

# HEALTH SEEKING PATHWAYS IN FOUR INDIAN STATES (4IS)



## Findings from a Survey on Health Care Seeking for Chronic and Acute Illnesses

September 2023

NATIONAL COUNCIL OF APPLIED ECONOMIC RESEARCH (NCAER)  
and  
THE NOSSAL INSTITUTE FOR GLOBAL HEALTH



# Health Seeking Pathways in Four Indian States (4IS)

---

**A Report on Chronic and Acute Problems of Adults, Women and Children**

**September 2023**

---

**National Council of Applied Economic Research  
Nossal Institute for Global Health, The University of Melbourne**



**National Council of Applied Economic Research**  
NCAER India Centre, 11, Indraprastha Estate, New Delhi-110 002. India.

# STUDY TEAM

## Authors

Prabir Kumar Ghosh, Ajay Mahal, Sumit Kane, Sumit Kumar, Shayequa Zeenat Ali,  
Charu Jain, Dhruv Pratap Singh, Sagari Sahu, Sree Sanyal, Chanchal Negi,  
Madhura Chowdhury, and Barbara McPake

## Field Co-ordinators

Firoz Malik, Rajender Mishra, and Vijay Kumar Bind

## Editor

Anupma Mehta

## Secretarial Assistant

Tara Kumari

## Technical Support

Rakesh Srivastava

## Correspondence

*pkghosh@ncaer.org; ajay.mahal@unimelb.edu.au; sumit.kane@unimelb.edu.au, barbara.mcpake@unimelb.edu.au*

### **Recommended Citation**

Ghosh, Prabir Kumar, Ajay Mahal, Sumit Kane, Sumit Kumar, Shayequa Zeenat Ali, Charu Jain, Dhruv Pratap Singh, Sagari Sahu, Sree Sanyal, Chanchal Negi, Madhura Chowdhury, and Barbara McPake. 2023. "Health Seeking Pathways in Four Indian States (4IS), India." Report, National Council of Applied Economic Research, New Delhi, and Nossal Institute for Global Health, Melbourne, The University of Melbourne.

DOI: 10.5281/zenodo.8369140

### **© National Council of Applied Economic Research, 2023**

All rights reserved. The material in this publication is copyrighted. NCAER encourages the dissemination of its work and will normally grant permission to reproduce portions of the work promptly. For permission to reprint any part of this work, please send a request with complete information to the publisher below.

### **Published by**

Anil Kumar Sharma  
Professor & Secretary and Operations Director  
National Council of Applied Economic Research (NCAER)  
NCAER India Centre, 11 Indraprastha Estate, New Delhi-110 002  
Tel: +91-11-2345-2657, 6120-2698  
Email: aksharma@ncaer.org  
www.ncaer.org

### **Publications Coordinator**

Jagbir Singh Punia

---

The findings, interpretations, and conclusions expressed are those of the authors and do not necessarily reflect the views of the Governing Body or Management of NCAER.

# FOREWORD

The renewed focus on routine as well as chronic health conditions across the world calls for a better understanding of healthcare seeking pathways to improve healthcare and reduce the overall disease burden. This is particularly true for chronic health conditions, which are becoming increasingly prevalent globally. Unlike a single acute episode of illness, which usually requires immediate medical attention, chronic health conditions tend to progress slowly. However, the frequency and intensity of the acute episodes associated with chronic illnesses increases if efficient and timely treatment is not sought for them.

The limited research in this area in India has necessitated studies that can provide deeper insights for identifying appropriate approaches to respond to both chronic and acute conditions. In order to bridge this gap, the Nossal Institute for Global Health, Melbourne School of Population and Global Health at the University of Melbourne, Australia, and the National Council of Applied Economic Research (NCAER), New Delhi, jointly undertook a research project covering various parameters of these health pathways. The broad themes covered in the report include: (i) the number of treatment providers consulted during the episodes of illness and sequencing of providers; (ii) the time lag between the current flare-up of a chronic condition and the last visit by the patient to a healthcare professional; (iii) the type of healthcare sought and exit from the

treatment; (iv) the key socio-economic, demographic, and potential system drivers of healthcare-seeking pathways, (v) out-of-pocket expenditures incurred by households on healthcare; and, (vi) the factors affecting the choice of healthcare facilities.

The study was conducted in two States with relatively less developed healthcare systems, that is, Odisha and Uttar Pradesh, and two States with relatively more developed healthcare systems, that is, Maharashtra and Punjab. These States were selected to explore the differences in healthcare-seeking pathways between lower and higher levels of development of health systems at the State level. The study tracked healthcare seeking for the following three conditions: (i) chronic breathlessness in adults; (ii) common chronic gynaecological problems faced by women; and iii) acute respiratory infection in children.

The findings presented in this report offer rich insights to researchers, policymakers, and development administrators on how Indians seek healthcare – these findings have significant policy and practice implications for improving the functioning of the Indian health system. I would like to commend the diligence and dedication of the NCAER and the Nossal Institute for Global Health teams in conducting the study and in preparing this report.

**Dr Poonam Gupta**

*Director General*

National Council of Applied Economic Research

New Delhi

September 2023



# FOREWORD

This report arises from a study conducted by the National Council of Applied Economic Research and the Nossal Institute for Global Health, the University of Melbourne, Australia. It sought to explore the treatment seeking behaviour of people living in Odisha, Uttar Pradesh, Maharashtra, and Punjab in order to understand more about financial protection and access to appropriate services for people with the following three conditions: adults with chronic respiratory conditions; adult women with common chronic gynaecological complaints; and children with acute respiratory conditions.

The study aimed to fill two specific gaps in the current understandings of health seeking behaviour in India. While national and state level surveys have previously been analysed with a view to understanding differences in health seeking behaviour between states and exposure to economic and financial risks associated with seeking health care, there have not previously been attempts to control for condition in so doing. There are good reasons for this, as existing national surveys are unable to identify those with a given condition who have not been diagnosed and are not well set up for identifying even those who have been diagnosed, by specific condition. National surveys are also not designed to be able to look at expenditure related to a whole episode of illness. They focus on a time period for total household health expenditure which might be related to multiple members and multiple conditions and/or expenditure on the last occasion of seeking health care which may have been only one of several episodes related to the condition in question. This study evaluated expenditures over as many providers as were used for the last 'flare up' of the condition, or the episode of the acute condition.

The choice of the three conditions arose from a specific interest in the growing importance of chronic conditions in the Indian epidemiological profile and the need for a comparative perspective on health seeking behaviour relative to health seeking behaviour

for an acute condition. The data collected reveal that health seeking is more comprehensive and immediate for children with acute respiratory conditions than for adults with a chronic condition. Women suffering from gynaecological complaints are most likely to self-treat and delay the longest before seeking care. Children with acute respiratory conditions are most likely to receive care in the private sector, and the highest proportion of out-of-pocket expenditure on their condition is in the private sector. Women with gynaecological complaints are most likely to attend the public sector, while the private sector still accounts for 75 per cent of their expenditure.

Chronic conditions are also a threat to the economic wellbeing of sufferers' households. For the two chronic conditions that were targeted by this study alone, prevalence (as a proportion of all household members) was about 2 per cent for chronic respiratory conditions and 3.5 per cent among women for chronic gynaecological complaints. Estimates based on WHO's SAGE survey (Arokiaswamy et al. 2017) project the prevalence of six chronic conditions in the Indian population aged 50 years and above to range from about 10 per cent for asthma to about 40 per cent for those with hypertension. Although conditions are not distributed evenly across the population and multiple conditions concentrate in an unfortunate few, data suggest that most, if not almost all households that include an older adult face the dilemmas associated with accessing appropriate care for a chronic illness.

For the chronic conditions, the survey reports the experience of the 'last flare up' with respect to both numbers of visits to health care providers and out of pocket expenditure. Compared to the evidence from a volume of literature suggesting that people visit multiple health providers before discontinuing health care seeking for an episode of illness, the care seeking journeys documented by this study are relatively short with the most common experience (for 39 per cent of the respondents) a visit to only one provider,

29 per cent visiting two providers, 18 per cent visiting three, and only 0.4 per cent of respondents visiting 4.13 per cent did not access health care at all. These short journeys are almost certainly an artefact of the focus on the 'last flare up' only, as most of those interviewed had long suffered from the condition concerned and would not have been seeking out a diagnosis or an acceptable treatment course for the first time. Nevertheless, even in this context, out-of-pocket health expenditure was far from trivial, but rather judged 'catastrophic' (or accounting for more than 10 per cent of the household's total expenditure) in 7.1 per cent of episodes of women's gynaecological complaints and 8.2 per cent of episodes of adult chronic illness. In the larger context of the prevalence of the full range of chronic illnesses in households, and the total expenditure on those illnesses from onset to end of life, the capacity for health-related out-of-pocket expenditures to impoverish a large

proportion of households over a generation would appear to present a major macro-economic and poverty reduction challenge that is only growing over time.

Our conclusion is that ensuring that the whole Indian population has access to affordable and appropriate treatment for the chronic illnesses primarily affecting older people is not only a humanitarian imperative, important as that is. As the epidemic of chronic illness continues to expand, the need to protect household economies from the cost consequences of long treatment seeking journeys inclusive of providers whose efforts are likely to be at best ineffective and at worst unsafe, becomes a macro-economic and poverty reduction imperative. Achieving Universal Health Coverage in India is likely to be a highly productive investment in a prosperous future that includes all social and economic groups.

September 2023

**Professor Barbara McPake**  
Nossal Institute for Global Health, The University of Melbourne



# ACKNOWLEDGEMENTS

The study team thanks the Bill & Melinda Gates Foundation, India, for the research grant that made this study possible.

We would like to express our gratitude to the Director General of NCAER, Dr Poonam Gupta and former Director General of NCAER, Dr Shekhar Shah, for supporting this study, and for reposing faith in the team for conducting this study. We thank Prof Nancy Baxter, the Head of the School of Population and Global Health, University of Melbourne, for her support to the study. We are also grateful to Dr Santhosh Mathew, Dr Oommen John, Alok Rajan, Dr Alexo Esperato, and Stefan Nachuk of Bill & Melinda Gates Foundation, India, for their steadfast support to the implementation of the study. We would also like to thank Dr Anil Kumar Sharma, Secretary and Operations Director of NCAER, who offered full administrative support for carrying out the study. The team is also grateful to Dr Gurucharan Manna, Ex-Director General, NSS, and Senior Adviser at NCAER, and Mr Khurshid Anwar Siddiqui, Senior Adviser and former Senior Fellow at NCAER, and Dr Palash Baruah, Associate Fellow at NCAER, for helping in drafting the research methodology and multiplier estimation. We would not have been able to complete this study without their constant support. The authors acknowledge the contributions of Associate Professor Michelle Kermode and Dr John Lee during the early stages of the study.

Our sincere gratitude goes out to our survey partners, the Indian Society for Applied Research & Development, New Delhi, and Bureau of Research on Industry & Economic Fundamentals, New Delhi, which helped us in data collection at the household level. Thanks are also due to Fuzone E Systems Pvt. Ltd, New Delhi, for their assistance in developing the Computer-Assisted Personal Interviews (CAPI) programme for undertaking survey work for the project.

Last but not the least, we express our heartfelt appreciation to the thousands of respondents who participated in the survey, for generously giving us their valuable time, and the patience and willingness with which they shared information, enabling us to complete the study in an efficient and timely manner.

We hope this study will prove to be a rich repository of data and knowledge for State-level administrators, aiding them in undertaking policy and programmatic decisions.

Finally, the team accepts full responsibility for any shortcomings and gaps in the research or data that form the basis for this study.

**Project Team**  
NCAER, and Nossal Institute for Global Health,  
University of Melbourne

# ABBREVIATIONS AND ACRONYMS

ANC	Antenatal Care
ARI	Acute Respiratory Infections
BSKY	Biju Swastha Kalyan Yojana
CAP	Computer Aided Personal Interviewing
CEB	Census Enumeration Block
CGHS	Central Government Health Scheme
CHE	Catastrophic Health Expenditure
COPD	Chronic Obstructive Pulmonary Disease
CSB	Chronic Severe Breathlessness
ESI	Employee State Insurance
GAPPD	Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea
GDP	Gross Domestic Product
Gen	General Category
HS	Higher Secondary Schooling
ICTs	Information and Communication Technologies
IHDS	India Human Development Survey
IHE	Impoverished Health Expenditure
LMICs	Low- and Middle-Income Countries
MPCE	Monthly per Capita Expenditure
NCAER	National Council of Applied Economic Research
NFHS	National Family and Health Survey
NITI	National Institution for Transforming India
NSSO	National Sample Survey Organisation
OBC	Other Backward Caste
OOP	Out-of-Pocket
PMJAY	Pradhan Mantri Jan Arogya Yojana
PSU	Public Sector Undertaking
RSBY	Rashtriya Swasthya Bima Yojana
SC	Scheduled Caste
ST	Scheduled Tribe
TB	Tuberculosis
THHE	The Household Health Expenditure
UHC	Universal Health Coverage
UNICEF	United Nations Children's Fund
UP	Uttar Pradesh
WHO	World Health Organisation

# TABLE OF CONTENTS

<i>Study Team</i> .....	<i>ii</i>
<i>Foreword</i> .....	<i>iii</i>
<i>Foreword</i> .....	<i>v</i>
<i>Acknowledgements</i> .....	<i>vii</i>
<i>Abbreviations and Acronyms</i> .....	<i>viii</i>
<i>List of Tables</i> .....	<i>xiii</i>
<i>List of Figures</i> .....	<i>xvi</i>
<i>Appendices</i> .....	<i>xviii</i>
<i>Executive Summary</i> .....	<i>xxi</i>

## CHAPTER 1

<b>Review of Healthcare Pathways in South Asia</b> .....	<b>1</b>
1.1 Introduction.....	1
1.2 Findings from the Literature in South Asia.....	3
1.2.1 Gender and Healthcare Seeking.....	4
1.2.2 Residence (Rural versus Urban), Economic Status and Healthcare Seeking .....	4
1.2.3 Treatment Pathways .....	5
1.3 Findings from Qualitative Research Done as Part of This Study.....	5
1.4 Plan for This Report .....	6

## CHAPTER 2

<b>Survey Methodology and Data Collection</b> .....	<b>7</b>
2.1 Introduction.....	7
2.2 Sampling Design .....	8
2.3 Sample Weights.....	9
2.4 Reliability of Estimates.....	11
2.5 Survey Tools: Data Collection and Quality Assurance.....	12
2.5.1 Development of Study Tools .....	12
2.5.2 Data Collection Process .....	15
2.5.3 Quality Assurance .....	15
2.6 Challenges Faced during Primary Data Collection.....	16
2.6.1 Logistical Challenges .....	16
2.6.2 Respondent-Related Challenges .....	16
2.6.3 Interviewer-Related Challenges .....	17
2.6.4 Miscellaneous Challenges.....	18
2.7 Data Limitations .....	19

## CHAPTER 3

### Prevalence of ARI, Chronic Breathlessness and Common Gynaecological Conditions: Findings from the Listing Survey .....21

3.1	Introduction.....	21
3.2	Acute Respiratory Infections among Children .....	21
3.3	Chronic Breathlessness among Adults .....	25
3.4	Common Gynaecological Conditions .....	26
3.5	Socio-economic Correlates of ARI, Chronic Breathlessness and Gynecological Conditions: Findings from Multivariate Analyses .....	28

APPENDIX TABLE .....	30
----------------------	----

## CHAPTER 4

### Chronic Breathlessness: Healthcare Use Pathways, Out-of-Pocket Spending and Service Quality..... 31

4.1	Sampling and Household Characteristics .....	32
4.1.1	Survey Respondents .....	33
4.2	Housing and Individual Characteristics .....	33
4.2.1	Housing Characteristics .....	33
4.2.2	Profile of Persons with Chronic Breathlessness.....	36
4.3	Healthcare Pathways .....	37
4.3.1	Number of Visits and Distribution of Patients .....	37
4.3.2	Length of Time Spent with Chronic Respiratory Condition .....	39
4.3.3	Reasons for Not Seeking Treatment.....	40
4.3.4	Consultation Status after Flare-up.....	41
4.3.5	Type of Service Provider at First Consultation .....	42
4.3.6	Number of Providers Consulted.....	43
4.3.7	Sequencing of Providers .....	44
4.3.8	Time Lag in Seeking Treatment after a Recent Flare-up .....	44
4.3.9	Exiting from the Treatment.....	47
4.3.10	Key Findings from Health-seeking Pathway Analysis .....	49
4.4	Out-of-pocket Spending .....	49
4.4.1	Cost of Treatment .....	50
4.4.2	Catastrophic Health Expenditure Estimates.....	52
4.4.3	Financing Strategies .....	53
4.4.4	Main Findings of Analyses of OOP Spending .....	55
4.5	Factors Influencing the Choice of Healthcare Provider.....	55
4.5.1	Evaluation of Healthcare Service .....	55
4.5.2	Factors Determining the Choice of Healthcare Facilities .....	56
4.5.3	Main Findings on Quality of Healthcare Facilities.....	56
4.6	History of the Patient: Chronic Breathlessness and Treatment .....	57
4.6.1	Type of Service Provider at the First Consultation after Noticing Symptoms .....	57
4.6.2	Type of Service Provider Consulted in the First Six Months .....	57

4.6.3	Number of Health Service Providers Consulted in the Entire Period of Illness (since first experience of symptoms).....	58
4.6.4	Satisfaction with the Healthcare Providers Consulted.....	58
4.6.5	Healthcare Providers Consulted in the Last Six Months.....	59
4.6.6	Routine Treatment.....	59
4.6.7	Salient Findings from Analysis of Health Seeking Behaviour since Symptoms Were Diagnosed .....	60
<b>APPENDIX TABLES .....</b>		<b>61</b>

## CHAPTER 5

<b>Gynaecological Problems of Women: Healthcare Use Pathways, Out-of-Pocket Spending and Service Quality .....</b>		<b>85</b>
<b>5.1</b>	<b>Sampling and Household Characteristics .....</b>	<b>85</b>
<b>5.2</b>	<b>Housing and Individual Characteristics .....</b>	<b>87</b>
5.2.1	Housing Characteristics .....	87
5.2.2	Profile of Women with Gynaecological Problems.....	90
<b>5.3</b>	<b>Healthcare Pathways .....</b>	<b>91</b>
5.3.1	Number of Visits and Distribution of Patients .....	92
5.3.2	Reasons for Not Seeking Treatment.....	94
5.3.3	Length of Time Spent with Gynaecological Problems .....	94
5.3.4	Consultation Status after Flare-up.....	95
5.3.5	Type of Healthcare Provider at the First Consultation.....	97
5.3.6	Number of Providers Consulted.....	97
5.3.7	Sequencing of Healthcare Providers.....	99
5.3.8	Time Lag in Seeking Treatment after a Recent Flare-up .....	100
5.3.9	Exiting from Treatment.....	102
5.3.10	Key Findings from Health-seeking Pathway Analysis .....	104
<b>5.4</b>	<b>Out-of-Pocket Spending .....</b>	<b>105</b>
5.4.1	Cost of Treatment .....	106
5.4.2	Catastrophic Health Expenditure Estimates.....	109
5.4.3	Financing Strategies .....	110
5.4.4	Salient Findings from Analysis of OOP Spending.....	112
<b>5.5</b>	<b>Factors Influencing Choice of Healthcare Provider .....</b>	<b>112</b>
5.5.1	Evaluation of Healthcare Service .....	113
5.5.2	Factors Determining the Choice of Healthcare Facilities .....	114
5.5.3	Salient Findings from Analysis of the Quality of Healthcare Facilities.....	114
<b>5.6</b>	<b>Consultation since the Beginning .....</b>	<b>114</b>
5.6.1	Type of Healthcare Provider at the First Consultation after Noticing Symptoms .....	115
5.6.2	Type of Healthcare Provider at the First Consultation in the First Six Months after Starting Seeking Solutions for Symptoms.....	115
5.6.3	Number of Healthcare Providers Consulted during the Entire Period of Illness (since the First Experience of Symptoms).....	116

5.6.4	Satisfaction Level with Healthcare Providers Consulted .....	116
5.6.5	Healthcare Providers Consulted in the Last Six Months.....	117
5.6.6	Routine Treatment Trends.....	117
5.6.7	Salient Findings from Analysis of Health Seeking Behaviour since Symptoms Began .....	118
<b>APPENDIX TABLES .....</b>		<b>119</b>
<b>CHAPTER 6</b>		
<b>Acute Respiratory Infection Among Children: Healthcare Use Pathways, Out-of-Pocket Spending, and Service Quality.....</b>		<b>143</b>
6.1	<b>Sampling and Household Characteristics .....</b>	<b>144</b>
6.1.1	Survey Respondents .....	145
6.2	<b>Housing and Individual Characteristics .....</b>	<b>145</b>
6.2.1	Housing Characteristics .....	145
6.2.2	Profile of the Child with Acute Respiratory Infection.....	148
6.3	<b>Healthcare-seeking Pathways.....</b>	<b>149</b>
6.3.1	Number of Visits and Distribution of Patients .....	149
6.3.2	Reasons for Not Seeking Treatment.....	152
6.3.3	Time Lag in Seeking Treatment after a Recent Flare-up .....	152
6.3.4	Consultation Status .....	155
6.3.5	Type of Service Provider at the First Consultation.....	156
6.3.6	Number of Healthcare Providers Consulted .....	157
6.3.7	Sequencing of Providers .....	158
6.3.8	Exiting from Treatment.....	159
6.3.9	Key Findings from Health-seeking Pathway Analysis .....	161
6.4	<b>Out-of-Pocket Spending .....</b>	<b>161</b>
6.4.1	Cost of Treatment .....	161
6.4.2	Catastrophic Health Expenditure Estimates.....	164
6.4.3	Financial Strategies .....	165
6.4.4	Salient Findings from the Analysis of OOP Spending.....	167
6.5	<b>Factors Influencing the Choice of Healthcare Provider.....</b>	<b>167</b>
6.5.1	Opinion on the Quality of Healthcare Facilities.....	168
6.5.2	Evaluation of the Healthcare Service .....	168
6.5.3	Factors Determining the Choice of Health Facilities .....	168
6.5.4	Key Factors Determining the Choice of Healthcare Providers .....	169
<b>APPENDIX TABLES .....</b>		<b>170</b>
<b>REFERENCES .....</b>		<b>186</b>

# LIST OF TABLES

Table 2.1:	Level of Development in the Selected States.....	8
Table 2.2:	Sampling Details.....	10
Table 2.3:	Prevalence Rate (%) of Different Conditions: Weighted and Un-weighted.....	10
Table 2.4:	Estimates of Standard Errors.....	11
Table 2.5:	Household Listing Questionnaire.....	13
Table 2.6:	Adult, Women, and Child Questionnaires.....	13
Table 3.1:	Respondent Characteristics and Recall Periods by Condition.....	22
Table 3.2:	Category-wise Risk Factors of Childhood Pneumonia.....	22
Table 3.3:	Prevalence Rate of ARI by Place of Residence during the Past 30 days (%).....	23
Table 3.4:	14-Day Prevalence Rate of ARI (%).....	23
Table 3.5:	Seasonal Variations in the 30-day Prevalence Rate of ARI.....	24
Table 3.6:	30-day Prevalence Rate of ARI by Socio-religious Status and Household Size.....	24
Table 3.7:	30-day Prevalence Rate of ARI, by Income Group.....	25
Table 3.8:	Prevalence of Chronic Breathlessness in the Adult Population by Place of Residence (%).....	26
Table 3.9:	Prevalence of Chronic Breathlessness in the Adult Population by Socio-religious Status and Household Size (%).....	26
Table 3.10:	Prevalence of Chronic Breathlessness among the Adult Population by Income Quintiles (%).....	26
Table 3.11:	Prevalence of Common Gynaecological Conditions by Place of Residence (%).....	27
Table 3.12:	Prevalence of Common Gynaecological Conditions by Socio-religious Status and Household Size (%).....	27
Table 3.13:	Prevalence of Common Gynaecological Conditions by Income.....	28
Table 3.14:	Socio-economic, Demographic and Locational Correlates of ARI, Chronic Breathlessness among Adults and Common Gynaecological Conditions: Results from a Multivariate Analysis.....	28
Table 4.1:	District-wise Number of Selected Households by District and Place of Residence.....	32
Table 4.2:	Distribution of Selected Households by Socio-economic Characteristics across Districts.....	32
Table 4.3:	Proportion of Households Having Three Basic Facilities by Districts and Place of Residence.....	35
Table 4.4:	Profile of Ill Persons by Socio-economic Characteristics across Districts (% Distribution).....	36
Table 4.5:	Proportion of Adult Patients Not Seeking Treatment after a Flare-up during the Last One Year.....	40
Table 4.6:	Average Number of Healthcare Providers Consulted during the Last One Year for Treatment by Socio-economic and Demographic Attributes (Numbers).....	43

Table 4.7:	Proportion of Patients Recovered by Number of Visits and Districts .....	47
Table 4.8:	Status (Exiting/Repeating Visit to the Same Healthcare Provider/Switching Healthcare Provider) of Patients after the First and/or Subsequent Visit to the Healthcare Provider, by Districts (%) .....	48
Table 4.9:	Average OOP Expenditure and Its Share in the Total Household Expenditure by District .....	50
Table 4.10:	Share of OOP Expenses in Total OOP Expenses by Visit (%) .....	50
Table 4.11:	Distribution of OOP Treatment Expenses by the Type of Healthcare Provider and District .....	52
Table 4.12:	Share of Households Spending More Than 10% of the Total Expenses on OOP by District .....	53
Table 4.13:	Share of Households incurring CHE Spending using Alternative Thresholds of OOP Spending as a Proportion of Household Non-food Spending.....	53
Table 4.14:	Financing Strategies to Meet Treatment Costs by District (% Households).....	54
Table 4.15:	Type of Health Insurance Coverage by Districts and Per Capita Expenditure Quartile (% Households) .....	54
Table 4.16:	Respondent Ratings of Public and Private Healthcare Providers, by District (% Households).....	56
Table 4.17:	District-wise Type of Healthcare Providers Consulted in the First Six Months after Patients Started Seeking Solutions for Symptoms.....	58
Table 4.18:	District-wise Number of Healthcare Providers Consulted during the Entire Period of Illness .....	58
Table 4.19:	District-wise Percentage of Patients Satisfied with All Healthcare Providers Consulted.....	58
Table 4.20:	District-wise Type of Healthcare Providers Consulted in the Last Six Months .....	59
Table 5.1:	District-wise Number of Selected Households by Place of Residence .....	85
Table 5.2:	Distribution of Selected Households by Socio-economic Characteristics across Districts .....	86
Table 5.3:	Proportion of Households Having Three Basic Facilities by Districts and Place of Residence.....	89
Table 5.4:	Profile of Ill Persons by Socio-economic Characteristics across Districts (% Distribution) ....	91
Table 5.5:	Proportion of Women Not Seeking Treatment after a Flare-up during the Preceding One Year by Districts (%) .....	94
Table 5.6:	Average Number of Health Care Providers Consulted during the Preceding Last One Year for Treatment by Socio-economic and Demographic Attributes (Numbers).....	98
Table 5.7:	Proportion of Patients Who Recovered by the Number of Visits and District .....	103
Table 5.8:	Status (Exiting/Repeating Visit to the Same Healthcare Provider/Switching Healthcare Provider) of Patients after the First and/or Subsequent Visit to the Healthcare Provider by Districts (%) .....	104
Table 5.9:	Average OOP Expenditure and Its Share in the Total Household Expenditure by District .....	106
Table 5.10:	Share of Treatment Cost as Percentage of Total Cost by Different Visits .....	106
Table 5.11:	Distribution of Treatment Expenses by the Type of Healthcare Provider and District .....	109
Table 5.12:	Share of Households Spending More Than 10% of the Total Expenses on Treatment by District .....	109



Table 5.13: Percentage of Households Spending on Treatment as a Percentage of the Total Household Non-food Expenditure by First visit and All Four Visits .....	110
Table 5.14: Financing Strategies to Meet Treatment Costs (% Households) by District.....	110
Table 5.15: Type of Health Insurance Coverage by Districts and Per Capita Expenditure Quartiles (% Households).....	111
Table 5.16: Respondent Ratings of Public and Private Providers by District (% Households).....	113
Table 5.17: District-wise Type of Healthcare Service Provider Consulted in the First Six Months after Started Seeking Solutions for Their Symptoms .....	116
Table 5.18: District-wise Number of Health Service Providers Consulted during the Entire Period of Illness .....	116
Table 5.19: District-wise Percentage of Patients Satisfied with All Healthcare Providers Consulted.....	116
Table 5.20: District-wise Type of Healthcare Providers Consulted in the Last Six Months .....	117
Table 6.1: District-wise Number of Selected Households by Districts and Place of Residence.....	144
Table 6.2: Distribution of Selected Households by Socio-economic Characteristics across Districts ....	145
Table 6.3: Proportion of Households Having Three Basic Facilities by Districts and Place of Residence.....	148
Table 6.4: Profile of Children Suffering from Acute Respiratory Infections (ARI) by Socio-economic Characteristics across Districts (% Distribution) .....	149
Table 6.5: Proportion of Children Not Being Taken for Treatment by Districts (%).....	152
Table 6.6: Average Number of Healthcare Providers Consulted for Treatment of ARI in Children (Five Years of Age) during the Preceding One Month by Socio-economic and Demographic Attributes (Numbers) .....	158
Table 6.7: Proportion of Children Who Recovered by Number of Visits and District (%) .....	159
Table 6.8: Status (Exiting/Repeating Visit to the Same Healthcare Provider/Switching Healthcare Provider) of Patients after the First and/or Subsequent Visit to the Healthcare Provider by District (%).....	160
Table 6.9: Average OOPE and Its Share in the Total Household Expenditure by District.....	162
Table 6.10: Share of the Treatment Cost as a Percentage to the Total Cost by Different Visits.....	162
Table 6.11: Distribution of Treatment Expenses by the Type of Providers and District (%) .....	164
Table 6.12: Share of Households Spending More Than 10% of the Total Expenses on Treatment by District.....	164
Table 6.13: Percentage Households Reporting Spending on Treatment as a Percentage of the Total Household Non-food Expenditure by Different Visits to the Healthcare Service Providers by District.....	165
Table 6.14: Financing Strategies to Meet Treatment Costs (% households) by District.....	166
Table 6.15: Type of Health Insurance Coverage by Districts and Per Capita Expenditure Quartiles (% Households).....	167
Table 6.16: Respondent Ratings of Public and Private Providers, by District (% Households) .....	168

# LIST OF FIGURES

Figure 1.1: Model of Pathways to Treatment (Walter and Scott 2012).....	3
Figure 4.1: Percentage Distribution of Households by Housing Characteristics and District.....	33
Figure 4.2: Percentage Distribution of Households by Type of Toilet Facilities, District, and Place of Residence.....	34
Figure 4.3: District-wise Percentage Distribution of Households, by Source of Drinking Water and Place of Residence .....	35
Figure 4.4: Share of Households across Wealth Quartiles, by Districts and Place of Residence.....	36
Figure 4.5: Treatment-seeking Behaviour.....	38
Figure 4.6: Overall Status of Treatment among the Ill Adults (2,636).....	39
Figure 4.7: Status of Treatment after All Four Visits by District .....	39
Figure 4.8: District-wise Average Duration of Chronic Breathlessness (in Years), by Age Categories ....	40
Figure 4.9: Proportion of Adults Who Sought Treatment by District .....	41
Figure 4.10: Proportion of Adults Reporting an Episode Who Visited a Healthcare Provider, by District and Place of Residence (%) .....	41
Figure 4.11: Proportion of Adults with a Flare-up Who Sought Treatment in the Last Year by Expenditure Quartiles (%).....	42
Figure 4.12: First Source of Treatment by Type of Healthcare Service Provider by District (% Share).....	42
Figure 4.13: Distribution of Patients by Number of Providers Visited by District.....	43
Figure 4.14: Average Duration between Flare-up and Seeking Treatment from the First Healthcare Provider by District in Days .....	44
Figure 4.15: Average Duration between Beginning of the Episode and First Visit to the Provider, by Rural-Urban and District (in Days).....	46
Figure 4.16: Average Duration between Start of the Episode and First Visit to the Provider by Expenditure Quartiles and District (in Days) .....	46
Figure 4.17: Proportion of Patients Recovered, by Rural-Urban and Number of Visits.....	47
Figure 4.18: Proportion of Households Reporting Treatment Cost (%).....	51
Figure 4.19: Average OOP Expenses for Treatment for All Visits Combined (Rs).....	51
Figure 4.20: District-wise Share of First Source of Treatment in the First Episode of the Beginning of the Symptoms, by Type of Healthcare Provider .....	57
Figure 4.21: District-wise Type of Healthcare Providers Visited Routinely for Treatment.....	59
Figure 5.1: Distribution of Households by Housing Characteristics and District.....	87
Figure 5.2: Percentage Distribution of Households by Type of Toilet Facilities by District and Place of Residence .....	88
Figure 5.3: District-wise Percentage Distribution of Households by Source of Drinking Water and Place of Residence .....	89
Figure 5.4: Share of Households across Wealth Quartiles by Districts and Place of Residence.....	90
Figure 5.5: Treatment-seeking Behaviour.....	92
Figure 5.6: Overall Status of Treatment among the Ill Women (2,510).....	93

Figure 5.7: District-wise Status of Treatment after All Four Visits.....	93
Figure 5.8: Average Duration of Gynaecological Conditions (in years) by Age Categories.....	95
Figure 5.9: Proportion of Women Reporting an Episode of Illness Who Visited a Provider by District .....	95
Figure 5.10: Proportion of Women Reporting an Episode Who Visited a Healthcare Provider by District and Place of Residence (%).....	96
Figure 5.11: Proportion of Women Who Sought Treatment by Expenditure Quartiles (%) .....	96
Figure 5.12: Share of First Source of Treatment by Type of Healthcare Service Provider by District .....	97
Figure 5.13: District-wise Distribution of Patients by Number of Providers Visited.....	98
Figure 5.14: Average Duration between the Flare-up and Seeking of Treatment from the First Healthcare Provider by District (in Days) .....	100
Figure 5.15: Average Duration between the Beginnings of the Illness Episode and First Visit to the Provider by District and Place of Residence (in Days) .....	101
Figure 5.16: Average Duration between the Start of the Episode and First Visit to the Provider by Expenditure Quartiles and Districts (in Days) .....	102
Figure 5.17: Proportion of Patients Recovered by Rural-Urban Area and Number of Visits.....	103
Figure 5.18: Proportion of Households Reporting Treatment Costs (%) .....	107
Figure 5.19: Average Cost of Treatment for All the Four Visits (in Rs) .....	108
Figure 5.20: District-wise Share of First Source of Treatment in the First Episode of the Beginning of the Symptoms by the Type of Healthcare Provider.....	115
Figure 5.21: District-wise Type of Healthcare Providers Visited Routinely for Treatment.....	117
Figure 6.1: Distribution of Households by Housing Characteristics and District.....	146
Figure 6.2: Percentage Distribution of Households by Type of Toilet Facilities by Districts and Place of Residence .....	146
Figure 6.3: Percentage Distribution of Households by Source of Drinking Water by Districts and Place of Residence .....	147
Figure 6.4: Share of Households across Wealth Quartile by Districts and Place of Residence.....	148
Figure 6.5: Treatment Seeking Behaviour.....	150
Figure 6.6: Overall Status of Treatment among the Ill Children (1,780).....	151
Figure 6.7: Status of Treatment after All Four Visits by Districts .....	151
Figure 6.8: Average Duration of Time between the Flare-up and Seeking of Treatment from the First Health Care Provider by District in Days.....	153
Figure 6.9: Average Duration between the Onset of Symptoms and Seeking Treatment from the First Healthcare Provider by Districts and Place of Residence (in days) .....	154
Figure 6.10: Average Duration between the Onset of Symptoms and Seeking Treatment from the First Healthcare Provider by Expenditure Quartiles (in Days) .....	154
Figure 6.11: Proportion of Children Who Sought Treatment by District.....	155
Figure 6.12: Proportion of Children Seeking Treatment by District and Place of Residence (%).....	155
Figure 6.13: Proportion of Children Sought Treatment by Expenditure Quartiles.....	156
Figure 6.14: Share of the First Source of Treatment by the Type of Healthcare.....	156
Figure 6.15: Distribution of Patients by the Number of Healthcare Providers Visited by Districts.....	157
Figure 6.16: Proportion of Recovering Children (Five Years of age) by Place of Residence and Number of Visits to the Healthcare Providers (%).....	159
Figure 6.17: Proportion of Households Reporting Treatment Costs (%).....	163
Figure 6.18: Average Cost of Treatment Incurred on All the Four Visits (in Rs) .....	163

# APPENDICES

Appendix Table 3.1:	MPCI, Average HH Income, Number of Households, Household Size, Average Number of Children and Prevalence of ARI among Children.....	30
Appendix Table 4.1:	Status of Treatment after Fourth Visit-All Sample (2636).....	61
Appendix Table 4.2:	Average Duration of Chronic Breathlessness (in Years) .....	62
Appendix Table 4.3:	Proportion of Adult Patients Not Seeking Treatment after a Flare-up during the Last One Year by Socio-economic and Demographic Attributes (%).....	63
Appendix Table 4.4:	Proportion of Adult Population with a Flare-up That Sought Treatment during the Last One Year by Socio-economic and Demographic Attributes (%).....	64
Appendix Table 4.5:	Proportion of Patients Who Received First Treatment by Type of Healthcare Service Provider during the Last One Year by Socio-economic and Demographic Attributes (%) .....	65
Appendix Table 4.6:	Proportion of Patients Who Visited Number of Healthcare Providers for Treatment after a Flare-up during the Last One Year by Socio-economic and Demographic Attributes (%).....	66
Appendix Table 4.7:	Sequencing of Visits to Different Types of Healthcare Providers with a Flare-up during the Last One Year Who Sought Treatment by Districts (%).....	67
Appendix Table 4.8:	Sequencing of Visits to Different Types of Healthcare Providers with a Flare-up during the Last One Year Who Sought Treatment by Socio-economic and Demographic Attributes (%).....	69
Appendix Table 4.9:	Average Duration between the Flare-up and Seeking of Treatment from the First Healthcare Provider by Socio-economic and Demographic Attributes (in Days) .....	71
Appendix Table 4.10:	Proportion of Patients Who Recovered after Different Number of Visits to Healthcare Providers for Treatment during the Last One Year by Socio-economic and Demographic Attributes (%).....	72
Appendix Table 4.11:	Proportion of Patients Exiting and Switching the Treatment after Visiting the Health Care Provider by Socio-economic and Demographic Attributes (%).....	73
Appendix Table 4.12:	Average Cost of Treatment of All the Four Visits (in Rs) by Socio-economic and Demographic Attributes (%).....	75
Appendix Table 4.13:	Percentage of Households That Reported Spending More Than 10% on Treatment as a Percentage of the Total Household Expenditure by Socio-economic and Demographic Attributes (%).....	77
Appendix Table 4.14:	Households Spending on Treatment as a Percentage of the Total Non-food Expenditure by Socio-economic and Demographic Attributes (%).....	78
Appendix Table 4.15:	Key Deciding Factors for Choosing Health Care Providers (%) by District .....	79
Appendix Table 4.16:	Proportion of Patients Who Received First Treatment by Type of Healthcare Service Provider during the Beginning of the Symptoms by Socio-economic and Demographic Attributes (%).....	80

Appendix Table 4.17:	Proportion of Patients Who Received Treatment by Type of Healthcare Service Provider in First Six Months of Started Seeking Solutions by Socio-Economic and Demographic Attributes (%).....	81
Appendix Table 4.18:	Number of Health Service Providers Consulted in the Entire Period of Illness by Socio-Economic and Demographic Attributes (%).....	82
Appendix Table 4.19:	Distribution of Patients with Chronic Breathlessness by Socio-demographic Characteristics and Type of Provider Consulted.....	83
Appendix Table 4.20:	Distribution of Health Service Providers Consulted Routinely for Treatment by Socio-Economic and Demographic Attributes (%).....	84
Appendix Table 5.1:	Status of Treatment after the Fourth Visits-All Sample (2,510).....	119
Appendix Table 5.2:	Proportion of Women Not Seeking Treatment after a Flare-up during the Preceding One Year by Socio-economic and Demographic Attributes (%).....	120
Appendix Table 5.3:	Average Duration of Common Gynaecological Conditions (in Years).....	121
Appendix Table 5.4:	Proportion of Women with a Flare-up Who Sought Treatment during the Preceding One Year by Socio-economic And Demographic Attributes (%).....	122
Appendix Table 5.5:	Proportion of Patients Who Received First Treatment by Type of Healthcare Service Provider during the Preceding One Year by Socio-Economic and Demographic Attributes (%).....	123
Appendix Table 5.6:	Proportion of Patients Who Visited a Number of Health Care Providers for Treatment after a Flare-up during the Preceding One Year by Socio-economic and Demographic Attributes (%).....	124
Appendix Table 5.7:	Sequencing of Visits to Different Types of Health Care Providers with a Flare-up during the Preceding One Year by Women Seeking Treatment by Districts (%).....	125
Appendix Table 5.8:	Sequencing of Visits to Different Types of Health Care Providers Seeking Treatment for a Flare-up during the Preceding One Year by Socio-economic and Demographic Attributes (%).....	127
Appendix Table 5.9:	Average Duration between the Flare-up and Seeking of Treatment from the First Health Care Provider by Socio-economic and Demographic Attributes (in Days).....	129
Appendix Table 5.10:	Proportion of Patients Who Recovered after Different Number of Visits to Health Care Providers for Treatment during the Preceding One Year by Socio-economic and Demographic Attributes (%).....	130
Appendix Table 5.11:	Proportion of Patients Exiting and Switching the Treatment after Visiting the Health Care Provider by Socio-economic and Demographic Attributes (%).....	131
Appendix Table 5.12:	Average Cost of Treatment of All the Four Visits (in Rs) by Socio-economic and Demographic Attributes (%).....	133
Appendix Table 5.13:	Percentage of Households That Reported Spending More Than 10% on Treatment as a Percentage of the Total Household Expenditure by Socio-economic and Demographic Attributes (%).....	134
Appendix Table 5.14:	Households Spending on Treatment as a Percentage of the Total Non-food Expenditure by Socio-economic and Demographic Attributes (%).....	135
Appendix Table 5.15:	Key Deciding Factors for Choosing Health Care Providers (%) by District.....	136
Appendix Table 5.16:	Proportion of Patients Who Received First Treatment by Type of Healthcare Service Provider during the Beginning of the Symptoms by Socio-Economic and Demographic Attributes (%).....	137

Appendix Table 5.17:	Proportion of Patients Who Received Treatment by Type of Healthcare Service Provider in First Six Months of Started Seeking Solutions by Socio-Economic and Demographic Attributes (%).....	138
Appendix Table 5.18:	Number of Health Service Providers Consulted in the Entire Period of Illness by Socio-Economic and Demographic Attributes of Women (%).....	139
Appendix Table 5.19:	Distribution of Patients with Chronic Breathlessness by Socio-demographic Characteristics and Type of Provider Consulted.....	140
Appendix Table 5.20:	Distribution of Health Service Providers Consulted Routinely for Treatment by Socio-economic and Demographic Attributes (%).....	141
Appendix Table 6.1:	Status of Treatment after the Fourth Visits Total Sample (1,687) .....	170
Appendix Table 6.2:	Proportion of Children Not Seeking Treatment after a Flare-up during the Preceding One Month by Socio-economic and Demographic Attributes (%) ....	171
Appendix Table 6.3:	Average Duration of Delay in Seeking Treatment by Socio-economic and Demographic Attributes (in Days) .....	172
Appendix Table 6.4:	Proportion of Children Being Taken for Treatment for an Episode of ARI during the Preceding One Month by Socio-economic and Demographic Attributes (%) .....	173
Appendix Table 6.5:	Proportion of Children Who Received (First) Treatment by the Type of Healthcare Service Provider during the Last One Year by Socio-economic and Demographic Attributes (%) .....	174
Appendix Table 6.6:	Number of Visits to Healthcare Providers by Socio-economic and Demographic Attributes (%) .....	175
Appendix Table 6.7:	Sequencing of Visits to Different Types of Health Care Providers amongst Those Who Sought Treatment, by Districts (%) .....	176
Appendix Table 6.8:	Sequencing of Visits to Different Types of Healthcare Providers amongst Those Who Sought Treatment by Socio-economic and Demographic Attributes Socio-economic and Demographic Attributes (%) .....	178
Appendix Table 6.9:	Proportion of Children Who Recovered, by Number of Visits to Healthcare Providers by Socio-economic and Demographic Attributes (%) .....	180
Appendix Table 6.10:	Proportion of Children Exiting and Switching the Treatment after Visiting a Healthcare Provider by Socio-economic and Demographic Attributes (%) .....	181
Appendix Table 6.11:	Average Cost of Treatment of All the Four Visits (in Rs) by Socio-economic and Demographic Attributes (%).....	182
Appendix Table 6.12:	Percentage Households That Reported Spending More Than 10% on Treatment as a Proportion of the Total Household Expenditure by Socio-economic and Demographic Attributes (%).....	183
Appendix Table 6.13:	Percentage of Households Reported Spending on Treatment as a Percentage to the Total Household Non-food Expenditure by Different Visits by Socio-economic and Demographic Attributes (%).....	184
Appendix Table 6.14:	Key Deciding Factors for Choosing Healthcare Providers by District (%) .....	185

# EXECUTIVE SUMMARY

## A. Introduction

The world lacks credible indicators of health system functionality that can be used at multiple levels, from comparing international performance to evaluating localised health service interventions for their health system impact. Three types of indicators are used to measure progress towards Universal Health Coverage: measures of service coverage, measures of health-related impoverishment, and measures of health security. There are large gaps in routinely collected data around measures of service coverage. For service coverage related to non-communicable diseases, proxies such as ‘effectively managed blood pressure’ are used, and details concerning the adequacy of service quality are missing for all types of health conditions. Measures of health-related impoverishment are more complete but remain somewhat arbitrary and under-specified in some respects. Measures of health security proved poorly predictive of resilience to the COVID-19 pandemic. The research reported here was inspired by the idea that measures of health seeking behaviour may be capable of improving the existing array of health system performance measures and may be usable for a wide range of needs for health system performance measures.

The idea of ‘health expenditure transition’ has been proposed recently,<sup>1</sup> recognising the increasing convergence of the spending profiles of middle-income countries such as India, towards those of high-income countries. These profiles are characterised with increased domestic and public spending and declining overseas development assistance, as well as increased risk-sharing and public financing and declining out-of-pocket (OOP) spending as shares of total health expenditure. While this is a description of trends, it can also be interpreted more normatively as an approach for measuring health system “development”, implying that OOP spending is a measure of dysfunctionality in the health system. Two further measures associated with OOP

spending have also been considered as measures of health system functioning: (i) Catastrophic Health Expenditure (CHE), which has multiple definitions, not all of which are comprehensive; and (ii) “Distress Financing”, which categorises borrowing and reduced household spending as sources of health expenditure that carry inherent risks and are more likely signals of distress situations than other sources. We sought to explore these measures and the applicability of these normative interpretations.

Analyses that do not adequately account for treatment pathways in responding to illness potentially suffer from two major limitations in their analyses of the implications of illnesses for households and health systems. If treatment pathways are temporally long, estimates of household OOP spending constructed from existing household surveys (with their typical recall periods ranging from 15 to 30 days) will exclude portions of treatment expenses associated with episodes of illness. Relatedly, the longer time span of illness episodes implies that the costs of foregone earnings from work for the ill person and/or their caregivers would be correspondingly larger but not adequately accounted for by the data collected. Secondly, not capturing the sequencing and length of treatments can lead to the omission of important information about the functioning of healthcare systems. For example, consumer perceptions about the quality of the available primary care services (public or private), and the functioning of referral systems and physical and financial access to services could influence the time taken to obtain treatment, and the choice of healthcare provider options. These are major concerns, especially in the case of chronic conditions, which have been increasing as a share of India’s disease burden. From the perspective of measuring health system functionality, long treatment pathways are likely to indicate poor regulation, poor patient satisfaction with services, and poor operation of referral systems.

Most datasets that capture health seeking behaviour have limited capacity to distinguish

<sup>1</sup> <https://www.who.int/publications/i/item/WHO-HIS-HGF-HFWorkingPaper-19.4>

between the conditions that have prompted the decision to seek healthcare. Household survey data rely on the users of healthcare to report their condition. However, users may not have been given a diagnosis or an accurate diagnosis, may not correctly remember the diagnosis they have been given, and for any of these reasons, may not be able to provide a reliable name for their condition. Furthermore, survey tools may have a limited capacity to code and summarise complex diagnostic information in contexts wherein many respondents simultaneously suffer from multiple morbidities. Relying on aggregate data across multiple conditions with varying mixes and contexts is likely to result in unreliable comparisons if the objective is to provide measures of relative health system functionality.

- **Long treatment pathways and associated health expenditures are unlikely to be fully captured by the existing surveys in India, given their relatively short recall periods.**
- **Longer treatment pathways are especially relevant for chronic conditions, which are becoming increasingly prevalent in India.**

Furthermore, without a sense of the nature and severity of the condition, any information about a household not seeking healthcare is difficult to interpret. By capturing a sub-sample of household members whose condition is defined as ‘serious enough to warrant treatment’, it is more reliable to interpret the failure to do so as a deficit in health seeking behaviour. This too can then be more readily interpreted as a measure of health system (dys) functionality.

This report presents new survey findings that help shed light on key questions pertaining to healthcare such as OOP spending, CHE, distress financing, treatment pathways, and failure to access care when warranted for household members, with one of the three clusters of symptoms consistent with specific conditions, in four States of India, viz., Odisha, Uttar Pradesh (UP), Maharashtra, and Punjab. These four States represent the two ends of the rankings for the performance of health systems created by the NITI Aayog (2018). Punjab and Maharashtra were ranked higher as they are believed to have a relatively well-performing health system, and Odisha and UP

were ranked lower, as they are considered to have relatively less well-performing health systems. We focused our inquiry on the following three sets of health conditions (one acute and two chronic): acute respiratory illness among children, chronic severe breathlessness among adults, and chronic common gynaecological conditions among women. While the surveys in UP and Odisha were done prior to the advent of COVID-19, in Maharashtra, and Punjab, the surveys were conducted post-COVID.

## B. Research Questions

The findings in this report answer the following questions pertaining to each of the three conditions:

1. What factors are associated with: (a) the decision to use medical care, and (b) the choice among the available medical providers?
2. What are the health expenditure consequences of both decisions, especially with respect to CHE?
3. What are the patterns of resort or what are the common pathways between providers and provider type, including primary and higher levels; public and private, in relation to a chronic condition common among adults, an acute condition common among and children, and gynaecological problems among women? These conditions were identified by clusters of symptoms rather than a specific diagnosis, as in many cases, the respondents have not been diagnosed or would not be able to name the condition for which they had been diagnosed.
4. To what extent do the patterns deduced from the study’s first four questions provide support for the use of additional data related to health seeking behaviour in evaluating the functioning and dysfunctionality in the health system?

## C. Sampling Methodology

The study covered the following three population groups:

1. Children (up to 5 years of age) suffering from severe cough/high fever and difficulty in breathing in the last 30 days. We label this as Acute Respiratory Infection (ARI).



2. Adults (aged 18 years and older) suffering from chronic cough, and severe shortness of breath at rest or on minimal effort, for a period of longer than six months, and with a flare-up of these symptoms in the last one year, even for a day. These symptoms are consistent with Chronic Obstructive Pulmonary Disease but potentially also with other conditions such as asthma or lung cancer. We label this as ‘chronic severe breathlessness’.
3. Women self-reporting one or more of the following: abnormally heavy bleeding and/or abnormally painful menstrual periods or abnormal vaginal discharge during the last one year, severe enough to regularly disrupt daily activities and/or to make the patients contemplate seeking treatment. We label this set of symptoms as ‘common gynaecological conditions’.

The sampled households containing individuals with the three targeted conditions belonged to 1,017 villages and urban wards, referred to as Primary Sampling Units or PSUs, in eight districts. The districts, including two each from the four sample States, were chosen to be at the median level of human development within each State. Given that district-level health data in India mostly consists of reproductive and child indicators, the districts chosen for this survey were at the median of the indicator, “the percentage share of women making four or more antenatal care (ANC) visits during the birth of the last child” within each State.

For sampling purposes, first the PSUs consisting of villages (for rural areas) and Census Enumeration Blocks (CEBs) for urban areas were chosen. About 125-150 households in each PSU were then listed using a pre-designed listing instrument (the listing survey) and stratified by health condition. In each of the selected PSUs, 3-5 households were randomly selected within each health condition stratum, depending upon their availability to participate in the survey. As a result, about 400 individuals per condition per district (if available) were chosen for participation in the survey. The household member best able to provide details of the health seeking journey, as identified by the household, was administered the survey. For the two chronic conditions, we defined an ‘episode’ of treatment seeking as a response to a ‘flare-up’ in the symptoms.

## D. Findings

### *D1. Results from the Listing Survey*

The listing survey was undertaken to construct a sampling frame for the “main” survey for the three targeted health conditions.

*D1.1* Data from the listing survey were used to estimate the self-reported prevalence rate of the three conditions. The 30-day ARI prevalence for the full sample was 4.1 per cent, with the prevalence being slightly higher in rural areas as compared to urban areas (4.3 per cent versus 3.0 per cent). The ARI prevalence was higher in the samples from the States of Odisha and UP, as compared to those from Maharashtra and Punjab. There were no significant differences in the prevalence of ARI across the three socio-ethnic groups. In the listing survey, there was an overall inverse association between the prevalence of ARI and household size, mostly driven by the samples for UP and Odisha; in contrast, there were negligible differences in ARI prevalence by household size in Maharashtra and Punjab.

The self-reported ARI prevalence rose with income, with the association being particularly strong in UP and Odisha. These trends may reflect under-reporting of ARI cases among the poorer households. Alternatively, the trends may suggest that richer households are more likely to seek care and are thus more likely to have their children diagnosed with ARI.

*D1.2* The listing survey reveals a relatively low prevalence of chronic severe breathlessness—at 1.2 per cent in the eight districts across the four States—with a slightly higher rate of prevalence among rural than urban households. There was some cross-district variation, with the prevalence of chronic respiratory conditions being higher in the districts of Dhenkanal in Odisha and Firozabad in UP, and lower in the two districts of Punjab. The line listing data points to lower prevalence rates among the SC/ST population and the OBC category, and the highest in the General category in UP and Odisha. In Maharashtra and Punjab, there were no significant differences by social group. The self-reported prevalence rates for chronic respiratory conditions were higher among Hindus than non-Hindus.

*D1.3* The listing survey gathered self-reported information on common gynaecological conditions,

encompassing symptoms such as abnormally heavy bleeding and/or abnormally painful menstrual periods, or abnormal vaginal discharge during the year preceding the survey, and symptoms that were severe enough to regularly disrupt daily activities, or for the individual to contemplate seeking treatment.

The prevalence of chronic common gynaecological conditions is 2.2 per cent, with similar burdens across rural-urban locations. The States of UP and Odisha show a much higher prevalence of gynaecological conditions (4 per cent) as compared to Maharashtra and Punjab (1 per cent). However, prevalence by social group, within and across States, is relatively similar. The prevalence of gynaecological conditions is lower among Hindu women as compared to non-Hindu women, but shows an increase with household income.

The sampling frame for the study (the “line listing”) was used to generate prevalence estimates for acute respiratory infections among children, gynaecological problems among women, and chronic severe breathlessness among adult men and women.

## ***D2. Chronic Severe Breathlessness (CSB): Use of Health Services, Provider Choice, and Out-of-Pocket Spending***

**D2.1 Sample Characteristics:** The findings are based on a survey of 2,636 individuals from an equivalent number of households sampled from the eight districts, and are representative at the district level in UP, Odisha, Maharashtra, and Punjab. Almost two-fifths of the individuals belonged to the age group of 60 years and above, with the share of individuals aged 46–60 years and 18–45 years being lower, except in the districts of Moga and Hoshiarpur. Men comprised 55.4 per cent of the sample. About 78.9 per cent were married. More than half were educated up to the matriculation (Matric) level, and almost 10 per cent up to the higher secondary level and above. Around three-fifths of the sample of people with chronic severe breathlessness (CSB) were not working, though this share varied widely across districts, ranging from 27.2 per cent in Yavatmal to 72.5 per cent in Moga.

**D2.2 Treatment Seeking Behaviours:** A large share (about 87 per cent) of the sample of those with chronic severe breathlessness reported seeking

treatment. Among those who did not seek treatment (13 per cent of the total) the major reasons were: self-care/self-medication, waiting for recovery, the flare-up episode being not severe enough, and lack of affordability of care. There was cross-district variation, with the share of patients seeking care in response to an acute episode being 98.8 per cent in Firozabad followed by Moga (92.9 per cent) and Kolhapur (92.7). Dhenkanal district had the lowest share of patients reporting treatment following an acute episode related to chronic breathlessness, at 72.8 per cent.

The share of individuals experiencing an acute episode of chronic severe breathlessness not seeking treatment was higher in rural areas, whereas the share of self-care was higher in urban areas. A higher number of male respondents received treatment as compared to female respondents.

**D2.3 Choice of Provider:** Among the respondents who sought care from formal health care providers, nearly 30.2 per cent did so from public healthcare providers and 59.2 per cent from private healthcare providers. Patients whose first visits were to private healthcare providers, also reported using private providers in subsequent visits. The share of public providers consulted in the first instance was higher among respondents in Odisha as compared to respondents from the other States. Conversely, in UP, Maharashtra, and Punjab, a majority of the patients sought treatment from private health care providers in the first instance.

Most patients (79.2 per cent) made exactly one visit, and only 4.3 per cent of the patients visited more than two healthcare providers. The proportion of patients visiting more than two healthcare providers was the highest in UP. The average time lag between the start of the flare-up episode and the first treatment visit was the least among respondents in Kolhapur, followed by respondents from the two districts of Odisha, and was the highest in Yavatmal followed by Moga. However, no rural-urban differences were observed in the time taken to seek the first treatment.

**D2.4 Out-of-pocket (OOP) Expenditure and Financing:** Across the eight districts, the subsample of patients living in Kolhapur reported the highest share of OOP healthcare expenses in the total household expenditures (4.9 per cent), whereas patients in Dhenkanal reported the corresponding lowest share of OOP spending (1.9 per cent). The

OOP expenses for treatments were mostly higher amongst those living in urban areas as compared to their rural counterparts across all the study districts. Three-quarters of all the OOP expenses during an episode were incurred during the first visit, with an additional 19.4 per cent incurred during the second visit. This finding reflects the fact that a large share of the respondents reported making only one visit. The average OOP expenses incurred for treatment was higher for patients in the age group of 46-60 years relative to the other age groups, and increased with the duration of the illness. The average OOP treatment expenses were lower among SC/ST patients than among patients from the OBC and General categories, and increased with household income (as measured by the total per capita household expenditures).

About 5.5 per cent of the households reported that the OOP expenses incurred on the first healthcare provider visited (for an episode of flare-up of severe breathlessness), were catastrophic, in that the OOP expenses exceeded 10 per cent of the household's monthly household. The share of households experiencing CHE at this 10 per cent threshold was higher for rural households, smaller households, households belonging to the OBC and General categories, and poorer households. The data further suggest that the two most frequently used sources of finance for health spending were household savings and borrowing.

**D2.5 Factors Associated with Choice of Healthcare Facility:** The reputation of the healthcare provider, proximity, and affordability were the three most important considerations determining the choice of healthcare provider. Among respondents choosing public facilities, three-quarters highlighted the availability of drugs as the reason for their choice. Affordability and proximity were two other important factors influencing their choice. Among those who chose private facilities, 75.7 per cent did so because of the good reputation of the healthcare provider.

- Acute episodes associated with chronic breathlessness usually triggered a visit to healthcare providers, though there were differences across districts.

- Although a large majority of the visits were single visits, about one in ten were followed by subsequent visits to healthcare providers, highlighting the importance of treatment seeking pathways even for acute episodes.
- Reputation, availability of drugs, affordability, all influenced the choice of healthcare provider.
- Even a single visit to a healthcare provider for an acute episode associated with chronic breathlessness was associated with catastrophic OOP expenses for 5.5 per cent of the households.

### **D3. Chronic Common Gynaecological Problems: Healthcare Use, Provider Choice, and Out-of-Pocket Spending**

**D3.1 Sample Characteristics:** The findings are based on a survey of 2,510 women reporting chronic common gynecological conditions, from an equivalent number of households. More than 35 per cent of the women were in the age group of below 25 years or 31-45 years. About 72 per cent of the women in the sample were married, 57 per cent of them had matriculation, and an additional 22 per cent had attained education up to or higher than the higher secondary level. Less than 20 per cent of the sample of women reported working, but there was considerable cross-district variation in the case of occupations. In the Yavatmal and Hoshiarpur districts, about 48.5 per cent and 38.7 per cent of the women in the sample, respectively, reported working.

**D3.2 Treatment Seeking:** About 56 per cent of the women received treatment from a healthcare provider following an acute episode associated with their condition, and 22 per cent of the women who sought treatment recovered after their first visits. Among the women who did not recover following their first visits, two-thirds did nothing further in terms of healthcare, or alternatively resorted to self-care/self-medication. The proportion of such women who did nothing further increased in the subsequent visits. Across the sample, the situation after four visits to a provider was that while 44 per cent of the women did not ever seek treatment, only 16 per cent reported recovering from the problem, and 40 per cent could

not recover. A higher proportion of women in Maharashtra sought treatment as compared to those in UP and Odisha. There were no differences across urban and rural areas. The proportion of women not seeking treatment after a flare-up of symptoms was, however, slightly higher among women who were living in rural areas; were unmarried, widowed or separated; and were below 25 years of age.

**D3.3 Choice of Healthcare Provider:** When seeking care, more than 50 per cent of the women consulted private healthcare providers, and this was generally the pattern in all the districts except Firozabad. Higher proportions of women who were living in rural areas, who were married, belonged to the OBC/General categories, had smaller sized families, were more educated, and belonged to the richest expenditure quartile consulted private healthcare providers. About 84.6 per cent of the women who sought treatment visited just one healthcare provider while 11.4 per cent visited two healthcare providers. Only 4 per cent of the women visited more than two healthcare providers. Women living in rural areas, poorer women, working women, and those living in households with smaller family sizes were more likely to have visited a healthcare provider just once.

On an average, across the eight sampled districts, it took around 18 days in rural and 17 days in urban areas for a woman to access a healthcare provider after a flare-up in her gynaecological symptoms. While women in UP took longer to seek medical help, their counterparts in Punjab were quicker in doing so. The trends of recovery by the number of visits further indicates that while 24 per cent of those from rural areas recovered after the first visit to a healthcare provider, the incidence of recovery was only 8 per cent in the subsequent visits. In urban areas, these rates were 17 per cent after the first visit and just 7.5 per cent thereafter. Older women and women from poorer households were less likely to report having recovered from the episode of flare-up of symptoms.

**D3.4 Out-of-pocket (OOP) Healthcare Expenditure and Financing:** The average OOP treatment expenses were highest in the Dhenkanal district of Odisha, followed by those in Kolhapur and Moga, with the lowest OOP treatment expenses being reported in Yavatmal and Firozabad. The share of OOP healthcare expenditure incurred for gynaecological conditions in aggregate household spending was higher in rural than urban areas, with private healthcare providers

accounting for a larger share of OOP spending as compared to public providers. The OOP expenses associated with treatment (for all visits) rose with an increase in the age of the woman and with the duration of illness. Most households drew upon their household savings to meet treatment expenses, whereas about 11 per cent reported borrowing from relatives, moneylenders, and other parties.

**D3.5 Factors Associated with the Choice of Healthcare Facility:** The two most important factors determining women's choice of healthcare providers were proximity to and good reputation of the healthcare provider. While a larger proportion of women chose public providers due to their proximity, affordability, and the availability of medicines, private providers were chosen because of their good reputation, past experience, and staff qualifications.

- About 56 per cent of the acute episodes associated with gynaecological conditions resulted in a visit to healthcare providers, and recovery rates were low even at the end of the treatment pathway.
- Treatment seeking rates were lower among women in rural areas and among younger women.
- Among women seeking treatment, a large majority of the visits consisted of exactly one visit, and private sector healthcare providers were generally preferred, especially by women from richer households and women living in rural areas. Moreover, there are long delays between the flare-up of a condition and seeking care, though the length of the delay varied considerably across districts.
- Reputation, availability of drugs and affordability, all influenced the choice of the healthcare provider.

#### ***D4. Acute Respiratory Infections among Children Aged 0-5 Years: Healthcare Use, Provider Choice, and Out-of-pocket Spending***

**D4.1 Sample Characteristics:** The findings are based on a survey of 1,781 children who had experienced an acute respiratory infection during the survey, or during a period of one month preceding the survey,

from an equivalent number of households. About 78.6 per cent of the children were from rural areas while the remainder from urban areas. About one-third of the children were below the age of one, 36 per cent were 2-3 years old, and the remainder 30 per cent were 4-5 years old. Boys comprised a majority of the sample across all the sample districts barring Kolhapur, where 70 per cent of the children sampled were girls.

**D4.2 Treatment Seeking Behaviours:** It was found that 94.7 per cent of the children with acute respiratory infections received treatment from a healthcare facility; of these, 54 per cent recovered after the first visit to the healthcare provider. Of the 46 per cent who did not recover after the first visit, 14 per cent of the families reported doing nothing further in terms of treatment, and 39 per cent reported providing home care. After four visits to healthcare providers, 66 per cent of the children with acute respiratory infections recovered. The incidence of recovery was better amongst children in urban areas whereas the share of children whose guardians opted for self-care and/or did not seek treatment at all was higher in rural areas. The respondents in Punjab and Maharashtra reported much shorter lags between the first identification of the health problem and consulting a healthcare provider, as compared to those in UP and Odisha. The time lag to treatment was shorter for female children as compared to male children in a majority of the districts included in the study.

**D4.3 Choice of Healthcare Provider:** Among children with ARI who received treatment, about 29 per cent went first to public healthcare providers, whereas 66 per cent received treatment from private healthcare providers. A relatively higher proportion of children were taken to public healthcare providers in rural than in urban areas, though in total, more than half the respondents consulted private healthcare providers in the first instance. A vast majority of children with ARI, that is, about 88 per cent, received care from exactly one healthcare provider. Children living in rural areas, male children, children below one year of age, and children from the richest households were more likely to receive treatment from more than one healthcare provider.

**D4.4 Out-of-pocket (OOP) Healthcare Expenditure and Financing:** Children with ARI in Maharashtra and UP had the highest average OOP healthcare expenses in the four states included in the study. The

average OOP treatment expenses were higher in urban areas across all the sampled districts. The OOP expenses incurred during the first visits accounted for 82 per cent of the combined expenditure incurred for all visits, followed by 13.7 per cent incurred on the second visits. The OOP treatment expenses incurred on male children with ARI was higher than for female children across all the sample districts, barring Kolhapur. As many as 80 per cent of the households drew from their savings to cover treatment-related expenses.

**D4.5 Factors Determining the Choice of Healthcare Facility:** For choosing public healthcare facilities, the top three factors that were considered important were proximity, good reputation, and affordability of services. Good reputation of and proximity to the healthcare provider were offered as the reasons for choosing private healthcare providers.

- Acute episodes associated with ARI among children usually triggered a visit to healthcare providers.
- Although a large majority of the visits were only single visits, about one in ten were followed by subsequent visits to healthcare providers, highlighting the importance of treatment seeking pathways even for acute episodes.
- The length of time between the recognition of the health problem and the first visit to a healthcare provider was smaller in Maharashtra and Punjab relative to UP and Odisha, and was somewhat smaller for female children as compared to male children.
- Reputation, availability of drugs, and affordability, all influenced the choice of the healthcare provider.
- OOP expenses during the first visit accounted for most of the OOP expenses incurred for ARI treatment by the households.

## D5. Conclusions

The conclusions have been structured with reference to our research questions.

What factors are associated with: (a) the decision

to use medical care, and (b) the choice among the available medical providers?

For acute respiratory infection in children, resort to healthcare is almost universal (91.2-99.8 per cent by State), and it is also very high for chronic severe breathlessness in adults (85.2-94.5 per cent by State). These high rates may be related to the way we framed our identification of the relevant conditions as 'warranting resort to healthcare', and there is a danger that this framing may have introduced a bias which might hide the determinants of the judgement that a condition warrants resort to healthcare. Nevertheless, for both the conditions, the explanations that the patient was 'waiting for auto-recovery', that the 'illness was not severe enough', that the patient 'got better' and that self-care or medication was used instead of formal healthcare, dominated explanations among those who did not seek care, implying that this stipulation may not have been interpreted strictly. The rates of failure to consult a healthcare provider for common gynaecological conditions among women were much higher but the same explanations predominated. In all the cases, lack of affordability was supplied as the explanation about 10 per cent of the time (8 per cent for CSB, 11 per cent for CGC, and 11.5 per cent for ARI).

For CSB and ARI, the main correlate of failure to consult a formal healthcare provider across all the conditions is rural residence. There is also an economic gradient in the likelihood of seeking care, with those in the upper quartiles more likely to seek care than those in the lower quartiles, for all the conditions. The differences otherwise are quite small—no more than 5 per cent difference in care seeking levels by gender, social group, education category, occupational category, household size, or age category. It is interesting that among children with ARI, girl children are a little more likely to be taken to a healthcare provider than male children. For CGC, married women are more likely to consult a healthcare provider than unmarried women, and older women (aged 45 years or more) are more likely to consult a formal provider than younger women (aged below 25 years).

As regards the choice of a private healthcare provider in the first instance, across all the conditions, there is a socio-economic gradient whereby being

in a higher economic quartile and belonging to the OBC/General other ethnic group categories are both associated with a greater likelihood of choosing a private healthcare provider. There is also a U-shaped relationship between education and private sector choice, with both the least and most educated groups most likely to opt for private healthcare. For CSB and ARI, the additional predictors of an initial private sector choice are being a member of a larger household and living in an urban area, whereas the opposite applies in both cases for CGC.

### *1. What are the health expenditure consequences of both decisions, and with respect to CHE?*

Data describing the findings related to health expenditure consequences are summarised in Table ES-1. In terms of the total rupee expenditure, and in line with our expectations (based on literature suggesting that the highest OOP payments are associated with chronic illness, expenditures on chronic severe breathlessness are higher than on other conditions. Expenditures on common gynaecological conditions were overall the lowest, though this was not the case in Odisha, where the lowest expenditures were associated with ARI. There was no clear pattern in relation to the highest and lowest expenditures by State, as may have been expected, given their different levels of economic development. Overall, expenditures were higher in the two richer States, that is, Maharashtra and Punjab, but with little difference between Punjab and UP. The differences in general were much smaller than differences in per capita expenditures between the four States.<sup>2</sup> Expressed as a share of household income, these patterns largely hold with respect to the relative levels and rankings across conditions and States. The incidence of CHE defined at the 10per cent level differs from those of the total and household expenditure shares overall. While CSB presents the greatest risk of causing CHE, CGC is in second place. And across States, the conditions collectively have the greatest likelihood of causing CHE in Maharashtra, the richest of the four States, and the second greatest likelihood in UP, the poorest. The high levels of CHE in some of India's richest States have been measured previously based on national survey data, and these results suggest that the higher prevalence of rates of more expensive NCDs are not the explanation, or at least the only explanation.

<sup>2</sup> Data from the Reserve Bank of India suggest that Maharashtra has a GDP/capital of approximately, 3-fold that of Uttar Pradesh for example.

**2. *What are the patterns of resort (what are the common pathways between providers and provider type including primary and higher levels; public and private)?***

Table ES-1 shows the estimated average number of visits to healthcare providers across each of the three conditions for each State (contingent on at least one visit). There are fewest health facility visits per health seeking journey for CSG and the most for ARI, a pattern consistent across all the States. Odisha has markedly shorter patient journeys than the other three States.

A considerably higher proportion of those with CSB (26.4 per cent) switched healthcare providers during their patient journey, as compared to those with ARI (12.8 per cent) and CGC (9.6 per cent), respectively. This might be an indicator of dissatisfaction with the first healthcare provider visited and may suggest that the satisfaction level with services provided for CSB is lower than for the other conditions. While Odisha had the lowest rate of switching of healthcare providers for CSB and ARI, and the highest for CGC as compared to the other States.

Patients who started in the public sector were more likely to switch to the private sector than vice versa. For example, of all the patients whose first visits were to private sector healthcare providers, 80 per cent made the second visit to the private sector providers, whereas among those whose first visits were to the public sector providers, the second visits were to the public sector providers in 32 per cent of the cases and to the private sector providers in 65 per cent of the cases.

**3. *To what extent do the patterns deduced from the study's first four questions provide support for the use of additional health seeking behaviour-related data in evaluating health system functioning and dysfunctionality?***

The eight variables included in Table ES-1 provide different insights into the level of functionality of the health system in each of the States and are presented in Figures ES-1, ES-2, and ES-3 for the three conditions, respectively in the form of laser charts. Each variable has been scaled to a maximum of 10 and on the basis of a judgement that the scale

0 to 10 goes from 'good' to 'bad'. The highest rates pertain to failing to seek healthcare from a facility, seeking private care in the first place, absolute OOP expenditure, OOP as a share of the total household expenditure, CHE, facility visits per episode, provider switches per visit, and Distress Financing.

No State clearly outperforms any other in terms of all indicators, and it is interesting to note that the richer States rated highly in terms of the performance of their health systems as per the rankings of the NITI Aayog (2018) did not out-perform those rated less highly with respect to these indicators. With respect to CSB and ARI, Odisha most consistently out-performs the other States: users express more confidence in its public healthcare services by using them more extensively, switching providers less frequently, and the resultant reduced likely risks of financial impoverishment from using healthcare, though it does also have a relatively high level of failure to visit a healthcare facility for both the health conditions, and of distress financing for ARI. The picture is very different with respect to CGC, for which Odisha appears to be largely outperformed by the other States. This underlines the insight that health systems can be better geared towards those with some conditions relative to others. Throughout the analyses, the health seeking behaviour of women with CGC seems to be differentiated from more similar patterns for adults with CSB and children with ARI. One explanation for this may be that howsoever intolerable, CGC is likely not considered to be life-threatening whereas breathing difficulties are easily recognised as life-threatening. Another explanation is that women's health conditions not commonly recognised as being related to reproduction may be undervalued in healthcare systems and in households.

There is consequently a long list of important questions that cannot yet be explored further with the currently available data. What appears clear to us at the end of this research is that it has been fruitful to compare condition-specific treatment seeking journeys, to more carefully frame the nature of the problem on which health seeking behaviour is predicated than standard surveys are able to do, and to explore patient experience beyond the 'last visit'. We hope that further research will be undertaken in these directions.

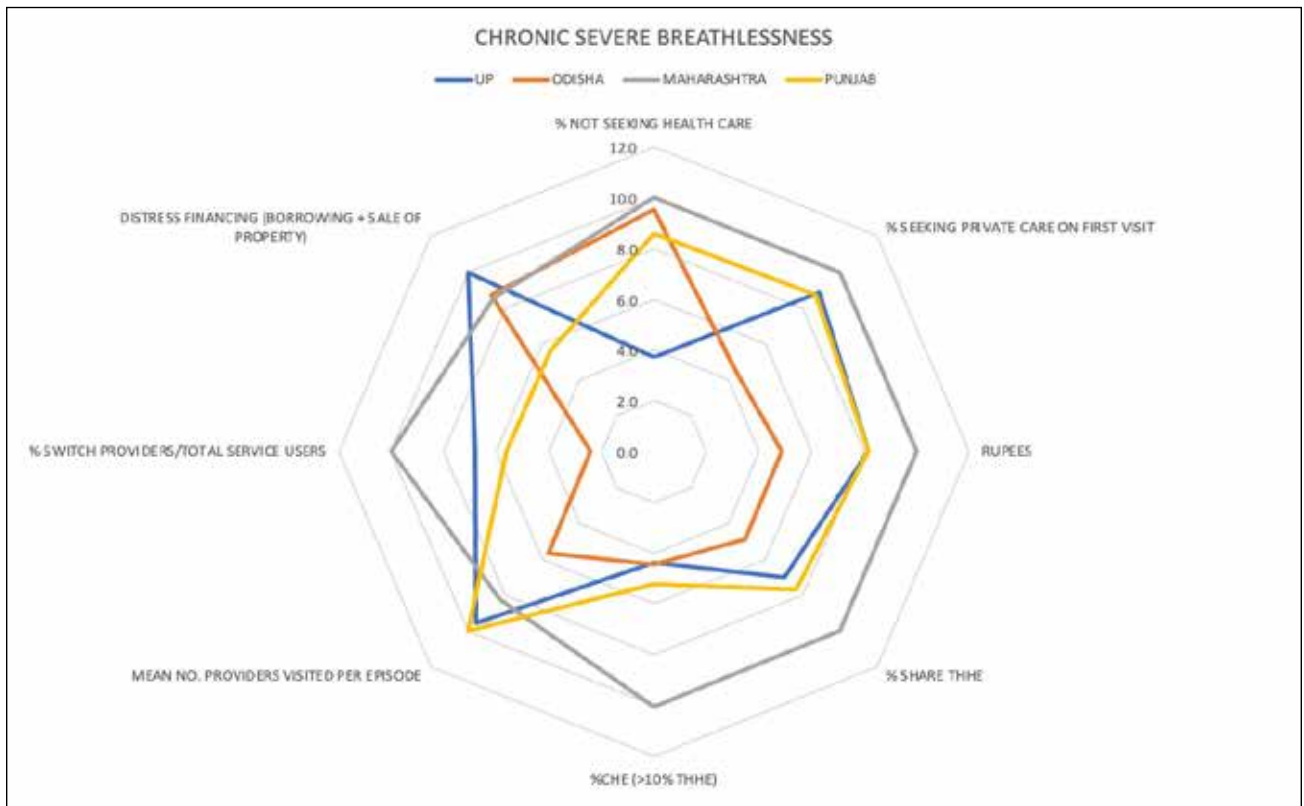
**Table ES-1: Key Data**

	Chronic Severe Breathlessness				Common Gynaecological Conditions				Acute Respiratory Infection			
	Uttar Pradesh	Odisha	Maharashtra	Punjab	UP	Odisha	Maharashtra	Punjab	UP	Odisha	Maharashtra	Punjab
% Seeking health care	95.9	78.7	85.8	83.9	55.3	54.8	66.2	45.4	97.1	92.5	91.9	100.0
% Seeking private care on first visit	68.7	34.3	77.3	67.3	46.0	65.8	64.7	62.6	80.5	43.1	80.8	84.2
<b>Out-of-pocket healthcare expenditure</b>												
Rupees	4309	2576	5287	4319	1964	2439	1965	2435	2875	1823	3230	2654
% Share of the household healthcare expenditure	3.3	2.3	4.7	3.6	0.9	1.8	1.2	1.0	2.5	2	2.6	2.6
% CHE (>10% of the household healthcare expenditure)	4.3	4.3	9.7	5.1	4.4	9.3	4.4	2.5	4.9	2.1	8.5	0.0
<b>Other key parameters</b>												
Mean no. of providers visited per episode	2.2	1.3	1.9	2.5	1.6	1.1	1.8	1.8	2.2	1.3	2.2	2.5
% Provider switches per visit	18.8	6.7	27.7	15.5	5.7	12.9	11.6	4.5	24.1	4.5	41.4	14.8
Distress financing (borrowing + sale of property)	29.9	26.1	25.7	16.7	12.0	17.5	23.3	6.8	18.9	24	17.1	6.2

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

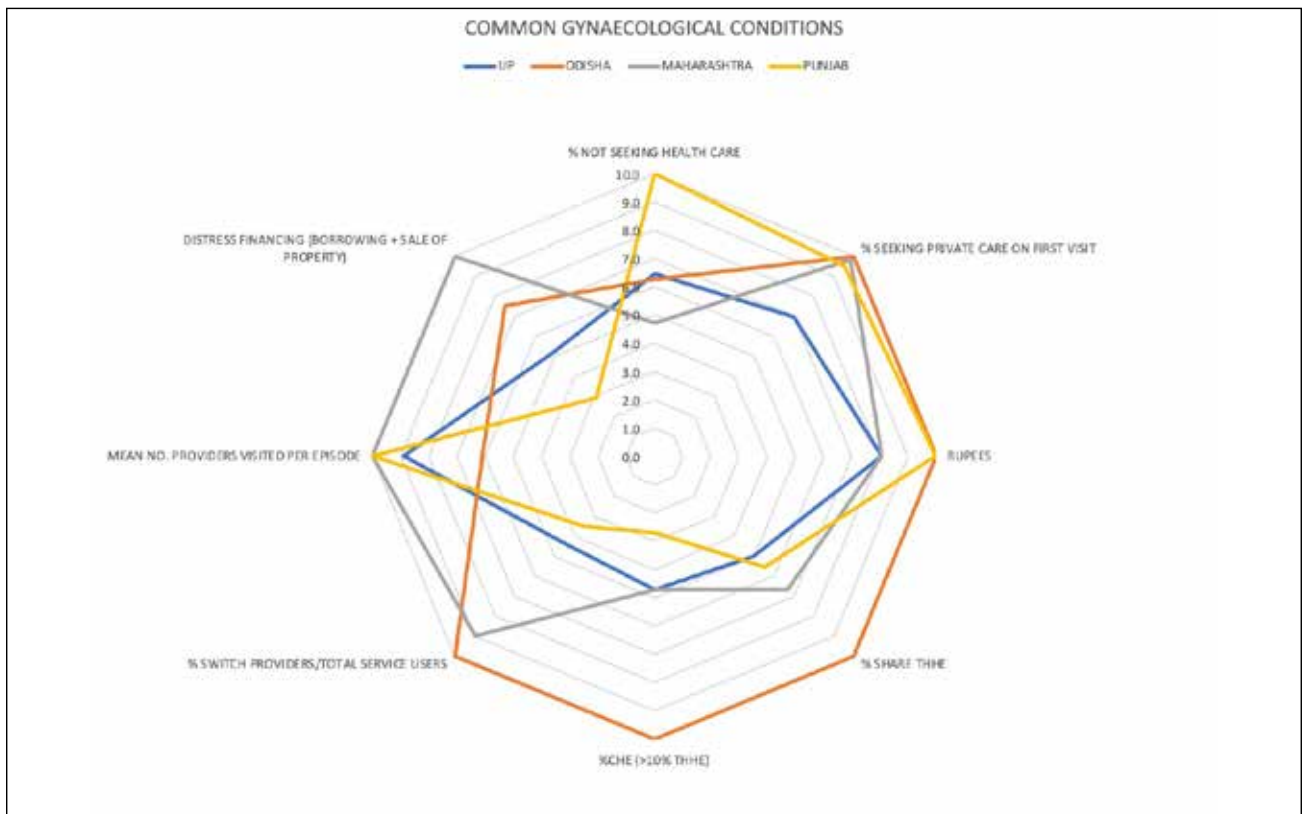


Figure ES-1



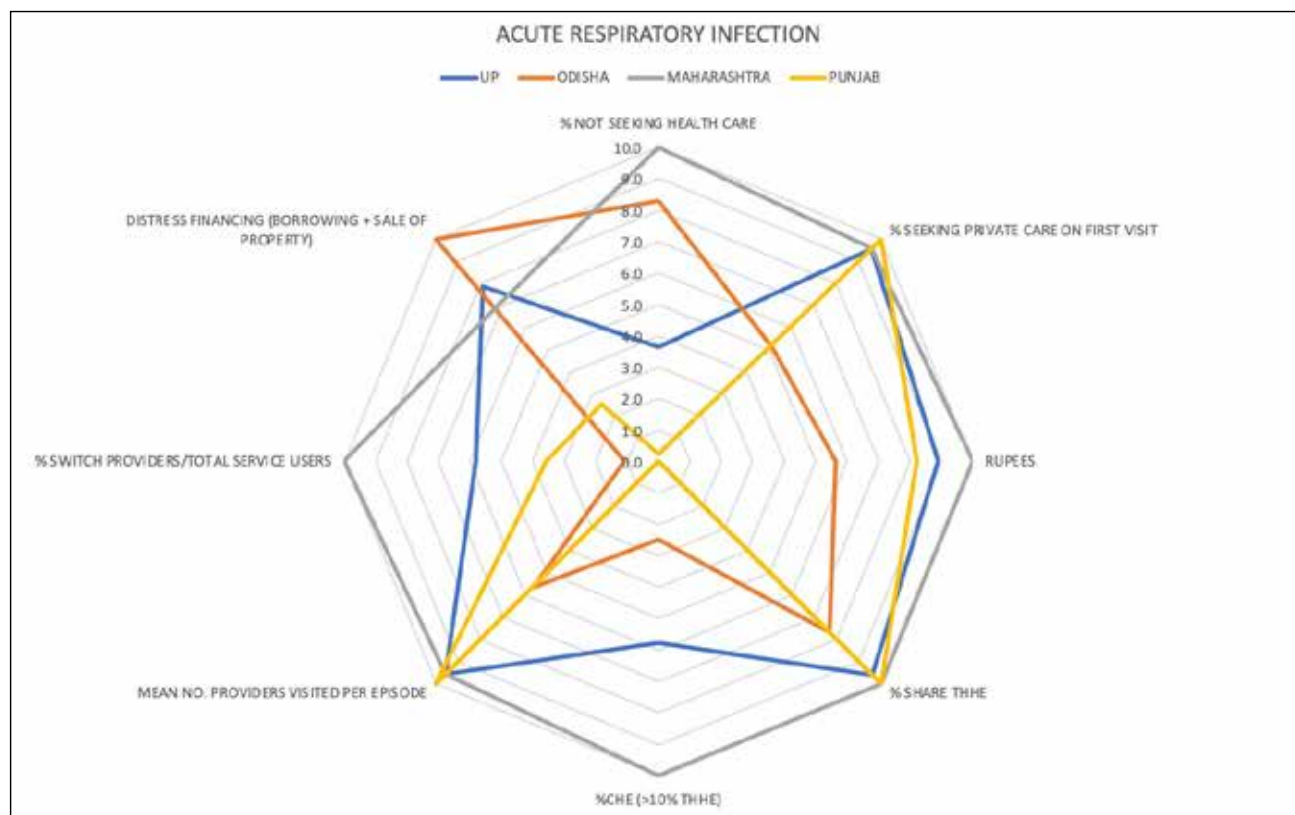
Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Figure ES-2



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Figure ES-3



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

# REVIEW OF HEALTHCARE PATHWAYS IN SOUTH ASIA

## 1.1 Introduction

Health-seeking behaviour can be defined as, “any action or inaction undertaken by individuals who perceive themselves to have a health problem, or to be ill for the purpose of finding an appropriate remedy” (Olenja 2003). It is thus likely to be a function not only of how individuals perceive their own health status, but also of the economic and social circumstances of patients, healthcare provider characteristics, and other factors that influence how perceptions of ill health are translated into healthcare use (for example, Das and Mohpal 2016; Varkey 2004; Ismail et al. 2019). Consistent with this thinking, Kroeger (1983) conceptualised healthcare-seeking behaviour as comprising two steps, of which the first focused on the ‘processes’ of decision-making and the second on explanatory variables associated with different healthcare choices. In this framework, explanatory variables consist of household and individual socio-economic and demographic characteristics, health conditions, and healthcare provider characteristics. Andersen (1995) offers another (related) framework for understanding healthcare-seeking decisions, with three factors driving choices: pre-disposing factors (for example, demographics, health beliefs), enabling factors (household, and personal and community factors), and the level of need.

Rightly or wrongly, however, the above frameworks tend to emphasise illness and the patients’ response to it as a single shot (or aggregated) event, including the associated healthcare use patterns and expenses incurred by households or other payers. This approach to understanding healthcare use is also broadly characteristic of data collection approaches and empirical literature on healthcare use in South Asia and elsewhere. For instance, data on healthcare use gathered by the National Sample Survey Office (NSSO) and the India Human Development Survey (IHDS), conducted by the National Council of Applied Economic Research (NCAER), assumes that there is no temporal dimension to the decisions

to seek healthcare. In both these surveys, though the respondents could report up to two healthcare provider visits for an episode of illness that required outpatient care, no data was gathered on the time lag between the illness and seeking treatment initially, or the time between visits.

Approaches that do not adequately account for treatment pathways in responding to illness potentially suffer from at least two major limitations in their analyses of the implications of illnesses for households and health systems in low- and middle-income countries (LMICs) such as India. As compared to their counterparts in high-income countries, LMIC health systems entail weaker regulatory oversight over providers and limited insurance coverage, and one might expect illness episodes to result in longer treatment pathways because of the uncertainty about provider quality (and advice), and also because of resource limitations that could initially bias the patient towards cheaper and possibly lower-quality providers, including self-medication. If treatment pathways are temporally long, estimates of household out-of-pocket spending constructed from existing household surveys (with their typical recall periods ranging from 15 to 30 days) will exclude portions of treatment expenses associated with episodes of illness. The exclusion of some of the treatments and their corresponding costs can downwardly bias estimates of commonly used measures of financial burden that do not account for duration, such as catastrophic spending and medical impoverishment. Moreover, the longer time span of these illness episodes implies that the costs of foregone earnings from work for the ill person and/or their caregivers would be correspondingly larger, and not adequately accounted for in the data.

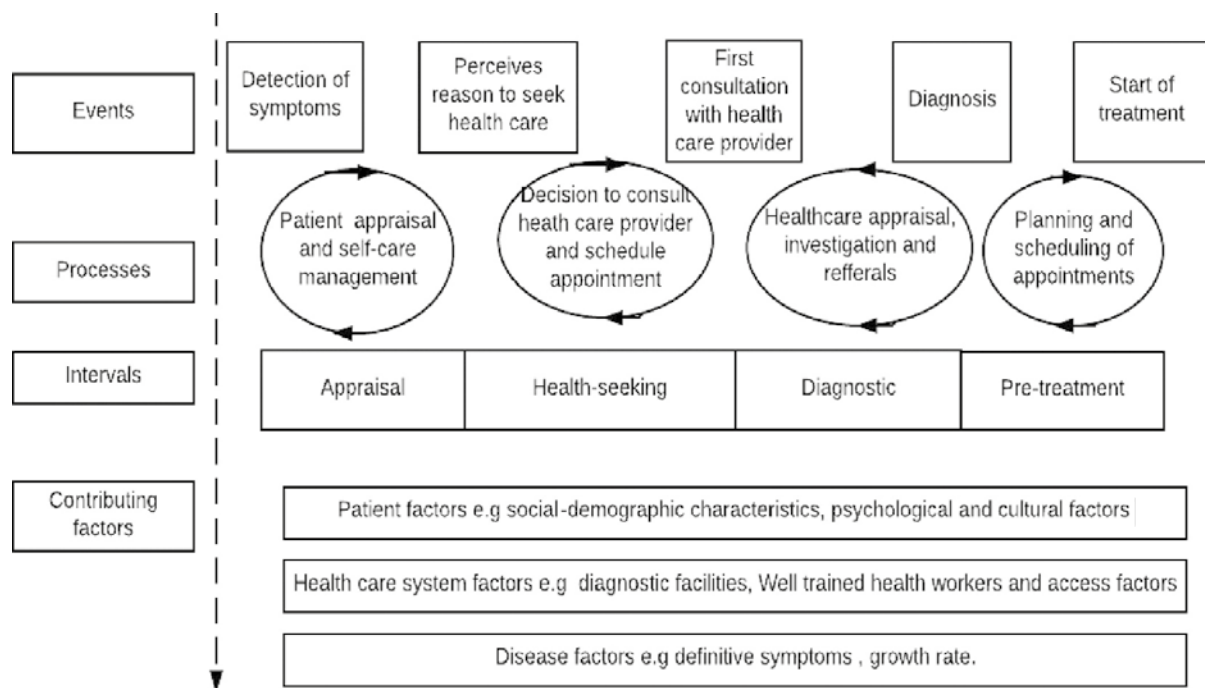
Secondly, a lack of data on the sequencing and length of treatments implies that important information about health system functioning could be lost. For example, consumer perceptions about the quality of available primary care services

(public or private), and the functioning of referral systems and physical and financial access to services could influence time lags in decisions to obtain treatment and the choice of options such as self-medication and unqualified healthcare providers. However, existing surveys in India do not always capture this information or, even if they do [as in the National Sample Survey (NSS) health surveys], the corresponding information on the sequencing of providers of different types is typically unavailable.

An understanding of treatment pathways can be especially insightful for chronic conditions, which are increasing as a share of India's disease burden. Unlike in the case of a single acute episode, which usually requires immediate medical attention (with little option for delaying seeking of healthcare), chronic conditions tend to progress more slowly, though the frequency and intensity of acute episodes increases in the absence of timely treatment. Because of delayed impacts of chronic conditions, the time lag between the initial identification of an "issue" and the point at which formal treatment is first sought becomes a key choice variable, as also do time intervals between subsequent health visits. The behavioural economics literature also reveals that distant consequences tend to be discounted heavily in decision-making, a feature that is likely to be characteristic of chronic conditions, especially in their early stages. The relative lack of medical urgency and limited household resources may also generate choices that emphasise proximity and low-cost options during the early phases of the treatment sequence. The absence of a definite cure may fuel longer and sometimes "irrational" searches for effective treatments, especially in weak health systems where qualified medical help is not readily accessible. In sum, long, complex (zigzagging) patterns of treatment-seeking, and ultimately costlier treatments, which are likely to be more characteristic of health-seeking behaviour for chronic conditions as compared to acute conditions, point to the weaknesses of existing data collection efforts, analyses of health-seeking behaviour, and prevailing measurements of the household and national economic burden of illness in India. Finally, responses to acute episodes are likely to differ among those with an established chronic condition (with its known complications) rather than those without. This may entail shorter waiting periods or the need for consulting more qualified providers earlier in the treatment pathway.

Formal models that can be used to conceptualise treatment-seeking pathways and their drivers are limited in the economic literature on healthcare, though the labour market literature on job search decisions is potentially relevant. The sociological literature on health-seeking behaviour offers some guidance, though it is focused primarily on health systems of high-income countries. Figure 1.1 (from Walter and Scott 2012) offers one such framework from this literature. In this framework, health-seeking behaviour allows for alternative healthcare response pathways, including lack of knowledge about, or the neglect of initial symptoms, self-medication, and lifestyle changes made by the affected individual. Walter and Scott categorised their framework as a 'Model of Pathway to Treatment', consisting of events, processes, intervals, and contributing factors. *Events* refer to the first point of detection of bodily changes and the cognitive understanding of the symptoms, inability to cope with the symptoms, and the reasons for seeking the treatment, followed by the diagnosis and treatment of the disease. The initial consultation with the healthcare provider, leading to the formal diagnosis and the start of the treatment, marks the end of the sequence of events. *Intervals* are the time periods between events, sub-categorised as appraisal intervals, help-seeking intervals (for example, the time between the decision to consult with a provider, and having done so), diagnostic intervals, and pre-treatment intervals. *Processes* are about the cognitive, emotional, and organisational elements leading to the next possible event in the sequence. Finally, *contributing factors* correspond to the descriptive characteristics of patients, the type of disease-clinical factors, and healthcare system factors that impact both the patient and the decision-making behaviours. There is a natural extension of the Walter and Scott model, somewhat more suited to LMICs and one that requires further unpacking of the box of health system factors, alongside the patient characteristics that matter. In this version, weaknesses in health system functioning can lead to a delayed or incorrect diagnoses, healthcare providers taking more time than required to diagnose patients, and inadequate referral linkages and lack of coordination between the public and private sectors.

**Figure 1.1: Model of Pathways to Treatment (Walter and Scott 2012)**



In the Walter and Scott framework, and the discussion preceding it, empirical work targeted to treatment pathways could be used to answer one or more of the following questions that capture the elements of the timing and sequencing of treatment:

- Was any provider consulted, and why?
- What was the first source of treatment? What factors affected that choice?
- What were the time durations between identification of the health problem and the choice of the first treatment, and between identification of the health problem and the time to treatment with the first trained healthcare provider? What factors affected the time taken for obtaining the first treatment?
- How many treatment providers were consulted during the episode? What factors contributed to the number of consultation visits?
- What was the sequencing of providers who were consulted during the episode (namely, who was consulted first, who was consulted second, and so forth)? Which factors affected this sequencing of providers?
- How (or why) did the patient exit treatment? What factors affected this choice?

The natural extensions to these questions are those focusing on the financial impacts of illness on the household, which reflect treatment pathways, including out-of-pocket spending on health services, and household income losses.

In the remainder of this introductory chapter, we report the findings of a brief literature review of the empirical research on treatment pathways in the context of chronic conditions in South Asia. The goal of this review is to highlight what has been done so far in this region with respect to the analysis of treatment pathways, and to indicate key gaps in the literature.

## 1.2 Findings from the Literature in South Asia

Our review for South Asia suggests that the analysis of treatment pathways is relatively rare. Thus, our initial focus is on elements of “single-shot” healthcare-seeking as is common in the literature, including, where available, information on the choice of the first healthcare episode after the patient experiences an illness and the time of consulting the first provider. We also explore some of the socio-economic and demographic drivers of provider choice and delays in treatment, such as gender, economic status, and rural

residence. In doing so, we do not intend to undertake a comprehensive literature review, and instead focus on the main themes emerging from this work. Later in the chapter, we explore the limited evidence on longer healthcare-seeking pathways.

### *1.2.1 Gender and Healthcare Seeking*

It was found that women's health-seeking choices were influenced first by their socio-economic and demographic circumstances. Younger women were less likely to seek treatment than older women, and poor women (especially in rural areas) were less likely to seek treatment as compared to the economically better-off women in urban areas (Prusty and Unisa 2013). Regionally, women in southern India were higher users of health services than their north Indian counterparts, possibly reflecting better access to health services and higher levels of literacy among the former. However, increased severity (as proxied by the number of symptoms reported for gynaecological conditions) did result in greater use of healthcare services (Rani and Bonu 2003).

We find that in South Asia, women are more likely than men to use private sector care for chronic conditions, including the services of informal care providers rather than public sector healthcare facilities, as compared to men (Das et al. 2018; Prasad et al. 2005; Shaikh and Hatcher 2007). There are a variety of reasons for this, ranging from health system characteristics, to the general circumstances of women in the region. Private providers are often preferred to public providers in rural areas owing to a lack of availability of doctors in primary health centres, especially the lack of female doctors in rural facilities, unavailability of drugs, and long waiting times. Women also prefer private health institutions due to the greater attention to privacy and trust offered by private providers. In this context, Bhatia and Cleland (1995) found that for menstrual problems, women in India preferred consulting private providers, whether qualified or unqualified, over government health services.

Women also experienced delays in treatment, mainly on account of fear, embarrassment, reluctance to get internal examination, especially when female doctors were not available, distance to health facilities, and lack of control over financial resources. In Pakistan, both male and female patients prefer seeking treatment for tuberculosis (TB) from

government healthcare facilities but as TB is a source of stigma in the society, many women patients shy away from seeking treatment, effectively delaying access to health care (Khan et al. 2020). If suitable healthcare providers were not available, many tended to prefer home remedies, self-medication, or informal care, as in Pakistan (Khan and Fatima 2014; Bhatti and Fikree 2002), in Sri Lanka (Hemachandra and Manderson 2009; Perera et al. 2012), and in India (Chaudhary et al. 2012; Gosoni et al. 2008; Seeberg et al. 2014). In contrast, men in South Asia were more likely to use formal care when sick, reflecting their role as earning members in the family who could not afford to stay at home for too long when ill (Das et al. 2018).

### *1.2.2 Residence (Rural versus Urban), Economic Status and Healthcare Seeking*

Poorer rural populations tend to disproportionately rely on private unqualified providers for chronic conditions, especially in northern India. Raza et al. (2015) provide evidence for this from Bihar and Uttar Pradesh, a major reason for this being proximity. Similarly, in Madhya Pradesh, one study found that private unqualified doctors accounted for more than three-quarters of all primary care visits in the poorest rural areas (Das and Mohpal 2016). Among TB patients in rural Madhya Pradesh, most patients preferred consulting private providers. Faith in the provider, proximity to the health facility, and low cost were reported as reasons for choosing the provider during their first visit, usually in the private sector. However, during subsequent visits, shifts were observed from public to private providers (Fochsen et al. 2006). Diabetes patients from the rural sections of Delhi also reported seeking care from private providers to a greater extent than their urban counterparts (Kishore et al. 2015). In contrast, in the rural coastal areas of South India, patients with chronic conditions reported relying more on public healthcare services due to the services being provided free of cost and ease of access to healthcare (Chauhan et al. 2015). There is some evidence of delays in seeking treatment, with rural patients delaying treatment-seeking to a greater extent than urban patients, primarily due to the travel distance entailed in reaching providers (Kotecha et al. 2011; Kishore et al. 2015; Thakur and Murhekar 2013; Rajeswari et al. 2002).

Evidence from other countries in the region is also suggestive of greater reliance of rural populations

on private services, though not universal. In Pakistan, Anwar et al. (2012) attribute this to the greater distances involved in reaching public facilities, restricted hours of operation, and unavailability of qualified female healthcare providers. Self-medication, and complementary or alternative treatment sources are the first choices of treatment in the rural areas of Nepal (Yadav et al. 2020; Shankar et al. 2002; Adhikari and Rijal 2014). Rural residents are more comfortable with the traditional treatments or self-medication, as modern medicines tend to be more expensive; and also because most of the respondents stay within a 30-minute walking distance from medical stores and informal care providers who are common sources of drugs (Shankar et al. 2002; Subba 2008; Adhikari and Rijal 2014). One study of the elderly from the rural areas of Bangladesh found that patients prefer government hospitals for the treatment of chronic illnesses as these services are usually located nearby (Jabeen et al. 2013).

There is a large body of literature from the larger South Asian countries suggesting that healthcare use rates are higher among urban than rural populations. A similar pattern was observed in Bhutan, one of the smallest countries in the region. Poorer Bhutanese people living in remote areas had a lower likelihood of visiting a healthcare provider (Damrongplisit and Wangdi 2017). Moreover, the economically better-off individuals in Bhutan were more likely to seek healthcare from secondary and tertiary levels, even after accounting for higher transportation costs (Herberholz and Phuntsho 2018). A large body of literature documents similar findings in India and Pakistan (for example, Anwar et al. 2012; Das and Mohpal 2016).

### **1.2.3 Treatment Pathways**

Evidence on treatment pathways for India is somewhat limited and that too is available only for TB. The main findings on this subject can be summarised as follows. Firstly, patients tend to prefer private providers as their source of care, which is often the informal practitioner (Kapoor et al. 2012). Considerable delay occurs between the time when the symptoms first emerge and treatment is sought, especially with formal providers, with mean delays being roughly of the order of 15-30 days. The main reasons for initial delays in seeking care are the symptoms not being considered serious, the stigma associated with TB, lack of information, and financial

problems (Mistry et al. 2017; Kulkarni et al. 2013; Jangid et al. 2016). Poor rural women experience longer delays in seeking and getting treatment than their male counterparts (Rajeswari et al. 2002). Further delays, ranging from 5 to 30 days, occur between the time that care is first sought and when the diagnosis is obtained via sputum microscopy in the case of TB. This is linked both to the provider sought, as well as systemic weaknesses in the public sector, including lack of diagnostic facilities and unavailability of trained staff (Das et al. 2017; Basnet et al. 2009).

Following on from initial visits, though patients prefer to continue with the same provider in a private facility, they often have to shift to government providers as the treatment pathway gets longer and treatment expenses start becoming a significant burden (Das and Mohpal 2016; Jangid et al. 2016; Arjun et al. 2019). It is also seen that longer pathways are associated with a shift from informal to formal care, as patients seek more effective remedies for their conditions, typically by the second, or third visits (Kusuma and Babu 2019). On an average, the number of consultations prior to reaching to the final treatment provider ranges from 2 to 3 (Sreeramareddy et al. 2014; Kapoor et al. 2012; Mistry et al. 2017; Konda et al. 2014; Das et al. 2017). Needless to add, patients seeking treatment from multiple healthcare providers experience larger delays (Thakur and Murhekar 2013; Das et al. 2017; Konda et al. 2014).

## **1.3 Findings from Qualitative Research Done as Part of This Study**

Qualitative research done as part of this study (Kane et al. 2022) drew on interviews conducted in 2019-20, across twenty villages in India, to unpack how people with chronic illness navigate complex care-seeking terrain. Our findings show how the act of seeking care involves navigating through personal, family, social, economic, cultural, and most importantly, difficult health systems spaces—and entails making difficult social, moral, and financial choices. The qualitative study reveals how the absence of reliable and accessible points of first contact for primary care results in people running from pillar to post, taking wrong turns, and becoming disappointed, frustrated, and, sometimes, impoverished. The study shows the complex individual and social dynamics of hope and misplaced and misguided expectations, as well as

social obligations and their performance that animate the act of navigating care in rural India. Crucially, the study highlights the problematic normalisation of the absence of reliable primary care services for chronic illness in India, specifically in rural India. The qualitative study signposts implications for research, and for policy and practice in India, and similar health system contexts, i.e., those with weak primary care and poor regulation of the private sector.

We argue that in India, having in place accessible, good quality, and trustworthy sources of advice and care for chronic illness at the first point of call, for all, is critical. We contend that this first point of call should be quality, public primary care services, and that if such arrangements are in place in public services, people will use them.

### **1.4 Plan for This Report**

Partly in response to the limited literature on the subject in India, this report presents new findings that help shed light on the question of treatment

pathways in India. Specifically, data from household surveys in four selected States are presented to reveal healthcare pathways and associated health spending for the most acute episodes for three sets of conditions: chronic breathlessness among adults, gynaecological conditions among women, and acute respiratory conditions among children. The following four questions underpin the results presented in this report:

- Who and how many providers were consulted?
- What were the time lags between the identification of the problem to the first visit, and between subsequent visits?
- What are the key socio-economic, demographic, and potential system drivers of healthcare-seeking pathways in the two States?
- How does the household financial burden of illness depend on healthcare-seeking pathways?



# SURVEY METHODOLOGY AND DATA COLLECTION

## 2.1 Introduction

To recall from the previous chapter, the goal of this study was to investigate the health seeking behaviour of individuals with chronic and acute conditions in four Indian States, the key correlates of this behaviour, the care seeking pathways and their potential consequences. Of key interest was the following question: Do we observe healthcare-seeking pathways and out-of-pocket expenditure patterns among individuals with chronic conditions which are different in the States that have more developed health systems as compared to those that do not? There were three health conditions of interest in this study: acute respiratory infections (ARI) among children; chronic respiratory conditions among adults; and common gynaecological problems among women.

Following are the specific questions that this study has attempted to answer:

- What are the major healthcare-seeking pathways that individuals with the above health conditions (and the households they belong to) adopt and how do these pathways vary across States at different levels of health system development?
- What are the factors that drive the choice of providers along the pathways, including the choice of whether to seek care or not?
- How do healthcare-seeking choices influence household economic well-being, as captured by the indicators of medical impoverishment and catastrophic spending?

Apart from an analysis of secondary data based on existing household surveys containing healthcare use and expenditure information, we also gathered primary data on healthcare use and expenditure, and potential covariates from households in the four States under study. These States were chosen so as to ensure inclusion of two States that were considered to have relatively well-developed health systems (Punjab and Maharashtra), and two States that were considered to have relatively less developed health systems in India (Uttar Pradesh and Odisha).

The National Institution for Transforming India (NITI) Aayog generates composite health index scores for the States in India. The Index is a weighted composite Index based on indicators in the following three domains: (a) Health Outcomes; (b) Governance and Information; and (c) Key Inputs/Processes, wherein each domain is assigned a weight based on its importance. The indicator values are standardised (scaled 0 to 100) and used for generating composite Index scores and overall performance rankings for the reference year (2015-16). Table 2.1 presents a classification of India's States into three groups based on the Index scores. The Index score for overall performance ranged widely from 33.7 in Uttar Pradesh to 76.6 in Kerala. The four States chosen for this study reflect the top and bottom-end of the State health systems in India in addition to capturing its geographic diversity. The presence of Kerala, with its highly regarded health system, at the top of the ranking, and of Uttar Pradesh towards the bottom, provide some confidence that these rankings are not inaccurate as a reflection of the strength of the health system in the country.

**Table 2.1: Level of Development in the Selected States**

Level of Development Based on Health Index Score	States
Low (33.7-50.0)	Uttar Pradesh (33.7), Rajasthan, Bihar, Odisha, Madhya Pradesh, Assam, Uttarakhand, Jharkhand, and Haryana (47.0)
Medium (50.1-60.0)	Chhattisgarh (52.0), Telangana, West Bengal, Karnataka, Andhra Pradesh, and Jammu & Kashmir (60.0)
High (60.1-76.6)	Maharashtra (61.1), Himachal Pradesh, Gujarat, Tamil Nadu, Punjab, and Kerala (76.6)

**Source:** “Healthy States, Progressive India - A Report on the Ranks of States and Union Territories”, Ministry of Health & Family Welfare, Government of India (2015-16).

The remainder of this chapter discusses the survey design and sampling strategy, and the implementation of the surveys in the four States.

## 2.2 Sampling Design

The study focused on the following three target population groups:

1. Children (up to 5 years of age) suffering from severe cough/high fever and difficulty in breathing in the last 30 days.
2. Adults (18 years and above) suffering from chronic cough, and severe shortness of breath at rest or on minimal effort, for a period of longer than six months, and with a flare up of these symptoms in the last one year, even for a day.
3. Women self-reporting one or more of the following: abnormally heavy bleeding and/or abnormally painful menstrual periods or abnormal vaginal discharge during the last 1 year, severe enough to regularly disrupt daily activities or to contemplate seeking treatment.

The sampled individuals (and the households they belonged to) were determined by the process (described as steps) outlined below.

*The first step* consisted of the identification of the four States where the study was carried out. As noted previously, these States were chosen on the basis of our assessment of the status of their respective health systems: two States (Punjab and Maharashtra) had relatively high performing health systems whereas the other two (Uttar Pradesh and Odisha) were among the States with relatively low-performing health systems.

In the *second step*, two districts in each of the four States, broadly representing the health

systems of their parent States, were chosen. Since district characteristics can vary quite significantly, even within States, in our search for indicators for choosing the districts, we prioritised health service use and/or outcomes, given our focus on health systems. The most commonly available data at the district level in India pertains to indicators related to the delivery of maternal and child health services, as data for outcomes related to chronic conditions are rarely available at the district level in India. This prompted us to choose districts that were roughly at the median of the indicator “per cent share of women with four or more antenatal care (ANC) visits in their last birth” within each State.

*The third step* was about identifying villages and wards (urban blocks) where households (containing at least one individual with one of the three health conditions) were sampled. It was estimated that 125 villages/urban blocks per district were needed to achieve a sample of 400 individuals per condition per district. In the four States and eight districts, approximately 1,000 villages and urban wards, referred to as Primary Sampling Units (or PSUs) were selected for the study, with a minimum of 125 PSUs being selected from each district. In each sample PSU, 3-5 households per were randomly selected for each health condition with an equal probability from a sampling frame that was stratified by condition and was specifically developed for this purpose (see below).

In its initial assessment, the survey team had sought a distribution of urban PSUs and rural PSUs to correspond to their respective shares of the urban and rural populations within each district. However, socio-economic data (for Uttar Pradesh, Odisha, Punjab, and Maharashtra) showed that urban PSUs exhibited considerably greater heterogeneity in socio-

economic and demographic characteristics of their respective populations than rural PSUs. In an effort to limit the sampling errors in urban settings, the survey team increased the number of urban PSUs (and lowered the number of rural PSUs) relative to their initially planned shares while retaining the original total number of PSUs.

The PSUs in each of the districts were sampled from a sampling frame that comprised the list of all villages and urban wards as per the 2011 Census of India. For rural areas, the full list of Census villages (within each sampled district) was further stratified into three groups based on the socio-economic ranking (low, medium, and high), with the female literacy rate in each village being used as a proxy indicator for the socio-economic ranking. The number of sampled PSUs in the rural areas within each stratum was determined on the basis of the population shares of the villages contained in each. Finally, the sample villages (rural PSUs) were selected within each stratum using probability proportional to the population size.

In urban areas, no stratification by female literacy rates was deemed necessary owing to the prevalence of roughly similar literacy rates in the urban wards. The PSUs in urban areas were selected using probability proportional to the population size for the different wards. Within each ward, one Census Enumeration Block (CEB) was selected for data collection purposes.

In the *fourth step*, household listing was undertaken to each selected primary sample units (PSUs); villages for the rural areas and the Census Enumeration Blocks (CEBs) for the urban areas. About 125-150 households in each PSU were listed through a designed listing proforma to stratify the households. Thus, approximately 1,26,000 households were listed for the survey. All the households in PSUs containing fewer than 150 households were listed. The PSUs containing more than 150 households were divided into segments, with each segment containing 125-150 households. This was done with the help of *Anganwadi* workers/Accredited Social Health Activist (ASHA) workers/panchayat members. Thereafter, the investigators randomly chose one segment and obtained a full listing.

A “listing form” (a short questionnaire) was administered to each household in the list, which was used to gather information on a small set of questions

on the household socio-economic and demographic profiles, and whether any household member (in the pre-specified age groups and reference period) had any of the three health conditions being analysed, and if they did, information on the relevant member’s age and gender was collected.

In the *fifth step*, individuals whose healthcare-seeking behaviour and health expenditures were of interest (and the households they belonged to) were identified for sampling purposes. Here, it may be recalled that the goal was to gather information on a sample of 400 individuals for each condition per district. With 125 PSUs in each district, this meant that the study team had to choose 3-5 households (and individuals with the relevant conditions) in each PSU. This also further meant that for each health condition, the subset of households containing at least one individual with that condition from the PSU list of 125 households had to be identified to create a “condition-specific sampling frame” of households/individuals, and then 3-5 households had to be randomly chosen from that subset. Table 2.2 reports the results from this exercise for each district with regard to the number of PSUs included, the number of households in the sampling frame, and the number of households and individuals in the condition-specific sampling frames.

## 2.3 Sample Weights

Since the sampling within each district was not random with equal probability and involved stratification at multiple levels, sampling weights were needed to arrive at estimates representative at the district level, within each State. Obtaining State-level estimates from a sample of 2 districts in each State (out of a total of 163 districts in the four States) is obviously problematic, especially since the districts themselves were chosen in a pre-determined way. However, to the extent that district-level estimates represent an average for the State they belong to, they may be considered as broadly representing the average for the State as a whole.

What are the differences, if any, between the weighted and un-weighted estimates? Table 2.3 depicts the district-level prevalence of acute respiratory conditions among children, chronic respiratory conditions among adults, and the prevalence of common gynaecological problems

among women, with and without adjustment for sample weights. These estimates about prevalence

rates suggest that the differences between the weighted and un-weighted estimates are small.

**Table 2.2: Sampling Details**

	Uttar Pradesh		Odisha		Maharashtra		Punjab		Total
	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	
<b>Number of Selected PSUs</b>									
Rural	98	91	110	98	85	98	92	94	766
Urban	28	44	25	22	40	27	34	31	251
All	126	135	135	120	125	125	126	125	1017
<b>Number of Listed Households</b>									
Rural	12207	11192	14569	11624	11211	12346	12232	10257	95638
Urban	3516	5182	3269	2766	4797	3386	3961	3580	30457
All	15723	16374	17838	14390	16008	15732	16193	13837	126095
<b>Number of Households for Detailed Interview (Acute Respiratory Infection among Children Aged 0-5 Years)</b>									
Rural	337	275	341	326	40	53	27	0	1399
Urban	81	132	86	52	15	8	7	1	382
All	418	407	427	378	55	61	34	1	1781
<b>Number of Households for Detailed Interview (Chronic Breathing Problem in the Adult Population Aged 18+)</b>									
Rural	338	289	406	494	260	263	52	28	2130
Urban	64	115	104	88	54	47	17	17	506
All	402	404	510	582	314	310	69	45	2636
<b>Number of Households for Detailed Interviews (Women Aged 18+ Suffering from Gynaecological Problems)</b>									
Rural	325	300	366	352	87	218	219	57	1924
Urban	79	167	78	71	52	47	73	19	586
All	404	467	444	423	139	265	292	76	2510

Source: NCAER-NOSSAL 4IS Health Survey-2019-22.

**Table 2.3: Prevalence Rate (%) of Different Conditions: Weighted and Un-weighted**

Districts/States	Acute Respiratory Conditions-Child		Chronic Respiratory Conditions-Adult		Common Gynaecological Conditions-Women	
	Weighted	Un-weighted	Weighted	Un-weighted	Weighted	Un-weighted
Chandauli	5.2	5.0	1.4	1.3	2.8	2.8
Firozabad	5.3	5.5	1.7	1.7	4.3	4.1
Bargarh	7.4	7.6	1.6	1.6	3.8	3.8
Dhenkanal	8.6	8.5	2.8	2.7	2.7	2.7
Kolhapur	2.5	1.7	0.8	0.6	0.6	0.6

(Contd.)

Table 2.3: (Contd.)

Districts/States	Acute Respiratory Conditions-Child		Chronic Respiratory Conditions-Adult		Common Gynaecological Conditions-Women	
	Weighted	Un-weighted	Weighted	Un-weighted	Weighted	Un-weighted
Yavatmal	2.2	1.8	0.8	0.7	1.3	1.2
Moga	0.6	0.6	0.2	0.2	1.4	1.4
Hoshiarpur	-	-	0.1	0.1	0.4	0.4
Uttar Pradesh	5.3	5.2	1.5	1.5	3.6	3.4
Odisha	8.0	8.0	2.1	2.1	3.3	3.3
Punjab	0.3	0.4	0.1	0.2	0.7	0.9
Maharashtra	2.3	1.8	0.8	0.7	0.9	0.9
All	4.1	4.3	1.1	1.1	1.9	2.1

Source: NCAER-NOSSAL 4IS Health Survey-2019-2022.

Note: '-' = No sample.

## 2.4 Reliability of Estimates

While there is no fool-proof method for establishing the reliability of all the survey results, the evaluation of sampling and non-sampling errors can help in increasing the degree of confidence in the survey findings. Sampling errors can be assessed within the framework of the sampling design and can potentially

be controlled by increasing the sample size. Table 2.4 reports estimates the percentage of standard errors for selected variables in the main survey.

The data presented in Table 2.4 suggest that the estimates of beneficiaries across different characteristics have been obtained quite precisely with the standard errors (as a proportion of the mean) being mostly around 2-5 per cent or less.

Table 2.4: Estimates of Standard Errors

Characteristics	Adult			Child			Women		
	Sample Size	Mean	CV (%)	Sample Size	Mean	CV (%)	Sample Size	Mean	CV (%)
Number of days taken to visit the health care provider after the onset of the most recent flare-up	2249	5.1	1.9	1697	1.9	1.3	1414	15.0	1.2
Per capita total cost associated with this illness	2249	4141	1.8	1697	2462	2.3	1414	2314	1.6
Percentage of households with separate kitchens	2636	58.5	1.6	1780	55.2	2.1	2510	57.3	1.7
Percentage of households with access to toilet facilities	2636	81.6	0.9	1780	68.0	1.6	2510	78.2	1.1
Percentage of households drinking water directly from the source	2636	68.2	1.3	1780	85.3	1.0	2510	72.5	1.2
Monthly per capita income	2636	2855	0.9	1780	2380	0.7	2510	2562	0.7
Monthly per capita expenditure	2636	1970	0.9	1780	1663	1.2	2510	1882	1.2
% Food expenditure	2636	48.4	0.3	1780	48.1	0.3	2510	47.8	0.3

Source: Estimates from the NCAER-Nossal 4IS Health Survey Data, 2019-22.

Non-sampling errors arise from multiple sources. First, respondents may refuse to cooperate and may

not provide the information required by the survey. If the non-response rate is high, and especially if

the non-response is not distributed randomly across households, it may result in biased estimates. In this survey, non-response rates were very low, at about 2 per cent during line listing, and at less than 1 per cent in the main interview.

Second, and a potentially even more problematic situation is when respondents provide only partial information or information that is not usable, and even false information. Third, interviewers can have preconceived notions that influence how they interpret the responses to survey questions and record such responses. These factors increase errors in the data collected and the corresponding parameter estimates based on that data. There is no completely satisfactory procedure for a precise measurement of non-sampling errors or methods for fully addressing them. However, during the survey work for this study, many steps were undertaken to mitigate non-sampling errors, including the use of State language in the questionnaire, the use of computer-assisted survey administration, selection of a team of highly experienced interviewers from the selected State, and adherence to a strong training regimen for implementation of the survey. About 80-100 interviewers and supervisors helped execute the survey, backed by four State/zone coordinators and four NCAER professionals. These individuals were selected for their language expertise enabling them to understand and interpret the responses given in different languages spoken in the States. They were also engaged for an extended period of 3-5 months to undertake the task of primary data collection. All the survey team members possessed a bachelor's (university) or higher degree and had 2-7 years of survey administration experience; and about 40 per cent of the team members had post-graduate (masters-level) qualifications. This aspect is discussed further in the next section.

## **2.5 Survey Tools: Data Collection and Quality Assurance**

Overall, four study tools (questionnaires) were developed to address the requirements emanating from the core objectives of the study. The quality of data collected through these instruments was ensured through a robust process of data collection and quality assurance checks. These steps have been elaborated in the following sections.

### **2.5.1 Development of Study Tools**

The process of questionnaire development spanned several months, involving multiple consultations among experts from across the study team, and pilot surveys. The four main survey instruments that were developed included:

- Household listing questionnaire;
- Child questionnaire;
- Adult questionnaire; and
- Women's questionnaire.

A workshop, comprising team members from the Nossal Institute for Global Health, NCAER, and the Population Council (Delhi office) was held in December 2018 in Delhi to discuss the first draft of the questionnaires. The listing questionnaire was primarily intended to develop a sampling frame for the specific health conditions of interest to the study and included a small set of questions on the household socio-economic and demographic characteristics, and on whether any individuals in the household were experiencing ARI, chronic respiratory conditions, and gynaecological conditions. The main challenge was to ensure that health conditions were defined in such a way that respondents could identify and report them easily, and to ensure short length of the questionnaire to limit non-response.

The other survey instruments were designed to gather more detailed information on the households' socio-economic and demographic characteristics, healthcare use behaviour, healthcare expenditures, and health insurance coverage, as also household perceptions of quality of care across different healthcare providers and access of the household to alternative healthcare providers. Considerable efforts were made to identify the appropriate respondents for the different instruments.

Tables 2.5 and 2.6 describe the main modules included in the survey questions. The questionnaires for adults and women (with gynaecological conditions) are broadly similar, barring the targeted interviewee and the health condition of interest. The questionnaire directed to children who had experienced an ARI had a slightly different list of questions than the other two and was slightly shorter. In contrast to the other two questionnaires, it left out Section 8 (on financial implications of illness) and Section 9 (cost of previous episodes of the same

illness) and also left out a question in Section 4 (on the duration of time that a child was ill with the condition). Overall, the questionnaires for adults with chronic respiratory conditions and women with gynaecological conditions consisted of 18 sections each, whereas the questionnaire for children with ARI had 16 sections.

As can be seen in Tables 2.5 and 2.6, Sections 1-3 captured the demographic information on the household, whereas Sections 4 through 7 gathered information specific to the individual with the health condition, along with health care use behaviour, perceived quality of care, healthcare-related travel,

and household expenditure on treatment. Sections 8 through 13 were used to collect information on the health conditions of all the members of the household. Sections 14 through 16 included questions related to household income, expenditure on medical and non-medical spending, and household living conditions, such as home ownership, availability of water, and electricity, among others. Section 17 gathered information on household ownership of consumer durables, while Section 18 focused on whether households possessed various identification documents like ration card, and Pan Card, without asking for any details about these documents.

**Table 2.5: Household Listing Questionnaire**

Section/Title	Content
Section 1: General characteristics	Location, demographic, social and economic variables.
Section 2: Household member(s)/ with the 3 chronic conditions	Information on the three health conditions (acute respiratory infection, chronic respiratory disease and common gynaecological problems).
Section 3: Details on household members with the 3 conditions	Age and gender of the children with acute respiratory infection, adults with chronic respiratory disease and women with common gynaecological problems.

**Table 2.6: Adult, Women, and Child Questionnaires**

Section/Title	Content	Availability Status
Section 1: Location	Location-related variables for the household.	Adult
		Women
		Child
Section 2: Household characteristics	Socio-economic, demographic and other household characteristics.	Adult
		Women
		Child
Section 3: Household roster-demographic and other characteristics of household members	Age, gender, relationship to the head of the household, marital status, educational status and occupational status of household members.	Adult
		Women
		Child
Section 4: Treatment-seeking behaviour.	Information about health status and treatment sought.	Adult
		Women
		Child
Section 5: Perceived quality of health care facilities	Reasons for provider choice, perception of quality of health care providers, and availability of health facilities.	Adult
		Women
		Child
Section 6: Travel for health care	Mode of travel, time to health care facility and treatment, travel distance, and companions when obtaining health care.	Adult
		Women
		Child

(Contd.)

Table 2.6: (Contd.)

Section/Title	Content	Availability Status
Section 7: Expenses for care	Household expenditures on health and their composition.	Adult
		Women
		Child
Section 8: Financial implications of illness	Information about financial implications of seeking treatment for the disease, excluding the most recent episode. The information regarding duration of illness, number of visits to a health facility in a year, details of hospitalisation, and consumption of medicines, is also gathered in this section.	Adult
		Women
Section 9: Associated cost of all other episodes of illness (excluding the most recent episode of care that mentioned previously)	Information about five major health expenditure events, with respect to the time of occurrence, reasons for seeking treatment, type of provider consulted, total expenditure and its source.	Adult
		Women
Section 10: Health insurance	Status of insurance and type of insurance.	Adult
		Women
		Child
Section 11: Health care access	Self-reported access by healthcare provider type: travel time, mode of transport commonly used, distance to facility, and whether services utilised.	Adult
		Women
		Child
Section 12: Perceived quality of public sector health facilities	Awareness and perception about quality of treatment received, availability of equipment and medicines, and overall experience with PHCs, CHCs, and the district hospital.	Adult
		Women
		Child
Section 13: Health care use by all household members	Ailments, whether and from treatment sought and expenditures the	Adult
		Women
		Childs
Section 14: Household income	Household monthly income and main sources of income.	Adult
		Women
		Child
Section 15: Household expenditure:	Expenditure on the food and non-food items (including medical expenses?), by household members.	Adult
		Women
		Child
Section 16: Household basic amenities	Household access to and use of housing, cooking fuel, sources of drinking water, treatment of drinking water before consumption, toilet, and electricity facilities.	Adult
		Women
		Child
Section 17: Ownership of land and consumer durables	Agricultural land, bicycle, chair, etc.	Adult
		Women
		Child
Section 18: Unique identity	Possession of identity documents by members of households like ration card, voter card, passport, etc.	Adult
		Women
		Child
Section 19: Consultation since the beginning	Duration of disease, treatment, type of health care provider, number of providers and visits, satisfaction level with providers	Adult
		Women



### *2.5.2 Data Collection Process*

For the purpose of data collection, locally recruited interviewers/supervisors with graduate/post-graduate/MBA qualifications and 2 to 7 years of experience in survey work were engaged. Many survey team members had previous experience with survey work as part of the National Family and Health Survey (NHFS). About 75 per cent of the field investigators in our study were women. Implementation of the survey required about 20-25 field investigators/supervisors for about 3-5 months in each State, including pilot data gathering, household listing and survey data collection.

Survey responses were collected with the help of Computer Assisted Personal Interviewing (CAPI) techniques. This entailed the setting up of a support infrastructure, including CAPI devices/tablets, relevant accessories, a central server, and a supporting operating system, along with front-end and back-end software. Survey questionnaires were uploaded on devices with data range, consistency, and logic checks, relevant skips, and other functionalities. CAPI has the advantage of reducing time lags between data collection and analysis. Without the intermittent steps of coding and data entry, the risk of non-sampling errors like coding errors and dynamic questionnaires, is lower relative to traditional paper-pencil based personal interviews. The five apparent advantages offered by CAPI are that it ensures the absence of routing errors, reduces time lag, eliminated a separate data entry phase, offers new ways to formulate questions, and creates the possibility of randomisation of responses (Leeuw 2008). Additional data quality support was provided in the form of spot checks and field supervision.

During the implementation of the survey, the field investigators were required to synchronise their devices and upload the completed questionnaires as well as the updated respondent information at regular intervals. This information was checked by the supervisor via random calling to the surveyed households about the visit and duration of the interview, among other things. In addition, the supervisor also accompanied the field investigators and did spot checking to assess how the interviews were being conducted and the information was sought and entered in the tablets. Following the verification of the responses to the questionnaire,

the application administrator exported all the data to the central database. Not all areas were set up for attaining a continuous online connection to the central server. In these cases, the approach was first to save the questionnaire data offline, and later forward it to the server once the device was in a location (say, an urban setting) where an online connection to the server was available.

### *2.5.3 Quality Assurance*

High priority was accorded to provision of rigorous training of the field investigators who carried out the implementation of the survey. The main objective of this training was to ensure that the investigators became thoroughly familiar with the questionnaires and the underlying concepts, and were able to effectively communicate the survey questions to the respondents. In India's setting, where respondents are often uninformed and in most cases illiterate, this can be critical for achieving high-quality responses.

For this study, training was carried out in two stages. In the first stage, a 'training of trainers' exercise was conducted by the NCAER team at Delhi. In the second stage, "on-site" training was imparted to the field investigation team at different locations in each survey district in the four selected States. This training was carried out by the person who had received training during the first stage (training of trainers), under the supervision of the NCAER team. The duration of training was five days in each case.

At the field level, a three-tier supervision structure was adopted. One supervisor from the partner organisation supervised the work of the team comprising four field investigators. NCAER also deputed State-level coordinators/supervisors for each State. They supervised all the field staff, including the partner organisation's supervisors. Members of the NCAER core study team remained in continuous touch with the field survey teams. This process helped facilitate a quick and amicable resolution of any hindrances in implementation of the survey. In some PSUs, the potential respondents refused to be interviewed until an influential person from the locality signed off. The NCAER team kept a close watch on these minor irritants to facilitate smooth completion of the survey.

## 2.6 Challenges Faced during Primary Data Collection

The main challenges related to survey implementation can be classified into logistical, respondent-related, and interviewer-related challenges, and challenges emanating from other factors.

### 2.6.1 Logistical Challenges

The first challenge was to get the questionnaire translated into local languages and to find a precise terminology for the specific health conditions that we were interested in. In our case, since the survey was undertaken in four States which are culturally very diverse and have their own distinctive languages, translation and terminology issues were particularly salient, as in these four States, the terminology used to describe an identical health condition was often different. The questionnaires were translated by competent persons into local languages. The experience of the field investigators and supervisors also helped a lot in delineating area-specific terms associated with diseases. Any remaining issues were addressed after the pilot testing and even during the data collection process.

The jury is still out over the suitability of CAPI-based surveys or manually implemented (paper questionnaires) surveys in low- and middle-income country settings, such as India's. For this study, a CAPI-based process of data collection was adopted. This entailed the development of a programme to record the responses of the individuals. The process of development of the programme was complicated by the fact that the main questionnaires were somewhat lengthy, and had many conditional (skip) responses, often over several modules. The challenge here mainly lay in striking a balance between the sophistication of the software and its usability in field settings. For example, an excessively complicated programme can cause the tablet to hang and affect the efficiency of data collection. Thus, developing a usable programme fine tuning it for field implementation proved to be a highly time- and effort-intensive exercise.

A related challenge but one pertaining to hardware was the tendency of the tablet batteries to get drained rapidly, necessitating charging them at frequent intervals. In remote rural areas, where the supply of electricity tends to be unreliable, this situation posed a major challenge, though the use of

power banks helped greatly in this respect. The team also carried spare tablets to offset the persistent risk of some of the devices becoming non-functional. Additionally, the risk of theft of tablets that tend to be relatively expensive was also a lingering concern. Despite tremendous development in the field of Information and Communication Technologies (ICTs), the issue of weak telecommunication signals in remote areas kept arising, hindering the process of data collection. It also delayed the uploading of the completed surveys, at times leading to inaccuracy in the GPS mapping of the households. All these resulted in increasing the data collection times, the uploading process for data, and the delay in the overall monitoring process during the implementation of the survey. The use of CAPI devices also imposes staff recruitment requirements. Investigators have to be reasonably technology-savvy to operate the tablets and simultaneously be conversant with the local language.

Even after the software and hardware issues of CAPI were addressed and a qualified investigator team was recruited, concerns about ensuring the collection of a high-quality data and consistency in the data collection process loomed large. This challenge was addressed in two days. As noted previously, the NCAER team ensured that an experienced person closely oversaw the data collection process in the field in a supervisory capacity. Moreover, the collected data was checked daily to identify any commonly occurring mistakes and to quickly correct any issues thereof. In one case, during the daily scrutiny of the uploaded data, it was observed that one of the field investigators was getting confused between the number of health care providers consulted (Question 4.9 in Section 4) and major health expenditures (Section 9). As a resolution to the problem, the particular field investigator was contacted and the difference between these items was explained to him. Many other similar challenges faced by the field investigators were not only corrected promptly but also flagged to ensure extra caution in the next phase of the data collection process.

### 2.6.2 Respondent-Related Challenges

We found that the educational qualifications of the respondents correlated well with higher rates of survey response and easier administration of the questionnaire. Low-levels of educational attainment may potentially pose a challenge, especially in studies

related to the health sector, as it involves self-reporting on health status and recall of many numbers.

In view of the varying abilities of the respondents, effective and consistent administration of the survey questionnaires posed a significant challenge. In our study, some of the respondents showed a serious lack of awareness of their exact health status, let alone be able to provide information related to a specific disease. There were circumstances wherein respondent recollection about the type of doctor contacted, their qualifications, and the treatment administered was very sketchy. In these cases, the role of the investigator expanded to the role of moderator, nudging the respondent into narrating the entire process and in the meantime, also providing all the details sought in the questionnaire.

The issue of availability of the respondent also presents a challenge. In rural areas, people go to work in the fields early and return late. Moreover, the time between 1 pm and 3 pm should also be avoided for administering the questionnaire, as it signifies an extended lunch time. Further, female respondents are not available when the household chores have to be completed, especially in the noon and in the evening. The time window for carrying out the survey in urban areas is still narrower. In urban areas, people are not available during weekdays, and they are not willing to give time on weekends. From our experience, the incidence of survey non-response is more common in urban areas than in rural areas. In general, the reasons for non-response are complex: they may be due to factors specific to the respondent, the topic of the survey, reaction to the field investigator, or something entirely unknown. Repeating a question when the respondent is providing an obviously incorrect answer may also invite a hostile reaction.

Even when agreeing to respond to the questionnaire, respondents may provide a 'no response' to certain questions. There are many factors underpinning this 'non-response.' In rural areas, people are often unable to accurately estimate the number of days, distance, age, expenditures incurred, and so on. Families engaged in agriculture find it very difficult to give information about their income as the harvest of crops is seasonal, and there is uncertainty about production and prices. Moreover, they may not always be able to separate the cost of inputs from revenues, and can at best provide estimates of gross revenue, and not income. In urban areas, people do not want to divulge details about income and household

amenities for safety reasons and/or potential tax liabilities or something entirely different.

Finally, the degree of trust that a respondent has in the interviewer plays a crucial role. Similarly, concerns about the end-use and confidentiality of information must also be addressed by the interviewer, preferably at the beginning of the interview. A proper introduction and a careful reading of the consent statement may ameliorate some of these concerns, but only up to an extent. Our experience has been that brochures about the organisation and its work and visibility in the public space help in substantially narrowing the trust deficit. The trust factor is more complicated for questionnaires designated for female respondents, as more often than not, they are accompanied by other family members (usually their in-laws) at the time of the interview. This situation may also dissuade the respondent from revealing information that may be related to the prestige of the family, or the privacy of the respondent. However, the high levels of training that our survey team was imparted and extensive pilot work helped in addressing some of these concerns.

### *2.6.3 Interviewer-Related Challenges*

Field investigators connect the theoretical aspects of the study with the actual respondent. Their role is, therefore, crucial to the quality of outcomes from the survey. Apart from the basic requirements for the field investigator to possess a certain level of education, experience, and local knowledge, the role of field investigator training cannot be over-emphasised. In our experience, the training should be suited to the learning process of the field investigators, which usually entails the need for being slow and deliberate, necessitating clarification of all doubts/concerns, and a mix of informal and formal settings. This is why the training of the field investigators was conducted in two phases, including firstly, training of the trainers, and secondly, in-field training of the investigators where the survey was to be conducted.

Knowledge of the terrain of the field is very crucial and must be kept in mind when recruiting field investigators. While the survey was being conducted, there was an instance when some of the female investigators, who were among the interviewers, got a little late in the evening in a village in Chandauli district. Returning to the hotel became a big concern for them as the last public transport vehicle had already left the place and no other means of transport

was available. Here, the friendly relations between the supervisor and the village headman proved to be a saviour, as the village headman offered his own vehicle to transport the team to the hotel at no cost.

Another continuous challenge is that of eliciting responses from the female respondents. The fundamental requirement in such a situation is to have female field investigators for conducting the interviews with the female respondents. This, in turn, leads to the attendant challenge of finding female investigators possessing appropriate skills and willing to travel to remote locations. The security of female investigators, as mentioned above in just one of the many instances, also becomes crucial. This led the study team to strictly limit its working hours to middle of the day, which is also a time when the female respondents are busy with their household chores in rural areas and are in their offices in the urban areas. This condition, sometimes quite severely, limits the number of interviews that can be conducted per day. One way of managing this issue was to fix an appointment with the respondents a day prior to the interview through a phone call and requesting them to be available at a particular time slot.

It is critical to establish a positive attitude and temperament among the field investigators. The possibility of abusive behaviour from some of the respondents should also be considered. Sometimes, even repeating a question to a respondent may become a sensitive issue, as the respondent not being able to understand a question in one attempt may be interpreted as a challenge to the respondent's intelligence. These instances tend to be common during administration of the income and expenditure-related sections of the survey, owing to mismatches between the details furnished for the sub-items and the reported total expenditure or income. Pressing beyond a point on these questions also often invites hostile reactions. In one instance, while filling the details of consumption expenditure in a village of Firozabad district, when the interviewer reminded the respondent that the sum of expenditures on individual items did not match the total monthly consumption expenditure, the respondent got angry and immediately discontinued the survey.

It is usually observed that if the interviewer consults documents while addressing the doubts of the respondents regarding the questions and related concepts, this leads to suspicion and/or loss of confidence in the minds of respondents. In such cases,

the investigators may be mistaken for some fly-by-night information gatherers with a dubious purpose. One way to handle these issues is to take approval for the survey from locally influential people like the village headman. Another response which is quite effective is to replace the field investigator involved in any such incidence with another more experienced field investigator. Here, the presence of mind of the supervisor is an invaluable asset as the respondent may totally refuse to give the interview. Therefore, if the interviewer is able to memorise definitions, threshold values, sequence of questions, and various sections of the questionnaire, it enhances the level of the respondents' confidence in the exercise.

The phenomenon of field staff dropping out of the survey is also quite frequent and proves to be expensive. Trained field investigators drop out midway from the survey for various reasons. Replacing them is quite expensive as the new field investigator needs to be imparted training afresh. This entails careful selection of the field investigators with experience and competence.

Here, it is noteworthy that the questions are primarily related to the personal lives of the respondents and sometimes stir emotional responses and even outbursts. Administering the questionnaire related to children is replete with such potentially volatile situations as a mother, while providing details of health-seeking behaviour of her presently seriously sick child, may not find it comfortable to recall each and every minor detail. Besides, the questionnaires are often long, and, therefore, retaining the interest of the respondent requires the deployment of a high level of soft skills. Here, one may cite the example of a field investigator who used to engage in interesting chats with the respondent after completing a fixed section of the questionnaire. Thus, the most sought-after attributes of the field investigators are their educational levels, tech-savviness, awareness of the locality where they would be carrying out the investigation, experience in conducting field surveys, physical fitness, and an amiable personality.

#### **2.6.4 Miscellaneous Challenges**

We also suggest avoiding conducting surveys during extreme seasons, unless they are an intrinsic part of the research design. India has immense climatic variations: while Rajasthan may be reeling under an intense heat wave and drought-like conditions, Northeast India could, at the same time, be receiving

copious rainfall and experiencing floods. In one instance, the entire investigating team had to be admitted in a hospital in Varanasi in the month of June while conducting a survey in Chandauli district due to dehydration and diarrhoea caused by the heat conditions. Adverse weather and climatic extremes also pose threats to the physical safety of the survey team, which should be accorded the highest priority. The period coinciding with elections must also be avoided for carrying out the survey, as the respondents usually confuse field investigators with political activists who may be affiliated to one or the other political party. This can influence the quality of data and the level of cooperation offered by the respondents, and can sometimes lead to financial demands from the field investigators. For instance, the field work of the survey slowed down considerably during the months of March, April and May, 2019, when the general elections were being held.

Besides, festivals are celebrated in different parts of India during different times of the year. Festivals are not a good time to conduct field surveys owing both to the difficulty of accessing respondents and the risk of introducing positive biases in the reported data. Finally, in view of the extensive access that people have to social media, rumours can spread like wildfire, sometimes leading to untoward incidents like mob lynching, which has especially been known to occur when individuals are suspected of being child abductors. These rumours potentially jeopardise the physical safety of the field staff. In one such episode in a village in Firozabad district, the local people informed the police about “the arrival of people from outside”. The supervisor had to show relevant documents and convince the police personnel about the genuineness of the data collection process. Thus, an effective response to deal with such situations is mandatorily carrying all the necessary documents, if possible, taking a local person along as part of the

survey team, and giving prior information to the local political representatives about the arrival of the survey team for data collection.

## 2.7 Data Limitations

Although tremendous care was taken in gathering the data during this survey, there was need for caution in interpreting and contextualising the outcomes resulting from the analysis of this data. Two issues were of particular concern. First, the sampling design and households interviewed included only two districts from each State. The method of choosing these districts and their relative scale (as compared to the overall State population) suggests that inferring State-level outcomes from the analysis of the data can be misleading.

Second, the survey was done during different time periods (details are in Chapter 3) cautioning extra attention in interpreting the results. It was mainly because of the pandemic COVID-19 outbreak in the country during March 2020 to January 2022. The surveys of the two States, namely Maharashtra and Punjab were done during March-May 2022 when the COVID-19 pandemic-induced restrictions were relaxed and conditions for conducting field surveys became normal.

Third, the target population from rural areas also included respondents with low levels of educational attainment, and in some cases, even illiterate participants. This observation and the fact that the recall of information related to healthcare use and expenditure can be challenging even for educated respondents suggests that the resulting estimates must be interpreted with care. In this connection, it may be noted that the target population also included female respondents who were almost always accompanied by another individual at the time of interview, which could have led to a bias in the responses.



# PREVALENCE OF ARI, CHRONIC BREATHLESSNESS AND COMMON GYNAECOLOGICAL CONDITIONS: FINDINGS FROM THE LISTING SURVEY

## 3.1 Introduction

This chapter reports the prevalence of three health conditions, Acute Respiratory Infections (ARI), Chronic Breathlessness, and Common Gynaecological Conditions, based on the data obtained from the listing survey. Information on prevalence rates for each of these conditions is provided by location, and by socio-economic, demographic, and religious characteristics. Recall that the listing survey was undertaken as a first step towards developing a sampling frame for the “main” survey that gathered information on healthcare use pathways and spending for the three health conditions of interest. Information was gathered from 126,095 households using the listing questionnaire.

For our purposes, ‘prevalence’ is defined as the number of cases reporting a specific condition during the relevant reference period, and the prevalence rate for a given condition implies the proportion reporting that condition in the population of the relevant group, which could be age groups or population broken down by gender. Prevalence is to be distinguished from ‘incidence’, which refers to the number of *new* cases over a reference period.

Data from the listing survey allowed the team to estimate the prevalence rates for Acute Respiratory Infections (ARIs) among children, Chronic Breathlessness among adults, and Common Gynaecological Conditions among women, in two districts each from the States of Uttar Pradesh, Odisha, Maharashtra, and Punjab. Since ARI, unlike chronic gynaecological and respiratory conditions, is an acute condition, its prevalence over the last month is likely to be close to the measure of incidence. Table 3.1 lists the three health conditions and the corresponding age group, gender, reference period,

and respondent categories for which information was collected as part of the listing survey.

The listing also assessed whether the prevalence rates estimated in the study are comparable to the estimated prevalence rates for similar conditions from other surveys for the same districts/regions. For example, the National Family Health Survey (NFHS) and the National Sample Survey Organisation (NSSO) also periodically gather information on different health conditions in the population. In addition, smaller scale studies have also been carried out from time to time for estimating the prevalence rates of similar conditions. Differences in definitions (of conditions), reference periods, and age groups for which the data was collected make such comparisons challenging, as seen in Table 3.1.

The remainder of this chapter is divided into four sub-sections. Sub-sections 3.2-3.4 describe the findings on the prevalence rates from the listing survey, each focusing on one of the three conditions, ARI, Chronic Breathlessness, and common gynaecological conditions, respectively. In the last sub-section, we present and discuss the results from multivariate regression analyses that explore the relationship between indicators for the three health conditions and a set of correlates, consisting of socio-economic, demographic, and locational characteristics.

## 3.2 Acute Respiratory Infections among Children

The prevalence of ARI among children is a leading cause of morbidity and mortality among children in India. A World Health Organisation (WHO) report (Rudan et al. 2008) categorised risk factors of childhood pneumonia into three groups based on strength of association, as shown in Table 3.2.

**Table 3.1: Respondent<sup>1</sup> Characteristics and Recall Periods by Condition**

Conditions	Gender	Age (in years)	Reference period	Respondent <sup>1</sup>
Acute Respiratory Infections (ARI) <sup>2</sup>	All	Less than 6	Last 30 Days	Mother of the child with ARI person
Chronic Breathlessness <sup>3</sup>	All	18 and above	Last One Year	The person with the health condition
Common Gynaecological Conditions <sup>4</sup>	Women	18 and above	Last One Year	The female with the health condition

*Note:* Age is in completed years.

**Table 3.2: Category-wise Risk Factors of Childhood Pneumonia**

Risk Factor Categories	Risk Factors
<b>Definite Risk Factors</b>	Malnutrition (weight-for-age z-score <-2) Low birth weight (<= 2500g), Lack of exclusive breastfeeding (during first 4 months), Lack of measles immunisation (within the first 12 months of life), Indoor air pollution, Crowding
<b>Likely Risk Factors</b>	Parental smoking, Zinc deficiency, Maternal inexperience, Co-morbidities (diarrhea, heart disease, asthma)
<b>Possible Risk Factors</b>	Maternal education, Day-care attendance, Rainfall (humidity), High altitude (cold air), Vitamin A deficiency, Higher birth order, Outdoor air pollution

*Source:* Rudan et al. (2008).

Table 3.3 reports data on the prevalence of ARI in the listing survey, broken down by rural and urban residence. The 30-day ARI prevalence rate for the full sample was 4.1 per cent, with the prevalence being slightly higher in rural areas as compared to urban areas (4.3 per cent versus 3.0 per cent). The ARI

prevalence rate was higher in districts of Odisha, i.e., Dhenkanal (8.6 per cent) and Bargarh (7.4 per cent); and in districts of Uttar Pradesh. In two districts, Maharashtra and Punjab, however, the prevalence of ARI was much lower than in two districts each in Uttar Pradesh and Odisha.

<sup>1</sup>While the respondent for the listing questionnaire was the head of the household, the information regarding the three health conditions of interest was gathered from the target population, that is, the mother of the child with ARI, the person suffering from chronic respiratory conditions, and the woman suffering from common gynaecological conditions.

The definitions of the health conditions used during the field work were as follows:

<sup>2</sup>ARI refers to a child of up to 5 (completed) years of age who has suffered, or is currently suffering from, severe cough, high fever, and difficulty in breathing during the last one month.

<sup>3</sup>Chronic respiratory conditions refers to a person experiencing/suffering from chronic cough and severe shortness of breath at rest, or on minimal effort, for a period longer than six months, with an acute episode characterised by the flare-up of symptoms in the last one year, even if for a day. These symptoms are consistent with severe chronic pulmonary disease, that is, chronic bronchitis, asthma, and emphysema/COPD.

<sup>4</sup>Chronic gynaecological conditions refers to a woman self-reporting one or more of the following: abnormally heavy bleeding and/or abnormally painful menstrual periods or abnormal vaginal discharge during the last one year, which were severe enough to regularly disrupt daily activities or to make the woman contemplate seeking treatment.



**Table 3.3: Prevalence Rate of ARI by Place of Residence during the Past 30 days (%)**

Districts	Rural	Urban	All
Chandauli	5.3	4.1	5.2
Firozabad	5.0	6.0	5.3
Bargarh	7.3	8.5	7.4
Dhenkanal	8.8	6.6	8.6
Kolhapur	2.4	1.1	2.3
Yavatmal	1.9	0.7	1.8
Moga	0.6	0.5	0.6
Hoshiarpur	0.0	0.0	0.0
All	4.3	3.0	4.1

*Source:* Authors' estimates, using data from the field survey.

*Note:* "State-level" estimates are a weighted sum of the district-level estimates from the two districts in each State. Table 3.4 reports estimates of ARI-prevalence rates from the National Family and Health Survey (NFHS-4) of 2015-16 and NFHS-5 of 2019-20. The comparisons of ARI prevalence in the districts/States for which data was available in NFHS-5 and in the household listing survey indicate that the ARI prevalence estimates from NFHS-5 are lower than our study's estimates in the case of Uttar Pradesh and Odisha and higher than our prevalence estimates for Maharashtra and Punjab.

**Table 3.4: 14-Day Prevalence Rate of ARI (%)**

Districts/States	NFHS-4(2015-16)	NFHS-5(2019-21)
Chandauli	8.5	1.2
Firozabad	8.6	3.9
Bargarh	^NA	2.8
Dhenkanal	2.7	6.1
Kolhapur	3.9	3.2
Yavatmal	1.2	^NA
Moga	7.6	6.0
Hoshiarpur	1.6	1.3
Uttar Pradesh	4.7	3.5
Odisha	2.4	3.2
Maharashtra	2.4	3.2
Punjab	4.1	2.5

*Source:* District Fact Sheets of the Respective Districts, NFHS 2015-16 and 2019-20, National Family Health Survey (NFHS-4 & 5), India, Uttar Pradesh; Odisha, Maharashtra and Punjab.

*Note:* ^NA reflects the values that are not provided by the NFHS due to small sample sizes. Our estimates are within the range found by NFHS-4 and NFHS-5, except for Firozabad, Kolhapur, and the two towns of Punjab where we found rates in all cases below that range. This could reflect our additional requirement to relevant symptoms of a severity benchmark and an over-time decline in ARI which is suggested by comparison between NFHS-4 and NFHS-5. However, seasonal factors seem only capable of explaining the relatively higher rates in Kolhapur comparing our data with NFHS-5 since NFHS-4 and-5 data were collected at relatively low prevalence season.

A number of factors could potentially explain the differences in estimates in ARI prevalence between NFHS-5 and the household listing survey. Apart from the different years for which data were collected, the variation in the prevalence estimates could have arisen from differences in the definition of ARI used in the surveys, the age group for which the prevalence rate was estimated, the reference period used, and the time at which the data was collected. The NFHS estimates were based on information gathered from children aged less than five years, with a reference period of two weeks. In comparison, the household listing survey gathered information on ARI for children aged five years or less, but with a reference period of 30 days, with the additional qualifier that the condition was severe enough for the household to contemplate seeking treatment for the child. The format of the questions used to identify ARI was also slightly different in the listing survey compared to NFHS. For example, NFHS asked households whether the child had a fever, or had symptoms of ARI, whereas in the listing survey, the respondents were directly asked whether the children had ARI (including using local terminology for ARI). Moreover, the listing survey during the period from March to October 2019 for Uttar Pradesh and Odisha, and from February to May 2022 for Maharashtra and Punjab. Because the seasonality effects can influence measured ARI prevalence significantly, as discussed below, any difference in time periods over which the survey was implemented matter for the comparison with NFHS estimates.

A full assessment of the main drivers of differences in the ARI prevalence estimates (NFHS-5 and the listing survey) is beyond the scope of this chapter. However, differences in the timing of the surveys could have played a major role in the differences in estimates of ARI prevalence. The ARI prevalence rates post-monsoon were more than double the ARI prevalence rates during the pre-monsoon phase in Uttar Pradesh and Odisha districts in the household listing survey (Table 3.5). In NFHS-5, the surveys were conducted primarily during the late winter and pre-monsoon periods which would have resulted in a lower-than-average ARI prevalence for Uttar Pradesh and Odisha. In Maharashtra and Punjab, the household listing survey was conducted in the spring and pre-monsoon period, and so ARI prevalence would likely to be lower than average. NFHS-5 in Maharashtra was conducted mostly post-monsoon and early winter, so one might expect ARI prevalence to be higher relative to the estimate from our household listing survey.

**Table 3.5: Seasonal Variations in the 30-day Prevalence Rate of ARI**

Districts/States	Period of Survey					Period of Survey NFHS-5
	Mar-Jun 2019	Aug-Oct 2019	Feb-Mar 2020	Mar-May 2022	All	
Chandauli	2.6	7.6	-	-	5.2	-
Firozabad	1.7	8.2	-	-	5.3	-
Bargarh	2.3	11.1	-	-	7.4	-
Dhenkanal	6.5	10.6	-	-	8.6	-
Kolhapur	-	-	3.1	1.5	2.3	-
Yavatmal	-	-	2.4	1.7	1.8	-
Moga	-	-	-	0.6	0.6	-
Hoshiarpur	-	-	-	0.0	0.0	-
All	2.9	9.0	3.0	0.9	4.1	-
Uttar Pradesh	2.1	7.9	-	-	5.2	January 2020 to March 2020 Nov 2020 to April 2021
Odisha	4.4	10.9	-	-	8.0	January 2020 to March 2020 Nov 2020 to March 2021
Maharashtra	-	-	3.0	1.6	2.1	June 2019 to December 2019
Punjab	-	-	-	0.2	0.2	January 2020 to March 2020 Dec 2020 to March 2021

*Source:* Authors' estimates, using data from the listing survey; NFHS-5 reports were used to identify the timing of the NFHS survey implementation.

Previous work has noted the association of ARI with socio-economic status (Taksande and Yeole, 2015). However, we found no significant variation by caste or tribal status (Table 3.6), with the ARI prevalence rates being roughly similar across the three social-ethnic groupings, that is, Scheduled Castes (SCs) and Scheduled Tribes (/STs), Other Backward Classes (OBCs), and other castes that were neither SC/ST, nor OBC. The ARI prevalence rates are higher among Hindus than non-Hindus. However, the sample size of non-Hindu households in the listing survey is very small in Odisha, making the ARI prevalence estimates in the latter group of individuals imprecise.

In the listing survey, smaller households reported a higher prevalence of ARI as compared to larger households—the ARI prevalence rate was of 5.6 per cent in households that had fewer than five members versus 3.4 per cent in households that had a membership of five or more—a pattern that is consistent across districts. These differences between smaller and larger sized families are relatively large in the districts of Uttar Pradesh and Odisha and minimal in the districts of Maharashtra and Punjab. It is *a priori* unclear as to whether this reflects a recall issue, that is, respondents in households with many children being less able to recall instances of ARI, or some other factor.

**Table 3.6: 30-day Prevalence Rate of ARI by Socio-religious Status and Household Size**

Districts	Social Group			Religious Group		Household Size (No. of Members)		All
	SC/ST	OBC	Others	Hindu	Non-Hindu	Less than 5	5 & above	
Chandauli	5.2	5.3	4.0	5.2	5.1	8.6	4.5	5.2
Firozabad	5.9	4.8	6.3	5.3	4.7	8.1	4.5	5.3
Bargarh	6.5	8.4	5.3	7.4	5.7	9.2	5.8	7.4
Dhenkanal	9.4	8.0	8.3	8.6	0.0	12.2	6.0	8.6
Kolhapur	2.5	3.2	1.7	2.2	3.1	2.3	2.3	2.3
Yavatmal	2.6	0.9	1.6	1.8	1.7	2.5	1.2	1.8
Moga	0.5	0.8	0.4	1.3	0.5	1.2	0.2	0.6
Hoshiarpur	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Source:* Authors' estimates, using data from the field survey.

*Note:* No sample in Hoshiarpur district of Punjab.

**Table 3.7: 30-day Prevalence Rate of ARI, by Income Group**

Districts	Per Capita Household Income Quintiles					
	Q1	Q2	Q3	Q4	Q5	All
Chandauli	3.7	4.1	5.9	6.9	10.1	5.2
Firozabad	3.3	4.0	4.3	5.9	7.6	5.3
Bargarh	5.1	6.7	6.5	7.3	10.5	7.4
Dhenkanal	7.5	7.6	7.1	9.9	10.4	8.6
Kolhapur	2.5	3.3	1.4	2.6	2.2	2.3
Yavatmal	1.4	1.3	1.7	1.2	5.5	1.8
Moga	0.0	0.1	0.5	0.4	1.2	0.6
Hoshiarpur	-	-	-	-	-	-

*Source:* Authors' estimates, using data from the field survey.

*Note:* No sample in Hoshiarpur district of Punjab.

Table 3.7 reports the findings on the 30-day ARI prevalence by (monthly) per capita income quintiles of households. The key observation is that the self-reported ARI prevalence is rising with income, particularly in the districts of Uttar Pradesh and Odisha. Since the number of children per household decreases with an increase in income per capita in the listing survey, these trends could suggest under-reporting of ARI cases among the poorer households. Of course, another explanation is that richer households are more likely to seek care and are thus more likely to have their children diagnosed with ARI.

### 3.3 Chronic Breathlessness among Adults

Chronic Breathlessness encompasses a range of health conditions, including asthma, Chronic Obstructive Pulmonary Disease (COPD), and tuberculosis. These conditions progress slowly over time and are usually seen in populations aged 30 years and over. Conditions giving rise to chronic breathlessness account for a significant share of India's disease burden. Given the challenges of accurately diagnosing specific conditions within the broad category of chronic respiratory disease, the study focused on identifying 'chronic respiratory disease' (breathlessness) among adults. The respondent for the questions on Chronic Breathlessness was the person suffering from the disease.

The prevalence estimates for chronic breathlessness, reported in Table 3.8, are based on self-reports without any physical examination or investigation by a qualified health professional. In the listing survey, Chronic Breathlessness was identified

if a person reported experiencing/suffering from chronic cough, and severe shortness of breath at rest or on minimal effort, for a period longer than six months, and with a flare-up of these symptoms in the last one year, even if for a single day. These symptoms are broadly consistent with severe chronic pulmonary disease, such as chronic bronchitis, asthma, and emphysema/COPD.

The estimates based on data from the listing survey point to relatively low levels of prevalence of Chronic Breathlessness, estimated to be 1.16 per cent in the eight districts combined. State-level figures from NFHS-5 are broadly consistent with the aggregates of prevalence rate estimates in the four States.

There are, however, differences between these two surveys on multiple dimensions, including the definition used to identify a chronic respiratory condition and the recall period. NFHS-4 and 5 estimates are based on data from adults aged 15–49 years, reporting only asthma. This study includes all reports of Chronic Breathlessness (asthma, along with other health conditions related to respiratory problems, is included) lasting more than six months among adults aged 18 years or above, and where there was a flare-up requiring medical attention during the last one year.

The estimates reported in Table 3.8 indicate a prevalence rate of 1.16 per cent for Chronic Breathlessness in eight districts on an aggregate level, with slightly higher rate of prevalence among rural than in urban respondents. There was some cross-district variation as well, with the prevalence of Chronic Breathlessness being higher in Dhenkanal and Firozabad. Districts of Punjab had the lowest rates of prevalence of chronic breathlessness.

**Table 3.8: Prevalence of Chronic Breathlessness in the Adult Population by Place of Residence (%)**

Districts	Rural	Urban	All
Chandauli	1.36	1.16	1.34
Firozabad	2.19	1.72	2.02
Bargarh	1.64	1.76	1.65
Dhenkanal	3.63	3.52	3.62
Kolhapur	0.75	0.40	0.73
Yavatmal	0.81	0.52	0.79
Moga	0.21	0.16	0.19
Hoshiarpur	0.09	0.16	0.13

Source: Authors' estimates, using data from the field survey.

Table 3.9 reports the breakdown of prevalence rates for Chronic Breathlessness in the sample by indicators of socio-economic status, religion, and household size. Broadly, the prevalence rates are lowest among the SC/ST population and OBC category, and highest in the "General" category across the districts of Uttar Pradesh and Odisha. In Maharashtra and Punjab districts, reported prevalence rates of chronic breathlessness did not vary much by social group.

Self-reported prevalence rates for Chronic Breathlessness are higher among Hindus than non-Hindus. However, there is not much variance in prevalence rates by household size.

**Table 3.9: Prevalence of Chronic Breathlessness in the Adult Population by Socio-religious Status and Household Size (%)**

Districts	Social Group			Religious Groups		Household Size		All
	SC/ ST	OBC	Others	Hindu	Non- Hindu	Less than Five	5 and above	
Chandauli	1.2	1.3	1.8	1.4	1.0	1.0	1.4	1.3
Firozabad	2.1	2.0	2.1	2.0	1.9	2.5	1.9	2.0
Bargarh	1.5	1.6	3.0	1.7	0.8	1.3	2.2	1.6
Dhenkanal	3.2	3.7	4.3	3.6	1.6	3.5	3.7	3.6
Kolhapur	0.7	0.8	0.7	0.8	0.4	0.9	0.7	0.7
Yavatmal	0.8	0.7	0.8	0.8	0.9	0.9	0.7	0.8
Moga	0.2	0.2	0.2	0.3	0.2	0.3	0.1	0.2
Hoshiarpur	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1

Source: Authors' estimates, using data from the field survey.

**Table 3.10: Prevalence of Chronic Breathlessness among the Adult Population by Income Quintiles (%)**

Districts	Per Capita Household Income Quintiles					All
	Q1	Q2	Q3	Q4	Q5	
Chandauli	1.5	1.4	1.0	1.2	1.4	1.3
Firozabad	2.9	1.9	1.6	1.7	2.2	2.0
Bargarh	1.7	2.4	1.2	1.6	1.6	1.6
Dhenkanal	3.5	4.3	3.0	3.7	3.9	3.6
Kolhapur	0.5	0.6	0.7	0.8	1.2	0.7
Yavatmal	0.6	0.7	1.1	1.3	0.9	0.8
Moga	0.2	0.1	0.1	0.2	0.3	0.2
Hoshiarpur	0.1	0.2	0.0	0.1	0.2	0.1

Source: Authors' estimates, using data from the field survey.

### 3.4 Common Gynaecological Conditions

The listing survey gathered self-reported information on Common Gynaecological Conditions (abnormally heavy bleeding and/or abnormally painful menstrual periods or abnormal vaginal discharge) during the

last one year, which were severe enough to regularly disrupt daily activities or for the individual to contemplate seeking treatment. The respondent for the information on Common Gynaecological Conditions was the woman reporting the condition.

The prevalence estimates constructed using the definition in the previous paragraph will differ from the prevalence estimates based on an examination by a qualified medical professional, and they may even vary by the location of the interview. Previous work suggests that the prevalence rates for gynaecological conditions may be downwardly biased if estimates are based on information from interviews conducted by lay persons at the residence of the respondent (Filippi et al. 1997). In the Indian context, a similar downward bias in the self-reporting of gynaecological conditions has been observed in multiple studies when respondents were interviewed in their home environment (Bhatia and Cleland 2000; Bang et al. 1989; Dheresa et al. 2017). Other factors that can influence self-reports of gynaecological conditions include awareness levels about the condition, education of the respondent, family income, availability of health facilities, the attitudes of health professionals with whom women interact, and the asymptomatic characteristics of some gynaecological conditions (Kambo et al. 2003; Bang et al. 1989).

Table 3.11 presents the estimates of the prevalence of gynaecological conditions in the household listing survey by State, district, and by rural and urban residence. The prevalence rate of Common Gynaecological Conditions in the full sample is 2.2 per cent, with roughly similar magnitudes across rural-urban locations. Uttar Pradesh and Odisha have

a higher prevalence of gynaecological conditions, at nearly around 4 per cent, compared to Maharashtra and Punjab, where the estimated prevalence rate was less than 1 per cent. Considering individual districts, the prevalence rate for Common Gynaecological Conditions was highest in Bargarh and Firozabad, among the eight districts that were part of the listing survey.

**Table 3.11: Prevalence of Common Gynaecological Conditions by Place of Residence (%)**

Districts	Rural	Urban	All
Chandauli	3.0	3.1	3.0
Firozabad	4.9	5.6	5.2
Bargarh	5.1	4.6	5.0
Dhenkanal	2.7	2.7	2.7
Kolhapur	0.7	0.7	0.7
Yavatmal	1.3	1.0	1.3
Moga	1.4	1.3	1.4
Hoshiarpur	0.4	0.4	0.4
Uttar Pradesh	3.9	5.0	4.2
Odisha	4.0	3.7	4.0
Maharashtra	1.0	0.8	0.9
Punjab	0.8	0.6	0.7
All	2.2	2.2	2.2

Source: Authors' estimates, using data from the field survey.

**Table 3.12: Prevalence of Common Gynaecological Conditions by Socio-religious Status and Household Size (%)**

Districts/ States	Social Group			Religious Groups		Household Size		All
	SC/ST	OBC	Others	Hindu	Non- Hindu	Less than 5	5 & Above	
Chandauli	3.7	2.6	2.7	2.9	3.8	2.6	3.1	3.0
Firozabad	6.4	4.6	5.8	4.8	8.2	5.0	5.2	5.2
Bargarh	4.6	5.4	4.8	5.0	10.7	5.8	3.9	5
Dhenkanal	2.9	2.7	2.2	2.7	0.0	3.2	2.1	2.7
Kolhapur	0.9	0.7	0.6	0.7	0.7	0.8	0.6	0.7
Yavatmal	1.3	1.2	1.5	1.3	1.5	1.4	1.1	1.3
Moga	1.6	1.7	0.9	1.8	1.3	1.8	1.0	1.4
Hoshiarpur	0.4	0.3	0.4	0.6	0.2	0.5	0.3	0.4
Uttar Pradesh	4.8	3.8	4.7	4.0	6.4	4.0	4.3	4.2
Odisha	4.0	4.1	3.3	4.0	7.7	4.7	3.1	4.0
Maharashtra	1.2	0.9	0.8	0.9	1.2	1.1	0.8	0.9
Punjab	0.8	0.8	0.6	0.7	0.7	0.9	0.5	0.7

Source: Authors' estimates, using data from the field survey.

The study estimates (in Table 3.12) suggest relatively small differences across social groups within and across States. There is, however, some evidence that the prevalence of gynaecological conditions

is lower among Hindu women as compared to their non-Hindu counterparts across districts. The differences in prevalence rates by household size do not appear to be significant.

**Table 3.13: Prevalence of Common Gynaecological Conditions by Income**

Districts/ States	Household Income Per Capita Quintiles					
	Q1	Q2	Q3	Q4	Q5	All
Chandauli	2.9	3	3.7	2.3	3.1	3.0
Firozabad	6.9	5.1	4.9	4.6	5.1	5.2
Bargarh	2.6	3	4.7	4.8	7.1	5.0
Dhenkanal	2.4	2.3	2.6	2.7	3.4	2.7
Kolhapur	0.4	0.5	0.5	0.8	1.4	0.7
Yavatmal	1.4	1.2	1.3	1.6	1.1	1.3
Moga	1.1	1.2	1.3	1.2	1.8	1.4
Hoshiarpur	0.0	0.1	0.4	0.7	0.5	0.4
Uttar Pradesh	4.0	4.1	4.5	4.0	4.7	4.2
Odisha	2.5	2.7	3.9	4.0	5.8	4.0
Maharashtra	0.9	0.9	0.8	1.1	1.3	0.9
Punjab	0.4	0.5	0.7	0.9	0.8	0.7
All	2.0	1.9	2.3	2.2	2.8	2.2

Source: Authors' estimates, using data from the field survey.

Table 3.13 reports listing survey-based gynaecological prevalence estimates for women ranked by household per capita income quintiles. These estimates suggest that prevalence rates are increasing in income quintiles, with the lowest income quintile indicating the lowest prevalence rate and the highest income quintile indicating the highest prevalence rate.

### 3.5 Socio-economic Correlates of ARI, Chronic Breathlessness and

### Gynecological Conditions: Findings from Multivariate Analyses

In this sub-section, the study explores the association between indicators of the three health conditions and a range of socio-economic, demographic, and locational correlates for which information was collected in the listing survey, using multivariate logistic regression analyses. The estimates from these analyses are summarised in Table 3.14, which reports the relevant odd ratios for the weighted and un-weighted regression models.

**Table 3.14: Socio-economic, Demographic and Locational Correlates of ARI, Chronic Breathlessness among Adults and Common Gynaecological Conditions: Results from a Multivariate Analysis**

	Odd Ratios are Reported					
	ARI		Chronic Breathlessness_		Gynaecological Conditions	
	Weighted	Un-weighted	Weighted	Un-weighted	Weighted	Un-weighted
Location (Reference Group: Rural)						
Urban	0.958	0.907	0.866	0.862	0.923	0.920
	(0.011)	(0.054)	(0.004)	(0.034)	(0.005)	(0.036)
Caste (Reference Group) SC/ST						
OBCs	0.892	0.853	1.093	1.077	0.853	0.915
	(0.008)	(0.045)	(0.004)	(0.04)	(0.004)	(0.034)
General	0.828	0.823	1.251	1.260	0.884	0.913
	(0.011)	(0.068)	(0.005)	(0.063)	(0.006)	(0.047)

(Contd.)

Table 3.14: (Contd.)

	Odd Ratios are Reported					
	ARI		Chronic Breathlessness		Gynaecological Conditions	
	Weighted	Un-weighted	Weighted	Un-weighted	Weighted	Un-weighted
Reference for Income Group (Quintile 1)						
Quintile 2	1.284 (0.015)	1.165 (0.081)	0.827 (0.003)	0.717 (0.032)	1.063 (0.007)	1.083 (0.053)
Quintile 3	1.304 (0.017)	1.133 (0.09)	0.918 (0.004)	0.842 (0.042)	1.124 (0.008)	1.162 (0.063)
Quintile 4	1.414 (0.023)	1.425 (0.14)	1.057 (0.006)	0.971 (0.06)	1.454 (0.013)	1.353 (0.089)
Quintile 5	1.383 (0.028)	1.270 (0.165)	1.062 (0.007)	0.853 (0.067)	1.556 (0.016)	1.340 (0.11)
Household Size (Reference Group HH Size < 5)						
HH Size (>=5)	0.588 (0.005)	0.591 (0.031)	1.346 (0.005)	1.271 (0.049)	1.159 (0.006)	1.036 (0.04)
District (Reference Group: Chandauli)						
Firozabad	1.176 (0.013)	0.995 (0.071)	1.283 (0.006)	1.215 (0.066)	1.520 (0.01)	1.424 (0.075)
Bargarh	1.170 (0.015)	1.102 (0.081)	1.320 (0.007)	1.416 (0.077)	1.308 (0.01)	1.406 (0.074)
Dhenkanal	1.610 (0.021)	1.380 (0.1)	2.660 (0.013)	2.380 (0.122)	0.721 (0.007)	0.977 (0.058)
Kolhapur	0.450 (0.007)	0.304 (0.041)	0.414 (0.002)	0.481 (0.034)	0.197 (0.002)	0.241 (0.021)
Yavatmal	0.282 (0.006)	0.267 (0.037)	0.473 (0.003)	0.624 (0.042)	0.359 (0.003)	0.419 (0.031)
Moga	0.077 (0.003)	0.093 (0.016)	0.102 (0.002)	0.141 (0.016)	0.329 (0.004)	0.469 (0.033)
Hoshiarpur	1.000 (omitted)	0.004 (0.004)	0.072 (0.001)	0.087 (0.013)	0.094 (0.001)	0.135 (0.016)
_No. of Children/ Adults/ Women**	1.275 (0.006)	1.259 (0.046)	1.143 (0.001)	1.272 (0.012)	1.063 (0.002)	1.272 (0.026)
Constant	0.113 (0.002)	0.140 (0.017)	0.020 (0)	0.013 (0.001)	0.043 (0)	0.027 (0.002)
N	21,086	21,086	64,296	64,296	63,866	63,866
Pseudo R2	0.0176	0.0424	0.0148	0.0145	0.056	0.0129

Source: Authors' estimates, using data from the field survey.

Note: Standard errors are reported in parentheses below coefficient estimates. \*\*with respect to children, adults, and women.

In general, the estimates from the multivariate analyses reflect the patterns that were observed from the simple cross-tabulations. For example, even after controlling for other covariates, the odds ratios indicate that ARI is less prevalent among households of larger size, relative to their smaller-sized counterparts; and are increasing in household size for Chronic Breathlessness and common gynaecological conditions. The results also suggest

that the likelihood of ARI and gynecological conditions of women being reported increases with income. Compared to the households belonging to SC households, those belonging to the General and OBC categories show slightly lower chances of ARI and gynaecological problems, whereas in the case of respiratory problems, it is vice versa. Finally, the odds of finding any of these three conditions are lower in urban areas as compared to rural areas.

## Appendix Table

**Appendix 3.1: MPCCI, Average HH Income, Number of Households, Household Size, Average Number of Children and Prevalence of ARI among Children**

Income Quintiles	Indicators	SC/ST	OBC	General	Total
Quintile 1	MPCI <sup>1</sup>	725	783	907	781
	Average HH Income <sup>2</sup>	4798	6100	6621	5640
	No of HHs <sup>3</sup>	2859	2376	938	6173
	HH Size <sup>4</sup>	6.8	8.1	7.4	7.5
	No. of Children <sup>5</sup>	1.9	2.0	1.8	1.9
	Prevalence Rate <sup>6</sup>	3.4	3.3	2.7	3.2
Quintile 2	MPCI	1329	1299	1479	1342
	Average HH Income	8712	9253	10676	9311
	No of HHs	2290	2707	881	5878
	HH Size	6.6	7.3	7.4	7.1
	No. of Children	1.8	1.7	1.8	1.8
	Prevalence Rate	3.8	4.0	2.9	3.8
Quintile 3	MPCI	1917	1848	2096	1926
	Average HH Income	10747	11685	12564	11550
	No of HHs	2661	3227	1399	7287
	HH Size	5.7	6.5	6.1	6.1
	No. of Children	1.8	1.7	1.6	1.7
	Prevalence Rate	3.0	3.9	1.5	3.1
Quintile 4	MPCI	2428	2355	2653	2431
	Average HH Income	11173	12359	13997	12278
	No of HHs	2225	3447	1141	6813
	HH Size	4.7	5.3	5.4	5.1
	No. of Children	1.5	1.6	1.6	1.6
	Prevalence Rate	5.6	5.4	2.9	5.0
Quintile 5 (Richest)	MPCI	3881	3996	4751	4184
	Average HH Income	15390	17508	21279	18105
	No of HHs	1653	3868	1931	7452
	HH Size	4.0	4.4	4.6	4.4
	No. of Children	1.3	1.4	1.4	1.4
	Prevalence Rate	8.1	6.4	3.0	5.8
All	MPCI	1776	2056	2498	2052
	Average HH Income	9265	11399	13441	11097
	No of HHs	11688	15625	6290	33603
	HH Size	5.8	6.3	6.1	6.1
	No. of Children	1.7	1.7	1.6	1.7
	Prevalence Rate	4.3	4.6	2.5	4.1

*Source:* Authors' estimates, using data from the field survey.

*Notes:*

<sup>1</sup> MPCCI= Monthly Per Capita Income in Rs

<sup>2</sup> Average household income is the average income of households in that particular category.

<sup>3</sup> Number of households refers to the total number of households in a particular category.

<sup>4</sup> Household size refers to the average size of the household.

<sup>5</sup> Number of children refers to the average number of children per household in a category.

<sup>6</sup> Prevalence rate refers to the prevalence of ARI in a particular category.



# CHRONIC BREATHLESSNESS: HEALTHCARE USE PATHWAYS, OUT-OF-POCKET SPENDING AND SERVICE QUALITY

As noted in the introduction to this report, analyses of treatment-seeking behaviour of individuals, including the full treatment pathway—the time taken to seek care in the first instance, the characteristics of providers consulted during the first and in subsequent visits, the timing of multiple visits, and the point at which they exit treatment—can offer important insights into patient (and household) preferences about health and healthcare, and the drivers of their decision-making about healthcare options. For example, patient reliance on traditional healers, unqualified providers, and home remedies can result from prevailing belief systems, lack of confidence in other options for medical care, financial constraints, and societal barriers such as stigma and religious prohibitions (Mohan et al. 2008; Das & Mohpal 2016; Sinha et al. 2017). To the extent that patient choices are influenced by available alternatives for healthcare provision and their cost, an analysis of treatment pathways can shed light on key health system gaps with regard to the location and timing of services, quality of care, or affordability. Thus, treatment pathways can also be good indicators of the functioning of a health system, with better functioning health systems characterised by shorter pathways and superior health outcomes.

In this chapter, the characteristics of *treatment pathways of individuals with chronic breathlessness* are assessed via:

- i. The time between the first appearance of symptoms and the time when the treatment was sought;
- ii. The number and types of healthcare providers visited;
- iii. The order in which healthcare providers were consulted, including the number of times patients switched between healthcare providers;
- iv. Total visits to health care providers; and
- v. The point of exit from treatment-seeking.

This chapter also reports findings on the households' *out-of-pocket (OOP) spending* on healthcare for individuals with a chronic breathlessness, including expenditures incurred on the full treatment pathway for the most recent acute episode related to the condition. In this, the study differs from most previous work on household spending on healthcare in India, which has tended to focus on expenditures on single (or at most two) treatment visits. Examining healthcare spending by households along the treatment pathway is also more appropriate for assessing the economic impact of treatment (on households) of long-running (or chronic) health conditions.<sup>5</sup> By highlighting the aggregate OOP expenditures along the treatment pathway, the estimates we obtain are more likely to be more representative of the economic burden of the chronic respiratory condition among the households in the eight districts. The data gathered by the survey included household expenditure for medicines, diagnostic tests, consultation fees, and hospitalisation charges.

The quality of health care services available can play an important role in influencing healthcare-seeking behaviour including along the treatment pathways. In this study, the quality of health care was assessed from the standpoint of the respondents and thus indicates patients' perceptions about the quality of health care services received by them.

This chapter is organised into five sections. Section 4.1 presents a description of the approach used to sample people with chronic breathlessness and the characteristics of households to which they belonged. Section 4.2 reports the demographic and socio-economic characteristics of persons with chronic breathlessness. Section 4.3 presents findings on their treatment-seeking behaviour, including elements of treatment 'pathways' of the respondent for the most recent acute episode associated with the condition, in the year preceding the survey. Section 4.4 discusses households' OOP spending on healthcare. Section

<sup>5</sup>In India, as in many other low- and middle-income countries, OOP expenditure on health care is a major cause of households becoming impoverished (Pandey et al. 2018).

4.5 provides results from analyses of the survey data on the factors associated with respondent choice of healthcare services.

## 4.1 Sampling and Household Characteristics

The findings reported in this chapter are based on a survey of 2,636 individuals from an equivalent number of households sampled from eight districts and are representative at the district level in Uttar Pradesh, Odisha, Maharashtra, and Punjab. The sample of households surveyed included at least one adult with chronic breathlessness during the year preceding the survey with the focus of the survey questions on health care use and expenditure being on the individual who reported chronic breathlessness.

The sampled households are spread across 766 villages and 251 urban blocks in the eight districts. Of the full sample, 81 per cent were from rural areas (ranging from 62 per cent in Hoshiarpur to 85 per cent in Dhenkanal) and 19 per cent were from urban areas (ranging from 15 per cent in Dhenkanal to 38 per cent in Hoshiarpur). The breakdown of sample households by district is reported in Table 4.1.

**Table 4.1: District-wise Number of Selected Households by District and Place of Residence**

Districts	Rural	Urban	All
Chandauli	338	64	402
Firozabad	289	115	404
Bargarh	406	104	510
Dhenkanal	494	88	582
Kolhapur	260	54	314
Yavatmal	263	47	310
Moga	52	17	69
Hoshiarpur	28	17	45
<b>All</b>	<b>2,130</b>	<b>506</b>	<b>2,636</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Further characterisation of the sample by social group, religion, and household size is provided in Table 4.2. Households belonging to OBCs and the General category comprised 71.4 per cent of the sample, with the remainder (28.6 per cent) being from the SC/ST communities. The share of SC/ST households was the highest in Moga and Yavatmal, with smaller shares in Kolhapur and Firozabad.

**Table 4.2: Distribution of Selected Households by Socio-economic Characteristics across Districts**

Background Characteristics	Uttar Pradesh		Odisha		Maharashtra		Punjab		All
	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	
<i>Social Groups</i>									
SC/ST	43.3	20.5	35.4	25.7	11.9	43.4	67.2	38.5	28.6
OBC/General	56.7	79.5	64.6	74.3	88.1	56.6	32.8	61.5	71.4
<i>Religion</i>									
Hindu	95.2	88.6	99.6	99.8	93.5	76.6	14.9	75.3	92.4
Others	4.8	11.4	0.4	0.2	6.5	23.4	85.1	24.8	7.6
<i>Household size</i>									
Up to 5 members	45.6	43.6	79.9	73.6	62.6	80.7	84.9	68.2	63.0
> 5 members	54.4	56.4	20.1	26.4	37.4	19.3	15.1	31.8	37.0

Source: NCAER Nossal 4IS Health Survey, 2019-2022.

Overall, across all eight districts, a large majority of the sample households were Hindus, but the shares by district varied considerably (from 14.9 per cent in Moga to 99.8 per cent in Dhenkanal), followed by Muslims and other religious groups (ranging from 0.2 per cent in Dhenkanal to 85.1 per cent in Moga).

There were large cross-district variations in household size in the sampled households in Uttar Pradesh, Odisha, Maharashtra, and Punjab, with the share of households consisting of five or more members ranging from 15.1 per cent in Moga in Punjab, to 56 per cent in Firozabad in Uttar Pradesh.

For the full sample, slightly more than one-third of households (37 per cent) consisted of five or more members.

Table 4.2 also reports the breakdown of the sample districts by the share of population belonging to different (per capita) expenditure quartiles. Note that these economic rankings for households were constructed for the full sample, not individual district, or State. The high share of households belonging to the 4<sup>th</sup> quartile in the two Punjab districts confirms that Punjab is economically the best off among the States included in our sample. On the other hand, the high shares of the households belonging to the bottom expenditure quartiles in Uttar Pradesh and Odisha districts that they are indeed the poorest among the 4 States for which data was gathered in this report.

#### 4.1.1 Survey Respondents

The household questionnaire was administered to the individual who was the most knowledgeable about the person reporting chronic breathlessness, the treatment obtained for that person during the one year preceding the survey, and other household-specific information such as income and expenditure (additional details in Chapter 2). In almost three-fifths (60.5 per cent) of the sample households, the person with chronic breathlessness was also the respondent. In other cases, the respondent was either

the parent, spouse, or an adult child of the person with the condition. The respondent share of people with chronic breathlessness was roughly the same across the four districts in Odisha and Uttar Pradesh, while this share was nearly seventy per cent in Maharashtra (69.1 per cent) and more than three-fourth in Punjab (77.2 per cent).

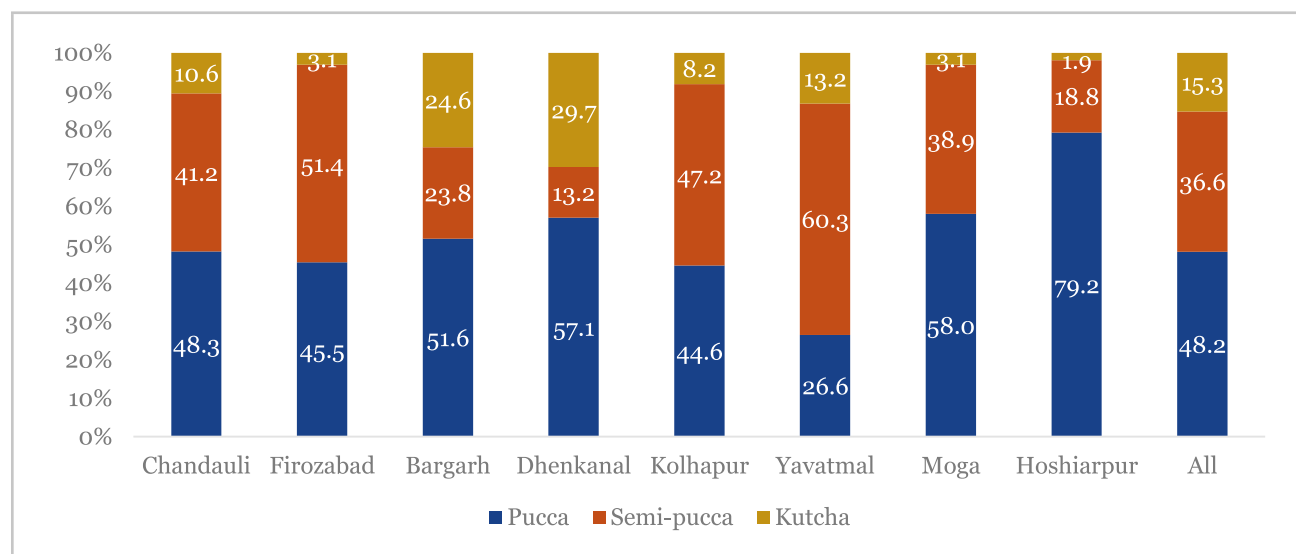
## 4.2 Housing and Individual Characteristics

This section addresses two themes. First, it provides a description of the households' standard of living as measured by home ownership status, the type of house in which they lived, access to electricity, sanitation, access to drinking water and purification, the type of cooking fuel used, and ownership of consumer durables. Second, it reports the socio-economic and demographic characteristics of the person with chronic breathlessness.

### 4.2.1 Housing Characteristics

**Ownership and Type of House:** In the sample, the vast majority (97.9 per cent) of the households reported living in their own house. Regarding the type of house lived in<sup>6</sup> (e.g., *pucca*, *semi-pucca*, and *kutcha*), the share of households owning *kutcha* houses in the Odisha sample was higher than in the other States, whereas this share was the lowest in Punjab (Figure 4.1).

**Figure 4.1: Percentage Distribution of Households by Housing Characteristics and District**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

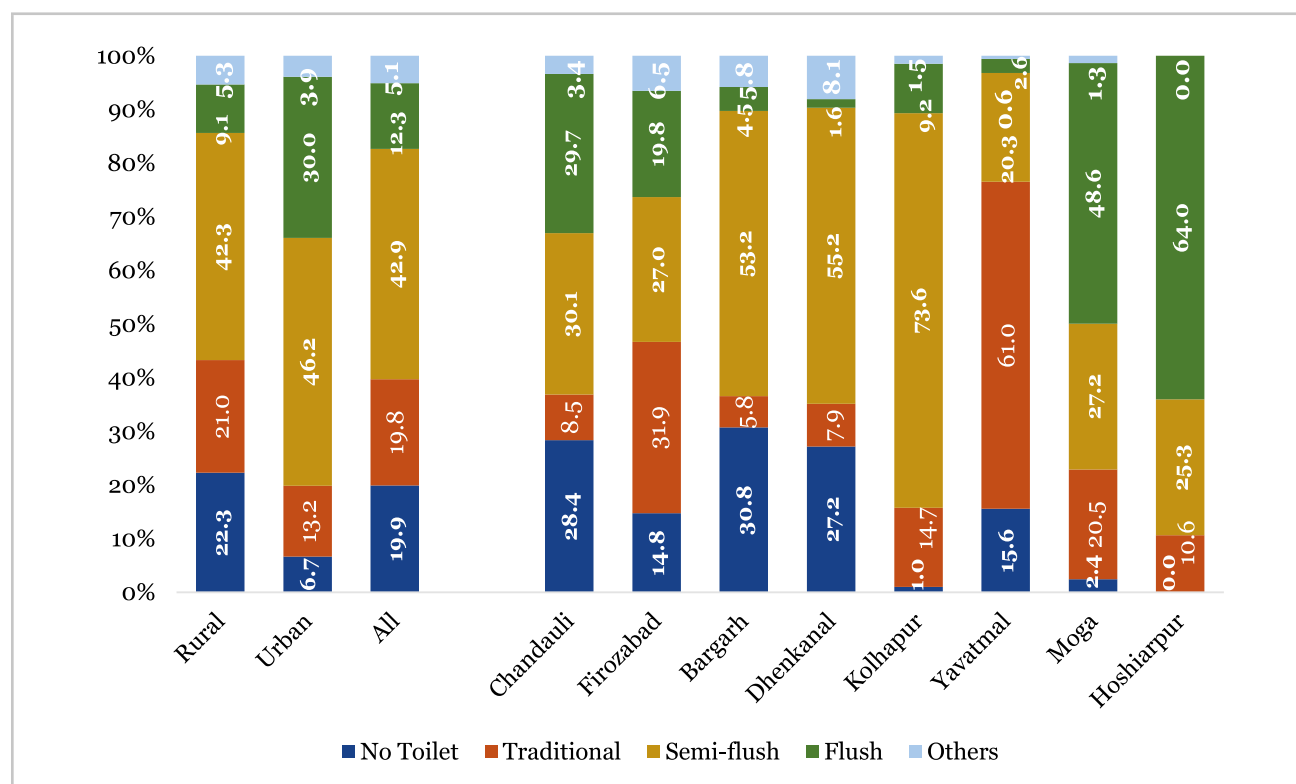
<sup>6</sup>Based on the construction material used in the walls and roofs of the houses.

**Access to electricity:** In the survey, 97 per cent of the households reported having access to electricity, albeit with a small rural-urban divide (96.6 per cent in rural households and 98.9 per cent in urban households, respectively). There is not much inter-district variation either, with the smallest share of households with access to electricity being 93 per cent in Chandauli, and the highest share of households with electricity being in Kolhapur, Yavatmal, Moga and Hoshiarpur.

**Access to sanitation facilities:** About one-fifth of the households did not have access to a toilet and were practising open defecation. Lack of access to

toilets was higher in rural than in urban areas, 22.3 per cent versus 6.7 per cent, respectively. There was some inter-district variation as well. Figure 4.2 shows the distribution of households by type of toilet facilities in each district. Nearly four-fifths of the households in Kolhapur possessed either a semi-flush or flushable toilet (82.8 per cent), whereas less than half of the respondents in Firozabad district (46.8 per cent) reported access to semi-flush or a flushable toilet, followed by Odisha where slightly more than half of the households reported access to a semi-flush toilet. In Punjab, the share of respondents reporting access to a semi-flush or flushable toilet ranged from 75.8 per cent in Moga to 89.3 per cent in Hoshiarpur.

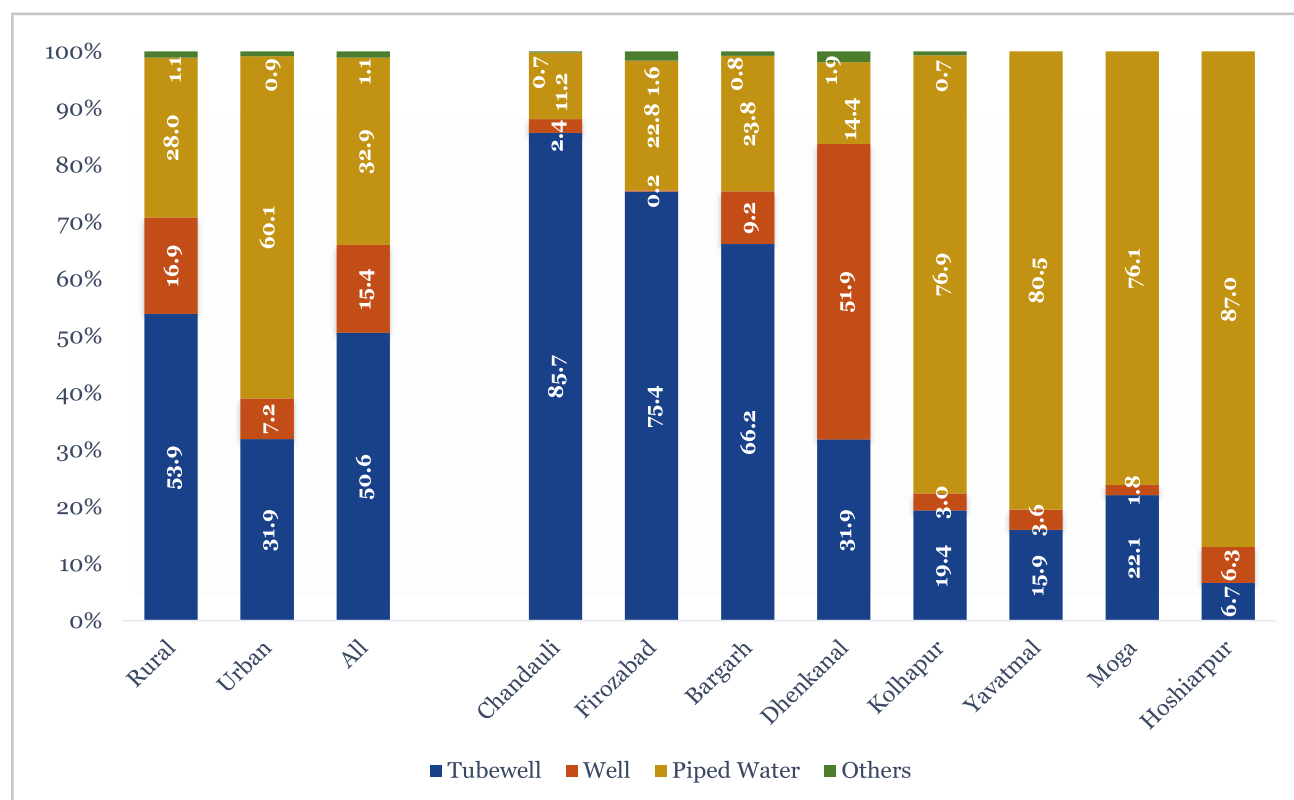
**Figure 4.2: Percentage Distribution of Households by Type of Toilet Facilities, District, and Place of Residence**



**Drinking water source and treatment:** Two types of information related to access to drinking water were collected in this study: (i) Sources of drinking water for the household; and (ii) the treatment process, that is, the actions households undertake to make water safe for drinking. Not surprisingly, access of rural respondents to piped water was lower (28.1 per cent) as compared to their urban counterparts (60.1 per cent). Tubewells, hand pumps, and other

types of wells were the most common sources of drinking water in rural areas, and among respondents in Uttar Pradesh and Odisha. In our sample, more than 70 per cent of respondents reported not treating their water prior to drinking, and this practice was more prevalent in the households in Uttar Pradesh and Odisha as compared to those in Punjab and Maharashtra.

**Figure 4.3: District-wise Percentage Distribution of Households, by Source of Drinking Water and Place of Residence**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Hitherto, the access to basic services has been considered individually. With an index that captures access to all three—electricity, sanitation, and drinking water—being used, only one-fourth of the rural households reported access to all three, whereas in urban areas, more than 80 per cent of the households reported access to all the three facilities inside the household. (Table 4.3).

**Table 4.3: Proportion of Households Having Three Basic Facilities by Districts and Place of Residence**

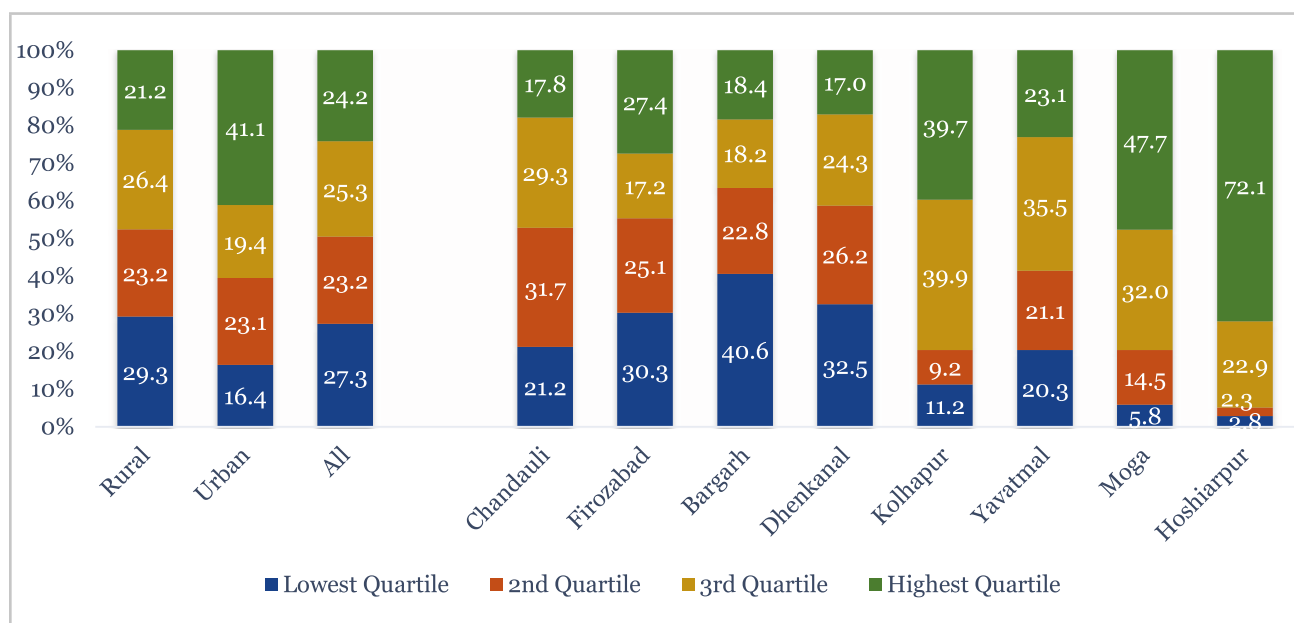
Districts	Rural	Urban	All
Chandauli	5.8	51.3	11.1
Firozabad	5.6	54.4	20.5
Bargarh	13.6	42.2	16.7
Dhenkanal	7.3	53.2	12.1
Kolhapur	75.7	96.9	76.4
Yavatmal	69.8	81.6	70.3
Moga	70.2	81.0	73.7
Hoshiarpur	87.4	86.9	87.0
All	24.7	57.1	29.6

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Wealth index:** The survey also gathered information on household ownership of consumer durables, in addition to housing amenities, to capture additional details about households' standard of living. Figure 4.4 reports the distribution of sampled households by wealth quartiles<sup>7</sup> and by district and rural-urban location. Not surprisingly, the wealthiest households are concentrated in urban areas, with more than 60 per cent of the urban households belonging to the top two wealth quartiles. In comparison, more than half of the rural households (52.2 per cent) belonged to the two poorest wealth quartiles. Among the districts, Hoshiarpur had the highest share of households (72.1 per cent) in the top wealth quartile. Bargarh had the highest share of households in the bottom wealth quartile (40.6 per cent), and indeed the Odisha households accounted for a larger share of the bottom quartile than households in Uttar Pradesh, Maharashtra, and Punjab.

<sup>7</sup>Households have been given scores based on the number and kinds of consumer goods they own, ranging from a television to a bicycle or car, and housing characteristics such as toilet facilities. These scores were derived using principal component analysis. Overall, wealth quartiles are compiled by assigning the household score, ranking each household by its score, and then dividing the distribution into four equal categories, each comprising 25 per cent of the households.

**Figure 4.4: Share of Households across Wealth Quartiles, by Districts and Place of Residence**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

#### 4.2.2 Profile of Persons with Chronic Breathlessness

Table 4.4 reports information on the demographic and socio-economic profiles of the persons in the surveyed household who reported chronic breathlessness among adults (aged 18 years and above). In our full sample, almost two-fifths of the individuals were aged 60 years and above, with the share of individuals aged 46-60 years and 18-45 years being slightly lower. However, there were variations in the age distribution across districts. The share of people aged 18-45 years was considerably lower in Kolhapur and Firozabad than in the other districts

and compared to the overall share of this age group in the sample, of 26 per cent. Men with chronic breathlessness comprised 55.4 per cent of the sample. However, there was considerable inter-district variation in the share of women reporting chronic breathlessness in the sample. Of the full sample of people with breathlessness, about 78.9 per cent reported being married, and three-fifths reported being educated at the matriculation level or higher. Around three-fifths (58.4 per cent) of the persons reporting chronic breathlessness were not working, ranging from 27.2 per cent in Yavatmal district in Maharashtra to 72.5 per cent in Moga district in Punjab.

**Table 4.4: Profile of Ill Persons by Socio-economic Characteristics across Districts (% Distribution)**

Background Characteristics	Uttar Pradesh		Odisha		Maharashtra		Punjab		All
	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	
<b>Age Categories (Years)</b>									
Up to 45	31.6	19.2	32.2	32.4	14.2	24.3	35.0	29.8	26.0
46-60	29.4	39.7	30.2	31.8	28.6	37.9	40.8	41.8	33.6
60 and above	39.0	41.2	37.6	35.9	57.2	37.8	24.2	28.4	40.3
<b>Gender</b>									
Male	52.7	63.3	56.6	51.4	40.7	66.5	42.8	56.5	55.4
Female	47.3	36.7	43.4	48.6	59.4	33.5	57.3	43.6	44.6

(Contd.)

Table 4.4: (Contd.)

Background Characteristics	Uttar Pradesh		Odisha		Maharashtra		Punjab		All
	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	
<b>Marital Status</b>									
Married	83.8	85.3	75.9	77.5	64.2	80.8	79.5	88.2	78.9
Unmarried/Divorced/ Separated/Widowed	16.3	14.7	24.2	22.5	35.8	19.2	20.5	11.8	21.1
<b>Level of Education</b>									
Illiterate	45.4	47.2	28.6	29.5	55.5	25.9	54.5	25.0	38.6
Up to matriculation level	40.1	43.5	62.7	62.1	36.9	65.2	44.1	47.3	51.8
Higher secondary and above	14.5	9.3	8.8	8.5	7.6	9.0	1.4	27.8	9.6
<b>Occupation Categories</b>									
Worker	35.3	39.0	42.3	35.9	39.3	72.8	27.5	51.8	41.7
Non-worker	64.7	61.0	57.7	64.1	60.7	27.2	72.5	48.2	58.4

Source: NCAER-NOSSAL 4IS Health Survey 2019-22.

### 4.3 Healthcare Pathways

The analysis in this section explores health-seeking responses by persons with chronic breathlessness in response to an acute episode during the year preceding the survey, and focused on the following questions:

- Following the initial recognition of the acute episode, was any health provider consulted?
- What was the first source of treatment?
- What was the length of time from the identification of the health problem to the choice of first treatment?
- How many providers were consulted during the episode?
- What was the sequencing of providers consulted during the episode (namely, who was consulted first, who was consulted second, and so forth)?
- How (or why) did the patient exit treatment? What factors affected this choice?

#### 4.3.1 Number of Visits and Distribution of Patients

Figures 4.5 and 4.6 provide an overview of the status of treatment starting from the point of “first sought treatment” to “exited treatment”.

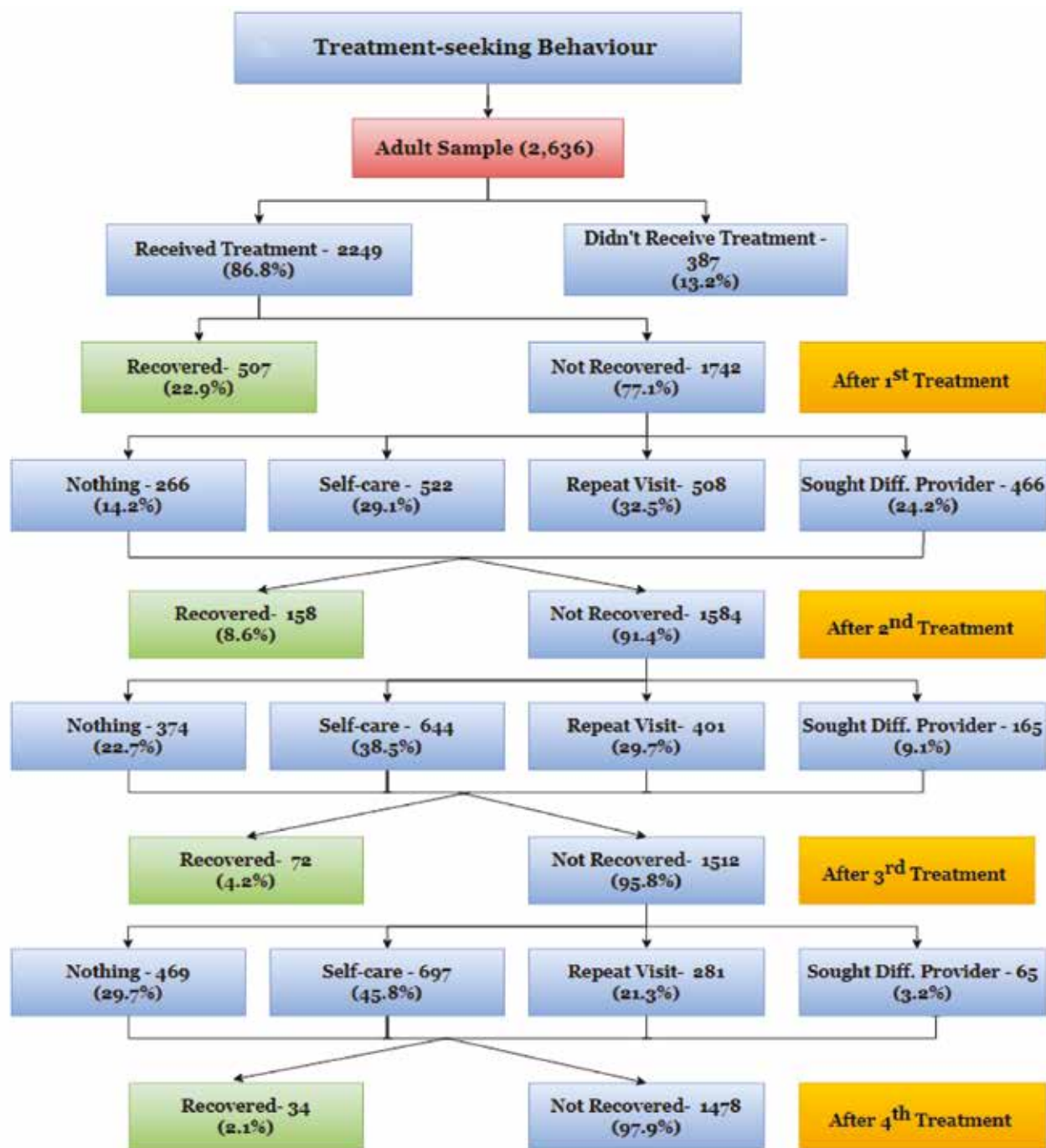
It was observed that about 87 per cent of the adults with chronic breathlessness sought treatment from a healthcare provider when experiencing an acute episode during the year preceding the survey (Figure 4.5). Of the remainder (13 per cent) that did not seek treatment from a healthcare provider, slightly more than half reported self-care/self-medication as the major reason for not seeking treatment from external health care providers. Roughly about half of those who did not report treatment stated, ‘waiting for recovery’ and ‘lack of affordability’ as the reasons for not seeking care.

Following their first visit (86.8 per cent who did seek treatment) to a health care provider, about two-thirds of the respondents stated that they had not recovered from their condition. Among those who did not recover from the first visit and decided to visit a healthcare provider a second time, about one-third visited the same healthcare provider and about one-quarter (24.2 per cent) sought treatment from a different healthcare provider, with a mean gap of nearly 22 days, following their first visit. The remainder (14.2 per cent either did nothing (no intervention) or resorted to self-care/self-medication (29.1 per cent). About 91.5 per cent of those visiting a healthcare provider a second time reported not recovering from their illness. In this sub-group, about two-fifths made a third visit (29.7 per cent made a repeat visit to their previous provider and 9.1 per cent sought a different provider). Those making a fourth

visit constituted a sub-set of individuals who did not recover after their third visit (95.8 per cent). Of this sub-set, about one-fourth made a fourth visit (21.3 per cent made a repeat visit and 3.2 per cent sought a different provider). Overall, only 29.4 per cent of

the respondents reported recovering from the acute episode, irrespective of the number of visits (Figure 4.6); and two-thirds of the respondents who visited at least one healthcare provider did not report having recovered (57.4 per cent out of 86.8 per cent).

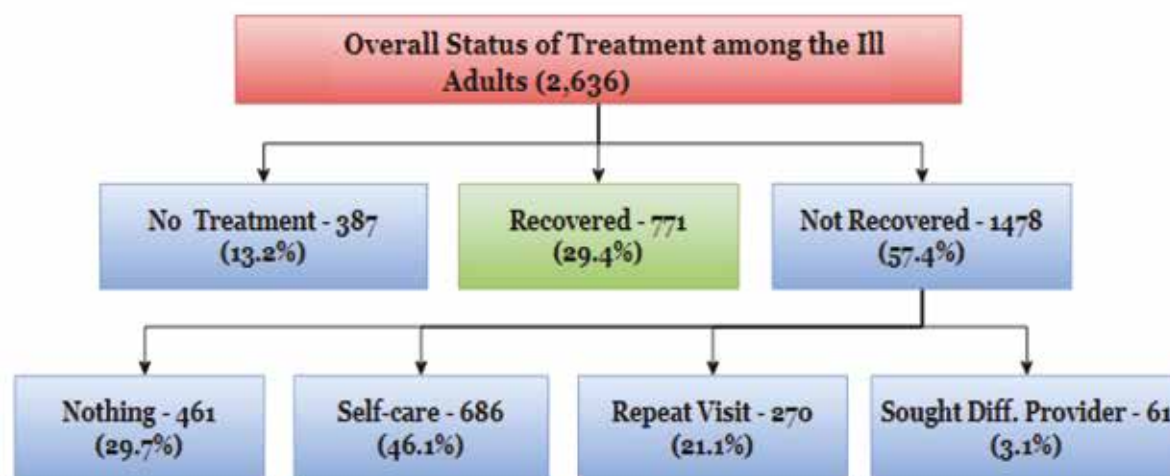
Figure 4.5 : Treatment-seeking Behaviour



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.



**Figure 4.6: Overall Status of Treatment among the Ill Adults (2,636)**

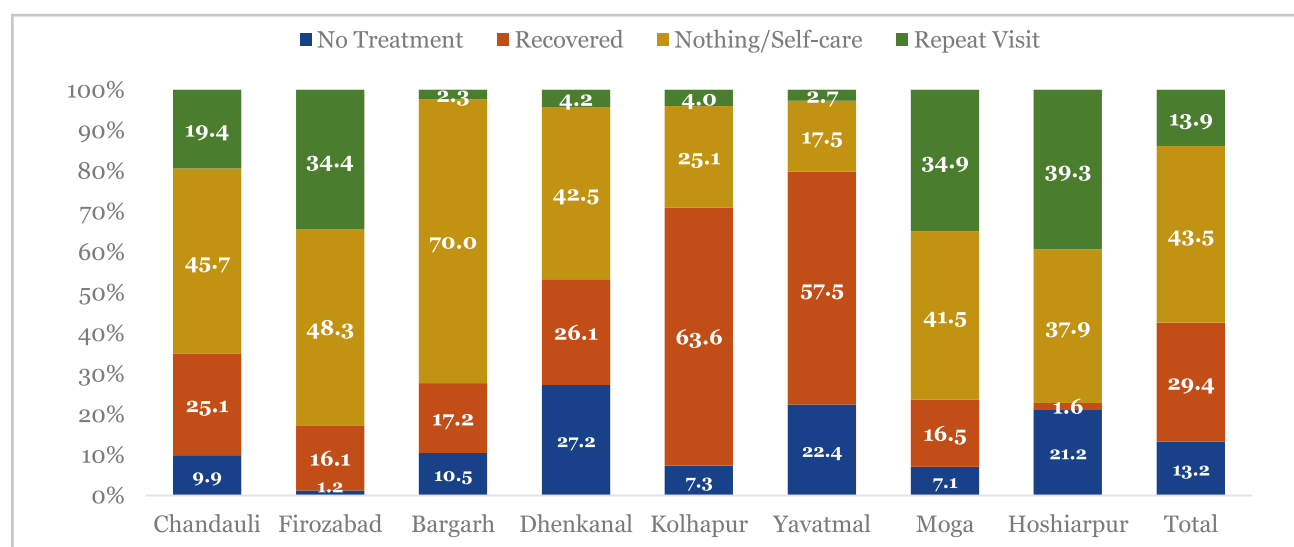


Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

One-fourth of the persons reporting an acute episode associated with chronic breathlessness did not seek treatment in Dhenkanal, higher than in the other seven districts. In contrast, in Firozabad,

almost all individuals reporting an acute episode sought treatment (Figure 4.7). The recovery rate was higher in the Kolhapur and Yavatmal districts of Maharashtra as compared to the other districts.

**Figure 4.7: Status of Treatment after All Four Visits by District**



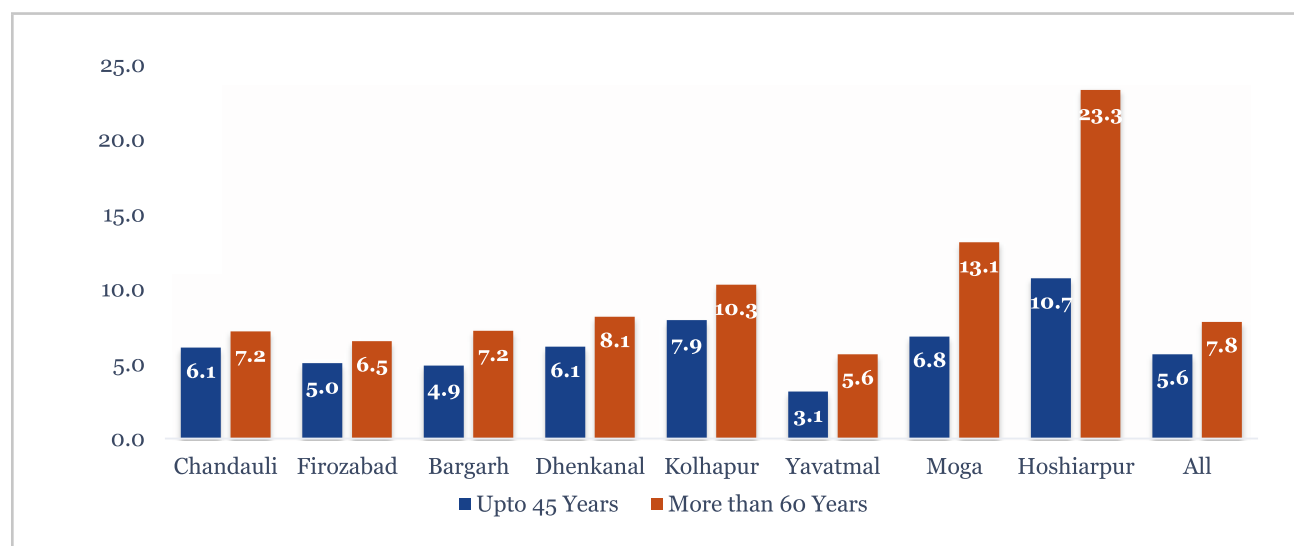
Source: NCAER-NSS 4IS Survey, 2019-22.

The status of treatment after the fourth visit by the level of residence, gender, and age categories, as given in Appendix 4.1, indicates that the tendency to not seek treatment and the recovery rate were higher in rural areas whereas the incidence of self-care was higher in urban areas. A higher number of male respondents received treatment as compared to female respondents. The recovery rate was higher among persons aged 60 years and older.

### 4.3.2 Length of Time Spent with Chronic Respiratory Condition

Figure 4.8 reveals, not surprisingly, that older individuals in the sample have a longer history of the condition. The duration of the condition in two districts of Punjab was also longer than in the other districts.

**Figure 4.8: District-wise Average Duration of Chronic Breathlessness (in Years), by Age Categories**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix 4.2 reports the duration of chronic breathlessness across districts, including by place of residence and gender.

### 4.3.3 Reasons for Not Seeking Treatment

Recall that 13 per cent of the patients opted not to seek care following an acute episode associated with chronic breathlessness in the year preceding the survey. Table 4.5 reports the share of patients across different categories by reasons for not seeking care. The data

reveal that 56 per cent of the patients who did not seek care opted for self-care and self-medication, with another 17.8 per cent waiting for recovery on their own. Around 9 per cent of the patients reported lack of money as the main reason for not seeking care while 14.8 per cent did not regard the episode as severe enough to warrant seeking treatment. There are some variations at the district level, though the number of observations in each district is too small for the point estimates to be considered reliable.

**Table 4.5: Proportion of Adult Patients Not Seeking Treatment after a Flare-up during the Last One Year**

Districts	Wait for Auto Recovery	Not Severe Enough	Got Better	Self-care/ Medication	Not Enough Money	Other
Chandauli	29.5	28.9	8.4	20.6	10.0	2.7
Firozabad	73.8	0.0	0.0	13.7	12.5	0.0
Bargarh	4.7	14.9	0.0	70.5	9.9	0.0
Dhenkanal	8.0	5.2	0.3	75.4	11.1	0.0
Kolhapur	12.1	24.0	0.0	63.9	0.0	0.0
Yavatmal	38.6	37.8	9.7	12.9	1.0	0.0
Moga	35.3	0.0	0.0	13.6	51.1	0.0
Hoshiarpur	61.7	0.0	0.0	29.2	9.1	0.0
All	17.8	14.8	2.5	56.0	8.6	0.3

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Appendix 4.3 shows that there was not much variation in reasons for not seeking treatment by place of residence, gender, social status, occupation status, income, household size, and across age categories.

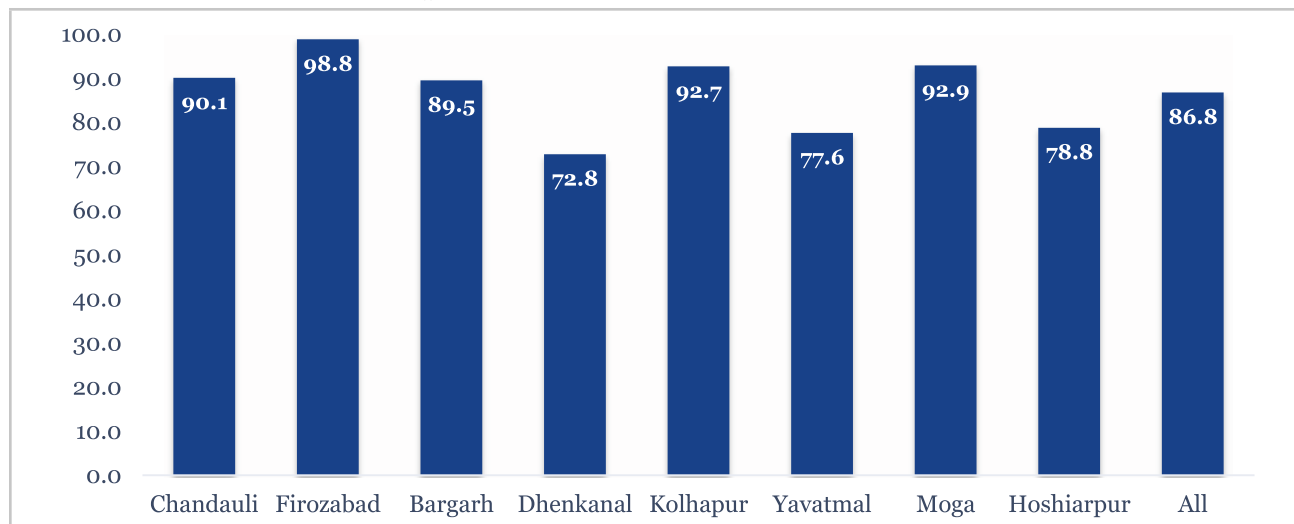
The proportion of patients citing the main reason for not seeking treatment as ‘the disease was not severe enough’, increased with the level of education.

### 4.3.4 Consultation Status after Flare-up

The shares of adults with an acute episode associated with chronic breathlessness in the last 12 months and who sought treatment from a health care provider are reported in Figure 4.9. Overall, the share of patients

seeking care in response to the episode was high (86.8 per cent), and higher in Firozabad (98.8 per cent), Moga (92.9 per cent) and Kolhapur (92.7 per cent), as compared to the other surveyed districts. Dhenkanal district had the lowest share of patients seeking treatment, at 72.8 per cent.

**Figure 4.9: Proportion of Adults Who Sought Treatment by District**

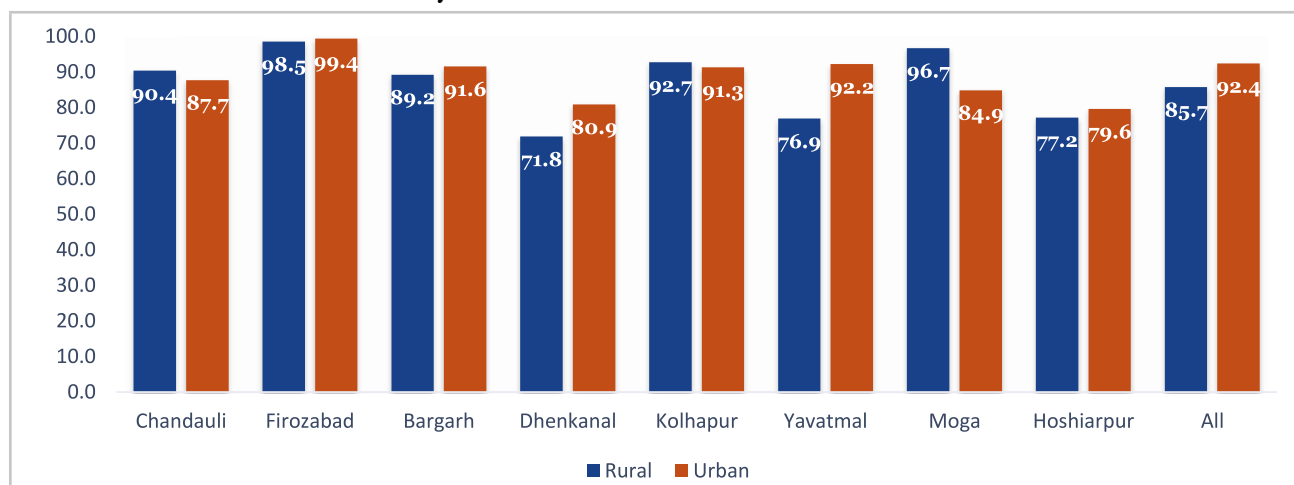


Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Figure 4.10 shows that overall, the proportion of patients seeking treatment was slightly higher in urban areas as compared to rural areas. However, there were cross-district variations. In the district of Moga in Punjab, the share of patients seeking treatment in rural areas was much larger than the share seeking treatment in urban areas. In Other districts, the share of people with chronic breathlessness seeking treatment in rural areas was either roughly equal to or less than in urban areas, – with the differential in favour of urban areas being especially large in Dhenkanal and Yavatmal.

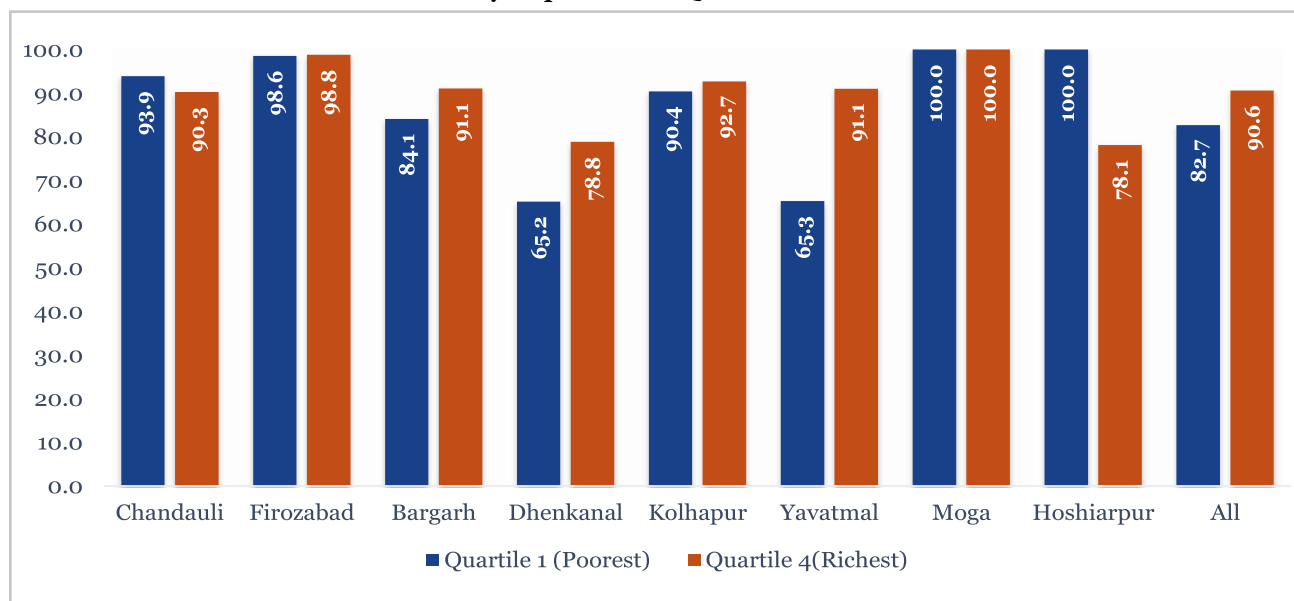
Figure 4.11 depicts the share of people choosing to seek treatment by expenditure quartile, by district. For the sample as a whole, the share of people seeking treatment was higher in the richest quartile as compared to the poorest quartile. When individual districts were considered, the share of the top quartile relative to the bottom quartile was highest in Bargarh, Dhenkanal, and Yavatmal. The only district where the share of people in the bottom quartile in rural areas was noticeably higher than in the top quartile was Hoshiarpur in Punjab.

**Figure 4.10: Proportion of Adults Reporting an Episode Who Visited a Healthcare Provider, by District and Place of Residence (%)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Figure 4.11: Proportion of Adults with a Flare-up Who Sought Treatment in the Last Year by Expenditure Quartiles (%)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

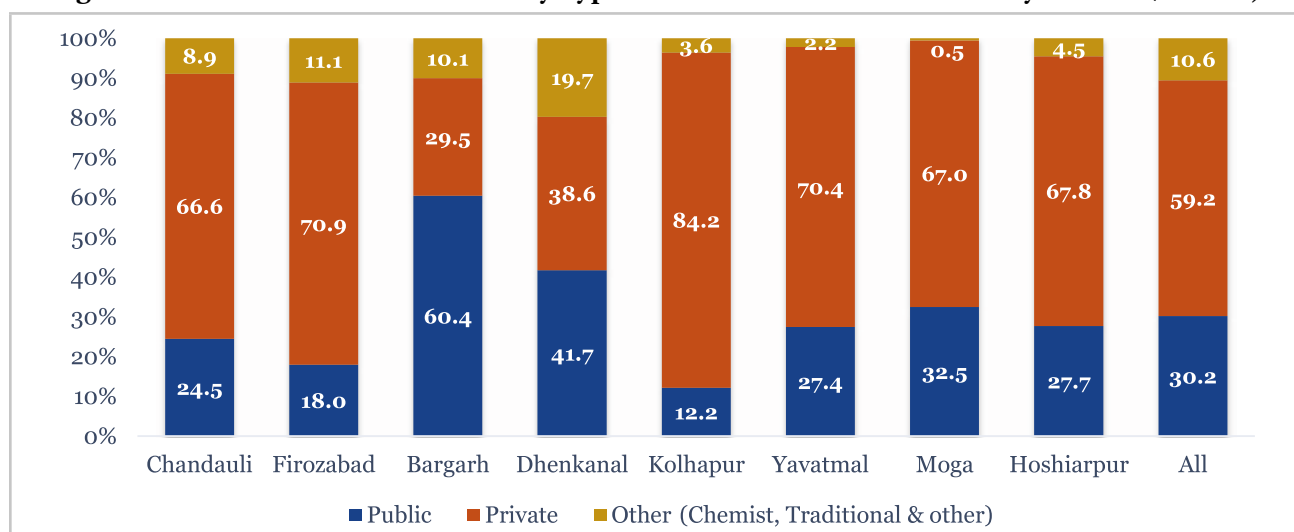
The results presented in Appendix 4.4 show that in five of the surveyed districts, namely, Bargarh, Dhenkanal, Yavatmal, Moga, and Kolhapur the share of patients seeking treatment was higher in smaller households (that is, households with five or fewer members) relative to their counterparts with more than five members. No clear patterns were observed for other socio-economic or demographic characteristics.

#### 4.3.5 Type of Service Provider at First Consultation

Figure 4.12 reports findings on the choice of the first provider when seeking care among patients with

chronic breathlessness. About 30.2 per cent of the patients seeking care first visited public sector health care providers, and another 59.2 per cent first visited health care providers in the private sector. However, there were cross-district differences. The highest share of patients with chronic breathlessness who sought care first in public sector facilities was in the two districts of Odisha. However, Dhenkanal in Odisha also stood out in terms of 20 per cent of patients with chronic breathlessness first seeking treatment from sources such as chemists, traditional healers, and others, which was almost double the share in the other districts. Except for Bargarh and Dhenkanal, a large majority of patients seeking care first visited private health care providers.

**Figure 4.12: First Source of Treatment by Type of Healthcare Service Provider by District (% Share)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

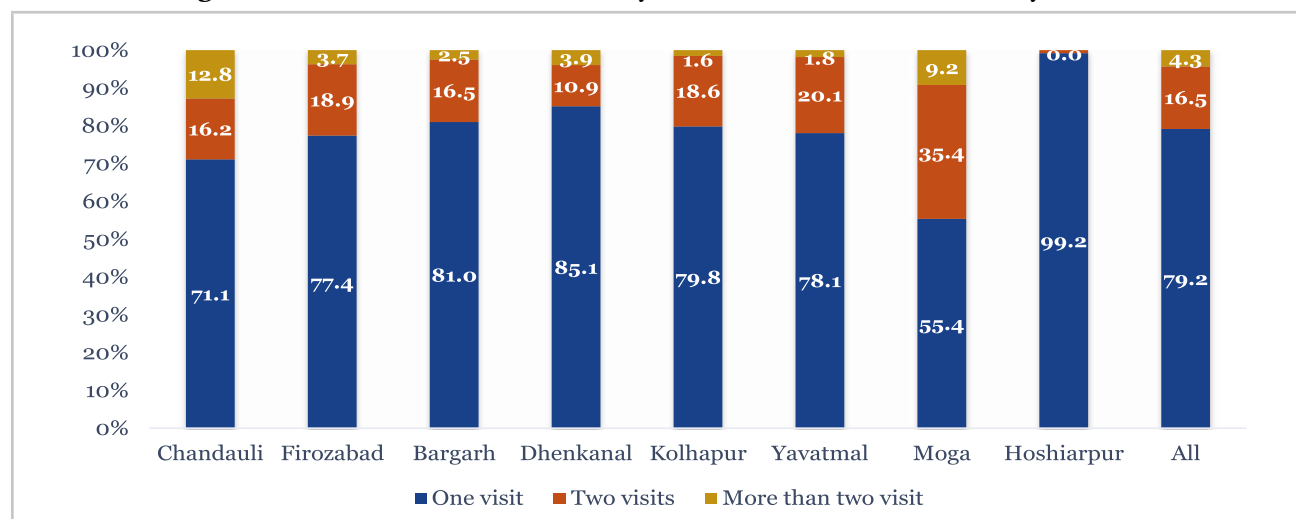
There were no major variations by rural-urban residence, gender, and across social groups (Appendix 4.5).

#### 4.3.6 Number of Providers Consulted

The distribution of patients by the number of provider visits is reported in Figure 4.13. Most

patients (79.2%) made exactly one visit, and only 4.3 per cent of the patients with chronic breathlessness visited healthcare providers more than two times. The proportion of patients visiting more than two health care providers in the last acute episode associated with chronic breathlessness was highest in Chandauli (12.8 per cent) followed by Moga (9.2 per cent) and Dhenkanal (3.9 per cent). (Figure 4.13).

**Figure 4.13: Distribution of Patients by Number of Providers Visited by District**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Appendix 4.6 provides additional information on the socio-economic and demographic correlates of the number of visits to health care providers. Typically, patients from rural areas visit a slightly higher number of providers than their urban counterparts, and patients with higher levels of educational attainment make fewer visits than relatively less educated patients. No significant differences in the number of visits by gender, occupational categories, per capita expenditure, quartiles of households, and age were observed.

Table 4.6 shows the average number of healthcare providers consulted by adults with chronic breathlessness during the year preceding the survey, by district and by socio-economic and demographic characteristics. Very few differences in the number of provider visits could be observed across socioeconomic categories. However, patients in Moga and Chandauli visited health care providers more often than patients in other districts.

**Table 4.6: Average Number of Healthcare Providers Consulted during the Last One Year for Treatment by Socio-economic and Demographic Attributes (Numbers)**

Background Characteristics	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	All
All	1.5	1.3	1.2	1.2	1.2	1.2	1.6	1.0	1.3
Place of Residence									
Rural	1.5	1.3	1.2	1.2	1.2	1.2	1.7	1.0	1.3
Urban	1.4	1.2	1.2	1.1	1.2	1.3	1.3	1.0	1.2
Gender									
Male	1.5	1.3	1.2	1.2	1.2	1.2	1.4	1.0	1.3

(Contd.)

Table 4.6: (Contd.)

Background Characteristics	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	All
Female	1.4	1.3	1.2	1.2	1.2	1.3	1.6	1.0	1.3
<b>Age Categories</b>									
Up to 45 Years	1.4	1.3	1.2	1.2	1.1	1.3	1.4	1.0	1.3
46-60 Years	1.5	1.3	1.2	1.2	1.3	1.2	1.7	1.0	1.3
More than 60 Years	1.5	1.2	1.2	1.2	1.2	1.2	1.5	1.0	1.2
<b>Monthly per Capita Expenditure Quartiles</b>									
Quartile 1 (Poorest)	1.4	1.3	1.1	1.1	1.3	1.2	1.0	1.0	1.3
Quartile 2	1.5	1.3	1.2	1.2	1.3	1.2	1.6	1.0	1.3
Quartile 3	1.5	1.3	1.2	1.3	1.1	1.1	1.5	1.0	1.3
Quartile 4 (Richest)	1.5	1.2	1.3	1.3	1.2	1.5	1.6	1.0	1.3

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

### 4.3.7 Sequencing of Providers

As seen earlier, more than half the patients (59.2 per cent) sought care from private health care providers during their first visit (Appendix 4.7). When tracked for their subsequent visits, a majority of the patients continued to visit private health care providers. In fact, among those patients who visited public health care providers, chemists, and others during their first visits, a major proportion chose to visit private health care providers for their subsequent visits. Across the districts, a higher proportion of patients visited public health care providers in Odisha; and private health care providers in Maharashtra. However, during subsequent visits, the patients mainly consulted private health care providers.

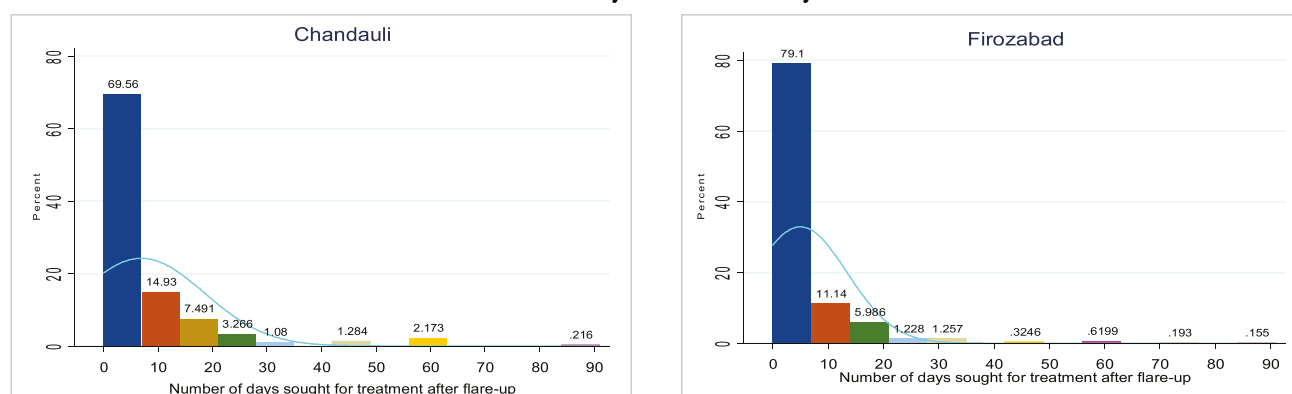
Descriptive data on the sequence of visits to health service providers by various socio-economic and

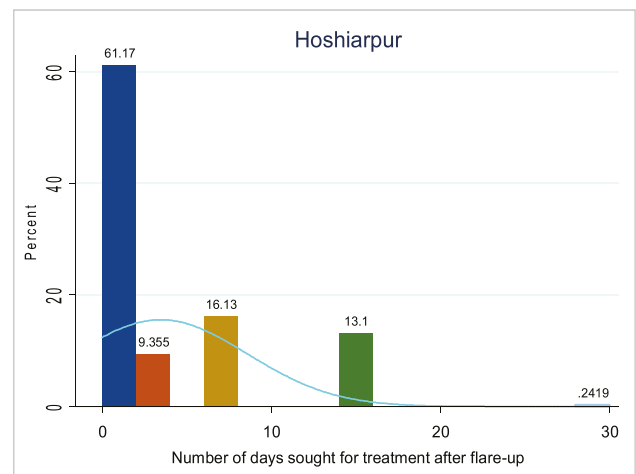
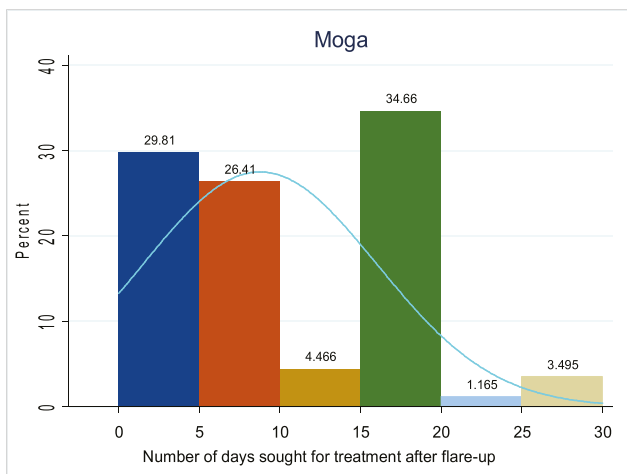
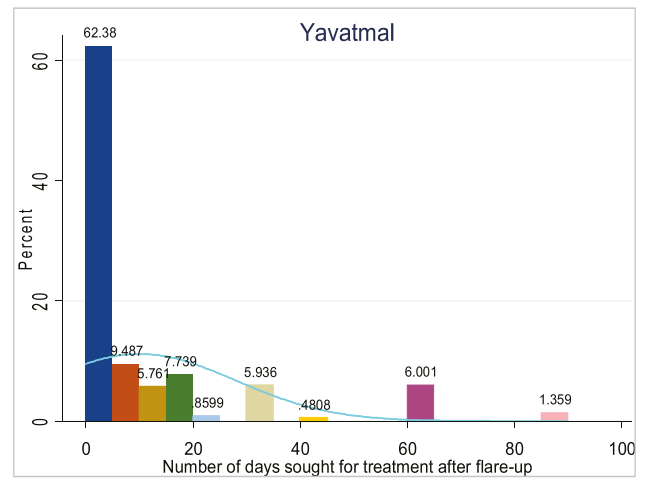
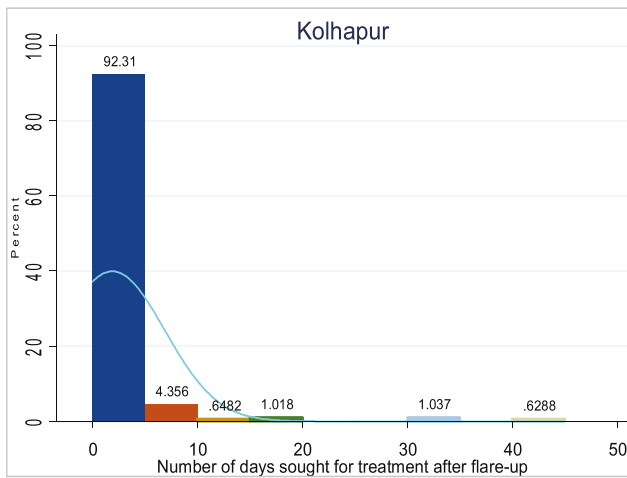
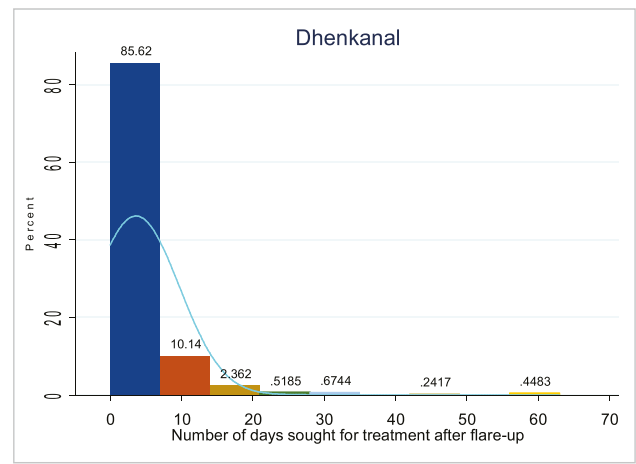
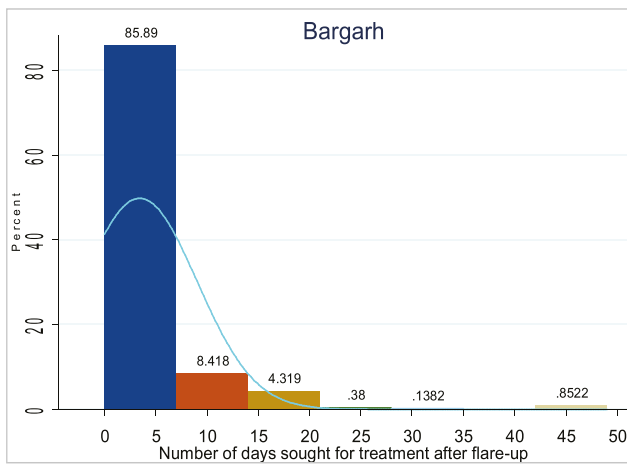
demographic attributes are presented in Appendix 4.8. The largest proportion of patients visited private health care service providers, followed by public facilities across rural/urban locations, gender, and economic status indicated by per capita expenditure quartiles.

### 4.3.8 Time Lag in Seeking Treatment after a Recent Flare-up

Most people who sought treatment visited the first provider within five days of recognition of their acute condition. In Kolhapur, for instance, the share of people obtaining care within five days of the acute event was 92 per cent. However, there was considerable within-district variation, reflecting differences in duration across individuals (Figure 4.14).

Figure 4.14: Average Duration between Flare-up and Seeking Treatment from the First Healthcare Provider by District in Days





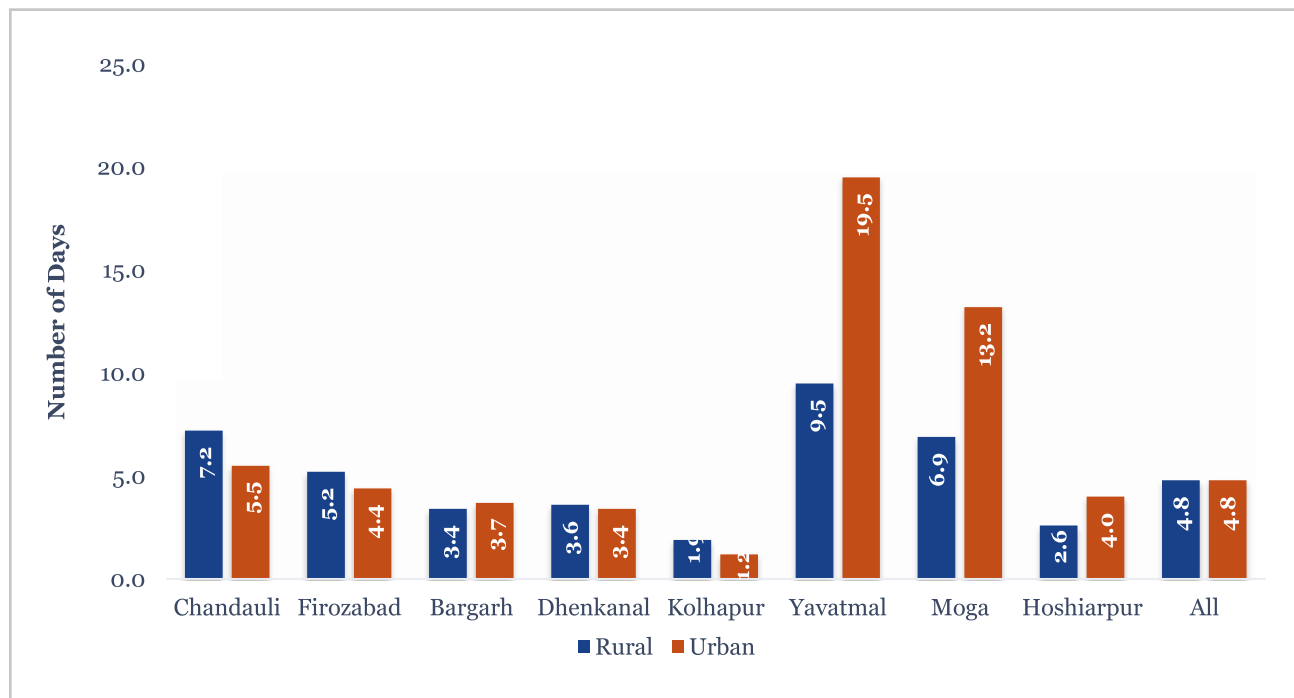
Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Note: Duration is provided only for those who obtained treatment.

For all the districts taken together, there were no rural-urban differences in the average duration between the beginning of an episode and the first visit to the provider. But individual districts were quite different. For instance, in Yavatmal, Moga, and Hoshiarpur, the duration between the start of an

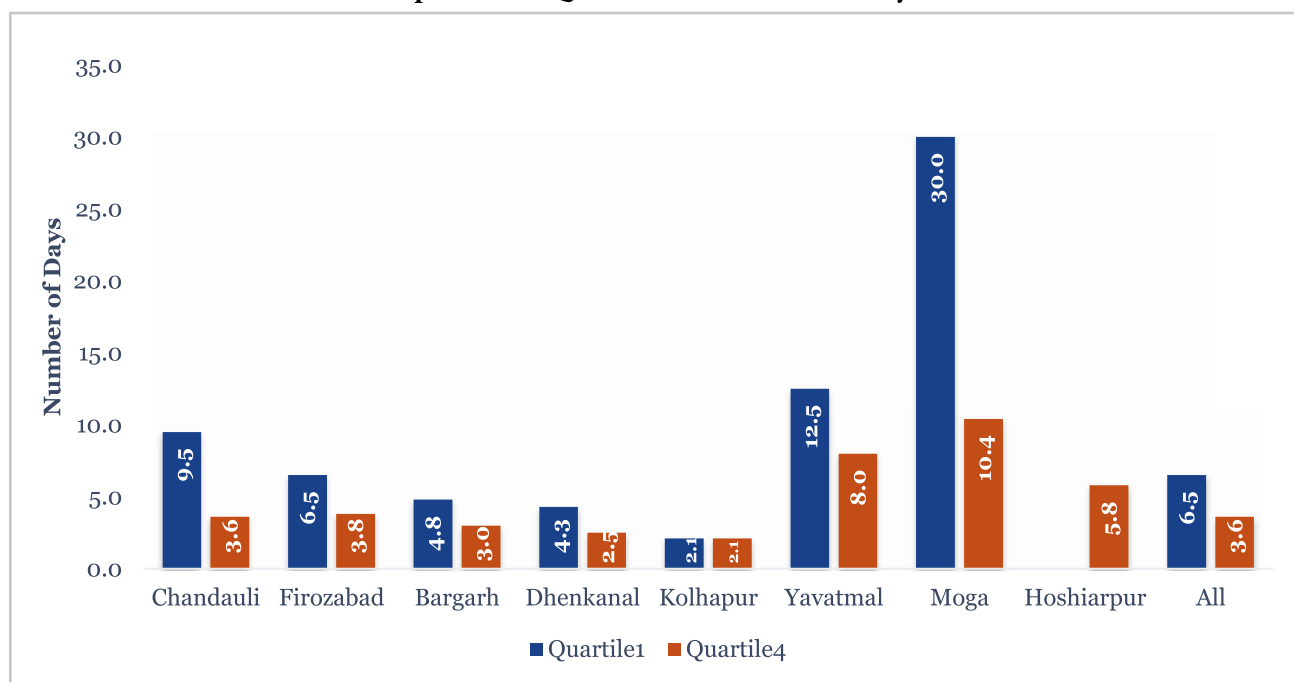
episode and the date of first treatment was longer for urban residents, relative to their rural counterparts. Figure 4.16 shows that the duration between the start of an episode and the date of first visit to a health care provider was higher for poorer patients.

**Figure 4.15: Average Duration between Beginning of the Episode and First Visit to the Provider, by Rural-Urban and District (in Days)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Figure 4.16: Average Duration between Start of the Episode and First Visit to the Provider by Expenditure Quartiles and District (in Days)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Appendix 4.9 provides additional information on the average duration between the start of the illness episode and first visit to a healthcare provider by socio-economic and demographic characteristics.

The average lag between the start of the episode and treatment visit is longer among the SC/ST population groups as compared to others. Although gender and occupational status were not differentially



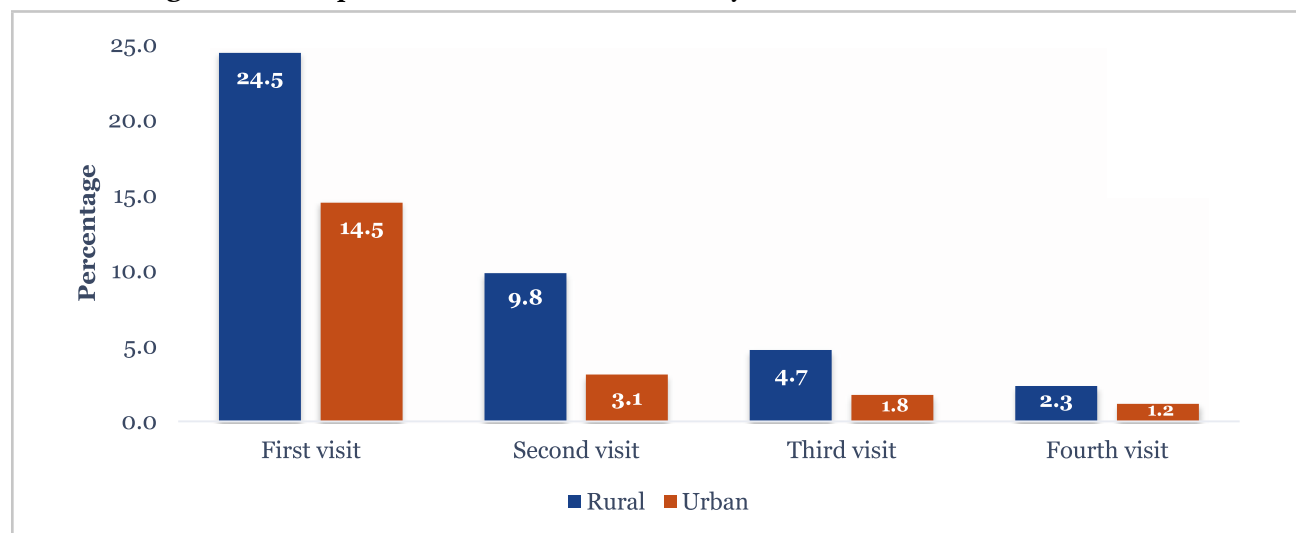
associated with duration, educational attainment (higher educational attainment is linked to shorter lags) and household size (smaller households imply shorter duration) were.

### 4.3.9 Exiting from the Treatment

This section highlights the proportion of patients who recovered and hence exited from treatment following their first or subsequent visits to the healthcare provider of their choice.

**Rate of recovery:** Overall, 29.4 per cent of the patients with chronic breathlessness who sought treatment reported having recovered, with 22.2 per cent recovered after consulting the first provider. The recovery rate fell in the extension of the treatment-seeking pathway (Figure 4.17). A higher proportion of rural patients reported having recovered (31.4 per cent) compared to patients from urban areas (18.1 per cent).

**Figure 4.17: Proportion of Patients Recovered, by Rural-Urban and Number of Visits**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Table 4.7 reports the proportion of patients who recovered, by district and number of provider visits. Kolhapur (63.6 per cent) had the highest recovery rate and Hoshiarpur the lowest recovery rate (1.6 per cent) among patients following treatment. The

proportion of recovered patients is higher among those who sought care from chemists and other (including traditional) health care providers, possibly due to the episode being less severe among such patients (less severe and therefore more likely to recover).

**Table 4.7: Proportion of Patients Recovered by Number of Visits and Districts**

Background Characteristics	Recovery Status after Visiting Healthcare Provider				All visits
	First	Second	Third	Fourth	
Chandauli	16.4	7.0	5.2	2.1	25.1
Firozabad	11.8	2.0	1.8	1.4	16.1
Bargarh	11.2	2.8	4.0	2.6	17.2
Dhenkanal	23.7	9.9	4.5	2.3	26.1
Kolhapur	46.1	36.1	7.3	2.0	63.6
Yavatmal	56.2	25.3	15.4	6.4	57.5
Moga	3.1	1.0	9.2	5.6	16.5
Hoshiarpur	1.2	0.8	0.0	0.0	1.6
All	22.9	8.6	4.2	2.1	29.4

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Appendix 4.10 provides additional details on the proportion of patients who reported recovering from the episode, by district and socio-economic characteristics. No major differences in the recovery rate were observed across gender, social groups, occupational categories, and age. The share of patients reporting recovery increased with educational attainment and monthly per capita expenditure. Finally, the proportion of recovered patients was higher for smaller households (having five or fewer members) as compared to large households (size greater than five members).

Table 4.8 reports district-wise details on whether the patients with an acute episode associated with chronic breathlessness exited the treatment pathway

by doing nothing/resorting to self-care and or self-medication, whether they went back to the same healthcare provider, or whether they changed their healthcare provider. Findings have been provided for the first visit, followed by each successive round of treatment. The proportion of patients exiting the healthcare pathway increased with each subsequent visit (43.4 per cent, 61.1 per cent, and 75.5 per cent after the first, second, and third visits, respectively). The proportion of patients switching their providers fell from 24.5 per cent after the first treatment to 3.2 per cent after the third treatment. The proportion of patients dropping out of the treatment was higher in the Odisha districts, while the proportion of those switching providers was higher in the Yavatmal and Kolhapur districts of Maharashtra.

**Table 4.8: Status (Exiting/Repeating Visit to the Same Healthcare Provider/Switching Healthcare Provider) of Patients after the First and/or Subsequent Visit to the Healthcare Provider, by Districts (%)**

Districts	After First Visit			After Second Visit			After Third Visit		
	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider
Chandauli	40.8	31.2	28.0	55.8	27.3	16.9	68.8	22.6	8.6
Firozabad	20.2	56.8	23.0	37.1	53.4	9.5	58.6	37.4	4.0
Bargarh	73.9	5.2	20.9	90.6	6.0	3.4	96.9	2.5	0.5
Dhenkanal	65.7	14.8	19.5	79.8	12.4	7.9	89.5	9.2	1.3
Kolhapur	30.8	35.3	34.0	68.9	22.3	8.8	85.6	13.6	0.9
Yavatmal	37.8	14.3	47.9	71.1	19.4	9.6	87.5	12.5	0.0
Moga	21.8	56.3	21.9	26.7	53.0	20.4	52.8	31.3	15.9
Hoshiarpur	30.4	68.8	0.8	33.8	66.2	0.0	49.1	50.9	0.0
<b>All</b>	<b>43.4</b>	<b>32.2</b>	<b>24.5</b>	<b>61.1</b>	<b>29.9</b>	<b>9.1</b>	<b>75.5</b>	<b>21.3</b>	<b>3.2</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Note: The denominator pertains to the total number of persons making successive visits to health care providers.

Data presented in Appendix 4.11 show that the proportion of patients doing nothing/resorting to self-care or self-medication, as well as those switching health care providers was higher for patients in rural areas than in urban areas. Among patients who first sought care from healthcare providers in the public sector, a higher proportion reported a switch of health care provider than those reporting continuing with the same health care provider after first visit, while among those seeking care from informal sources like chemists and others, a higher proportion of patients either did nothing or resorted to self-care and self-

medication subsequently. The patients who sought care from the private health care providers accounted for the highest share of those who reported visiting the same health care provider after the first visit. There were no major variations (in switching providers) across gender, social groups, occupation, and age categories. The proportion of patients doing nothing/resorting to self-care/self-medication decreased with a rise in their level of educational attainment. However, educational attainment had a negligible association with switching of health care providers after the first visit. The proportion of patients doing

nothing or resorting to self-care and self-medication decreased with a rise in economic status (as measured by average household monthly per capita expenditure) and moreover, was higher for the smaller households. The proportion of patients switching their health care provider was higher for larger households.

#### **4.3.10 Key Findings from Health-seeking Pathway Analysis**

The main findings from the analysis of the health-seeking pathways during the most recent acute episode associated with chronic breathlessness are delineated as follows:

- About 87 per cent of the respondents with an acute episode sought treatment. The major reasons cited by those who did not seek treatment were their preference for self-medication or their decision to wait for recovery without medication, and/or lack of money.
- Patients aged 60 years and above had a longer history of chronic breathlessness in all the districts. Moreover, in most districts, patients from urban areas had a longer history with chronic breathlessness (the two exceptions were Chandauli and Kolhapur). Of the approximately 87 per cent who sought treatment, 30.2 per cent visited health care providers in the public sector and 59.2 per cent visited private health care providers. Patients in Odisha had the largest proportion of patients consulting public sector health care providers relative to the other States.
- Most (79.2 per cent) of the patients seeking care made exactly one visit to a health care provider. Only a miniscule proportion (1.4 per cent) of the patients visited four health care providers; and the proportion of patients visiting two or more providers was the highest in Uttar Pradesh. The proportion of patients visiting more than two health care providers was also the highest in Uttar Pradesh. Consistent with the Indian literature on the subject, three-fifths of all patients who sought treatment obtained care from private health care providers during their first visits. Most of these patients visited private health care providers during their subsequent visits as well.
- The average lag between the start of the episode and the first treatment visit was smaller

in Kolhapur district, followed by the two districts of Odisha, and at aggregate level, the gap between the start of the episode and the time treatment was obtained was similar for patients in rural and urban areas.

- Patients who sought care from formal sources, either public or private health care providers, during the first visits, exhibited a higher rate of switching as compared to those who sought care from informal providers like chemists and others during their first visits. Among those seeking care from informal sources, a higher proportion of patients subsequently exited the health care pathway.

#### **4.4 Out-of-pocket Spending**

The need for out-of-pocket (OOP) spending for health services influences affordability of health care, and can, in turn, influence the decision to seek care, the choice of health care provider, and the lag between the start of an illness and treatment. Households with lower economic status are less likely to seek formal medical care for their illness than those belonging to a higher economic status; and there is considerable literature showing that the inability to pay for health services is a major factor in determining the utilisation of health services (Saito et al. 2014; Oyibo 2011; Nyongator and Kutzin 1999). Inappropriate health-seeking behaviour, that is, seeking healthcare from chemists, traditional healers, and family members, or getting no treatment at all, not surprisingly, are associated with poor health outcomes, and increased morbidity and mortality (Selvaraj et al. 2014; Beran et al. 2015; Ghoshal et al. 2016).

The tendency of people to refrain from seeking care or obtaining inappropriate care is an issue of concern, and so is the financing of payments for health services that are not covered by some form of subsidy or insurance. Available estimates suggest that the burden of health expenditure has pushed large numbers of people towards impoverishment in low- and middle-income countries such as India (Xu et al. 2006; Kumar et al. 2015). Low levels of health insurance coverage and the unavailability of subsidised public healthcare services are major contributing factors for these effects (Dilip and Duggal 2002). Financing health services via the sale of assets can affect household non-medical consumption in the short-run, and lead to loss of income in the longer run (Morduch 1995; Dilip and Duggal 2002) and

rural households are more likely to borrow money than the urban households (Mock et al. 2003).

We first estimate the OOP cost of treatment for patients experiencing an acute episode associated with chronic breathlessness in the study sample. Second, estimated measures of catastrophic OOP payment for health care for households and analysed the methods that households used to finance their OOP expenditure.

#### 4.4.1 Cost of Treatment

The average costs of treatment for all the visits combined are reported in Table 4.9. The table shows

that household OOP expenses for treatment were higher for residents in Kolhapur, Moga, and Yavatmal than in the other districts. Moreover, OOP expenses for treatments were higher among urban patients than their rural counterparts in most districts. Despite their lower absolute levels of spending, the shares of OOP spending in household expenditures were higher for patients in rural than in urban areas.

Among the sample districts, the sub-sample of patients in Kolhapur reported the highest share of OOP in household spending (4.9 per cent) whereas those in Dhenkanal reported the lowest share of OOP spending in total household expenditures (1.9 per cent).

**Table 4.9: Average OOP Expenditure and Its Share in the Total Household Expenditure by District**

Districts	Average Treatment Cost of All the Last Four Visits (in Rs)			Percentage Share of OOP Expenditure to the Total Household Expenditure		
	Rural	Urban	All	Rural	Urban	All
Chandauli	4842	4901	4849	3.8	3.5	3.7
Firozabad	3932	4349	4060	3.2	2.6	3.0
Bargarh	2687	2595	2677	2.9	2.1	2.8
Dhenkanal	2469	2800	2508	2.0	1.4	1.9
Kolhapur	6034	7224	6075	4.9	5.0	4.9
Yavatmal	4080	5370	4151	4.4	5.3	4.5
Moga	5533	5768	5602	6.0	2.9	4.5
Hoshiarpur	2022	4226	3468	1.8	2.3	2.2
<b>All</b>	<b>3866</b>	<b>4119</b>	<b>3907</b>	<b>3.3</b>	<b>2.5</b>	<b>3.1</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Given the highly skewed distribution of the number of visits by the patients' OOP expenses incurred during the first visit to a healthcare provider dominated the share of combined OOP treatment costs for all visits: about three-fourths of all OOP

spending during the illness episode was incurred during the first visit, with an additional 19.4 per cent incurred on the second visit (Table 4.10). The share of the first visit in OOP spending during the episode was the highest in Hoshiarpur.

**Table 4.10: Share of OOP Expenses in Total OOP Expenses by Visit (%)**

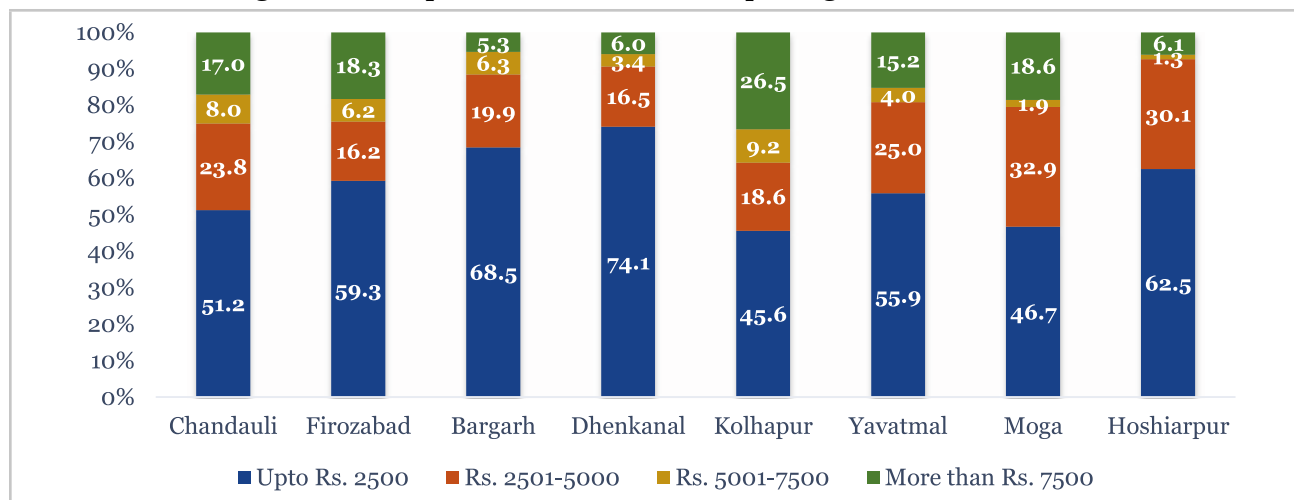
Districts	Share of Treatment Cost as a Percentage to the Total Cost by Different Visits			
	First Visit	Second Visit	Third Visit	Fourth Visit
Chandauli	62.1	19.8	12.9	5.2
Firozabad	72.6	22.3	4.0	1.1
Bargarh	79.2	18.4	2.4	0.0
Dhenkanal	78.8	15.3	4.4	1.5
Kolhapur	77.9	20.2	1.9	0.0
Yavatmal	81.1	16.7	2.2	0.0
Moga	72.0	23.9	1.9	2.3
Hoshiarpur	100.0	0.0	0.0	0.0
<b>All</b>	<b>74.5</b>	<b>19.4</b>	<b>4.7</b>	<b>1.4</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

When broken down by the distribution of OOP expenditure per visit, households in the Bargarh and Dhenkanal districts in the sample (both in Odisha) spent a considerably greater share as OOP than households in other districts (Figure 4.18).

Correspondingly, the proportion of households spending more than Rs 7,500 (top of our range of spending) was higher in Kolhapur (at around 27%) followed by Moga (18.6 per cent) than in any other district.

**Figure 4.18: Proportion of Households Reporting Treatment Cost (%)**

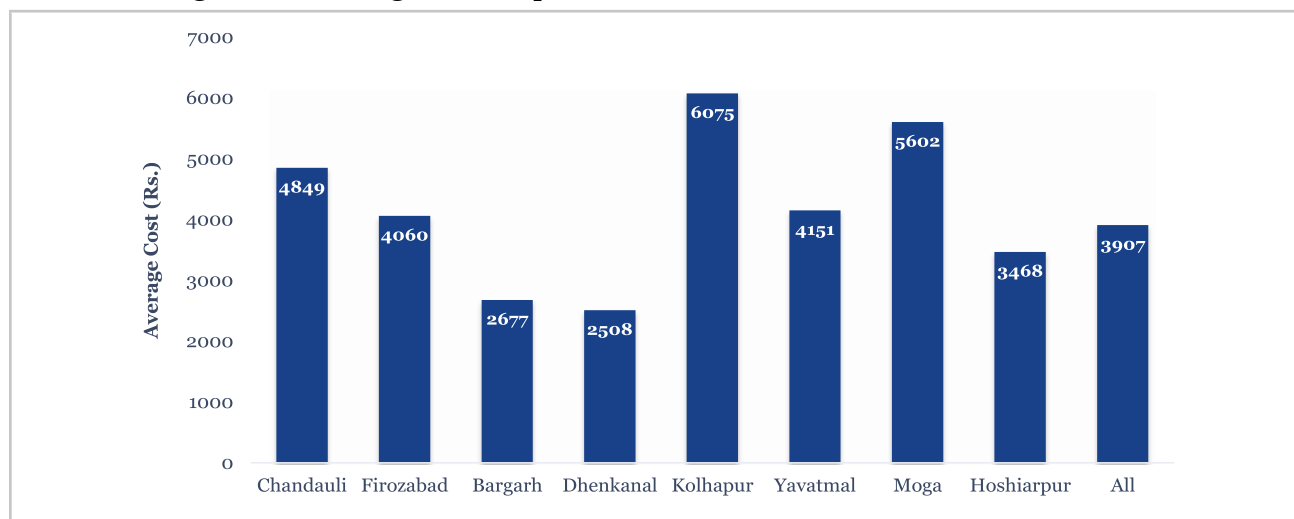


Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

The average OOP expenditures incurred on treatment for all the four visits was the highest in Kolhapur district in Maharashtra, followed by Moga district in Punjab, (Figure 4.19). Additional information on the average OOP expenses incurred on treatment and their association with household characteristics, including by the type of provider consulted, is reported in Appendix 4.12. Among the more salient findings, the OOP expense of treatment for both male and female patients was higher in the Kolhapur and Moga districts. Moreover, the overall average OOP expense for treatment was the highest for patients in the age group of 46-60 years relative to the other age groups.

Not surprisingly, the study also found the average OOP expenses for treatment to increase with the duration of illness. In addition, the average OOP expenses associated with treatment were lower among SC/ST patients than among patients belonging to the OBC and General categories. The OOP treatment expenses also increased with the household economic status, as indicated by the household per capita expenditure quartile; however, no clear association could be discerned between OOP spending and educational attainment, at least from the district-level data.

**Figure 4.19: Average OOP Expenses for Treatment for All Visits Combined (Rs)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Table 4.11 reports the distribution of OOP treatment expenses by type of provider. Across the States, private providers are the main drivers of OOP expenses in our sample of patients.

**Table 4.11: Distribution of OOP Treatment Expenses by the Type of Healthcare Provider and District**

Districts	Public	Private	Chemist	Traditional/ Other
Chandauli	12.6	84.9	0.8	1.7
Firozabad	12.7	85.3	1.2	0.9
Bargarh	46.3	51.4	0.8	1.5
Dhenkanal	32.7	62.8	2.6	1.9
Kolhapur	10.0	89.7	0.1	0.2
Yavatmal	8.9	90.8	0.1	0.1
Moga	22.9	76.6	0.5	0.0
Hoshiarpur	16.4	83.0	0.6	0.0
All	17.9	80.1	0.9	1.0

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

#### 4.4.2 Catastrophic Health Expenditure Estimates

Household OOP expenditure on healthcare is designated as catastrophic in the literature if it exceeds a given proportion of the household income or expenditure. Catastrophic Health Expenditure (CHE) is defined as constituting a sufficiently large proportion of a household budget to threaten a substantial reduction in that household's customary standard of living (Berki 1986). One approach is to consider OOP healthcare expenditure as catastrophic if it exceeds 10 per cent of a household's total annual expenditure, with the rationale being that healthcare expenditure on this scale is likely to require a significant sacrifice of other (non-medical) consumption goods, possibly including basic goods (Wagstaff and Doorslaer 2004; Russell 1996). An alternative approach is to define catastrophic expenditure in terms of a household's "ability to pay". Under this approach, OOP healthcare expenditure is defined as catastrophic if it exceeds 40 per cent of the household non-food expenditure (Kawabata and Carrin 2002; Xu et al. 2003; Garg and Karan 2009). Both sets of approaches have been adopted to estimate rates of CHE of the households in the sample.

This report provides estimates of catastrophic medical spending for multiple thresholds (10–40 per cent) of non-food spending. We have also assessed how CHE estimates would vary if only the OOP expenses incurred for obtaining treatment from the first provider were considered versus if OOP treatment expenses of all visits were accounted for.

Aggregate household expenditures were estimated from information on spending on food and non-food items gathered during the household survey. For food items, the survey recall period was 30 days. Non-food items were divided into two categories: routine and non-routine. Details on routine expenditure for items like education, routine healthcare, house rent, instalments of housing loan, servant, cook, driver, sweeper, cooking fuel, electricity charges, toiletries and cosmetics, and phone charges were based on a recall period of 12 months. For non-routine items like clothes and footwear, white goods and furniture, housing (purchase/construction/maintenance), one-time/large expenses on education/health, social functions/recreation, religious functions, and consumer durables, information was also obtained using a one-year recall period.

Detailed OOP expenditures on drugs and medicines, consultation fees, hospital bed charges, transportation for accessing treatment, and daily living costs, including food and lodging for the escorts of the ailing household member were gathered in a separate section of the survey. For this study, household healthcare expenditure was defined as the sum of the OOP expenditures incurred on these items.

Table 4.12 reports the share of households incurring Catastrophic Health Expenditures (CHE) (using the threshold of 10 per cent OOP as a proportion of total household expenditure), across districts. The data show that 5.5 per cent of the households incurred catastrophic healthcare expenses if we considered OOP on the first healthcare provider consulted alone.

This proportion rose to 9.6 per cent if OOP expenditures on all the treatment visits along the pathway were included. Hoshiarpur district reported the lowest rate of CHE under this criterion (4.9 per cent), and Yavatmal (15.7 per cent) reported the highest.

**Table 4.12: Share of Households Spending More Than 10% of the Total Expenses on OOP by District**

Districts	OOP on First Visit (% Households)	OOP for all Visits (% Households)
Chandauli	3.5	11.1
Firozabad	5.0	9.4
Bargarh	5.9	7.5
Dhenkanal	2.9	5.3
Kolhapur	8.2	14.2
Yavatmal	11.3	15.7
Moga	5.2	12.4
Hoshiarpur	4.9	4.9
All	5.5	9.6

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

The next CHE spending was assessed by comparing OOP health expenditures with household non-food spending, for a range of thresholds. About 18 per cent and 24.5 per cent of the households reported spending more than 10 per cent of their total non-food expenditure on treatment during their first visit, and all visits, respectively (Table 4.13). The estimated share of households incurring CHE was the highest for Yavatmal under this measure, whereas households in Hoshiarpur district reported the lowest rate of CHE, irrespective of whether only one visit, or all visits, were considered.

**Table 4.13: Share of Households incurring CHE Spending using Alternative Thresholds of OOP Spending as a Proportion of Household Non-food Spending**

Districts	First Visit Catastrophic Thresholds				All Visits Catastrophic Thresholds			
	>10%	>20%	>30%	>40%	>10%	>20%	>30%	>40%
Chandauli	17.8	4.4	2.3	1.6	25.3	12.0	7.9	4.4
Firozabad	15.8	4.7	2.1	1.0	25.3	8.8	5.9	3.0
Bargarh	18.6	9.2	3.6	2.4	24.0	11.5	4.6	3.7
Dhenkanal	13.8	4.3	2.0	0.9	16.7	5.7	3.0	1.6
Kolhapur	22.5	8.8	5.9	3.4	27.2	13.9	10.5	5.7
Yavatmal	30.9	16.6	10.9	8.9	37.7	21.6	14.6	10.8
Moga	19.6	5.1	4.0	1.9	31.8	12.3	8.8	4.0
Hoshiarpur	7.4	3.0	2.3	2.3	7.4	3.0	2.3	2.3
All	18.1	6.8	3.6	2.3	24.5	10.7	6.7	4.0

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

The results in Appendix Table 4.13 also show that the share of households experiencing CHE for thresholds using non-food expenditure as the denominator was higher for rural (relative to urban) households, for smaller households (less than five members versus five or more members), for households belonging to the OBC and General categories, and for households belonging to the bottom per capita expenditure quartiles (versus the top quartiles) (Appendix 4.14). As also noted earlier, an increase in the number of treatment visits was associated with a rise in the share of health spending in the total household expenditures; and accounting for all visits (instead of just the first visit) resulted in a doubling of the CHE estimate.

#### 4.4.3 Financing Strategies

Households typically adopt a variety of coping strategies to finance their healthcare expenses, including using current income, drawing upon savings, and consumption of non-medical items, asset sales, and borrowing from moneylenders (Desai 2009; Dercon 2002; Flores et al. 2008). Some of these financing methods are defined as 'distress financing', the reliance on which is likely to adversely affect long-term household economic outcomes. Poor and marginalised populations appear to face the greatest risk of distress financing for healthcare (Binnendijk et al. 2012; Dasgupta and Mukherjee 2021; Pannarunothai and Mills 1997; Ghosh 2011).

Table 4.14 reports some of our key results on the financing strategies adopted by households to support the OOP treatment expenses associated with acute episodes of chronic breathlessness. The data suggest that the two most frequently used sources of

finance for health spending are household savings and borrowing. Insurance and asset sales as a financing strategy were relied upon by only a small subset of households.

**Table 4.14: Financing Strategies to Meet Treatment Costs by District (% Households)**

Districts	Savings	Borrowed (from Relatives/ Moneylender/Healthcare Provider)	Insurance	Others (Sale Jewellery/ Property/ Other)
Chandauli	96.0	44.7	0.3	1.0
Firozabad	96.5	13.0	0.0	1.1
Bargarh	96.3	29.0	0.6	0.0
Dhenkanal	97.8	22.1	0.2	1.5
Kolhapur	97.2	19.7	0.4	4.1
Yavatmal	88.6	26.1	1.2	1.5
Moga	94.9	13.9	3.6	1.2
Hoshiarpur	93.9	19.1	1.2	0.0
<b>All</b>	<b>96.0</b>	<b>23.4</b>	<b>0.4</b>	<b>1.4</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Health Insurance:** India has recently seen a sharp increase in publicly funded hospital insurance schemes, such as the Pradhan Mantri Jan Arogya Yojana (PM-JAY) and in the case of Odisha, the Biju Swasthya Kalyan Yojana that was introduced in 2018. Their coverage was far from universal partly because these schemes were relatively newly introduced at the time of the survey. Less than 10 per cent of the

households reported being covered by any insurance scheme in Maharashtra, Punjab, and Uttar Pradesh. Households in Odisha, on the other hand, reported a much higher insurance coverage, including 47.7 per cent in Bargarh and 62.4 per cent in Dhenkanal.

Other forms of both public and private insurance also exist, but these cover a relatively smaller segment of the sample households (Table 4.15).

**Table 4.15: Type of Health Insurance Coverage by Districts and Per Capita Expenditure Quartile (% Households)**

Districts	Private	Government	RSBY/Arogyashri/BSKY	No Insurance	All
Chandauli	1.1	1.6	8.9	88.5	100.0
Firozabad	1.5	3.4	4.6	90.5	100.0
Bargarh	0.9	4.1	47.7	47.4	100.0
Dhenkanal	0.8	6.8	54.8	37.6	100.0
Kolhapur	0.6	4.1	1.2	94.1	100.0
Yavatmal	0.8	0.6	0.3	98.3	100.0
Moga	4.2	0.0	1.9	93.9	100.0
Hoshiarpur	0.0	1.3	0.0	98.8	100.0
<b>Per Capita Expenditure Quartile</b>					
Quartile 1	0.5	2.1	27.4	70.0	100.0
Quartile 2	0.9	3.4	26.0	69.8	100.0
Quartile 3	0.6	3.2	18.8	77.4	100.0
Quartile 4	2.1	7.0	18.2	72.7	100.0
<b>All</b>	<b>1.0</b>	<b>3.9</b>	<b>22.8</b>	<b>72.4</b>	<b>100.0</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.



#### 4.4.4 Main Findings of Analyses of OOP Spending

The main findings from the analysis of OOP spending by the surveyed households in the 4 States are as follows:

- Average household OOP spending on treatment expenses for acute episodes associated with chronic breathlessness was the highest in Maharashtra among the four States studied.
- Patients living in urban areas reported higher average levels of OOP spending on treatment for episodes of chronic breathlessness than patients from rural areas.
- OOP expenses incurred during the first visit to a healthcare provider during an acute episode accounted for almost three-fourths of the treatment expenditures over the full treatment pathway.
- Most of the OOP spending was incurred on private healthcare providers. However, the share of OOP expenditures incurred on public sector healthcare providers in Odisha was relatively high (nearly two-fifths of all OOP spending during the acute episode) as compared to OOP expenses in Uttar Pradesh, Maharashtra, and Punjab.
- Catastrophic spending rates (based on thresholds that relied on total household expenditure as the denominator) were larger for urban households than rural households when the OOP expenses for only the first visits were considered. However, the proportion of households incurring catastrophic spending was larger in rural households when the full treatment pathway was accounted for. A larger share of poorer households incurred catastrophic OOP spending than their richer counterparts.

#### 4.5 Factors Influencing the Choice of Healthcare Provider

While OOP healthcare expenses borne by households are obviously important in influencing the choice of the healthcare provider, costs do not signify the

only relevant factor. Variables such as convenience, behaviour, and quality of care also matter. For instance, a key driver of accessibility and effectiveness of healthcare services in India is the availability of formally trained healthcare providers in proximity (Das et al. 2016; Mohanan and Mohpal 2016). This is especially crucial in the rural areas of India, where public sector options are limited and people commonly rely on informal healthcare providers, who are not always able to provide care of good technical quality (Rohde and Viswanathan 1995; Banerjee et al. 2004).

This study did not collect information on the technical indicators of quality, focusing instead on patients' rationale for their choice of provider and on additional quality-relevant information commonly discussed in the literature. The variables gathered to get a better understanding of the patients' healthcare provider choices included factors such as proximity, reputation of the healthcare provider, the price charged, personal experience, qualifications, and recommendations by relatives.

##### 4.5.1 Evaluation of Healthcare Service

To gain a deeper understanding of patients' assessment of the quality of providers available in the area, the survey collected information on patients' perceptions on healthcare services available from different types of providers. Table 4.16 reports responses on service quality ratings provided by respondents in the eight districts. These show that an overwhelming proportion of the respondents (typically 90 per cent or higher) rated private services as 'good' to 'excellent' in all the eight districts. Interestingly, there were differences between the respondents across the States with respect to public sector healthcare providers. Although almost one-fifth of the respondents who visited public healthcare facilities rated them as poor, in the two richer States, viz., Maharashtra and Punjab, public services were highly rated by users. Even in Odisha, respondents from Bargarh district rated public services highly, with 90 per cent ranking them as "good to excellent". Only in Uttar Pradesh did a large share of the respondents rate public healthcare providers as poor, with 47.0 per cent of the respondents in Chandauli and 38.6 per cent in Firozabad assigning this rating.

**Table 4.16: Respondent Ratings of Public and Private Healthcare Providers, by District (% Households)**

Districts	Excellent		Good		Poor	
	Public	Private	Public	Private	Public	Private
Chandauli	15.4	15.9	37.6	75.5	47.0	8.6
Firozabad	8.5	22.1	53.0	73.3	38.6	4.6
Bargarh	9.8	7.2	80.5	92.6	9.7	0.3
Dhenkanal	7.9	10.2	66.7	88.3	25.5	1.5
Kolhapur	21.2	27.8	78.4	71.8	0.4	0.4
Yavatmal	18.1	18.9	81.9	79.5	0.0	1.6
Moga	25.1	7.4	71.4	89.3	3.5	3.3
Hoshiarpur	34.7	83.0	65.3	13.5	0.0	3.5
<b>All</b>	<b>11.3</b>	<b>20.0</b>	<b>67.1</b>	<b>76.7</b>	<b>21.6</b>	<b>3.4</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

#### 4.5.2 Factors Determining the Choice of Healthcare Facilities

Appendix 4.15 reports additional information on the factors that respondents deemed relevant in terms of influencing their decision to choose a particular healthcare facility for their first visits. These included “good reputation” of the facility (noted by 67.3 per cent of the respondents), proximity (58.2 per cent of respondents), and cost (50.3 per cent of the respondents), which were the three considerations for which the largest share of respondents noted their relevance.

Among the respondents who chose public facilities, 75.2 per cent cited the availability of drugs as a key factor, especially in the districts of Bargarh (90.6 per cent) and Dhenkanal (81.5 per cent), both in Odisha. Low cost (73.6 per cent) and proximity (70.9 per cent) were two other important factors influencing the choice of public healthcare providers. Among those who chose private facilities, 75.7 per cent did so because of the good reputation of the facilities, which was a common consideration across all the eight districts in the sample. Other important considerations in the choice of private healthcare providers were proximity and good personal experience. Among those who opted for ‘Other’ facilities, about 63.1 per cent did so because of proximity, and a little less than half of the respondents stated that cost was an important factor in influencing their choice of ‘Other’ facilities. At the district level, “good reputation” was mentioned as the most important factor by respondents in Hoshiarpur (94.5 per cent), Moga (85.4 per cent), Kolhapur (71.0 per cent), Yavatmal (69.2 per cent), Firozabad (61.4 per cent), and Chandauli (68.5 per

cent). For respondents in Bargarh (74.9 per cent) and Dhenkanal (66.7 per cent), the most important factor was proximity.

Additional granular analysis of the data revealed that the staff qualification was an important consideration for the respondents in Hoshiarpur (79.8 per cent among those who chose public facilities and 65.3 per cent among those who chose private facilities). Familiarity with the facility because of relatives/friends working there or recommendations from relatives were not important considerations among the respondents.

#### 4.5.3 Main Findings on Quality of Healthcare Facilities

The main findings were as follows:

- A majority of the respondents categorised both public and private healthcare facilities as good. About 15 per cent found the public facilities to be excellent, and approximately 16 per cent had a similar opinion about private healthcare facilities.
- A little more than one-fifth of the respondents said that public healthcare facilities were of poor quality.
- Overall, good reputation of the facility (67.3 per cent), proximity (58.2 per cent), and inexpensiveness (50.3 per cent) were the three most important considerations for the respondents.
- Familiarity with the facility because of relatives/friends working there and recommendations from relatives were

not important considerations for the respondents.

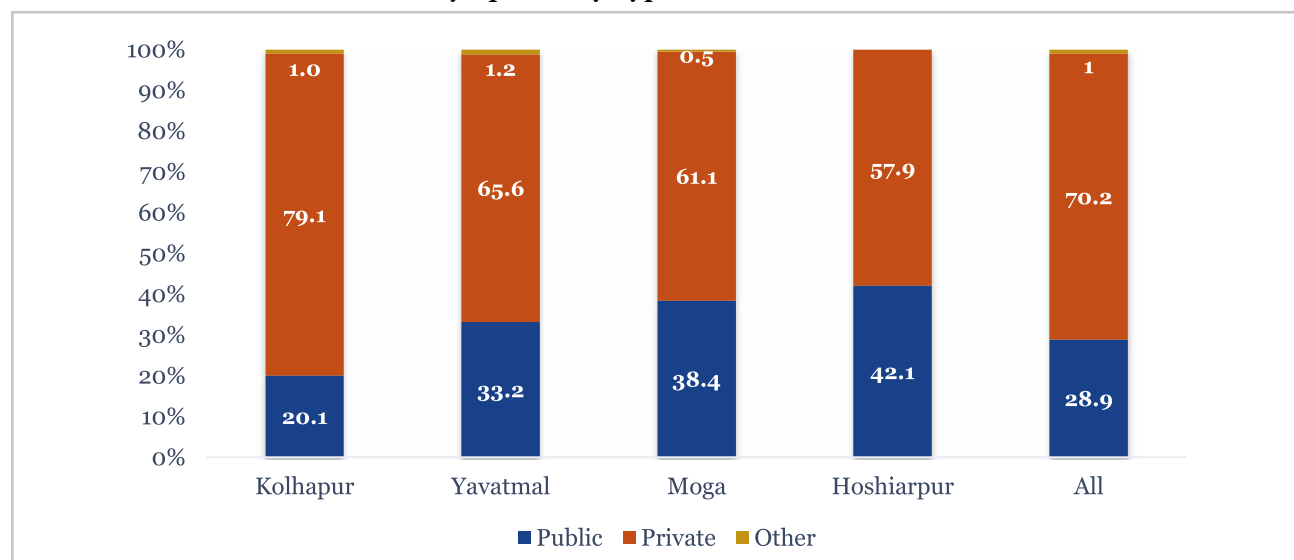
#### 4.6 History of the Patient: Chronic Breathlessness and Treatment

The long-term treatment history of chronic breathlessness among patients in the sample was assessed by respondent reports for the first time the patient noticed the symptoms, and subsequently when the treatment was sought. It was found that in the two districts of Punjab, on an average, they had been suffering since more than eight years whereas for Kolhapur and Yavatmal, the corresponding periods were more than seven years and more than five years, respectively.

#### 4.6.1 Type of Service Provider at the First Consultation after Noticing Symptoms

This section describes the type of first healthcare service provider consulted by patients when they were first diagnosed with chronic breathlessness. The findings show that a majority of the patients across all the four sample districts consulted private healthcare providers (approximately 70 per cent in the four districts taken together). The share of patients who consulted a private healthcare provider first was slightly higher in the two districts of Maharashtra as compared to those of Punjab. Note that though smaller, the public sector share as a provider of choice for the first visit was non-trivial, at about 30 per cent of all the visits.

**Figure 4.20: District-wise Share of First Source of Treatment in the First Episode of the Beginning of the Symptoms, by Type of Healthcare Provider**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix 4.16 shows the demographic profile of patients by choice of healthcare provider, at the time they first noticed the symptoms of chronic breathlessness.

#### 4.6.2 Type of Service Provider Consulted in the First Six Months

The type of healthcare service provider consulted by the ailing adults in the first six months after seeking solutions to chronic breathlessness shows that > 80 per cent of the patients consulted private

healthcare providers. This proportion was the highest for Kolhapur, at 93.5 per cent, and the lowest for Hoshiarpur, at 64.5 per cent (Table 4.17). Among those who consulted a public healthcare provider in the first six months after they started seeking solutions for their health problems, the highest proportion was recorded in Moga, at 61 per cent. In addition to private healthcare providers, slightly less than 60 per cent of the patients in Kolhapur referred to 'other' healthcare providers as well during the first six months of seeking treatment.

**Table 4.17: District-wise Type of Healthcare Providers Consulted in the First Six Months after Patients Started Seeking Solutions for Symptoms**

Districts	Public	Private	Other
Kolhapur	32.3	93.5	58.8
Yavatmal	47.4	72.4	26.9
Moga	61.3	73.9	21.1
Hoshiarpur	43.4	64.5	33.4
<b>Total</b>	<b>41.7</b>	<b>80.2</b>	<b>39.8</b>

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix 4.17 shows that a higher proportion of women consulted private healthcare providers after they started seeking solutions to these problems in the first six months, particularly in the case of female adult patients, those who belonged to the OBC/General categories, those who were illiterate, non-working, and belonged to the top two richest expenditure quartiles. Not much variation was reported by age group, location, and household size of the patients.

#### 4.6.3 Number of Health Service Providers Consulted in the Entire Period of Illness (since first experience of symptoms)

Table 4.18 shows the average number of healthcare service providers consulted by people with chronic breathlessness during the entirety of their illness since they first experienced symptoms. Private providers were consulted most often and across all districts with the exception of Yavatmal, where 'other' healthcare providers were consulted most often. Note that most of these "other" providers also tend to be in the private sector, though they may not possess formal qualifications, or belong to the allied healthcare providers' category.

**Table 4.18: District-wise Number of Healthcare Providers Consulted during the Entire Period of Illness**

Districts	Public	Private	Other
Kolhapur	3.1	7.5	6.1
Yavatmal	1.3	2.9	4.0
Moga	2.1	3.1	1.0
Hoshiarpur	4.6	4.6	2.0
<b>Total</b>	<b>2.3</b>	<b>4.9</b>	<b>4.6</b>

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 4.18 shows that adult patients who were female, above 60 years of age, belonged to the OBC/General categories, were in the age group of above 45 years, illiterate, and non-working, had larger sized families, and belonged to the second richest expenditure quartile, visited private healthcare providers a higher number of times than their counterparts. Although nearly similar trends were observed in the case of 'other' healthcare providers, no significant differences were reported across socio-demographic profiles except for the age group in the case of public healthcare providers.

#### 4.6.4 Satisfaction with the Healthcare Providers Consulted

A significantly large share of patients reported being satisfied by the treatment provided by various healthcare providers consulted by them during the entire period of their illness. The highest satisfaction levels in the treatment of chronic breathlessness were reported by adults who visited private healthcare providers, including both clinics and hospitals, followed by those who visited district hospitals (Table 4.19). Both the districts of Maharashtra and the Moga district in Punjab reported almost similar trends in the satisfaction rate, whereas in the case of Hoshiarpur district, more than 93 per cent of the adult patients reported satisfaction from the treatment provided by private hospitals and Primary Health Centres (PHCs).

**Table 4.19: District-wise Percentage of Patients Satisfied with All Healthcare Providers Consulted**

Service Providers	Kolhapur	Yavatmal	Moga	Hoshiarpur	Total
PHC	89.8	46.6	73.7	93.2	65.4
District Hospital	56.7	79.0	68.6	79.5	74.7
Private clinic	100.0	81.3	89.7	84.8	90.0
Private Hospital	97.6	94.2	94.2	96.2	96.2
Asha/ANM	65.8	33.2	81.3	-	55.9

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

#### 4.6.5 Healthcare Providers Consulted in the Last Six Months

This section details the type of healthcare service providers consulted by the adults suffering from chronic breathlessness in the last six months. It shows that nearly 76 per cent of the adults consulted private healthcare providers during the last six months of their treatment, while 27.5 per cent consulted public healthcare providers (Table 4.20). The proportion of those who consulted private healthcare providers in the last six months was the highest in Kolhapur district, at 88 per cent, and the lowest in Hoshiarpur at 62.5 per cent.

**Table 4.20: District-wise Type of Healthcare Providers Consulted in the Last Six Months**

Districts	Public	Private	Other
Kolhapur	20.6	87.7	37.1
Yavatmal	31.0	68.9	15.7
Moga	51.8	68.8	8.9
Hoshiarpur	27.2	62.5	16.8
All	27.5	75.8	24.0

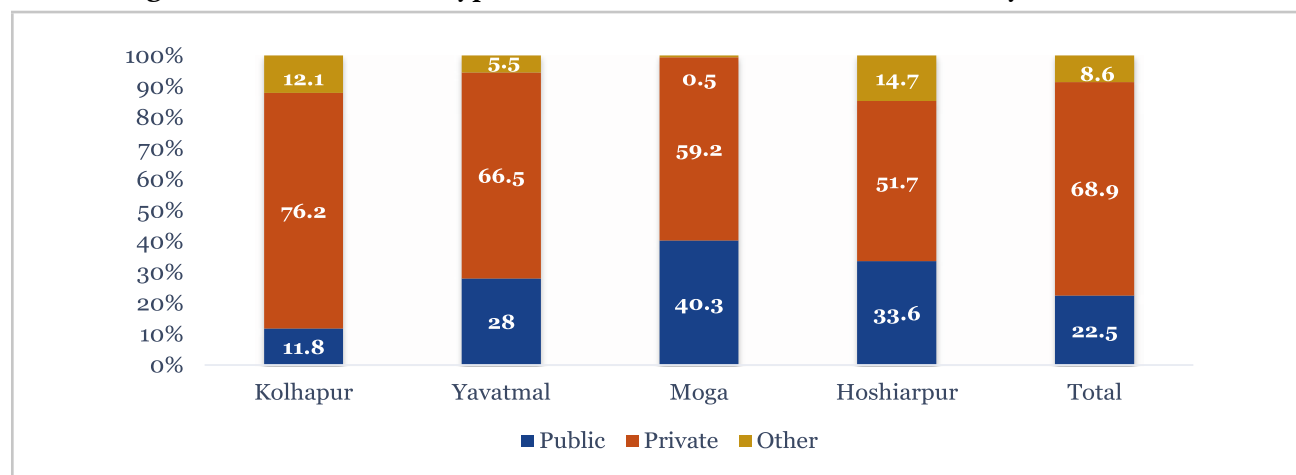
Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 4.19 shows the distribution of patients with chronic breathlessness by socio-demographic characteristics and the type of provider consulted. In general, patients who were female, illiterate, and belonged to the OBC/General categories consulted private healthcare providers more often.

#### 4.6.6 Routine Treatment

Figure 4.21 shows the type of healthcare service providers consulted by patients with chronic breathlessness on a routine basis, that is, even in the absence of acute episodes. It is found that at present, about 81 per cent had been consulting healthcare providers routinely for chronic respiratory problems. The analysis shows that a majority of the patients (about 70 per cent) now consult private healthcare providers on a routine basis. These proportions are much higher in the case of districts in Maharashtra as compared to the districts in Punjab. In Punjab, more than one-third of such patients visit public healthcare providers routinely for treatment. The routine visit to 'other' health care providers is, to some extent, reported in the case of Hoshiarpur and Kolhapur, ranging between 12 and 14 per cent.

**Figure 4.21: District-wise Type of Healthcare Providers Visited Routinely for Treatment**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 4.20 shows that the proportion of adult patients who visit private healthcare providers routinely for treatment shows some variations by socio-demographic characteristics. The higher proportion of those patients were females, belonging to the 60 years and above age group, and to the OBC/General categories. The variations were

minimal by expenditure quintiles, occupational status, location, educational attainment, and household size. A larger proportion of adults belonging to the SC/ST social group, males, and having attained education till matriculate or higher levels, visited public healthcare providers on a routine basis for treatment.

#### *4.6.7 Salient Findings from Analysis of Health Seeking Behaviour since Symptoms Were Diagnosed*

This section captures the treatment-seeking behaviour analysed through the choice of the healthcare service providers consulted during different intervals when the symptoms were noticed and treatment was sought by adult patients for chronic respiratory diseases. Following are the key results:

- More than 70 per cent of the patients across all the four sample districts consulted private healthcare providers the first time they diagnosed the chronic respiratory symptoms. This proportion was higher in the districts of Maharashtra than in those of Punjab.
- After the patients started seeking treatment, in the first six months, the proportion of those who consulted private healthcare providers touched more than 80 per cent, indicating an

increase in the demand for private treatment since the period when the symptoms were noticed, when this proportion was slightly lower.

- As far as the number of visits to the healthcare provider during the entire period of illness was concerned, the highest number of visits were made to private healthcare providers, followed by 'other' healthcare providers.
- Those who visited private healthcare providers (including both clinics and hospitals) reported the highest satisfaction level in the treatment of chronic respiratory problems, followed by those who visited district hospitals.
- The findings further show that a majority of the adults taking treatment for chronic respiratory problems now consult private healthcare providers on a routine basis. These proportions are much higher for Maharashtra as compared to Punjab.

## Appendix Tables

**Appendix Table 4.1: Status of Treatment after Fourth Visit-All Sample (2636)**

Background Characteristics	No Treatment	Recovered	Nothing	Self-care	Repeat Visit	Sought a Different Provider	Total
All	13.2	29.4	17.1	26.4	12.1	1.8	100
<i>Place of Residence</i>							
Rural	14.3	31.4	17.3	24.6	10.7	1.7	100
Urban	7.6	18.1	15.7	36.8	19.8	2.1	100
<i>Gender</i>							
Male	12.6	28.4	17.3	27.0	13.3	1.4	100
Female	14.1	30.6	16.7	25.8	10.6	2.2	100
<i>Age Categories (Years)</i>							
Up to 45	13.1	28.7	18.0	29.7	8.8	1.6	100
46-60	13.7	28.9	16.0	25.2	13.7	2.6	100
60 and above	13.0	30.2	17.4	25.4	12.8	1.2	100

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 4.2: Average Duration of Chronic Breathlessness (in Years)**

Background Characteristics	Uttar Pradesh		Odisha		Maharashtra		Punjab		All
	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	
All	6.7	5.9	6.3	7.4	10.0	4.0	8.7	14.8	6.9
<i>Place of Residence</i>									
Rural	6.8	5.9	6.1	7.3	10.0	4.0	8.7	14.5	6.8
Urban	5.4	6.0	7.5	7.8	9.4	4.9	8.7	15.0	7.0
<i>Gender</i>									
Male	6.1	5.7	6.3	7.6	10.6	3.9	7.4	15.8	6.6
Female	7.3	6.3	6.1	7.1	9.6	4.4	9.7	13.6	7.1
<i>Age Categories (Years)</i>									
Up to 45	6.1	5.0	4.9	6.1	7.9	3.1	6.8	10.7	5.6
46-60	6.7	5.7	6.5	7.7	10.4	3.0	7.7	12.0	6.7
60 and above	7.2	6.5	7.2	8.1	10.3	5.6	13.1	23.3	7.8

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.



**Appendix Table 4.3: Proportion of Adult Patients Not Seeking Treatment after a Flare-up during the Last One Year by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Waiting for Auto-recovery	Illness Not Severe Enough	Got Better	Self-care/ Medication	Not Enough Money	Other
<b>All</b>	<b>17.8</b>	<b>14.8</b>	<b>2.5</b>	<b>56.0</b>	<b>8.6</b>	<b>0.3</b>
<i>Place of Residence</i>						
Rural	16.9	15.3	2.1	56.5	9.0	0.3
Urban	26.6	10.3	7.4	51.1	4.5	0.0
<i>Gender</i>						
Male	19.3	16.8	2.8	53.4	7.8	0.0
Female	16.1	12.6	2.3	59.0	9.5	0.5
<i>Social Groups</i>						
SC/ST	15.1	21.1	2.8	50.3	10.7	0.0
OBC/Gen	18.9	12.1	2.4	58.6	7.7	0.4
<i>Educational Categories</i>						
Illiterate	18.4	10.6	2.1	56.3	11.8	0.8
Matric	17.5	15.3	3.2	56.4	7.6	0.0
Higher Secondary+	17.0	27.3	0.0	52.5	3.2	0.0
<i>Occupational Categories</i>						
Worker	25.7	21.8	2.9	44.4	5.2	0.0
Non-worker	10.5	8.5	2.2	66.6	11.7	0.5
<i>Monthly Per Capita Expenditure Quartiles</i>						
Quartile 1 (Poorest)	18.1	13.4	2.0	61.9	4.6	0.0
Quartile 2	17.4	12.9	1.8	59.2	8.7	0.0
Quartile 3	16.0	25.3	4.8	43.1	10.8	0.0
Quartile 4 (Richest)	20.0	7.4	1.9	55.7	13.6	1.5
<i>Household Size</i>						
Up to 5 Members	18.0	15.8	2.1	52.8	11.0	0.4
More than 5	17.3	12.7	3.4	63.4	3.2	0.0
<i>Age Categories (Years)</i>						
Up to 45	21.2	9.5	3.4	54.3	11.0	0.5
46-60	21.8	23.1	3.4	44.6	7.2	0.0
60 and above	12.0	11.1	1.2	67.1	8.3	0.3

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 4.4: Proportion of Adult Population with a Flare-up That Sought Treatment during the Last One Year by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Chandauli	Firozabad	Bargah	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	All
All	90.1	98.79	89.49	72.78	92.66	77.6	92.9	78.77	86.76
<i>Gender</i>									
Male	88.6	98.9	90.2	74.2	92.9	77.9	88.6	84.3	87.5
Female	91.8	98.5	88.5	71.3	92.5	77.0	96.1	71.7	85.9
<i>Social Groups</i>									
SC/ST	92.4	99.2	86.2	73.8	99.8	74.4	92.7	75.7	85.7
OBC/General	88.4	98.7	91.3	72.4	91.7	80.1	93.2	80.7	87.2
<i>Educational Categories</i>									
Illiterate	93.2	98.5	91.2	71.9	90.4	77.9	92.6	73.4	88.8
Up to Matriculate Level	87.5	99.2	88.2	73.5	95.1	75.3	93.0	86.2	85.0
Higher Secondary+	87.6	98.4	93.4	70.5	97.1	93.7	100.0	71.0	87.9
<i>Occupational Categories</i>									
Worker	86.6	99.1	93.2	71.3	89.2	72.7	86.8	72.5	84.8
Non-worker	92.0	98.6	86.8	73.6	94.9	90.6	95.2	85.5	88.2
<i>Monthly Per Capita Expenditure Quartiles</i>									
Quartile 1 (Poorest)	93.9	98.6	84.1	65.2	90.4	65.3	100.0	100.0	82.7
Quartile 2	89.6	98.5	90.9	73.5	95.2	78.5	86.2	77.2	85.9
Quartile 3	84.8	99.3	92.6	75.8	92.1	80.9	86.5	78.4	88.2
Quartile 4 (Richest)	90.3	98.8	91.1	78.8	92.7	91.1	100.0	78.1	90.6
<i>Household Size</i>									
Up to 5 Members	88.5	98.8	90.1	73.1	94.3	78.9	94.9	74.7	85.3
More than 5 Members	91.4	98.8	87.2	72.0	89.9	72.3	81.8	87.4	89.2
<i>Age Categories (Years)</i>									
Up to 45	92.8	98.1	91.8	74.4	98.5	84.5	93.9	59.3	86.9
46-60	83.1	99.6	89.5	72.4	94.4	73.0	93.3	84.6	86.3
60 and above	93.2	98.3	87.5	71.7	90.3	77.8	90.8	90.6	87.0

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 4.5: Proportion of Patients Who Received First Treatment by Type of Healthcare Service Provider during the Last One Year by Socio-economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Chemist</b>	<b>Traditional</b>	<b>Other</b>
<b>All</b>	<b>30.2</b>	<b>59.2</b>	<b>6.6</b>	<b>3.3</b>	<b>0.7</b>
<i>Gender</i>					
Male	32.2	57.2	6.5	3.9	0.3
Female	27.7	61.8	6.8	2.5	1.3
<i>Social Groups</i>					
SC/ST	36.0	54.6	5.1	2.9	1.6
OBC/General	28.0	61.0	7.2	3.4	0.4
<i>Educational Categories</i>					
Illiterate	27.3	62.1	7.3	1.9	1.4
Matriculate	33.3	56.1	6.6	3.8	0.2
Higher Secondary+	25.6	63.8	3.7	6.1	0.8
<i>Occupational Categories</i>					
Worker	32.0	57.7	6.3	3.7	0.2
Non-worker	29.0	60.2	6.8	3.0	1.0
<i>Monthly Per Capita Expenditure Quartiles</i>					
Quartile 1 (Poorest)	33.2	56.3	5.6	4.2	0.8
Quartile 2	32.5	53.3	10.1	3.3	0.8
Quartile 3	28.7	63.8	4.9	2.5	0.2
Quartile 4 (Richest)	26.4	63.7	5.7	3.1	1.0
<i>Household Size</i>					
Up to 5 Members	32.5	56.9	7.0	2.8	0.7
More than 5 Members	26.4	63.0	5.9	4.0	0.7
<i>Age Categories (Years)</i>					
Up to 45	30.5	56.9	8.0	4.1	0.5
46-60	28.5	60.5	7.3	3.3	0.5
60 and above	31.5	59.6	5.2	2.8	1.0

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 4.6: Proportion of Patients Who Visited Number of Healthcare Providers for Treatment after a Flare-up during the Last One Year by Socio-economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>One</b>	<b>Two</b>	<b>Three</b>	<b>Four</b>
All	79.2	16.5	2.9	1.4
<i>Place of Residence</i>				
Rural	78.2	17.2	3.3	1.3
Urban	84.5	12.7	1.1	1.7
<i>Gender</i>				
Male	79.9	16.1	2.8	1.2
Female	78.3	17.0	3.1	1.6
<i>Education Categories</i>				
Illiterate	77.1	17.8	3.2	1.9
Matriculate	80.4	15.8	2.6	1.2
Higher Secondary+	81.3	14.6	3.6	0.6
<i>Occupational Categories</i>				
Worker	78.4	17.4	3.7	0.6
Non-worker	79.7	15.9	2.4	2.0
<i>Monthly Per Capita Expenditure Quartiles</i>				
Quartile 1 (Poorest)	80.0	15.3	3.1	1.6
Quartile 2	78.5	18.0	2.4	1.2
Quartile 3	80.2	14.6	3.2	2.1
Quartile 4 (Richest)	78.2	18.0	3.1	0.7
<i>Household Size</i>				
Up to 5 Members	81.0	16.1	2.3	0.6
More than 5 Members	76.3	17.1	3.9	2.7
<i>Age Categories (Years)</i>				
Up to 45	79.4	16.6	3.0	1.0
46-60	77.6	17.4	3.4	1.6
60 and above	80.4	15.7	2.5	1.4

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 4.7: Sequencing of Visits to Different Types of Healthcare Providers with a Flare-up during the Last One Year Who Sought Treatment by Districts (%)**

Districts	Visits	Public			Private			Chemist			Other		
		Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
Chandauli	First	24.5			66.6			4.9			4.0		
	Second	20.4	74.8	4.8	30.5	65.5	4.0	25.9	24.9	49.2	0.0	100.0	0.0
	Third	47.1	52.9	0.0	19.6	75.9	4.5	0.0	0.0	100.0	0.0	100.0	0.0
	Fourth	25.1	74.9	0.0	14.2	85.8	0.0	0.0	0.0	100.0	0.0	100.0	0.0
Firozabad	First	18.0			70.9			8.2			2.9		
	Second	16.7	83.3	0.0	10.3	82.2	7.6	0.0	78.6	21.4	0.0	100.0	0.0
	Third	0.0	100.0	0.0	0.0	80.9	19.1	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	100.0	0.0	11.4	61.0	27.6	0.0	0.0	0.0	0.0	0.0	0.0
Barghar	First	60.4			29.5			4.4			5.6		
	Second	37.5	54.8	7.7	25.3	60.4	14.3	0.0	0.0	100.0	47.9	39.8	12.3
	Third	50.5	20.9	28.6	22.0	78.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
	Fourth	28.4	0.0	71.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dhenkanal	First	41.7			38.6			12.5			7.2		
	Second	31.4	50.8	17.8	25.4	70.8	3.9	100.0	0.0	0.0	50.1	17.9	32.0
	Third	7.5	54.0	38.6	30.7	55.5	13.9	0.0	0.0	0.0	0.0	0.0	100.0
	Fourth	0.0	100.0	0.0	43.2	56.8	0.0	0.0	0.0	0.0	100.0	0.0	0.0
Kolhapur	First	12.2			84.2			1.4			2.2		
	Second	12.2	75.4	12.4	32.6	56.3	11.1	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	40.5	59.5	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yavatmal	First	27.4			70.4			1.7			0.4		
	Second	47.3	52.7	0.0	36.2	58.2	5.7	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	100.0	0.0	48.1	33.8	18.1	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(Contd.)

Appendix Table 4.7: (Contd.)

Districts	Visits	Public			Private			Chemist			Other		
		Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
Moga	First	32.5			67.0			0.5			0.0		
	Second	34.9	65.1	0.0	42.6	8.6	48.9	0.0	100.0	0.0	0.0	0.0	0.0
	Third	34.9	0.0	65.1	87.2	12.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	100.0	0.0	35.2	64.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hoshiarpur	First	27.7			67.8			4.5			0.0		
	Second	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	First	30.2			59.2			6.6			4.0		
	Second	28.0	63.4	8.6	23.3	69.4	7.4	26.2	47.7	26.1	34.9	47.7	17.4
	Third	18.0	54.7	27.3	17.7	72.8	9.5	0.0	0.0	100.0	18.5	56.4	25.1
	Fourth	13.7	70.1	16.2	19.9	69.9	10.3	0.0	0.0	100.0	30.8	69.2	0.0

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 4.8: Sequencing of Visits to Different Types of Healthcare Providers with a Flare-up during the Last One Year Who Sought Treatment by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Visits	Public			Private			Chemist			Other		
		Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
<b>Place of Residence</b>													
<b>Rural</b>	First	30.8			58.9			6.3			4.0		
	Second	30.3	60.9	8.8	24.4	69.0	6.6	22.7	49.7	27.7	39.4	40.9	19.7
	Third	20.3	50.8	28.9	17.5	72.5	10.0	0.0	0.0	100.0	18.5	56.4	25.1
	Fourth	19.0	58.7	22.4	19.7	69.1	11.3	0.0	0.0	100.0	30.8	69.2	0.0
<b>Urban</b>	First	27.3			60.8			8.3			3.7		
	Second	6.7	86.2	7.1	16.1	71.8	12.1	84.6	15.4	0.0	0.0	100.0	0.0
	Third	5.9	75.3	18.8	20.5	75.3	4.3	0.0	0.0	100.0	0.0	0.0	0.0
	Fourth	0.0	100.0	0.0	21.8	78.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Gender</b>													
<b>Male</b>	First	32.2			57.2			6.5			4.2		
	Second	34.4	59.6	6.0	24.8	69.7	5.5	17.5	61.3	21.2	39.7	55.1	5.2
	Third	17.8	51.2	31.0	16.9	71.7	11.4	0.0	0.0	100.0	24.7	75.3	0.0
	Fourth	10.8	61.9	27.3	12.7	78.0	9.3	0.0	0.0	100.0	0.0	100.0	0.0
<b>Female</b>	First	27.7			61.8			6.8			3.8		
	Second	20.4	67.9	11.8	21.4	69.0	9.6	45.4	17.6	37.1	26.6	34.9	38.5
	Third	18.4	60.8	20.9	18.4	73.6	8.0	0.0	0.0	100.0	0.0	0.0	100.0
	Fourth	18.0	82.0	0.0	24.3	64.8	10.9	0.0	0.0	0.0	100.0	0.0	0.0
<b>Monthly Per Capita Expenditure Quartiles</b>													
<b>Quartile 1 (Poorest)</b>	First	33.2			56.3			5.6			5.0		
	Second	26.1	70.5	3.4	23.3	73.2	3.5	52.3	0.0	47.7	60.4	30.7	8.9
	Third	40.5	59.5	0.0	8.1	80.9	11.0	0.0	0.0	100.0	0.0	0.0	0.0
	Fourth	0.0	53.4	46.6	9.3	59.1	31.6	0.0	0.0	100.0	0.0	0.0	0.0

(Contd.)

Appendix Table 4.8: (Contd.)

Background Characteristics	Visits	Public			Private			Chemist			Other		
		Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
Quartile 2	First	32.5			53.3			10.1			4.1		
	Second	25.1	66.0	9.0	14.7	77.3	8.0	0.0	100.0	0.0	0.0	25.9	74.1
	Third	10.3	60.4	29.4	24.8	69.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	18.9	81.1	0.0	21.7	78.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quartile 3	First	28.7			63.8			4.9			2.6		
	Second	39.6	54.0	6.3	33.2	65.1	1.7	29.2	47.5	23.3	41.0	59.0	0.0
	Third	24.4	27.3	48.4	18.8	70.6	10.6	0.0	0.0	100.0	0.0	100.0	0.0
	Fourth	64.2	35.8	0.0	18.2	74.1	7.8	0.0	0.0	0.0	0.0	100.0	0.0
Quartile 4 (Richest)	First	26.4			63.7			5.7			4.2		
	Second	22.6	62.9	14.6	22.2	62.3	15.5	17.7	60.5	21.8	0.0	100.0	0.0
	Third	5.6	80.2	14.1	23.1	67.4	9.5	0.0	0.0	0.0	42.4	0.0	57.6
	Fourth	0.0	100.0	0.0	40.3	59.7	0.0	0.0	0.0	0.0	100.0	0.0	0.0

Source: NCAFER-NOSSAL 4IS Health Survey, 2019-22.



**Appendix Table 4.9: Average Duration between the Flare-up and Seeking of Treatment from the First Healthcare Provider by Socio-economic and Demographic Attributes (in Days)**

Background Characteristics	Chandauli	Firozabad	Bargah	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	All
All	7.0	5.0	3.4	3.6	1.9	10.1	8.8	3.6	4.8
<i>Gender</i>									
Male	7.6	5.0	3.6	3.6	1.0	10.1	8.1	4.9	5.0
Female	6.3	5.0	3.1	3.6	2.5	10.0	9.2	1.6	4.5
<i>Social Groups</i>									
SC/ST	8.0	4.9	3.5	4.2	3.4	13.8	9.5	5.8	6.3
OBC/General	6.2	5.0	3.4	3.4	1.6	7.4	7.2	2.2	4.2
<i>Educational Categories</i>									
Illiterate	9.5	5.5	3.7	3.7	2.2	9.8	7.3	0.8	5.3
Matriculate	5.7	4.7	3.5	3.5	1.7	9.1	10.6	5.5	4.5
Higher Secondary+	2.1	3.8	2.4	3.6	0.5	16.3	6.7	2.0	4.1
<i>Occupational Categories</i>									
Worker	9.1	5.4	3.1	3.8	1.6	10.8	9.3	5.7	5.5
Non-worker	5.9	4.7	3.7	3.5	2.0	8.5	8.6	1.6	4.3
<i>Household Size</i>									
Up to 5 Members	6.1	4.1	3.3	3.5	1.8	10.4	8.6	4.1	4.5
More than 5 Members	7.7	5.7	3.7	4.0	1.9	8.5	9.6	2.5	5.3
<i>Age Categories (Years)</i>									
Up to 45	5.1	5.3	3.3	4.1	1.6	8.3	8.7	7.6	4.6
46-60	9.0	5.5	2.9	3.8	1.5	9.7	8.4	0.5	5.1
60 and Above	7.1	4.4	4.0	2.9	2.1	11.6	9.4	5.1	4.7

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 4.10: Proportion of Patients Who Recovered after Different Number of Visits to Healthcare Providers for Treatment during the Last One Year by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Recovery Status after Visiting Health Care Provider				
	First	Second	Third	Fourth	All Visits
<b>All</b>	<b>22.9</b>	<b>8.6</b>	<b>4.2</b>	<b>2.1</b>	<b>29.2</b>
<i>Place of Residence</i>					
Rural	24.5	9.8	4.7	2.3	31.4
Urban	14.5	3.1	1.8	1.2	18.1
<i>Gender</i>					
Male	21.8	7.6	4.3	2.5	28.4
Female	24.2	10.0	4.1	1.6	30.6
<i>Social Groups</i>					
SC/ST	22.5	7.0	4.7	1.7	27.8
OBC/General	23.0	9.3	4.0	2.3	30.0
<i>Educational Categories</i>					
Illiterate	22.0	10.0	3.6	1.9	29.9
Matriculate	23.7	6.8	4.3	2.6	28.7
Higher Secondary+	21.7	12.6	5.6	0.2	31.2
<i>Occupational Categories</i>					
Worker	24.2	8.4	4.0	2.9	30.0
Non-worker	21.9	8.8	4.3	1.6	29.0
<i>Monthly Per Capita Expenditure Quartiles</i>					
Quartile 1 (Poorest)	22.9	7.6	4.8	2.0	27.7
Quartile 2	24.7	8.0	3.3	1.1	29.0
Quartile 3	25.7	9.5	3.5	3.5	33.0
Quartile 4 (Richest)	18.1	9.4	5.0	2.0	28.0
<i>Household Size</i>					
Up to 5 Members	24.3	9.8	4.6	2.6	31.2
More than 5 Members	20.5	6.9	3.5	1.4	26.4
<i>Age Categories (Years)</i>					
Up to 45	22.3	8.4	3.6	2.5	28.7
46-60	22.3	8.3	4.9	1.8	28.9
60 and above	23.7	9.1	4.0	2.1	30.2

*Source:* NCAER-NOSSAL 4IS Health Survey, 2019-22.

*Note:* The denominator in the above calculation is the total number of persons suffering from Chronic Breathlessness who sought treatment from any health care provider after the flare-up in their health condition.

**Appendix Table 4.11: Proportion of Patients Exiting and Switching the Treatment after Visiting the Health Care Provider by Socio-economic and Demographic Attributes (%)**

Background Characteristics	After First Visit			After Second Visit			After Third Visit		
	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Healthcare Provider	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Healthcare Provider	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Healthcare Provider
<b>All</b>	43.4	32.2	24.5	61.1	29.9	9.1	75.5	21.3	3.2
<i>Place of Residence</i>									
Rural	44.4	29.4	26.2	63.2	27.4	9.5	76.8	20.0	3.2
Urban	38.6	44.9	16.5	52.1	40.5	7.4	70.1	26.7	3.2
<i>Type of Health Care Provider</i>									
Public	51.7	20.7	27.7	70.4	21.9	7.8	84.5	13.5	2.1
Private	35.7	39.0	25.3	53.4	35.6	11.0	68.3	27.8	4.0
Chemist	59.5	33.5	7.0	73.3	25.7	1.1	91.4	6.0	2.6
Other	62.7	22.3	15.0	75.2	20.0	4.8	79.9	16.4	3.7
<i>Gender</i>									
Male	42.9	33.8	23.3	59.3	31.9	8.8	75.0	22.6	2.5
Female	44.1	30.0	25.9	63.4	27.2	9.4	76.1	19.6	4.3
<i>Social Groups</i>									
SC/ST	45.9	29.8	24.4	64.9	26.4	8.7	76.4	20.0	3.6
OBC/									
General	42.4	33.1	24.5	59.5	31.3	9.2	75.1	21.8	3.1
<i>Educational Categories</i>									
Illiterate	36.4	37.4	26.2	56.8	33.2	10.0	72.6	23.8	3.6
Matric	48.8	27.8	23.5	65.4	26.2	8.3	79.3	17.7	3.0
Higher Secondary+	44.6	33.0	22.4	55.2	35.6	9.2	66.7	30.6	2.7

(Contd.)

Appendix Table 4.11: (Contd.)

Background Characteristics	After First Visit			After Second Visit			After Third Visit		
	Nothing/Self-care/Medication	Repeat Visit	Switching the Healthcare Provider	Nothing/Self-care/Medication	Repeat Visit	Switching the Healthcare Provider	Nothing/Self-care/Medication	Repeat Visit	Switching the Healthcare Provider
<b>Occupational Categories</b>									
Worker	41.8	32.2	26.0	61.8	29.3	8.9	75.4	22.1	2.5
Non-worker	44.5	32.1	23.4	60.6	30.3	9.2	75.5	20.8	3.8
<b>Monthly Per Capita Expenditure Quartiles</b>									
Quartile 1 (Poorest)	49.0	27.1	23.9	69.0	20.7	10.3	82.4	14.2	3.4
Quartile 2	44.0	29.2	26.8	59.5	32.3	8.2	78.6	18.6	2.9
Quartile 3	42.3	34.3	23.4	58.2	31.6	10.2	69.6	26.1	4.3
Quartile 4 (Richest)	38.7	37.7	23.6	57.7	34.7	7.6	71.1	26.5	2.5
<b>Household Size</b>									
Up to 5 Members	49.2	28.1	22.6	68.4	24.4	7.2	80.5	17.2	2.3
More than 5	34.3	38.4	27.3	50.2	38.0	11.8	68.0	27.4	4.6
<b>Age Categories (Years)</b>									
Up to 45	46.0	29.2	24.9	66.7	24.1	9.3	81.9	15.4	2.8
46-60	39.5	34.7	25.8	56.9	33.6	9.5	71.0	24.3	4.7

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Note: The denominator is the total persons making successive visits to healthcare providers.

Appendix Table 4.12: Average Cost of Treatment of All the Four Visits (in Rs) by Socio-economic and Demographic Attributes (%)

Background Characteristics	Chandauli	Firozabad	Bargharh	Dhenkanal	Kollhapur	Yavatmal	Moga	Hosharpur	All
<b>Gender</b>									
Male	5211	3782	2889	2188	6357	4162	6012	3628	3799
Female	4459	4542	2395	2859	5882	4129	5320	3225	4044
<b>Age Categories (Years)</b>									
Up to 45	3662	4519	2749	1874	5472	4006	4298	2099	3349
46-60	4720	4184	2984	2980	7244	3569	6154	2945	4126
60 and above	5891	3727	2360	2679	5628	4799	6594	5128	4086
<b>Duration of the Disease (Months)</b>									
Up to 2 Years	3213	3032	2618	3440	6812	3370	4007	500	3520
2-5 Years	4695	3334	2749	2562	6706	4947	6539	8315	3768
More than 5 Years	5719	5691	2656	2133	5487	5029	5923	2351	4258
<b>Occupation Categories</b>									
Worker	4294	3469	2794	2267	5397	4305	3794	4245	3600
Non-worker	5135	4439	2584	2638	6488	3820	6227	2761	4118
<b>Social Groups</b>									
SC/ST	4524	3515	2242	2254	5242	4042	4737	5295	3477
OBC/General	5108	4202	2902	2597	6198	4229	7366	2394	4076
<b>Per Capita Expenditure Quintile</b>									
Quartile 1 (Poorest)	3787	3615	1882	1532	4191	3253	500	1268	2964
Quartile 2	4308	3660	2473	2267	4526	3550	3027	477	3238
Quartile 3	5156	4230	3119	2739	6181	3283	3577	2555	4124

(Contd.)

Appendix Table 4.12: (Contd.)

Background Characteristics	Chandauli	Ferozabad	Bargah	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	All
<b>Quartile 4 (Richest)</b>	7416	4627	3350	3699	7999	7333	7925	5414	5324
<i>Level of Education</i>									
<b>Illiterate</b>	4915	4088	2795	2936	4305	4613	4304	2640	3960
<b>Matric</b>	5235	4179	2527	2268	8371	3918	7207	2133	3863
<b>Higher Secondary+</b>	3560	3354	3309	2824	7212	4405	5388	7003	3919
<i>Household Size</i>									
<b>Up to 5 Members</b>	4154	3649	2731	2242	6020	4324	5472	3856	3586
<b>More than 5 Members</b>	5412	4378	2456	3257	6172	3365	6450	2758	4430
<i>Service Providers</i>									
<b>Public</b>	2486	2865	2051	1967	5001	1348	3950	2056	2320
<b>Private</b>	6182	4883	4660	4085	6474	5356	6407	4248	5289

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 4.13: Percentage of Households That Reported Spending More Than 10% on Treatment as a Percentage of the Total Household Expenditure by Socio-economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>On First Treatment Cost (% Households)</b>	<b>On Total Treatment Cost (% Households)</b>
All	5.5	9.6
<i>Place of Residence</i>		
Rural	5.4	9.9
Urban	6.0	8.1
<i>Household Size</i>		
Up-to 5 members	6.7	10.1
More than 5 members	3.4	8.9
<i>Social Groups</i>		
SC/ST	4.3	7.3
OBC/General	5.9	10.5
<i>Per Capita Expenditure Quartiles</i>		
Quartile 1	6.6	13.0
Quartile 2	3.5	7.7
Quartile 3	5.4	9.6
Quartile 4	6.3	8.3

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix 4.14: Households Spending on Treatment as a Percentage of the Total Non-food Expenditure by Socio-economic and Demographic Attributes (%)**

Background Characteristics	% Households Spending on Treatment Cost of First Visit as % of the Total Household Non-food Expenditure Catastrophic Thresholds				% Households Spending on Treatment Cost of All Visits As % of the Total Household Non-food Expenditure Catastrophic Thresholds			
	>10%	>20%	>30%	>40%	>10%	>20%	>30%	>40%
<b>All</b>	<b>18.1</b>	<b>6.8</b>	<b>3.6</b>	<b>2.3</b>	<b>24.5</b>	<b>10.7</b>	<b>6.7</b>	<b>4.0</b>
<i>Place of Residence</i>								
Rural	19.1	7.6	4.0	2.6	25.6	12.0	7.5	4.3
Urban	13.3	2.6	1.4	0.8	18.4	4.1	2.6	2.3
<i>Household Size</i>								
Up to 5 Members	21.2	7.9	4.5	3.0	26.1	11.2	6.8	4.5
More than 5 Members	13.2	5.0	2.2	1.2	21.8	9.9	6.4	3.2
<i>Social Groups</i>								
SC/ST	17.7	5.8	3.1	2.4	23.7	9.5	5.7	4.0
OBC/General	18.3	7.2	3.8	2.2	24.8	11.2	7.1	4.0
<i>Per Capita Expenditure Quartile</i>								
Quartile 1 (Poorest)	22.4	11.1	5.3	4.0	29.4	17.1	10.4	6.9
Quartile 2	16.8	5.2	3.0	1.9	25.5	9.8	6.0	3.9
Quartile 3	19.2	6.6	3.2	1.9	24.8	10.3	6.4	3.6
Quartile 4 (Richest)	14.2	4.3	3.0	1.4	18.3	5.7	4.0	1.8

Source: NCAER-Nossal 4IS Health Survey, 2019-22.



Appendix Table 4.15: Key Deciding Factors for Choosing Health Care Providers (%) by District

Districts	Proximity				Good Reputation			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	60.8	58.6	60.1	59.3	40.2	70.6	51.4	61.4
Firozabad	48.2	38.7	64.3	43.3	46.9	77.1	48.1	68.5
Bargarh	80.0	66.1	70.1	74.9	73.6	83.8	51.1	74.3
Dhenkanal	80.9	51.8	65.9	66.7	54.2	78.2	31.8	59.1
Kolhapur	75.3	54.1	37.1	56.1	69.1	72.3	45.6	71.0
Yavatmal	64.9	60.8	31.5	61.3	63.3	71.8	59.9	69.2
Moga	41.5	35.7	0.0	37.4	96.4	79.9	100.0	85.4
Hoshiarpur	65.3	68.1	0.0	64.2	88.7	96.5	100.0	94.5
All	70.9	50.9	63.1	58.2	59.4	75.7	42.9	67.3
	Inexpensive				Good Personal Experience			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	63.3	49.1	49.5	52.6	37.7	49.5	46.5	46.4
Firozabad	75.6	34.3	72.0	45.9	22.9	39.5	5.3	32.7
Bargarh	77.9	39.3	60.2	64.7	73.0	80.3	35.6	71.4
Dhenkanal	69.0	15.1	28.0	40.1	53.8	46.2	9.9	42.2
Kolhapur	76.6	40.7	53.3	45.5	49.0	61.6	35.0	59.1
Yavatmal	81.3	65.0	25.4	68.6	50.4	53.6	35.8	52.3
Moga	50.4	23.6	0.0	32.2	44.5	58.0	0.0	53.3
Hoshiarpur	100.0	50.2	100.0	66.2	69.2	100.0	45.7	89.0
All	73.6	38.7	49.2	50.3	52.0	51.3	17.7	48.0
	Qualification of Staff				Availability of Drugs			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	21.3	12.7	2.0	13.9	59.8	38.6	25.4	42.6
Firozabad	0.0	4.4	0.0	3.1	73.0	21.7	15.4	30.2
Bargarh	65.4	70.4	10.5	61.4	90.6	23.9	22.3	64.1
Dhenkanal	31.4	42.4	3.9	30.2	81.5	7.6	26.8	42.2
Kolhapur	38.2	24.9	19.1	26.3	46.3	20.3	36.8	24.0
Yavatmal	35.5	21.9	0.0	25.2	40.2	26.9	65.5	31.4
Moga	20.9	42.0	0.0	34.9	80.3	54.0	100.0	62.7
Hoshiarpur	65.3	79.8	0.0	72.2	69.2	66.1	0.0	64.0
All	35.8	22.5	4.0	24.6	75.2	23.6	23.7	39.2
	Relative/Friends Works There				Recommended by Relatives			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	2.6	1.1	2.1	1.6	6.1	3.7	2.1	4.1
Firozabad	0.0	1.7	1.7	1.4	3.2	7.0	3.3	5.9
Bargarh	1.0	4.3	0.7	2.0	4.0	6.4	3.0	4.6
Dhenkanal	2.7	9.2	6.1	5.9	3.9	13.1	12.6	9.2
Kolhapur	0.0	4.5	0.0	3.8	0.0	10.5	0.0	8.8
Yavatmal	5.7	2.3	0.0	3.2	6.3	11.9	47.0	11.1
Moga	3.9	0.0	0.0	1.3	3.0	3.5	0.0	3.2
Hoshiarpur	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1.8	3.4	3.2	2.9	4.0	8.3	7.4	6.9

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 4.16: Proportion of Patients Who Received First Treatment by Type of Healthcare Service Provider during the Beginning of the Symptoms by Socio-economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>
<i>Place of Residence</i>			
Rural	29.0	70.0	1.1
Urban	28.2	71.6	0.2
<i>Age Categories (in Years)</i>			
Up to 45 years	26.0	72.0	2.0
46-60 years	31.3	67.3	1.4
Above 60 years	28.2	71.5	0.3
<i>Gender</i>			
Male	34.0	64.4	1.6
Female	23.3	76.5	0.3
<i>Social Group</i>			
SC/ST	37.9	61.3	0.8
OBC/Gen	24.9	74.1	1.1
<i>Education Level</i>			
Illiterate	27.2	72.8	0.0
Matriculate	29.2	68.9	1.9
HS+	35.3	64.8	0.0
<i>Occupation</i>			
Worker	33.4	65.5	1.1
Non-worker	23.3	75.8	0.9
<i>Expenditure Quartile</i>			
Quartile 1	31.1	67.2	1.8
Quartile 2	30.1	67.8	2.1
Quartile 3	29.5	70.2	0.4
Quartile 4	25.3	74.7	0.1
<i>Household Size</i>			
Up to 5 members	29.5	69.7	0.8
More than 5 members	27.0	71.5	1.5

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 4.17: Proportion of Patients Who Received Treatment by Type of Healthcare Service Provider in First Six Months of Started Seeking Solutions by Socio-Economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>
<b>All</b>	<b>41.7</b>	<b>80.2</b>	<b>39.8</b>
<i>Place of Residence</i>			
Rural	42.2	80.7	39.6
Urban	37.6	75.7	40.8
<i>Age Category (Years)</i>			
Up to 45 years	48.8	79.0	28.0
46-60 years	42.5	75.4	37.9
Above 60 years	38.1	84.4	46.0
<i>Gender</i>			
Male	44.2	74.1	35.4
Female	38.9	86.9	44.6
<i>Social Group</i>			
SC/ST	50.3	69.5	24.9
OBC/General	37.8	85.0	46.3
<i>Education Level</i>			
Illiterate	39.8	85.3	48.5
Matriculate	43.2	77.2	34.0
HS+	41.2	73.9	32.0
<i>Occupation</i>			
Worker	49.1	77.7	36.9
Non-worker	32.6	83.3	43.2
<i>Expenditure Quartile</i>			
Quartile 1	38.3	76.8	36.6
Quartile 2	48.5	78.0	33.2
Quartile 3	39.3	80.0	44.8
Quartile 4	40.6	85.3	42.2
<i>Household Size</i>			
Up to 5 members	42.7	79.7	38.2
More than 5 members	38.7	81.7	44.1

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 4.18: Number of Health Service Providers Consulted in the Entire Period of Illness by Socio-Economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>
<b>All</b>	<b>2.3</b>	<b>4.9</b>	<b>4.6</b>
<i>Place of Residence</i>			
Rural	2.4	4.8	4.8
Urban	1	4.9	2.5
<i>Age Category (Years)</i>			
Up to 45 years	1.5	4	3.6
46-60 years	1.6	4.2	3.9
Above 60 years	3.1	5.7	5.5
<i>Gender</i>			
Male	2.2	4	4.4
Female	2.4	5.8	4.7
<i>Social Group</i>			
SC/ST	1.4	3	3.5
OBC/General	2.7	5.7	5.1
<i>Education</i>			
Illiterate	2.8	6.1	5.8
Matriculate	2	4.1	4.1
Higher Secondary+	1.3	3.3	1.9
<i>Occupation</i>			
Worker	2.1	4.1	4.1
Non-worker	2.5	5.8	5.1
<i>Expenditure Quartiles</i>			
Quartile 1	2.5	3.4	4
Quartile 2	2.3	4.3	5.1
Quartile 3	2.3	6.2	5.6
Quartile 4	2.1	4.7	3.2
<i>Household Size</i>			
Up to 5 members	2.1	4.2	4.3
More than 5 members	2.8	6.6	5.3

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 4.19: Distribution of Patients with Chronic Breathlessness  
by Socio-demographic Characteristics and Type of Provider Consulted**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>
<b>All</b>	<b>27.5</b>	<b>75.8</b>	<b>24.0</b>
<i>Place of Residence</i>			
Rural	27.9	76.1	24.6
Urban	23.4	73.5	18.5
<i>Age Category (Years)</i>			
Up to 45 years	26.0	74.7	19.4
46-60 years	30.4	72.8	21.5
Above 60 years	25.9	78.6	27.8
<i>Gender</i>			
Male	29.8	70.7	20.7
Female	25.0	81.4	27.6
<i>Social Group</i>			
SC/ST	35.6	65.5	12.7
OBC/General	23.9	80.4	29.0
<i>Education Level</i>			
Illiterate	27.2	80.7	30.6
Matriculate	27.9	72.6	20.4
Higher Secondary+	25.9	71.7	13.3
<i>Occupation</i>			
Worker	29.8	74.6	22.8
Non-worker	24.6	77.3	25.5
<i>Expenditure Quartiles</i>			
Quartile 1	29.0	72.8	24.7
Quartile 2	30.0	75.0	21.4
Quartile 3	25.8	76.7	26.4
Quartile 4	26.0	77.9	22.9
<i>Household Size</i>			
Up to 5 members	27.5	74.8	23.1
More than 5 members	27.3	78.8	26.6

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 4.20: Distribution of Health Service Providers Consulted Routinely for Treatment by Socio-Economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>
<b>All</b>	<b>22.5</b>	<b>68.9</b>	<b>8.6</b>
<i>Place of Residence</i>			
Rural	22.2	69.6	8.3
Urban	25.5	63.4	11.1
<i>Age Category (Years)</i>			
Up to 45 years	21.0	72.3	6.7
46-60 years	27.1	64.6	8.3
Above 60 years	19.7	70.8	9.6
<i>Gender</i>			
Male	26.2	66.8	7.0
Female	18.4	71.3	10.3
<i>Social Group</i>			
SC/ST	33.2	63.5	3.3
OBC/General	17.8	71.4	10.9
<i>Education Level</i>			
Illiterate	19.1	70.5	10.4
Matriculate	24.6	67.6	7.8
HS+	26.1	69.5	4.4
<i>Occupation</i>			
Worker	25.8	67.6	6.7
Non-worker	18.5	70.6	10.9
<i>Expenditure Quartiles</i>			
Quartile 1	22.8	70.8	6.5
Quartile 2	21.3	69.3	9.4
Quartile 3	24.7	68.6	6.7
Quartile 4	20.8	67.5	11.7
<i>Household Size</i>			
Up to 5 members	22.6	68.5	8.9
More than 5 members	22.1	70.2	7.7

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

# GYNAECOLOGICAL PROBLEMS OF WOMEN: HEALTHCARE USE PATHWAYS, OUT-OF-POCKET SPENDING AND SERVICE QUALITY

In this chapter, the characteristics of *treatment pathways of women with gynaecological problem* are assessed via:

- i. The time between the first appearance of symptoms and the time when the treatment was sought;
- ii. The number and types of healthcare providers visited;
- iii. The order in which healthcare providers were consulted, including the number of times patients switched between healthcare providers;
- iv. Total number of visits to healthcare providers; and
- v. The point of exit from treatment-seeking.

This chapter also reports the findings on the out-of-pocket (OOP) spending incurred by households on healthcare for women with gynaecological problems, including expenditures incurred over the full treatment pathway for the most recent acute episode related to the condition.

The quality of healthcare was also assessed based on the respondents' perceptions on the quality of the services received.

This chapter is organised into five sections. Section 5.1 gives the description of the sampling procedure and household characteristics. It also provides the selection details of the sample respondents. Section 5.2 includes background details such as the demographic and socio-economic profiles of the households having women with gynecological problems, including their housing characteristics. Section 5.3 reports findings on treatment-seeking behaviour, including different elements of treatment 'pathways' of the respondent during the one year preceding the date of the survey. Section 5.4 discusses the household's OOP spending on healthcare services. Section 5.5 presents the results on the quality of healthcare services by different healthcare providers, as perceived by the survey respondents. This section

also highlights the differences between public and private healthcare providers by levels of care. The last section 5.6 presents the health seeking behaviour of women since the beginning of the symptoms for gynecological problems.

## 5.1 Sampling and Household Characteristics

The findings reported in this chapter are based on a survey of 2,510 individuals from the available households sampled from eight districts and are representative at the district level. The sample of households includes at least one woman who has been suffering from gynaecological problems during the year preceding the survey with the focus on healthcare usage and expenditure incurred by one of the individuals who reported gynaecological problems.

These households were spread across 765 villages and 251 urban blocks in the eight districts. Out of the total sample households, 76.7 per cent were from rural areas (ranging from 62.6 per cent of the total in Kolhapur to 83.2 per cent in Dhenkanal) and 23.3 per cent were from urban areas (ranging from 16.8 per cent of the total in Dhenkanal to 37.4 per cent in Kolhapur). The district-wise number of selected sample households is given in Table 5.1.

**Table 5.1: District-wise Number of Selected Households by Place of Residence**

Districts	Rural	Urban	All
Chandauli	325	79	404
Firozabad	300	167	467
Bargarh	366	78	444
Dhenkanal	352	71	423
Kolhapur	87	52	139
Yavatmal	218	47	265
Moga	219	73	292
Hoshiarpur	57	19	76
<b>All</b>	<b>1,924</b>	<b>586</b>	<b>2,510</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

The distribution of the sample by social group, religion, and household size is given in Table 5.2. A majority of the households belonged to the Other Backward Class (OBC) and General (64.4 per cent) categories, while the remaining 35.6 per cent were from the SC/ST communities. The highest proportion of SC/ST households was in Moga (69.3 per cent) while the lowest proportion of such households was in Firozabad (24.5 per cent).

Nearly 87 per cent of the sample households were Hindu, while the remaining were from other religious groups. While 100 per cent of the sample households in Dhenkanal and more than 90 per cent in Chandauli and Bargarh were Hindus, in Moga district, a majority (87.5 per cent) belonged to non-Hindu communities. It should be mentioned that: a) the selected households belonged to a specific category, that is, households having at least one woman who had been suffering from a chronic gynaecological problem over the one year preceding the survey, and b) the religion and caste classifications were based on the respondents' self-identification.

As regards the household size, out of the total selected households, 37.8 per cent had more than five members, with this household size being the most prevalent in districts like Chandauli (62.2 per cent) and Firozabad (59 per cent). Comparatively, in districts like Yavatmal, Hoshiarpur, and two districts of Odisha, the proportion of households with up to five members was the highest (more than 86 per cent). At the State level, sample districts from Uttar Pradesh reflect larger sized households in the sample, whereas those from Odisha, Maharashtra, and Punjab reflect smaller sized households.

While a higher proportion of the sample households from the districts of Uttar Pradesh and Odisha belongs to lower expenditure quartiles (Quartiles 1 and 2), in case of Maharashtra and Punjab, the higher proportion of such households comes from the top two expenditure quartiles (Quartiles 3 and 4).<sup>8</sup> In the two sample districts of Punjab, the proportion of households in expenditure Quartile 1 is even less than 4 per cent, and is around 7 per cent in Kolhapur for the same quartile.

**Table 5.2: Distribution of Selected Households by Socio-economic Characteristics across Districts**

Background Characteristics	Uttar Pradesh		Odisha		Maharashtra		Punjab		All
	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	
<i>Social Groups</i>									
SC/ST	44.3	24.5	42.6	30.9	18.1	44.7	69.3	42.1	35.6
OBC/General	55.7	75.5	57.4	69.1	81.9	55.3	30.7	57.9	64.4
<i>Religion</i>									
Hindu	90.2	84.2	99.4	100.0	89.0	79.4	12.5	66.7	86.9
Others	9.8	15.8	0.6	0.0	11.0	20.6	87.5	33.4	13.1
<i>Household Size</i>									
Up to 5 members	37.8	41.0	86.7	86.4	62.5	89.2	84.0	86.1	62.2
> 5 members	62.2	59.0	13.3	13.6	37.6	10.8	16.0	13.9	37.8
<i>Per Capita Expenditure Quartile</i>									
Quartile 1	45.4	25.0	34.5	34.0	6.8	15.8	3.9	3.3	28.4
Quartile 2	22.4	25.6	30.7	24.1	25.8	30.2	13.1	21.0	25.9
Quartile 3	16.7	28.1	20.6	17.9	33.1	37.5	34.8	25.2	24.8
Quartile 4	15.5	21.3	14.2	24.0	34.3	16.5	48.2	50.6	20.9

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

<sup>8</sup>The distribution is based on the total sample of selected households and its per capita expenditure quartile.



**Respondents:** The household questionnaire was administered to the individual who was the most knowledgeable about the ailing person's disease and the treatment that took place during the one year preceding the survey besides other household information related to income and expenditure (details are given in Chapter 2). It was observed that in 85 per cent of the total households, the ill persons themselves were the respondents of the survey. Another 15 per cent were either mothers or grandmothers or mothers-in-law, or sisters/sisters-in-law or daughters/daughters-in-law or other relatives of the ill person.

## 5.2 Housing and Individual Characteristics

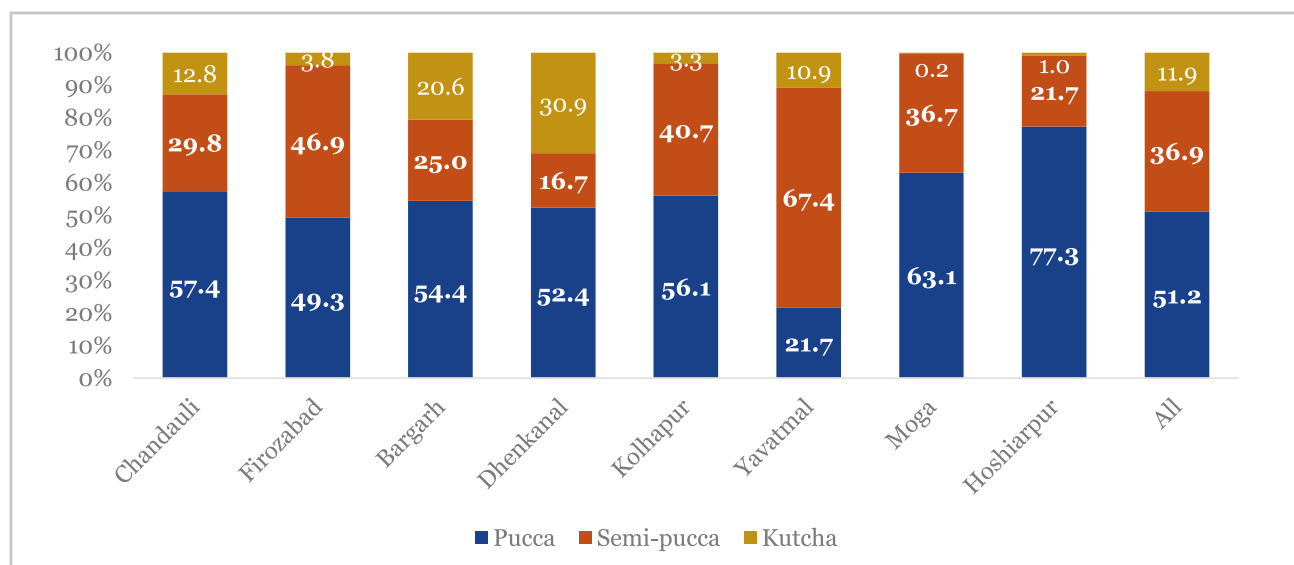
This section of the chapter addresses two topics. Firstly, it describes the household's standard of living as observed through some basic amenities and ownership of assets like house, type of house, electricity, sanitation facilities, drinking water facilities and purification, and a variety of household

consumer durable items as wealth indicators. The second part of this section focuses on the profile of the selected women suffering from gynaecological problems.

### 5.2.1 Housing Characteristics

**Ownership and Type of House:** Figure 5.1 shows that a majority of the households across the sample districts in the four States of Uttar Pradesh, Odisha, Maharashtra, and Punjab have a higher proportion of *pucca* houses, except for Yavatmal, where 67 per cent of the households were semi-*pucca* constructions. This proportion is also higher in the case of Firozabad, at 47 per cent. Among all, Dhenkanal is the district where more than 30 per cent of the sample households have *kutcha* construction. At the State level, Punjab has a higher proportion of households with *pucca* structures as compared to the other three States. In addition to this, more than 97 per cent of the surveyed households were staying in their own houses.

**Figure 5.1: Distribution of Households by Housing Characteristics and District**



**Source:** NCAER-Nossal 4IS Health Survey, 2019-22.

**Access to Electricity:** About 97.8 per cent of the total households had access to electricity, with the proportion of households having this access being 97.5 per cent in rural and about 99 per cent in urban areas. Nearly all the sample households in the districts of Maharashtra and Punjab had access to electricity, the households in Uttar Pradesh and Odisha show comparatively lower access to electricity. The

Chandauli district of Uttar Pradesh reports access to electricity in less than 95 per cent of the sample households.

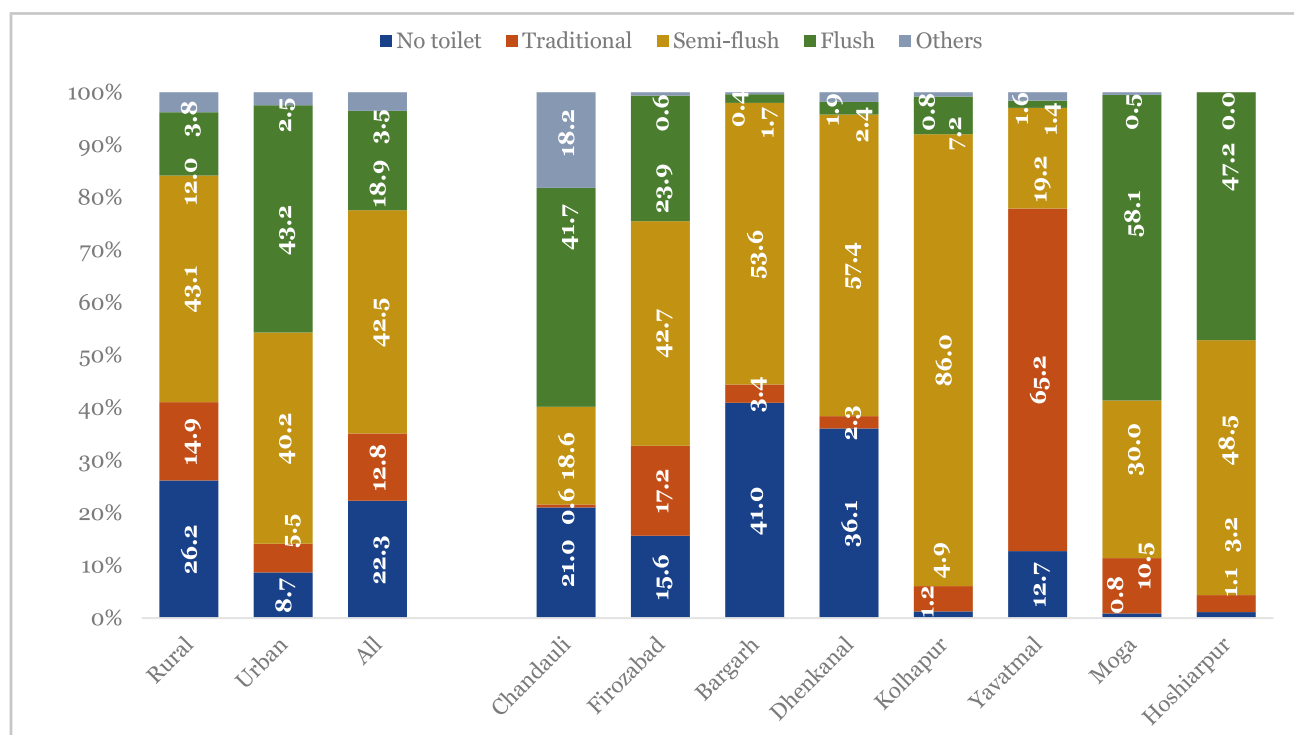
**Access to Sanitation Facilities:** The data in Figure 5.2 shows that 22.3 per cent of the households did not have any toilet facilities in the sample households. The condition of rural households in terms of toilet facilities is more vulnerable (26.2 per cent households

lacking toilet facilities) than urban households where this proportion is just 8.7 per cent. Among those who have this facility, while in rural areas, a majority own semi-flush toilets, in urban areas, the proportion of households owning semi-flush and flush toilets is almost similar, at around two-fifths of the total.

Across the eight districts, the proportion of households lacking toilet facilities is the highest in the districts of Odisha as compared to the other three States. Even among the households that have toilets,

a majority in both the districts of Odisha have access to semi-flush toilet facilities. Maharashtra also shows higher ownership of traditional or semi-flush toilet facilities. In contrast, the districts of Punjab show better toilet facilities as a larger proportion of the households here have toilets with flush facilities as compared to the remaining States. The Chandauli district of Uttar Pradesh also shows better toilet provisions (with flush facilities), as reported by nearly 42 per cent of the households in the district.

**Figure 5.2: Percentage Distribution of Households by Type of Toilet Facilities by District and Place of Residence**



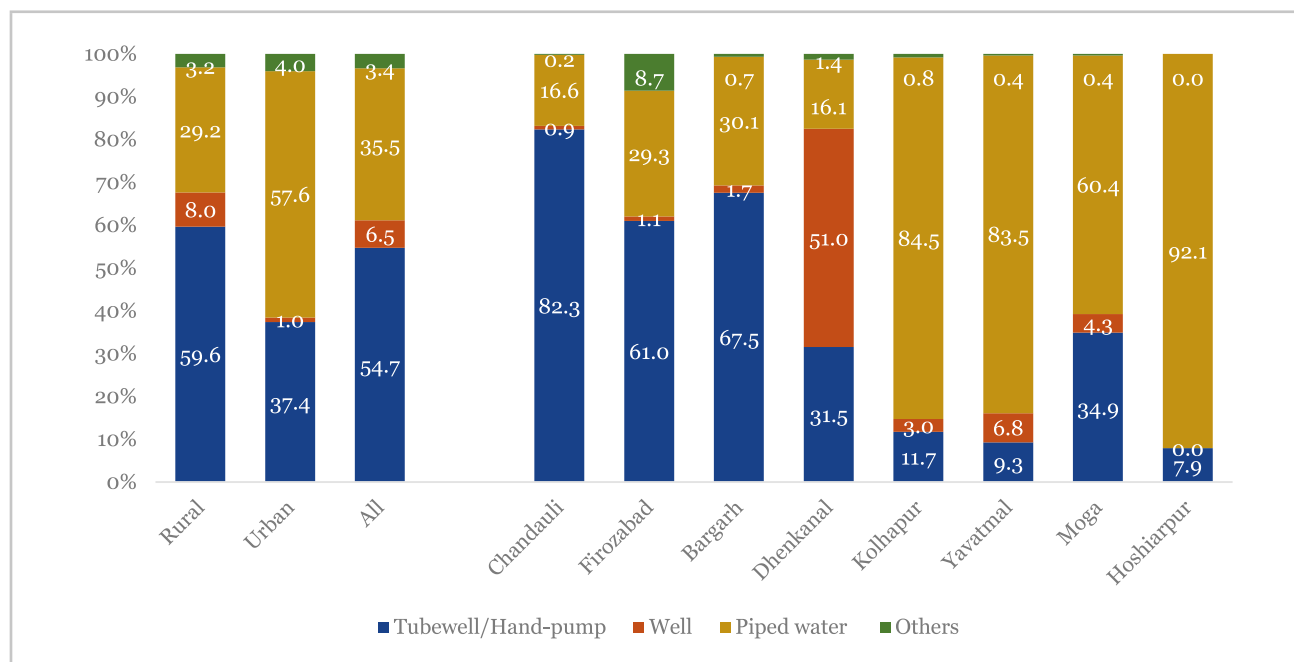
Source: NCAER-Nossal 4IS Health Survey, 2019-22.

*Drinking Water Sources and Treatment:* The following two types of information were gathered on drinking water: (i) the sources of drinking water, and (ii) the treatment process, that is, how the households were making the water safe for drinking, indicating that the households were conscious about the quality and safety of the potable water available to them.

Figure 5.3 shows the percentage distribution of households by their source of drinking water across rural-urban regions and districts. It is found that nearly 68 per cent of the households in rural areas are still using tubewells/hand pumps or wells as their major source of drinking water, whereas this

proportion is much lower at 38 per cent in urban areas. In urban locations, a majority (around 58 per cent) of the households have access to piped water. The usage of tubewells/hand pumps or wells as the major source of drinking water is much higher in the sample districts of Uttar Pradesh and Odisha. In contrast, a larger proportion of the households in the sample districts of Maharashtra and Punjab have access to piped water for drinking purpose. In the Moga district of Punjab, nearly 40 per cent of the households are still dependent on traditional sources of drinking water such as tubewells/hand pumps or wells.

**Figure 5.3: District-wise Percentage Distribution of Households by Source of Drinking Water and Place of Residence**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Almost 76 per cent of the total households were consuming water directly from the source, which means that the households were not treating their water before drinking. Another 11 per cent of the households were straining the drinking water using cloth, whereas just 5 per cent were using water filters. The remaining households use different modes to clean water such as earthen storage pots, chlorine tablets, or electric purifiers but the proportion of such households is very small.

The above figures depict the district-wise and rural-urban differences separately for each of the three indicators, viz., access to toilet facilities, safe drinking water, and electricity, together termed as 'basic amenities'. Access to these amenities is imperative for having a standard quality of life and should be the basic right for any individual. Table 5.3 shows a huge variation in the provision of these amenities at the household level. Nearly three-fourths of the households in rural areas still lack these basic amenities, whereas this proportion is lower in urban households, at 45 per cent. At the district level, the proportion of households having these basic amenities is much higher in the sample districts of Punjab and Maharashtra as compared to the districts covered in Uttar Pradesh and Odisha. These numbers, in a way, highlight the poor condition of the household

environment and the need for proper implementation of policies by the government to ensure better and more equitable access to these facilities, particularly in the two States of Uttar Pradesh and Odisha.

**Table 5.3: Proportion of Households Having Three Basic Facilities by Districts and Place of Residence**

Districts	Rural	Urban	All
Chandauli	7.1	57.2	14.4
Firozabad	11.8	47.5	26.4
Bargarh	17.3	57.2	20.5
Dhenkanal	7.8	60.8	13.0
Kolhapur	82.2	97.7	83.3
Yavatmal	53.1	58.5	53.4
Moga	63.1	82.3	70.7
Hoshiarpur	91.2	96.4	93.3
All	22.5	55.0	29.7

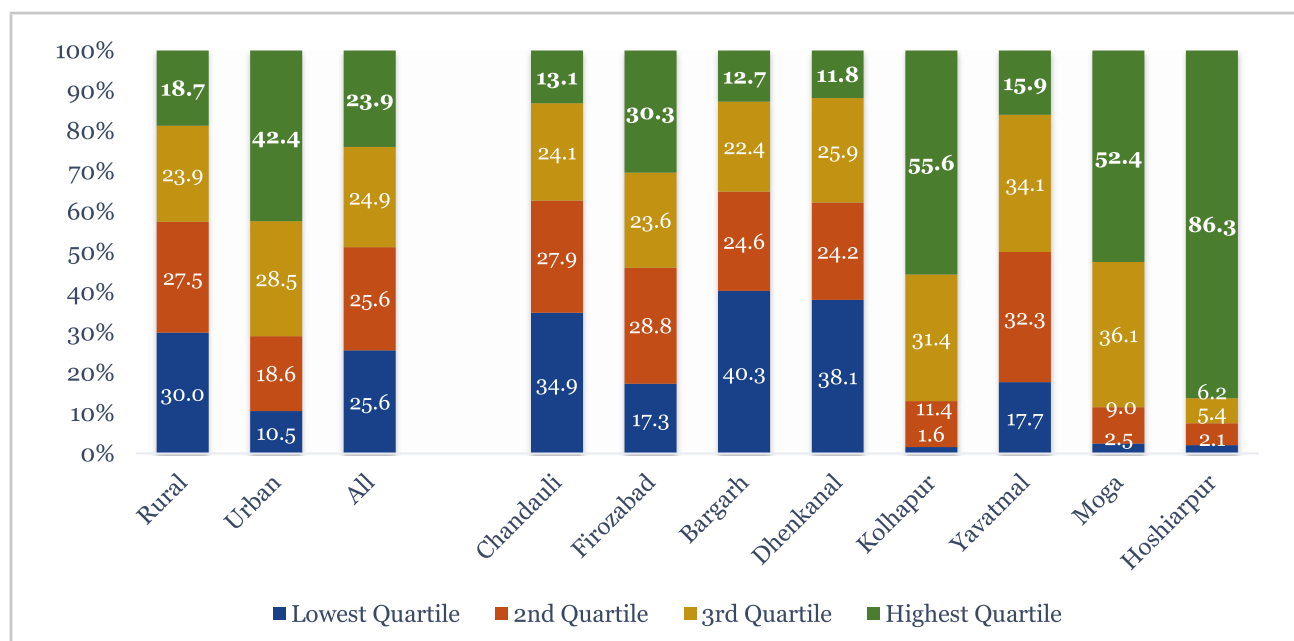
Source: NCAER-Nossal 4IS health survey, 2019-22.

**Wealth index:** This study also collected information on household goods along with the housing amenities in order to understand the household's standard of living and to portray the wealth index with these indicators. Figure 5.4 represents the wealth

quartiles<sup>9</sup> showing rural-urban diversity and district-wise comparisons in the four sample States. While 72 per cent of the urban households belonged to the top two wealth quartiles, in rural areas, this proportion is around 43 per cent. The remaining households in rural areas belonged to the bottom two wealth quartiles. At the district level, a wide variation is reflected among

the four States. The larger proportion of households in the districts of Maharashtra and Punjab belonged to top two wealth quartiles, whereas in the districts in Odisha and Uttar Pradesh, except Firozabad, a majority of the households belonged to the bottom two wealth quartiles.

**Figure 5.4: Share of Households across Wealth Quartiles by Districts and Place of Residence**



Source: NCAER-Nossal 4IS health survey, 2019-22.

### 5.2.2 Profile of Women with Gynaecological Problems

Table 5.4 provides information on the profile of ill women who self-reported that the gynaecological problems they faced during the one year preceding the survey were severe enough to regularly disrupt their daily activities or compel them to seek treatment. The data shows that more than 35 per cent of the ailing women fell under the age cohorts of less than 25 years and 31-45 years, in total. With an increase in age, the proportion of self-reporting among ailing women declines. The trend is almost similar in all the districts.

About 72 per cent of the ailing women in the sample were married, 57 per cent of them had

completed matriculation, and another 22 per cent had completed higher education. Although a majority of the ailing women had completed matriculation across all the sample districts except Hoshiarpur and Firozabad, this proportion was the highest in the case of districts in Odisha as compared to the other States. As far as women who had completed higher secondary level of education were concerned, the districts reporting a higher proportion of ailing women from this category were from Hoshiarpur from Punjab and Kolhapur from Maharashtra. More than 80 per cent of the ailing women were non-workers across districts, except in Yavatmal and Hoshiarpur, where 48.5 per cent and 38.7 per cent of the women, respectively, belonged to the working category.

<sup>9</sup> Households are given scores based on the number and kinds of consumer goods they own, ranging from a television to a bicycle or car, and housing characteristics such as toilet facilities. These scores are derived by using principal component analysis. Overall, the wealth quartiles have been compiled by assigning the household score, ranking each household by its score, and then dividing the distribution into four equal categories, each comprising 25 per cent of the households.

**Table 5.4: Profile of Ill Persons by Socio-economic Characteristics across Districts (% Distribution)**

Background Characteristics	Uttar Pradesh		Odisha		Maharashtra		Punjab		All
	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	
<i>Age Category (Years)</i>									
Up to 25 years	41.1	32.1	43.0	39.0	28.6	32.2	27.1	29.2	36.2
26-30 years	17.3	25.2	21.1	17.9	17.7	17.8	16.1	42.3	21.4
31-45 years	36.9	36.8	34.3	39.4	48.5	42.7	52.8	23.3	37.8
More than 45 years	4.7	6.0	1.6	3.7	5.2	7.3	4.0	5.3	4.6
<i>Marital Status</i>									
Married	72.6	77.2	66.1	69.7	79.5	68.6	85.4	44.8	72.4
Unmarried/ Widowed/ Separated/ Divorced	27.4	22.8	33.9	30.3	20.5	31.4	14.6	55.2	27.6
<i>Educational Qualifications</i>									
Illiterate	25.8	36.8	6.5	8.5	6.1	10.4	18.2	2.3	20.8
Matriculate	51.9	42.4	77.3	73.5	55.3	62.7	64.8	30.2	57.4
Higher secondary	22.3	20.8	16.2	18.0	38.7	26.9	17.0	67.5	21.9
<i>Occupational Status</i>									
Worker	3.3	10.2	6.7	4.4	17.6	48.5	12.0	38.7	11.8
Non-worker	96.7	89.8	93.3	95.6	82.4	51.6	88.1	61.3	88.2

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

### 5.3 Healthcare Pathways

Health-seeking behaviour is a complex decision-making process, more so in the case of gynaecological conditions suffered by women in middle- and low-income countries. As discussed in Chapter One, the mere acceptance of a disease involves stigmatisation in society, especially for the young and poor women. Treatment-seeking pathways are further stalled by ignorance of the illness and lack of awareness of treatment options, which pushes women towards the providers of alternative modes of treatment with dubious effectiveness. Moreover, any delay in seeking treatment for gynaecological conditions is usually longer and proves to be expensive. The main aspects of health-seeking behaviour being discussed in this section are similar to those in Chapter Four. This section elaborates the status of treatment-seeking by women who suffer from common gynaecological

conditions. The following specific questions were explored:

- Following the initial recognition of the acute episode, was any healthcare provider consulted?
- What was the first source of treatment?
- What was the length of time from identification of the health problem till the choice of the first treatment?
- How many providers were consulted during the episode?
- What was the sequencing of providers who were consulted during the episode (that is, who was consulted first, who was consulted second, and so forth)?
- How (or why) did the patient exit treatment? What factors affected this choice?

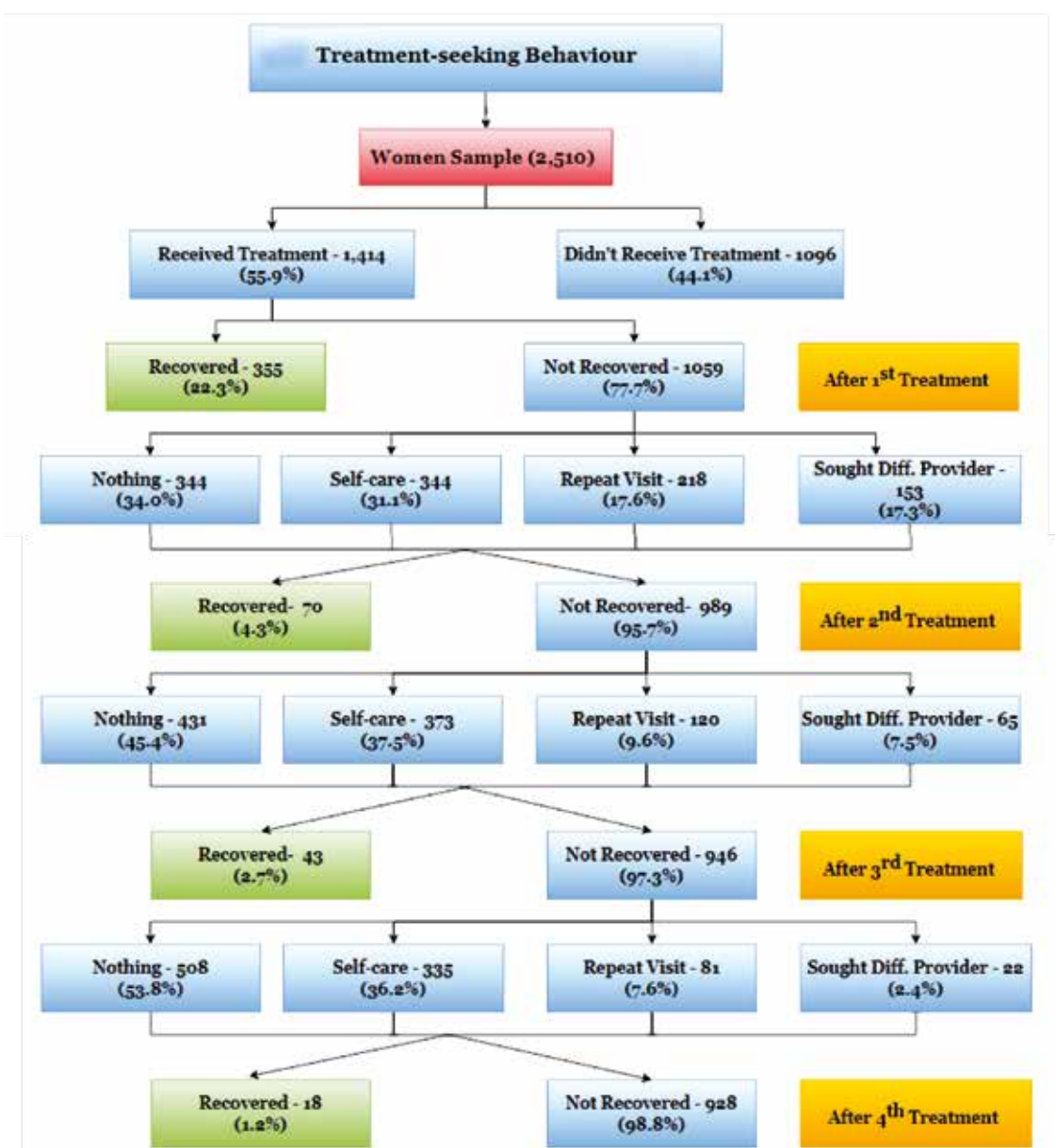
### 5.3.1 Number of Visits and Distribution of Patients

Figures 5.5 and 5.6 present a brief overview of the status of treatment starting from 'sought treatment' to 'exited treatment'.

Figure 5.5 reiterates that a sample of 2,510 women with common gynaecological problems was chosen from the selected eight districts of Uttar Pradesh, Odisha, Maharashtra, and Punjab. About 56 per cent of the women received treatment from a healthcare provider and 22 per cent of the women who sought treatment recovered after their first visits.

The percentage of recovered patients fell sharply in the subsequent visits. Among the women who did not recover after their first visits, 65 per cent did nothing or resorted to self-care/self-medication, whereas the remaining women continued taking treatment either from the same health care provider or from a different one. The proportion of such women patients who did nothing or resorted to self-care/self-medication increased during the subsequent visits, touching 90 per cent after their third visit, and at this stage only 10 per cent of the women continued taking treatment either from the same health care provider or from a different one.

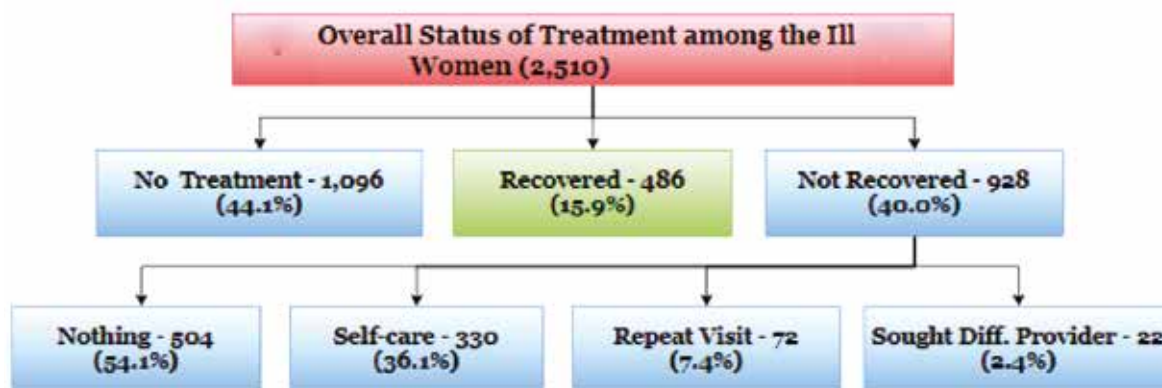
Figure 5.5: Treatment-seeking Behaviour



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Figure 5.6 sums up the final status of women after their four visits. While 44 per cent of them did not ever seek treatment, only 16 per cent could recovered from the problem while 40 per cent could not recover.

**Figure 5.6: Overall Status of Treatment among the Ill Women (2510)**

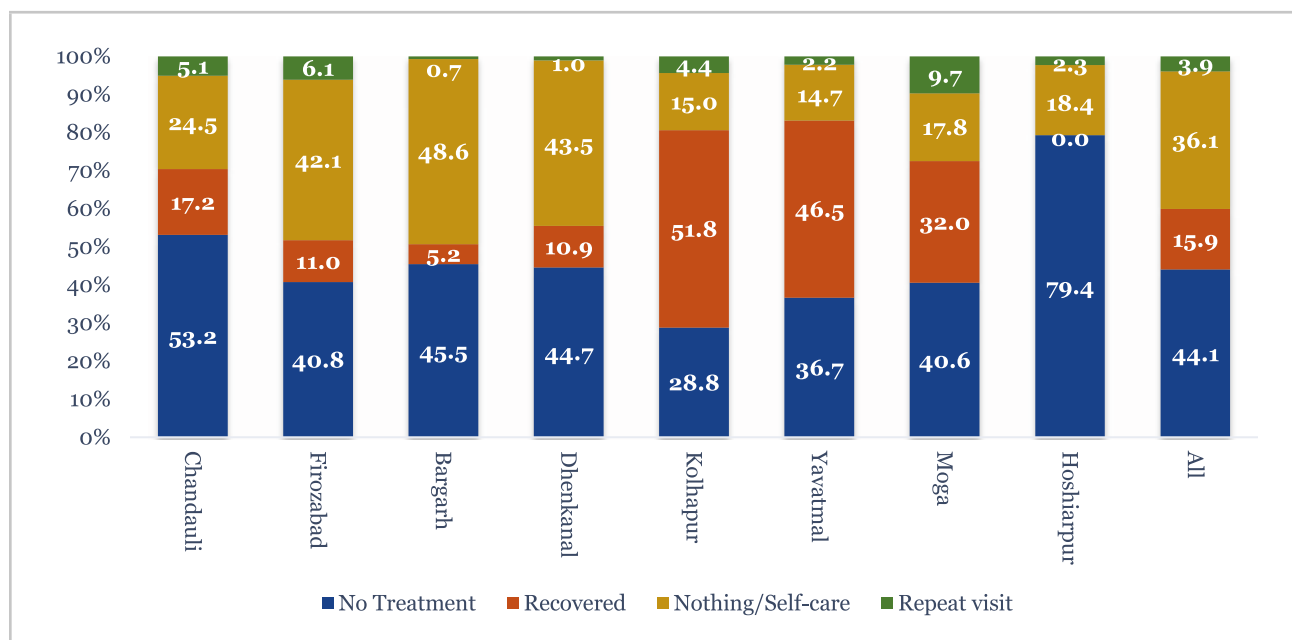


Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Figure 5.7 depicts the status of women with gynaecological conditions after four visits in all the sampled districts across the four States. Among all the districts, while Hoshiarpur and Chandauli had the highest proportion (79.4 per cent and 53.2 per cent) of women not seeking treatment after a flare-up in their condition, Kolhapur and Yavatmal accounted for the lowest corresponding proportions, at 28.8 per cent and 36.7 per cent, respectively, in this category. Since the ailing women in the districts of Maharashtra were among those who took the treatment, these districts also reflect a higher proportion among those who recovered from the disease. Three districts

(Firozabad in Uttar Pradesh and two districts in Odisha) accounted for more than 40 per cent of the women who either did nothing or resorted to self-care after seeking treatment from at least one health care provider. This proportion was less than 20 per cent in the districts of Maharashtra and Punjab. Interestingly, Hoshiarpur is the only sample district where there was no case of recovery, with the reasons being that more than three-fourths of the women suffering from gynaecological problem did not go for treatment and 18.4 per cent of the women exited the treatment pathways without recovery.

**Figure 5.7: District-wise Status of Treatment after All Four Visits**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Appendix Table 5.1 further elaborates the latest status of women with gynaecological conditions by other socio-demographic variables. The proportion of women not seeking treatment after a flare-up in their gynaecological conditions was slightly higher among women living in the rural areas, unmarried/widowed/separated women, and women who were below 25 years of age. There were no other noticeable variations across these socio-demographic dimensions.

### 5.3.2 Reasons for Not Seeking Treatment

Table 5.5 highlights the reasons for not seeking treatment among women after a flare-up in their

gynaecological condition. Around 63 per cent of the women waited for auto-recovery, while 11 per cent cited lack of money as the main reason for refraining from seeking treatment. Another 11 per cent of the women reported the illness not being very severe as the reason for not seeking treatment. 'Waiting for auto-recovery' was cited as the main reason across all the eight districts. A significant proportion of women in Bargarh and Dhenkanal (>17 per cent) reported lack of money as a hindrance. For nearly 30 per cent of the women in Kolhapur, the highest among all districts, 'self-care' was also a reason for not seeking the treatment.

**Table 5.5: Proportion of Women Not Seeking Treatment after a Flare-up during the Preceding One Year by Districts (%)**

Districts	Wait for Auto-Recovery	Illness Not Severe Enough	Got Better	Self-care	Not enough Money	Other
Chandauli	59.6	14.6	12.9	0.8	8.1	4.2
Firozabad	66.2	14.1	0.4	5.6	9.8	4.0
Bargarh	69.6	5.4	1.7	5.7	17.0	0.5
Dhenkanal	51.3	4.1	0.0	18.6	22.7	3.3
Kolhapur	54.2	11.8	0.0	28.9	0.0	5.1
Yavatmal	61.6	21.6	10.7	4.9	1.2	0.0
Moga	52.5	11.4	1.0	23.4	2.8	8.9
Hoshiarpur	66.1	0.0	2.7	30.1	1.1	0.0
<b>All</b>	<b>63.1</b>	<b>11.0</b>	<b>3.8</b>	<b>8.1</b>	<b>11.0</b>	<b>2.9</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

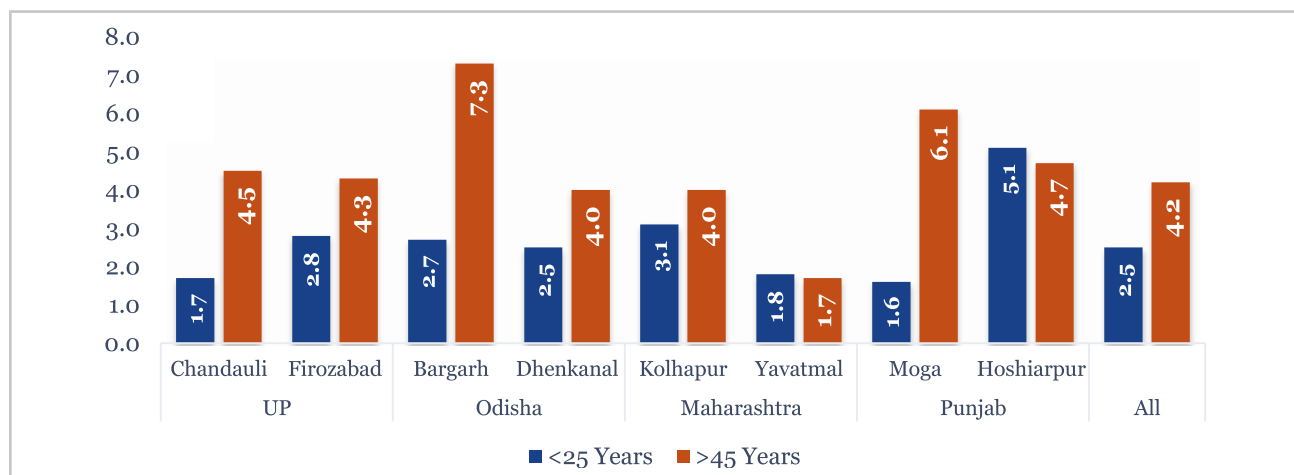
Appendix Table 5.2 indicates that lack of money was a considerable hurdle for a higher proportion of women who were living in rural areas, married, and belonging to the SC/ST group, small-sized families, lowest two expenditure quartiles, and who were illiterate and non-working. In contrast, in the other categories, a larger proportion of women waited for recovery.

### 5.3.3 Length of Time Spent with Gynaecological Problems

The average duration of illness for women below the age of 25 years was 2.5 years whereas the same for women above the age of 45 years was 4.2 years (Figure 5.8). In the lower age group, four districts reported above average duration including Hoshiarpur (5.1 years), Kolhapur (3.1 years), Firozabad (2.8 years), and Bargarh (2.7 days). In the upper age category, four districts reported above average duration of illness, ranging from 4.3 years in Firozabad to 7.3 years in Bargarh.



**Figure 5.8: Average Duration of Gynaecological Conditions (in years) by Age Categories**



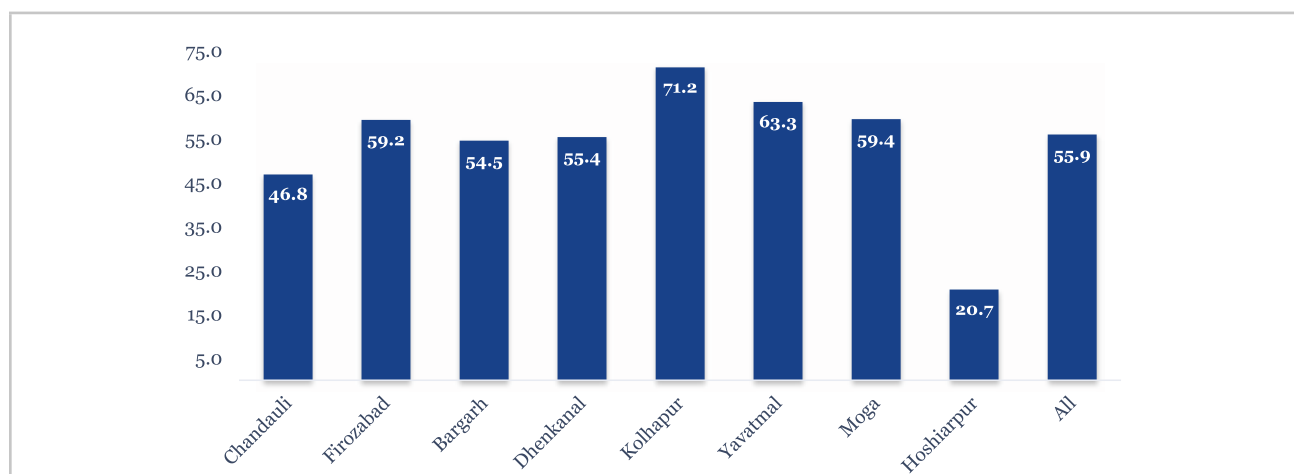
Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

The impact of socio-economic factors on the duration of common gynaecological conditions is not distinctively linear. In the sampled districts, the average duration was 3.3 years, with the lowest duration (1.7 years) recorded in Yavatmal, and the highest (5.3 years) in Hoshiarpur. Although not much variation in the average duration of gynaecological conditions is indicated by rural-urban locations and social group, some variations do exist by marital status of women. In the case of the rural-urban comparison, the difference in the average duration is reported in Hoshiarpur and Kolhapur, by social group. In addition to these two districts, Firozabad also reported some variations in the average duration. As far as marital status is concerned, except for Yavatmal and Moga, all the other sample districts reported wide variations in the average duration of their health conditions (Appendix Table 5.3).

### 5.3.4 Consultation Status after Flare-up

The study also collected data on whether the suffering women sought treatment or not, and the reasons for not seeking treatment cited by them. Figure 5.9 shows the proportion of women seeking treatment after a flare-up in their gynaecological conditions. It may be recalled that 56 per cent of the women sought treatment with inter-district variations. The lowest proportion of such cases was reported in Hoshiarpur (20.7 per cent), followed by Chandauli (46.8 per cent), and the highest was reported in Kolhapur and Yavatmal (above 63 per cent). Overall, a larger proportion of women in the districts of Maharashtra and Punjab, barring Hoshiarpur, visited health care providers for seeking treatment than in the districts of Uttar Pradesh and Odisha.

**Figure 5.9: Proportion of Women Reporting an Episode of Illness Who Visited a Provider by District**

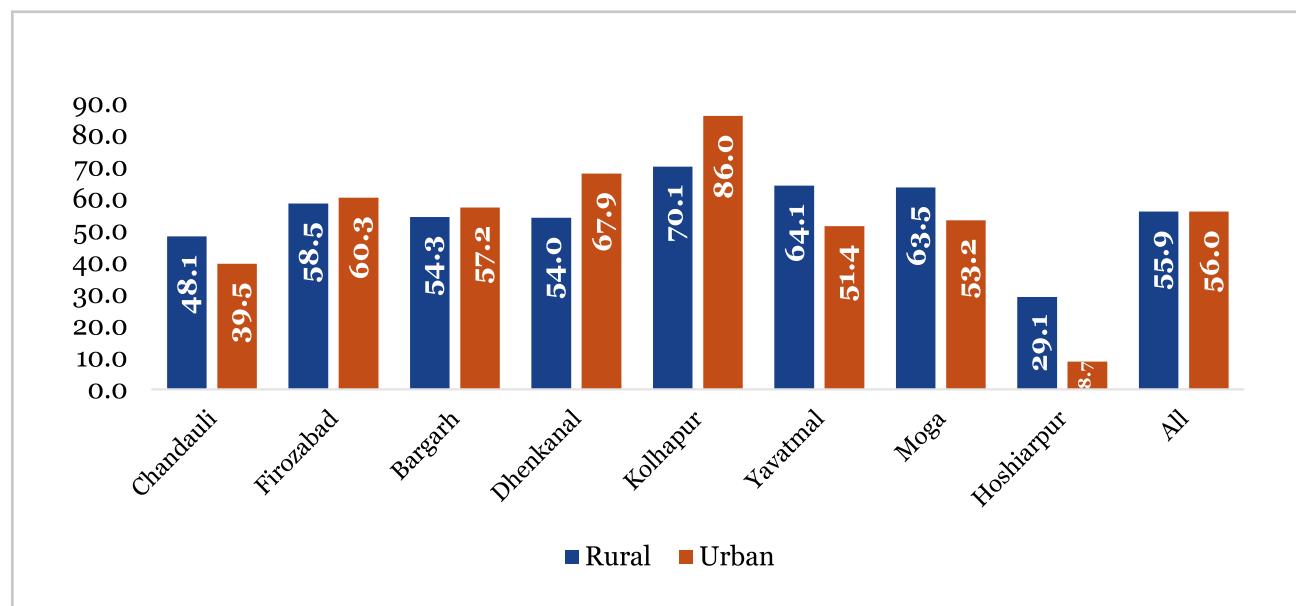


Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Figure 5.10 shows that at the aggregate level, the differences between rural and urban locations in the proportion of patients seeking treatment were small. But when compared at the district level, some variations were recorded, with a higher proportion of

women seeking treatment in urban areas in Dhenkanal and Kolhapur whereas Chandauli, Yavatmal and both the districts of Punjab reported a higher proportion of such cases in rural areas.

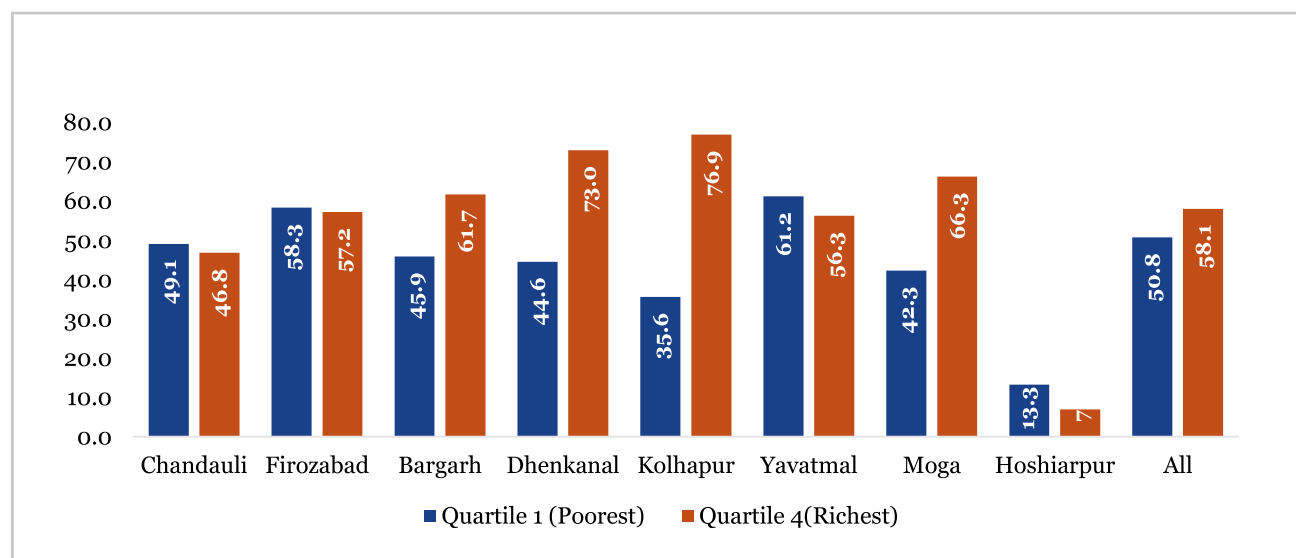
**Figure 5.10: Proportion of Women Reporting an Episode Who Visited a Healthcare Provider by District and Place of Residence (%)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

No major differences were observed in the share of patients seeking treatment across the different quartiles in Uttar Pradesh. In all the other districts except Yavatmal and Hoshiarpur, the share of patients seeking treatment increased with a rise in the monthly per capita expenditure (MPCE) (Figure 5.11). In Yavatmal and Hoshiarpur, the patients who underwent treatment increase with an increase in the MPCE quartiles.

**Figure 5.11: Proportion of Women Who Sought Treatment by Expenditure Quartiles (%)**



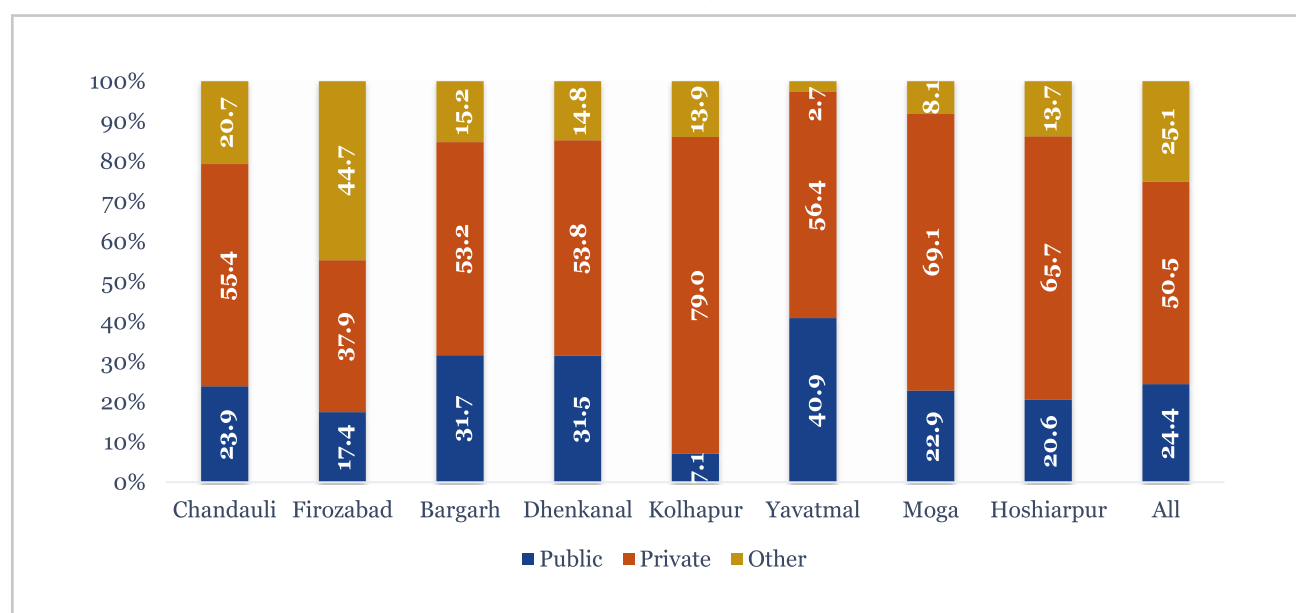
Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 5.4 shows the consultation status of women by other socio-economic and demographic variables. Among the women who sought treatment, a larger proportion were those who were married, had attained higher secondary levels of education, belonged to the OBC/General social group, were in the top two expenditure quartiles, and were above the age group of 45 years. There was a negligible impact of occupational status, rural-urban location, and size of the household on treatment-seeking behaviour.

### 5.3.5 Type of Healthcare Provider at the First Consultation

Figure 5.12 shows the type of first health care service provider consulted by the ailing women. More than 50 per cent of the women consulted private health care providers. This trend is similar across all the sample districts except for Firozabad, where a majority of the women consulted health care providers other than public or private health care providers. In Yavatmal, more than 40 per cent of the patients reported consulting public health care providers, followed by the two districts of Odisha where this proportion was more than 30 per cent.

**Figure 5.12: Share of First Source of Treatment by Type of Healthcare Service Provider by District**



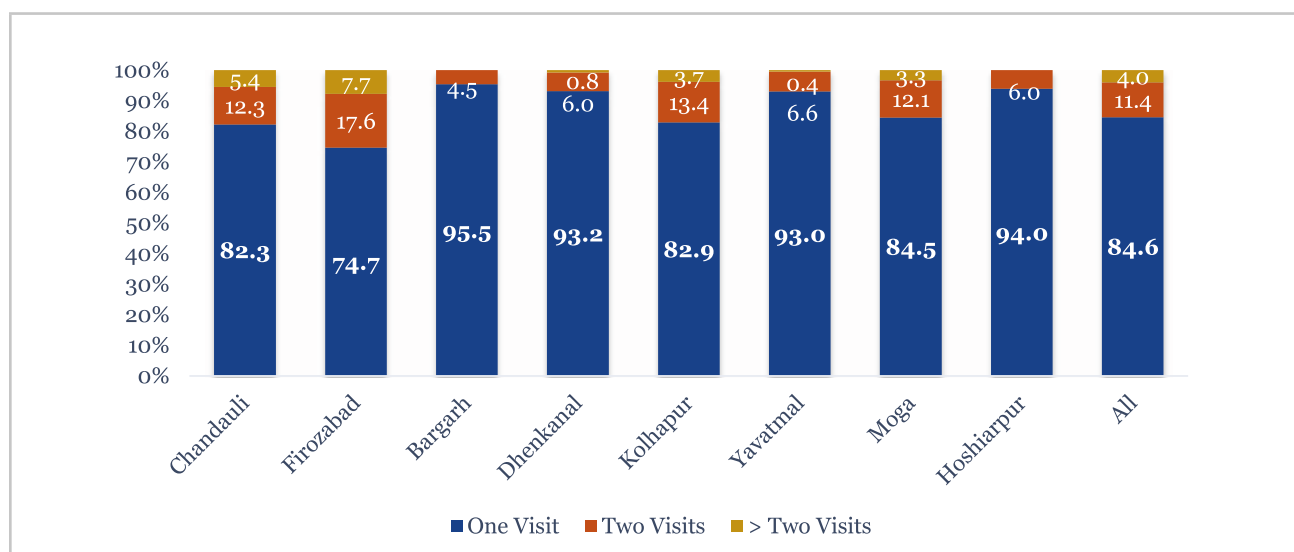
Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 5.5 shows the proportion of patients who consulted different types of health care providers. A higher proportion of women consulted private health care providers, especially those living in rural areas, who were married, belonged to the OBC/General categories and had smaller-sized families, were more educated, belonged to the richest expenditure quartile, and were in the age group of 31-45 years. Not much variation was reported by the occupational status of the patients..

### 5.3.6 Number of Providers Consulted

Figure 5.13 shows the proportion of patients visiting different numbers of health care providers in the eight sampled districts. About 84.6 per cent of the treatment-seeking women visited just one healthcare provider and 11.4 per cent visited two healthcare providers. Only 4 per cent of the women visited more than two healthcare providers. The proportion of women who visited one healthcare provider is more than 80 per cent across all the sample districts except for Firozabad, where this proportion is slightly less than 75 per cent.

**Figure 5.13: District-wise Distribution of Patients by Number of Providers Visited**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 5.6 further elaborates the proportion of women visiting different numbers of healthcare providers across socio-economic and demographic attributes. A higher proportion of women from rural areas (86.7 per cent) visited just one healthcare provider as compared to those in urban areas (77.4 per cent), where about 15 per cent also visited a second healthcare provider. Household financial status also affects the number of visits to healthcare providers as nearly 14 per cent in the top two expenditure quartiles made a second visit for treatment. Working women and those living in households with smaller family size constitute a higher proportion among those who made just one visit. There was negligible influence of the marital status and age of women on their decision regarding the number of healthcare providers visited.

Table 5.6 shows the average number of healthcare providers consulted by socio-economic and demographic attributes. The average number of healthcare providers consulted was 1.2, with the number being slightly lower in the two districts of Odisha. On average, a higher number of healthcare providers were consulted by women in urban than in rural areas. Women, especially in Uttar Pradesh, who were living in urban areas, and were unmarried and up to 30 years of age, consulted a larger number of healthcare providers. In addition, the unmarried women and those up to 25 years of age consulted larger number of healthcare providers in the Hoshiarpur district of Punjab.

**Table 5.6: Average Number of Health Care Providers Consulted during the Preceding Last One Year for Treatment by Socio-economic and Demographic Attributes (Numbers)**

Background Characteristics	Chandauli	Firozabad	Bargarth	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	All
<i>Place of Residence</i>									
Rural	1.3	1.3	1.0	1.1	1.2	1.1	1.2	1.0	1.2
Urban	1.1	1.4	1.0	1.1	1.1	1.1	1.1	1.3	1.3
All	1.3	1.3	1.0	1.1	1.2	1.1	1.2	1.1	1.2
<i>Marital Status</i>									
Married	1.2	1.3	1.0	1.1	1.2	1.1	1.2	1.0	1.2

(Contd.)

Table 5.6: (Contd.)

Background Characteristics	Chandauli	Firozabad	Bargath	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	All
Unmarried/Widowed/ Separated/Divorcee	1.4	1.4	1.0	1.1	1.1	1.0	1.2	1.2	1.2
<i>Age Category (Years)</i>									
Up to 25 Years	1.3	1.4	1.0	1.1	1.0	1.0	1.2	1.2	1.2
26-30 Years	1.1	1.4	1.1	1.1	1.1	1.2	1.2	1.0	1.2
31-45 Years	1.2	1.3	1.0	1.1	1.4	1.1	1.2	1.0	1.2
More than 45 Years	1.5	1.2	1.0	1.0	1.0	1.1	1.2	1.0	1.2
<i>Monthly Per Capita Expenditure Quartiles</i>									
Quartile 1	1.2	1.3	1.0	1.1	1.0	1.1	1.0	1.0	1.2
Quartile 2	1.3	1.3	1.0	1.0	1.0	1.1	1.0	1.0	1.2
Quartile 3	1.2	1.4	1.1	1.1	1.2	1.0	1.1	1.1	1.2
Quartile 4	1.4	1.3	1.1	1.1	1.3	1.2	1.3	1.0	1.2

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

### 5.3.7 Sequencing of Healthcare Providers

Appendix Table 5.7 shows the sequencing of providers, that is, the zigzag pattern in the treatment-seeking pathways up to four visits after the women's visits to a particular type of healthcare provider. More than 55 per cent of the women visited private healthcare providers and less than 25 per cent visited public healthcare providers. About one-fifth of the women also preferred other types of healthcare providers. Nearly or more than 50 per cent of the women visited private healthcare providers in all the districts except Firozabad. Firozabad recorded the highest proportion (39.5 per cent) of women visiting "other" types of healthcare providers. More than 40 per cent of the patients in Yavatmal, the highest among all districts, visited public healthcare providers. In subsequent visits, the women who visited public healthcare providers and sought further treatment, primarily consulted private healthcare providers across all sample districts, except Moga in Punjab, where about 45 per cent of the patients shifted to public healthcare providers in their second visits. It is also found that among those who visited public healthcare providers during the first visits, a majority shifted to the private sector in the second

visits except in the Yavatmal, Dhenkanal, and Hoshiarpur districts. This trend appears to reflect the greater trust of patients in the quality of services/treatment provided in the private healthcare sectors as compared to the public sectors. The women who sought treatment from chemists and other types of healthcare providers also mainly consulted private healthcare providers during their subsequent visits in all the sampled districts.

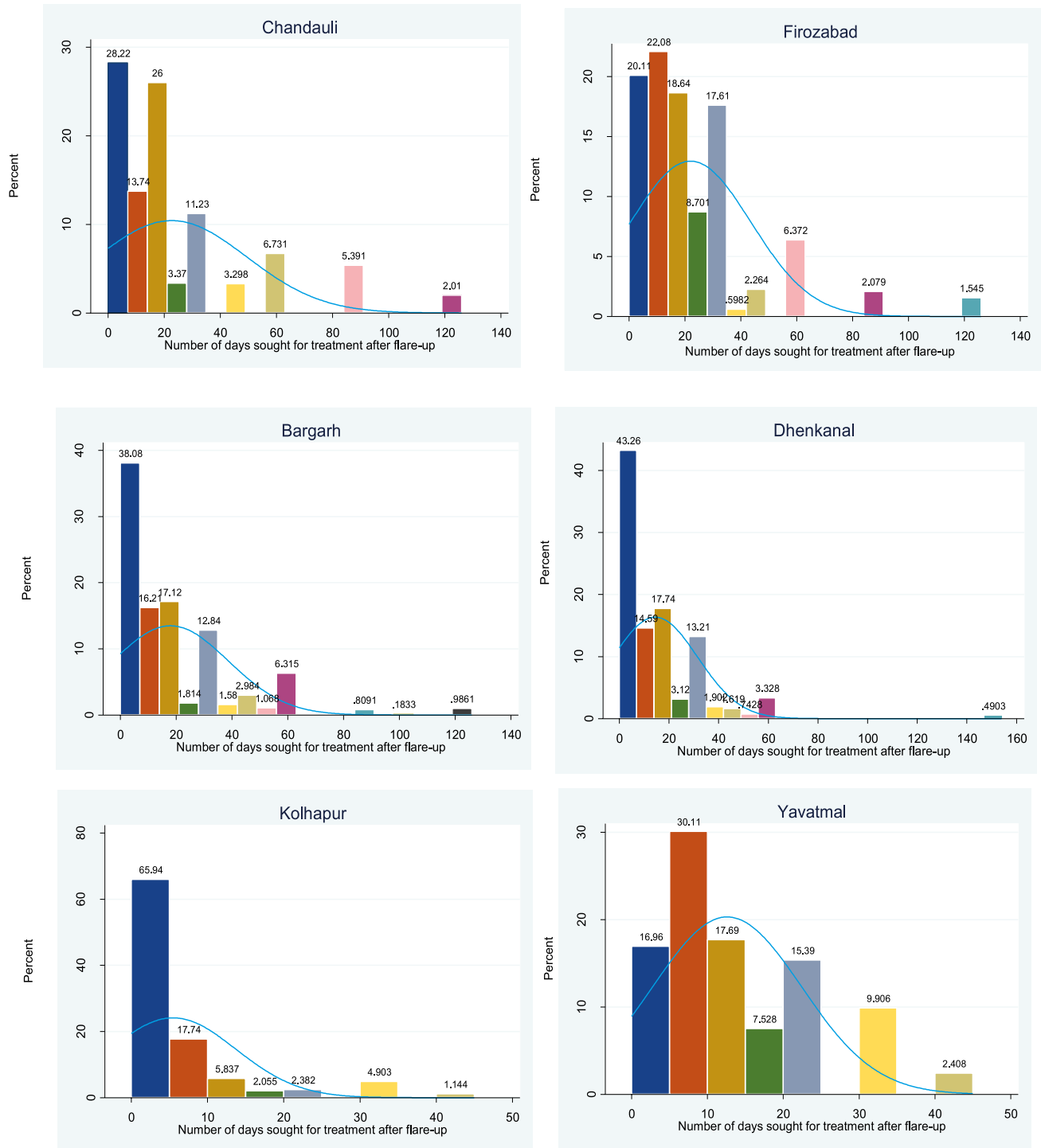
Appendix Table 5.8 shows the sequencing of visits by socio-economic and demographic attributes. A higher proportion of women living in rural areas (53.7 per cent) consulted private sector healthcare providers during their first visits than their urban counterparts. Interestingly, a larger proportion of women (27.8 per cent) in urban areas also consulted other types of healthcare providers than those in the rural areas (16.8 per cent). A higher proportion of married women consulted private healthcare providers than unmarried women. The proportion of women consulting private healthcare providers increased with a rise in monthly expenditure, while correspondingly, the proportion of women consulting public healthcare providers decreased. There was not much effect of the monthly expenditure quartiles or marital status on the proportion of women consulting "Other" types of healthcare providers.

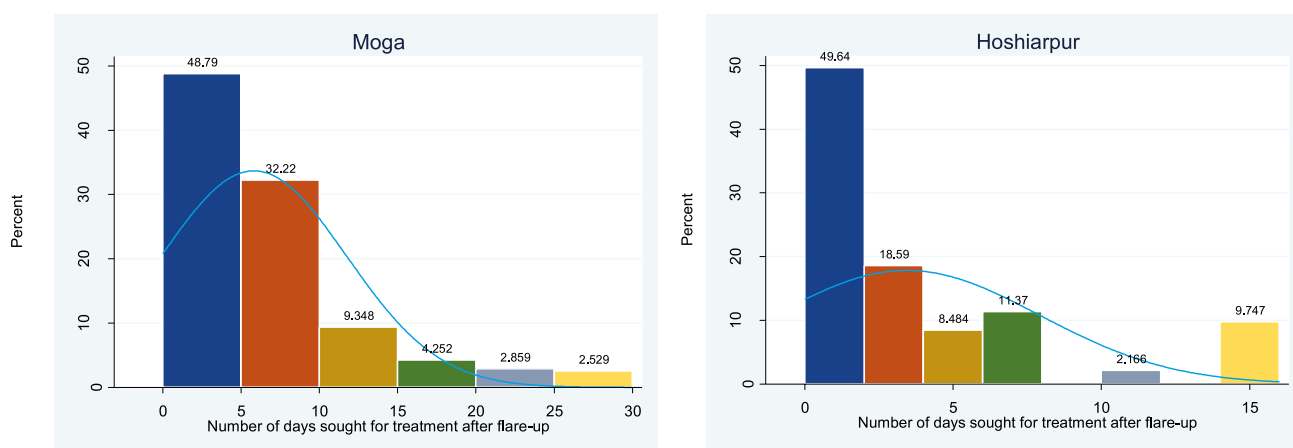
### 5.3.8 Time Lag in Seeking Treatment after a Recent Flare-up

The distribution of time lag in seeking treatment by the number of days taken between the flare-up

experienced by the women and when they finally sought treatment is shown in Figure 5.14. In the four districts of Maharashtra and Punjab, women sought treatment earlier than their counterparts in the four districts of Uttar Pradesh and Odisha.

**Figure 5.14: Average Duration between the Flare-up and Seeking of Treatment from the First Healthcare Provider by District (in Days)**



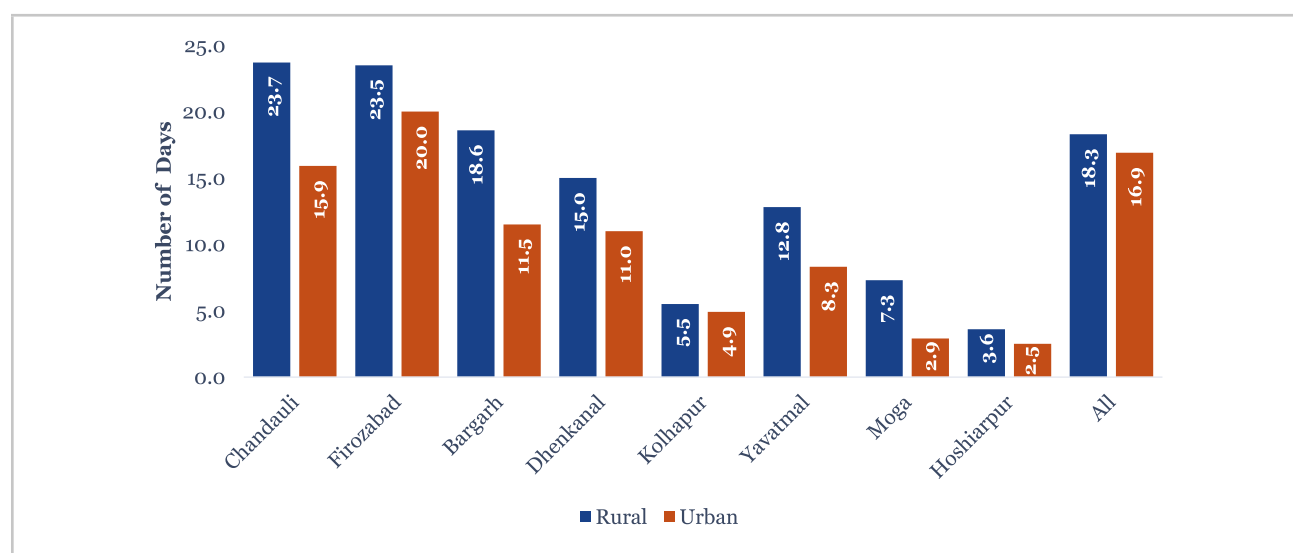


Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Figure 5.15 shows the average duration between the flare-up of Common Gynaecological Conditions and treatment sought by them from the first healthcare provider. On average, it took around 18 days in rural and 17 days in urban areas for a woman in the eight sampled districts to access a healthcare provider after a flare-up in her gynecological condition. While Kolhapur and

Hoshiarpur reported the least gap between rural-urban treatment time durations, this gap was highest in the Chandauli, Bargarh, and Yavatmal districts. The findings also show that as compared to the districts in Uttar Pradesh and Odisha, which reported much higher delays in women seeking first treatment from a healthcare provider, the districts of Punjab and Maharashtra reported faster treatments.

**Figure 5.15: Average Duration between the Beginnings of the Illness Episode and First Visit to the Provider by District and Place of Residence (in Days)**

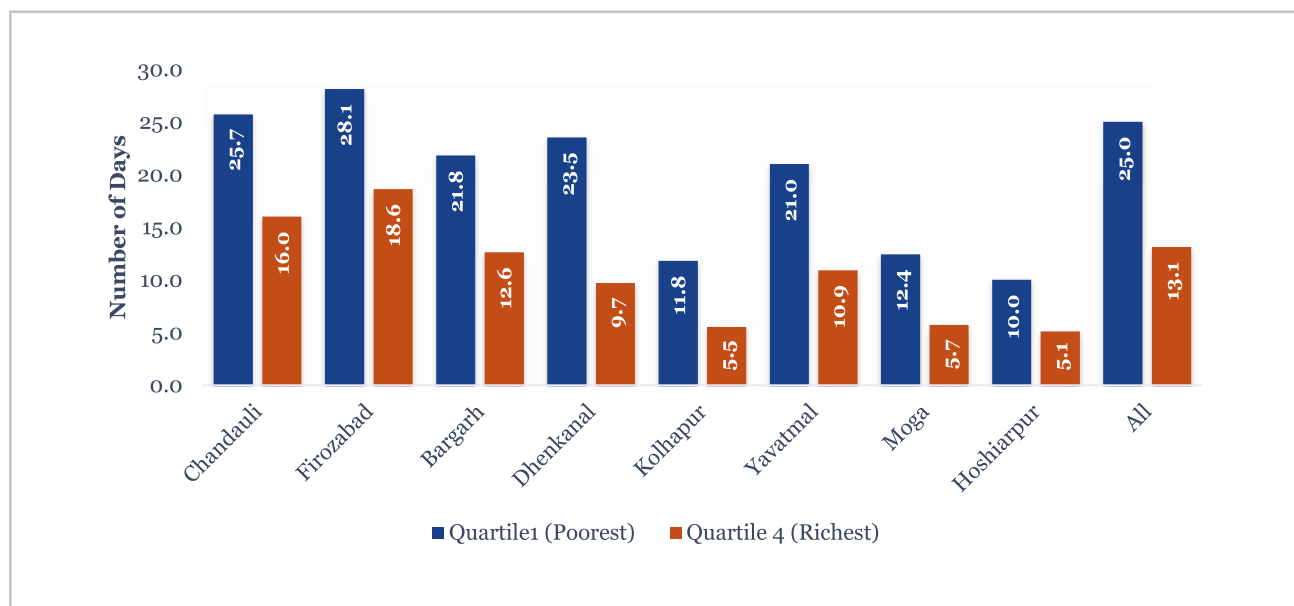


Source: NCAER-Nossal 4IS Health Survey, 2019-22.

The level of income has an inverse relationship with the duration of delay in seeking treatment (Figure 5.16). On average, people falling under the lowest quartile in the eight districts took almost 12 additional days as compared to their highest income

counterparts, with the total amounting to 25 days, to seek help. While patients in Uttar Pradesh took longer to seek medical help, those in Punjab took the shortest time among all the sample States.

**Figure 5.16: Average Duration between the Start of the Episode and First Visit to the Provider by Expenditure Quartiles and Districts (in Days)**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 5.9 shows that married women, who consulted a healthcare provider 19 days after the first episode of illness, tended to defer seeking treatment longer than their unmarried counterparts, who took 15.7 days to do so. However, the scenario in Dhenkanal and Moga districts was the opposite, with unmarried women taking more days than married women to visit their healthcare providers after the first episode of illness. The women from rural locations, those belonging to SC/ST populations, and illiterate women exhibited longer delays in seeking treatment. Across districts, while a similar pattern existed for all the sample districts, in case of social groups, in Chandauli, women from the OBC/General communities took longer time to seek treatment. Education appeared to influence the healthcare-seeking behaviour of women in a desired direction. Women with higher levels of education tended to show shorter delays in seeking healthcare by a significant margin across all the districts except in Punjab. By occupational status, working women in most of the districts (except for both districts in Maharashtra and the Firozabad district of Uttar Pradesh) exhibited longer delays as compared to non-working women. Further, data suggests that women

living in smaller households showed shorter delays than those in larger households. The average delay in seeking care appeared to increase with the increasing age of women.

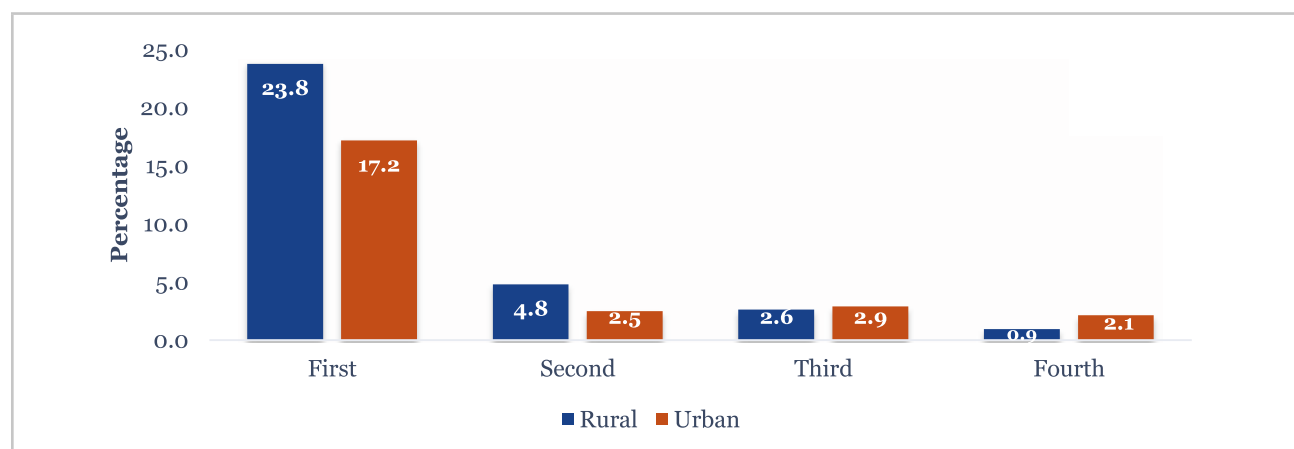
### 5.3.9 Exiting from Treatment

This section highlights the proportion of patients who recovered and hence exited following their first or subsequent visits to the healthcare provider chosen by them.

**Rate of Recovery:** Among the women who sought treatment, the rural-urban divide reflects some level of variation with higher recovery rate in rural (16.8 per cent) as compared to urban areas (13 per cent) (Appendix Table 5.10). An analysis of the trends of recovery by the number of visits further indicates that while 24 per cent recovered after their first visits to healthcare providers in rural areas, the corresponding figure was nearly 8 per cent in subsequent visits. These rates were 17 per cent in urban after the first visits and just 7.5 per cent thereafter, indicating that the recovery rate fell sharply with the extension of treatment pathways (Figure 5.17).



**Figure 5.17: Proportion of Patients Recovered by Rural-Urban Area and Number of Visits**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Table 5.7 shows that Kolhapur and Yavatmal had the highest recovery rates of 51.8 per cent and 46.5 per cent, respectively, while Bargarh had the lowest, at

only 5.2 per cent. The Hoshiarpur district of Punjab, on the other hand, registered no recovery rate.

**Table 5.7: Proportion of Patients Who Recovered by the Number of Visits and District**

District	Recovery Status after Visiting Health Care Provider				
	First Visit	Second Visit	Third Visit	Fourth Visit	All Visits
Chandauli	31.8	3.7	3.7	0.0	17.2
Firozabad	14.3	1.9	2.1	1.0	11.0
Bargarh	7.2	0.6	1.3	0.8	5.2
Dhenkanal	15.8	2.7	1.9	0.0	10.9
Kolhapur	53.1	38.8	0.0	5.3	51.8
Yavatmal	61.7	17.5	10.2	6.2	46.5
Moga	30.1	13.6	14.7	10.3	32.0
Hoshiarpur	0.0	0.0	0.0	0.0	0.0
All	22.3	4.3	2.7	1.2	15.9

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Note:** The denominator in the above calculation is the total number of persons suffering from Chronic Breathlessness who sought treatment from any healthcare provider after the flare-up in their health condition.

Appendix Table 5.10 reveals that there is no prominent effect of place of residence, marital status, social groups, and household size on the recovery rate of women. However, the recovery rate increased for women in the highest per capita expenditure quartile as compared to those in the lowest quartile. Further, the women with higher secondary level of education, those working, and those above the age of 31 years had a higher recovery rate.

Table 5.8 shows the proportion of patients exiting and switching treatment after visiting health care providers. After their first visits, around 65 per cent of the women resorted to self-care or did nothing to address their health problems. The proportion of women doing nothing or resorting to self-care increased with an increase in the number of visits. About 17 per cent of the women who sought treatment switched their healthcare providers after

their first visits, and almost a similar proportion of women persisted with the same type of healthcare provider. The proportion of women doing nothing or resorting to self-care after their first visits was higher in the three districts of Bargarh (92.6 per cent), Hoshiarpur (85.2 per cent), and Dhenkanal (80.8 per cent). In contrast, the districts of Moga and Yavatmal registered the highest proportions of women who revisited the same healthcare provider, at 55.5 per cent and 39.6 per cent, respectively. The women in

Kolhapur, on the other hand, reported the highest proportion, among all the sample districts, at about 36.5 per cent, in switching the healthcare provider after the first visits. Overall, among these States, Odisha showed the lowest proportion of women who either repeated visits or switched healthcare providers after the first visits, whereas the highest corresponding proportion was reported in Maharashtra, followed by Uttar Pradesh.

**Table 5.8: Status (Exiting/Repeating Visit to the Same Healthcare Provider/Switching Healthcare Provider) of Patients after the First and/or Subsequent Visit to the Healthcare Provider by Districts (%)**

Districts	After First Visit			After Second Visit			After Third Visit		
	Nothing/Self-care/Medication	Repeat Visit	Switching the Provider	Nothing/Self-care/Medication	Repeat Visit	Switching the Provider	Nothing/Self-care/Medication	Repeat Visit	Switching the Provider
Chandauli	55.8	20.9	23.2	70.7	14.8	14.5	82.9	10.2	6.9
Firozabad	53.7	20.5	25.9	77.8	10.4	11.8	87.4	9.9	2.7
Bargarh	92.6	3.2	4.2	98.9	1.1	0.0	98.6	0.8	0.7
Dhenkanal	80.8	12.7	6.6	92.6	5.5	1.9	97.7	1.7	0.6
Kolhapur	32.0	31.5	36.5	77.7	9.3	12.9	78.5	21.5	0.0
Yavatmal	44.1	39.6	16.4	64.6	33.3	2.1	85.9	11.0	3.2
Moga	32.7	55.5	11.9	46.2	39.4	14.3	62.1	33.7	4.2
Hoshiarpur	85.2	8.8	6.0	94.0	6.0	0.0	94.6	5.4	0.0
All	65.1	17.6	17.3	82.8	9.6	7.6	90.1	7.5	2.4

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Note: The denominator is the total persons making successive visits to healthcare providers.

Appendix Table 5.11 reveals that a higher proportion of women living in rural areas did nothing or resorted to self-care as compared to those living in urban areas. However, a greater proportion of the women from urban areas either repeated the visit to the same healthcare provider or switched their healthcare provider. Little variation was reported by marital status, social group, and occupational status of women in making choices between visiting the healthcare provider or resorting to self-care. The proportion of women revisiting the same healthcare provider or switching healthcare providers was the highest in the top two MPCE quartiles, and in the age groups of 31 years and above.

### 5.3.10 Key Findings from Health-seeking Pathway Analysis

This chapter has analysed treatment-seeking by women who suffer from common gynaecological conditions. The other attributes discussed in the chapter relate to the duration of the disease, type and number of healthcare provider/s consulted, reasons for not seeking treatment, sequencing of visits to different types of healthcare providers, and exit from treatment-seeking pathways. The salient findings of this chapter are as follows:

- About 56 per cent of the women received treatment from a healthcare provider and 22

per cent of women who sought treatment recovered after their first visits. The percentage of recovered patients fell sharply during the subsequent visits. Among the women who did not recover after their first visits, 65 per cent did nothing or resorted to self-care/self-medication. The proportion of women who did nothing increased in the subsequent visits.

- The final status of women after their four visits shows that while 44 per cent did not seek treatment, 16 per cent recovered from the problem while 40 per cent did not.
- Among all the districts, Hoshiarpur and Chandauli had the highest proportion of women not seeking treatment after a flare-up in their condition, while Kolhapur and Yavatmal had the lowest proportions in this category.
- The proportion of women not seeking treatment after a flare-up in their gynaecological condition was slightly higher among women living in rural areas, unmarried/widowed/separated women, and women who were below 25 years of age.
- Among the reasons for not seeking treatment after a flare-up in the gynaecological condition, around 63 per cent of the women waited for auto-recovery, 11 per cent cited lack of money, while another 11 per cent of the women reported the illness not to be very severe as the major reasons.
- A larger proportion of women in the districts of Maharashtra and Punjab barring Hoshiarpur, visited healthcare providers for seeking treatment than in the districts of Uttar Pradesh and Odisha. At the aggregate level, there were similarities between the rural and urban locations in the proportion of patients seeking treatment.
- An analysis of the type of first healthcare service provider consulted by the ailing women indicates that more than 50 per cent of the women consulted private healthcare providers. This trend is similar across all the sample districts except Firozabad, where a majority of the women consulted healthcare providers other than public or private healthcare providers.

- About 84.6 per cent of the treatment-seeking women visited just one healthcare provider and 11.4 per cent visited two healthcare providers. The proportion of treatment-seeking women who visited one healthcare provider is more than 80 per cent across all the sample districts except for Firozabad (74.7 per cent).
- The findings also reveal that urban women consulted a higher number of healthcare providers as compared to their rural counterparts.
- On average, it took around 18 days in rural and 17 days in urban areas for a woman in the eight sampled districts to access a healthcare provider after a flare-up in her gynecological condition. While patients in Uttar Pradesh took longer to seek medical help, those in Punjab took the lowest time among all the sample States.
- The trends of recovery by the number of visit further indicate that while 24 per cent recovered in rural areas after first visits to healthcare providers, the corresponding proportion was nearly 8 per cent in the subsequent visits. These rates were 17 per cent in urban areas after first visits and just 7.5 per cent thereafter. Among socio-economic factors, the age of women and financial status of their families seemed to impact the recovery rate.

## 5.4 Out-of-Pocket Spending

This section of the study attempts to assess OOP expenditure, catastrophic health expenditure, financing strategies to cope with OOP expenditure, and health insurance schemes among households where women were found to suffer from gynaecological ailments in the eight sample districts drawn from the States of Uttar Pradesh, Odisha, Maharashtra, and Punjab.

Increasing healthcare cost is one of the major public health challenges in low-and middle-income countries like India. In some cases, almost three quarters of the healthcare expenditure is borne by the household itself (Alam and Tyagi 2009). India's health expenditure to GDP ratio constitutes 1 per cent (2015-16) and out-of-pocket (OOP) expenditure amounts to 65 per cent, which is among the highest rates globally (WHO 2016; World Bank 2018)<sup>10</sup>. This OOP spending has a severe impact on the lower-income households, as it affects their normal spending patterns and consequently their

<sup>10</sup> Current Health Expenditures. Data, IBRD, IDA; The World Bank, New York (2018). Available at: <https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS?locations=IN>, accessed on 7 January 2021.

daily living. Since poor health and chronic ailments among the household members take a heavy toll on the household's OOP expenditure, it often pushes the affected households below the threshold poverty level and towards impoverishment (NSS 2015). Every year, an estimated 32-39 million people fall into poverty because of high healthcare spending and face financial catastrophe (Kastor and Mohanty 2018). As discussed in Chapter One, the health-seeking behaviour is largely shaped by health-related social costs (stigma) and cultural customs in the society (Khanna et al. 2005).

#### 5.4.1 Cost of Treatment

This chapter concentrates on the cost of treatment across the last four visits made by the patient to the healthcare providers, as given in Table 5.9. According

to the survey among the eight districts, the highest average cost of gynaecological treatment was reported in the Dhenkanal district of Odisha, followed by the Kolhapur and Moga districts. The lowest treatment cost, on the other hand, is reported in the districts of Yavatmal and Firozabad. Across all the districts, the treatment cost was higher in urban than in rural areas except in Bargarh, where a slightly higher cost was reported in rural areas for the treatment of such diseases. The percentage share of OOP expenditure to the total household expenditure was higher in rural areas (1.1 per cent) in comparison to urban areas (1.0 per cent). The Dhenkanal district (2.0 per cent) of Odisha reported the highest percentage share of OOP expenditure to the total household expenditure, whereas Hoshiarpur reported the lowest, at 0.4 per cent.

**Table 5.9: Average OOP Expenditure and Its Share in the Total Household Expenditure by District**

Districts	Average Treatment Cost of All the Last Four Visits (in Rs.)			Percentage Share of OOP Expenditure to the Total Household Expenditure		
Chandauli	2487	2557	2495	1.1	0.7	1.0
Firozabad	1677	1895	1768	0.7	0.9	0.8
Bargarh	2249	2188	2244	1.7	1.5	1.7
Dhenkanal	2853	3231	2899	2.1	1.6	2.0
Kolhapur	2583	3166	2634	1.2	1.6	1.2
Yavatmal	1486	2333	1527	1.2	1.2	1.2
Moga	2413	2799	2551	1.2	1.1	1.2
Hoshiarpur	1801	2048	1844	0.5	0.2	0.4
All	2133	2131	2133	1.1	1.0	1.1

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

In Table 5.10, the share of treatment cost for each visit to the total treatment cost indicates that 85.6 per cent of the total OOP expenditure was spent on the first visits, followed by 12.1 per cent on

the second visits in all the eight districts. The cost incurred during the first visit as compared to the cost incurred on subsequent visits was the highest in the two districts of Odisha, while the lowest cost was reported in the districts of Uttar Pradesh.

**Table 5.10: Share of Treatment Cost as Percentage of Total Cost by Different Visits**

Districts	Share of Treatment Cost as a Percentage to the Total Cost by Different Visits			
	1 <sup>st</sup> Visit	2 <sup>nd</sup> Visit	3 <sup>rd</sup> Visit	4 <sup>th</sup> Visit
Chandauli	82.6	13.1	2.9	1.3
Firozabad	77.7	19.0	2.0	1.3
Bargarh	96.8	3.2	0.0	0.0

(Contd.)

Table 5.10: (Contd.)

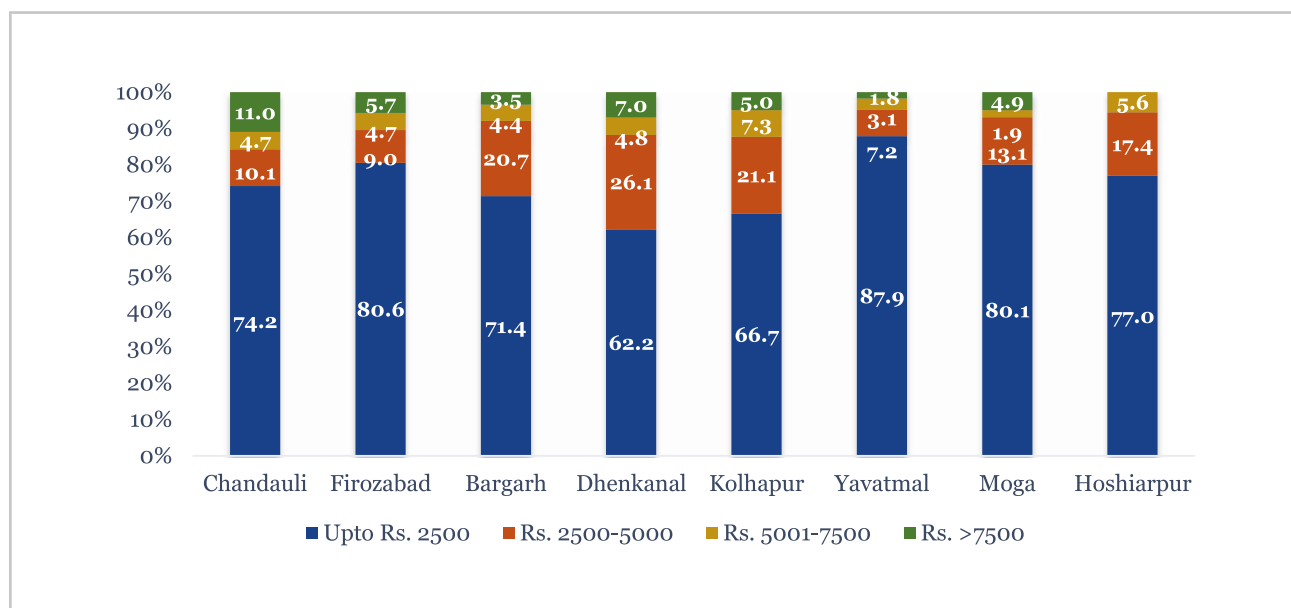
Districts	Share of Treatment Cost as a Percentage to the Total Cost by Different Visits			
	1 <sup>st</sup> Visit	2 <sup>nd</sup> Visit	3 <sup>rd</sup> Visit	4 <sup>th</sup> Visit
Dhenkanal	92.5	6.2	1.3	0.0
Kolhapur	75.1	23.3	1.7	0.0
Yavatmal	88.1	10.2	0.4	1.3
Moga	83.8	10.0	6.2	0.0
Hoshiarpur	93.5	6.5	0.0	0.0
All	85.6	12.1	1.7	0.7

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Figure 5.18 shows that patients in the Kolhapur district of Maharashtra and both districts of Odisha were spending more on the treatment of their gynaecological problems than their counterparts in the remaining sample districts. The largest proportion of patients in the Yavatmal, Moga, and Firozabad districts spent less than Rs 2500, whereas more than

one-fourth of the women in Dhenkanal, on average, spent Rs 2500-5000 for treatment. This proportion is more than 20 per cent in the Bargarh and Kolhapur districts. The proportion of patients spending more than Rs 5000 was the highest (15.7 per cent) in the Chandauli district of Uttar Pradesh. Nearly 12 per cent of the patients in Dhenkanal and Kolhapur also fell in this category of the treatment cost.

Figure 5.18: Proportion of Households Reporting Treatment Costs (%)



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

The average cost of treatment for all four visits to healthcare providers across different patients and household backgrounds, including by the type of healthcare provider, is discussed below (see Figure 5.19). Overall, among all the eight sample districts, those reporting the highest average cost of treatment were in Dhenkanal district, followed by the Kolhapur and Moga districts. Appendix Table 5.12 shows that, with an increase in the age of the patients, the average

cost of treatment for all the four visits also increases. In Bargarh and Hoshiarpur, however, women above 45 years of age incurred the lowest OOP expenditure. Moreover, the higher the reported duration of the disease, the higher was the cost of treatment. This trend was reflected across all the districts.

An analysis of the cost of treatment across occupation categories shows that the average costs

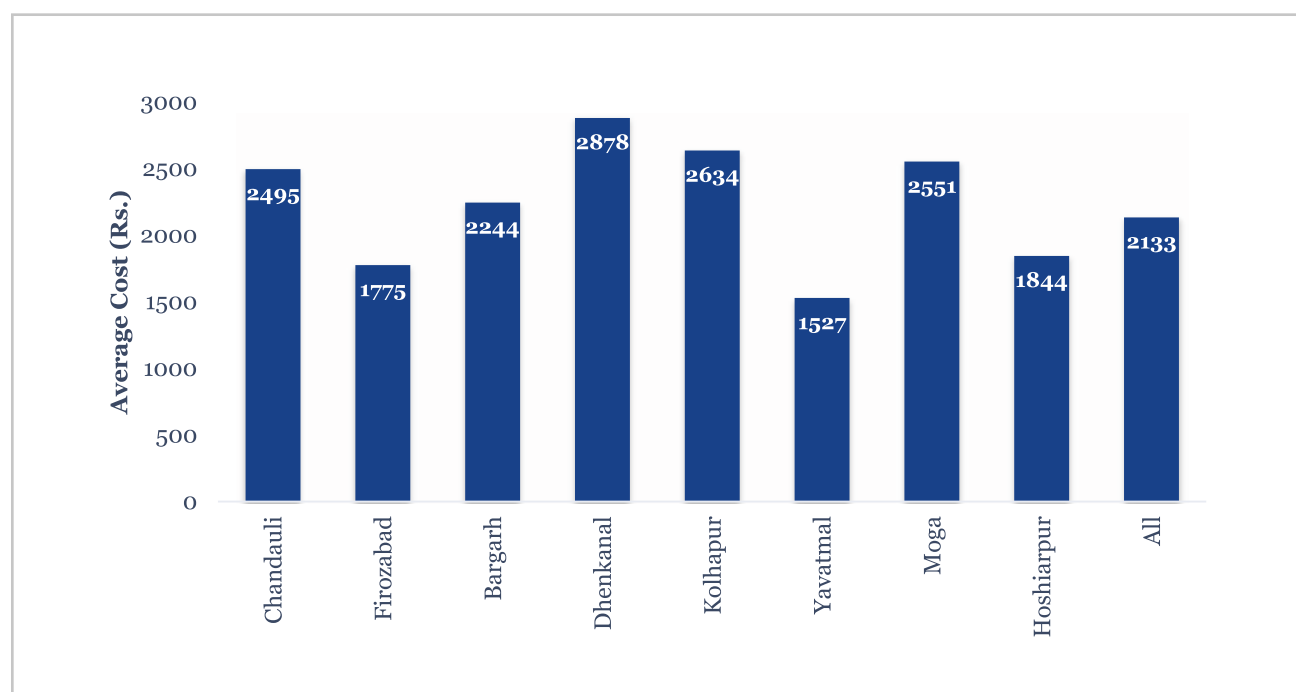
were higher for working than non-working women in all the districts except Chandauli. This analysis also shows that while in the districts of Punjab and Odisha, the average cost of treatment was higher among women from the OBC and General categories than among the SC/ST social groups. In the cases of districts in Maharashtra (except for Yavatmal) and Uttar Pradesh, the situation is reversed. An examination of the average cost of treatment across the per capita quartiles highlighted an increase in treatment costs with a rise in household expenditure. This trend applies in all the sample districts except Hoshiarpur, which shows that the households belonging to the Quartile 3 expenditure category were spending more on healthcare providers.

Across all the districts, patients having attained higher education (Higher Secondary+) sought more help from healthcare providers, and their average treatment costs increased. Barring both the districts in Punjab and Chandauli district in Uttar Pradesh, in all other districts, this cost was also higher for women with matriculation or higher as their education levels.

Households with more than five members incurred lower treatment costs as compared to households with a maximum of five members.

The average cost of treatment was observed to be higher in private healthcare facilities than in public ones. Women incurred substantial costs on drugs, travel, and indirect costs when they sought healthcare treatment from public or private healthcare institutions (Rani and Bonu 2003; Bhatia et al. 1997).

**Figure 5.19: Average Cost of Treatment for All the Four Visits (in Rs)**



**Source:** NCAER-Nossal 4IS Health Survey, 2019-22.

The distribution of total treatment costs according to type of healthcare provider, as depicted in Table 5.11, shows that the share of treatment costs incurred on consultation with private health care providers was highest among all at 75.4 per cent, as compared to public healthcare providers, at almost 18 per cent. More than 5 per cent of the patients consulted traditional health care providers. Among

the States, in the districts in Maharashtra more than 90 per cent of the patients reported consulting private healthcare providers. Compared to this, about 75 per cent of patients in Odisha consulted private healthcare providers. Around 22 per cent of women in the Firozabad district of Uttar Pradesh, consulted public healthcare providers, the highest proportion in this category among all the sample districts.

**Table 5.11: Distribution of Treatment Expenses by the Type of Healthcare Provider and District**

Districts	Public	Private	Chemist	Traditional/Other
Chandauli	14.6	76.3	2.1	7.1
Firozabad	21.9	68.3	2.4	7.4
Bargarh	21.5	72.5	0.7	5.4
Dhenkanal	21.1	75.0	0.6	3.4
Kolhapur	3.0	91.0	0.7	5.3
Yavatmal	6.5	93.3	0.1	0.1
Moga	16.2	82.8	0.4	0.5
Hoshiarpur	10.0	86.9	0.1	3.0
All	17.9	75.4	1.4	5.4

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

### 5.4.2 Catastrophic Health Expenditure Estimates

Table 5.12 provides an overview of Catastrophic Health Expenditure (CHE) for the first treatment across the eight districts of Uttar Pradesh, Odisha, Maharashtra, and Punjab. The CHE has been analysed with respect to the total annual household expenditure. In total, around 5.4 per cent of the households spent more than 10 per cent of their total household expenditure on the first treatment for gynecological problems and 6.5 per cent of households spent more than 10 per cent of their total household expenditure on the total treatment cost incurred across all visits to healthcare providers. Among all the districts, the two districts of Odisha, that is, Bargarh and Dhenkanal, reported the highest share of expenditure incurred by households in the first visits and also in all the four visits (Table 5.12). In contrast, Firozabad reported the lowest share of expenditure on the first visit and on the total treatment at 2.4 per cent and 3.3 per cent, respectively.

Women from rural households spent more on their first visits (5.9 per cent of the total) and on the total treatment (7.3 per cent) including all four visits than women in urban areas. It is evident that women belonging to smaller households (up to five members), and the SC/ST social groups, and those from the poorest background were more likely to incur higher first and total treatment costs (Appendix Table 5.13).

**Table 5.12: Share of Households Spending More Than 10% of the Total Expenses on Treatment by District**

Districts	On First Treatment Cost (% Households)	On Total Treatment Cost (% Households)
Chandauli	6.6	7.5
Firozabad	2.4	3.3
Bargarh	9.5	10.7
Dhenkanal	9.1	9.8
Kolhapur	2.8	5.3
Yavatmal	5.2	6.9
Moga	3.1	4.4
Hoshiarpur	0.0	0.0
All	5.4	6.5

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

As regards the total non-food household expenditure, around 12.3 per cent and 15 per cent of the households spent more than 10 per cent of the total household non-food expenditure on treatment during both the first and total visits, respectively (Table 5.13). The proportion of households spending more than 10 per cent of their total non-food expenditure on treatment were higher for the households in the Dhenkanal and Bargarh districts as compared to the other districts. Comparatively, Firozabad and Yavatmal districts reported the lowest treatment expenditure shares of their first visits in non-food expenditures.

Appendix Table 5.14 shows significant variations in the expenditure patterns between rural and urban locations with women in rural areas reporting higher expenditures than those in urban areas. Further, women in smaller sized families, those belonging to

the SC/ST communities and the bottom two MPCE quartiles incurred higher expenditure shares on their first treatment cost and total treatment as a percentage of the total household non-food expenditures.

**Table 5.13: Percentage of Households Spending on Treatment as a Percentage of the Total Household Non-food Expenditure by First visit and All Four Visits**

Districts	Percentage Households Spend in the First Visit at Different Threshold Levels				Percentage Households Spent in all the Four Visits at Different Threshold Levels			
	<i>Catastrophic Thresholds</i>				<i>Catastrophic Thresholds</i>			
	>=10%	>=20%	>=30%	>=40%	>=10%	>=20%	>=30%	>=40%
Chandauli	14.1	6.3	2.8	0.5	16.9	7.1	3.7	2.7
Firozabad	4.0	1.7	1.4	1.4	6.7	2.6	1.8	1.4
Bargarh	23.4	7.9	4.6	2.5	24.8	7.9	4.6	2.5
Dhenkanal	22.6	9.4	3.6	2.2	25.9	10.2	4.5	2.7
Kolhapur	8.9	0.0	0.0	0.0	13.6	3.4	1.0	0.0
Yavatmal	7.9	2.9	1.4	0.9	11.9	3.9	1.4	0.9
Moga	12.0	3.7	1.3	1.3	13.9	4.2	1.3	1.3
Hoshiarpur	17.4	5.6	0.0	0.0	17.4	5.6	0.0	0.0
All	12.3	4.5	2.4	1.5	15.0	5.3	2.8	1.8

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

### 5.4.3 Financing Strategies

Lack of health insurance compels households to resort to multiple coping options, especially in the form of informal mechanisms such as borrowing from moneylenders or from random sources, thereby dragging the household into financial indebtedness (Morduch 1995; Kruk et al. 2009). Distress financing of healthcare expenditure entails borrowing and selling of household assets that accelerates financial suffering, changes in the consumption patterns of the household members and loss of income (Sangar et al. 2020; Joe 2015; Dilip and Duggal 2002).

Table 5.14 provides information on the financing strategies used by households to meet their treatment

costs. Around 88 per cent of the households were found to be dependent on their household savings to meet the treatment costs followed by borrowing from relatives/moneylenders/healthcare providers (11.3 per cent).

Among those who used their household savings to meet the treatment cost, the top five districts with more than 94 per cent share were Hoshiarpur, Kolhapur, Bargarh, Dhenkanal, and Moga. Nearly one-third households in Yavatmal and 21 per cent in Dhenkanal reported borrowing as their source for covering the treatment cost. Less than 5 per cent of the households used insurance or jewellery as a mode of meeting the treatment cost for their gynaecological ailments.

**Table 5.14: Financing Strategies to Meet Treatment Costs (% Households) by District**

Districts	Savings	Borrowed (from Relatives/Money lender /Health Care Provider)	Insurance	Others (Sale Jewellery/ Property; Other)
Chandauli	75.2	19.3	1.6	2.4
Firozabad	82.1	2.9	0.3	0.7
Bargarh	97.1	11.3	0.0	0.5
Dhenkanal	96.2	20.9	0.0	1.1

(Contd.)



Table 5.14: (Contd.)

Districts	Savings	Borrowed (from Relatives/Money lender /Health Care Provider)	Insurance	Others (Sale Jewellery/Property; Other)
Kolhapur	100.0	2.6	0.0	0.0
Yavatmal	87.8	33.3	0.0	0.9
Moga	94.7	4.0	0.0	4.6
Hoshiarpur	99.9	0.0	0.0	0.0
All	<b>87.9</b>	<b>11.3</b>	<b>0.3</b>	<b>1.0</b>

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

*Health Insurance:* The concept of Universal Health Coverage (UHC) arose out of the global concern for OOP expenditure, especially in developing countries, to provide “Health for All”. Despite this broad vision, at the unit level, it has depended on State-funded insurance schemes and has not focused on improving the health quality and equity aspects. The dichotomy resulting from uneven distribution of insurance enrolment in rural and urban areas has led to major questions on the usage of these insurance schemes in times of need (Jehu-Appiah et al. 2011; Acharya et al. 2012). Poor coverage of health insurance and adoption of distress financial strategies by households that incur OOP spending can push them into catastrophic situations and impoverishment (Dilip and Duggal 2002).

Our survey shows that more than half of the total households in Odisha were covered under health insurance schemes, such as Rashtriya Swasthya Bima Yojana (RSBY)/Arogyashri/Biju Swasthya Kalyan Yojana (BSKY) or other government or private insurance schemes, whereas a majority of the households in Punjab, Uttar Pradesh, and Maharashtra had no insurance (Table 5.15). The main reason for this could be the Odisha government’s

decision to use health insurance schemes such as BSKY and RSBY for providing free health services to everyone, irrespective of economic status, social group, and residence from the sub-centre level to the district headquarter hospital level, with annual health coverage of Rs 5 lakh per family and Rs 7 lakh for women members of the family.

Overall, about 15 per cent of the households in all the eight districts reported being covered under RSBY/Arogyashri/BSKY, and 79.2 per cent had no insurance. Each of the two districts from Punjab, Uttar Pradesh, and Maharashtra barring Kolhapur accounted for more than 90 per cent of the households that do not have any insurance. The government insurance schemes including the Central Government Health Scheme (CGHS) and Employee State Insurance (ESI) covered 4 per cent of the households whereas the extent of private insurance coverage was around 2 per cent in all the eight districts. While a larger proportion of the poorer households from the bottom two expenditure quartiles were covered under the RSBY/Arogyashri/BSKY schemes, households from the top two expenditure quartiles were subsidised by government and private health insurance schemes.

**Table 5.15: Type of Health Insurance Coverage by Districts and Per Capita Expenditure Quartiles (% Households)**

Districts	Private	Government	RSBY/ Arogyashri/ BSKY	No Insurance
All	1.7	3.7	15.3	79.2
<i>District</i>				
Chandauli	0.0	0.8	0.4	98.8
Firozabad	1.4	4.7	3.0	90.9
Bargarh	3.2	3.6	43.3	49.9
Dhenkanal	3.4	7.1	48.5	41.1
Kolhapur	0.9	10.2	0.8	88.1

(Contd.)

Table 5.15: (Contd.)

Districts	Private	Government	RSBY/ Arogyashri/ BSKY	No Insurance
Yavatmal	1.4	0.0	0.0	98.6
Moga	1.0	0.6	0.7	97.7
Hoshiarpur	1.2	1.8	0.0	97.0
<i>Monthly Per Capita Expenditure Quartiles</i>				
Quartile 1	0.5	0.7	24.3	74.6
Quartile 2	2.3	2.8	17.5	77.4
Quartile 3	1.9	4.6	9.3	84.3
Quartile 4	2.5	8.0	7.6	81.9

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

#### 5.4.4 Salient Findings from Analysis of OOP Spending

Some of the other salient findings emerging from the analysis of OOP spending by households in the eight districts are as follows:

- In seven out of the eight sample districts, the treatment cost was higher in urban than in rural areas.
- The percentage share of OOP expenditure to total household expenditure was higher in rural areas (1.1 per cent) in comparison to urban areas (1.0 per cent). Among all the sample districts, the Dhenkanal district of Odisha reported the highest percentage share of OOP expenditure to the total household expenditure, whereas the Hoshiarpur district of Punjab reported the lowest of all.
- The share of treatment cost as a percentage of the total cost by different visits indicates that 85.6 per cent of the total OOP expenditure was spent on the first visits, followed by 12.1 per cent on the second visits for all the eight districts.
- The cost incurred during the first visits as compared to the subsequent visits was highest in the two districts of Odisha, and lowest in the districts of Uttar Pradesh.
- The distribution of total treatment costs according to the type of healthcare providers indicates that the share of treatment costs incurred on consultation with private healthcare providers was highest at 75.4 per cent, as compared to public healthcare providers, which was just 17.9 per cent.

- Around 88 per cent of the households were dependent on their household savings to meet the treatment cost, whereas 11.3 per cent were dependent on borrowing from relatives/monylenders/healthcare providers. Less than 5 per cent of the households used insurance or jewellery as a mode of meeting the treatment cost for their gynaecological ailments.

#### 5.5 Factors Influencing Choice of Healthcare Provider

The growing demand for healthcare utilisation, accelerated costs of treatment, availability of limited resources, and varied clinical practices with the aim of optimising patient care have increased the interest of researchers in quantifying and improvising the quality of care especially in developing countries. It is quite difficult to define 'quality', as it is subjective, intangible, heterogeneous, and immeasurable (Taylor and Cronin, 1994; Tucker and Adams, 2001; Walter and Jones, 2001). According to the World Health Organisation, the quality of care can be defined as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes. It is based on evidence-based professional knowledge and is critical for achieving universal health coverage."<sup>11</sup> In the context of the need for achieving the goal of 'Health for All', it is important to value the quality of health services. WHO suggests three key components for the quality of care in their conceptual framework – Effectiveness, Safety, and Public-centred, which will help patients by providing health services benefits like reducing waiting time (Timely), providing same health facilities, irrespective of gender, ethnicity, geographical location, and socio-

<sup>11</sup> [https://www.who.int/health-topics/quality-of-care#tab=tab\\_1](https://www.who.int/health-topics/quality-of-care#tab=tab_1) accessed on March 1, 2021.

economic backgrounds (Equitable), and integration of health services and maximising the benefits of available resources with less wastage (Efficiency). The Sustainable Development Goals (SDGs) of the UN lay stress on the quality of healthcare to achieve Universal Health Coverage (UHC), as every year 5.7–8.4 million deaths occur in low- and middle-income countries due to the poor quality of health services and under-utilisation of the health system (WHO 2020). In an Iranian study model, the main attributes of the quality of care were conceptualised as Tangible and Intangible, within which Environment was tangible, and empathy, efficiency, effectiveness, and efficacy were seen as the intangible impacts the dimensions of quality of care (Mosadeghrad 2012). Improvement in the quality of healthcare services, affordable cost of treatment, and increase in productivity will enhance the institutional and organisational performance of the health system and will satisfy its long-term demand–supply relationships (Parasuraman et al. 1985; Rohlin et al. 2002; Snoj and Mumel 2002; Lee et al. 2006; Corbin and Strauss 2014). Researchers opine that the actual improvement happens with the involvement of the patients’ perceptions, which impact the patients’ health-seeking behaviour, and their choice of healthcare providers, including the utilisation of services, issues that are relatable to them, enabling the possibilities to meet their expectations, and providing information to the government and policymakers to bring about improvements for the future (Sharma and Narang, 2011).

This chapter assesses the perceptions of women suffering from gynaecological problems about the

quality of healthcare services in both the urban and rural areas of eight districts in the four States of Uttar Pradesh, Odisha, Maharashtra, and Punjab. Their treatment-seeking behaviour and the respective health service quality can be analysed through multiple quantitative indicators, including the perceived reasons for choosing the healthcare provider.

### 5.5.1 Evaluation of Healthcare Service

The first sub-section in this section discusses the quality of care during the first visit. The type of provider has been classified as Public, Private, and Others. In our study, the information that has been collected depicts the perceptions of women suffering from chronic gynaecological problems and their choices in seeking treatment. Table 5.16 depicts the experiences and understanding of the healthcare services by respondents, with relatively fewer respondents categorising both public and private facilities as ‘excellent’ or ‘poor’. Most patients were satisfied with both types of healthcare facilities and described nearly 90 per cent of the public and 84 per cent of the private facilities as providing ‘Good service’, except Hoshiarpur district, where a majority of the respondents rated both public and private healthcare facilities across all districts as ‘Good’. In Hoshiarpur, while the majority rated private health services as excellent, in the case of public health services the majority rated them as poor. In the Moga and Firozabad districts also, about 25 per cent and 19 per cent of the respondents rated healthcare services as ‘excellent’.

**Table 5.16: Respondent Ratings of Public and Private Providers by District (% Households)**

Districts	Excellent		Good		Poor	
	Public	Private	Public	Private	Public	Private
Chandauli	8.9	8.8	79.2	79.2	7.2	1.7
Firozabad	10.6	18.9	87.8	78.3	1.6	2.9
Bargarh	0.0	3.5	94.9	95.3	5.1	1.2
Dhenkanal	1.5	10.2	90.6	83.4	7.9	5.0
Kolhapur	0.0	9.8	85.2	90.3	14.8	0.0
Yavatmal	0.9	9.2	99.2	90.8	0.0	0.0
Moga	6.2	24.9	89.0	63.7	0.0	5.0
Hoshiarpur	0.0	40.5	44.8	17.9	55.2	3.2
All	4.4	11.8	90.4	83.8	4.4	2.1

Source: NCAER-Nossal 4IS Health Survey, 2019–22.

### 5.5.2 Factors Determining the Choice of Healthcare Facilities

In this section, the reasons for the choice of healthcare provider have been categorised as: 'proximity', 'good reputation', 'inexpensive', 'good personal experience', 'qualification of staff', 'relatives/friends work there', and 'recommended by relatives'.

Appendix Table 5.15 presents the results on various factors considered by respondents in choosing healthcare providers. The results show that the two most important factors in choosing healthcare providers by a majority of the respondents were proximity and good reputation of the healthcare facility.

An assessment of the data by the type of healthcare facilities showed that while a larger proportion of patients chose proximity as a major factor for choosing the public healthcare provider, in case of private healthcare providers, the major factor for their selection was good reputation. In addition to these factors, in case of those who preferred public facilities, 59.1 per cent chose it for its inexpensiveness while 39.3 per cent did so for the availability of the drug. In choosing private facilities, apart from the earlier two factors discussed, nearly 40 per cent of the respondents chose it for good personal experience while about 27 per cent cited staff qualification and inexpensiveness as the key determining factors.

The district-wise findings revealed that among all the districts, a larger proportion of the respondents in Yavatmal find proximity, good reputation, and cost as the major factors for choosing healthcare providers, whereas the respondents in Bargarh report staff qualifications and good personal experience as the major choice factors. More than 50 per cent in Firozabad consider cost as the major factor, whereas a similar proportion in Kolhapur consider good (past) personal experience for choosing the healthcare provider. About 65 per cent of the respondents in Hosharpur rated the availability of drugs as the most important deciding factor. Having relatives/friends working in the facility and/or the recommendations of relatives were not important deciding factors for a large proportion of the respondents, except in the three districts of Firozabad, Bargarh, and Dhenkanal, where up to 20 per cent of the respondents considered 'recommendations of relatives' as one of the deciding factors.

### 5.5.3 Salient Findings from Analysis of the Quality of Healthcare Facilities

This section captures the quality of healthcare services based on the patients' experiences regarding the perceived quality of care and the key factors affecting their choice of healthcare facilities. Following are the key results in this context:

- Relatively fewer respondents categorised both public and private healthcare facilities as 'excellent' or 'poor'. Most patients were satisfied with both types of healthcare facilities and described nearly 90 per cent of the public and 84 per cent of the private facilities as offering 'Good service'.
- The proximity and good reputation of the healthcare facility were among the two most important factors determining the choice of healthcare providers among a majority of the respondents.
- The major factor for choosing public healthcare providers were: proximity, followed by inexpensiveness, and the availability of drugs.
- The key determining factor for choosing private healthcare providers were: good reputation of the healthcare provider, followed by good personal experience, staff qualification, and inexpensiveness.
- Having friends/relatives working in the facility and the recommendations of relatives did not have any significant influence on the patients' healthcare-seeking behaviour across the sample districts, except in Firozabad, Bargarh, and Dhenkanal where up to 20 per cent of the respondents considered the recommendations of relatives in choosing the healthcare providers.

## 5.6 Consultation since the Beginning

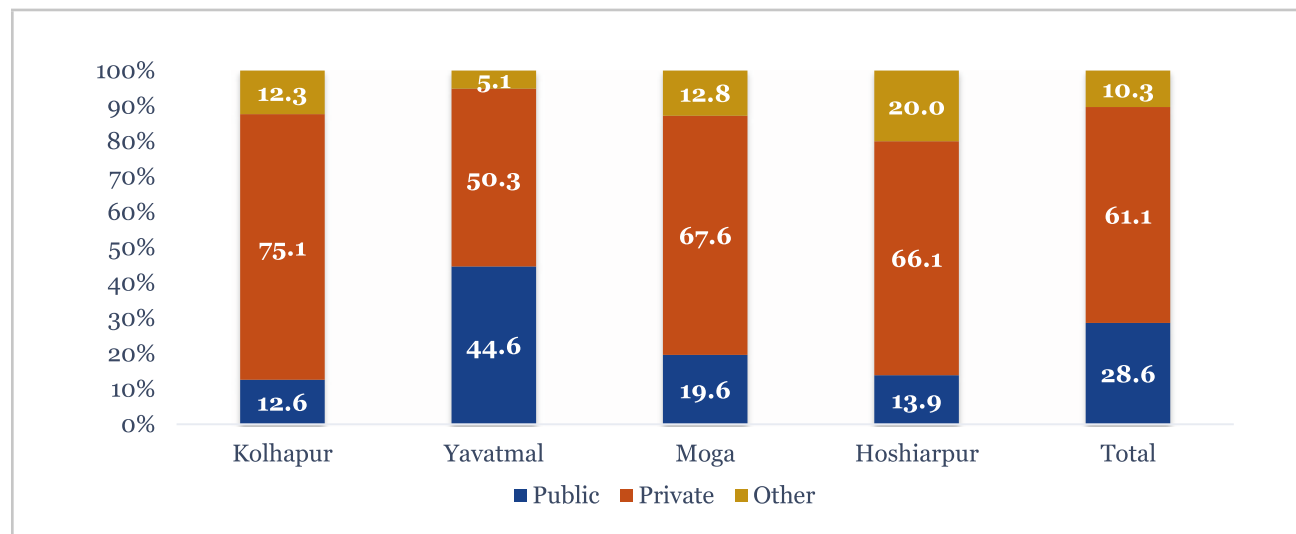
This section of the chapter assesses the treatment-seeking behaviour of women suffering from gynaecological problems since the first episode of the disease, that is, the first time when they diagnosed the symptoms till now. This is analysed through their choice and satisfaction with the healthcare providers during different courses of treatment seeking, that is, first time of noticing symptoms, in the first six months after treatment was started, in the last six months, and routine treatments being undertaken currently.

### 5.6.1 Type of Healthcare Provider at the First Consultation after Noticing Symptoms

Figure 5.20 shows the type of first healthcare provider consulted by the women when they first experienced gynaecological symptoms. The findings show that more than 60 per cent of the women consulted private healthcare providers. This trend is consistent across all the sampled districts except Yavatmal,

where 45 per cent of the patients consulted public healthcare providers and another 5 per cent consulted 'other' healthcare providers. In the Kolhapur district, almost 75 per cent of the respondents consulted private healthcare providers, whereas nearly 12 per cent consulted public and 'other' healthcare providers each. In Hoshiarpur, 20 per cent of the patients reported consulting 'other' healthcare providers, the highest among all the sample districts.

**Figure 5.20: District-wise Share of First Source of Treatment in the First Episode of the Beginning of the Symptoms by the Type of Healthcare Provider**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 5.16 shows the distribution of patients who consulted different types of healthcare providers during the first time when they noticed symptoms, by socio-demographic profile. A higher proportion of women who live in urban areas, who were above 45 years of age, belonged to the OBC/General categories, had larger sized families, and belonged to the richest expenditure quartile consulted private healthcare providers. Little variation was reported by marital status and education of the patients.

### 5.6.2 Type of Healthcare Provider at the First Consultation in the First Six Months after Starting Seeking Solutions for Symptoms

Table 5.17 shows the type of healthcare provider consulted by women in the first six months after

they started seeking solutions for their gynecological problems. The findings reveal that a majority of the women consulted private healthcare providers in the first six months. While more than 70 per cent of the women in the districts of Punjab consulted private healthcare providers, in the Kolhapur district of Maharashtra, this proportion was more than 80 per cent. The lowest private consultation was reported in Yavatmal, at 50 per cent. Overall, 34 per cent of the women consulted public healthcare providers in the first six months after they started seeking solutions for their health problems. Of these, the highest proportion was recorded in Yavatmal, at 48 per cent. In addition to private healthcare providers, more than 40 per cent of the patients in the Kolhapur and Hoshiarpur districts also referred to 'other' healthcare providers during the first six months of seeking treatment.

**Table 5.17: District-wise Type of Healthcare Service Provider Consulted in the First Six Months after Started Seeking Solutions for Their Symptoms**

Districts	Public	Private	Other
Kolhapur	24.8	81.0	40.2
Yavatmal	48.4	50.2	7.9
Moga	24.7	70.0	28.8
Hoshiarpur	15.2	70.4	47.5
All	34.0	63.3	24.3

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 5.17 shows that a higher proportion of women consulted private healthcare providers after they started seeking solutions to these problems in the first six months, particularly those living in urban areas, who belonged to OBC/General categories, had larger sized families, and belonged to the richest expenditure quartiles. Little variation was reported by the marital status, education, occupation and age group of the patients.

### 5.6.3 Number of Healthcare Providers Consulted during the Entire Period of Illness (since the First Experience of Symptoms)

Table 5.18 shows the average number of healthcare service providers consulted by the ailing women during the entire period of their illness since they first experienced symptoms. The findings reveal that on average, the consultation from private healthcare providers was higher than that from public healthcare providers across all the sample districts. In fact, more than the private or public healthcare provider, a larger number of 'other' healthcare providers were consulted during the entire period of illness experienced by the women. On average, women in Kolhapur visited 'other' healthcare providers six times, the highest such incidence among all the sample districts, followed by those in Hoshiarpur and Moga.

**Table 5.18: District-wise Number of Health Service Providers Consulted during the Entire Period of Illness**

Districts	Public	Private	Other
Kolhapur	2.1	3.6	5.7
Yavatmal	0.6	0.9	0.9
Moga	1.8	2.4	3.9
Hoshiarpur	0.2	1.2	4.4
All	1.1	1.8	3.0

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 5.18 shows that women living in urban locations, belonging to the OBC/General categories, and in the age group of above 45 years, and those who were married, had larger sized families, and belonged to the richest expenditure quartile visited private healthcare providers more often than their counterparts. Similar trends were also observed in the case of 'other' healthcare providers. Not much variations were noticed across socio-economic groups were noticed among those who consulted public healthcare providers.

### 5.6.4 Satisfaction Level with Healthcare Providers Consulted

Table 5.19 shows the rate of satisfaction with the treatment provided by various healthcare providers consulted by women during the entire period of their illness. It shows that the highest satisfaction level in the treatment of gynaecological problems was reported by women who visited private clinics, followed by those who visited private hospitals. These trends were similar across all the four sample districts studied in the two States of Maharashtra and Punjab. In both the districts of Punjab, that is, Moga and Hoshiarpur, almost all the patients are also reported being satisfied with the healthcare services offered by the Accredited Social Health Activists (ASHAs) and Auxiliary Nurses and Midwives (ANMs). The lowest satisfaction levels for all healthcare providers were recorded for district hospitals in Kolhapur, and for ASHAs/ANMs in Yavatmal.

**Table 5.19: District-wise Percentage of Patients Satisfied with All Healthcare Providers Consulted**

Service Providers	Kol-hapur	Yavat-mal	Moga	Hoshi-arpur	Total
PHC	77.3	81.3	78.7	44.8	78.5
District Hospital	32.8	69.1	89.3	71.3	70.1
Private clinic	99.9	94.4	94.3	97.3	96.2
Private Hospital	98.2	85.2	96.7	94.2	93.5
ASHA/ANM	0.0	39.0	96.2	100.0	77.2

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

### 5.6.5 Healthcare Providers Consulted in the Last Six Months

Table 5.20 shows the type of healthcare providers consulted by the ailing women in the last six months. It shows that nearly 50 per cent of the ailing women consulted private healthcare providers during the last six months of their treatment, while 23 per cent consulted public healthcare providers. The proportion of those who consulted private healthcare providers in the last six months was the highest in Kolhapur district, at 70 per cent, and the lowest in Hoshiarpur district, at just 15 per cent. Among all the four sample districts, the proportion of those who had consulted public healthcare providers in the last six months was the highest in Yavatmal at 32 per cent. About 40 per cent of the patients in Kolhapur also consulted 'other' healthcare providers in the last six months, pointing to a higher demand for 'other' healthcare providers than public ones.

**Table 5.20: District-wise Type of Healthcare Providers Consulted in the Last Six Months**

Districts	Public	Private	Other
Kolhapur	14.9	70.7	40.7
Yavatmal	32.0	48.3	4.6
Moga	21.7	53.1	9.6
Hoshiarpur	5.0	15.3	6.7
All	22.6	48.9	13.0

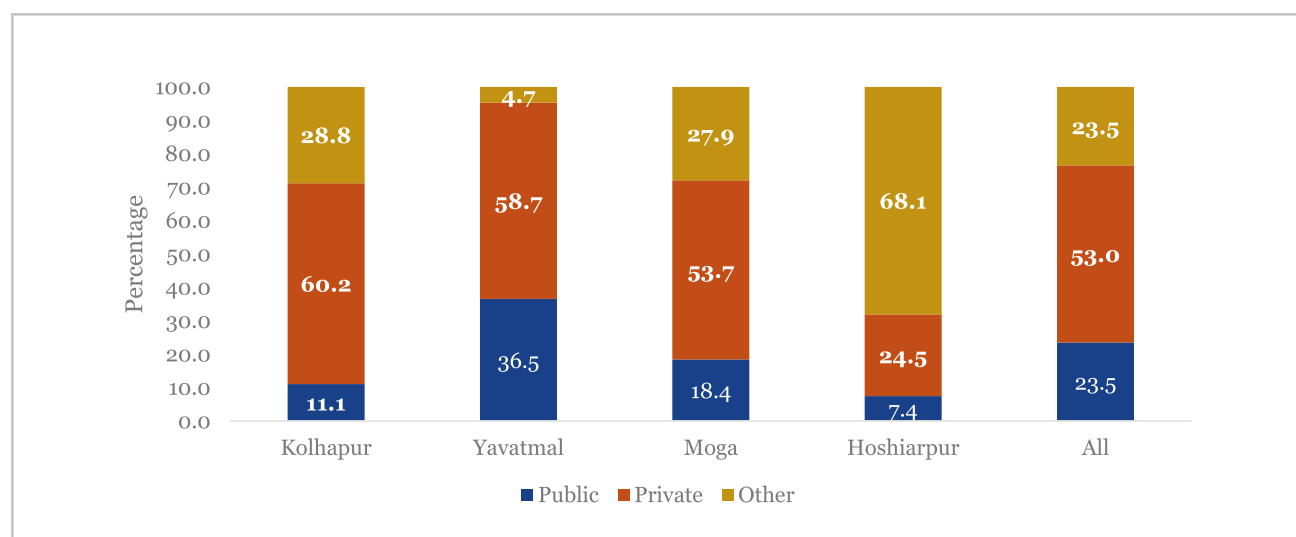
Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 5.19 shows wide variations by socio-demographic characteristics among women who consulted private healthcare providers in the last six months. The higher proportion of patients who were living in rural locations, were in the age group of above 45 years, married, and illiterate, consulted private healthcare providers than their counterparts in the other categories. Not much variations were observed by social group, occupational patterns, household expenditure quintile, and family size in the case of private healthcare providers. Unlike consultations with private sector healthcare providers, little variation was observed by marital status and age among those who consulted public healthcare providers.

### 5.6.6 Routine Treatment Trends

Figure 5.21 shows the type of healthcare service providers consulted by women routinely. It is found that at present about 77 per cent had been consulting healthcare providers routinely for critical gynecological problems. The analysis shows that 53 per cent of the women were seeking treatment for gynaecological problems routinely from private healthcare providers and another 21 per cent from private pharmacies. In Hoshiarpur, 65 per cent of the patients reported routinely consulting private pharmacies for treatment. After private healthcare providers, in Yavatmal, public healthcare providers were mostly preferred on a routine basis, in Kolhapur and Moga, it was 'other' healthcare providers.

**Figure 5.21: District-wise Type of Healthcare Providers Visited Routinely for Treatment**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 5.20 shows wide variations by socio-demographic characteristics among women who consulted private healthcare providers routinely. A higher proportion of those patients who lived in rural locations, were in the age group of above 25 years, were educated up to the higher secondary level, and belonged to the higher expenditure quintile consulted private healthcare providers on a routine basis. Not much variation was observed by social group, occupational status, marital status and family size in cases where private healthcare providers were consulted.

#### ***5.6.7 Salient Findings from Analysis of Health Seeking Behaviour since Symptoms Began***

This section captures the treatment-seeking behaviour analysed through the choice of healthcare provider during different intervals after noticing symptoms were noticed for the first episode of the disease. Following are the key results in this context:

- More than 60 per cent of the women consulted private healthcare providers since they were first diagnosed with the gynaecological symptoms at the beginning of the disease.
- Even after women started seeking solutions to their gynaecological problems, in the first six months, a higher proportion of women (more than 63 per cent) continued consulting private healthcare providers. These proportions were higher among those living in urban areas, who were from the OBC/General categories, had larger sized families, and belonged to the richest expenditure quartile.
- The highest satisfaction level in the treatment of gynecological problems was reported by women who visited private clinics, followed by those who visited private hospitals.
- A majority of the women taking treatment for gynaecological problems consulted private healthcare providers on a routine basis.



## Appendix Tables

Appendix Table 5.1: Status of Treatment after the Fourth Visits-All Sample (2,510)

Background Characteristics	No Treatment	Recovered	Nothing	Self-care	Repeat Visit	Sought Different Provider
All	44.1	15.9	21.6	14.4	3.0	1.0
<i>Place of Residence</i>						
Rural	44.1	16.8	22.6	13.1	2.7	0.8
Urban	44.0	13.0	18.3	19.0	4.1	1.6
<i>Marital Status</i>						
Married	41.7	16.2	22.9	14.5	3.7	1.0
Unmarried/widowed/separated/divorced	50.1	15.3	18.3	14.3	1.1	0.8
<i>Age Categories</i>						
Up to 25 years	46.4	14.9	22.8	13.6	1.6	0.8
26-30 years	42.1	13.9	19.9	18.4	3.6	2.2
31-45 years	43.2	17.5	21.2	13.8	3.8	0.5
More than 45 Years	40.7	20.4	26.4	8.4	4.2	0.0

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.2: Proportion of Women Not Seeking Treatment after a Flare-up during the Preceding One Year by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Waiting for Auto recovery	Illness Not Severe Enough	Got Better	Self-care	Not Enough Money	Other
All	63.1	11.0	3.8	8.1	11.0	2.9
<i>Place of Residence</i>						
Rural	61.5	11.1	4.2	8.0	12.5	2.7
Urban	68.6	10.8	2.4	8.6	6.0	3.6
<i>Marital Status</i>						
Married	60.1	11.6	3.9	8.0	12.9	3.3
Unmarried	69.5	9.5	3.5	8.3	6.9	2.1
<i>Social Groups</i>						
SC/ST	56.9	13.6	4.8	6.1	16.7	1.9
OBC/General	66.9	9.4	3.2	9.3	7.6	3.6
<i>Educational Categories</i>						
Illiterate	60.5	13.8	3.4	4.6	15.4	2.3
Matric	64.0	9.0	4.0	7.8	11.8	3.4
Higher Secondary+	63.3	13.7	3.8	12.6	4.4	2.2
<i>Occupational Categories</i>						
Worker	69.5	10.8	3.5	7.9	6.8	1.5
Non-worker	62.3	11.1	3.8	8.2	11.6	3.1
<i>Monthly Per Capita Expenditure Quartiles</i>						
Quartile 1 (Poorest)	57.1	11.0	5.7	6.4	16.4	3.4
Quartile 2	64.6	8.5	3.8	9.5	10.9	2.7
Quartile 3	64.9	14.5	2.8	7.6	7.2	3.0
Quartile 4 (Richest)	68.5	10.0	2.1	9.8	7.2	2.4
<i>Household Size</i>						
Up to 5 Members	63.4	9.6	3.2	9.3	12.4	2.2
More than 5 Members	62.6	13.3	4.7	6.3	8.9	4.2
<i>Age Categories</i>						
Below 25 years	67.9	9.2	4.5	8.7	6.9	2.8
25-30 years	60.3	13.4	2.3	6.7	14.0	3.4
31-45 years	58.7	11.4	3.9	8.0	14.8	3.3
Above 45 years	68.6	14.3	4.8	11.1	1.2	0.0

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.3: Average Duration of Common Gynaecological Conditions (in Years)**

Background Characteristics	Uttar Pradesh		Odisha		Maharashtra		Punjab		All
	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	
All	2.6	3.8	3.6	3.5	3.4	1.7	2.7	5.3	3.3
<i>Place of Residence</i>									
Rural	2.6	3.6	3.5	3.5	3.4	1.7	2.9	6.9	3.2
Urban	2.5	4.0	3.9	3.4	4.3	2.1	2.5	2.9	3.6
<i>Marital Status</i>									
Married	3.0	4.0	4.0	3.7	3.5	1.7	2.7	7.4	3.6
Unmarried	1.6	3.0	2.7	2.9	3.1	1.7	2.6	3.4	2.6
<i>Social Groups</i>									
SC/ST	2.7	4.2	3.7	3.2	1.9	1.7	2.9	5.3	3.3
OBC/General	2.5	3.6	3.5	3.6	3.8	1.8	2.3	5.3	3.3

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.4: Proportion of Women with a Flare-up Who Sought Treatment during the Preceding One Year by Socio-economic And Demographic Attributes (%)**

Background Characteristics	Chandauli	Firozabad	Bargharh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	All
All	46.8	59.2	54.5	55.4	71.2	63.3	59.4	20.7	55.9
<i>Place of Residence</i>									
Rural	48.1	58.5	54.3	54.0	70.1	64.1	63.5	29.1	55.9
Urban	39.5	60.3	57.2	67.9	86.0	51.4	53.2	8.7	56.0
<i>Marital Status</i>									
Married	50.0	59.4	60.8	57.7	71.1	60.9	58.4	28.8	58.3
Unmarried	38.5	58.8	42.2	50.0	71.7	69.5	65.6	13.5	49.9
<i>Social Groups</i>									
SC/ST	43.4	58.4	52.5	42.7	65.9	69.2	56.6	30.4	53.0
OBC/General	49.5	59.5	56.0	61.0	72.4	58.6	65.8	13.6	57.5
<i>Educational Categories</i>									
Illiterate	53.8	54.6	48.7	49.6	80.1	73.1	59.8	50.5	55.1
Up to Matriculate	41.5	60.3	55.3	54.5	69.5	59.2	58.9	40.3	55.4
Higher Secondary+	51.2	65.3	53.3	61.6	72.2	69.2	61.2	10.8	58.1
<i>Occupational Categories</i>									
Worker	54.7	56.2	55.8	60.1	64.0	58.7	72.7	7.7	54.9
Non-worker	46.7	59.6	54.4	55.1	72.8	67.1	57.3	28.8	56.1
<i>Monthly Per capita Expenditure Quartiles</i>									
Quartile 1 (Poorest)	49.1	58.3	45.9	44.6	35.6	61.2	42.3	13.3	50.8
Quartile 2	41.1	63.4	61.7	49.9	62.4	57.8	54.3	19.1	57.2
Quartile 3	48.5	57.8	53.4	59.6	79.5	71.8	53.8	50.4	58.8
Quartile 4 (Richest)	46.8	57.2	61.7	73.0	76.9	56.3	66.3	7.0	58.1
<i>Household Size</i>									
Up to 5 Members	48.8	58.6	56.5	54.4	72.4	64.2	59.8	19.3	56.7
More than 5 Members	45.6	59.7	41.6	61.4	69.3	56.0	57.5	28.9	54.7
<i>Age Categories</i>									
Below 25 years	45.0	55.5	50.5	54.4	77.7	67.7	66.9	24.6	53.6
25-30 years	48.2	62.7	61.4	54.8	68.2	65.3	53.7	10.2	57.9
31-45 years	48.5	60.9	54.5	55.9	67.2	60.5	56.8	18.2	56.8
Above 45 years	50.3	55.4	77.0	58.8	83.8	55.7	66.6	92.9	59.3

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.5: Proportion of Patients Who Received First Treatment by Type of Healthcare Service Provider during the Preceding One Year by Socio-Economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Chemist</b>	<b>Traditional</b>	<b>Other</b>
<b>All</b>	<b>24.4</b>	<b>50.5</b>	<b>5.8</b>	<b>18.5</b>	<b>0.8</b>
<i>Place of Residence</i>					
Rural	24.0	53.7	5.5	15.9	1.0
Urban	25.8	39.4	6.9	27.8	0.0
<i>Marital Status</i>					
Married	23.5	52.7	5.3	18.0	0.5
Unmarried	27.3	43.7	7.4	20.2	1.5
<i>Social Groups</i>					
SC/ST	33.1	45.3	5.6	15.3	0.7
OBC/General	20.0	53.2	5.9	20.2	0.8
<i>Educational Categories</i>					
Illiterate	15.3	51.1	7.7	26.0	0.0
Matric	28.5	48.7	4.8	16.8	1.3
Higher Secondary+	22.4	54.7	6.7	16.3	0.0
<i>Occupational Categories</i>					
Worker	26.6	51.5	5.2	16.3	0.4
Non-worker	24.2	50.3	5.9	18.8	0.8
<i>Monthly Per Capita Expenditure Quartiles</i>					
Quartile 1 (Poorest)	27.2	39.2	9.9	23.2	0.5
Quartile 2	27.2	50.1	4.1	17.9	0.7
Quartile 3	23.9	51.6	6.2	17.1	1.2
Quartile 4 (Richest)	18.3	63.2	2.5	15.4	0.6
<i>Household Size</i>					
Up to 5 Members	26.8	54.1	4.6	13.7	0.8
More than 5 Members	20.3	44.5	7.9	26.7	0.6
<i>Age Categories</i>					
Below 25 years	25.0	48.5	5.9	18.5	2.0
25-30 years	24.6	49.7	6.3	19.4	0.0
31-45 years	23.7	54.4	5.0	16.8	0.1
Above 45 years	25.8	38.8	9.2	26.2	0.0

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.6: Proportion of Patients Who Visited a Number of Health Care Providers for Treatment after a Flare-up during the Preceding One Year by Socio-economic and Demographic Attributes (%)**

Background Characteristics	One	Two	Three	Four
All	84.6	11.4	3.2	0.8
<i>Place of Residence</i>				
Rural	86.7	10.3	2.3	0.7
Urban	77.4	15.4	6.4	0.9
<i>Marital Status</i>				
Married	84.6	11.4	3.2	0.8
Unmarried	84.4	11.7	3.4	0.5
<i>Education Categories</i>				
Illiterate	77.5	17.4	3.8	1.4
Matric	87.2	9.1	3.1	0.7
Higher Secondary+	84.6	12.1	3.1	0.3
<i>Occupational Categories</i>				
Worker	90.6	7.3	0.6	1.5
Non-worker	83.9	11.9	3.6	0.7
<i>Monthly Per Capita Expenditure Quartiles</i>				
Quartile 1 (Poorest)	86.3	10.9	2.6	0.2
Quartile 2	88.5	7.4	3.0	1.1
Quartile 3	81.7	13.7	3.9	0.8
Quartile 4 (Richest)	81.3	14.4	3.4	1.0
<i>Household Size</i>				
Up to 5 Members	88.3	8.9	2.0	0.8
More than 5 Members	78.2	15.8	5.3	0.7
<i>Age Categories</i>				
Below 25 years	85.5	10.5	3.3	0.7
25-30 years	83.5	10.3	4.3	1.9
31-45 years	84.2	13.2	2.4	0.2
Above 45 years	85.6	10.1	4.3	0.0

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.7: Sequencing of Visits to Different Types of Health Care Providers with a Flare-up during the Preceding One Year by Women Seeking Treatment by Districts (%)**

Districts	Visits	Public			Private			Chemist			Other		
		Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
<i>Individual Districts</i>													
Chandauli	First	23.9			55.4			13.4			7.3		
	Second	0.0	74.9	25.1	16.8	53.6	29.5	43.7	56.3	0.0	0.0	100.0	0.0
	Third	0.0	100.0	0.0	11.0	70.8	18.3	0.0	100.0	0.0	0.0	100.0	0.0
	Fourth	41.2	26.9	31.9	19.4	48.3	32.4	0.0	0.0	0.0	0.0	0.0	0.0
Firozabad	First	17.4			37.9			5.2			39.5		
	Second	5.8	85.8	8.5	7.9	31.2	61.0	0.0	50.0	50.0	8.2	61.9	29.9
	Third	0.0	38.4	61.6	21.2	28.6	50.1	0.0	0.0	0.0	0.0	100.0	0.0
	Fourth	0.0	31.1	68.9	0.0	53.1	46.9	0.0	0.0	0.0	0.0	0.0	0.0
Bargarh	First	31.7			53.2			3.5			11.7		
	Second	0.0	100.0	0.0	14.8	35.6	49.6	0.0	0.0	0.0	0.0	100.0	0.0
	Third	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dhenkanal	First	31.5			53.8			5.3			9.5		
	Second	100.0	0.0	0.0	9.6	84.8	5.6	0.0	0.0	0.0	0.0	100.0	0.0
	Third	70.9	29.2	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kolhapur	First	7.1			79.0			9.2			4.7		
	Second	0.0	100.0	0.0	0.0	99.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(Contd.)

Appendix Table 5.7: (Contd.)

Districts	Visits			Public			Private			Chemist			Other		
	Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
Yavatmal	First	40.9	56.4	2.1	0.5										
	Second	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	0.0	0.0	62.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moga	First	22.9	69.1	3.0	5.1										
	Second	33.8	66.3	0.0	44.9	21.6	33.5	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	53.7	46.3	0.0	94.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	100.0	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
Hoshiarpur	First	20.6	65.7	4.7	9.0										
	Second	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	First	24.4	50.5	5.8	19.3										
	Second	10.4	79.2	10.5	9.3	51.2	39.5	11.4	52.8	35.9	6.0	71.9	22.1		
	Third	3.2	48.9	48.0	15.0	46.8	38.2	0.0	100.0	0.0	0.0	100.0	0.0		
	Fourth	9.6	49.1	41.4	13.2	51.3	35.5	0.0	100.0	0.0	0.0	0.0	0.0		

Source: NCAER-Nossal 4IS Health Survey, 2019-22.



**Appendix Table 5.8: Sequencing of Visits to Different Types of Health Care Providers Seeking Treatment for a Flare-up during the Preceding One Year by Socio-economic and Demographic Attributes (%)**

Background Characteristics		Public			Private			Chemist			Other		
		Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
<i>Place of Residence</i>													
Rural	First	24.0			53.7			5.5			16.8		
	Second	9.8	80.3	9.9	8.5	57.9	33.6	11.4	52.8	35.9	11.1	48.2	40.7
	Third	9.5	67.4	23.1	14.1	37.8	48.1	0.0	100.0	0.0	0.0	100.0	0.0
	Fourth	16.0	71.6	12.4	6.5	41.0	52.5	0.0	100.0	0.0	0.0	0.0	0.0
Urban	First	25.8			39.4			6.9			27.8		
	Second	10.9	78.2	11.0	11.7	29.4	58.9	0.0	0.0	0.0	0.0	100.0	0.0
	Third	0.0	39.3	60.7	18.5	81.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	15.5	84.5	27.1	72.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Marital Status</i>													
Married	First	23.5			52.7			5.3			18.5		
	Second	10.0	76.0	14.0	9.8	50.8	39.4	11.6	51.7	36.7	17.4	51.0	31.7
	Third	4.8	60.2	35.0	9.7	57.9	32.4	0.0	100.0	0.0	0.0	100.0	0.0
	Fourth	11.7	46.6	41.6	6.1	60.8	33.1	0.0	0.0	0.0	0.0	0.0	0.0
Unmarried	First	27.3			43.7			7.4			21.7		
	Second	11.7	88.3	0.0	6.5	53.5	40.0	0.0	100.0	0.0	0.0	83.0	17.0
	Third	0.0	25.5	74.5	30.9	13.4	55.7	0.0	0.0	0.0	0.0	100.0	0.0
	Fourth	0.0	59.8	40.2	30.9	27.5	41.6	0.0	100.0	0.0	0.0	0.0	0.0

(Contd.)

Appendix Table 5.8: (Contd.)

Background Characteristics		Public			Private			Chemist			Other		
		Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
<i>Monthly Per Capita Expenditure Quartiles</i>													
Quartile 1 (Poorest)	First	27.2			39.2			9.9			23.7		
	Second	8.6	91.4	0.0	0.0	66.9	33.1	18.4	81.6	0.0	0.0	100.0	0.0
	Third	0.0	100.0	0.0	22.9	52.4	24.7	0.0	100.0	0.0	0.0	100.0	0.0
	Fourth	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quartile 2	First	27.2			50.1			4.1			18.6		
	Second	4.1	82.6	13.2	12.6	54.2	33.2	0.0	0.0	0.0	0.0	54.7	45.3
	Third	0.0	72.2	27.8	0.0	36.5	63.5	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	38.6	61.4	21.8	78.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quartile 3	First	23.9			51.6			6.2			18.3		
	Second	5.4	94.6	0.0	3.8	41.7	54.5	0.0	5.8	94.2	28.5	42.1	29.3
	Third	0.0	7.8	92.3	14.9	35.5	49.7	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	100.0	0.0	0.0	75.1	24.9	0.0	100.0	0.0	0.0	0.0	0.0
Quartile 4 (Richest)	First	18.3			63.2			2.5			16.0		
	Second	24.3	52.4	23.3	17.8	53.2	29.0	0.0	0.0	0.0	0.0	19.7	80.3
	Third	13.3	59.0	27.6	18.1	55.7	26.2	0.0	0.0	0.0	0.0	100.0	0.0
	Fourth	33.5	6.9	59.5	23.5	5.9	70.7	0.0	0.0	0.0	0.0	0.0	0.0

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.9: Average Duration between the Flare-up and Seeking of Treatment from the First Health Care Provider by Socio-economic and Demographic Attributes (in Days)**

Background Characteristics	Chandauli	Firozabad	Bargharh	Dhenkanal	Kolhapur	Yavatmal	Moga	Hoshiarpur	All
All	22.7	22.1	18.0	14.6	5.5	12.6	5.8	3.4	18.0
<i>Place of Residence</i>									
Rural	23.7	23.5	18.6	15.0	5.5	12.8	7.3	3.6	18.3
Urban	15.9	20.0	11.5	11.0	4.9	8.3	2.9	2.5	16.9
<i>Marital Status</i>									
Married	22.4	23.4	19.4	13.4	6.2	13.0	5.5	3.5	18.7
Unmarried	23.8	17.6	14.1	17.3	2.7	11.9	7.2	3.7	15.7
<i>Social Groups</i>									
SC/ST	21.5	27.2	18.5	16.6	5.7	13.0	7.1	4.0	19.0
OBC/General	23.6	20.4	17.7	13.8	5.4	12.2	3.5	2.6	17.5
<i>Educational Categories</i>									
Illiterate	31.6	30.5	22.3	21.8	4.9	12.1	6.1	1.0	27.5
Matric	20.9	21.6	20.1	15.3	7.0	12.6	5.3	3.4	17.9
Higher Secondary+	15.3	10.4	6.1	8.9	3.4	12.8	7.3	3.8	9.7
<i>Occupational Categories</i>									
Worker	27.5	14.5	23.6	17.7	3.9	12.3	7.0	6.2	14.3
Non-worker	22.5	22.9	17.6	14.3	5.8	12.6	5.7	3.0	18.5
<i>Monthly Per Capita Expenditure Quartiles</i>									
1 (Poorest)	25.7	28.1	21.8	23.5	11.8	21.0	12.4	10.0	25.0
Quartile 2	24.3	24.0	18.0	11.0	2.6	11.3	6.7	4.0	18.7
Quartile 3	18.7	17.3	16.7	13.4	6.6	11.0	5.2	2.6	14.4
4 (Richest)	16.0	18.6	12.6	9.7	5.5	10.9	5.7	5.1	13.1
<i>Household Size</i>									
Up to 5 Members	22.4	19.6	18.2	14.2	6.5	12.5	5.6	3.4	16.2
More than 5 Members	22.9	23.7	16.1	15.9	3.6	13.1	7.0	3.5	21.1
<i>Age Categories</i>									
Below 25 years	22.4	16.1	12.5	16.3	6.3	12.5	7.3	1.1	14.9
25-30 years	20.0	25.5	22.0	15.2	5.6	14.3	5.6	7.1	21.0
31-45 years	22.9	22.7	21.1	12.7	5.4	11.7	4.6	1.8	18.2
Above 45 years	33.1	34.1	24.2	14.4	0.9	14.0	9.5	5.0	24.6

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.10: Proportion of Patients Who Recovered after Different Number of Visits to Health Care Providers for Treatment during the Preceding One Year by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Recovery Status after Visiting Health Care Provider				
	First Visit	Second Visit	Third Visit	Fourth Visit	All visits
<b>All</b>	<b>22.3</b>	<b>4.3</b>	<b>2.7</b>	<b>1.2</b>	<b>15.9</b>
<i>Place of Residence</i>					
Rural	23.8	4.8	2.6	0.9	16.8
Urban	17.2	2.5	2.9	2.1	13.0
<i>Marital Status</i>					
Married	21.6	4.4	2.4	1.3	16.2
Unmarried	24.3	3.8	3.8	1.1	15.3
<i>Social Groups</i>					
SC/ST	21.6	5.9	3.4	1.6	15.8
OBC/General	22.7	3.4	2.3	1.0	16.0
<i>Educational Categories</i>					
Illiterate	19.3	4.5	4.7	0.1	14.7
Matric	21.7	3.3	2.1	1.4	14.9
Higher Secondary+	26.4	6.5	2.5	2.0	19.9
<i>Occupational Categories</i>					
Worker	30.7	4.7	1.2	1.2	19.5
Non-worker	21.2	4.1	2.9	1.2	15.4
<i>Monthly Per Capita Expenditure Quartiles</i>					
Quartile 1 (Poorest)	17.4	2.3	3.2	0.0	11.1
Quartile 2	21.4	2.9	1.8	1.8	15.1
Quartile 3	26.3	3.5	2.0	0.4	17.9
Quartile 4 (Richest)	24.4	9.4	4.1	3.3	21.2
<i>Household Size</i>					
Up to 5 Members	22.6	5.0	3.0	1.8	17.0
More than 5 Members	21.7	3.0	2.3	0.3	14.2
<i>Age Categories</i>					
Below 25 years	22.6	2.5	3.5	0.8	14.9
25-30 years	16.8	4.7	1.9	2.4	13.9
31-45 years	24.3	5.0	2.7	1.0	17.5
Above 45 years	30.1	5.7	0.4	0.0	20.4

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.11: Proportion of Patients Exiting and Switching the Treatment after Visiting the Health Care Provider by Socio-economic and Demographic Attributes (%)**

Background Characteristics	After First Visit			After Second Visit			After Third Visit		
	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider
All	65.1	17.6	17.3	82.8	9.6	7.6	90.1	7.5	2.4
<i>Place of Residence</i>									
Rural	69.5	15.5	15.0	85.0	8.9	6.2	91.2	6.8	2.0
Urban	51.0	24.4	24.6	76.1	12.0	11.9	86.9	9.6	3.6
<i>Marital Status</i>									
Married	63.9	18.6	17.5	82.1	10.8	7.1	88.7	8.9	2.4
Unmarried	68.9	14.3	16.8	85.2	5.9	9.0	94.7	2.9	2.4
<i>Social Groups</i>									
SC/ST	63.1	21.7	15.2	78.3	12.9	8.8	87.8	8.1	4.1
OBC/General	66.2	15.5	18.4	85.1	8.0	6.9	91.3	7.2	1.5
<i>Educational Categories</i>									
Illiterate	52.4	24.3	23.4	69.8	18.1	12.1	81.9	15.8	2.2
Matriculate	71.8	13.7	14.5	87.0	6.7	6.3	92.7	5.0	2.3
Higher Secondary+	60.0	21.3	18.7	84.7	9.0	6.4	91.1	6.1	2.8
<i>Occupational Categories</i>									
Worker	67.1	22.6	10.3	77.2	17.1	5.7	87.8	9.1	3.1
Non-worker	65.0	17.0	18.0	83.5	8.7	7.8	90.4	7.3	2.3
<i>Monthly Per Capita Expenditure Quartiles</i>									
Quartile 1 (Poorest)	71.4	14.2	14.4	86.0	8.7	5.4	93.4	6.1	0.5
Quartile 2	72.6	13.6	13.8	84.7	8.7	6.7	90.9	6.5	2.6

(Contd.)

Appendix Table 5.11: (Contd.)

Background Characteristics	After First Visit			After Second Visit			After Third Visit		
	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider
Quartile 3	58.9	19.5	21.6	81.6	10.3	8.1	88.4	8.7	3.0
Quartile 4 (Richest)	54.6	24.9	20.5	77.5	11.3	11.2	86.6	9.4	4.0
<b>Household Size</b>									
Up to 5 Members	69.3	17.9	12.8	84.5	10.1	5.5	90.6	6.9	2.6
More than 5 Members	58.1	17.0	24.9	80.1	8.9	11.0	89.4	8.6	2.1
<b>Age Categories</b>									
Below 25 years	68.9	14.9	16.3	85.7	7.0	7.4	93.8	4.1	2.1
25-30 years	65.3	17.7	17.0	81.8	9.0	9.2	87.0	8.3	4.8
31-45 years	62.2	19.5	18.3	81.1	12.2	6.7	88.7	10.0	1.4
Above 45 years	57.0	23.3	19.8	79.3	13.2	7.5	90.3	9.7	0.0

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.12: Average Cost of Treatment of All the Four Visits (in Rs) by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Chandauli	Firozabad	Bargarh	Dhenkanal	Kollhapur	Yavatmal	Moga	Hoshiarpur	All
All	2495	1775	2244	2878	2634	1527	2551	1844	2133
<i>Age Categories</i>									
Below 25 years	2632	1470	1969	2335	1975	840	1751	2700	1847
25-30 years	1811	1938	2715	2744	2485	1184	1564	2228	2125
31-45 years	2552	1828	2264	3346	3015	1927	2762	305	2288
Above 45 years	3397	2279	1820	4022	3552	3668	8784	1585	2987
<i>Duration of the Disease</i>									
12 months and below	1543	1331	2300	2648	2324	1011	2664		1710
13-24 months	1985	1656	2196	2421	1851	3881	2481	469	2038
Above 24 months	3834	1905	2244	3253	3243	2415	2512	2289	2413
<i>Occupational Categories</i>									
Worker	1727	1949	2381	3733	2799	1813	3933	3574	2195
Non-worker	2526	1749	2234	2857	2603	1298	2341	1552	2126
<i>Social Groups</i>									
SC/ST	2575	2185	2231	2149	2861	1465	1500	1524	2123
OBC/General	2440	1636	2253	3133	2588	1587	4593	2366	2138
<i>Monthly Per Capita Expenditure Quintiles</i>									
Quartile 1 (Poorest)	1626	860	1723	1562	2351	1160	613	200	1354
Quartile 2	1849	2105	2326	2763	1682	1251	897	405	2060
Quartile 3	3097	1715	2369	3087	2694	1066	3102	2597	2108
Quartile 4 (Richest)	5305	2477	2853	4031	3180	3765	2697	979	3179
<i>Educational Levels</i>									
Illiterate	2727	1938	2269	2977	1460	1526	3654	3000	2177
Matric	2376	1153	2304	2784	2825	1677	2187	1185	2009
Higher Secondary+	2438	2676	1935	3284	2575	1231	2732	2764	2403
<i>Household Size</i>									
Up to 5 Members	2851	1749	2323	3049	2648	1538	2608	2038	2253
More than 5 Members	2264	1781	1541	2052	2608	1429	2239	1046	1927
<i>Healthcare Service Providers</i>									
Public	1524	2221	1523	1938	1109	242	1812	897	1559
Private	3434	3184	3059	4041	3036	2526	3059	2439	3182

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.13: Percentage of Households That Reported Spending More Than 10% on Treatment as a Percentage of the Total Household Expenditure by Socio-economic and Demographic Attributes (%)**

Background Characteristics	On First Treatment Cost (% Households)	On Total Treatment Cost (% Households)
All	5.4	6.5
<i>Districts</i>		
Chandauli	6.6	7.5
Firozabad	2.4	3.3
Bargarh	9.5	10.7
Dhenkanal	9.1	9.8
Kolhapur	2.8	5.3
Yavatmal	5.2	6.9
Moga	3.1	4.4
Hoshiarpur	0.0	0.0
<i>Place of Residence</i>		
Rural	5.9	7.3
Urban	3.5	3.6
<i>Household Size</i>		
Up to 5 Members	7.0	8.1
More than 5 Members	2.6	3.8
<i>Social Groups</i>		
SC/ST	6.6	8.0
OBC/General	4.8	5.8
<i>Monthly Per Capita Expenditure Quartiles</i>		
Quartile 1 (Poorest)	6.6	7.1
Quartile 2	7.2	9.1
Quartile 3	5.3	6.3
Quartile 4 (Richest)	2.0	3.0

Source: NCAER-Nossal 4IS Health Survey, 2019-22.



**Appendix Table 5.14: Households Spending on Treatment as a Percentage of the Total Non-food Expenditure by Socio-economic and Demographic Attributes (%)**

Background Characteristics	% Households Spending on Treatment Cost of First Visit as % of the Total Household Non-food Expenditure				% Households Spending on Treatment Cost of All Visits as % of the Total Household Non-food Expenditure			
	Catastrophic Thresholds				Catastrophic Thresholds			
	>10%	>20%	>30%	>40%	>10%	>20%	>30%	>40%
All	12.3	4.5	2.4	1.5	15.0	5.3	2.8	1.8
<i>Place of Residence</i>								
Rural	13.9	5.0	2.6	1.5	16.8	6.0	3.2	1.9
Urban	7.0	2.6	1.5	1.3	8.7	2.7	1.5	1.3
<i>Household Size</i>								
Up to 5 Members	16.0	6.2	3.3	2.2	18.3	6.8	3.7	2.5
More than 5 Members	6.1	1.6	0.8	0.2	9.3	2.8	1.3	0.6
<i>Social Groups</i>								
SC/ST	14.1	6.2	4.0	2.8	18.2	7.0	4.8	3.3
OBC/General	11.4	3.6	1.6	0.8	13.4	4.4	1.8	1.0
<i>Monthly Per Capita Expenditure Quartiles</i>								
Quartile 1 (Poorest)	15.3	6.0	3.3	1.6	18.0	6.5	3.7	2.2
Quartile 2	18.8	6.7	3.6	2.8	21.9	8.5	4.4	2.9
Quartile 3	8.7	3.4	1.7	0.9	10.8	3.9	1.9	1.3
Quartile 4 (Richest)	5.2	1.2	0.7	0.5	8.0	1.6	0.8	0.6

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

Appendix Table 5.15: Key Deciding Factors for Choosing Health Care Providers (%) by District

Districts	Proximity				Good Reputation			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	60.9	56.7	64.8	59.4	70.3	68.0	59.5	66.8
Firozabad	33.4	43.1	45.4	42.4	32.6	50.2	21.4	34.3
Bargarh	58.7	51.1	82.3	58.3	78.6	75.9	30.5	69.8
Dhenkanal	51.9	35.6	82.9	47.7	68.2	77.1	31.4	67.5
Kolhapur	85.2	56.1	46.0	56.7	30.8	66.6	0.0	54.8
Yavatmal	89.2	56.2	66.3	70.0	77.2	79.5	2.3	76.5
Moga	71.0	54.4	31.1	56.4	72.8	58.6	38.2	60.1
Hoshiarpur	44.7	49.7	77.6	52.5	44.7	45.3	34.2	43.7
All	57.0	49.4	54.6	52.5	62.9	66.1	26.7	55.5
	Inexpensive				Good Personal Experience			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	53.8	14.6	40.1	29.2	32.7	27.1	12.0	25.3
Firozabad	58.1	31.5	65.8	51.5	12.4	24.3	13.4	17.4
Bargarh	52.4	17.1	16.5	28.2	51.8	57.1	22.4	50.2
Dhenkanal	45.2	8.7	10.9	20.5	36.5	44.5	5.2	36.2
Kolhapur	85.2	40.7	27.3	42.0	52.1	50.5	56.6	51.5
Yavatmal	88.4	63.4	57.7	73.5	52.7	37.4	24.0	43.3
Moga	49.8	22.0	21.9	28.4	48.9	44.4	69.3	47.5
Hoshiarpur	44.7	37.6	77.6	44.6	15.8	52.2	56.6	45.3
All	59.1	27.1	51.7	41.1	37.1	39.3	16.4	33.0
	Qualification of Staff				Availability of Drugs			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	2.8	5.4	0.0	3.6	31.9	50.9	36.7	43.4
Firozabad	1.8	7.1	0.9	3.4	57.1	41.3	15.9	32.7
Bargarh	54.9	61.4	9.6	51.5	22.8	2.8	8.9	10.1
Dhenkanal	39.5	44.2	2.1	36.5	21.8	1.2	5.2	8.3
Kolhapur	30.8	19.9	0.0	17.9	30.8	11.5	54.5	18.8
Yavatmal	10.3	17.5	0.0	14.1	49.9	17.1	28.6	30.8
Moga	14.3	28.2	8.8	23.5	37.4	43.0	4.4	38.6
Hoshiarpur	44.7	31.6	0.0	30.0	100.0	67.9	0.0	65.2
All	23.9	26.5	2.1	19.7	38.0	25.2	17.8	26.4
	Relative/Friends Works There				Recommended by Relatives			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	3.7	2.4	0.0	2.2	12.5	12.2	5.9	11.0
Firozabad	3.3	1.7	3.4	2.7	22.0	17.7	22.6	20.6
Bargarh	0.0	1.9	2.3	1.4	3.8	22.1	25.4	16.8
Dhenkanal	8.3	6.6	5.9	7.0	11.8	30.5	10.7	21.7
Kolhapur	0.0	1.4	0.0	1.1	0.0	3.4	6.7	3.6
Yavatmal	2.5	2.2	0.0	2.3	0.0	5.3	0.0	3.0
Moga	6.4	1.9	0.0	2.7	0.0	0.6	0.0	0.4
Hoshiarpur	0.0	0.0	0.0	0.0	0.0	0.0	43.4	6.0
All	2.9	2.3	2.8	2.6	9.8	15.5	19.5	15.1

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.16: Proportion of Patients Who Received First Treatment by Type of Healthcare Service Provider during the Beginning of the Symptoms by Socio-Economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>
<b>All</b>	<b>28.6</b>	<b>61.1</b>	<b>10.3</b>
<i>Place of Residence</i>			
Rural	31.2	58.8	10.1
Urban	18.6	70.2	11.3
<i>Age Categories</i>			
Up to 25 years	29.9	57.1	13.0
26-30 years	28.4	63.4	8.2
31-45 years	29.0	62.0	9.1
More than 45 years	19.9	66.8	13.4
<i>Marital Status</i>			
Married	29.5	61.2	9.3
Unmarried/Widowed/Separated/Divorced	26.6	60.7	12.6
<i>Social Groups</i>			
SC/ST	28.2	58.6	13.3
OBC/General	29.0	63.1	8.0
<i>Educational Levels</i>			
Illiterate	21.3	62.2	16.5
Matriculate	31.3	60.4	8.3
HS+	26.9	61.8	11.4
<i>Occupational Categories</i>			
Worker	27.7	65.2	7.1
Non-worker	29.1	59.1	11.8
<i>Monthly Per Capita Expenditure Quartiles</i>			
Quartile 1	32.2	51.7	16.1
Quartile 2	38.7	45.9	15.5
Quartile 3	27.7	64.2	8.1
Quartile 4	21.4	71.1	7.5
<i>Household Size</i>			
Up to 5 members	29.8	60.1	10.1
More than 5 members	22.7	66.0	11.3

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.17: Proportion of Patients Who Received Treatment by Type of Healthcare Service Provider in First Six Months of Started Seeking Solutions by Socio-Economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>
All	34.0	63.3	24.3
<i>Place of Residence</i>			
Rural	37.7	60.8	20.3
Urban	19.5	73.2	40.1
<i>Age Categories</i>			
Up to 25 years	35.6	61.7	23.0
26-30 years	31.1	65.7	29.4
31-45 years	33.2	63.1	21.0
More than 45 years	43.3	63.9	37.5
<i>Marital Status</i>			
Married	34.6	64.1	22.5
Unmarried/Widowed/Separated/Divorcee	32.8	61.3	28.5
<i>Social Groups</i>			
SC/ST	33.8	60.8	24.6
OBC/General	34.2	65.3	24.1
<i>Educational Levels</i>			
Illiterate	31.0	61.2	28.1
Matriculate	36.7	62.4	21.9
Higher Secondary+	30.9	65.3	26.9
<i>Occupational Categories</i>			
Worker	32.4	64.7	26.5
Non-worker	34.8	62.6	23.3
<i>Monthly Per Capita Expenditure Quartiles</i>			
Quartile 1	32.2	52.9	24.1
Quartile 2	39.2	50.6	24.1
Quartile 3	36.1	63.8	22.7
Quartile 4	28.3	74.5	26.3
<i>Household Size</i>			
Up to 5 members	35.4	61.7	23.5
More than 5 members	27.3	71.3	28.1

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.18: Number of Health Service Providers Consulted in the Entire Period of Illness by Socio-Economic and Demographic Attributes of Women (%)**

Background Characteristics	Public	Private	Other
All	1.1	1.8	3.0
<i>Place of Residence</i>			
Rural	1.1	1.7	2.6
Urban	1.0	2.3	4.4
<i>Age Categories</i>			
Up to 25 years	1.1	1.7	2.9
26-30 years	1.1	1.3	2.6
31-45 years	0.9	1.8	3.3
More than 45 years	2.1	4.0	3.0
<i>Marital Status</i>			
Married	1.1	2.1	3.2
Unmarried/Widowed/Separated/Divorcee	0.9	1.1	2.5
<i>Social Groups</i>			
SC/ST	1.0	1.4	2.9
OBC/General	1.1	2.1	3.1
<i>Educational Levels</i>			
Illiterate	1.1	1.7	2.4
Matriculate	1.2	2.1	3.1
Higher Secondary+	0.8	1.4	3.0
<i>Occupational Categories</i>			
Worker	0.9	1.5	2.5
Non-worker	1.2	1.9	3.2
<i>Monthly Per Capita Expenditure Quartiles</i>			
Quartile 1	0.5	0.8	2.8
Quartile 2	1.0	1.1	2.4
Quartile 3	0.9	1.7	3.0
Quartile 4	1.4	2.6	3.5
<i>Household Size</i>			
Up to 5 members	1.0	1.7	2.8
More than 5 members	1.3	2.2	3.7

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.19: Distribution of Patients with Chronic Breathlessness by Socio-demographic Characteristics and Type of Provider Consulted**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>
<b>All</b>	<b>22.6</b>	<b>48.9</b>	<b>13.0</b>
<i>Place of Residence</i>			
Rural	24.9	51.4	14.3
Urban	13.6	39.1	8.1
<i>Age Categories</i>			
Up to 25 years	25.6	54.3	13.4
26-30 years	22.3	33.9	11.4
31-45 years	20.4	50.3	11.1
More than 45	24.5	67.4	31.5
<i>Marital Status</i>			
Married	22.4	51.8	13.8
Unmarried/Widow/Separate/Divorcee	23.0	42.2	11.1
<i>Social Groups</i>			
SC/ST	24.0	49.8	8.1
OBC/General	21.5	48.2	16.9
<i>Educational Levels</i>			
Illiterate	17.1	69.5	11.9
Matriculate	23.5	50.0	12.7
Higher Secondary+	23.0	40.6	13.9
<i>Occupational Categories</i>			
Worker	16.2	43.9	11.5
Non-worker	25.7	51.3	13.7
<i>Monthly Per Capita Expenditure Quartiles</i>			
Quartile 1	14.8	54.6	5.3
Quartile 2	25.8	38.0	14.5
Quartile 3	28.1	54.0	14.3
Quartile 4	16.0	50.1	12.3
<i>Household Size</i>			
Up to 5 members	24.6	48.3	11.1
More than 5 members	12.8	51.9	22.4

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

**Appendix Table 5.20: Distribution of Health Service Providers Consulted Routinely for Treatment by Socio-economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>
<b>All</b>	<b>23.5</b>	<b>53.0</b>	<b>23.5</b>
<i>Place of Residence</i>			
Rural	25.9	55.1	19.0
Urban	13.9	44.9	41.2
<i>Age Categories</i>			
Up to 25 years	25.5	53.9	20.6
26-30 years	18.9	49.4	31.7
31-45 years	25.3	53.5	21.3
More than 45 years	17.4	58.1	24.5
<i>Marital Status</i>			
Married	22.5	56.6	21.0
Unmarried/Widowed/Separated/divorcee	25.5	44.8	29.7
<i>Social Group</i>			
SC/ST	22.6	52.9	24.5
OBC/General	24.2	53.1	22.7
<i>Educational Levels</i>			
Illiterate	12.8	66.2	21.0
Matriculate	27.3	53.4	19.4
Higher Secondary+	21.1	48.3	30.7
<i>Occupational Categories</i>			
Worker	18.6	56.5	24.9
Non-worker	26.2	51.0	22.8
<i>Monthly Per Capita Expenditure Quartiles</i>			
Quartile 1	18.2	60.5	21.3
Quartile 2	27.9	46.4	25.8
Quartile 3	27.3	54.1	18.6
Quartile 4	17.4	54.9	27.7
<i>Household Size</i>			
Up to 5 members	25.7	51.8	22.6
More than 5 members	13.0	59.1	27.9

Source: NCAER-Nossal 4IS Health Survey, 2019-22.





# ACUTE RESPIRATORY INFECTION AMONG CHILDREN: HEALTHCARE USE PATHWAYS, OUT-OF-POCKET SPENDING, AND SERVICE QUALITY

Acute Respiratory Infections (ARI) are a major cause for morbidity and mortality in children aged up to five years in both developed and developing countries. Around one-third or 32 per cent of the deaths occurred among children aged under five in South Asian countries (UNICEF 2014). Acute respiratory infections cause inflammation of the respiratory tract with a variety of symptoms like common cold and even breathing problems (Pore et al. 2010). In managing children's health, mothers play an important role as they are the first to recognise the sick child and their deliberate decision of seeking treatment can prevent mortality rates among under-five children (Chibwana et al. 2009; D'Souza 2003; Hortensia et al. 1997; Mitra et al. 2001). The Integrated Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea (GAPPD) prioritises the case management, improvement of nutrition, breastfeeding, vaccination, and treatment of pneumonia and diarrhoea by 2025 (WHO/UNICEF 2013). Still, according to NFHS-4 data, in both the rural and urban areas of India, only 71 per cent and 80 per cent of the children having ARI/fever during the preceding two weeks sought treatment from any health facilities (NFHS-4: Factsheets). The factors contributing to complications and death include a delay in diagnosis (Majumdar et al. 2014), improper use of antibiotics (Hardy and Traisman 1956; Taylor et al. 1977), home remedies, and not seeking treatment (Willis et al. 2009).

In this chapter, the characteristics of the treatment pathways of children aged up to 5 years with acute respiratory infections were examined along the following lines:

- i. The time between the first appearance of symptoms and the time the treatment was sought;
- ii. The number and types of healthcare providers visited;

- iii. The order in which the healthcare providers were consulted, including the number of times the patients switched between the healthcare providers;
- iv. The total number of visits to healthcare providers; and
- v. The point of exit from treatment-seeking.

This chapter also reports findings on the households' out-of-pocket spending on healthcare for children with acute respiratory infection, including expenditures incurred over the full treatment pathway for the most recent acute episode related to the condition. The quality of healthcare was also assessed from the standpoint of the respondent, that is, their perceptions about the quality of healthcare services received.

This chapter is organised into five sections. Section 6.1 presents a description of the sampling procedure and household characteristics. It also provides details of the ailing children. Section 6.2 includes background details, such as the demographic and socio-economic profiles of the households (each with a child with acute respiratory infection problems), including their housing characteristics. Section 6.3 reports findings on treatment-seeking behaviour, including different elements of the treatment 'pathways' of the patient during the one month preceding the date of the survey. Section 6.4 discusses the on-household's OOP spending on the child's healthcare. Section 6.5 provides the results from the analyses of the survey data on the quality of healthcare services offered by different healthcare providers, as perceived by the survey respondents, including differences between the public and private healthcare providers, and by the levels of care. It also presents information on factors taken into consideration during selection of a healthcare service provider by the family members of the ill child.

## 6.1 Sampling and Household Characteristics

The findings reported in this chapter are based on a survey of 1,781 individuals from an equivalent number of households sampled from the eight districts under study and are representative at the district level in Uttar Pradesh, Odisha, Maharashtra, and Punjab. The sample of households surveyed included at least one child who had suffered or was suffering from acute respiratory infection during the survey or during the month preceding the survey, with the focus of the survey being on healthcare and the expenditure incurred on the individual who reported acute respiratory infection.

These households were spread across 766 villages and 251 urban blocks in the eight districts. Out of the total sample households, 78.6 per cent were from rural areas (ranging from 67.6 per cent in Firozabad to 86.9 per cent in Yavatmal) and 21.0 per cent were from urban areas. The breakdown of the sample households is given in Table 6.1.

**Table 6.1: District-wise Number of Selected Households by Districts and Place of Residence**

Districts	Rural	Urban	All
Chandauli	337	81	418
Firozabad	275	132	407
Bargarh	341	86	427
Dhenkanal	326	52	378
Kolhapur	40	15	55
Yavatmal	53	8	61
Moga	27	7	34
Hoshiarpur	0	1	1
<b>All</b>	<b>1,399</b>	<b>382</b>	<b>1,781</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Further characterisation of the sample by social group, religion, and household size is given in Table 6.2. An assessment of the social group distribution of the overall sample households indicates that a majority of the households belonged to the OBC and General categories (61 per cent) while the remaining 39 per cent were from the SC/ST community. Across the seven sample districts, the highest share of SC/ST households was from Yavatmal (58 per cent), and Chandauli (50 per cent), whereas Firozabad and Kolhapur had a majority of households (more than 75 per cent) belonging to the OBC/General communities.

A vast majority of the households (92 per cent) in the sample districts were Hindus, with almost 100 per cent of such households being in the districts of Bargarh and Dhenkanal; the exception was Moga district in Punjab, where more than 78 per cent of the households belonged to the Muslim/non-Hindu communities. It should be noted that the households selected for the study were from a specific category, that is, households having at least one child who was/had been suffering from an acute respiratory illness during the preceding one month; and that the religion and caste classifications were based on the respondent's self-identification.

There were variations in the household size of the sampled households across the four States. Barring Chandauli and Kolhapur, more than 60 per cent of the sample households in all the other districts had up to five members.

Table 6.2 also reports the breakdown of the sampled districts by the share of the population belonging to different (per capita) expenditure quartiles. More than 50 per cent of the sample households in four out of seven districts belonged to the upper two income quintiles, whereas the majority of households in the Chandauli, Kolhapur, and Yavatmal districts belonged to the bottom two expenditure quartiles.

**Table 6.2: Distribution of Selected Households by Socio-economic Characteristics across Districts**

Background Characteristics	Uttar Pradesh		Odisha		Maharashtra		Punjab	All
	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	
<b>Social Category</b>								
SC/ST	50.0	24.9	38.9	44.6	23.5	58.0	49.7	39.0
OBC/General	50.0	75.1	61.1	55.5	76.5	42.0	50.4	61.0
<b>Religion</b>								
Hindu	89.5	89.3	99.8	100.0	79.3	85.7	21.3	92.2
Muslim/Others	10.6	10.7	0.2	0.0	20.7	14.3	78.7	7.8
<b>Household Size</b>								
Up to 5 members	48.7	60.8	79.8	78.8	34.3	74.7	93.8	65.3
More than 5 members	51.3	39.2	20.2	21.2	65.7	25.3	6.2	34.8
<b>Monthly Per Capita Expenditure Quartiles</b>								
Quartile 1 (Poorest)	32.3	21.9	19.4	26.7	23.6	37.7	5.9	25.0
Quartile 2	21.8	23.6	30.4	23.8	29.1	23.0	23.5	25.0
Quartile 3	23.7	24.6	29.5	22.0	12.7	26.2	44.1	25.0
Quartile 4 (Richest)	22.3	30.0	20.6	27.5	34.6	13.1	26.5	24.9

Source: NCAER-Nossal 4IS Health Survey, 2019-22.

### 6.1.1 Survey Respondents

The household questionnaire was administered to the individual who was the most knowledgeable about the child reporting acute respiratory illness and the treatment that took place during the preceding one month, besides providing other household information related to income and expenditure, among other things (details are given in Chapter 2). It was observed that in nearly 66 per cent of the households, mothers were the respondents in the survey, whereas in another 24 per cent of the cases, the child's father responded to the survey, and in 7.6 per cent of the cases, the grandparents of the ill child responded.

## 6.2 Housing and Individual Characteristics

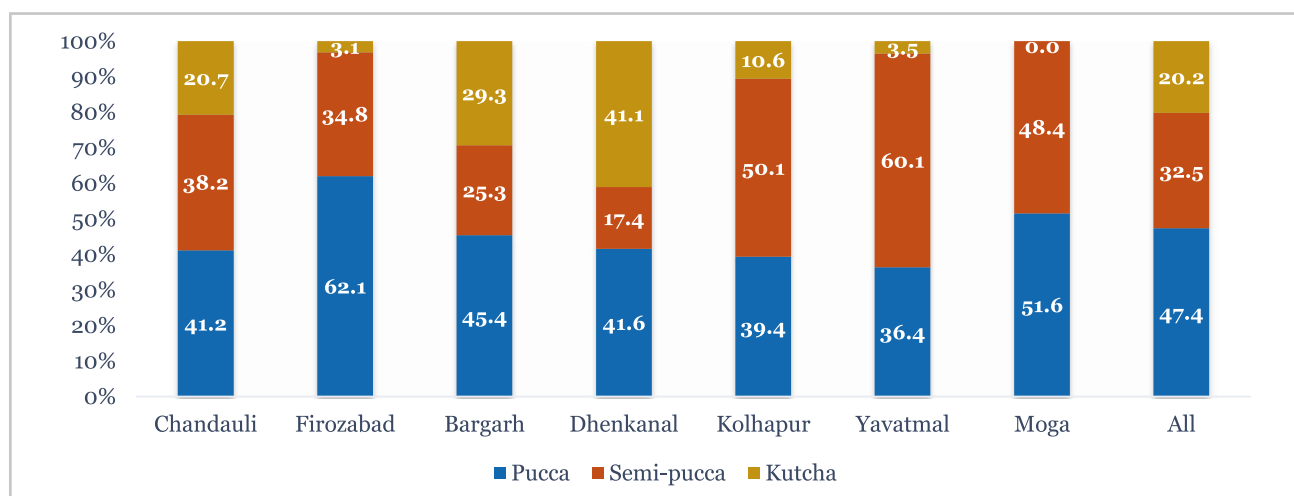
This section addresses two themes. First, it provides a description of the household's standard of living, as measured by basic amenities and asset holdings such as the ownership of house and the type of house,

access to electricity, sanitation, drinking water and purification, and a variety of household consumer durable items. The second theme in this section pertains to the characteristics of the children suffering from Acute Respiratory Infections (ARI).

### 6.2.1 Housing Characteristics

**Ownership and Type of House:** Around 97 per cent of the sample households were living in their own house. Figure 6.1 indicates that about 47.4 per cent of the total households were staying in *pucca* houses, whereas another 32.5 per cent were staying in *semi-pucca* houses. The district-wise data shows that a majority of the households in Firozabad (62 per cent) and Moga (52 per cent) districts were staying in *pucca* houses followed by Chandauli district and two districts in Odisha, where more than 40 per cent of the households were staying in *semi-pucca* houses. In Maharashtra, however, more than 50 per cent of households were staying in *semi-pucca* houses. Further, among all the sampled districts, the proportion of households staying in *kutchha* houses was the highest in Odisha.

**Figure 6.1: Distribution of Households by Housing Characteristics and District**



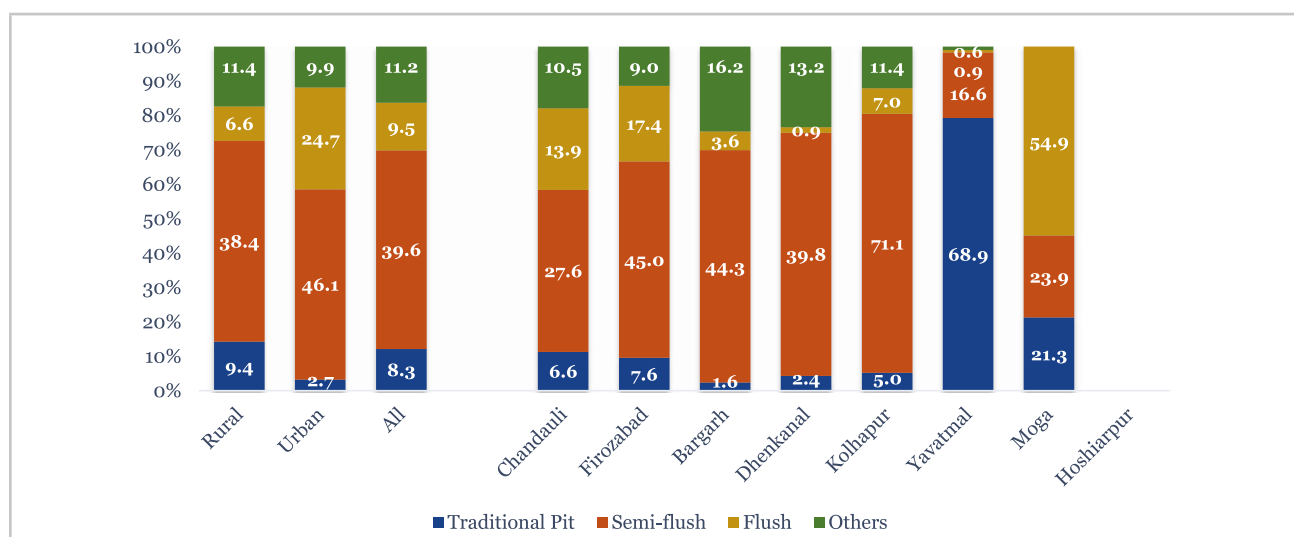
Source: NCAER-Nossal 4IS Health Survey, 2019-22.

*Access to Electricity:* Almost 96 per cent of the households had access to electricity with a small rural-urban divide (95 per cent in the rural and 99 per cent in the urban households, respectively). There were no significant differences among the districts of the four sample States. All the sample households had access to electricity in the districts of Kolhapur and Moga.

*Access to Sanitation Facilities:* About 31 per cent of the households did not have a toilet. In rural areas, 34 per cent of the households had no toilet, as compared to 16 per cent in urban areas. Among those who had toilet facilities at their home, nearly 40 per cent of the households owned semi-flush toilets and only 9.5 per cent of them had toilets with

a flush. The proportions of these two categories were substantially higher in urban areas as compared to their rural counterparts. In urban areas, one fourth of the households had flush toilets as compared to just 6.6 per cent in rural areas. There was some inter-district variation as well. Among all the districts, the two districts of Odisha, Firozabad in Uttar Pradesh, and Kolhapur in Maharashtra showed a higher proportion of households with semi-flush toilets. Among the remaining three districts, 55 per cent of the households in Moga had flush toilets, and nearly 70 per cent in Yavatmal had traditional toilets. In contrast, in Chandauli, 28 per cent had semi-flush toilets, while 14 per cent of the households possessed flush toilets.

**Figure 6.2: Percentage Distribution of Households by Type of Toilet Facilities by Districts and Place of Residence**



Source: NCAER-Nossal 4IS Health Survey, 2019-22.

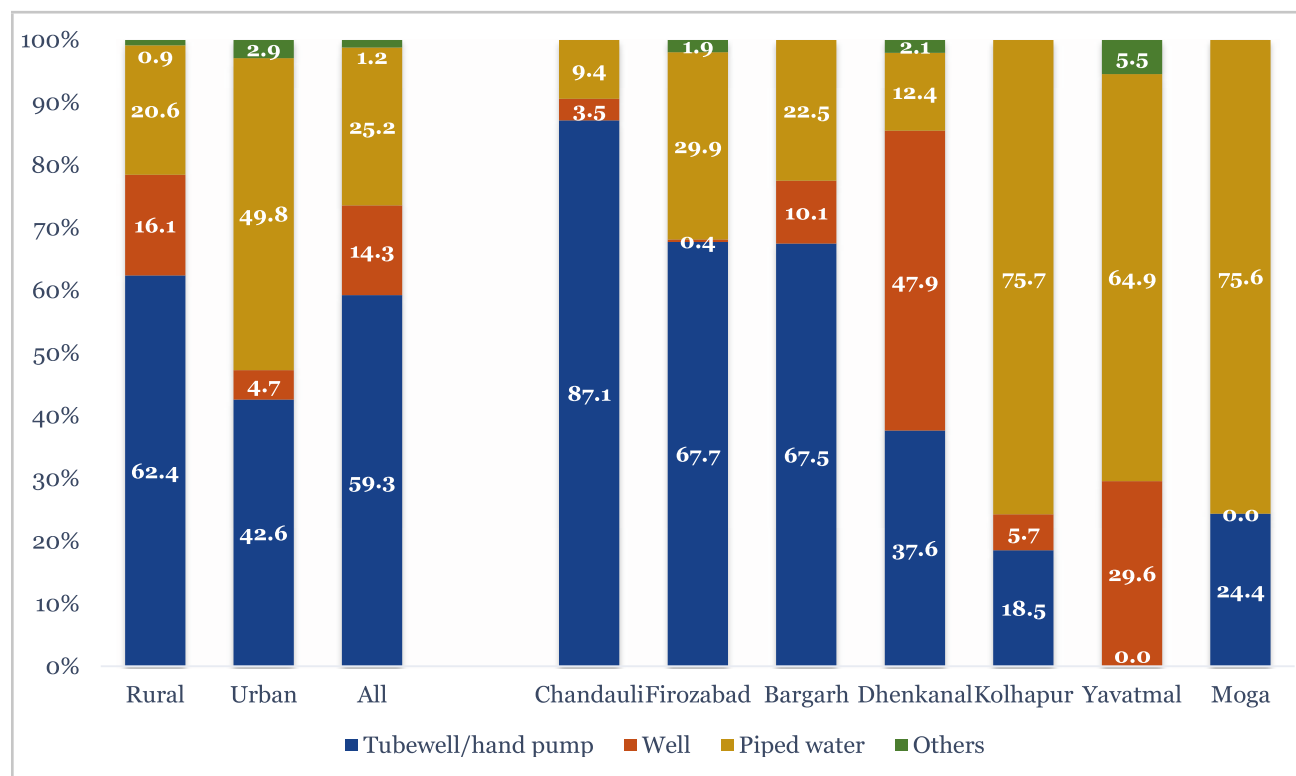
*Drinking Water Source and Treatment:* Two types of information related to drinking water were collected in this study: (i) Sources of drinking water and (ii) The treatment process, that is, the actions that households undertake to make water safe for drinking. The overall findings indicate that just one-fourth of the households had provision for piped water (Figure 6.3), with only about 20.6 per cent of the rural households reporting access to piped water. In contrast, in urban areas, almost 50 per cent of the households had access to piped water supply.

The district-wise data revealed significant variations across the sample States. Across all the districts, those in Maharashtra and Punjab had a larger proportion of households (in the range of 65- 75 per cent) that had access to piped water. Comparatively, the districts in Uttar Pradesh and Odisha (with Dhenkanal being a bit of an exception) showed a larger proportion of households depending on tubewells/hand pumps as their major sources of drinking water, with Chandauli district reporting 87 per cent of such households. The Dhenkanal district, however, reported 48 per cent of the households using wells as a major source of drinking water, followed by another

39 per cent of the households using tubewells or hand pumps. Around 82 per cent of the total households did not treat their water before drinking. Around 8.5 per cent of the households strained the water through a cloth, while 3.6 per cent each used either a water filter or earthen pots. The proportion of households using some sort of filtration technique was higher in the districts of Maharashtra and Punjab than those in Uttar Pradesh and Odisha.

Access to basic services has thus far been considered individually. If an index that captures access to all three—electricity, sanitation, and drinking water—is used, the sample households come off worse. Overall, 23 per cent of the households in the sample districts showed access to these three amenities. In the rural areas, only 17.2 per cent of the households reported access to all three, but in the urban areas, the access was far from universal—with 45.3 per cent of the households reporting in the affirmative (Table 6.3). At the district level, those in Maharashtra and Punjab showed a much higher percentage of households with all the three amenities in both rural and urban areas than in Uttar Pradesh and Odisha.

**Figure 6.3: Percentage Distribution of Households by Source of Drinking Water by Districts and Place of Residence**



Source: NCAER-Nossal 4IS Health Survey 2019.

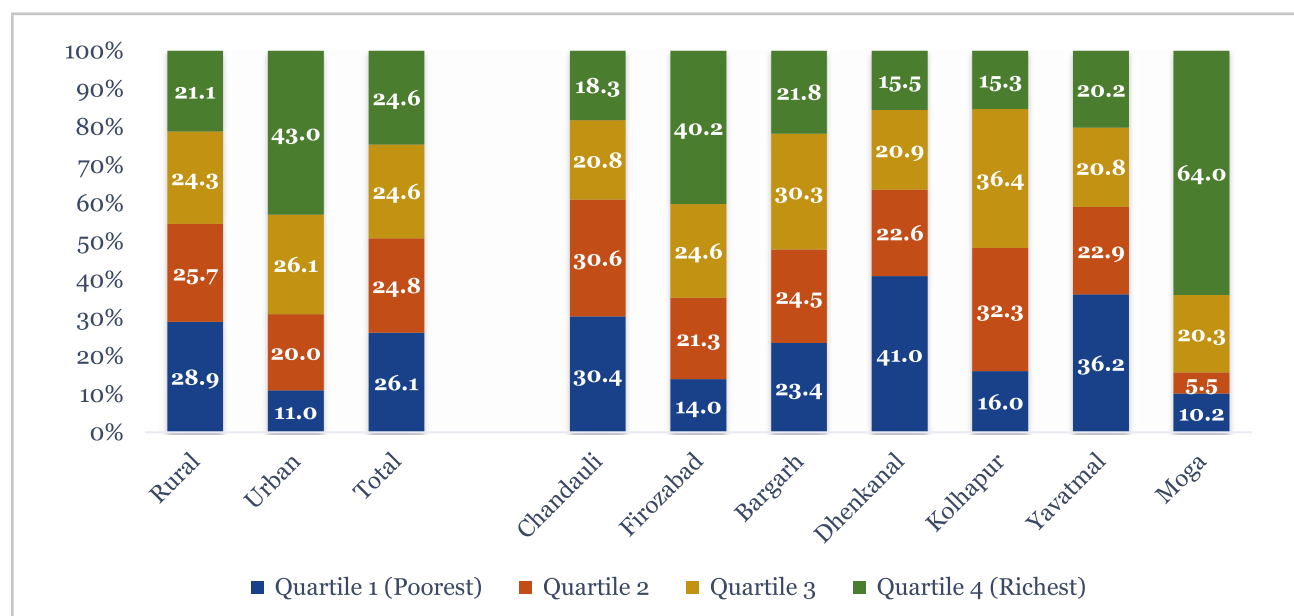
**Table 6.3: Proportion of Households Having Three Basic Facilities by Districts and Place of Residence**

Districts	Rural	Urban	All
Chandauli	4.11	41.53	7.79
Firozabad	15.57	47.85	26.87
Bargarh	13.23	32.53	15.35
Dhenkanal	8.53	37.65	10.71
Kolhapur	69.19	91.55	70.18
Yavatmal	58.88	86.35	59.88
Moga	70.69	87.41	75.64
All	17.23	45.27	21.7

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

*Wealth Index:* The survey also collected information on the household ownership of consumer durables, in addition to housing amenities, in order to capture the households' standard of living. Figure 6.4 reports the distribution of the sampled households by wealth quartiles,<sup>12</sup> by district and rural-urban location. Not surprisingly, the wealthiest households were concentrated in urban areas, with 70 per cent of the urban households belonging to the top two wealth quartiles. In comparison, more than half of the rural households (nearly 55 per cent) belonged to the lowest two wealth quartiles. Among the districts, Moga had the highest share of households (84.3 per cent) in the top two wealth quartiles, followed by Firozabad (>60 per cent), Bargarh, and Kolhapur with more than 50 per cent.

**Figure 6.4: Share of Households across Wealth Quartile by Districts and Place of Residence**



Source: NCAER-NOSSAL 4IS Health Survey, 2019.

### 6.2.2 Profile of the Child with Acute Respiratory Infection

Table 6.4 reports information on the demographic profile of the child with acute respiratory infection. In our sample, one-third of the children were below the age of one, 36 per cent were between the age of 2 and 3 years, and the remaining (30 per cent) were 4-5 years old. A majority of the children were aged 2-3 years except in three districts. In the latter three

districts of Firozabad, Bargarh, and Kolhapur, a larger proportion of the sampled children were below the age of one. Boys comprised 58 per cent of the share in the total sample. A similar trend is seen across all the sample districts for the male-female ratio barring Kolhapur, where 70 per cent of the sample respondents reported an ill female child. Moga reported the lowest proportion of female children in the sample.

<sup>12</sup> Households were given scores based on the number and kinds of consumer goods they owned, ranging from a television to a bicycle or car, and housing characteristics such as toilet facilities. These scores were derived using principal component analysis. Overall, the wealth quartiles were compiled by assigning the household score, ranking each household by its score, and then dividing the distribution into four equal categories, each with 25 per cent of the households.

**Table 6.4: Profile of Children Suffering from Acute Respiratory Infections (ARI) by Socio-economic Characteristics across Districts (% Distribution)**

Districts	Uttar Pradesh		Odisha		Maharashtra		Punjab	All
	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	
<i>Age Categories</i>								
Up to one year	31.2	41.0	34.2	31.7	46.9	11.9	25.1	34.2
2-3 years	39.3	36.6	32.9	34.8	21.2	48.5	56.6	36.1
4-5 years	29.5	22.4	32.9	33.5	31.9	39.6	18.3	29.7
<i>Gender</i>								
Male	55.7	59.6	58.8	66.8	29.7	57.5	80.2	58.5
Female	44.3	40.4	41.2	33.2	70.3	42.5	19.8	41.5

Source: NCAER-Nossal Health Survey, 2019-22.

### 6.3 Healthcare-seeking Pathways

Health-seeking pathways for children, in general, are more complicated than those for adults as the recognition of symptoms and the decisions on when to consult a doctor/specialist, the type of healthcare providers to consult, and the duration of the same, are all dependent on caregivers. In contrast to the previous two chapters, which dealt with chronic conditions, this chapter elaborates an acute health condition which exhibits a very distinct health-seeking pathway.

In this section, we discuss the treatment-seeking pathways for children with ARI during the one month preceding the survey. This section, as in the case of Chapters 4 and 5, elaborates the status of treatment of children who have suffered from ARI, their reasons for not seeking treatment, delay between the onset of ARI and accessing a healthcare provider, the types of healthcare providers, sequencing of healthcare providers, and exits from the treatment pathways in the form of recovery, with the patients either doing nothing or resorting to self-care, persisting with the same healthcare provider, or switching to a new healthcare provider.

The analysis in this section explores the health-seeking related responses to the following questions:

- Following the initial recognition of the acute episode, was any healthcare provider consulted?
- What was the first source of treatment?

- What was the length of time from identification of the health problem to the choice of the first treatment provider?
- How many providers were consulted during the episode?
- What was the sequencing of providers consulted during the episode (namely, who was consulted first, who was consulted second, and so forth)?
- How (or why) did the patient exit treatment? What factors affected this choice?

#### 6.3.1 Number of Visits and Distribution of Patients

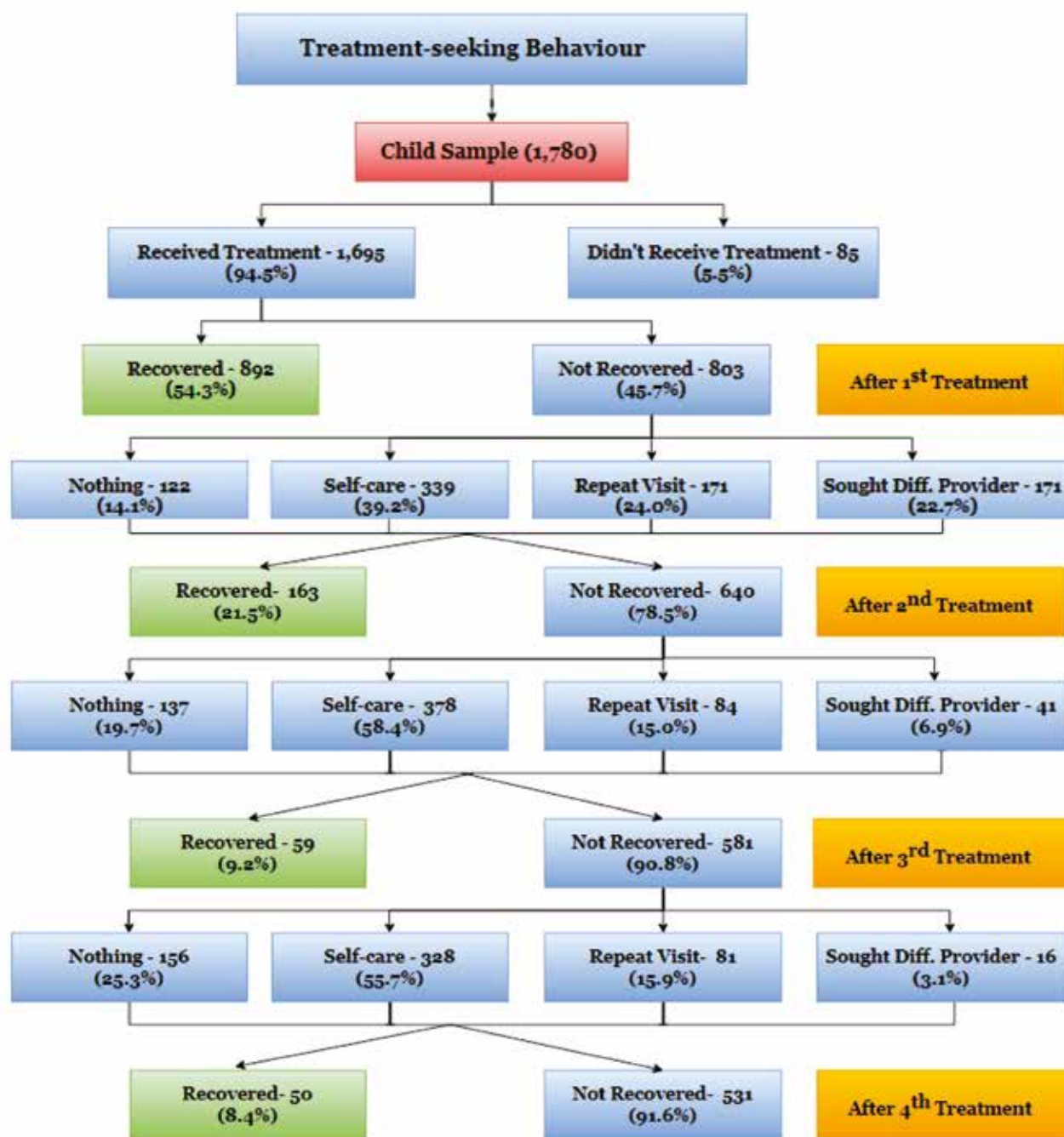
Figures 6.5 and 6.6 provide an overview of the status of treatment starting from the point of “first sought treatment” to “exited treatment”.

It was observed that about 94.7 per cent of the children with ARI received treatment from a healthcare facility (Figure 6.5). Out of those who received treatment, 54 per cent of the ailing children recovered after the first visit to the healthcare provider. Of the remaining 46 per cent of those who did not recover after the first visit, 14 per cent were made to do nothing and 39 per cent were cared for/given medication at home. This is equivalent to the figures on self-care/self-medication mentioned in Chapters 4 and 5. For ease of reference, the same terms will be used in this chapter from this point onwards. About 24 per cent of the children continued receiving

treatment from the same healthcare provider and another 23 per cent were taken to a different healthcare provider. While 21 per cent recovered after

the second visit, 9 per cent and 3 per cent recovered after the third and fourth visits, respectively.

Figure 6.5 Treatment-Seeking



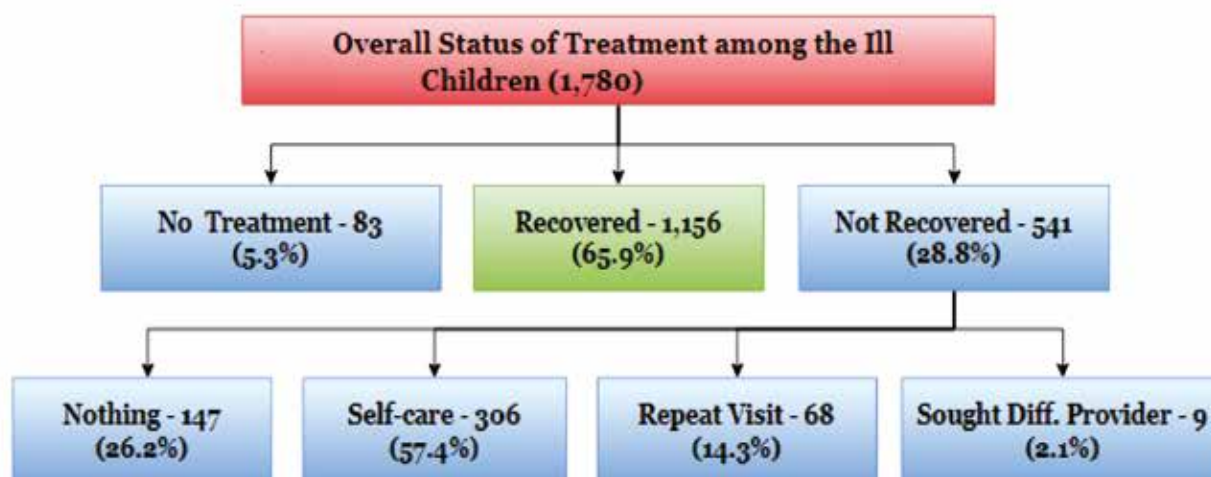
Source: NCAER-NOSSAL 4IS Health Survey, 2019.

Figure 6.6 provides the overall status after four visits to healthcare providers. About 66 per cent of the children with ARI during the last month recovered after taking treatment, whereas 28.8 per cent did not. Of those who did not recover, 84 per

cent were either given no treatment or received home (self)-care. Only 14 per cent were taken to the same healthcare provider, while only two per cent were taken to a different healthcare provider.



**Figure 6.6: Overall Status of Treatment among the Ill Children (1,780)**

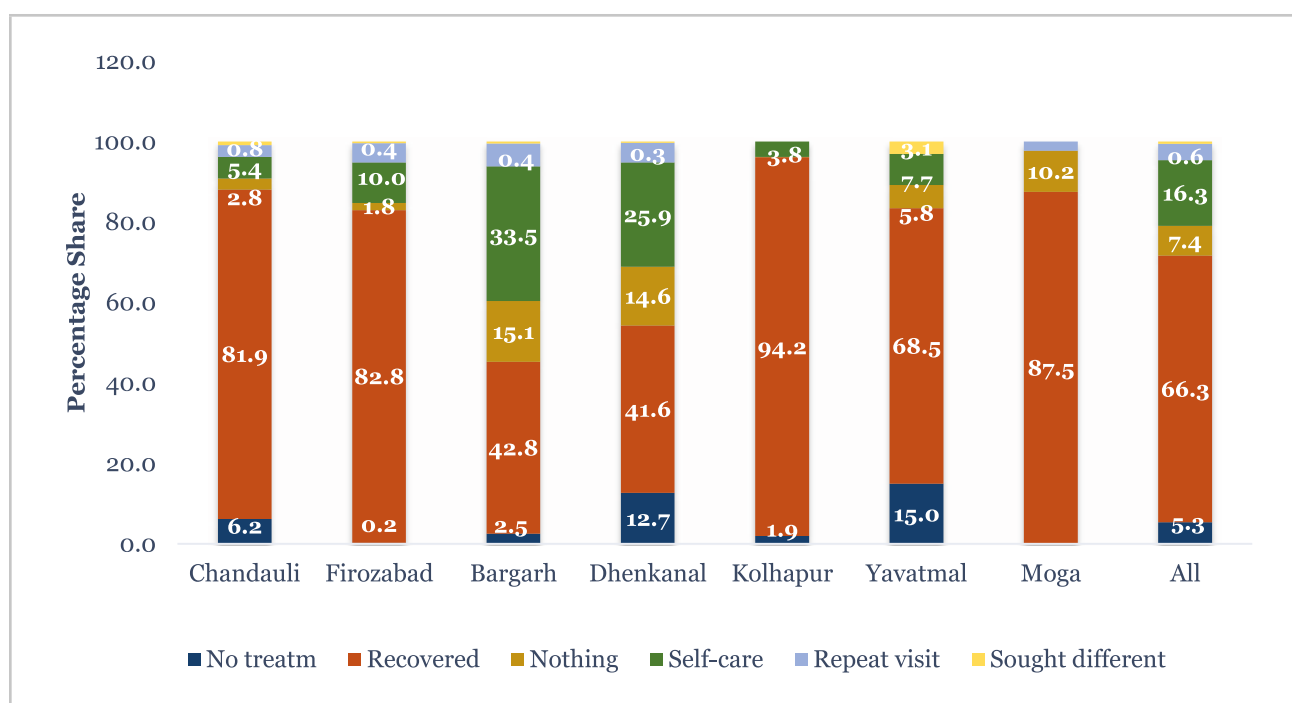


Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Of all the children with ARI, 5.3 per cent did not receive any treatment (Figure 6.7). The district-wise results showed that Yavatmal and Dhenkanal had the highest proportion (15 per cent and 12.7 per cent, respectively) of children not receiving treatment. At the district level, the recovery rate was highest in Kolhapur and Moga, but overall, the two districts of Uttar Pradesh performed better in terms of the

recovery rate for both the districts together. It should also be noted that more than 40 per cent of the ailing children were not given any further treatment (doing nothing) or were cared for at home (self-care) in the two districts of Odisha. The ailing children might have had mild or not severe enough symptoms and that is the reason why they were cared for at home or automatically relieved from this episode of illness.

**Figure 6.7: Status of Treatment after All Four Visits by Districts**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Appendix Table 6.1 shows the status of treatment after all the four visits according to the place of residence, gender, and the age categories, and explains the treatment-seeking pathways wherein the patient's recovery rate was higher in urban areas whereas adherence towards self-care and not seeking treatment was higher in rural areas. Across gender and age groups, little difference was seen in the recovery rates.

### 6.3.2 Reasons for Not Seeking Treatment

It may be recalled that 5.3 per cent of the children with ARI did not ever receive treatment. Table 6.5 reports the share of children across the seven districts

who did not receive treatment by different categories of reasons. About 54 of these children, who did not receive treatment from a healthcare provider, were accorded home (self)-care. For almost 17 per cent of the children, the main reason for not receiving treatment was that the episode was not considered severe enough, while for 11.5 per cent of the children, lack of money was the main reason. While close to 9 per cent waited for self-recovery, a similar proportion of children automatically got better. All the children in Firozabad and Kolhapur districts were self-cared for at home. A considerable proportion (21 per cent) of the ailing children in Dhenkanal were not treated due to lack of money.

**Table 6.5: Proportion of Children Not Being Taken for Treatment by Districts (%)**

Districts	Wait for Auto Recovery	Not Severe Enough	Got Better	Self-care/ Medication	Not Enough Money for Treatment
Chandauli	0.0	22.2	33.9	38.6	5.4
Firozabad	0.0	0.0	0.0	100.0	0.0
Bargarh	13.3	17.3	5.5	61.7	2.3
Dhenkanal	3.8	4.2	0.0	71.0	21.0
Kolhapur	0.0	0.0	0.0	100.0	0.0
Yavatmal	41.4	58.6	0.0	0.0	0.0
All	8.7	16.8	8.8	54.2	11.5

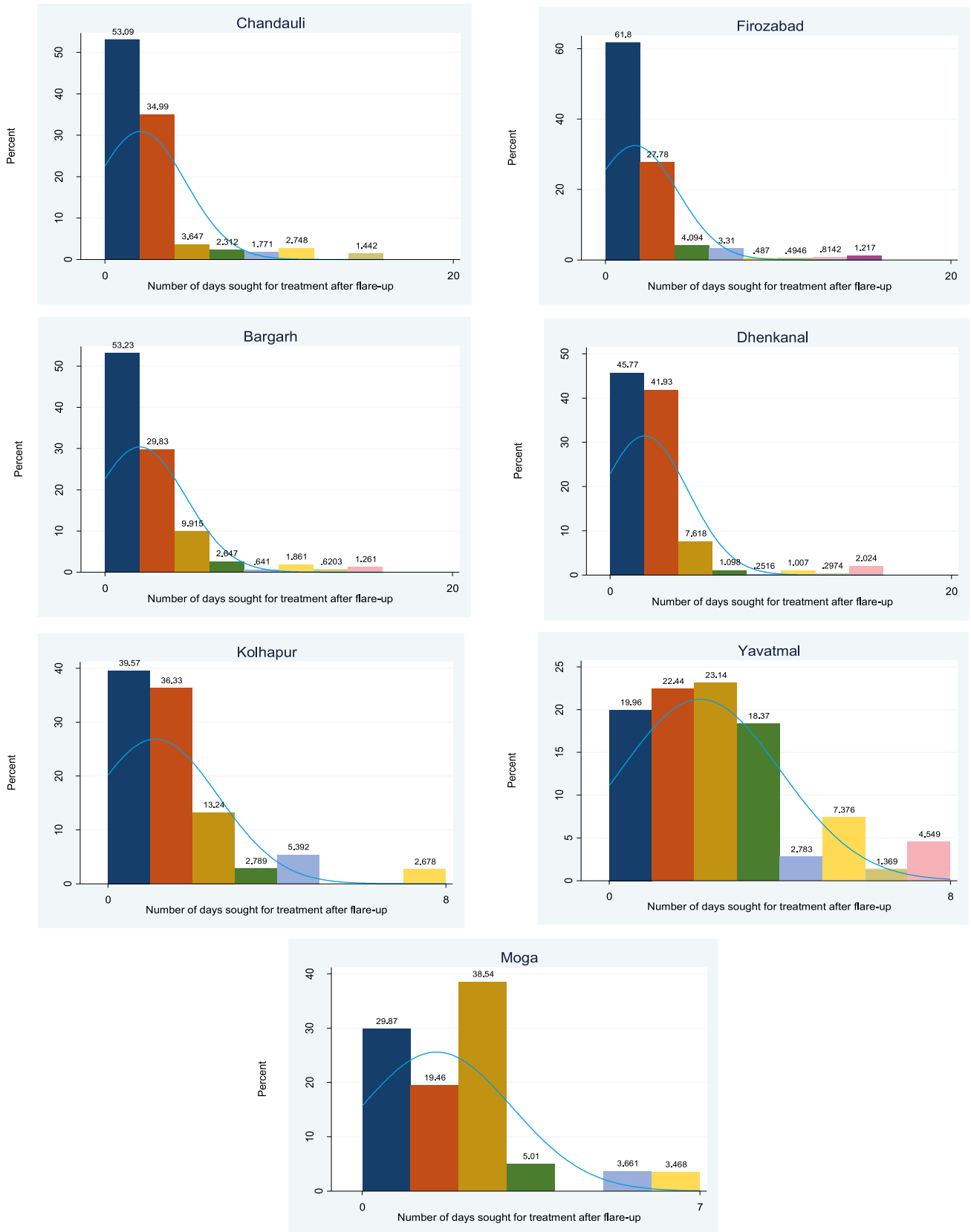
Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

The proportion of children not seeking treatment by socio-economic and demographic attributes is given in Appendix Table 6.2. The analysis shows that the proportion of children receiving home (self-care) and medication was higher in the rural areas, among male children, children from the OBC/General categories, in the richest expenditure quartile household, and in the age category of up to one year. The data also suggests that, the auto recovery rate was much higher in case of the older children, that is, those in the age group of 4-5 years, than the younger ones.

### 6.3.3 Time Lag in Seeking Treatment after a Recent Flare-up

Nearly 90 per cent of the children were taken to a healthcare provider within five days of the flare-up in all districts. The tail of the distribution is very short for all the sampled districts suggesting that a higher proportion of children were taken to a healthcare provider with lesser delay (Figure 6.8). The States of Punjab and Maharashtra showed much shorter delays in taking the child for treatment as compared to those of Uttar Pradesh and Odisha.

**Figure 6.8: Average Duration of Time between the Flare-up and Seeking of Treatment from the First Health Care Provider by District in Days**

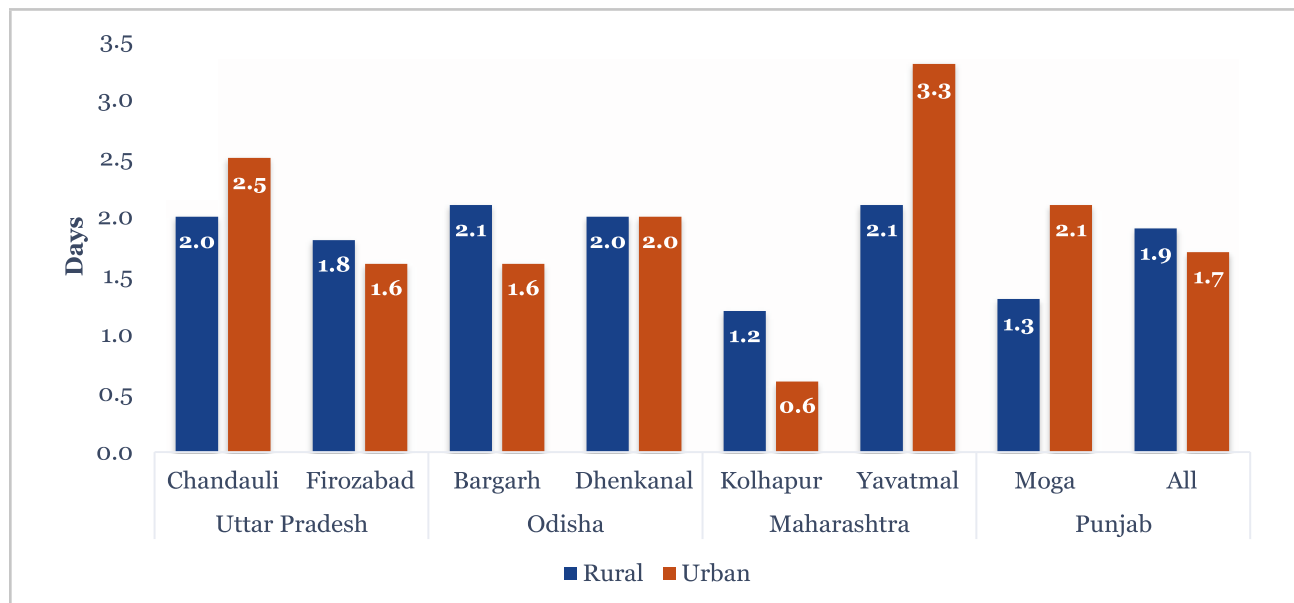


Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Figure 6.9 shows the average duration of time (in days) between the onset of symptoms and seeking treatment from the first healthcare provider by socio-economic and demographic attributes. The average delay for the whole sample was 1.9 days, with not much variation seen across the rural and urban contexts (Figure 6.9). The duration of delay decreased with a rise in the monthly per capita expenditure across all the districts (Figure 6.10).

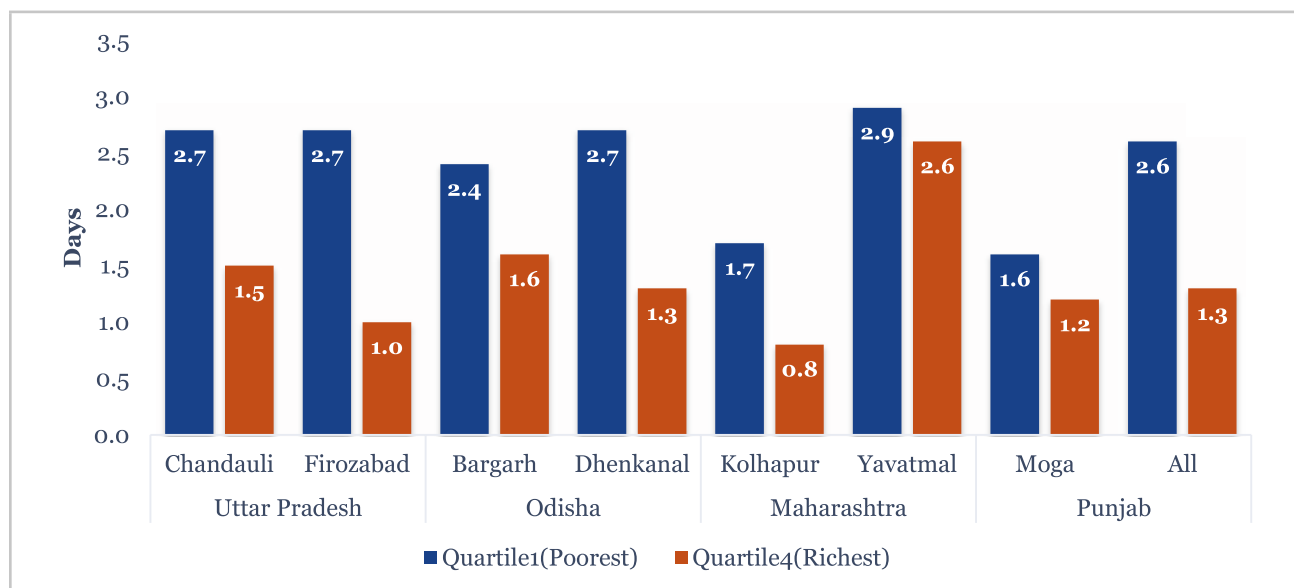
The duration of delay was lower for the female child (1.6 days) as compared to that for the male child (2.1 days), across five out of seven districts—in Kolhapur and Moga, the delay in seeking care was lower for the male child. Children from the OBC/General categories were taken to a healthcare provider sooner than those from the SC/ST categories. The duration of delay increased with an increase in the size of the household and the age of children (Appendix Table 6.3).

**Figure 6.9: Average Duration between the Onset of Symptoms and Seeking Treatment from the First Healthcare Provider by Districts and Place of Residence (in days)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Figure 6.10: Average Duration between the Onset of Symptoms and Seeking Treatment from the First Healthcare Provider by Expenditure Quartiles (in Days)**



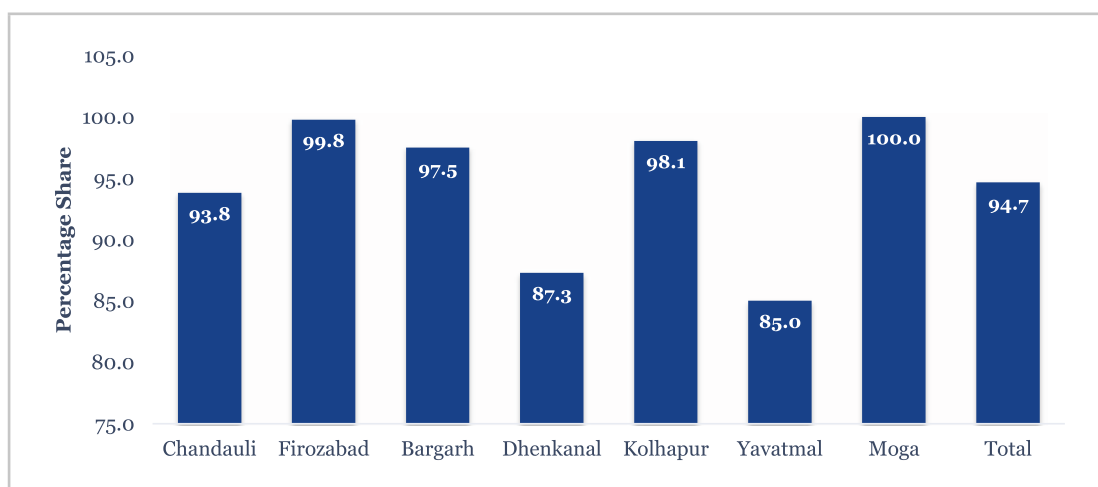
Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

### 6.3.4 Consultation Status

Figure 6.11 presents the proportion of children with an acute illness who received treatment in the seven sampled districts. The share of children receiving care was quite high (94.7 per cent). Almost

all ill children received treatment in the districts of Moga and Firozabad, whereas in other three districts (Chandauli, Kolhapur and Bargarh) this proportion is above 93 per cent. The lowest proportion of treatment was recorded in Yavatmal (85 per cent).

**Figure 6.11: Proportion of Children Who Sought Treatment by District**



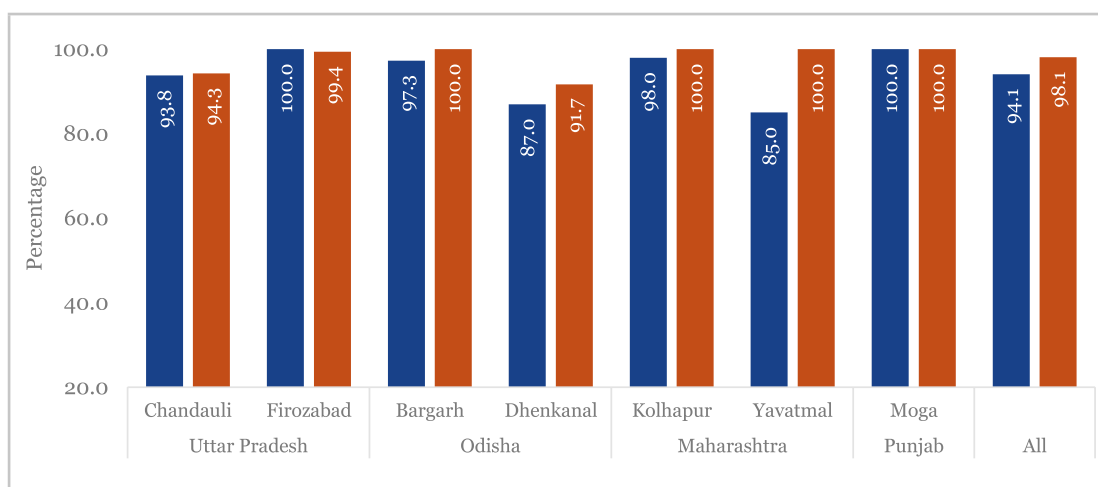
Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Figure 6.12 shows that four districts (Moga, followed by Firozabad, Bargarh and Kolhapur) showed the highest proportion of children receiving the treatment. In all these four districts, the proportion of children receiving treatment is almost 100 per cent. While in Moga and Firozabad, all ill children in rural areas also received treatment, in the Dhenkanal, Chandauli, and Yavatmal districts, the rural areas reported a slightly lower proportion of children receiving treatment (Figure 6.12). Not

much variation was observed by income quartiles in share of children receiving treatment, except in the Dhenkanal and Yavatmal (Figure 6.13).

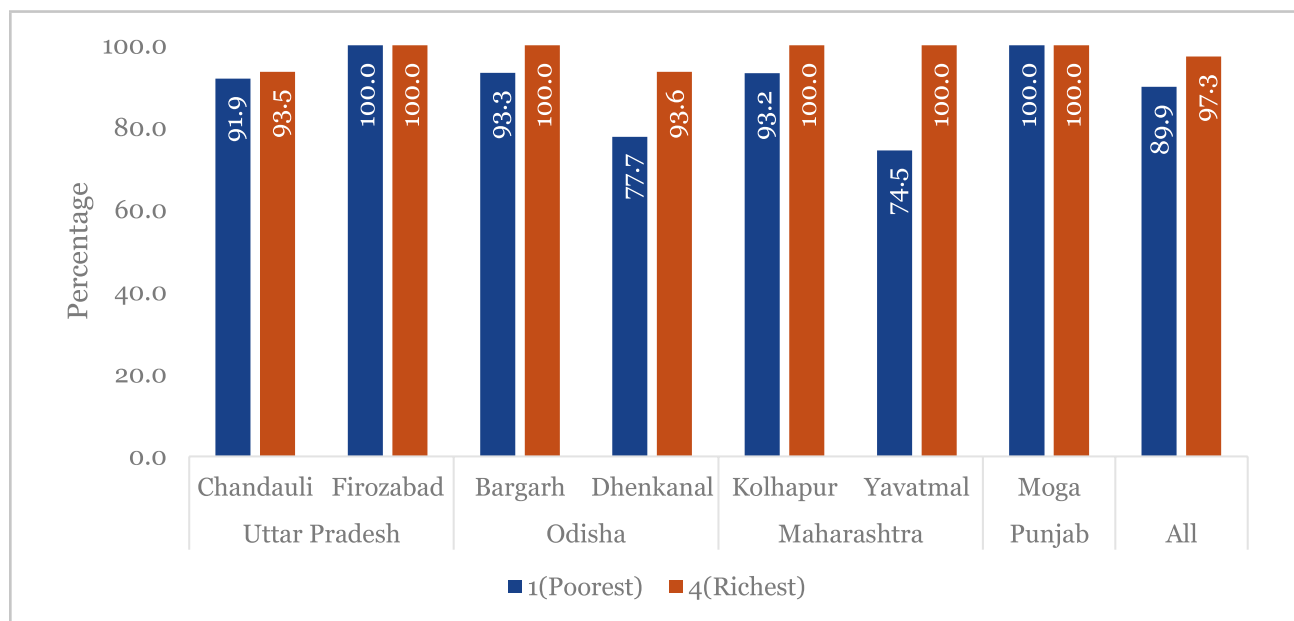
By socio-economic and demographic profile of households, a larger proportion of the children belonging to urban areas, females, OBC/General categories, and the two higher expenditure quartiles received treatment, than their counterparts. There were no differences by the size of the household and age group (Appendix Table 6.4).

**Figure 6.12: Proportion of Children Seeking Treatment by District and Place of Residence (%)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Figure 6.13: Proportion of Children Sought Treatment by Expenditure Quartiles**



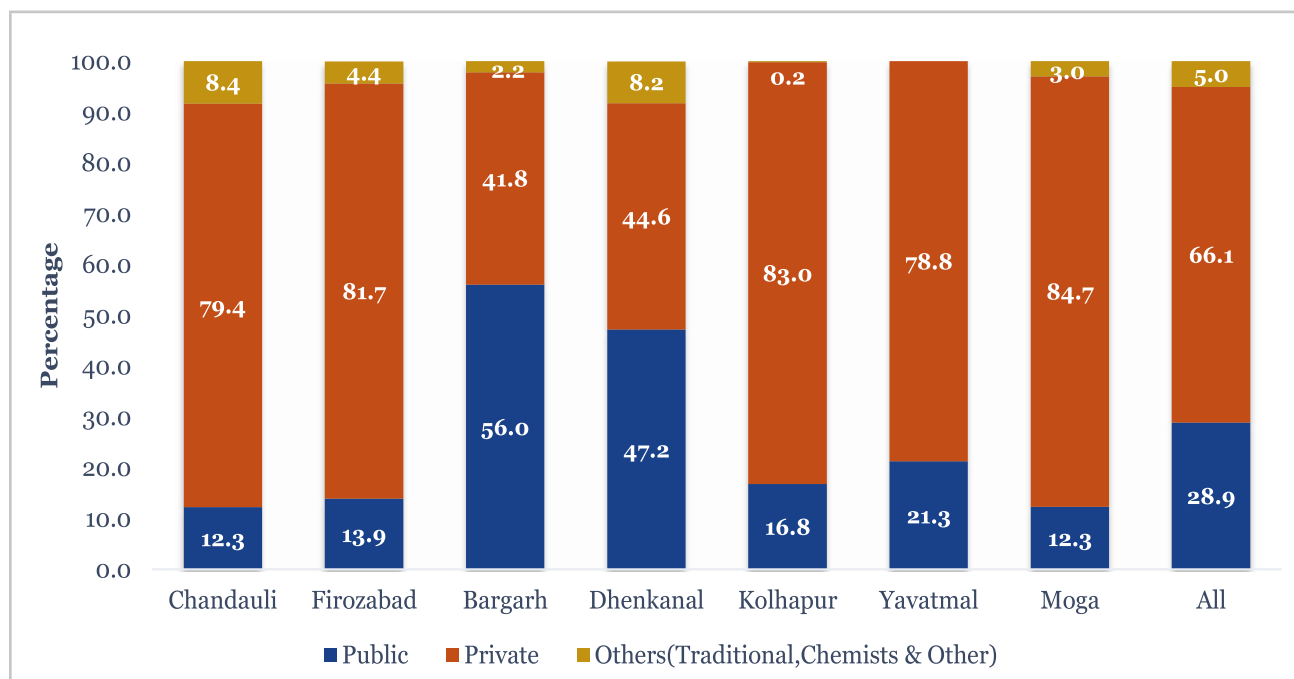
Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

### 6.3.5 Type of Service Provider at the First Consultation

Figure 6.14 shows the proportion of children with ARI during the preceding month of the survey who received treatment from different types of healthcare providers. While 29 per cent of the children were

taken to public healthcare providers, 66 per cent received treatment from private healthcare providers. The proportion of children receiving treatment from public healthcare providers was higher in the two districts of Odisha, while in all the other sample districts, a higher proportion of children were taken to private healthcare providers.

**Figure 6.14: Share of the First Source of Treatment by the Type of Healthcare**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

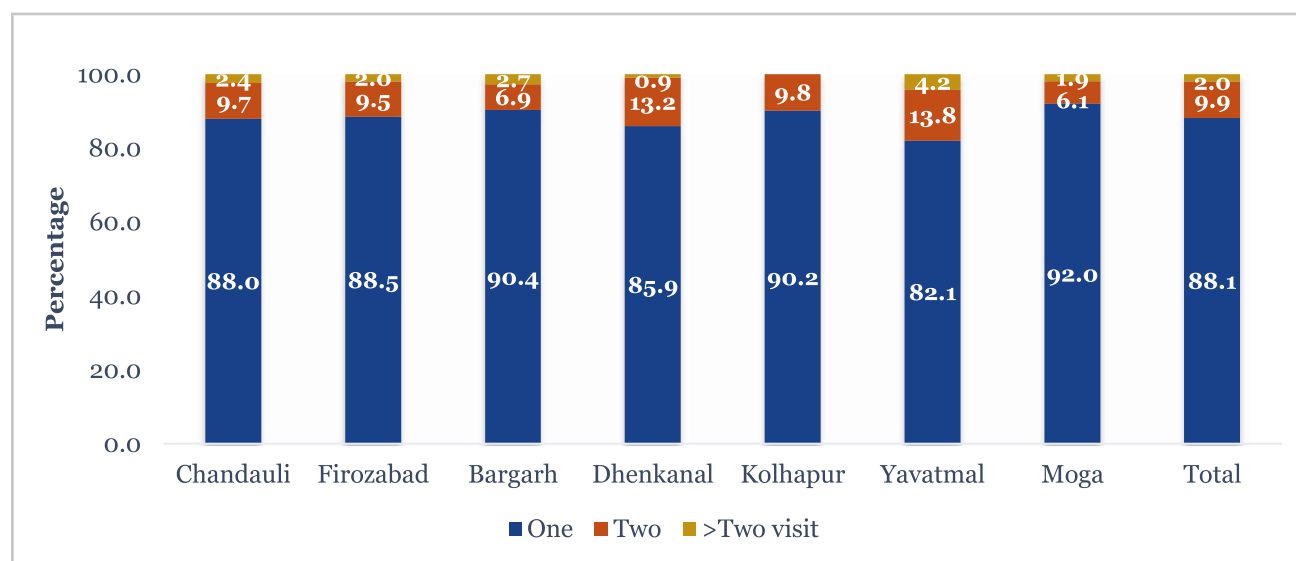
Appendix Table 6.5 presents the proportion of children receiving treatment from different types of healthcare providers by socio-economic and demographic attributes. The proportion of children being taken to the chemist, and traditional and other types of healthcare providers was very small (5 per cent). In rural areas, a relatively higher proportion of children were taken to public healthcare providers than in the urban areas, though in total, a majority of them were taken to private healthcare providers. The proportion of children receiving treatment from public healthcare providers was higher for the SC/ST population groups, at 32.2 per cent, as compared to those for the OBC/General population groups, at 26.8 per cent. The share of children receiving treatment from private healthcare providers increased with a rise in the monthly per capita expenditure. A higher proportion of children from households with a larger size were taken to private healthcare providers. There were no noticeable variations by the gender of

the child. The proportion of children being taken to private healthcare providers decreased with the rising age of the children.

### 6.3.6 Number of Healthcare Providers Consulted

The number of healthcare providers consulted is presented in Figure 6.15. About 88 per cent of the children received care from one healthcare provider. Except for Bargarh, Kolhapur, and Moga where this proportion was higher than 90 per cent, in all the remaining districts, more than 80 per cent of the children were taken to one healthcare provider. There were no major variations across the four districts. The proportions of children being taken to two healthcare providers were the highest in Yavatmal (13.8 per cent) and Dhenkanal (13.2 per cent). A very small proportion of children (2 per cent) were taken to more than two healthcare providers.

**Figure 6.15: Distribution of Patients by the Number of Healthcare Providers Visited by Districts**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Appendix Table 6.6 presents the distribution of children taken to a number of healthcare providers by socio-economic and demographic attributes. Although a large proportion of the children continue to be taken to just one healthcare provider, this figure is slightly higher for children from urban areas, female children, and children from small-sized households. The proportion of children receiving treatment from one healthcare provider decreased with a rise in the monthly per capita expenditure and increased with

the age of the children. However, in the case of younger children with up to one years of age or male children, two or more visits were made.

Table 6.6 presents the average number of healthcare providers consulted for children with ARI during the preceding one month. Male children, and those who were up to one year of age or belonged to the highest monthly per capita expenditure households received treatment from a higher number of healthcare providers.

**Table 6.6: Average Number of Healthcare Providers Consulted for Treatment of ARI in Children (Five Years of Age) during the Preceding One Month by Socio-economic and Demographic Attributes (Numbers)**

Background Characteristics	Chandauli	Firozabad	Bargarh	Dhenkanal	Kolhapur	Yavatmal	Moga	Total
All	1.2	1.1	1.1	1.1	1.1	1.2	1.1	1.1
<i>Place of Residence</i>								
Rural	1.2	1.1	1.1	1.2	1.1	1.2	1.1	1.1
Urban	1.1	1.1	1.1	1.1	1	2.1	1	1.1
<i>Gender</i>								
Male	1.2	1.2	1.1	1.2	1	1.2	1.1	1.2
Female	1.1	1.1	1.1	1.1	1.1	1.3	1	1.1
<i>Age Categories</i>								
Up to 1 Year	1.2	1.2	1.1	1.1	1.1	1	1.2	1.2
2-3 Years	1.2	1.1	1.1	1.2	1.2	1.2	1	1.1
4-5 Years	1.1	1.1	1.2	1.2	1	1.3	1.3	1.1
<i>Monthly Per Capita Expenditure Quartiles</i>								
Quartile 1 (Poorest)	1.1	1.2	1.1	1.1	1.1	1.3	1	1.1
Quartile 2	1.1	1.1	1.1	1.2	1	1.2	1	1.1
Quartile 3	1.1	1.1	1.1	1.1	1.2	1.1	1.3	1.1
Quartile 4 (Richest)	1.2	1.2	1.2	1.2	1.1	1.4	1	1.2

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

### 6.3.7 Sequencing of Providers

Appendix Table 6.7 shows the sequencing of visits for children with ARI during the preceding month, to different types of healthcare providers after the first visit. It may be recalled that a higher proportion of children received treatment from private healthcare providers across districts and even in their subsequent visits, a majority of these went to private healthcare providers. In the case of those who visited public healthcare providers during the first visit, a majority of them shifted to private healthcare providers in subsequent visits. In Bargarh and Dhenkanal, a significant proportion of patients continued to visit public healthcare providers in their subsequent visits also among those who visited public healthcare providers in the first visits.

Appendix Table 6.8 presents the sequencing of visits of children with ARI during the preceding one month to different types of healthcare providers by socio-economic and demographic attributes. A higher proportion of children from the urban areas than from rural areas received treatment from private healthcare providers. Among those who visited public healthcare providers, a higher proportion of children from both rural and urban areas shifted to private healthcare providers in their subsequent visits. The proportion of patients visiting private healthcare providers in the first visits was higher in the higher expenditure quartiles. A larger proportion of patients who visited public healthcare centres in their first visits also shifted to private centres as the financial status of the household improved.

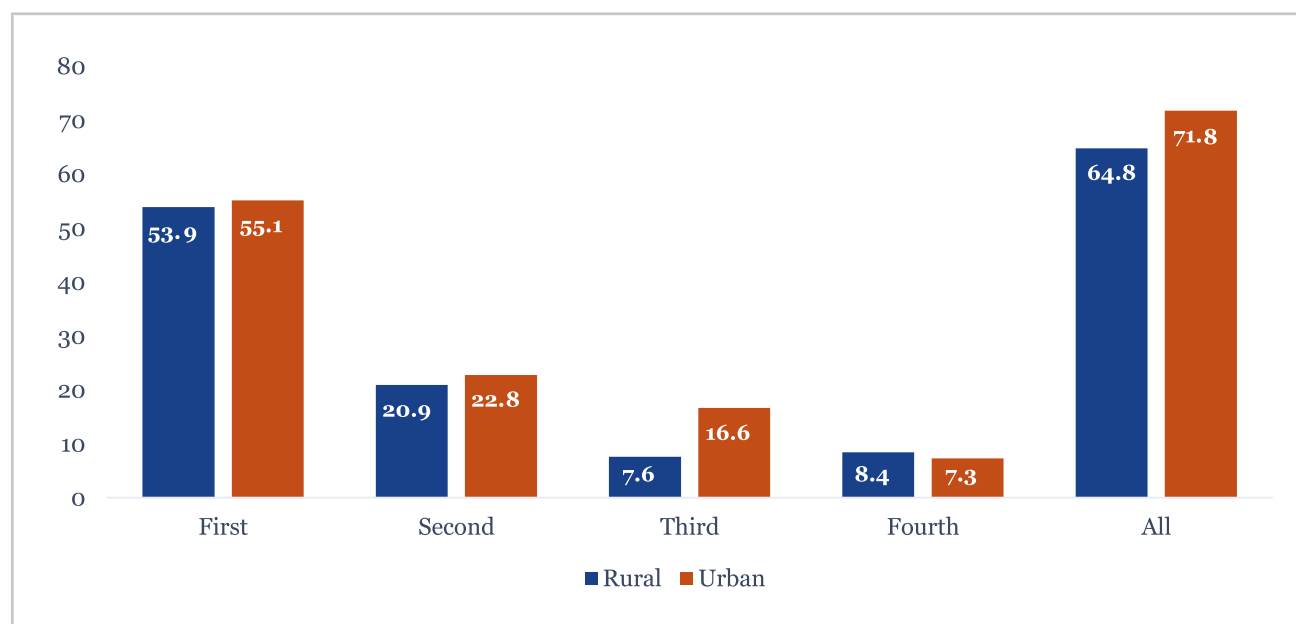


### 6.3.8 Exiting from Treatment

This section presents the recovery status and, therefore, the exit of children from the treatment pathway after receiving treatment from a healthcare provider by socio-economic and demographic variables.

About 54 per cent of the children who were taken to a healthcare provider recovered after the first visits, while another 21 per cent recovered after the second visits. Overall, 66 per cent of the children with ARI (including those who did not receive any treatment) recovered. As seen in Figure 6.16, the rate of recovery in urban areas (72 per cent) was higher than that in rural areas (65 per cent).

**Figure 6.16: Proportion of Recovering Children (Five Years of age) by Place of Residence and Number of Visits to the Healthcare Providers (%)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

While at district level, highest recovery rate is reported in Kolhapur at 94 per cent, at State level, the overall recovery rate for children with ARI was

much highest in Uttar Pradesh than all other sample States (Table 6.7). The least recovery rate of children is reported in both the districts of Odisha.

**Table 6.7: Proportion of Children Who Recovered by Number of Visits and District (%)**

Districts	Recovery Status after Visiting the Healthcare Provider				
	First Visit	Second Visit	Third Visit	Fourth Visit	All visits
All	54.1	21.2	9.0	8.3	65.9
Chandauli	74.2	36.1	11.3	13.2	81.9
Firozabad	61.5	34.4	21.0	14.6	82.8
Bargarh	34.5	4.1	3.4	7.0	42.0
Dhenkanal	29.8	17.5	6.4	3.5	41.6
Kolhapur	78.0	54.9	20.0	49.8	94.2
Yavatmal	70.3	17.9	12.5	2.5	66.0
Moga	49.6	59.9	9.4	15.1	84.4

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Appendix Table 6.9 highlights little variation in the recovery rate by the child's gender, social status, expenditure quartiles, and age group. However, by the household size and location of residence, some variations are reported. The findings show that the recovery rate of children with ARI was higher for children from larger-sized households than from smaller-sized ones, and in urban locations than in rural.

Table 6.8 reports the distribution of children who were withdrawn from treatment (with parents either doing nothing for them or providing them with "self-care and self-medication") and who continued receiving treatment from either the same healthcare provider or from a different one. Among the children

who did not recover after the first visit, 53.3 per cent were withdrawn from treatment and were given either nothing or were subjected to home (self) care/medication, whereas 23 per cent switched from the previous healthcare provider to another one. The proportion of children for whom nothing was done or who were subjected to home (self) care increased with an elongation of the treatment pathway, that is, with an increase in the number of visits. The proportion of children for whom nothing or 'home (self) care' was done was highest in Bargarh and Dhenkanal, the two districts of Odisha, followed by the districts of Uttar Pradesh. Comparatively, the districts of Moga and Kolhapur had the highest proportion of children who either repeated the visit to the same healthcare provider or switched it after the first treatment.

**Table 6.8: Status (Exiting/Repeating Visit to the Same Healthcare Provider/Switching Healthcare Provider) of Patients after the First and/or Subsequent Visit to the Healthcare Provider by District (%)**

Districts	After the First Visit			After the Second Visit			After the Third Visit		
	Nothing/ Self-care/ Medication	Re-peat Visit	Switching the Provider	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider	Nothing/ Self-care/ Medication	Repeat Visit	Switching the Provider
All	53.3	24.0	22.7	78.2	14.9	6.9	81.0	15.9	3.1
<i>Districts</i>									
Chandauli	30.8	31.0	38.2	55.1	28.5	16.4	59.3	28.3	12.4
Firozabad	25.4	48.9	25.6	48.2	42.5	9.3	62.7	32.6	4.7
Bargarh	84.1	2.1	13.8	93.7	0.8	5.5	89.3	9.7	1.0
Dhenkanal	63.8	18.2	18.0	88.6	8.5	2.9	88.5	10.8	0.7
Kolhapur	11.7	43.6	44.8	54.7	45.3	0.0	69.7	30.3	0.0
Yavatmal	20.4	28.8	50.8	78.3	3.1	18.6	81.9	0.0	18.2
Moga	10.7	73.5	15.8	66.2	24.5	9.4	66.6	33.4	0.0

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Note: The denominator is the total number of persons making successive visits to healthcare providers.

Appendix Table 6.10 shows that in urban areas, a smaller proportion of the children were given nothing or were subjected to home (self) care, and a higher proportion continued their treatment with the same healthcare provider. In the category of those who have done nothing after first treatment, not much variation

in behaviour was seen across the gender of the child, social groups, children from households falling in different monthly per capita expenditure quartiles, and by age group. The proportion of children being given nothing or subjected to home (self) care was higher for children from households of smaller size.

### 6.3.9 Key Findings from Health-seeking Pathway Analysis

Following are some salient findings from the analysis of the health-seeking pathways:

- Nearly 95 per cent of the children with ARI received treatment from a healthcare facility. Out of those who received treatment, 54 per cent of the ailing children recovered after the first visit to the healthcare provider.
- The four districts of Moga, Firozabad, Bargarh, and Kolhapur showed the highest proportion of children receiving the treatment. The Yavatmal and Dhenkanal districts had the highest proportion, at 15 per cent and 12.7 per cent, respectively, of children not receiving treatment.
- The States of Punjab and Maharashtra showed much shorter delays in taking the child for treatment as compared those of Uttar Pradesh and Odisha.
- The average duration of time between the flare-up and seeking of treatment from the first healthcare provider was 1.9 days, with not much variations across rural and urban areas.
- The proportion of children taken to public healthcare providers was lower than those who received treatment from private healthcare providers. Further, the share of children receiving treatment from private healthcare providers increased with a rise in the monthly per capita expenditure.

## 6.4 Out-of-Pocket Spending

The cost of treatment of childhood ailments poses an economic burden on the affected households. Some studies suggest that around 10 per cent of the household income was spent on the treatment of acute childhood illnesses (Dongre et al. 2010). Among the hospitalised children aged less than five years, the main factors for OOP spending at both public and private facilities were post-discharge medical prescriptions, diagnostic tests, and radiological studies, and the

direct costs were 2 to 20 times higher than the indirect costs for ARI (Peasah et al. 2015). Research also shows that seeking treatment from traditional healers, local chemist shops, unqualified practitioners, self-medication, and resorting to home remedies may lead to a deterioration in the condition of under-five children with ARI, causing higher morbidity, mortality, and economic burden (Halder et al. 2017). The reasons associated with seeking care from such informal providers include being poor, inaccessibility to proper formal providers, cultural beliefs, illiteracy, and large household sizes (Majumdar et al. 2014).

There are few studies on disease-specific treatment costs and OOP spending in India. This study is an effort to understand the OOP expenditure, catastrophic health expenditure, financial strategies of the households, and health insurance coverage among children up to the age of five years with ARI in all the eight districts under study, of which responses have been received from seven districts for the child samples.

### 6.4.1 Cost of Treatment

The study also collected information on the cost of treatment of children below five years of age suffering from ARI across all the last four treatment-seeking episodes from the healthcare providers. The information regarding the average treatment costs incurred during all the last four visits is presented in Table 6.9. Among the seven districts of the four sample States considered in this study, both the districts of Maharashtra, followed by those of Uttar Pradesh, reported higher average treatment costs than the one in Punjab. The average cost of treatment was higher for urban patients as compared to their rural counterparts across all the sample districts.

The percentage share of OOP expenditure to the total household expenditure was higher in urban areas (2.7 per cent) than in rural areas (2.3 per cent). The districts of Yavatmal, Moga, Chandauli, and Firozabad reported a higher share of OOP expenditure to the total household expenditure (above average percentage of seven districts).

**Table 6.9: Average OOPE and Its Share in the Total Household Expenditure by District**

Districts	Average Treatment Cost Of all the Last Four Visits (in Rs.)			Percentage Share of OOPE to the Total Household Expenditure		
	<i>Rural</i>	<i>Urban</i>	<i>All</i>	<i>Rural</i>	<i>Urban</i>	<i>All</i>
Chandauli	2880	3691	2960	2.5	3.3	2.5
Firozabad	2393	3583	2808	2.3	2.9	2.6
Bargarh	1741	1999	1770	2.3	1.8	2.2
Dhenkanal	1845	2326	1883	1.8	1.5	1.8
Kolhapur	3392	4041	3421	2.3	2.0	2.3
Yavatmal	2990	3319	3004	2.8	3.6	2.8
Moga	2650	2662	2654	2.8	2.6	2.7
<b>All</b>	<b>2352</b>	<b>3247</b>	<b>2499</b>	<b>2.3</b>	<b>2.7</b>	<b>2.4</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Table 6.10 depicts the average treatment cost of all the four visits and the share of treatment cost as a percentage to the total cost. It should be mentioned that more than 82 per cent of the total OOP expenditure was incurred only on the first visits,

followed by 13.7 per cent on the second visits, and so on. The share of the treatment cost for the first visits was the highest in the Chandauli, Kolhapur, and Yavatmal districts as compared to the other districts under study.

**Table 6.10: Share of the Treatment Cost as a Percentage to the Total Cost by Different Visits**

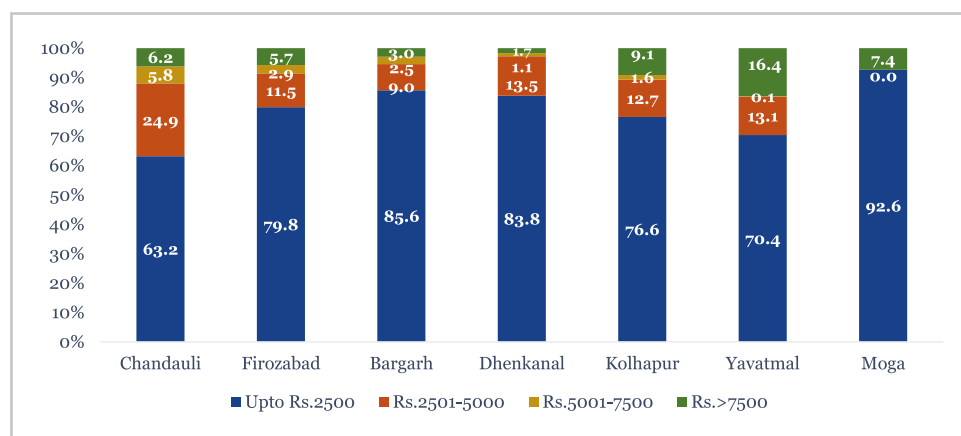
Districts	Share of the Treatment Cost as a Percentage of the Total Cost by Different Visits			
	<i>First Visit</i>	<i>Second Visit</i>	<i>Third Visit</i>	<i>Fourth Visit</i>
Chandauli	88.3	8.2	2.5	0.9
Firozabad	80.0	19.3	0.5	0.1
Bargarh	80.4	11.8	7.4	0.4
Dhenkanal	77.0	13.6	9.3	0.0
Kolhapur	88.2	11.8	0.0	0.0
Yavatmal	86.5	13.8	0.9	0.0
Moga	70.8	24.2	5.0	0.0
<b>All</b>	<b>82.7</b>	<b>13.7</b>	<b>3.3</b>	<b>0.3</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

The analysis given in Figure 6.17 pertains to the distribution of households having ailing children suffering from ARI and the treatment cost incurred. It shows that a larger proportion of patients with ARI in the Moga, Dhenkanal, and Bargarh districts

recorded a low cost of treatment (up to Rs 2,500). In comparison, those in the Chandauli, Yavatmal, and Kolhapur districts incurred a higher cost of treatment (more than Rs 2500).

**Figure 6.17: Proportion of Households Reporting Treatment Costs (%)**



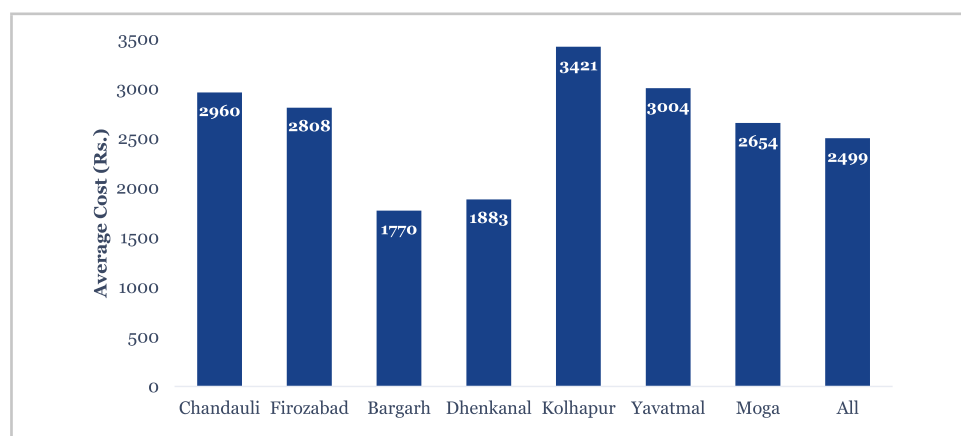
Source: NCAER-NOSSAL 4IS Health Survey, 2019.

The data analysis constituted the average cost of treatment incurred on all the visits to the healthcare providers across different background characteristics, across the seven districts of Uttar Pradesh, Odisha, Maharashtra, and Punjab in correlation with the type of healthcare service provider (see Appendix Table 6.11). Figure 6.18 shows that the average cost of treatment incurred on all the four visits was higher in Maharashtra and Uttar Pradesh as compared to that in Punjab and Odisha. It was observed that the cost of treatment incurred on male children was higher than that on female children across all the sample districts, barring Kolhapur. On similar lines, the available literature also indicates that the preference for treatment of a male child and the desire for him to recover soon were higher than for the female child in the household's health-seeking behaviour (Sivamani 2016).

In all the districts, except Bargarh and Moga, district, , the average cost of treatment also showed

an upward trend with an increase in age of a child with ARI. The distribution of the associated treatment costs can also be identified based on social stratification. By social group, though those belonging to the OBC/General community were spending more than SC /ST patients, this pattern was different in the Kolhapur and Dhenkanal districts, where the SC/ST patients spent a higher amount on treatment. Across the per capita expenditure quartiles, the average treatment cost increased with an increase in the household's per capita expenditure, again with the exception of the two districts of Kolhapur and Yavatmal, where the trend is opposite as compared to that in all the remaining districts. The analysis showed that except for Dhenkanal, households with more than five members incurred higher treatment costs as compared to their counterparts in the other districts under study. Further, households from all the seven sampled districts were found to be spending more on private healthcare facilities than on public ones.

**Figure 6.18: Average Cost of Treatment Incurred on All the Four Visits (in Rs)**



Source: NCAER-NOSSAL 4IS Health Survey, 2019.

The distribution of treatment costs according to the type of provider have been discussed in Table 6.11, which shows that the total proportion of the treatment cost on ARI in the private healthcare sector (79 per cent) was the highest, followed by that in the public sector (19 per cent), and others. Nearly or more than 90 per cent of the cost on treatment

was incurred on private healthcare facilities in five out of the seven sample districts. In the remaining two districts of Bargarh and Dhenkanal (both in Odisha State), almost 54 per cent and 46.5 per cent of the share in the total cost, respectively, was incurred on public healthcare facilities.

**Table 6.11: Distribution of Treatment Expenses by the Type of Providers and District (%)**

Districts	Public Provider	Private Provider	Other
Chandauli	8.9	88.8	2.3
Firozabad	6.1	92.2	1.7
Bargarh	53.7	45.7	0.6
Dhenkanal	46.5	49.5	3.9
Kolhapur	1.7	98.3	0.0
Yavatmal	8.6	91.4	0.0
Moga	1.0	98.4	0.6
All	<b>19.1</b>	<b>79.1</b>	<b>1.8</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

#### 6.4.2 Catastrophic Health Expenditure Estimates

Catastrophic health expenditure has been calculated on the basis of the percentage distribution of the total treatment costs. Table 6.12 provides an overview of the percentage catastrophic health expenditure incurred on the first treatment across all the districts. It can be observed that as regards the total distribution, around 4 per cent of the households spent more than 10 per

cent of their total household expenditure on the first treatment and nearly 6 per cent of the total treatment costs for all the four visits to the healthcare provider. In both the districts of Maharashtra, the proportion of households was high who spent more than 10 per cent of the total household expenditure on both the first visit and on all the four visits. The next highest share is incurred by districts of Uttar Pradesh among all.

**Table 6.12: Share of Households Spending More Than 10% of the Total Expenses on Treatment by District**

Districts	On First Treatment Cost (% Households)	On Total Treatment Cost (% Households)
Chandauli	4.9	6.1
Firozabad	5.0	6.2
Bargarh	2.6	4.5
Dhenkanal	1.5	4.0
Kolhapur	7.1	7.1
Yavatmal	9.8	11.7
Moga	0.0	1.9
All	<b>4.1</b>	<b>5.7</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Appendix Table 6.12 presents details of the catastrophic health expenditure by socio-economic and demographic parameters.

With respect to the total non-food household expenditure, around 13.4 per cent and 16.1 per cent of the households, respectively spent more than 10 per cent of the total non-food expenditure on the treatment of ARI in the first visit and on all the four visits shown in Table 6.13, respectively. A significant

proportion of households in Yavatmal (more than 27 per cent) and two districts of Uttar Pradesh (14-17 per cent) spend more than 20 per cent share of their non-food expenditure on the treatment cost. Households belonging to rural areas incurred higher treatment costs than their urban counterparts on both the first visit and all the visits as a proportion of the total household non-food expenditure (Appendix 6.13).

**Table 6.13: Percentage Households Reporting Spending on Treatment as a Percentage of the Total Household Non-food Expenditure by Different Visits to the Healthcare Service Providers by District**

Districts	Percentage of Households Spend on Treatment at Different Threshold Levels				Percentage of Households Spend on Children with Treatment at Different Threshold Levels			
	(Treatment Cost of the First Visit as a % to the Total Household Non-food Expenditure)				(Treatment Cost of All the Visits as a % to the Total Household Non-food Expenditure)			
	Catastrophic Thresholds				Catastrophic Thresholds			
	>10%	>20%	>30%	>40%	>10%	>20%	>30%	>40%
Chandauli	20.2	9.5	4.3	2.4	22.5	9.7	5.1	2.4
Firozabad	14.2	7.0	4.2	2.6	16.7	8.0	5.4	3.8
Bargarh	7.4	2.6	1.1	0.4	10.3	4.3	2.4	1.1
Dhenkanal	11.7	3.0	0.6	0.3	15.9	5.7	1.8	1.1
Kolhapur	10.8	7.1	0.0	0.0	10.8	7.1	0.0	0.0
Yavatmal	15.3	11.7	7.8	7.8	17.4	13.4	9.1	9.1
Moga	5.5	0.0	0.0	0.0	7.4	1.9	1.9	1.9
All	<b>13.4</b>	<b>6.0</b>	<b>2.8</b>	<b>1.7</b>	<b>16.1</b>	<b>7.3</b>	<b>3.9</b>	<b>2.5</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Smaller sized households with up to five members, and those belonging to the SC/ST caste groups, especially those from the poorest per capita expenditure quartile, were more likely to incur higher treatment costs on both the first visits and all the visits as a proportion of the total household non-food expenditure. Further, with an increase in the number of treatment-seeking episodes for children with ARI, the share of household spending to the total household expenditure also increased for all the catastrophic thresholds and socio-economic backgrounds (Appendix Table 6.13).

### 6.4.3 Financial Strategies

Despite the initiation of various plans and programmes over the years, the Indian State's health

indicators have not improved significantly. It is true that the health-seeking behaviours of the people are largely affected by their financial status as healthcare facilities are not free, and privatisation has further increased the cost of quality healthcare treatment. Therefore, the marginalised sections of the society have been adversely affected by the high OOP expenditure. Consequently, households primarily resorted to varied financial risk protection strategies like selling of assets, borrowing money from random sources, and curtailing the education expenses of their children (Garg and Karan 2005; Rout 2010; Sahoo and Madheswaran 2014).

Table 6.14 examines the information pertaining to financial strategies that households resorted to for meeting their treatment costs. Overall, around

80 per cent of the households were dependent on their savings, followed by another 19 per cent that borrowed money from relatives, moneylenders, and healthcare providers to face the health expenditure shock caused by high OOP expenditure. Just 1 per cent of the households used their jewellery/property or insurance to bear the cost of treatment for children with ARI. In Moga, almost 94 per cent of

the households were more inclined to spend money from their savings on healthcare. On the other hand, households in the Dhenkanal district were far less likely to use their savings for treatment in comparison with the other districts, and almost one-fourth of the households in the district borrowed money for healthcare treatment, the highest among all.

**Table 6.14: Financing Strategies to Meet Treatment Costs (% households) by District**

Districts	Savings	Borrowed (from Relatives/ Moneylenders/Health Care Providers)	Insurance	Others (Sale Jewellery/ Property; Other)
Chandauli	77.6	21.5	0.0	1.0
Firozabad	84.5	14.6	0.3	0.6
Bargarh	76.9	22.2	0.0	0.9
Dhenkanal	74.6	24.9	0.3	0.2
Kolhapur	87.5	7.1	0.0	5.4
Yavatmal	78.7	20.2	0.0	1.1
Moga	93.6	6.4	0.0	0.0
<b>All</b>	<b>79.6</b>	<b>19.3</b>	<b>0.1</b>	<b>1.0</b>

Source: NCAER-NOSSAL 4IS Health Survey, 2019.

*Health Insurance:* In India, with an increase in the financial burden caused by health shocks, the number of people living below the poverty line has also increased (Mitchell et al. 2011). Thus, in order to provide financial aid, especially to the marginalised sections of the population, the Central Government in India has launched various insurance schemes, among which the Rashtriya Swasthya Bima Yojana (RSBY) scheme being implemented by the Ministry of Labour and Employment deserves special mention. A few States like Kerala and Himachal Pradesh have also extended the benefit packages of RSBY. State governments like those of Odisha and West Bengal also have their own public health insurance schemes apart from RSBY, such as the Biju Swasthya Kalyan Yojana (BSKY) and the Swasthya Sathi Scheme, which are funded by the State revenues. However, health insurance coverage is not applicable for acute ailments as it can only be availed of through hospitalisation.

The analysis in Table 6.15 indicates that overall, around 18 per cent of the households reported being covered under the RSBY/Arogyashri/BSKY

schemes, 78.5 per cent had no insurance, and only 2.7 per cent and one per cent of the households were covered under the government and private healthcare insurance schemes, respectively, in all the seven districts cumulatively.

Among those covered under the RSBY/Arogyashri/BSKY schemes, the largest proportions of households belong to the two districts of Odisha, Bargarh, and Dhenkanal (ranging from 36 to 38 per cent), whereas more than 90 per cent of the households from the remaining five districts had not been covered by any health insurance schedule. Around 5-7 per cent of the households in Kolhapur and Dhenkanal were covered under government insurance for the treatment costs for children suffering from ARI. Irrespective of the differences in the economic and per capita expenditure quartiles, most of the households with children with ARI were not insured under any public or private healthcare schemes (77 to 80 per cent), and as per the different quartile cohorts, only 14 to 20 per cent of the households were covered under the RSBY/Arogyashri/BSKY schemes.



**Table 6.15: Type of Health Insurance Coverage by Districts and Per Capita Expenditure Quartiles (% Households)**

Districts	Private	Government	RSBY/Arogyashri/ BSKY	No Insurance
All	1.1	2.7	17.7	78.5
<i>Districts</i>				
Chandauli	0.7	1.3	6.0	92.0
Firozabad	0.5	1.6	6.0	92.0
Bargarh	2.2	1.5	36.4	59.9
Dhenkanal	1.2	6.9	37.6	54.4
Kolhapur	2.4	5.5	0.0	92.1
Yavatmal	0.1	0.0	0.0	99.9
Moga	0.0	0.0	2.2	97.8
<i>Monthly Per Capita Expenditure Quartiles</i>				
Quartile 1	0.7	0.5	19.0	79.8
Quartile 2	0.8	2.1	19.5	77.6
Quartile 3	1.5	3.7	17.7	77.1
Quartile 4	1.5	4.9	14.1	79.5

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

#### 6.4.4 Salient Findings from the Analysis of OOP Spending

Following are the significant findings based on an assessment of the OOP expenditure incurred by different categories of households:

- The household OOP spending on treatment was higher in both the districts of Maharashtra and Uttar Pradesh than in Odisha and Punjab. The average cost of treatment was higher for urban patients as compared to their rural counterparts across all the sample districts.
- The larger share of treatment costs incurred mostly pertained to the first visits to the healthcare providers as compared to the subsequent visits.
- Households from all the sample districts were found to be spending more on private healthcare facilities than on those in the public sector.
- Around 80 per cent of the households depended on their savings to face the health

expenditure shock caused by high OOP expenditure.

#### 6.5 Factors Influencing the Choice of Healthcare Provider

ARI is a major public health problem affecting children under the age of five years globally (Kamal et al. 2020)— it is the leading cause of mortality and morbidity in this age group in LMICs. About 40 per cent of the global child mortality is attributable to ARI, with the burden being the highest in Bangladesh, India, Indonesia, and Nepal (Park 2015). Pneumonia is the most serious outcome of ARI (UNICEF 2020). Globally, 1,400 cases of pneumonia per 100,000 children are recorded each year; at 2,500 cases per 100,000 children, the highest incidence rate is observed in South Asia. ARI contributes to 15-25 per cent of deaths among children in India, and most of them are preventable. According to the latest NFHS-4 report, around 3 per cent of the children in India were detected with symptoms of ARI during the last two weeks before the survey, and among them, 78 per cent sought treatment from any healthcare provider.

### 6.5.1 Opinion on the Quality of Healthcare Facilities

Healthcare-seeking is shaped by many factors, such as one's knowledge and perceptions of health, socio-economic parameters, availability of services, attitudes of healthcare providers, and the perceived quality of services. Perceived health risks and health self-efficacy also significantly influence the healthcare seeking-behaviour intentions of the consumer (Deng and Liu 2017).

This study elaborates the regional variations in the quality of healthcare providers, as perceived by the respondents, for their ill children. The variables and background characteristics analysed in the previous chapters on the perceived quality of healthcare sought for treating respiratory problems among adults, and gynaecological problems among women aged 15-49 years, have also been used in this chapter for studying healthcare seeking for children with ARI. This section of the study examines the respondents' perceptions about the healthcare providers for children suffering from ARI.

### 6.5.2 Evaluation of the Healthcare Service

Table 6.16 depicts the district-wise differences in perceptions about healthcare providers (public versus private) wherein overall there was a higher preference for public healthcare facilities (87 per cent) for treatment of children with ARI as compared to private facilities (76 per cent). The reason given by the respondents for this was 'good services' offered by the facilities concerned. All the respondents in Moga and more than 90 per cent of the households in both the districts of Odisha showed a higher inclination towards seeking treatment from public providers offering good services as compared to their counterparts in the remaining districts. A significant proportion of the households in the sample districts from Maharashtra ranging between 20-30 per cent rated the services provided by public healthcare providers as poor. Among all the districts, more than 20 per cent of the households in Uttar Pradesh found both public and private healthcare services to be excellent.

**Table 6.16: Respondent Ratings of Public and Private Providers, by District (% Households)**

Districts	Excellent		Good		Poor	
	Public	Private	Public	Private	Public	Private
Chandauli	28.5	25.9	60.9	70.7	2.5	3.3
Firozabad	18.0	21.7	76.9	75.5	5.1	2.4
Bargarh	3.9	6.2	94.0	91.6	1.7	2.2
Dhenkanal	4.9	10.9	92.3	84.8	2.2	4.3
Kolhapur	0.0	27.2	69.5	72.8	30.5	0.0
Yavatmal	0.0	42.1	79.2	56.2	20.8	1.7
Moga	0.0	23.8	100.0	72.1	0.0	0.0
All	<b>8.2</b>	<b>21.1</b>	<b>87.0</b>	<b>76.0</b>	<b>3.8</b>	<b>2.6</b>

Source: NCAER-NOSSAL Survey, 2019.

### 6.5.3 Factors Determining the Choice of Health Facilities

The two major factors that were considered by all the respondents in their selection of healthcare facilities across districts and the sources of healthcare were good reputation (70.7 per cent) of the facility and proximity (65.3 per cent) to the same (Appendix Table 6.14). Good personal experience and inexpensive treatment were the other factors considered by

the households in the selection of the healthcare provider. About 38-44 per cent of the households mentioned staff qualification and drug availabilities as among the major factors determining the choice of public healthcare providers. In the case of households that chose public healthcare facilities, the top three factors for selection were proximity, good reputation, and inexpensive services. In comparison to this, for private healthcare facilities, good reputation and proximity were the major factors.

The district-wise data revealed that for the districts of Odisha, proximity and good reputation of the healthcare facility were clearly the two most important deciding factors for selection of the healthcare provider. In comparison to this, for the two districts of Maharashtra and Moga in Punjab, good reputation and good personal experience were among the major factors for choosing the healthcare providers. More than 40 per cent of the respondents in both the districts of Odisha also rated staff qualification as the major factor, whereas a similar proportion of the respondents in Yavatmal and Moga factored in the availability of drugs in their decision-making process.

Factors such as the qualifications of staff, having friends/relatives working in the facility and/or recommendations by relatives were not important deciding factors for a significant proportion of the respondents.

#### *6.5.4 Key Factors Determining the Choice of Healthcare Providers*

Following are the findings relating to the key deciding factors in the choice of the healthcare providers by households:

- Most of the respondents reported that both public and private healthcare facilities were 'Good' but this opinion was tilted more in favour of public providers as compared to the private ones.
- The three most important considerations for the respondents, as a whole, in the choice of the healthcare facility were good reputation of the facility (71 per cent), proximity (65.3 per cent), and good personal experience (50 per cent).

## Appendix Tables

**Appendix Table 6.1: Status of Treatment after the Fourth Visits Total Sample (1,687)**

Background Characteristics	Status of the Treatment after the Fourth Visit						
	Total Sample (1,687)						
	No Treatment	Recovered	Nothing	Self-care	Repeat Visit	Sought a Different Provider	Total
<b>All</b>	<b>5.3</b>	<b>66.3</b>	<b>7.4</b>	<b>16.3</b>	<b>4.1</b>	<b>0.6</b>	<b>100</b>
<i>Place of Residence</i>							
Rural	6.0	65.3	8.0	16.4	3.8	0.6	100
Urban	1.9	71.9	4.7	15.7	5.4	0.5	100
<i>Gender</i>							
Male	6.7	65.1	7.8	16.5	3.6	0.3	100
Female	3.4	68.1	6.8	16.0	4.8	1.0	100
<i>Age Categories</i>							
Up to one year	5.0	65.1	7.6	17.7	4.2	0.4	100
2-3 years	6.2	67.7	7.4	13.6	4.4	0.7	100
4-5 years	4.7	66.0	7.3	17.9	3.4	0.7	100

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Appendix Table 6.2: Proportion of Children Not Seeking Treatment after a Flare-up during the Preceding One Month by Socio-economic and Demographic Attributes (%)

Background Characteristics	Wait for Auto Recovery	Illness Not Severe Enough	Got Better	Self-care/ Medication	Not Enough Money for Treatment
All	8.7	16.8	8.8	54.2	11.5
<i>Place of Residence</i>					
Rural	8.2	17.4	7.8	54.6	11.9
Urban	15.8	8.2	22.2	48.7	5.1
<i>Gender</i>					
Male	9.3	14.3	6.2	56.7	13.6
Female	7.5	22.2	14.4	48.9	7.0
<i>Social Groups</i>					
SC/ST	11.1	16.7	10.5	46.1	15.7
OBC/General	6.0	16.9	6.8	63.7	6.6
<i>Monthly Per Capita Expenditure Quartiles</i>					
Quartile 1 (Poorest)	9.3	17.4	13.0	51.8	8.5
Quartile 2	8.0	22.4	2.2	46.7	20.8
Quartile 3	16.4	19.3	14.0	41.6	8.7
Quartile 4 (Richest)	0.0	0.0	0.0	93.1	6.9
<i>Household Size</i>					
Up to 5 members	9.1	18.4	6.1	55.1	11.4
More than 5 members	8.0	13.3	14.9	52.2	11.7
<i>Age Categories</i>					
Up to 1 year	3.0	14.0	2.9	64.3	15.8
2-3 years	2.2	26.4	6.2	56.8	8.5
4-5 years	24.2	7.0	19.0	39.2	10.6

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 6.3: Average Duration of Delay in Seeking Treatment by Socio-economic and Demographic Attributes (in Days)**

Background Characteristics	Uttar Pradesh		Odisha		Maharashtra		Punjab	
	Chandauli	Firozabad	Bargath	Dhenkanal	Kolhapur	Yavatmal	Moga	All
All	2.0	1.7	2.0	2.0	1.1	2.1	1.5	1.9
<i>Place of Residence</i>								
Rural	2.0	1.8	2.1	2.0	1.2	2.1	1.3	1.9
Urban	2.5	1.6	1.6	2.0	0.6	3.3	2.1	1.7
<i>Gender</i>								
Male	2.3	1.9	2.1	2.3	0.9	2.6	1.4	2.1
Female	1.7	1.4	1.9	1.6	1.2	1.6	2.1	1.6
<i>Social Groups</i>								
SC/ST	2.1	2.0	2.5	2.0	1.1	2.1	1.6	2.1
OBC/General	2.0	1.6	1.7	2.1	1.1	2.1	1.5	1.7
<i>Monthly Per Capita Expenditure Quartiles</i>								
Quartile 1 (Poorest)	2.7	2.7	2.4	2.7	1.7	2.9	1.6	2.6
Quartile 2	1.9	1.6	2.3	2.1	1.2	1.7	1.0	1.9
Quartile 3	1.7	1.7	1.7	2.1	0.6	1.7	2.1	1.7
Quartile 4 (Richest)	1.5	1.0	1.6	1.3	0.8	2.6	1.2	1.3
<i>Household Size</i>								
Up to 5 members	1.9	1.5	2.0	2.1	1.2	2.2	1.6	1.8
More than 5 members	2.2	2.1	2.1	1.8	1.1	1.9	0.7	2.0
<i>Age Categories</i>								
Up to 1 year	1.4	2.1	2.0	2.2	1.1	1.2	1.5	1.8
2-3 years	2.3	1.4	2.1	1.9	1.0	2.1	1.6	1.9
4-5 years	2.3	1.5	1.9	2.0	1.3	2.5	1.6	1.9

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 6.4: Proportion of Children Being Taken for Treatment for an Episode of ARI during the Preceding One Month by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Chandauli	Firozabad	Bargarth	Dhenkanal	Kolhapur	Yavatmal	Moga	All
All	93.8	99.8	97.6	87.3	98.1	85.6	100.0	94.7
<i>Place of Residence</i>								
Rural	93.8	100.0	97.3	87.0	98.0	85.0	100.0	94.1
Urban	94.3	99.4	100.0	91.7	100.0	100.0	100.0	98.1
<i>Gender</i>								
Male	91.2	99.7	98.4	85.2	93.5	83.0	100.0	93.3
Female	97.2	100.0	96.3	91.6	100.0	89.0	100.0	96.7
<i>Social Groups</i>								
SC/ST	94.5	99.2	95.6	86.1	100.0	85.1	100.0	93.1
OBC/General	93.2	100.0	98.8	88.3	97.5	86.3	100.0	95.7
<i>Monthly Per Capita Expenditure Quartiles</i>								
1 (Poorest)	91.9	100.0	93.3	77.7	93.2	74.5	100.0	89.9
Quartile 2	96.9	100.0	97.1	84.0	100.0	85.4	100.0	94.8
Quartile 3	94.0	99.1	99.5	97.2	100.0	95.3	100.0	97.7
4 (Richest)	93.5	100.0	100.0	93.6	100.0	100.0	100.0	97.3
<i>Household Size</i>								
Up to 5 members	93.2	99.7	97.0	88.5	94.4	86.1	100.0	94.3
More than 5 members	94.4	100.0	100.0	83.0	100.0	84.2	100.0	95.5
<i>Age Categories</i>								
Up to 1 year	94.8	99.5	97.2	82.7	100.0	100.0	100.0	95.0
2-3 years	93.9	100.0	96.4	87.0	90.9	82.6	100.0	93.9
4-5 years	92.7	100.0	99.2	92.0	100.0	84.9	100.0	95.4

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 6.5: Proportion of Children Who Received (First) Treatment by the Type of Healthcare Service Provider during the Last One Year by Socio-economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>Public</b>	<b>Private</b>	<b>Other</b>
All	28.9	66.1	5.0
<i>Place of Residence</i>			
Rural	30.2	64.1	5.7
Urban	21.9	76.5	1.7
<i>Gender</i>			
Male	29.1	66.6	4.4
Female	28.6	65.5	6.0
<i>Social Groups</i>			
SC/ST	32.2	61.2	6.7
OBC/General	26.8	69.2	4.0
<i>Monthly Per Capita Expenditure Quartiles</i>			
Quartile 1 (Poorest)	35.2	59.7	5.1
Quartile 2	30.6	65.3	4.2
Quartile 3	27.6	67.7	4.7
Quartile 4 (Richest)	21.4	72.3	6.3
<i>Household Size</i>			
Up to 5 members	32.6	62.3	5.2
More than 5 members	22.0	73.2	4.8
<i>Age Categories</i>			
Up to 1 year	25.3	68.5	6.2
2-3 years	27.4	68.8	3.8
4-5 years	34.7	60.2	5.1

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.



**Appendix Table 6.6: Number of Visits to Healthcare Providers by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Number of Visits		
	One	Two	>Two Visits
All	88.1	9.9	2.0
<i>Place of Residence</i>			
Rural	87.9	10.1	2.0
Urban	89.3	8.6	2.1
<i>Gender</i>			
Male	87.2	10.4	2.4
Female	89.4	9.2	1.5
<i>Monthly Per Capita Expenditure Quartiles</i>			
Quartile 1 (Poorest)	88.9	8.8	2.4
Quartile 2	88.2	10.4	1.4
Quartile 3	90.7	7.4	1.8
Quartile 4 (Richest)	84.7	12.9	2.4
<i>Household Size</i>			
Up to 5 Members	89.6	8.8	1.6
More than 5 Members	85.4	11.9	2.8
<i>Age Categories</i>			
Up to 1 year	86.9	10.3	2.8
2-3 years	88.8	9.7	1.6
4-5 years	88.8	9.6	1.7

Appendix Table 6.7: Sequencing of Visits to Different Types of Health Care Providers amongst Those Who Sought Treatment, by Districts (%)

Districts	Visits	Public			Private			Chemist			Other		
		Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
Chandauli	First	12.3	79.4	1.3	7.0								
	Second	39.0	61.0	0.0	17.7	80.8	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	100.0	0.0	18.1	75.1	6.8	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	100.0	0.0	0.0	15.0	45.6	39.4	0.0	0.0	0.0	0.0	0.0	0.0
Firozabad	First	13.9	81.7	1.0	3.4								
	Second	12.8	87.2	0.0	5.3	87.4	7.4	0.0	100.0	0.0	0.0	0.0	100.0
	Third	0.0	100.0	0.0	22.4	77.6	0.0	0.0	100.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	0.0	0.0	35.8	64.2	0.0	0.0	0.0	0.0	0.0	0.0
Bargarh	First	56.0	41.8	0.0	2.2								
	Second	51.1	45.1	3.8	5.4	94.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	61.8	26.6	11.6	30.1	58.2	11.7	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	49.7	50.3	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dhenkanal	First	47.2	44.6	2.1	6.1								
	Second	35.8	60.3	3.9	38.7	48.1	13.3	0.0	0.0	0.0	0.0	0.0	0.0
	Third	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kolhapur	First	16.8	83.0	0.2	0.0								
	Second	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(Contd.)

Appendix Table 6.7: (Contd.)

Districts	Visits	Public			Private			Chemist			Other		
		Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
Yavatmal	First	21.3	78.8		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Second	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Moga	First	12.3	84.7		0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
	Second	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	First	28.9	66.1		0.0	0.0	0.0	1.0	0.0	0.0	0.0	4.1	0.0
	Second	32.3	65.2	2.5	14.8	80.2	5.0	0.0	100.0	0.0	0.0	71.2	28.8
	Third	57.5	35.9	6.6	17.7	78.1	4.2	0.0	100.0	0.0	0.0	0.0	0.0
	Fourth	71.0	14.4	14.6	41.9	26.9	31.2	0.0	0.0	0.0	0.0	0.0	0.0

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 6.8: Sequencing of Visits to Different Types of Healthcare Providers amongst Those Who Sought Treatment by Socio-economic and Demographic Attributes**

Background Characteristics	Visits			Public			Private			Chemist			Other		
	Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other
<i>Place of Residence</i>															
	<b>30.2</b>			<b>64.1</b>			<b>1.0</b>			<b>4.7</b>					
Rural	First	35.5	61.6	3.0	15.2	80.6	4.2	0.0	100.0	0.0	0.0	0.0	0.0	71.2	28.8
	Second	64.9	26.1	9.0	19.1	77.7	3.2	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	100.0	0.0	0.0	41.9	26.9	31.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth		21.9		76.5			0.8						0.9	
Urban	First	13.7	86.3	0.0	12.6	77.7	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Second	37.4	62.6	0.0	9.0	81.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	0.0	49.7	50.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth														
<i>Gender</i>															
	<b>29.1</b>			<b>66.6</b>			<b>0.7</b>			<b>3.6</b>					
Male	First	36.5	59.3	4.2	15.2	77.4	7.4	0.0	100.0	0.0	0.0	0.0	0.0	55.2	44.8
	Second	83.4	16.7	0.0	14.3	79.8	5.9	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	57.0	21.4	21.6	9.4	41.9	48.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth		28.6		65.5			1.3						4.7	
Female	First	25.9	74.1	0.0	14.2	85.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
	Second	38.3	50.2	11.5	26.0	74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth														

(Contd.)

Appendix Table 6.8: (Contd.)

Background Characteristics	Visits			Public			Private			Chemist			Other			
	Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other	Public	Private	Other	
<i>Monthly Per Capita Expenditure Quartiles</i>																
Quartile 1 (Poorest)	First	35.2			59.7			0.9			4.3					
	Second	24.5	70.1	5.4	14.2	85.8	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Third	77.6	22.4	0.0	27.7	60.9	11.4	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	100.0	0.0	0.0	20.8	0.0	79.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quartile 2	First	30.6			65.3			1.4			2.8					
	Second	48.3	47.8	4.0	15.0	74.7	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Third	25.2	74.8	0.0	11.7	88.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	100.0	0.0	75.4	0.0	24.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quartile 3	First	27.6			67.7			0.6			4.1					
	Second	28.1	71.9	0.0	22.2	77.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
	Third	64.1	35.9	0.0	23.4	76.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	100.0	54.0	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Quartile 4 (Richest)	First	21.4			72.3			1.1			5.2					
	Second	25.9	74.1	0.0	11.6	80.8	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
	Third	54.5	21.8	23.7	12.7	82.1	5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Fourth	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: NCAER-NOSSAL-4IS Health Survey, 2019-22.

**Appendix Table 6.9: Proportion of Children Who Recovered, by Number of Visits to Healthcare Providers by Socio-economic and Demographic Attributes (%)**

Districts and Background Characteristics	Recovery Status after Visiting the Health Care Provider				
	First	Second	Third	Fourth	All visits
<b>All</b>	<b>54.1</b>	<b>21.2</b>	<b>9.0</b>	<b>8.3</b>	<b>65.9</b>
<i>Districts</i>					
Chandauli	74.2	36.1	11.3	13.2	81.9
Firozabad	61.5	34.4	21.0	14.6	82.8
Bargarh	34.5	4.1	3.4	7.0	42.0
Dhenkanal	29.8	17.5	6.4	3.5	41.6
Kolhapur	78.0	54.9	20.0	49.8	94.2
Yavatmal	70.3	17.9	12.5	2.5	66.0
Moga	49.6	59.9	9.4	15.1	84.4
<i>Place of Residence</i>					
Rural	53.9	20.9	7.6	8.5	64.8
Urban	55.1	22.8	16.6	7.3	71.8
<i>Gender</i>					
Male	52.9	21.0	9.8	9.7	64.9
Female	55.8	21.5	8.0	6.3	67.4
<i>Social Groups</i>					
SC/ST	55.4	21.5	9.8	10.8	66.5
OBC/General	53.3	21.0	8.6	6.8	65.5
<i>Monthly Per Capita Expenditure Quartiles</i>					
Quartile 1 (Poorest)	57.2	19.7	10.9	9.5	64.6
Quartile 2	54.7	19.4	10.2	6.8	65.6
Quartile 3	54.6	24.1	7.4	11.8	70.1
Quartile 4 (Richest)	49.7	21.7	7.5	5.6	63.6
<i>Household Size</i>					
Up to 5 members	51.9	18.6	8.8	6.2	62.6
More than 5 members	58.1	26.7	9.6	13.1	72.1
<i>Age Categories</i>					
Up to 1 year	51.7	22.3	9.4	7.0	64.8
2-3 years	55.9	20.2	9.8	11.1	67.1
4-5 years	54.7	21.0	7.7	6.6	65.8

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Note: The denominator in the above calculation is the total number of persons suffering from Chronic Breathlessness who sought treatment from any health care provider after a flare-up in their health condition.

**Appendix Table 6.10: Proportion of Children Exiting and Switching the Treatment after Visiting a Healthcare Provider by Socio-economic and Demographic Attributes (%)**

Districts and Background Characteristics	After the First Visit			After the Second Visit			After the Third Visit		
	Nothing/Self-care/Medication	Repeat Visit	Switching the Provider	Self-care/Medication Nothing/	Repeat Visit	Switching the Provider	Nothing/Self-care/Medication	Repeat Visit	Switching the Provider
<b>All</b>	<b>53.3</b>	<b>24.0</b>	<b>22.7</b>	<b>78.2</b>	<b>14.9</b>	<b>6.9</b>	<b>81.0</b>	<b>15.9</b>	<b>3.1</b>
<i>Districts</i>									
Chandauli	30.8	31.0	38.2	55.1	28.5	16.4	59.3	28.3	12.4
Firozabad	25.4	48.9	25.6	48.2	42.5	9.3	62.7	32.6	4.7
Bargarh	84.1	2.1	13.8	93.7	0.8	5.5	89.3	9.7	1.0
Dhenkanal	63.8	18.2	18.0	88.6	8.5	2.9	88.5	10.8	0.7
Kolhapur	11.7	43.6	44.8	54.7	45.3	0.0	69.7	30.3	0.0
Yavatmal	20.4	28.8	50.8	78.3	3.1	18.6	81.9	0.0	18.2
Moga	10.7	73.5	15.8	66.2	24.5	9.4	66.6	33.4	0.0
<i>Place of Residence</i>									
Rural	56.2	20.7	23.1	81.8	11.6	6.6	81.0	15.9	3.1
Urban	38.1	41.0	21.0	59.0	32.6	8.4	81.0	15.9	3.1
<i>Gender</i>									
Male	52.9	22.5	24.7	78.1	15.0	6.9	83.1	14.2	2.8
Female	54.0	26.2	19.9	78.4	14.8	6.8	78.0	18.4	3.6
<i>Social Groups</i>									
SC/ST	54.7	24.6	20.7	77.5	14.8	7.8	78.7	16.5	4.9
OBC/General	52.5	23.6	23.9	78.6	15.0	6.4	82.4	15.6	2.1
<i>Monthly Per Capita Expenditure Quartiles</i>									
Quartile 1 (Poorest)	52.5	25.3	22.2	76.5	15.6	7.9	82.9	13.0	4.1
Quartile 2	53.3	25.7	21.0	74.7	18.8	6.5	78.7	17.7	3.6
Quartile 3	58.1	21.8	20.1	83.3	11.4	5.3	85.7	11.8	2.5
Quartile 4 (Richest)	49.6	23.0	27.4	78.8	13.5	7.7	77.4	20.3	2.3
<i>Household Size</i>									
Up to 5 members	58.9	21.9	19.2	83.1	11.8	5.1	84.0	13.8	2.2
More than 5 members	41.3	28.5	30.2	66.5	22.4	11.1	73.8	21.1	5.2
<i>Age Categories</i>									
Up to 1 year	52.3	22.9	24.8	76.7	15.2	8.1	81.3	15.3	3.4
2-3 years	52.4	25.5	22.1	74.2	21.1	4.7	76.6	19.8	3.6
4-5 years	55.6	23.6	20.9	84.6	7.5	7.9	85.6	12.2	2.2

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

Note: The denominator is the total number of persons making successive visits to healthcare providers.

**Appendix Table 6.11: Average Cost of Treatment of All the Four Visits (in Rs) by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Chandauli	Firozabad	Bargarth	Dhenkanal	Kolhapur	Yavatmal	Moga	All
All	2960	2808	1770	1883	3421	3004	2654	2499
<i>Gender</i>								
Male	3464	3335	1815	2058	1548	3083	2922	2705
Female	2366	2033	1703	1556	4160	2903	1564	2218
<i>Age Categories</i>								
Up to 1 year	2567	2965	2212	1662	1643	1626	3724	2399
2-3 years	2986	2234	1439	1610	9292	3695	1865	2457
4-5 years	3349	3460	1641	2338	2489	2665	3627	2663
<i>Social Groups</i>								
SC/ST	2262	2375	1476	2001	7500	1664	1726	2200
OBC/General	3669	2951	1950	1790	2134	4827	3569	2684
<i>Monthly Per Capita Expenditure Quartiles</i>								
Quartile 1 (Poorest)	2234	1964	1228	1303	745	1686	304	1709
Quartile 2	2746	2290	1538	1572	2477	3830	1227	2155
Quartile 3	3145	2227	1837	1860	1612	3771	3274	2339
Quartile 4 (Richest)	4219	4349	2624	2683	8505	1872	4106	3886
<i>Household Size</i>								
Up to 5 Members	2911	2300	1696	1919	2330	2305	1757	2153
More than 5 Members	3006	3594	2052	1738	3959	5113	16184	3137
<i>Healthcare Providers</i>								
Public	2143	1240	1695	1856	438	1348	223	1674
Private	3311	3167	1934	2092	3888	3395	3082	2976

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.



**Appendix Table 6.12: Percentage Households That Reported Spending More Than 10% on Treatment as a Proportion of the Total Household Expenditure by Socio-economic and Demographic Attributes (%)**

<b>Background Characteristics</b>	<b>On First Treatment Cost (% Households)</b>	<b>On Total Treatment Cost (% Households)</b>
All	4.1	5.7
<i>Place of Residence</i>		
Rural	4.1	5.8
Urban	4.2	5.1
<i>Household Size</i>		
Up to 5 members	3.9	5.8
More than 5 members	4.4	5.5
<i>Social Groups</i>		
SC/ST	3.8	4.9
OBC/General	4.3	6.2
<i>Monthly Per Capita Expenditure Quartiles</i>		
Quartile 1 (Poorest)	6.5	9.3
Quartile 2	3.9	5.2
Quartile 3	3.1	3.6
Quartile 4 (Richest)	2.8	4.5

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

**Appendix Table 6.13: Percentage of Households Reported Spending on Treatment as a Percentage to the Total Household Non-food Expenditure by Different Visits by Socio-economic and Demographic Attributes (%)**

Background Characteristics	Percentage of Households Spend on Treatment at Different Threshold Levels (Treatment Cost of First Visit as a % of the Total Household Non-food Expenditure)				Percentage of Households Spend on Treatment at Different Threshold Levels (Treatment Cost of All Visits as a % of the Total Household Non-food Expenditure)			
	<i>Catastrophic Thresholds</i>				<i>Catastrophic Thresholds</i>			
	>10%	>20%	>30%	>40%	>10%	>20%	>30%	>40%
All	13.4	6.0	2.8	1.7	16.1	7.3	3.9	2.5
<i>Place of Residence</i>								
Rural	13.6	6.0	2.7	1.6	16.4	7.4	3.9	2.4
Urban	12.3	6.1	3.2	2.4	14.5	6.9	3.8	2.8
<i>Household Size</i>								
Up to 5 members	13.8	6.2	2.9	1.3	16.5	7.8	3.9	2.1
More than 5 members	12.7	5.6	2.7	2.5	15.3	6.5	3.8	3.2
<i>Social Groups</i>								
SC/ST	15.3	6.5	2.3	1.1	18.5	7.2	3.0	1.3
OBC/General	12.2	5.8	3.1	2.1	14.6	7.4	4.5	3.2
<i>Monthly Per Capita Expenditure Quartiles</i>								
Quartile 1 (Poorest)	21.8	11.5	6.5	4.3	25.3	14.0	8.2	6.1
Quartile 2	13.7	4.7	1.2	0.9	16.5	5.6	2.1	1.2
Quartile 3	10.6	3.7	1.6	0.8	13.4	4.2	2.1	1.1
Quartile 4 (Richest)	6.9	4.1	1.9	0.9	8.5	5.3	3.0	1.3

Source: NCAER-NOSSAL 4IS Health Survey, 2019.

Appendix Table 6.14: Key Deciding Factors for Choosing Healthcare Providers by District (%)

Districts	Proximity				Good Reputation			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	57.6	63.5	72.0	63.5	74.5	63.9	46.6	63.7
Firozabad	42.8	56.5	55.3	54.6	72.3	67.8	52.5	67.7
Bargarh	83.0	74.4	100.0	79.7	88.6	76.6	66.7	83.1
Dhenkanal	81.3	60.7	66.7	70.9	64.4	74.5	60.3	68.5
Kolhapur	79.6	50.3	100.0	55.3	20.4	84.3	0.0	73.4
Yavatmal	85.7	61.1	-	66.3	42.8	79.8	-	72.0
Moga	82.8	49.7	100.0	55.2	18.8	71.0	100.0	65.4
All	74.7	60.9	69.1	65.3	73.7	70.6	54.1	70.7
	Inexpensive				Good Personal Experience			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	38.2	37.6	43.5	38.1	43.1	39.1	43.3	39.9
Firozabad	42.5	29.0	25.2	30.7	41.3	41.3	30.9	40.9
Bargarh	72.4	34.9	70.4	56.7	67.8	64.6	66.7	66.4
Dhenkanal	70.9	8.5	34.4	40.1	52.9	43.8	33.6	47.2
Kolhapur	100.0	51.6	0.0	59.6	75.8	56.6	0.0	59.7
Yavatmal	54.1	58.6	-	57.6	54.9	71.6	-	68.1
Moga	82.8	31.5	0.0	36.9	100.0	60.5	100.0	66.5
All	65.1	32.8	38.4	42.4	57.5	47.1	39.7	49.7
	Qualification of Staff				Availability of Drugs			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	17.6	8.3	0.0	8.7	45.4	38.7	46.6	40.2
Firozabad	9.2	9.7	12.8	9.8	23.8	32.0	51.1	31.7
Bargarh	48.6	38.5	32.9	44.0	43.1	4.5	27.2	26.6
Dhenkanal	46.7	37.6	23.9	40.8	52.7	3.2	18.9	27.9
Kolhapur	43.8	29.6	0.0	31.9	68.0	12.1	100.0	21.6
Yavatmal	10.0	43.1	-	36.0	33.3	42.8	-	40.8
Moga	82.8	10.4	100.0	21.9	18.8	54.6	0.0	48.5
All	38.6	19.9	13.8	25.0	44.0	26.1	37.5	31.8
	Relative/Friend Works There				Recommended by Relatives			
	Public	Private	Other	Total	Public	Private	Other	Total
Chandauli	2.4	1.4	0.0	1.4	2.5	2.7	2.3	2.7
Firozabad	0.0	0.8	6.0	0.9	3.6	4.0	4.8	4.0
Bargarh	1.1	3.2	0.0	2.0	1.0	10.8	5.6	5.2
Dhenkanal	2.6	9.9	0.0	5.6	2.0	26.3	5.9	13.2
Kolhapur	0.0	0.0	0.0	0.0	0.0	7.0	0.0	5.8
Yavatmal	3.3	1.3	-	1.7	0.0	4.8	-	3.8
Moga	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	1.6	2.4	1.5	2.1	1.7	7.5	4.3	5.7

Source: NCAER-NOSSAL 4IS Health Survey, 2019-22.

## REFERENCES

- Acharya, A., Vellakkal, S., Taylor, F., Masset, E., Satija, A., Burke, M., and Ebrahim, S. (2012). "Impact of national health insurance for the poor and the informal sector in low-and middle-income countries: A systematic review." EPPI-Centre Report, London: Social Science Research Unit, Institute of Education, University of London.
- Adhikari, D., and Rijal, D.P. (2014). "Factors affecting health-seeking behaviour of senior citizens of Dharan." *Journal of Nobel Medical College*, 3(1): 50–57.
- Alam, M., and Tyagi, R.P. (2009). "A Study of Out of Pocket Household Expenditure on Drugs and Medical Services: An Exploratory Analysis of UP, Rajasthan and Delhi." New Delhi: Population Research Centre, Institute of Economic Growth.
- Andersen, B. L., Cacioppo, J.T., and Roberts, D. C. (1995). Delay in seeking a cancer diagnosis: Delay stages and psychophysiological comparison processes. *British Journal of Social Psychology*, 34(1): 33–52.
- Anwar, M., Green, J., and Norris, P. (2012). "Health-seeking behaviour in Pakistan: A narrative review of the existing literature." *Public Health*, 126(6): 507–517.
- Arjun, P., Nair, S., Jilisha, G., Anand, J., Babu, V., Moosan, H., and Kumari, A.K. (2019). "Assessing health-seeking behavior among Asthma and COPD patients in urban South India." *Journal of Family Medicine and Primary Care*, 8(8): 2714–2719.
- Banerjee, A., Deaton, A., and Duflo, E. (2004). "Wealth, health, and health services in rural Rajasthan." *American Economic Review*, 94(2): 326–330.
- Bang, R.A., Bang, A.T., Baitule, M., Choudhary, Y., Sarmukaddam, S., and Tale, O. 1989. "High Prevalence of gynaecological diseases in rural Indian women." *Lancet* (London, England), 1(8629): 85–88. DOI: 10.1016/s0140-6736(89)91438-4.
- Basnet, R., Hinderaker, S.G., Enarson, D., Malla, P., and Mørkve, O. (2009). "Delay in the diagnosis of tuberculosis in Nepal." *BMC Public Health*, 9(1): 236.
- Beran, D., Zar, H.J., Perrin, C., Menezes, A.M., and Burney, P. (2015). "Burden of asthma and chronic obstructive pulmonary disease and access to essential medicines in low-income and middle-income countries." *The Lancet Respiratory Medicine*, 3(2): 159–170.
- Berki, S.E. (1986). "A look at catastrophic medical expenses and the poor." *Health Affairs*, 5(4): 138–145.
- Bhatia, J.C. and Cleland, J. (1995). Self-reported symptoms of gynecological morbidity and their treatment in south India. *Studies in Family Planning*, 26(4): 203–216.
- Bhatia, J. and Cleland, J. (2000) "Methodological Issues in Community-based Studies of Gynecological Morbidity." *Studies in Family Planning*, 31(4): 267–273.
- Bhatia, J.C., Cleland, J., Bhagavan, L., and Rao, N.S.N. (1997). "Levels and determinants of gynaecological morbidity in a district of south India." *Studies in Family Planning*, 28(2): 95–103.
- Bhatti, L. I. and Fikree, F.F. (2002). Health-seeking behavior of Karachi women with reproductive tract infections. *Social Science & Medicine*, 54(1): 105–117.
- Binnendijk, E., Koren, R., and Dror, D.M. (2012). "Hardship financing of healthcare among rural poor in Orissa, India." *BMC Health Services Research*, 12(1): 1–14.
- Chaudhary, V., Kumar, R., Agrawal, V.K., Singh, A., Narula, R., and Sharma, M. (2012). "Prevalence and determinants of vaginal discharge among women of reproductive age group in tertiary care hospital of northern India." *National Journal of Community Medicine*, 3(4): 661–665.
- Chauhan, R.C., Manikandan, P.A., Samuel, A., and Singh, Z. (2015). "Determinants of health care

- seeking behavior among rural population of a coastal area in South India." *Int J Sci Rep*, 1(2): 118–122.
- Chibwana, A.I., Mathanga, D.P., Chinkhumba, J., and Campbell, C.H. (2009). "Socio-cultural predictors of health-seeking behaviour for febrile under-five children in Mwanza-Neno district, Malawi." *Malaria Journal*, 8(1): 1–8.
- Corbin, J. and Strauss, A. (2014). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Thousand Oaks, California: Sage Publications.
- Damrongplisit, K. and Wangdi, T. (2017). "Healthcare utilization, bypass, and multiple visits: The case of Bhutan." *International Journal of Health Economics and Management*, 17(1): 51–81.
- Das, J. and Mohpal, A. (2016). "Socioeconomic status and quality of care in rural India: new evidence from provider and household surveys." *Health Affairs*, 35(10): 1764–1773.
- Das, J., Holla, A., Mohpal, A., and Muralidharan, K. (2016). "Quality and accountability in health care delivery: audit-study evidence from primary care in India." *American Economic Review*, 106(12): 3765–3799.
- Das, M., Angeli, F., Krumeich, A.J., and van Schayck, O.C. (2018). "The gendered experience with respect to health-seeking behaviour in an urban slum of Kolkata, India." *International Journal for Equity in Health*, 17(1): 24.
- Das, S., Basu, M., Mandal, A., Roy, N., Chatterjee, S., and Dasgupta, A. (2017). Prevalence and determinants of delay in diagnosis of pulmonary tuberculosis in Darjeeling district of West Bengal. *Journal of Family Medicine and Primary Care*, 6(3): 627.
- Dasgupta, P. and Mukherjee, S. (2021). "Distress financing for out-of-pocket hospitalization expenses in India: An analysis of pooled National Sample Survey data." *Occasional Paper*, 71. Kolkata: Institute of Development Studies.
- Deng, Z. and Liu, S. (2017). "Understanding consumer health information-seeking behavior from the perspective of the risk perception attitude framework and social support in mobile social media websites." *International Journal of Medical Informatics*, 105, 98–109.
- Dercon, S. (2002). "Income risk, coping strategies, and safety nets." *The World Bank Research Observer*, 17(2): 141–166.
- Desai, S. (2009). "Keeping the 'health' in health insurance." *Economic and Political Weekly*, 44(38): 18–21.
- Dheresa, M., Assefa, N., Berhane, Y., Worku, A., Mingiste, B., and Dessie, Y. (2017). "Gynecological Morbidity among Women in Reproductive Age: A Systematic Review and Meta-Analysis." *Journal of Women's Health Care*, 6: 367. DOI:10.4172/2167-0420.1000367.
- Dilip, T.R. and Duggal, R. (2002). "Incidence of non-fatal health outcomes and debt in urban India." Mumbai: Centre for Enquiry into Health and Allied Themes (CEHAT).
- Dongre, A.R., Deshmukh, P.R., and Garg, B.S. (2010). "Health expenditure and care seeking on acute child morbidities in peri-urban Wardha: A prospective study." *The Indian Journal of Paediatrics*, 77(5): 503–507.
- D'Souza, R.M. (2003). "Role of health-seeking behaviour in child mortality in the slums of Karachi, Pakistan." *Journal of Biosocial Science*, 35(1): 131–144.
- Filippi, V., Marshall, T., Bulut, A., Graham, W., and Yolsal, N. (1997). "Asking Questions about Women's Reproductive Health: Validity and Reliability of Survey Findings from Istanbul." *Tropical Medicine and International Health*, 2(1): 47–56. DOI: 10.1046/j.1365-3156.1997.d01-126.x. PMID: 9018302.
- Flores, G., Krishnakumar, J., O'Donnell, O., and Van Doorslaer, E. (2008). "Coping with health care costs: Implications for the measurement of catastrophic expenditures and poverty." *Health Economics*, 17(12): 1393–1412.
- Fochsen, G., Deshpande, K., Diwan, V., Mishra, A., Diwan, V.K., and Thorson, A. (2006). "Healthcare-seeking among individuals with cough and tuberculosis: A population-based study from rural India." *The International Journal of Tuberculosis and Lung Disease*, 10(9): 995–1000.
- Garg, C.C. and Karan, A.K. (2005). "Health and Millennium Development Goal 1: Reducing

out-of-pocket expenditures to reduce income poverty: Evidence from India." *Equity in Asia-Pacific Health Systems*, New Delhi: Institute for Human Development.

— (2009). "Reducing out-of-pocket expenditures to reduce poverty: a disaggregated analysis at rural-urban and state level in India." *Health Policy and Planning*, 24(2): 116–128.

Ghosh, S. (2011). "Catastrophic payments and impoverishment due to out-of-pocket health spending." *Economic and Political Weekly*, 46(47): 63–70.

Ghoshal, A.G., Ravindran, G.D., Gangwal, P., Rajadhyaksha, G., Cho, S.H., Muttalif, A.R.B.A., Lin, H.C., Thanaviratananich, S., Bagga, S., Farugi, R., Sajjan, S., Shetty, P., Syed, R., Hamrosi, K.K., and Wang, D.Y. (2016). "The burden of segregated respiratory diseases in India and the quality of care in these patients: Results from the Asia-Pacific Burden of Respiratory Diseases study." *Lung India: Official Organ of Indian Chest Society*, 33(6): 611.

Gosoni, G.D., Ganapathy, S., Kemp, J., Auer, C., Somma, D., Karim, F., and Weiss, M.G. (2008). "Gender and socio-cultural determinants of delay to diagnosis of TB in Bangladesh, India and Malawi [Special section on gender and TB]." *The International Journal of Tuberculosis and Lung Disease*, 12(7): 848–855.

Guntoory, I., Tamaraba, N.R., Nambaru, L.R., and Kalavakuri, A.S. (2017). "Prevalence and socio-demographic correlates of vaginal discharge among married women of reproductive age group at a teaching hospital." *Int J Reprod Contracept Obstet Gynecol*, 6(11): 4840–4846.

Halder, A.K., Luby, S.P., Akhter, S., Ghosh, P.K., Johnston, R.B., and Unicomb, L. (2017). "Incidences and costs of illness for diarrhea and acute respiratory infections for children < 5 years of age in rural Bangladesh." *The American Journal of Tropical Medicine and Hygiene*, 96(4): 953–960.

Hardy, L.M. and Traisman, H.S. (1956). "Antibiotics and chemotherapeutic agents in the treatment of uncomplicated respiratory infections in children: A controlled study." *The Journal of Paediatrics*, 48(2): 146–156.

Hemachandra, D.K.N.N. and Manderson, L. (2009). "Menstrual problems and health seeking in Sri Lanka." *Women & Health*, 49(5): 405–421.

Hortensia, R., Perez-Cuevas, R., Salmeron, J., Tome, P., Guiscafre, H., and Gutierrez, G. (1997). "Infant mortality due to acute respiratory infections: The influence of primary care processes." *Health Policy and Planning*, 12(3): 214–230.

India State-Level Disease Burden Initiative CRD Collaborators. (2018). "The Burden of Chronic Respiratory Diseases and Their Heterogeneity across the States of India: The Global Burden of Disease Study 1990–2016." *Lancet Glob Health*. 6(12): e1363–e1374. DOI: 10.1016/S2214-109X(18)30409-1.

Indian Institute for Population Sciences (IIPS) and MoHFW. (2017). "India Fact Sheet: National Family Health Survey-4." Available at: <http://rchiips.org/nfhs/pdf/NFHS4/India.pdf> (accessed on June 18, 2021).

Ismail, S. A., McCullough, A., Guo, S., Sharkey, A., Harma, S., and Rutter, P. (2019). Gender-related differences in care-seeking behaviour for newborns: A systematic review of the evidence in South Asia. *BMJ Global Health*, 4(3), e001309.

Jabeen, S., Bari, M.A., Wazib, A., Salma, U., Shaheduzzaman, A.K.M., Das, P.P., and Hossain, M.S. (2013). "Morbidity pattern and health-seeking behaviour among the senior citizens in selected rural areas of Bangladesh." *Journal of Dhaka Medical College*, 22(2): 129–135.

Jangid, V.K., Agrawal, N.K., Yadav, G.S., Pandey, S., and Mathur, B.B. (2016). "Health-seeking behavior and social stigma for tuberculosis in tuberculosis patients at a tertiary-care center in North West India." *Int J Med Sci Public Health*, 5(9): 1893–1899.

Jehu-Appiah, C., Aryeetey, G., Spaan, E., De Hoop, T., Agyepong, I., and Baltussen, R. (2011). "Equity aspects of the National Health Insurance Scheme in Ghana: Who is enrolling, who is not and why?" *Social Science & Medicine*, 72(2): 157–165.

Joe, W. (2015). "Distressed financing of household out-of-pocket health care payments in India: incidence and correlates." *Health Policy and Planning*, 30(6): 728–741.

- Kamal, M.M., Aziz, F., Islam, M.R., Ahsan, M., and Islam, S.N. (2020). "Effect of immune-nutritional status, healthcare factors, and lifestyle on acute respiratory infections among under-5 children in Bangladesh." *SAGE Open Medicine*, 8, 2050312120940533.
- Kambo, I.P., Dhillon, B.S., Singh, P., Saxena, B.N., and Saxena, N.C. (2003). "Self-reported Gynaecological Problems from Twenty-Three Districts of India: An ICMR Task Force Study." *Indian Journal of Community Medicine*, 28(2): 67–73.
- Kapoor, S. K., Raman, A. V., Sachdeva, K. S., and Satyanarayana, S. (2012). How did the TB patients reach DOTS services in Delhi? A study of patient treatment seeking behavior. *PLOS ONE*, 7(8), e42458.
- Kastor, A. and Mohanty, S.K. (2018). "Disease-specific out-of-pocket and catastrophic health expenditure on hospitalization in India: Do Indian households face distress health financing?", *PLOS ONE*, 13(5), e0196106-e0196106.
- Kawabata, K., Xu, K., and Carrin, G. (2002). "Preventing impoverishment through protection against catastrophic health expenditure." *Bull World Health Organ*, 80(8): 612.
- Khan, A., Shaikh, B.T., and Baig, M.A. (2020). "Knowledge, awareness, and health-seeking behaviour regarding tuberculosis in a rural district of Khyber Pakhtunkhwa, Pakistan." *BioMed Research International*, 2020(10): 1–6.
- Khan, N. and Fatima, H. (2014). "Health seeking behaviors of Pakistani women reporting vaginal discharge." *TIJ's Research Journal of Social Science & Management*, Available at: <https://www.semanticscholar.org/paper/Health-Seeking-Behaviors-of-Pakistani-Women-Vaginal-Khan-Fatima/329b89aa214725bdd642f60f558763b417868699> (accessed on June 10, 2021).
- Khanna, A., Goyal, R.S., and Bhawsar, R. (2005). "Menstrual practices and reproductive problems: A study of adolescent girls in Rajasthan." *Journal of Health Management*, 7(1): 91–107.
- Kishore, J., Kohli, C., Gupta, N., Kumar, N., and Sharma, P.K. (2015). "Awareness, practices and treatment seeking behavior of type 2 diabetes mellitus patients in Delhi." *Annals of Medical and Health Sciences Research*, 5(4): 266–273.
- Konda, S., Melo, C., Giri, P., and Behera, A. (2014). "Determinants of delays in diagnosis and treatment of pulmonary tuberculosis in a new urban township in India: A cross-sectional study." *Int J Med Sci Public Health*, 3(2): 140–145.
- Kotecha, P.V., Patel, S.V., Baxi, R.K., Shah, S., Mehta, K.G., and Diwanji, M. (2011). "Treatment seeking pathway of PID (Pelvic Inflammatory Disease) patients attending government hospital Vadodara, India." *National Journal of Community Medicine*, 2(2): 186–190.
- Kroeger, A. (1983). "Anthropological and socio-medical health care research in developing countries." *Social Science & Medicine*, 17(3): 147–161.
- Kruk, M.E., Goldmann, E., and Galea, S. (2009). "Borrowing and selling to pay for health care in low-and middle-income countries." *Health Affairs*, 28(4): 1056–1066.
- Kulkarni, P.Y., Kulkarni, A.D., Akarte, S.V., Bhawalkar, J.S., and Khedkar, D.T. (2013). "Treatment seeking behavior and related delays by pulmonary tuberculosis patients in E-ward of Mumbai Municipal Corporation, India." *Int J Med Public Health*, 3(4): 286.
- Kumar, K., Singh, A., Kumar, S., Ram, F., Singh, A., Ram, U., and Kowal, P.R. (2015). "Socio-economic differentials in impoverishment effects of out-of-pocket health expenditure in China and India: Evidence from WHO SAGE." *PLOS ONE*, 10(8), e0135051.
- Kusuma, Y.S. and Babu, B.V. (2019). "The costs of seeking healthcare: Illness, treatment seeking and out of pocket expenditures among the urban poor in Delhi, India." *Health & Social Care in the Community*, 27(6): 1401–1420.
- Lee, P.M., Khong, P., and Ghista, D.N. (2006). "Impact of deficient healthcare service quality." *The TQM Magazine*. DOI: 10.1108/09544780610707075.
- Leeuw, Evelyne de (2008), "The effect of computer-assisted interviewing on data quality: A review of the evidence." *Psychology*, 1–20.

- Majumdar, A., Premarajan, K.C., Ganesh, K.S., Veerakumar, A.M., and Ramaswamy, G. (2014). "Rural-urban differentials of treatment-seeking behaviour for acute respiratory infection among children in Puducherry." *National Journal of Community Medicine*, 5(3), 325-328.
- Mistry, N., Lobo, E., Shah, S., Rangan, S., and Dholakia, Y. (2017). "Pulmonary tuberculosis in Patna, India: Durations, delays, and health care seeking behaviour among patients identified through household surveys." *Journal of Epidemiology and Global Health*, 7(4): 241-248.
- Mitchell, A., Mahal, A., and Bossert, T. (2011). "Healthcare utilisation in rural Andhra Pradesh." *Economic and Political Weekly*, 46(5): 15-19.
- Mitra, N.K. (2001). "A longitudinal study on ARI among rural under-fives." *Indian Journal of Community Medicine*, 26(1): 8.
- Mock, C.N., Gloyd, S., Adjei, S., Acheampong, F., and Gish, O. (2003). "Economic consequences of injury and resulting family coping strategies in Ghana." *Accident Analysis & Prevention*, 35(1): 81-90.
- Mohan, P., Iyengar, S.D., Agarwal, K., Martinez, J.C., and Sen, K. (2008). "Care-seeking practices in rural Rajasthan: barriers and facilitating factors." *Journal of Perinatology*, 28(2): S31-S37.
- Mohanan, M., Hay, K., and Mor, N. (2016). "Quality of health care in India: challenges, priorities, and the road ahead." *Health Affairs*, 35(10): 1753-1758.
- Morduch, J. (1995). "Income smoothing and consumption smoothing." *Journal of Economic Perspectives*, 9(3): 103-114.
- Mosadeghrad, A.M. (2012). "A conceptual framework for quality of care." *Materia Socio-medica*, 24(4): 251-261.
- NFHS-4 India Factsheet (2015-16). New Delhi: Ministry of Health and Family Welfare, Government of India. Available at: [https://dhsprogram.com/pubs/pdf/OF31/India\\_National\\_FactSheet.pdf](https://dhsprogram.com/pubs/pdf/OF31/India_National_FactSheet.pdf) (accessed on June 26, 2021).
- NSS. (2015). "NSS 71<sup>st</sup> Round—Health in India." National Sample Survey Organisation, New Delhi: Government of India.
- Nyonator, F. and Kutzin, J. (1999). "Health for some? The effects of user fees in the Volta region of Ghana." *Health Policy and Planning*, 14(4): 329-341.
- Olenja, J. (2003). "Health-seeking Behaviour in Context." *East African Medical Journal*, 80(2): 61-62.
- Oyibo, P.G. (2011). "Out-of-pocket payment for health services: Constraints and implications for government employees in Abakaliki, Ebonyi State, south east Nigeria." *African Health Sciences*, 11(3): 481-485.
- Pandey, A., Kumar, G. A., Dandona, R., and Dandona, L. (2018). Variations in catastrophic health expenditure across the states of India: 2004 to 2014. *PLOS ONE*, 13(10), e0205510.
- Pannarunothai, S. and Mills, A. (1997). "The poor pay more: Health-related inequality in Thailand." *Social Science & Medicine*, 44(12): 1781-1790.
- Parasuraman, A., Zeithaml, V.A., and Berry, L.L. (1985). "A conceptual model of service quality and its implications for future research." *Journal of Marketing*, 49(4): 41-50.
- Park, K. (2015). *Park's Textbook of Preventive and Social Medicine*. 23<sup>rd</sup> edition. Jabalpur, India: Bhanot Publishers.
- Peasah, S.K., Purakayastha, D.R., Koul, P.A., Dawood, F.S., Saha, S., Amarchand, R., Broor, S., Rastogi, V., Assad, R., Kaul, K.A., Widdowson, M-A., Lal, R.B., and Krishnan, A. (2015). "The cost of acute respiratory infections in Northern India: a multi-site study." *BMC Public Health*, 15(1): 1-9.
- Pore, P.D., Ghattargi, C.H., and Rayate, M.V. (2010). "Study of risk factors of Acute Respiratory Infection (ARI) in under-fives in Solapur." *National Journal of Community Medicine*, 1(2): 64-67.
- Prasad, J.H., Abraham, S., Kurz, K.M., George, V., Lalitha, M.K., John, R., and Joseph, A. (2005). "Reproductive tract infections among young married women in Tamil Nadu, India." *International Family Planning Perspectives*, 31(2): 73-82.
- Prusty, R.K. and Unisa, S. (2013). "Reproductive tract infections and treatment seeking behavior among married adolescent women 15-19 years in India." *International Journal of MCH and AIDS*, 2(1): 103-110.



- Rajeswari, R., Chandrasekaran, V., Suhadev, M., Sivasubramaniam, S., Sudha, G., and Renu, G. (2002). "Factors associated with patient and health system delays in the diagnosis of tuberculosis in South India." *The International Journal of Tuberculosis and Lung Disease*, 6(9): 789–795.
- Rani, M. and Bonu, S. (2003). Rural Indian women's care seeking behavior and choice of provider for gynaecological symptoms. *Studies in Family Planning*, 34(3): 173–185.
- Raza, W.A., Van de Poel, E., Panda, P., Dror, D., & Bedi, A. (2015). "Healthcare seeking behaviour among self-help group households in Rural Bihar and Uttar Pradesh, India." *BMC Health Services Research*, 16(1): 1–13.
- Rohde, J.E. and Viswanathan, H. (1995). *The Rural Private Practitioner*. New Delhi: Oxford University Press.
- Rohlin, M., Schaub, R.M., Holbrook, P., Leibur, E., Lévy, G., Roubalíkova, L., Nilner, M., Roger-Leroi, V., Danner, G., Iseri, H., and Feldman, C. (2002). "2.2 Continuous Quality Improvement." *European Journal of Dental Education*, 6: 67–77.
- Rout, S.K. (2010). "Public expenditure on health care in Orissa: Focus on reproductive and child health services." *Health and Population Innovation Programme Working Paper No. 12*, New Delhi: Population Council.
- Rudan, I., Boschi-Pinto, C., Biloglav, Z., Mulholland, K., and Campbell, H. (2008). "Epidemiology and Etiology of Childhood Pneumonia." *Bull WHO*. 86: 408–416.
- Russell, S. (1996). "Ability to pay for health care: concepts and evidence." *Health Policy and Planning*, 11(3): 219–237.
- Sahoo, A.K. and Madheswaran, S. (2014). "Socio-economic disparities in health care seeking behaviour, health expenditure and its source of financing in Orissa: Evidence from NSSO 2004–05." *Journal of Health Management*, 16(3): 397–414.
- Saito, E., Gilmour, S., Rahman, M.M., Gautam, G.S., Shrestha, P.K., and Shibuya, K. (2014). "Catastrophic household expenditure on health in Nepal: A cross-sectional survey." *Bulletin of the World Health Organization*, 92(10): 760–767.
- Sangar, S., Dutt, V., and Thakur, R. (2020). "Coping with out-of-pocket health expenditure in India: Evidence from NSS 71<sup>st</sup> round." *Global Social Welfare*, 7(3): 275–284.
- Seeberg, J., Pannarunothai, S., Padmawati, R. S., Trisnantoro, L., Barua, N., and Pandav, C.S. (2014). "Treatment seeking and health financing in selected poor urban neighbourhoods in India, Indonesia and Thailand." *Social Science & Medicine*, 102: 49–57.
- Selvaraj, K., Kumar, S.G., and Ramalingam, A. (2014). "Prevalence of self-medication practices and its associated factors in Urban Puducherry, India." *Perspectives in Clinical Research*, 5(1): 32–36.
- Shaikh, B.T. and Hatcher, J. (2007). "Health seeking behaviour and health services utilisation trends in national health survey of Pakistan: What needs to be done?" *Journal of Pakistan Medical Association*, 57(8): 411–414.
- Shankar, P.R., Partha, P., and Shenoy, N. (2002). "Self-medication and non-doctor prescription practices in Pokhara Valley, western Nepal: A questionnaire-based study." *BMC Family Practice*, 3(1): 1–7.
- Sharma, J.K. and Narang, R. (2011). "Quality of healthcare services in rural India: The user perspective." *Vikalpa*, 36(1): 51–60.
- Singh, D. (2019). "Awareness about Reproductive Tract Infection and Treatment Seeking Behavior among Married Women of Age 15–44 Years in a Rural Area of Bundelkhand Region of Uttar Pradesh, India." *Indian Journal of Applied Research*, 9(4): 51–53.
- Sinha, B., Vibha, R.S., and Chowdhury, R. (2017). "An epidemiological profile of chronic obstructive pulmonary disease: A community-based study in Delhi." *Journal of Postgraduate Medicine*, 63(1): 29–35.
- Sivamani, M. (2016). "A study on health seeking behaviour among mothers with acute respiratory infections in under-five children in a rural area of Coimbatore." Doctoral dissertation submitted to the PSG Institute of Medical Sciences and Research, Coimbatore.
- Snoj, B. and Mumel, D. (2002). "The measurement of perceived differences in service quality—The case of health spas in Slovenia." *Journal of Vacation Marketing*, 8(4): 362–379.

- Sreeramareddy, C. T., Qin, Z. Z., Satyanarayana, S., Subbaraman, R., and Pai, M. (2014). Delays in diagnosis and treatment of pulmonary tuberculosis in India: A systematic review. *The International Journal of Tuberculosis and Lung Disease*, 18(3): 255–266.
- Subba, N.R. (2008). “Health seeking behaviour of Rajbanshi community in Katahari and Baijanathpur of Morang district, Nepal.” *Journal of Nepal Health Research Council*, 2(2): 14–18.
- Taksande, A.M. and Yeole, M. (2015). “Risk Factors of Acute Respiratory Infection (ARI) in Under-fives in a Rural Hospital of Central India.” *Journal of Pediatric and Neonatal Individual Medicine*, 5(1): e050105. DOI: 10.7363/050105.
- Taylor, B., Abbott, G.D., Kerr, M.M., and Fergusson, D.M. (1977). “Amoxycillin and co-trimoxazole in presumed viral respiratory infections of childhood: Placebo-controlled trial.” *Br Med J*, 2(6086): 552–554.
- Taylor, S.A. and Cronin Jr, J.J. (1994). “Modeling patient satisfaction and service quality.” *Journal of Health Care Marketing*, 14(1): 34–44.
- Thakur, R. and Murhekar, M. (2013). “Delay in diagnosis and treatment among TB patients registered under RNTCP Mandi, Himachal Pradesh, India, 2010.” *Indian Journal of Tuberculosis*, 60(1), 37–45.
- Tucker, J.L. and Adams, S.R. (2001). “Incorporating patients’ assessments of satisfaction and quality: An integrative model of patients’ evaluations of their care.” *Managing Service Quality*, 11(4): 272–287.
- UBC Wiki (2015). “Health Seeking Behaviour.” The University of British Columbia, Wikipedia, Available at: [https://wiki.ubc.ca/Health\\_Seeking\\_Behaviour](https://wiki.ubc.ca/Health_Seeking_Behaviour) (Accessed on June 26, 2021).
- UNICEF (2020). “Childhood pneumonia: Everything you need to know.” Available at: <https://www.unicef.org/stories/childhood-pneumonia-explained> (accessed 26 June 2021).
- Van Brakel, W.H. (2006). ‘Measuring health-related stigma—a literature review.’ *Psychology, Health & Medicine*, 11(3): 307–334.
- Varkey, A.B. (2004). “Chronic obstructive pulmonary disease in women: Exploring gender differences.” *Current Opinion in Pulmonary Medicine*, 10(2): 98–103.
- Wagstaff, A. and Doorslaer, E.V. (2004). “Overall versus socioeconomic health inequality: a measurement framework and two empirical illustrations.” *Health Economics*, 13(3): 297–301.
- Walter, F., Webster, A., Scott, S., and Emery, J. (2012). The Andersen Model of Total Patient Delay: a systematic review of its application in cancer diagnosis. *Journal of Health Services Research & Policy*, 17(2); 110–118.
- Walters, D. and Jones, P. (2001). “Value and value chains in healthcare: A quality management perspective.” *The TQM Magazine*, 13(5): 319–335.
- Weiss, M.G., Ramakrishna, J., and Somma, D. (2006). “Health-related stigma: Rethinking concepts and interventions.” *Psychology, Health & Medicine*, 11(3): 277–287.
- Willis, J.R., Kumar, V., Mohanty, S., Singh, P., Singh, V., Baqui, A.H., Awasthi, S., Singh, J.V., Santosham, M., and Darmstadt, G.L. (2009). “Gender differences in perception and care-seeking for illness of newborns in rural Uttar Pradesh, India.” *Journal of Health, Population, and Nutrition*, 27(1): 62–71.
- WHO/UNICEF (2013). “Ending preventable child deaths from pneumonia and diarrhoea by 2025: The integrated Global Action Plan for Pneumonia and Diarrhoea (GAPPD)”, Report No. WHO/FWC/MCA/13/01, Available at: [https://apps.who.int/iris/bitstream/handle/10665/79207/WHO\\_FWC\\_MCA\\_13\\_01\\_eng.pdf?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/79207/WHO_FWC_MCA_13_01_eng.pdf?sequence=1) (accessed on June 27, 2021).
- World Bank. (2018). Current Health Expenditure Data, IBRD, IDA, World Health Organization Global Health Expenditure Database, New York: The World Bank, Available at: <https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS?locations=IN> (accessed on June 21, 2021).
- World Health Organisation (2020). “Quality of services’: Factsheets.” Available at: <https://www.who.int/news-room/fact-sheets/detail/quality-health-services> (accessed on June 21, 2021).
- World Health Organization. (2016). “World Health Statistics 2016: Monitoring Health for the SDGs Sustainable Development Goals.” Geneva: World Health Organization.
- Xu, K., Evans, D.B., Kadama, P., Nabyonga,

J., Ogwal, P.O., Nabukhonzo, P., and Aguilar, A.M. (2006). "Understanding the impact of eliminating user fees: Utilization and catastrophic health expenditures in Uganda." *Social Science & Medicine*, 62(4): 866–876.

Xu, K., Evans, D.B., Kawabata, K., Zeramdini, R., Klavus, J., and Murray, C.J. (2003).

"Household catastrophic health expenditure: A multi-country analysis." *The Lancet*, 362(9378): 111–117.

Yadav, U.N., Lloyd, J., Hosseinzadeh, H., Baral, K.P., Dahal, S., Bhatta, N., and Harris, M.F. (2020). "Facilitators and barriers to the self-management of COPD: A qualitative study from rural Nepal." *BMJ Open*, 10(3), e035700.



## About NCAER

NCAER, the National Council of Applied Economic Research, is India's oldest and largest independent economic think tank, set up in 1956 to inform policy choices for both the public and private sectors. Over the past 65 years, NCAER has served the nation well with its rich offering of applied policy research, unique data sets, evaluations, and policy inputs to Central and State governments, corporate India, the media, and the citizenry. It is one of a few independent think tanks world-wide that combines rigorous economic analysis and policy outreach with deep data collection capabilities, particularly for large-scale household surveys. NCAER is led by its Director General, Dr Poonam Gupta, and it is governed by an independent Governing Body currently chaired by Mr Nandan M. Nilekani.

## About Nossal

The Nossal Institute for Global Health is a centre of global health housed within the University of Melbourne's Faculty of Medicine, Dentistry and Health Sciences. It's focus is on strengthening the health systems for populations to achieve health equity across the Asia-Pacific region. The Institute's approaches are aimed at supporting evidence building, capacity strengthening, applied research and evaluations, and policy development. The experts at Nossal Institute work with governments, academics, philanthropists, multilateral agencies, and civil society partners, and explore, connect, and assess decisions and policies for their impact on the health and wellness of people. For the Institute's applied research to have the greatest impact, its experts listen to the voices of the partners they work with.



### NATIONAL COUNCIL OF APPLIED ECONOMIC RESEARCH

NCAER India Centre, 11, Indraprastha Estate, New Delhi-110 002, India

Tel: + 91 11 2345 2657, 6120 2698

Email: [info@ncaer.org](mailto:info@ncaer.org) [www.ncaer.org](http://www.ncaer.org)