*On the best Mode of tabulating Recoveries from Insanity in Asylum Reports.** By D. HACK TUKE, F.R.C.P.

Much attention has been directed of late, more especially in America, by Dr. Pliny Earle, to the ordinary mode of calculating recoveries from insanity. Having examined with some care into the different results of several modes of making these calculations, I propose to state in this paper the conclusions to which I have been led, and to suggest an improved form of tabulating cures in the Reports of our asylums.

Great stress has been laid on the importance of distinguishing between *persons* and *cases* as regards recovery, and I have therefore endeavoured to ascertain among other things the different results obtained, according as we ascertain the recoveries from *attacks* of insanity or those of *persons*; and when percentages are taken, according as we calculate the recoveries of *cases* on the cases admitted, or the recoveries of *persons* on the persons admitted. It should be observed that Dr. Thurnam did not overlook the importance of this distinction in his "Statistics of Insanity," but it has been too frequently ignored by asylum physicians.†

I am greatly indebted to Dr. Savage for placing his admission books at my disposal, and knowing, as I have reason to do, how much time and labour their examination involves, I must express my obligations to Dr. Bacon for supplying me with most valuable particulars extracted from his books for my benefit. The labour he has expended is another proof that the more persons *have* to do, the more they *can* do, and in fact his labour in my service should be regarded as one of his contributions to this section. My cordial thanks are also due to Dr. Chapman and Dr. Manley, the Superintendents of the Hereford and the Hampshire Asylums; to Dr. Needham, of Barnwood House, Dr. Blandford, Dr. Stilwell, Dr. Baker, of the York Retreat (in his absence Dr. Colin Campbell), and others.

I am unable, however, to make use on the present occasion of more than a small part of the information thus obtained, as the limits of time circumscribe my remarks to a consideration of the points which I have indicated.

* Read at Cambridge in the Psychological Section of the British Medical Association Meeting, August 13, 1880.

† "The distinction between the number of cases admitted into any institution, and the number of persons in whom those cases occurred, is an important one in a statistical point of view; and in the construction of these Tables has always been kept in sight."—*Op. cit.*, p. 66.

My first intention in examining the books at Bethlem was to distinguish the persons from the cases as regards admission and cure from an early period, but I found this a more serious undertaking than I had anticipated, and one which when attempted yielded doubtfully accurate results. I therefore restricted the enquiry to ten years, viz., from January, 1869, to December, 1878, stopping short somewhat of the present year in order to obtain as many completed cases as possible.

Now during this period there were 2,241 admissions, and the number of discharges on account of recovery amounted to 1,077. This number corresponds to that which is ordinarily given in our Asylum Reports under the head of "discharged recovered," and is, without explanation, in danger of misleading the unwary examiner of asylum statistical tables. I do not now allude to percentages, which do not bring out the difference so strikingly. This number really represents only 962 patients who recovered. One of these recovered for the tenth time, so that within a certain period he had figured as ten persons discharged cured in the gross number of recoveries. The number of persons admitted was 2,094.

Let us now compare the cures per cent. when calculated as usual—that is to say cures of attacks—however frequent in the same patient, upon the admissions, on the one hand, and the cures of persons calculated upon admissions of patients on the other. In the former instance, it was 48·05; but in the latter not more than 45·94—the difference between the total cures and those of persons being 115.

So, again, with the Cambridge Asylum. The replies of Dr. Bacon to my questions show that while there were out of 1,968 admissions during the twenty-one years the Asylum has been opened, 696 discharges on account of recovery, there were in fact only 586 patients cured. One had recovered seven times, 4 five times, 7 four times, 12 three times, 43 twice, and 519 once. Again, calculating the recoveries, including re-cures, on the total number of admissions, the percentage was 35·36; while calculating the recoveries of persons on the admissions of persons, they were less, viz., 34·19, the difference between the total cures and those of persons being 110.

In Table I. will be seen these different modes of calculation worked out for more asylums. It will be observed that though considerable, the difference expressed in percentages is not so patent as when the gross numbers are given. The reason of this is that the *re-cures* are, to a certain extent, balanced by the *re-admissions*. The discrepancy is greater in

a series of figures published by Dr. Mitchell in the "Journal of Mental Science," January, 1877. There I find that the cures per cent. on the ordinary mode of calculation, were 47·3, while the calculation worked on persons was only 41·5, showing a difference of 5·8. In Asylums E and F the numbers happen to be higher when worked on persons.

TABLE I.

Showing percentages of Recoveries calculated on Cases and Persons in Various Asylums.

		ON CASES.	ON PERSONS.
Asylum	A	48·05	45·94
"	B	43·04	40·00
"	C	35·47	33·88
"	D	35·36	34·19
"	E	31·01	31·61
"	F	29·22	30·03
"	G	27·41	26·61
"	H	24·83	26·03
Dr. Mitchell		47·3	41·5

That the plan of including re-cures in the percentage is not necessarily balanced by the re-admissions—that the calculation of cases cured on cases admitted does not always prove identical with that of persons cured on persons admitted, though it may often happen to be very nearly the same—may further be shown by this very simple Table, for which I would apologise, did I not know that as a matter of fact some difficulty is felt on this point.

TABLE II.

Usual Mode of calculating Percentages. Cases of Recovery on Cases of Admission.

RECOVERED.	ADMISSIONS.	RECOVERED.
1	1. Jas. Smith ...	... 1
1	2. Jno. Jones ...	... 1
	3. Thos. Brown	
	4. Hy. Robinson	
1	5. Wm. Dawson	... 1
1	6. Chas. Mason...	... 1
	7. W. Marriage	
1	8. Henry Pasco...	... 1
	9. Frank Pearson	
	10. Geo. Hancock	
1	11. John Jones (re-admitted)	Died insane.
1	12. James Smith (ditto) ...	1
Recoveries ... 7	12 Admissions (cases)	6 Recoveries.

Here we suppose 12 Admissions and 7 Recoveries in the first column. As of the admissions two were re-admissions, only ten persons were admitted. It may be said that as you add the two re-admissions to the admissions, and two to the first column—the Recoveries—it will come to the same thing, whichever of the modes of calculation in question we adopt. But a glance at these figures will show that such is not the result, for the five recoveries do not bear the same relation to the ten persons admitted, as the seven cures bear to the twelve admissions. In fact, there were 50 per cent. of the persons cured, while there were 58 per cent. (58·3) of the admissions followed by recovery.

Let us, however, suppose an instance in which the two methods of calculation would produce the same percentage. This is shown in the column to the right. Suppose that John Jones, instead of recovering on his re-admission had not recovered, but died insane, we should then have twelve admissions as before, but only six recoveries—the same proportion as is borne by the numbers when persons only are taken as the basis of calculation, or 50 per cent. in both instances.

The other mode of calculation, that of persons on persons, is represented in Table III.

TABLE III.

Showing the more correct Mode of calculating Percentages.
Persons who Recover on Persons Admitted.

ADMISSIONS.		RECOVERED.	
1. James Smith	...	...	1
2. John Jones ...	...	...	1
3. Thomas Brown			
4. Hy. Robinson			
5. Wm. Dawson	...	...	1
6. Charles Mason	...	...	1
7. W. Marriage			
8. Henry Pasco	...	...	1
9. Frank Pearson			
10. Geo. Hancock			
<hr/>		<hr/>	
10		5	

What I contend for, then, is this—that it is mere chance whether the difference between the results of the two modes of calculating the percentages is small or large, or identical as in this instance; the only supposable case in which the customary method would give a correct result being that in

which the number of cases which recover bears the same proportion to the number of cases admitted, as the number of persons who recover bears to the number of persons who are admitted, in which event the percentages are, as we have already seen, identical.

But it is said that we *ought* to reckon the re-cures in our calculation, and that the ordinary method does this. On the contrary, whether they should be included or not, this method does not do justice to them, for they are largely balanced, as we have seen, by the re-admissions. If it is desired to make them tell, we ought to calculate the cures and re-cures on the persons admitted. This would raise the percentage of Bethlem Hospital recoveries to 51.43, and of Cambridge to 40.61. With Dr. Mitchell's cases the percentage on this mode of calculation is given by him at 65.6.

The present system of calculating the percentage does not, therefore, secure that which some of those who employ it suppose they gain.

On the general question whether we should or should not allow for re-cures, I fully admit that the number of times any patient recovers should be stated in our tables, but this should be kept so distinct that those who consult them should be able to distinguish between the persons who have recovered and the number of recoveries, for I cannot agree with those who hold that we should regard each cure of insanity in a patient in the same light as each cure of a physical disease—pneumonia, for instance. The famous Dr. Willis, George III.'s medical attendant, when giving evidence before a Committee of the House of Commons, in 1789, and astonishing its members by a statement of the number of cures he effected, when asked whether every cure in the same person was included in the calculation of the whole number, replied—"If a person has been twice brought under my care, and twice cured, I reckon two cures, as I should of a fever." But it seems to me that our experience proves but too clearly that the parallel is not a fair one, for the relapses after pneumonia and fever, when once cured, would be much less frequent than in mental disease; and the patient himself would be generally a sounder man *physically* in the interval than the re-cured lunatic is *mentally*. Besides, from the different functions of the organs attacked, the permanent consolidation of a portion of one lung may allow a man to perform efficiently the duties of his position in life; but the remains of an infinitesimal lesion of the brain may virtually

incapacitate him from the efficient performance of his duties in the intervals between the attacks.

I most fully admit, however, that as to the credit of treatment, these repeated cures of the same patient may have shown the skill and taxed the patience of the Superintendent just as much as if occurring in separate patients; and as to the individuals themselves, they have no doubt in many instances enjoyed a fair share of health in the intervals of their attacks.

All I object to is allowing figures to go forward, year after year, to the public, representing the gross number of recoveries as the number of persons restored to society able to resume their place as useful members of the community; for without some clearer mode of presenting the actual facts than at present obtains, they will believe that 100 recoveries represent 100 persons enjoying the use of their reason, instead of, in too many cases, oscillating between the world and the asylum. Then in their ignorance of the tendency to the recurrence of insanity, they are astonished at the ever increasing demands for new asylums, and the conclusion, out of all proportion to the fact, that there has been an increase of insanity. Nor will these misconceptions be dispelled till it is stated in characters so legible that he who runs may read, how many of the published cures are only re-cures of relapsed cases. Dr. Earle writes to me:—"The British Superintendents are careful to inform the readers of their reports how many of their admissions are re-admissions. Why are they not equally careful to show, *in their recoveries*, what proportion or what number of them are the recoveries of the re-admitted patients?" I trust that before long this question will not have to be asked.

I would propose to supplement the present Tables in the Annual Reports of Asylums in the following manner.

I would add to what is already usually given (*viz.*, the re-admissions and the number of persons admitted), the number of times each patient has been admitted.

This is exhibited in Table IV.

I would, in the Recovery Table, show separately in addition to the number of cases recovered—

1. The number of *persons* who recovered.
2. The number who relapsed, and who did not relapse.
3. Of those who relapsed, the number who had again recovered at the date of the Report, thus showing, when added to the previous cures, the net number of recovered persons.

I have taken as an illustration the Cambridgeshire Asylum, the materials for forming the Tables (IV. and V.) being obtained from Dr. Bacon.

It will be seen that while 34·19 per cent. of the persons admitted were cured, 103 or 17·5 per cent. of these relapsed, leaving 28·2 per cent. who did not (so far as the asylum is concerned) ; that ultimately, allowing for cases of relapsed patients, 31·15 per cent. were cured at the date of Report.

TABLE IV.

Admissions and Re-admissions from opening of Asylum in 1858 to 1880—

Cases admitted (total cases under treatment)	...	1,968
Re-admissions ...	...	257
Persons admitted (total persons under treatment)...		1,711
Re-admitted once	...	257
Do. 2	...	
Do. 3	...	
Do. 4	...	
Do. 5	...	
Do. 6	...	
Do. 7	...	
Do. 8	...	
Do. 9	...	
Do. 10	...	

TABLE V.

Recoveries from opening of Asylum to 1880—

Total cases				Total persons			
or 35·36 per cent.				or 34·19 per cent.			
			696				586
Recovered	...	once	...	Recovered persons re-ad-			
			519	mited ...	...	...	103
"	...	2	...	or 17·5 per cent.			—
"	...	4	...	Recovered persons who			
"	...	5	...	have not relapsed	...		483
"	...	6	...	or 28·2 per cent.			
"	...	7	...	Relapsed persons dis-			
			1	charged cured...	...		50
							533
696 recoveries representing 586				Or 31·15 per cent. of per-			
persons recovered.				sons admitted			
				...			

Such a Table would afford practical information in regard to the proportion of patients who relapse, so far at least as the asylum can be cognisant of the subsequent history of the patients it has treated, and would no doubt present anything but a bright picture of the stability and permanency of the cures effected; but it is far better that the truth, however unpleasant, should be clearly recognised. Thus I find that at the Hereford Asylum that one patient was first admitted in consequence of a 5th attack, and recovered from that and a 6th, 7th, 8th, 9th, and 10th attack. He had slighter attacks at home, not sufficient to bring him to the asylum, in the intervals. Of this patient, Dr. Chapman says, that although counting six recoveries, he really did not recover at all. Another patient, admitted in consequence of a 4th attack, recovered from that and from a 5th, 6th, 7th, 8th, 9th, 10th, and 11th attack. Another, admitted for a 2nd attack, recovered from it and from a 3rd, 4th, 5th, and 6th attack. Lastly, two patients, each admitted on the 4th attack, recovered from it and from a 5th and 6th attack. All these, and several others, Dr. Chapman has no doubt will return again and again. How can we call these "cures"? Is it not a misnomer? Dr. Manley points out in his last report that 40 per cent. of the recoveries since the opening of the asylum have relapsed, thus reducing the percentage from 31 to 18. Taking the recoveries from the *first* attack at the York Retreat up to a certain date, as many as 65 per cent. relapsed—some, of course, recovering again. The cures at first were 53 per cent.; then, after deducting relapses they were only 18 per cent.; while allowing for recures the latter number was raised to 26 per cent.

Summary.

I.

That the Statistical Tables in the Reports of the Asylums for the Insane should contain a clear statement, not only of the re-admissions (specifying the number for each person and distinguishing between re-admissions after recovery, improvement, &c.), but of the re-cures, showing separately the number of *persons* who have recovered.

II.

That the percentage of recovery given in these Tables should be that of *persons* recovered, calculated on *persons* admitted.

III.

That the usual plan of obtaining the percentage of recovery by calculating the cases of recovery on the cases admitted, though frequently producing nearly the same result, does not afford a reliable proportion of the number of persons who recover to the number of persons admitted.

IV.

That if it be desired to include the number of times the patient recovers, this object is not secured, as some suppose, by the usual method of calculating the percentages of recovery, but by calculating the gross number of cures and re-cures upon the persons admitted.

V.

That the present plan of jumbling together in the Statistical Table of Recoveries, the gross number of cures and re-cures, is misleading, and occasions exaggerated views as to the curability of insanity, and proportionate disappointment when the demand is made for additional asylums.

CLINICAL NOTES AND CASES.

Cases of Tumour of the Brain in the Insane. By THOMAS LYLE, M.D., Borough Asylum, Birmingham.

Tumours of the Brain amongst the insane are so very rare that I think any clinical record of such cases cannot be without interest, not only to the medico-psychologist, but also to the general practitioner.

I will, therefore, bring before your notice two cases of Tumour of the Brain, one of which came under my care in June, 1879.

T. H. admitted 30th June, 1879, from his own home. Age 40, married, occupation a boatman on the canal. First attack. His wife states that he has always been a very steady, respectable man. About six months ago, one day while at work, he fell off the boat into the canal, and was nearly drowned before assistance could be rendered him. After he was taken home it was found he had lost the use of his left arm and leg. He remained home from that time until he came to the asylum. When admitted into the asylum he had regained the full use of his paralysed side. There is no history or

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