WHO’s latest update on leprosy was published in the Weekly Epidemiological Record on 15th August, entitled: ‘Global leprosy situation, beginning of 2008’.1 The report is accessible on the web at www.who.int/wer. Most readers of Leprosy Review are familiar with these updates, as the surveillance data presented in them are cited routinely in descriptions of leprosy trends in the world.

Surveillance is crucial in public health – to inform, monitor and guide disease control activities. In order to perform these tasks, surveillance data should be comprehensible and valid. Leprosy statistics pose particular problems for surveillance, for several reasons.2–4 First there are problems with diagnosis and classification in the field, even in good programmes. Second, there are problems with stigma and confidentiality which affect reporting practices and official data. Third, there have been major operational changes in many countries in recent years, relating to ascertainment and registration of cases, with important implications for case numbers. Without information on these (which is rarely available), comparisons are difficult. Fourth, WHO can only use the figures sent to it by member nations, and has limited scope to influence them. There are often delays in reporting from some countries and this adds further difficulties in comparing data from year to year. Fifth, leprosy statistics have emphasised prevalence, a statistic which is difficult to interpret because of its dependence on treatment policies and duration on registers. Finally, there have been ‘political’ pressures associated with the elimination initiative, which appear to have influenced the manner of reporting statistics, in particular prevalence statistics, which make them difficult to interpret in the absence of clarifying information. The WHO Leprosy Unit has attempted to move away from these latter problems in recent years, by de-emphasising prevalence and emphasising case detection.

The latest report’s format is identical to last year’s,5 with the same six tables, and a brief text. The most important table is number six, which presents the raw data which are the basis for all the other tables. It has ten columns: country/territory, prevalence, new case detection, new MB, new female, new children, new grade 2 disability, relapses, ‘cure rate’ PB and MB. Readers with serious interests in leprosy in the world will wish to study this table themselves. Here are some things to note:

1. Data from 118 countries or territories (C-Ts) are presented. This contrasts with last year’s table, which presented data from 109 C-Ts. This does not mean nine new C-Ts this year.

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In fact, 17 C-Ts included last year are omitted this year (among them Kenya, Tanzania, Bolivia, USA, Australia, . . .) and 26 C-Ts appear this year which were not in last year’s table (among them Ethiopia, Ghana, Zimbabwe, . . .). It is more complicated than this, however, as nine of the 26 countries not included in this 15 August Table were included in a supplementary table published 2 November 2007 (including Ethiopia and Zimbabwe). Six countries appear only in the November 2007 supplement (including Chad, Malawi, Sierra Leone, . . .). Once again, the European region has been omitted entirely (though it is known that autochthonous leprosy persists in several countries of southern Europe and cases are diagnosed in immigrants throughout the continent). We see that 19 C-Ts submitted zeros for all columns. This is good, as it implies that ‘nil returns’ were received. The 19 nil returns include Algeria, Botswana, Iraq, Jordan and Mongolia, each of which countries is surrounded by populations with leprosy. We encourage readers to correspond if they can confirm or refute the zero leprosy reported status of these five countries.

2. The second column is headed ‘Registered prevalence a’. Referring to the foot of the table we are told that this means ‘a prevalence per 10,000 population, beginning of 2008’. This is incorrect – the table presents numbers of cases, not rates. More interesting, we see that this column alone is blank for nine countries: Argentina, Columbia, Cuba, Haiti, Peru, Uruguay, Thailand, Morocco and United Arab Emirates. There is no mention of this in the text – but let us presume that these countries are to be congratulated for following the guidance of the 2005–2010 global strategy and have ceased to use prevalence statistics at all. Other countries should follow their example.

3. The third column is headed ‘No. [number] of new cases detected, 2007’. The total reported comes to 254,525, which is compared (in Table 2 WER) to last year’s total (for 2006) of 265,661, thus a decline of 11,136 or 4%. However, if one refers to last year’s WER article (22 June 2007) one sees that the total new cases in 2006 was given as 259,017, only 4,492 more than in 2007. Although it is not explained in the text, the summary Table 2 in the latest 15 August WER compares updated (more complete) data from last year (including countries in the November supplement) with this year’s less complete data. However, this has a relatively small effect. The most striking trend in global leprosy in recent years is the decline in India which reported 137,685 new cases in 2007, representing a decline of 74% from the 537,956 reported in 2000. This implies that India’s contribution to the global leprosy burden has declined from 73% to 54% of the world’s newly detected leprosy cases over these years. It is unclear the extent to which this decline reflects changes in ascertainment and criteria for new cases to be counted in India – e.g. whether single lesion cases are being systematically counted, and whether cases are being counted only if the diagnosis has been confirmed by medical supervisors (both of which procedures have been used in India). Without such information, this important trend in India’s (and the world’s) statistics remain difficult to interpret.

4. Insofar as new case detection is a surrogate for incidence, and as prevalence = incidence times duration, we may look at the ratio of column 2 (prevalence) to column 3 (new cases) to see an estimate of average duration of cases in different countries. In theory, this ratio should reflect – or at least correlate with – the proportion multibacillary, insofar as multibacillary cases are treated longer. We see the ratio is 212,802/254,525 or 0.84 for the global totals, indicating that cases are held on registers for about 0.84 years, or 10 months, on average. As shown here (see Table A), cases appear to be held on registers on average twice as long in the Western Pacific compared to the South East Asia region.
5. A close look shows further oddities. In Iran, Korea and Malaysia the ratios are 182/25 \(\approx 7.3\); 363/12 \(\approx 30\); and 681/190 \(\approx 3.6\), respectively, suggesting that cases are held on registers and counted as prevalent for many years in some countries. Quite beyond the issue of what is best for the patient (for example does this imply long-term surveillance for care of these patients?), we once again see the non-interpretability and non-comparability of prevalence statistics.

6. The next four columns (on new MB, new female, new child, and new grade 2 disabled cases) should give some insight into what is happening in each country or territory. It is pointed out in Table 5 (WER) that each of these statistics has a wide range between countries. A close look reveals odd things – for example we read that there were 1459 MB cases detected in Sudan in 2007 but only 940 prevalent at the start of 2008. Something is wrong here (as MB cases are treated for at least a year, the number of cases registered at the start of a year must be at least the number of MB cases registered the previous year). We are told in a footnote to Table 4 (WER) that totals for 2007 include Southern Sudan – does this mean that only 2007 detection but not 01/01/08 prevalence for 2008 were included for southern Sudan (if so here is another example of missing prevalence data)? Without further clarification we cannot solve this problem. The low proportion of female cases (only a third of the world’s detected cases last year) suggests considerable under-ascertainment worldwide. The very low proportion female and high proportion multibacillary reported from Africa do not fit with traditional descriptions of leprosy from this continent. I do not understand these figures.

7. Relapse statistics are given in column 8. These are of considerable interest, given their potential relevance for drug resistance. Three countries provide more than 80% of the world’s total of 2355 reported relapses (Brazil: 1534; Ethiopia: 227; China: 161). India reported no relapses – probably reflecting a de-emphasis of relapse cases for several years as one of the measures taken to reduce reported prevalence in that country. It is apparent that the vast majority of the relapses in the world go unreported (at least to WHO) with present systems.

8. Columns 9 and 10 are labelled ‘cure rate (%)’, in an effort to encourage cohort monitoring of cases series. These statistics were provided by only 16 of the 118 reporting countries. The column was added only 2 years ago and has not yet become routine. It should be pointed out that the heading is inappropriate – this is at best a ‘treatment completion rate’ and not a ‘cure’ rate. The method was borrowed from tuberculosis

<table>
<thead>
<tr>
<th>WHO region</th>
<th>Registered prevalence 01-01-08</th>
<th>New cases detected 2007</th>
<th>Ratio: Prev/NCD</th>
<th>New MB Number</th>
<th>%*</th>
<th>Number</th>
<th>%*</th>
<th>Relapses Number</th>
</tr>
</thead>
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<tr>
<td>Africa</td>
<td>30,055</td>
<td>31,037</td>
<td>0.97</td>
<td>22,518</td>
<td>73</td>
<td>7021</td>
<td>23</td>
<td>336</td>
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<td>Americas</td>
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<td>41,978</td>
<td>1.18</td>
<td>22,957</td>
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<td>18,423</td>
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<td>171,552</td>
<td>0.71</td>
<td>87,532</td>
<td>51</td>
<td>53,455</td>
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<tr>
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<td>1660</td>
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<td>60</td>
</tr>
<tr>
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<td>5867</td>
<td>1.39</td>
<td>4051</td>
<td>69</td>
<td>1595</td>
<td>27</td>
<td>192</td>
</tr>
<tr>
<td>Totals</td>
<td>212,802</td>
<td>254,525</td>
<td>0.84</td>
<td>140,174</td>
<td>55</td>
<td>82,154</td>
<td>32</td>
<td>2355</td>
</tr>
</tbody>
</table>

*Percentages among New cases detected 2007
control programmes, but the logic has been lost in the transfer — the statistic gives the proportion of patients who competed their course of MDT with the prescribed number of months — but there is no test for ‘cure’ in leprosy (in TB the cure statistic refers to sputum smear negativity).

The other tables in the report present summaries of the figures in Table 6 (WER), and relate them to previous years. Given the problems in the raw data which are mentioned above one should be cautious about these summaries. Table 3 (WER) is misleading. It is titled ‘Prevalence of leprosy and number of new cases detected in countries with population >1 million that have not yet eliminated the disease.’ Stop! Leprosy has not been eliminated from any countries in the usual sense of the term – the leprosy usage of ‘elimination’ requires the qualifier phrase ‘as a public health problem’ (and preferably with the further clarification ‘arbitrarily defined as a prevalence less than 1 per 10 000’). One sees that Timor Leste has appeared this year among the countries failing to reach this threshold — apparently this is because its population has just reached 1 million, not because of setbacks in leprosy control.

It should be clear from the above that global prevalence statistics are no longer comparable at all, being based upon a changing and diminishing series of countries providing data, let alone obviously different definitions of prevalent cases. Given these problems they are of little use in monitoring global leprosy trends or comparing countries. To its credit, WHO has recognised this problem in recent years, and the current (2005–2010) Global Strategy urges a concentration upon new case detection. It may be argued that WHO was right to emphasise these statistics in the past, in order to encourage cleaning of registers and stimulate the use of shortened MDT regimens, but this time has passed. Prevalence statistics can now be dispensed with altogether.

One of the main problems in interpreting global data is that of the changing numbers of countries contributing to the global summaries. One way to improve this would be to change the format of Table 6 (WER) in the future, so that all countries are listed, with clear indication if no report was received, versus a nil report, versus a numerical report. This would clarify what data are available and what countries have not reported at all, and would improve our ability to make valid comparisons over time.

WHO has been correct to encourage the shift to case detection statistics and also to introduce the reporting of relapses and treatment completion statistics in recent years. Comparison of such reporting between countries in this recent WER suggests that much work still needs to be done within some leprosy endemic countries, to optimise the management of leprosy control.

References