Getting Everyone in the Picture

World Health Organization

Solving the Problem of Limited Cause of Death Data with Verbal Autopsy

WHO Verbal Autopsy Reference Group

www.who.int

Acknowledgments

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Purpose

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1. **Orient high-level decision-makers** to the problem and how Verbal Autopsy can help

2. **Provide the basics of Verbal Autopsy** in the context of routine civil registration and vital statistics (CRVS) and health systems

3. **Describe the benefits of a Verbal Autopsy** system integrated into CRVS and health systems

The Problem

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How can we prioritize, allocate resources, or track progress when we see only part of the picture?

The Solution

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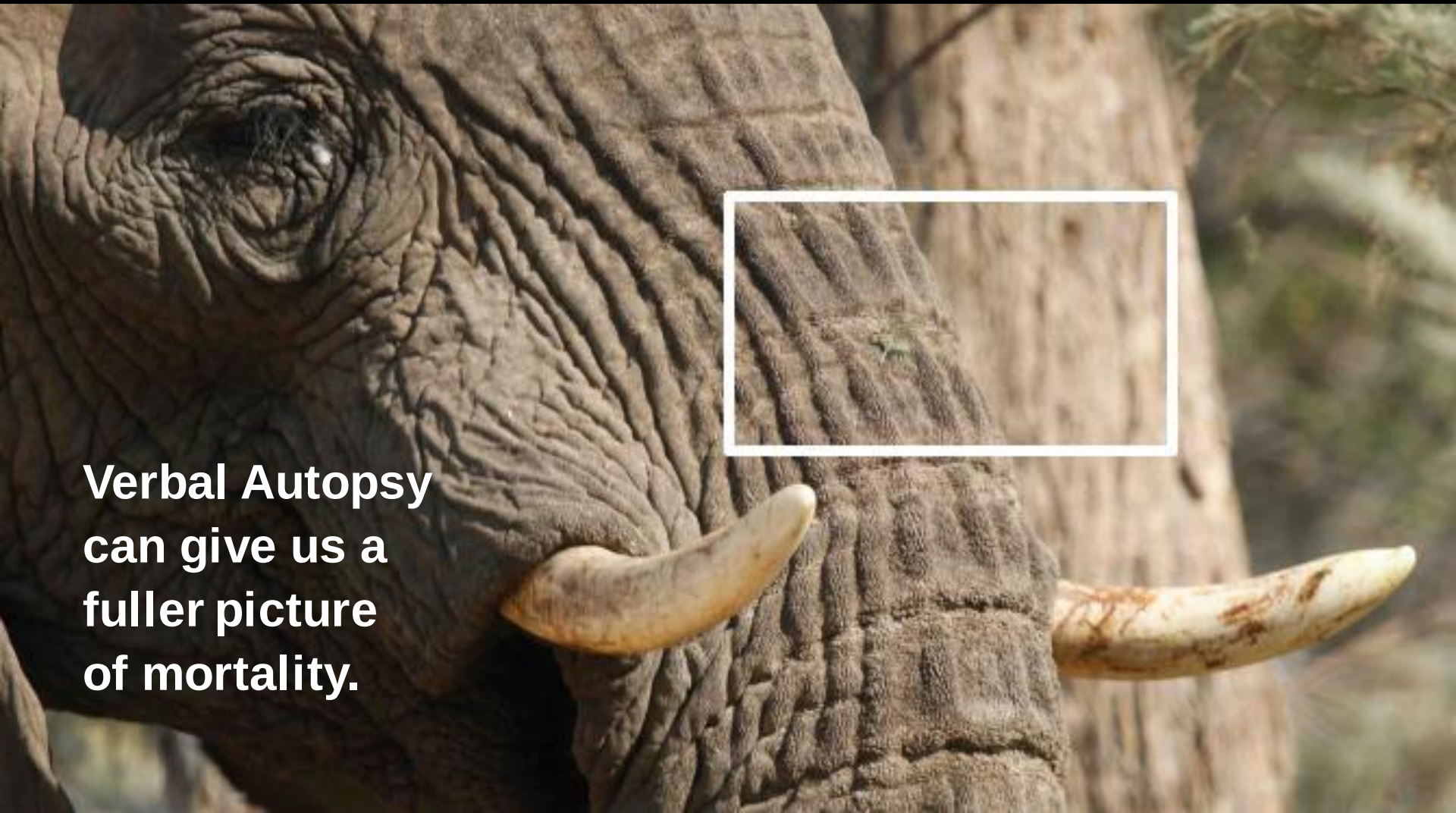

Verbal Autopsy Gets Everyone in the Picture

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29%
of deaths occur in health facilities

71%
of deaths occur at home

Source: Navrongo, Ghana Health and Demographic Surveillance Site, 2015

Definition

Verbal Autopsy is a structured interview with the caregivers of the deceased that can be used to determine the most likely cause of death.

Image conceded with permission by Greg Kabadi

Verbal Autopsy…

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Is…

+ **A structured interview** with caregivers of the deceased and diagnosis of likely cause of death.
+ **Useable at the population level** through aggregated data that provides good population-level measures of causes of death in the community.
+ **The only option** available for determining causes of death in settings without physician certification.

Is not…

- **Accurate at the individual level.**
- **A replacement** for proper physician-certified cause of death.

Who benefits?

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People's Health

- The only reliable source of cause of death data for deaths outside of health facilities
- Enables planning and assessment of program impact using more complete, representative data at national and subnational levels

National Government

- Enables reporting on Sustainable Development Goals (SDGs) that require cause of death data

Who benefits?

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Civil Registration & Vital Statistics (CRVS)

+ Improves CRVS system coordination

National ID system/ Population Register

+ Ensures voter rolls are purged of those who have died
+ Ensures pensions are no longer paid to deceased individuals

Causes of Death in CRVS systems

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Death notification and registration

- Cause of death information can be collected as part of death registration, OR
- Can be collected separately and forwarded to the civil registration agency or to a national statistics office for tabulation

Standardized reporting for mortality statistics

- Underlying cause of death selected and coded in alignment to rules and principles of the International Classification of Disease (ICD) using either full ICD or the Start-Up Mortality List (SMoL)

Methods for determining causes of death

- Autopsy by medical examiner or coroner to determine and report on cause of death
- Medical certification using the WHO International Form of Medical Certificate of Cause of Death (MCCD)
- Hospital/medical facility discharge data
- Verbal Autopsy
- Other health reporting (e.g., community nursing reports)
- Lay reporting

Increasing certainty

How Verbal Autopsy Works

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Image conceded with permission by Peter Byass

- 20 to 30 minutes to interview using tablet computer or smartphone
- Data automatically uploads to central level
- Cause of Death available quickly once central level has data

Verbal Autopsy Needs to Be Integrated with CRVS

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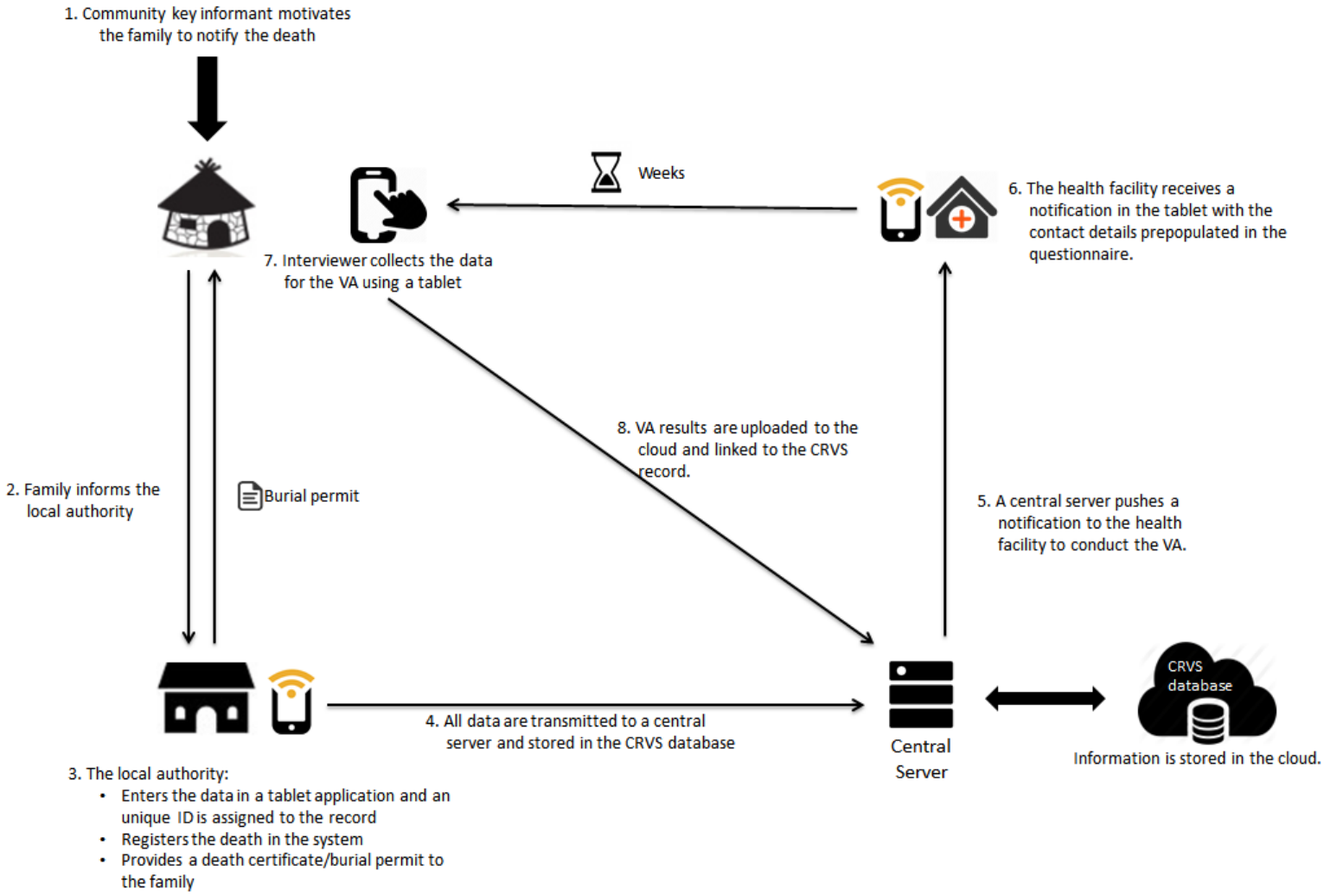

An Example of Verbal Autopsy and CRVS Integration

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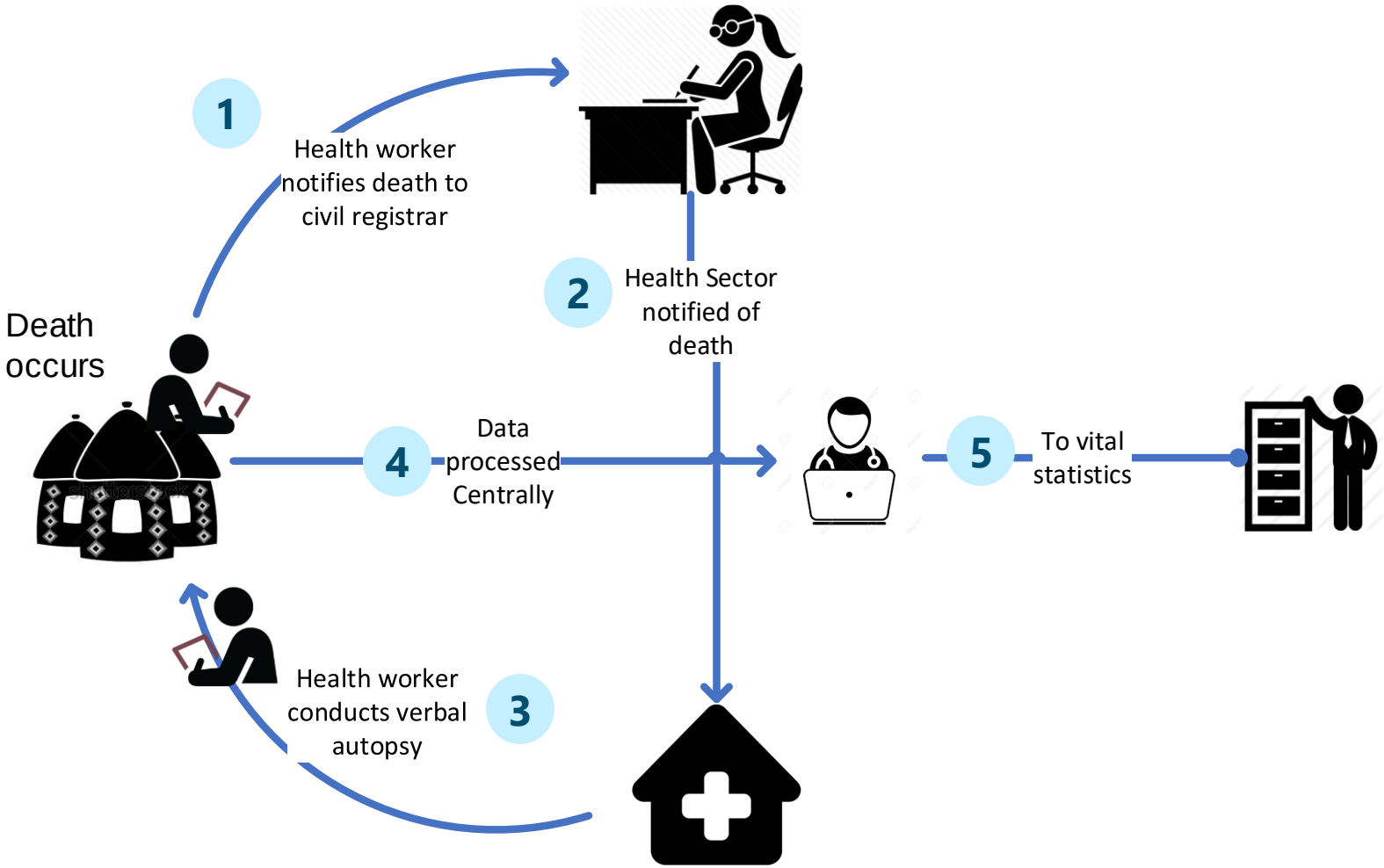

Costs

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Several factors drive the cost of a Verbal Autopsy System

Primarily: Will the Verbal Autopsy system be implemented on a representative sample or universally? What scope and scale are most cost effective for country needs?

Considerations Impact on the cost per VA	**All deaths**	**Sample of community deaths**
Number of clusters required	↓	↑
Number of interviewers	↑	↓
Cost of setting up the VA system	↑	↓
Efficiency	↑	↓
Number of VAs required for a specific accuracy	=	=
Operational feasibility	=	=

Costs

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Several factors drive the cost of a Verbal Autopsy System

Considerations Impact on the cost per Verbal Autopsy (VA)	**Small clusters**	**Big Clusters**
Accuracy given the same number of VAs	↓	↑
Number of interviewers	↑	↓
Cost of setting up the VA system	↑	↓
Proximity to households	↑	↓
Representativeness	=	=
Number of VAs required for a specific accuracy	=	=
Opportunity to piggy back on other programs	↑	↓

Costs

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Several factors drive the cost of a Verbal Autopsy System

Other major cost drivers:

- Opportunity to 'piggy-back' on existing surveillance systems
- Training and refresher training
- Supervision
- Payment death informants
- Transport costs
- Purchase and maintenance of mobile devices for data collection
- Central IT capacity and data management

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Benefits of Verbal Autopsy

Track Trends in Causes of Death

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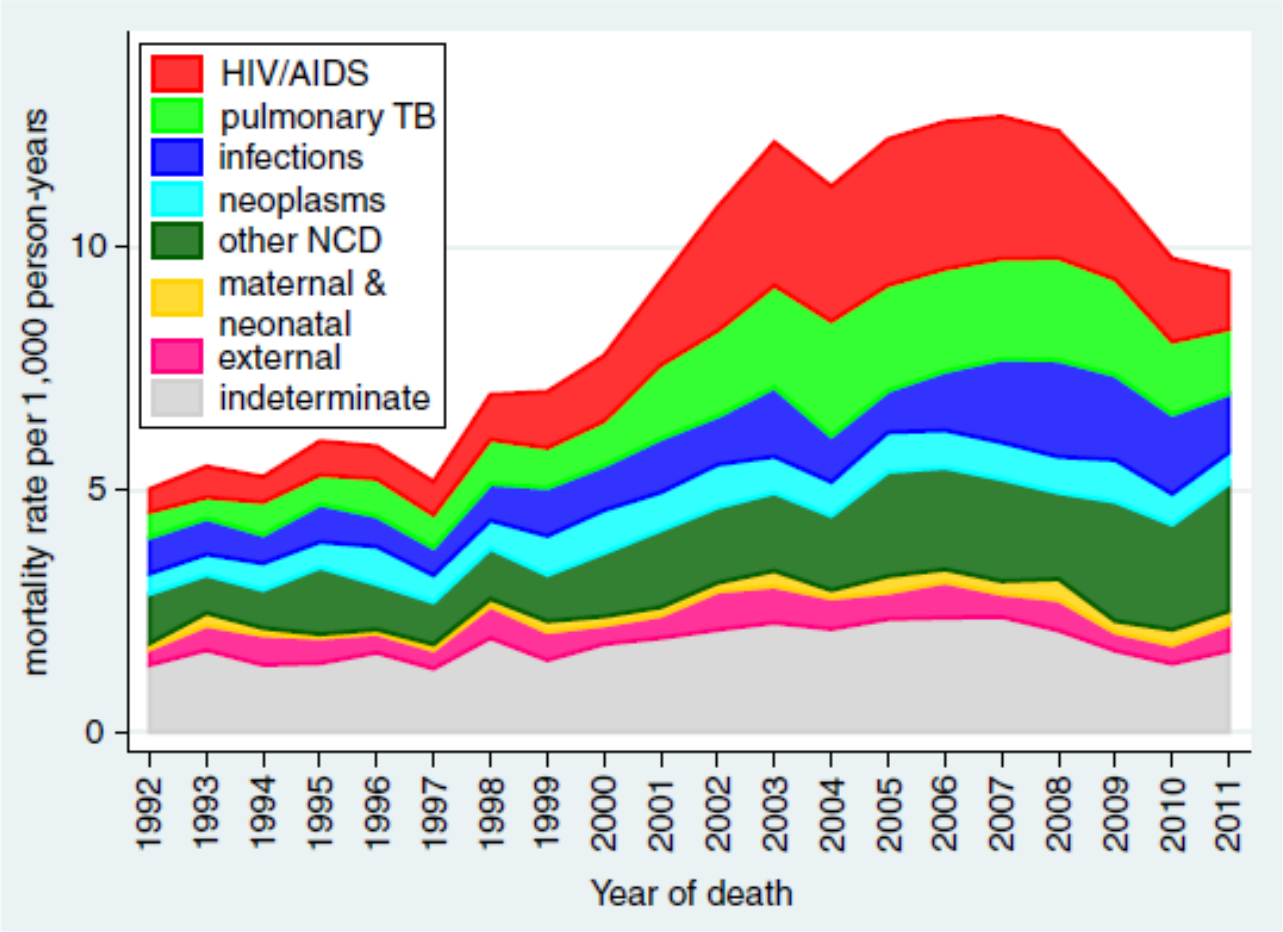
Example

Age-sex-time standardized mortality rates by broad cause categories ascertained by InterVA-4, Agincourt HDSS



*Source: Kabudula et al (2014); Two decades of mortality change in rural northeast South Africa. Global Health Action; **7** (26556)*

Compare Trends Across Countries

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Example

Malaria mortality rates from Verbal Autopsy data processed by InterVA-4, by site, age group and period at 20 INDEPTH Network sites

*Source: Streatfield et al (2014); Malaria mortality in Africa and Asia: evidence from INDEPTH health and demographic surveillance sites. Global Health Action; **7** (25369)*

Inform Health Resource Allocation

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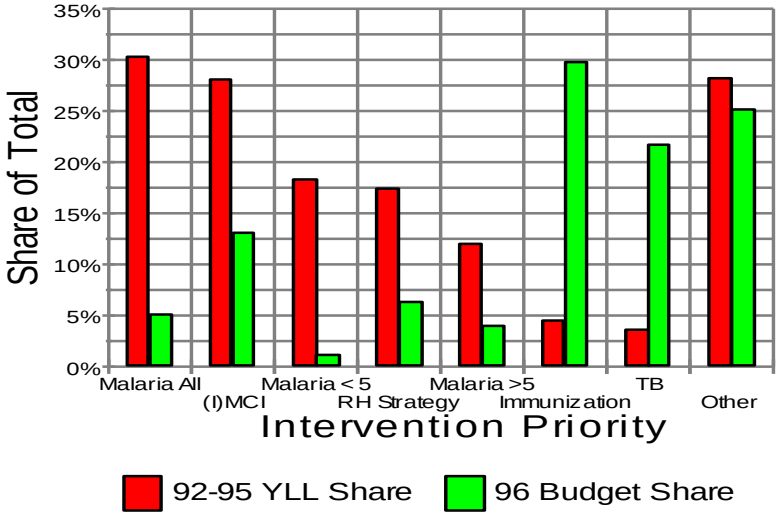
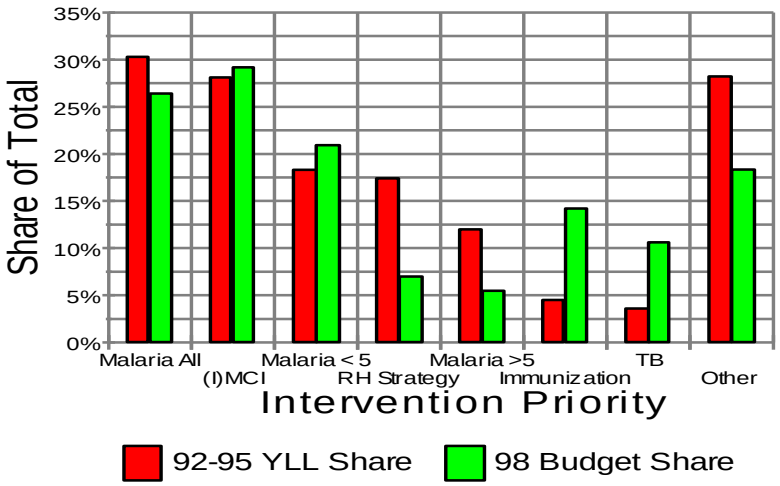
Example

Resource allocation without Verbal Autopsy data



Resource allocation with Verbal Autopsy data



Source: District Health Plans, Morogoro (Tanzania), 1996 & 1998

Track Sustainable Development Goals

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3.1 Reduce the maternal mortality ratio

3.2 Reduce under 5 child mortality

3.3 End epidemics of AIDS, TB, Malaria and NTDs

3.4 Reduce premature mortality from NCDs

3.9 Reduce deaths from hazardous chemicals, pollution, etc.

3.d Strengthen country capacity for early detection of global health risks

SUMMING UP

Conclusions

A nationally representative Verbal Autopsy system integrated with CRVS:

- **Offers data crucial to saving peoples' lives** with better planning and more accountability;
- **Creates information** never before available; and
- **Benefits multiple stakeholders** and agencies at national and subnational level.