COMSA/SIS-COVE MOZAMBIQUE

How much did it cost?

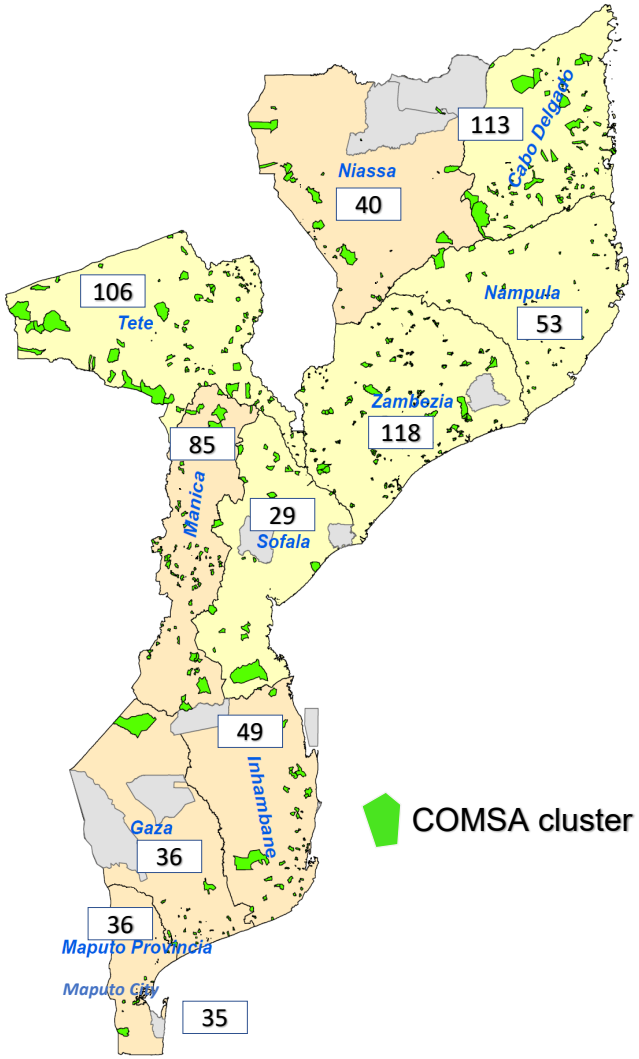
Malick Kante and the COMSA/SIS-COVE team

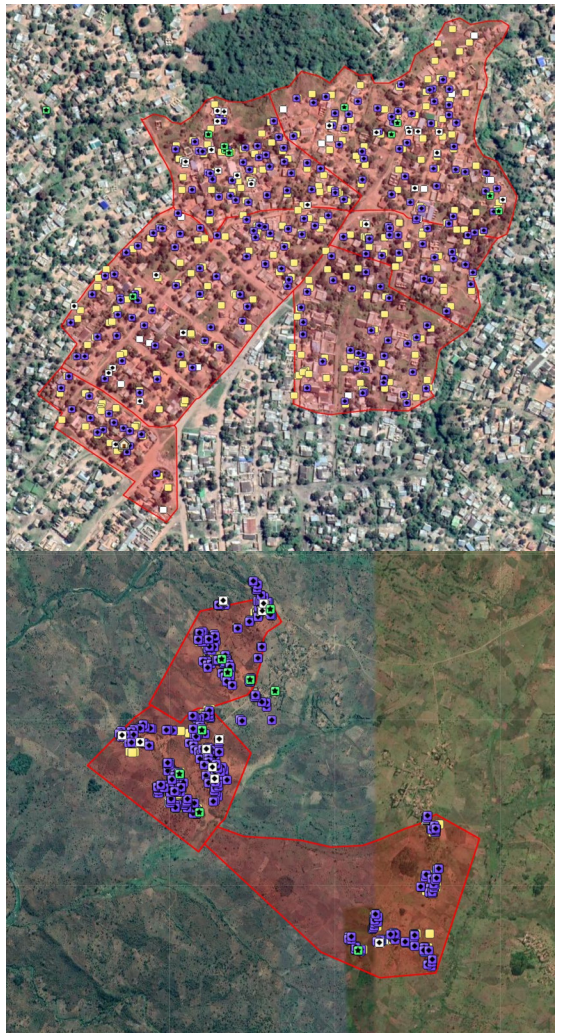
COMSA/SIS-COVE main objectives:

- To provide representative community epidemiological indicators on mortality and disease, including causes of death at all ages;
- To provide sample-based demographic and vital statistics with link to CRVS;
- To serve as a platform for rapid data collection on specific health topics relevant to the Government.

COMSA has a digitized sample and data collection

1. Random selection of 700 clusters
2. Representative at national and provincial levels
3. Large cluster (~300 households)
4. Surveillance of total population of each cluster
5. 180,000 households
6. 800,000 population





Implementing the Countrywide Mortality Surveillance in Action in Mozambique: How Much Did It Cost?

Safia S. Jiwani,[1]* Victor Américo Mavie,[2] Emma Williams,[1] Almamy Malick Kante,[1] and Agbessi Amouzou[1]

[1]*Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland;*
[2]*National Institute of Health (INS), Maputo, Mozambique*

Abstract. Complete sample registration systems are almost inexistent in sub-Saharan Africa. The Countrywide Mortality Surveillance in Action (COMSA) project in Mozambique, a national mortality and cause of death surveillance system, was launched in January 2017, began data collection in March 2018, and covers over 800,000 population. The objectives of this analysis are to quantify the costs of establishing and maintaining the project between 2017 and 2020 and to assess the cost per output of the surveillance system using data from financial reports produced by the National Institute of Health in Mozambique. The program cost analysis consists of start-up (fixed) costs and average annual operating costs covering the period of maximum implementation in 700 clusters. The cost per output analysis quantifies the annual operating cost of surveillance outputs during the same period. Approximately two million dollars were spent on setting up the system, with infrastructure, technological investments, and training making up over 80% of these start-up costs. The average annual operating costs of maintaining COMSA was $984,771 per year, of which 66% were spent on wages and data collection incentives. The cost per output analysis indicates costs of $37–$42 per vital event captured in the surveillance system (deaths, pregnancies, pregnancy outcomes), $303–$340 per verbal and social autopsy conducted on a reported death, and a per capita cost of $1–$1.3. In conclusion, establishing COMSA required large costs associated with infrastructure and technological investments. However, the system offers long-term benefits for real-time data generation and informing government decision-making for health.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10160867/pdf/ajtmh.22-0438.pdf

Objectives

- To quantify the program cost of establishing and maintaining the implementation of COMSA in Mozambique between 2017 and 2020 and

- To assess the cost per output of the system.
  - Cost per output analyses aim to ascertain the annual operating costs associated with each of the outputs produced by the COMSA surveillance system with verbal and social autopsies

Methods

- Cost data were obtained from quarterly and annual financial reports

- Program costs were split into two types: start-up (fixed) costs and operating (recurrent) costs.
  - The start-up costs were categorized into six main domains: infrastructure (i.e., vehicles), information technology (smartphones, tablets, laptops, etc.), field materials, training (of implementing institutions, CSAs, and VASA data collectors), baseline population and cluster mapping, and formative research.

  - The operating costs were categorized into personnel costs (salaries, incentives, and per diem payments for data collection), infrastructure maintenance, supervision and travel, communication, refresher trainings, and dissemination events.

COMSA/ SIS-COVE Start-up Cost

- **$5,804,169** over the course of 4 years from 2017 to 2020
- **35%** of the costs consisted of the project start-up investments

Design and initiation phases: start-up fixed COMSA costs at central and cluster levels

Category	Description	Cost (US$)	Percentage
Design phase			
Central-level costs			
Formative research	Formative research study	29,400.0	1.5
Cluster-level costs			
Baseline population and cluster mapping	Household listing and delineating cluster boundaries, data collection and training materials	250,078.7	12.4
Initiation phase			
Central-level costs			
Infrastructure	Vehicles	800,000.0	39.5
Training	Training of trainers for CSA surveillance and VASA	143,245.0	7.1
Technology	Smartphones, tablets, laptops, desktops, monitors, printers, transformers, solar chargers, statistical software, international shipping	259,308.8	12.8
Cluster-level costs			
Field materials	T-shirts, hats, backpacks, household labels, banners, etc.	37,179.7	1.8
Training	Training of interviewers for CSA surveillance and VASA (travels, lodging, per diems, etc.)	503,787.8	24.9
Total		2,023,000.0	100.0

COMSA = Countrywide Mortality Surveillance in Action; CSA = community surveillance agent; VASA = verbal and social autopsy.

COMSA/ SIS-COVE Operational Costs

- ~ $1M annual running cost
- 46% personnel and incentive

Maintenance phase: average annual operating costs at central and cluster levels (2019–2020)

Category	Description	Cost (US$)	Percentage
Central-level costs			
Personnel and incentives	Wages (INS, INE staff)	196,905.0	20.0
Infrastructure	Vehicle maintenance, fuel, cloud servers, printing, emergency infrastructure, etc.	202,766.9	20.6
Administration and logistics	Banking fees, tender announcements	10,025.1	1.0
Field supervision	Supervision of data collection and travels	26,839.6	2.7
Communication	Telephone, Internet	20,626.1	2.1
Dissemination	Stakeholder meetings, conferences, dissemination workshops, etc.	1,322.4	0.1
Cluster-level costs			
Personnel and incentives	Wages (Delegados, administrative/finance staff, coordinators, supervisors, VASA data collectors, CSA, drivers), incentives, health insurance, data collection per diems)	452,770.2	46.0
Communication	Staff communication plans	46,767.4	4.7
Refresher trainings	CSA and VASA refresher trainings	26,747.2	2.7
Total		$984,771.0	100.0

CSA = community surveillance agent; INE = Insituto Nacional de Estatisticas; INS = Insituto Nacional de Saúde; VASA = verbal and social autopsy.

Summary

- SIS-COVE is a community surveillance system owned by the country
- SIS-COVE requires USD $1.0 million of annual operating costs for its current operations.
  - For comparison, one nationwide survey can cost up to USD $6.7 million every 5 years (e.g. PHIA)
- More than half of SIS-COVE's costs are allocated to the personnel (CSAs and supervision teams) that ensure data are collected regularly and of good quality.

INSTITUTO NACIONAL DE SAÚDE
MOÇAMBIQUE

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

WHERE TO FIND RESOURCES

COMSA
SISTEMA DE VIGILÂNCIA DE EVENTOS VITAIS

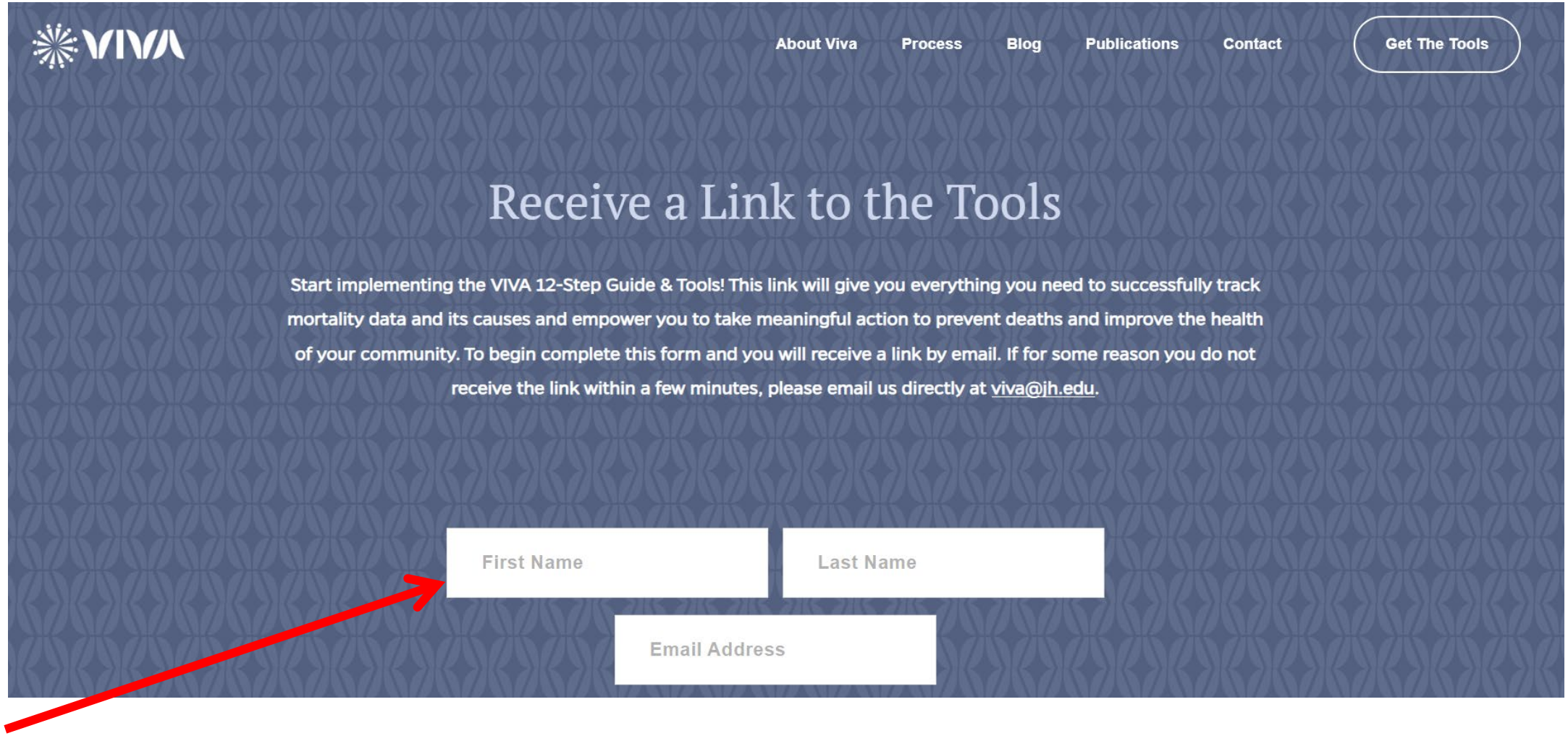
VIVA
Vital Insights for Vital Action

VIVA: **Vital Insights for Vital Action**

https://viva.jhuhost.org/

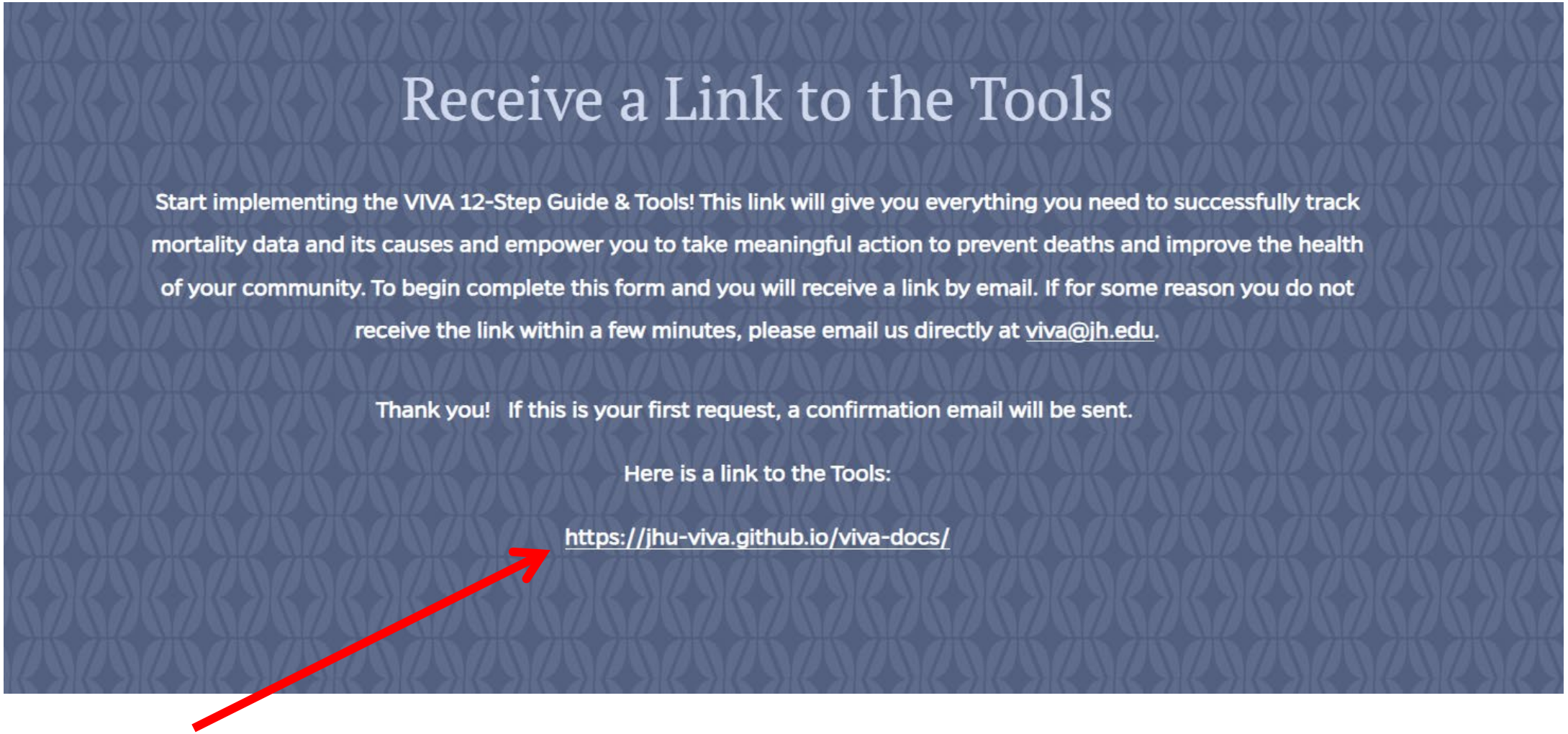
VIVA: **Vital Insights for Vital Action**

https://viva.jhuhost.org/get-the-tools



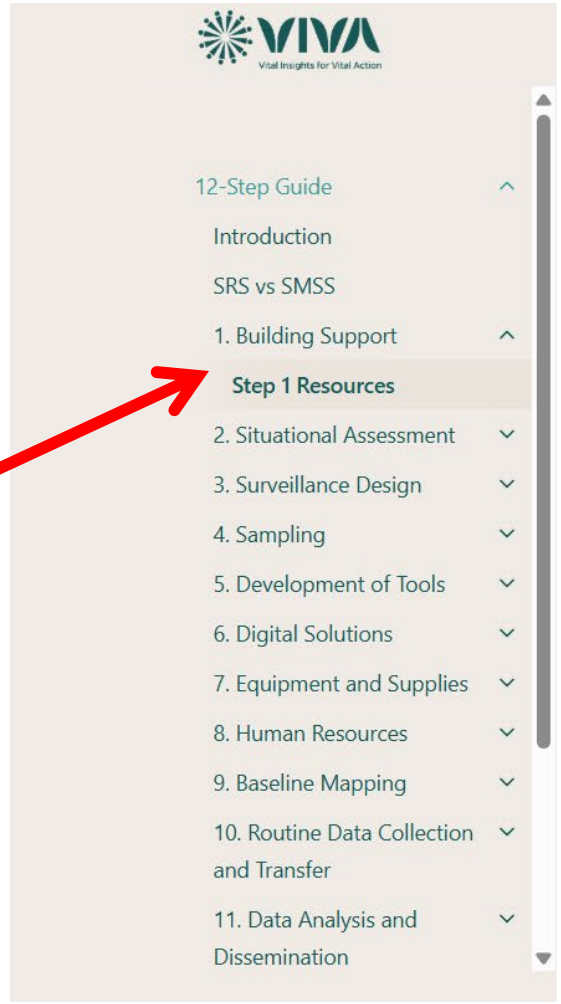
VIVA: **Vital Insights for Vital Action**

https://viva.jhuhost.org/get-the-tools



VIVA: **Vital Insights for Vital Action**

https://viva.jhuhost.org/get-the-tools



Step 1

General Information

1. Building a Case for an SMSS (docx) A narrative and illustrative guide for countries wanting to develop a Sample-Based Mortality Surveillance System.
2. Stakeholder Mapping Tool (docx) A table to help capture information on potential stakeholders.
3. Resource Needs for an SMSS (docx) A list of essential resources that may need to be developed to implement an SMSS.
4. SMSS Proposal Template (docx) A proposal template for implementing an SMSS.

Budget

1. Budget Components (xlsx) A table that outlines components to consider when budgeting for an SMSS.
2. Template for Fixed Costs (xlsx) A template to calculate the fixed costs for starting an SMSS.
3. Template for Recurrent Costs (xlsx) A template to calculate the running and recurrent costs of maintaining an SMSS.

Last updated

May 27, 2025