

Infant mortality

The relevance of population health indicators

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In this issue of the journal Daniel Reidpath and Pascale Allotey provocatively wonder if disability adjusted life expectancy (DALE) brings more information than infant mortality rate (IMR) when comparing the overall health status of different populations.¹ It is a relevant question because on the one hand IMR is easy to compute and to understand. It requires mortality and population data, which are not too difficult to collect. On the other hand DALE is quite difficult to compute and to precisely understand. It requires a lot of data that are much more difficult and expensive to collect thus raising additional data quality concerns.

When the WHO published for the first time an estimation of DALE for the its 191 member states for the years 1997 and 1999,² the results seemed surprising: a quasi perfect linear correlation between life expectancy at birth (LE) and DALE with a constant gap of about 7.1 years between LE and DALE:

$$DALE \approx LE - 7.1$$

from LE=45.6 and 48.0 years respectively for men and women in some WHO African Region to LE=70.3 and 82.7 years respectively for men and women in Western Pacific WHO Region, as illustrated by figure 2.2 of the *World Health Report 2000*.² This figure was published without any comments. This was also amazing because if the figure is true it is the best possible news, illustrating a huge compression of morbidity when moving from low to high life expectancy! All the years gained are healthy years! So far from the initial worries! The rationale to develop disability free life expectancy (DFLE) was the fear that increases in life expectancy in the most developed countries are accompanied by an expansion of morbidity.³⁻⁶ Large variations in the prevalence of perceived health or difficulty in daily life are observed in the

European Union where countries are very similar and use harmonised data collection protocols run by the most prestigious statistical bureaux.⁷ Thus calculations show that DFLE is poorly related to LE,⁸ justifying its calculation within Europe in addition to life expectancy.

DALE, now officially called HALE (health adjusted life expectancy) and presented as healthy life expectancy, based on "more than 15 years of work",⁹ is quite complex. It aims to combine and summarise all states of health in one figure. Thus the results raise two questions. Firstly, can all the states of health considered, once summarised in one figure, correspond to the same number of healthy years lost whatever the value of life expectancy? No theory related to the demographic, epidemiological, or health transitions foresaw such a scenario. Secondly, taking into account limited data availability in most countries, are not the data, mainly estimated from or adjusted to mortality, manufacturing DALE similar to LE? If DALE/HALE hardly brings more information than LE, it is much easier to focus on mortality data still deficient in many developing countries. And, as IMR is a very good proxy for LE, it is much better to focus on mortality data during the first year of life to improve the quality of the population health indicators used.

Moreover, WHO still needs to demonstrate that its DALE/HALE summarises properly the different health dimensions and level of severity in countries with high data quality and well established chronological series such as England and Wales where it is possible to monitor a redistribution of the disability severity level.¹⁰ In the most developed countries, the main interest yields on active life expectancy (ALE) or DFLE, recommended by the G7¹¹ and newly established as structural indicator by the European Union, because what is important when LE as well as the proportion of

old and oldest-old people is high is to know how long people can live without difficulty in activities of daily life (ADL or IADL type) and how long they can live independently without the need of someone's help for daily living.

Thus if for the less developed countries, the "here and now" reactivity of the IMR is particularly relevant, for the most developed countries contrasting ALE or DFLE to LE is essential. In this context, DALE/HALE intends to permit comparison between all the countries. The point is to know whether it is relevant to use, as population summary health indicator for comparing all the countries, an indicator that is poorly relevant for both for the less and the most developed countries.

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