Making people count: the unequal world of global health data

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Ratios of observations to estimated numbers:

Figure 1 Ratio of observations used in the Global Burden of Disease model to the number of cirrhosis deaths estimated for 2010, by country.

BMC Medicine 2014, 12:159
Tensions between global estimates and counted data:

Effects of applying sophisticated modelling methods

Proportion of vital events registered

Africa

Asia

Americas

Europe

Australasia
Verbal autopsy as the most pragmatic solution for cause-of-death data:

- Verbal autopsy (VA) interviews can be carried out by school leavers with some training.

- WHO recently updated international standards for VA to the WHO 2016 version – using a tablet, interviews take around 15-20 minutes per case.

- Interview findings can be processed automatically using computer models – e.g. InterVA – a cheap and rapid process.

- What is needed to make this happen on a large scale?
Effectiveness of verbal autopsy:

- Routine VAs automatically processed with the InterVA model achieve high co-validity with Global Burden of Disease cause-specific estimates for low- and middle-income countries.

Concordance correlation between GBD and INDEPTH cause-specific mortality findings in 13 low-income and middle-income countries, by six major cause of death categories. Each point represents one country, cause category, age group, and 5-year period.

Lancet Glob Health 2016; 4:785-6
Technical barriers? – the example of child mortality:

• There are about 670 million under-5 children in the world, and about 6 million under-5 deaths each year.

• If the basic who-where-when details of every birth were recorded, the capacity needed to store a 250-character record for each of the 670 million under-5s is well within the space available on a modern laptop.

• There would still be plenty of room for much more detail on each of the 6 million under-5 deaths.

• No fancy modelling or estimating would be needed.

• Thus IT infrastructure is not the major constraint – but effective data processes on the ground – particularly in Africa and Asia – don’t exist.
The need for worldwide vital registration:

To catch up on VR in the unregistered areas of the world, the world needs to implement:

1. Routine identification of deaths
2. A standard verbal autopsy (VA) tool
3. Consistent, automated cause-of-death assignment methods
4. Portable, robust implementations for easy field use with easy language adaptation
5. Transparent analyses and interpretations
Generalising to global development:

• Good information systems and data, well implemented on the ground, are critical to development in general

• Epidemiologists talk about “unit of observation” – the level at which things are observed (country, local area, household, individual, etc.)

• Progress in global development (and being able to document that progress) depends critically on good individual-level routine observation – not just making high-level generalisations and estimates

• “Everyone counts – so count everyone” (Lancet 2015; 386:1313-1314)