After all our searching and discussing, the summing up shows but a brief list of plausible predictions. That specialism will increase, and competition become more fierce, we may feel as confident as of any future event. That medical treatment will become more scientific in its basis and methods; that disease will be more effectively prevented; that hygiene agents will largely supplant drugs—all these seem to be among the strong probabilities. Very probably the family doctor is about to be eclipsed for a time; perhaps to reappear later in a more glorified aspect.

The darkest cloud which rests upon our future seems to arise from the combined forces of greatly increased competition and the growth of socialistic and co-operative ideas.

We must not forget that the past is the only test by which we judge the future. In his great vision, Dante observed that all the prophets had their heads turned backward. The most accurate inferences we can draw from experience are liable, indeed are almost certain, to be deranged by the entrance of new and unexpected factors. Let us therefore face the future with the hope and confidence which befit men who believe that creation is not without a plan, and that the grand trend of evolution is toward better things.

"New times demand new measures and new men;
The world advances, and in time outgrows
The laws that in our fathers' days were best."

Original Article.

A CITY ISOLATION HOSPITAL.¹

BY MAY SALONA HOLMES, M.D., WORCESTER,
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It is unfortunate that certain infectious diseases are the unwelcome but ever-present guests of all organized communities today. Therefore it has become the duty of the boards of health of these communities to provide for their isolation. If there could be thorough co-operation of the citizens with the boards of health to this end, no doubt these diseases could be wiped out of existence in a comparatively short time. It is needless to say, however, that we cannot hope for this happy result until the millenium comes; for it is inevitable that many mild and atypical cases will not be recognized, that many will be wilfully concealed, and that, owing to the popular prejudice to hospitals of this kind, commonly called pesthouses, many more will refuse the isolation provided.

There has been in recent years considerable progress made by the municipal control of infectious diseases, which must inevitably have had its effect upon their spread. Owing to this recognition of the constant menace to life from disease in its cities, the Massachusetts Legislature in June, 1894, passed the following act:

SECTION 1. In any city in which no suitable hospital accommodations have been provided for the care and

¹ Read before the Massachusetts Association of Boards of Health.

treatment of persons suffering from contagious diseases dangerous to the public health, the Board of Health of such city may address a communication to the Mayor thereof, stating that, in the opinion of said Board, the safety of the inhabitants of the city demands that suitable hospital accommodations should be provided for the reception and treatment of persons suffering from such diseases, other than smallpox and those of a venereal nature. The Mayor shall, forthwith, transmit such communication to the City Council, and the City Council shall forthwith order such hospital accommodations to be provided, and shall make the necessary appropriations therefor.

SEC. 2. Every city in which hospital accommodations have been provided, in accordance with the provisions of this act, shall make an annual appropriation for the maintenance of such hospital accommodations, and said appropriation shall be expended under the direction of the Board of Health, unless otherwise ordered by the City Government.

In accordance with this act the Board of Health of Worcester sent to the mayor of this city, in January, 1895, a request that early provision be made for such a hospital. An appropriation of \$30,000 was accordingly set aside, the plans submitted and the erection of the hospital begun that same year. The site obtained for the hospital was a most fortunate one. Few cities are able to furnish a location so admirable in such a variety of ways. The distance from the center of the city is not great, and yet it is practically in the country, with an apple orchard in front and woods in the rear. There is plenty of land to cultivate for garden supplies. The patients have play-ground space a sufficiently safe distance from neighbors. The buildings are on the slope of a hill, of good elevation, with a southern exposure. Sunlight and the circulation of fresh air are unobstructed.

The plans of the buildings were made by Fuller, Delano and Frost of this city. There are four separate buildings arranged in a hollow square. The appropriation did not permit of making preparation for but two diseases. Scarlet fever and diphtheria were, therefore, selected as the two most common and most malignant of the infectious diseases, and, hence, the greatest menace to the welfare of the city. There has been really great demand made upon us to isolate measles also, but the City Government has not been able as yet to add to our appropriation a sufficient amount for that purpose.

The hospital, as at first erected, consists of an administration building; forty feet to each side of this, and somewhat to the rear, are the ward buildings, the one on the east for diphtheria and the one on the west for scarlet fever. These three buildings are connected by both over and under-ground corridors. In the rear is a separate building in which are the ward laundry, the sterilizing plant, a morgue and chapel. The wards are exactly alike in plan. Each provides two rooms which can accommodate from 12 to 16 patients, three private rooms and a nurses' serving kitchen. There are closets and bath rooms at the extreme ends of each ward building, separated from them by cross corridors for ventilation. With six beds in each ward, 80 cubic

feet of fresh air per patient per minute is provided.

The heating is by indirect radiation. In addition there are windows on opposite sides of the wards for cross ventilation, and there are fireplaces. Fifteen patients can thus be comfortably cared for in each building. A few more, even, may be easily added, provided they will accommodate us in their division as to age, sex and degree of sickness. For the past year the average number daily in the hospital has been 25, to be divided between the two diseases. Our largest number at any one time was 45, 31 of whom had to be stowed away in the scarlet fever building. That was not comfortable, however. The basements are cemented throughout. Robing rooms are provided in them where nurses change their outer clothing on entering and leaving the wards, and where the attending physicians and necessary visitors don robes and caps.

The work of the hospital increased so rapidly that the administration building has already had to be remodeled and enlarged to provide for more nurses and for their better accommodation. More cold-storage room and a larger heating plant were also added.

We have also bought an adjoining cottage with additional land, at a cost of \$3,500. The cottage enables us to provide for our janitor's family and to separate the nurses in the scarlet fever wards from those in the diphtheria. We had never been able in any way to suspect any mixing of infection by the intermingling of our nurses; but as the hospital grew the danger increased, and we were much pleased when we were enabled to separate them. We have not yet been able to trace a case of infection to any of the employees.

Although the buildings are so thoroughly separate in their entire equipment, the patients themselves are not always accommodating, but will persist occasionally in having more than one infectious disease at the same time. To place such patients where they will do no harm to others, taxes our equipment exceedingly, especially in the winter months when we are crowded. We do feel a very urgent need for a separate building for mixed infections and hope that its realization is not far distant. Otherwise the plan of the hospital has proved to be very practical, and in the main satisfactory. This separate cottage plan is one we would always heartily recommend.

The entire cost of the hospital plant, including seven acres of land and the additions, has been \$50,000. The average net cost per year for maintenance has been \$6,849.

As the work of the hospital has increased, the administrative force has grown in proportion, until now it consists of a superintendent and resident physician, a housekeeper and a superintendent of nurses. There is an attending staff of four physicians and a pathologist.

The entire question of obtaining nurses has throughout been a serious one. We hope, however, that our latest plan, even though a bold one, of instituting our own training school, will solve

the problem. At first we depended upon the City Hospital, and a course in contagious diseases was made a part of the curriculum of their school. It became impossible for them, as time went on, to furnish a sufficient number, and we were obliged to hire nurses from other sources. The supply available was limited, however, and we were frequently at a loss to obtain enough who were sufficiently capable to carry on the work satisfactorily. We were, therefore, driven to the last resource of training our own nurses, and have so far been encouraged in our undertaking by the results. We expect to supplement the course in our own hospital by work elsewhere in surgery and obstetrics before awarding any diploma.

We are also able to continue the training of the City Hospital nurses and to admit a limited number of post-graduates from out of town hospitals for a four months' course. The number of these applicants is steadily increasing as the hospital becomes better known. The fear of contracting the diseases has had its influence more or less upon the peace of mind of the nurses. A certain proportion, perhaps half, have been immunized with diphtheria antitoxin. No one of these contracted the disease under six weeks time. The rashes have been rather disagreeable in some cases, and we have, therefore, ceased to urge the immunization. Should a nurse contract the disease we have no fear of being unable to control it with the help of antitoxin.

Since the opening of the hospital, 97 different nurses have been employed. Of this number 4 contracted diphtheria, 4 scarlet fever and 1 whooping cough. This makes the percentage for each of the two diseases 4.12% of the number employed, and for all diseases 9.2%. No other employees in any capacity have contracted disease with the exception of the superintendent, who had each in turn, and one member of the staff who contracted diphtheria. Even ward maids and laundry girls have so far been exempt.

Owing to the limited capacity of the hospital, the administration has been obliged to make rather rigid rules for the admission of patients, especially on the diphtheria side. No case of diphtheria is admitted until the bacteriological report supports the diagnosis, except in laryngeal cases. This rule has not always been approved by the profession, but we have felt that, taking into consideration our limited capacity, it was best for all concerned to adhere to it.

With the help of antitoxin there are few cases which cannot wait the few hours necessary for the report, which at most is only twenty-four, and in cases of special urgency can be reduced to six. The swab even, may be examined at once under certain conditions. The repeated admission of patients suffering from tonsillitis of nondiphtheritic origin can be thus avoided. We have no place to separate them from the diphtheria patients, and even though antitoxin renders them immune they have to submit to the sterilization of their clothing, and to the other disagreeable features necessarily attending isolation.

Antitoxin has been most generously supplied by the State Board of Health and is kept constantly on hand for distribution by the local board. The hospital has also had the benefit of this generosity on the part of the State board, and we wish to publicly express our gratitude to them for it. We feel sure that by its unstinted use we have not only saved lives, but have been able to swell the statistical records in its behalf.

Diphtheria patients are not discharged until two consecutive negative cultures have been obtained. We do not possess the same degree of scientific knowledge about the infectious period of scarlet fever, but no patient is discharged until the skin is absolutely smooth. No visitors are admitted to see the patients except when there are indications of a fatal termination of the disease. Then only the adult members of the immediate family are admitted, together with the spiritual advisor and such others as are absolutely necessary. Professional courtesy is always shown physicians.

As to our sterilizing plant, the steam sterilizer which was made for us by the Stewart Boiler Works has been very satisfactory. It consists of a jacketed cylinder large enough to admit mattresses. A brick partition crosses it in the middle, so that the infected material can be put in at one end and taken out of the other. By never opening both ends at the same time there is no communication between the infected and clean rooms. All materials that can be disinfected by the ordinary boiling in the laundry are done in that way. Blankets, mattresses and, until recently, the patients' clothing, were disinfected by the steam. We now use Formaldehyde when practicable. Steam under pressure necessarily affects the materials submitted to it to a certain extent. Cloth will shrink, stains will be set, and the peculiar odor of heated wool will be left. Our sterilizer is a good one, however, and we think these disadvantages are reduced to a minimum.

The hospital opened to admit patients Nov. 25, 1896, and from that date until the end of the year 11 patients were admitted. Seven of them had diphtheria, 2 had scarlet fever, and 2 did not have either disease. In spite of our vigilance patients occasionally get in who do not have either diphtheria or scarlet fever. Eruptions are often thought to be those of scarlet fever, which later prove to be due to some other cause; and sometimes patients are unceremoniously dropped at our door who do not belong there.

In 1897 there were 92 patients. That was our first complete year. In 1898 there were 99 patients; in 1899, 203; and in 1900, 338.

During the first year, 1897, there were 70 cases of diphtheria treated, which was 20.8% of the cases reported in the city. The next year 23.9% came in. In 1899, 29.7% entered and in 1900, 38.3%. Of scarlet fever cases, the first year we received 7% of the cases, in 1898, 9.7%; in 1899, 17.7%; and in 1900, 27.2%.

You will observe from these figures that not only have the actual numbers treated at the hos-

pital increased year by year, but the proportion of cases has increased also. In this city, as well as elsewhere, the mortality rate for diphtheria has been decreasing in recent years. This is due principally to the routine bacteriological examination of all sore throats, to the increasing popularity of antitoxin among physicians in private practice, and to the hospital.

There were 6 deaths from diphtheria the first year in the hospital, making the mortality rate 8.57, while the death-rate for the city that year was 17.62. Excluding the cases treated at the hospital, the rate was 20.24. Therefore the hospital lowered the city's mortality by 2.62. In the same way we find that the city's rate was lowered in 1898 by .85, in 1899 by 1.17 and in 1900 by .77; and that, too, in spite of the fact that most of the septic cases came to the hospital, as well as a large proportion of those requiring operation.

Since the opening there have been 479 cases of diphtheria treated, with 38 deaths, giving a mortality rate for the whole time of 7.93. The same good results were obtained also on the scarlet fever side. During the first two years there were no deaths from scarlet fever in the hospital. I would say here that the Board of Health has never yet compelled a case to enter the hospital. The hospital treatment is rather offered to them as a privilege, and their acceptance has been purely voluntary as far as the board has been concerned. Limited capacity has been one cause for this stand. Also, it was thought that the hospital would gain more patients in the end, would obtain the public confidence by its good reputation, and that the idea of it being a pesthouse, where all sorts of horrible, loathsome diseases are supposed to be huddled together, would gradually disappear. You can infer from the figures how successful this has been. The benefits derived from such a hospital are far greater, however, than are shown by simple mortality statistics. In fact, perhaps the most important ones are negative in visible results. By the complete isolation afforded these cases of infectious diseases, there is no question but that epidemics have been averted.

There are in Worcester, besides the public schools, many private institutions where large numbers of young adults are brought into close contact. There have been, in the past four years, repeated outbreaks of infectious diseases in these places. These have occurred especially in the private schools. Scarcely one has escaped, but by the immediate removal to the hospital of the cases as they appeared, the spreading of the disease was prevented. Not one of the institutions had to be closed. The appearance of these outbreaks in schools is acknowledged to be inevitable; but the facility offered by the city for the control of the same is sure to be appreciated by the patrons of these schools.

Therefore their reputation is enhanced, and indirectly that of the city also. Then, too, there are adults constantly being admitted from the boarding-houses and hotels, from factories and stores. Servants in private families are not

exempt. By these the privileges of the hospital are even still more appreciated.

Another important step gained by such a hospital is the advance which can be made by the properly directed study of these diseases in a suitable environment. The actual value of any particular method of treatment can be better determined in a hospital where the patients are constantly watched by trained observers, and where the officious interference of well-meaning friends and the other ill effects of home environment can be eliminated. Physicians, therefore, look to the hospitals for practical results of scientific research and discovery. The widespread use of antitoxin today is a striking example, and this hospital has done its share towards proving its life-saving powers.

Such, then, is the Isolation Hospital, its administration and the results, as we are able to judge of them at the end of four years.

We feel that the city government has the right to consider its money well appropriated, and that we can heartily encourage other cities, which have not already established such a hospital, to follow our example.

Clinical Department.

REPORT OF A CASE OF PORRO-CÆSAREAN SECTION FOR PLACENTA PREVIA CENTRALIS.¹

BY W. J. GILLETTE, M.D., TOLEDO, OHIO,

Professor of Abdominal Surgery and Gynecology, Toledo Medical College, Surgeon to Robinwood Hospital.

A REPORT of the following case of Porro-Cæsarean section for placenta previa centralis I think of sufficient interest to present to this society by reason of the bearing it may have upon the question whether or not Cæsarean section constitutes a justifiable new departure in its treatment.

Mrs. K., aged forty, American; father dead of Bright's disease; mother, one brother and one sister dead of tuberculosis; married twice; by first husband had four children; last marriage eight years ago, and this the first pregnancy as a result. Her labors had always been normal and very easy. During the first three months of present pregnancy suffered pain, and much of the time was not able to be about. During the first two months had occasionally discharges of blood, for which she could not account. Did not consider herself pregnant. After this there was no more bleeding till the fifth month, when it again appeared, accompanied by pain. This bleeding was not very profuse, and her physician, Dr. Lamona Shuey, was able to control it by rest in bed, and the administration of such remedies as are usual for hemorrhage. From this time on the patient could not be about, not only by reason of the hemorrhage, but the pain, which was unbearable when she stood on her feet. The first hemorrhage that created alarm occurred a week before Christmas, but was controlled as before.

¹ Read before the Ohio State Medical Society at its meeting in Cincinnati, May 8, 9 and 10, 1901.

Two weeks after another occurred, and so severe that Dr. W. W. Grube of this city was called in consultation. The nature of the trouble was recognized, and the induction of labor discussed; but it was finally decided to wait. On the Wednesday preceding the last hemorrhage, which proved so nearly fatal, another occurred, but was controlled as the others had been, and interference again not thought best. Following this were repeated small hemorrhages, but nothing that created great alarm until the evening of Jan. 26, when I was hurriedly called at about 9 in the evening to assist Drs. Shuey and Grube. The patient was said to be bleeding furiously and in great danger. I went at once and found the doctors much alarmed over her condition. When I reached them the bleeding had, however, for the time stopped. Tampons had been used to control it, but in spite of them the bed was soaked with blood, and the patient blanched white as marble from its loss. Her pulse was weak and from 130 to 140. The room had as much the appearance of a slaughterhouse as anything else. Curiously enough, at the meeting just prior, of our Lucas County Medical Society, the matter of the treatment of placenta previa was discussed, and I had mentioned then that Cæsarean section in my opinion was a justifiable procedure in some of these cases. To this Dr. Grube, among others, took violent exception, and was probably as pronounced as any one present in his condemnation of the operation; designating it as "a very unnecessary mutilation"; but now he was in the presence of "a condition and not a theory," two lives were depending on him for their safety, and he felt keenly (conscientious man that he is) his responsibility. He could not attack by any of the old methods with any prospect of success, for the os was dilated but little larger than a ten-cent piece, and every attempt at forcible dilatation was accompanied by hemorrhage, and tampons could not be packed tight enough, even with all the doctor's skill, to prevent blood escaping.

To the question from both physicians, "What shall we do?" I, with a good deal of hesitancy, having in mind Dr. Grube's very recent opposition to this operation, suggested Cæsarean section as an only hope; for in the condition of the patient, without any doubt, another hemorrhage would prove fatal. She could not lose more blood and live; and to dilate forcibly that cervix, bore through the placenta, turn the child and deliver, would be impossible without further great loss of blood, and I for one had not the heart to attempt it. To my surprise, a ready assent was given to my proposal, not only by the friends and Dr. Shuey, but by Dr. Grube as well. An ambulance was at once called, the patient hurriedly wrapped up, placed in it and taken to Robinwood Hospital, only a few blocks distant.

At 12.30 A.M., after a hasty preparation, in the presence of a number of invited physicians, I operated. Fortunately, in the meantime no further hemorrhage had taken place. When the patient was brought to the table the pulse was very