



Investing in People: Strengthening Zambia's Public Health Data and Policies

University Teaching Hospital, Lusaka, Zambia. Dr. Thato Moses Patlakwe, a visiting fellow with the MLDI program, conducts medical investigations to determine causes of death as part of routine procedures. His work contributes significantly to the mortality surveillance program. Photo Credit: Juan Arredondo.

IMPACT AT A GLANCE

- Death registration increased from 4% to 42%
- More than 5,000 doctors trained in Medical Certification of Cause of Death (MCCD)
- Improved quality of cause of death data for public health use
- In-depth forensic training established in Zambia
- Life-saving policies adopted by the Zambian government



Before 2015, Zambia's public health officials faced a daunting reality: fewer than 4% of deaths in the country were officially registered, and even fewer had medically certified causes of death. Fragmented reporting and limited use of international coding standards meant that public health leaders had little visibility into what was really causing deaths in the country.

Simply introducing new technology or digitizing systems might seem like the solution to improving Zambia's health data system. But the real transformation began when Zambia, with support from the Bloomberg Philanthropies Data for Health Initiative and the CDC Foundation, made a dedicated investment in people—those responsible for collecting, reporting, analyzing and using public health data. A strategic focus on training initiatives has strengthened the accuracy of Zambia's cause of death (COD) data, improved death investigations and helped turn data into lifesaving policies.

BUILDING A FOUNDATION: TRAINING FOR BETTER DEATH REGISTRATION

To address the accuracy of COD data and how it's reported, Zambia launched a training program for medical professionals. At the heart of this effort was **training in Medical Certification of Cause of Death (MCCD)**, considered the gold standard in COD reporting. In 2016, the first MCCD sessions for “training of trainers” were held, followed by training an initial cohort of doctors at Lusaka’s main hospital, and then expanding to other health facilities and districts.

The MCCD course, based on global guidelines, was integrated into Zambia Medical Association’s continuing medical education program, which is required for doctors to renew their licenses with the Health Professions Council of Zambia (HPCZ). An e-learning platform linked to the HPCZ further facilitated access. MCCD instruction also was integrated into university curricula to ensure future doctors would graduate with this essential skill.

Today, more than 5,000 doctors—80% of practicing doctors in Zambia—have been trained in proper cause-of-death certification. These efforts were reinforced by **training people in the use of the International Classification of Diseases (ICD) codes**, supported by the establishment of a national mortality coding center. The coding staff receives the paper MCCD forms, assigns the correct ICD code and enters the data in the civil registration and vital statistics system (CRVS). The Data for Health Initiative provided initial support for the center and the coders’ training and salaries until the Zambian government took over the management, including financing the salaries. To ensure sustainability, the role of coder has been added as a job classification in Zambia’s human resource structure.

Zambia also recognized the need to document deaths occurring outside health facilities—which account for about 47% of all deaths in the country. To close this gap, Zambia introduced **verbal autopsy (VA)** at select sites in 2017. The CDC Foundation provided support for VA training of mortality surveillance officers—those who collect and analyze public health data on deaths—and VA implementation. The surveillance officers conducted interviews with the deceased’s family members or caregivers to determine the likely cause of death. These interviews, using the globally standardized VA questionnaire, were initially conducted at mortuary sites and then expanded to interviewing family members in the community. VA has expanded to 35 sites covering nearly half the country’s population and has played a vital role in understanding causes of death during recent public health emergencies.



Department of National Registration, Passport, and Citizenship (DNRPC) in Lusaka, Zambia. Members of the National Morbidity and Mortality Coding Program handle death registrations and ensure accurate data by cross-referencing with the World Health Organization’s (WHO) international standards for coding causes of death through the International Classification of Diseases (ICD-10). Photo Credit: Juan Arredondo



Death Registration Office, University Teaching Hospital, Lusaka, Zambia. Alice Zimba, Mortality Surveillance officer responsible for the verbal autopsies at Death Registration Office, University Teaching Hospital. Embedded within Lusaka’s mortuary system, the verbal autopsy team plays a crucial role in raising awareness and enhancing the Medical Legal Death Investigation (MLDI) system. Photo Credit: Juan Arredondo.

Improved data from hospitals using the Medical Certificate of Cause of Death (MCCD), documentation of community deaths and cause of death reporting by the state forensic pathologist all feed into Zambia's civil registration and vital statistics (CRVS) system.

MODERNIZING MEDICO-LEGAL DEATH INVESTIGATIONS

Another critical area of reform was Zambia's medico-legal death investigation (MLDI) system. Medico-legal death investigation refers to the process of determining the cause, manner and circumstances surrounding a death, particularly in cases of unnatural or suspicious deaths. In the past, death investigations were conducted by general practitioners without formal training in forensic medicine. A lack of coordination between health officials, coroners and police also led to delays or inaccuracies of findings. Dr. Luchenga Adam Mucheleng'anga, state forensic pathologist for Zambia's Ministry of Home Affairs, said, "There was a gap between medicolegal death investigations and death registration ... and that gap had an impact on public health."

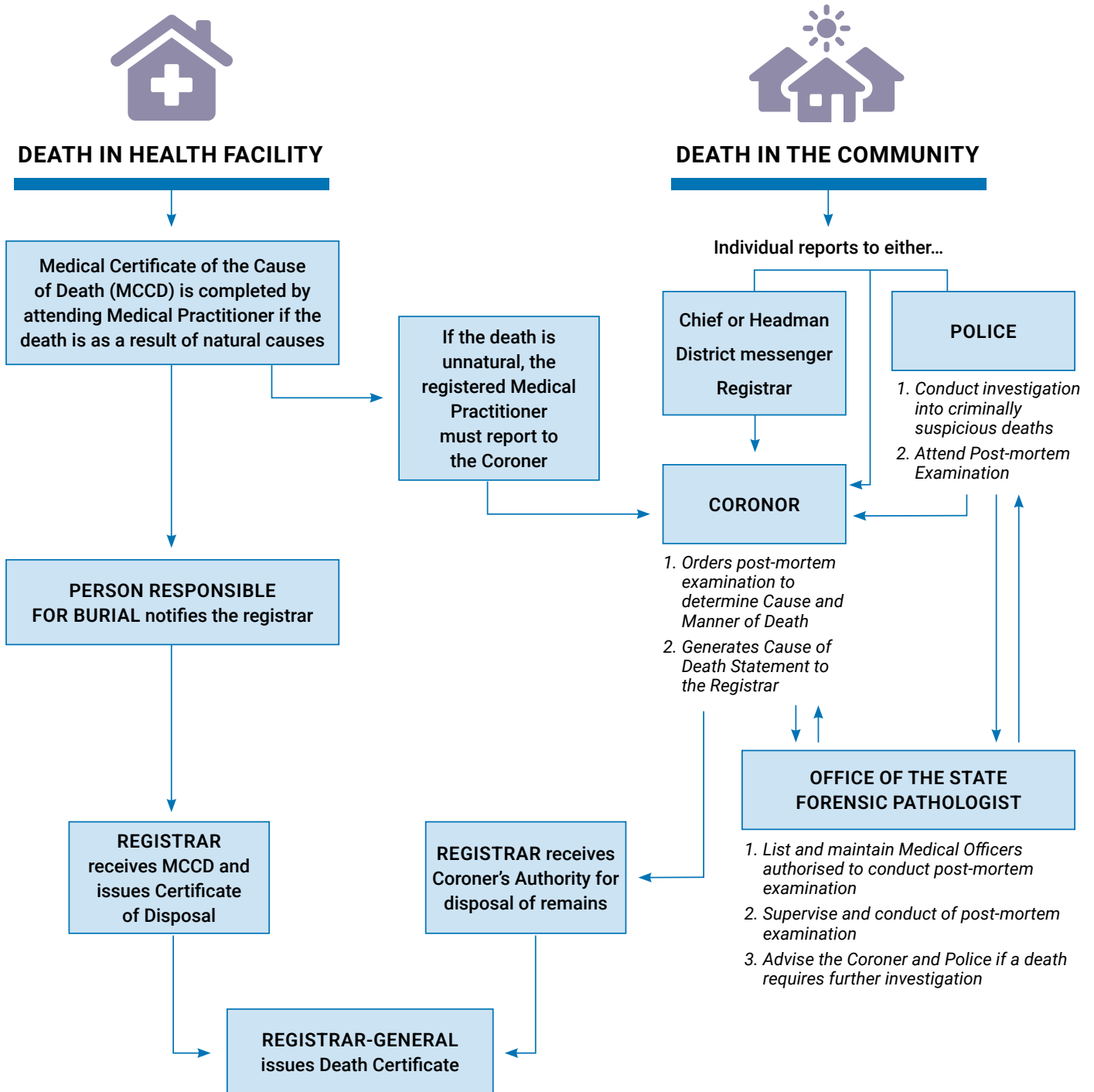
The passage of Zambia's National Forensic Act in 2020 marked a turning point by institutionalizing forensic death investigations and setting clear protocols. Alongside this legal framework, **targeted training programs began to build capacity across the system**. This included courses for medical officers and forensic pathologists, delivered through the University of Zambia and the Zambia Colleges of Medicines and Surgery. A locally run eighteen-month course, developed with the Office of the State Forensic Pathologist, offers in-depth training on cause-of-death recognition, forensic procedures, legal documentation and ethical practices. The training programs have grown so successful that they are attracting visiting students from other countries in the region, including Botswana, Republic of Congo, Zimbabwe and Tanzania.

With better-trained personnel and clearer coordination, cause-of-death reporting is now faster and more accurate. **Improved data from hospitals using the Medical Certificate of Cause of Death (MCCD), documentation of community deaths and cause of death reporting by the state forensic pathologist all feed into Zambia's civil registration and vital statistics (CRVS) system.** Using this information, authorities can more effectively identify and respond to public health threats, including infectious diseases, non-communicable diseases like hypertension and findings like drug-resistant tuberculosis.



University Teaching Hospital, Lusaka, Zambia. Staff around covered corpse. The MLDI program conducts medical investigations to determine causes of death as part of routine procedures. Photo Credit: Juan Arredondo.

MANAGEMENT OF DEATHS IN ZAMBIA



FROM DATA TO ACTION: EMPOWERING POLICYMAKERS WITH EVIDENCE

Strengthening the data pipeline is only part of the story. Zambia also invested in the people who interpret data and help turn it into policy. Through **interactive training and mentorship**, public health professionals in Zambia have learned how to analyze data, assess policy options and present evidence-based recommendations to decision-makers. The **Data to Policy training program (D2P)** involves several phases of intensive training and mentorship that guide development of policy proposal briefs. The training culminates in a policy forum, where these D2P participants brought their research and recommendations directly to senior government leaders and decision-makers.

In Zambia, the program has not only strengthened the country's ability to turn data into action but has also contributed to major public health successes. In 2015, D2P program participants analyzed and modelled data to understand the extent of childhood mortality and gaps in HIV detection among children—which revealed that if children with HIV are unidentified and left untreated, 75% will die by the age of five. The team's policy brief highlighted the need for routine testing in health facilities to significantly improve early diagnosis and treatment. In late 2016, the D2P team presented their research and recommendations at two policy forums, and by March 2017, the *Health Press - Zambia* published an article highlighting the topic.

In 2017, this led to a government mandate reinforcing **routine HIV testing and treatment** for all people (children and adults) who visit a clinic. The Ministry of Health integrated the policy into national health guidelines, **leading to a substantial increase in the number of children tested and treated with antiretroviral therapy—from only 3% to 85% by 2020**. According to the model, this will save 1,288 children's lives each year.

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Chawama Level 1 Hospital, Integrated Management of Childhood Illness (IMCI) Lusaka, Zambia. Mothers with their children begin the registration process and are directed to routine HIV testing, an initiative implemented in 2016 by the Zambian President. This program enforces HIV testing and treatment for everyone attending government clinics in Zambia. Photo Credit: Juan Arredondo

Another example came from efforts to reduce maternal deaths from postpartum hemorrhage (PPH), or severe bleeding after childbirth. D2P participants advocated for the use of **Non-Pneumatic Anti-Shock Garments (NASGs)** in rural health centers. The NASG is a simple first-aid device that helps stabilize women experiencing PPH by applying compression to the lower body, redirecting blood flow to vital organs. The Ministry of Health responded by purchasing 900 NASGs for national distribution, demonstrating how data-driven recommendations can lead to immediate and tangible health improvements.

From increasing HIV testing rates to improving maternal health interventions, Zambia's experience proves that data-driven policy is a life-saving strategy. Dr. Theodora Savory is director of strategy and information at the Center for Infectious Disease Research in Zambia and an author of the policy brief for routine HIV testing in children. She says, "Before we didn't think we could influence on a high level ... Data to Policy training helped us end up with a razor-sharp policy brief that convinced people that something needed to change."



Chimwemwe Level 1 Hospital, Kitwe, Zambia. Nurse Ruth Mithi has been one of the promoters of the implementation of the Non-Pneumatic Anti-Shock Garment (NASG). Photo Credit: Juan Arredondo.

A MODEL FOR OTHER COUNTRIES

Zambia's progress has been impressive. **Between 2015 and 2023, death registration increased from 4% to 42%, while the proportion of deaths with ill-defined causes dropped from 40% to 15%.** Improved death reporting now informs everything from epidemic response to resource allocation. At the same time, forensic death investigations are more accurate, timely and aligned with legal standards, supporting both public health and public safety.

D2P alumni are now mentoring health officials in Malawi and Tanzania, and the Zambia National Health Research Authority has launched a Policy Advancement Program to institutionalize evidence-based decision-making.



82% increase
in number of children
tested and treated with
antiretroviral therapy,
2017-2020



38% increase
in number of
death registrations,
2015-2023



25% decrease
in proportion of deaths
with ill-defined causes,
2015-2023

LOOKING AHEAD

The country plans to digitalize its paper-based CRVS system, expand VA and mortality coding to underserved areas and invest further in forensic training. These steps will help ensure that the gains made so far are not only sustained but scaled up. Through a combination of cross-sector collaboration, trainings and policy reform, Zambia has built a public health data system that saves lives and sets a new standard for the region.

THEN		NOW
Limited expertise in certifying/coding COD data	→	More than 5,000 trained medical professionals and coders
Lack of trained forensic pathologists	→	In-depth forensic training in Zambia
Limited skills in writing policy briefs	→	Interactive workshops, mentoring and policy forums through the Data to Policy (D2P) program
Non-facility deaths were undocumented	→	Verbal autopsies are used to understand causes of non-facility deaths

LINK TO OTHER RELEVANT STORIES:

[Zambia CRVS story](#)

[Zambia D2P training story](#)

[MLDI story](#)



Death Registration Office, Kitwe, Zambia. Lazarus Kangasa waits at the Kitwe City Council Registration Office for a burial permit, the final step in certifying and obtaining his son's death certificate. Photo Credit: Juan Arredondo.