

The case for verbal autopsy in health systems strengthening



The quest for robust, affordable, consistent methods for filling global health information gaps is familiar. But frequently the focus is on how the international community can extract population-based data, rather than how countries and communities can use robust methods to understand and act on their own health and disease burdens.

This week, researchers are convening in Vancouver, Canada, for the 4th Global Symposium on Health Systems Research organised by Health Systems Global. At the same time, the INDEPTH Network (the International Network for the Demographic Evaluation of Populations and Their Health) is meeting in Kampala, Uganda. INDEPTH and Health Systems Global are distinctive groups committed to research for action.

This commitment is surprisingly rare. Health researchers tend to avoid the worlds of policy and politics, prioritising technical sophistication over conceptual depth, and emphasising scientific productivity but often with limited attention to uptake among non-academics and local decision makers.¹ Health systems research has emerged in response, as a field working with and for those who organise and deliver services, rather than in a process that is separate to it.² In this context, we reflect on verbal autopsy (VA) as a means to connect data and action, as well as contributing to national and global knowledge.

VA is a pragmatic approach used in many low-income and middle-income countries for determining cause-specific mortality levels where registration of deaths is otherwise incomplete. VA uses a structured interview with final caregivers on the medical signs and symptoms of the deceased prior to death, which are interpreted to assign probable medical causes. WHO has led an international process of standardising interview protocols and VA cause-of-death categories based on the International Classification of Diseases to facilitate cross-national analyses,³ and automated models such as InterVA⁴ and Smart VA⁵ offer pragmatic approaches to processing VA data that are cheap, consistent, and amenable to widespread application by operators with school-level skills. VA has also been adapted for use on mobile devices (figure), offering considerable operational efficiencies.

At the national level, following widespread use in research environments, VA has become a recognised source of mortality data where other methods are not

used. The two most promising avenues to scale up VA are in enhancing civil registration and vital statistics (CRVS) systems and sample registration systems, as highlighted in *The Lancet Series Who Counts*⁶ and *Counting Births and Deaths*.⁷ Several African and Asian countries have included VA in sample registration systems, generating useful information on cause of death patterns, as well as on mortality levels and trends.

Whether and how VA contributes to national CRVS systems is ultimately a matter for countries themselves. For now, WHO VA standards, InterVA, and SmartVA offer effective approaches to tracking causes of death that are amenable to cost-effective scale-up, offering new opportunities for evidence-based services. Accumulating methodological and substantive evidence bases will be key to understanding the potentials and obligations of VA for mortality registration within and beyond the health system.

By virtue of the deaths it investigates, VA is also an opportunity to better understand social exclusion from access to health systems. Social autopsy (SA) is a related technique that seeks to understand the detail of how and why deaths occur in particular contexts. SAs collect and analyse information on the circumstances of mortality to identify social and health systems failures related to deaths.⁸ Alongside medical causes of death, categorising the circumstances of mortality at scale is important for understanding mortality.⁹

Lancet Glob Health 2016

Published Online
November 17, 2016
[http://dx.doi.org/10.1016/S2214-109X\(16\)30332-1](http://dx.doi.org/10.1016/S2214-109X(16)30332-1)



Figure: Mobile VA in South Africa

Methods also exist to blend VA with local knowledge using participatory processes.¹⁰ Participation aims to understand and transform exclusion by shifting control over knowledge production towards those most directly affected. VAs conducted in partnership with local health authorities and communities can also be used to provide data that are both based on core standards and locally relevant. Further development of approaches to VA in local contexts, expanding interpretation, and action with communities and health authorities will add important value and relevance to evidence-based approaches to health systems strengthening at subnational levels.

Finally, at a global level, considerable efforts are invested in estimating the burden of disease, a process to which VA data contribute substantially.¹¹ In isolation, however, global estimates can be mistaken as definitive and divert investment away from the settings in which information systems and good data are needed most.¹² Despite attention to and investment in quantifying global burdens of disease, the majority of deaths in Africa and Asia remain unrecorded. This seriously limits the veracity of disease burden estimates and, more crucially, the capacity of local health systems to respond.

In a Sustainable Development Goals context where valid and reliable data are required on a grand scale, VA has a potentially important role to play in connecting information on the health of people excluded from access to health systems to local health systems stakeholders. Priorities to address in expanding this role include understanding responsibilities surrounding cause of death information at scale—eg, ethical and operational issues around providing direct feedback on cause of death to interviewees; developing an evidence base to inform methods; developing and applying contextually relevant approaches to VA; expanding interpretation and action with communities and health authorities at different levels; and ensuring information ownership by end users that works towards shared goals and fosters relationships to support and sustain positive change.

Employing VA methods in health system strengthening approaches can inform local change and thereby achieve aggregated global impact.

*Lucia D'Ambruoso, Ties Boerma, Peter Byass, Edward Fottrell, Kobus Herbst, Karin Källander, Zoë Mullan
University of Aberdeen, Aberdeen, UK (LD'A); WHO, Geneva, Switzerland (TB); Umeå University, Umeå, Sweden (PB); University College London, London, UK (EF); Africa Health Research Institute, Durban, South Africa (KH); Malaria Consortium, London, UK (KK); Karolinska Institutet, Stockholm, Sweden (KK); and *The Lancet Global Health*, London, UK (ZM)
lucia.dambruoso@abdn.ac.uk

This Comment is based on a round-table discussion held at University College London on Oct 17, 2016, funded by a Health Systems Research Initiative grant from the UK Department for International Development (DFID)/Medical Research Council (MRC)/Wellcome Trust/Economic and Social Research Council (ESRC) (MR/N005597/1). We declare no competing interests.

Copyright © The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY license.

- 1 Carey G, Landvogt K, Barrakt J, eds. *Creating and implementing public policy*. Oxford: Routledge, 2016.
- 2 World Health Organization. *Changing mindsets: strategy on health policy and systems research*. Geneva: WHO, 2012. http://www.who.int/alliance-hpsr/alliancehpsr_changingmindsets_strategyhpsr.pdf (accessed Nov 8, 2016).
- 3 World Health Organization. *Verbal autopsy standards: ascertaining and attributing causes of death*. Geneva: WHO, 2016. <http://www.who.int/healthinfo/statistics/verbalautopsystandards/en> (accessed Nov 8, 2016).
- 4 Byass P, Chandramohan D, Clark SJ, et al. Strengthening standardised interpretation of verbal autopsy data: the new InterVA-4 tool. *Glob Health Action* 2012; **5**: 19281.
- 5 Zhao Y, Joshi R, Rampatige R, et al. Use of smartphone for verbal autopsy: results from a pilot study in rural China. *Asia Pacific J Public Health* 2016; **28**: 601–10.
- 6 *The Lancet*. Series: Who counts? <http://www.thelancet.com/series/who-counts> (accessed Nov 8, 2016).
- 7 *The Lancet*. Series: Counting births and deaths. <http://www.thelancet.com/series/counting-births-and-deaths> (accessed Nov 8, 2016).
- 8 Källander KD, Kadobera D, Williams T et al. Social autopsy: INDEPTH Network experiences of utility, process, practices, and challenges in investigating causes and contributors to mortality. *Popul Health Metr* 2011; **9**: 44.
- 9 D'Ambruoso L, Kahn K, Wagner R, et al. Moving from medical to health systems classifications of deaths. *Glob Health Res Pol* 2016; **1**: 2.
- 10 Hullur N, D'Ambruoso L, Edin K, et al. Community perspectives on HIV, violence and health surveillance in rural South Africa: a participatory pilot. *J Glob Health* 2016; **6**: 010406.
- 11 Byass P. Cause-specific mortality findings from the Global Burden of Disease project and the INDEPTH Network. *Lancet Glob Health* 2016; **4**: e785–86.
- 12 Byass P. Child mortality is (estimated to be) falling. *Lancet* 2016; published online Nov 11. [http://dx.doi.org/10.1016/S0140-6736\(16\)32169-9](http://dx.doi.org/10.1016/S0140-6736(16)32169-9).