QUALITY OF DATA AFTER DECENTRALISATION OF CIVIL REGISTRATION AND VITAL STATISTICS IN IRINGA REGION 2016 -2022

Gisbert Kanisius Msigwa, MD

Master of Public Health

Muhimbili University of Health and Allied Sciences

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MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
SCHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES
DEPARTMENT OF DEVELOPMENT STUDIES

QUALITY OF DATA AFTER DECENTRALISATION OF CIVIL REGISTRATION AND VITAL STATISTICS IN IRINGA REGION 2016 -2022

By

Gisbert Kanisius Msigwa

A Dissertation Submitted in fulfillment of the Requirements for the Degree of Master of Science in Public Health – Distance Learning of Muhimbili University of Health and Allied Sciences

October, 2024

CERTIFICATION

The undersigned certifies that, they have read and hereby recommends for the acceptance by Muhimbili University of Health and Allied Sciences dissertation entitled ***"Quality of data after Decentralization of Civil Registration and Vital Statistics in Iringa Region 2016 -2022"*** in fulfillment of the requirement for the degree of Masters of Public Health – Distance Learning of Muhimbili University of Health and Allied Sciences.

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PROF. DAVID URASSA

(Main Supervisor)

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Date

DECLARATION AND COPYRIGHT

I **Gisbert Kanisius Msigwa**, declares that this dissertation is my own original work and it has not been presented to any other university for similar or any other degree award.

Signature-……**Date** ……

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DEDICATION

This work is dedicated to my beloved wife, Theresia Mahenge, and our two children, Isaac and Adeline Msigwa. Your presence in my life has been an immense blessing. I pray to the Almighty God that you may enjoy a long and fulfilling life, continuing to grace my existence with your love and companionship.

ABSTRACT

Background: Globally, the Civil Registration and Vital Statistics (CRVS) Systems are insufficient to meet the needs of various governments, as approximately one-third of births go unrecorded and approximately half of deaths go unreported. More than one billion individuals worldwide lack a legal identification, which implies that they could be denied their rights, access to services like health and education, and involvement in political and economic progress. In the majority of Sub-Saharan African (SSA) nations, the CRVS is not complete. Tanzania is now undergoing several reforms on CRVS systems including legal review reforms which have accelerated the decentralization of CRVS services in many regions in the country since 2013. It's therefore important to strengthen the CRVS systems to make sure that all vital events that happen in our territories can adequately be accounted for.

Aim of the study: This study aimed at assessing the quality of data after decentralization of Civil Registration and Vital Statistics in Iringa Region 2016-2022.

Materials and methods: The goal of this study was to conduct a mixed-methods analysis of CRVS data obtained from all healthcare facilities via the District Health Information System (DHIS2) and Civil Registration Centers (wards) under Local Government Authorities (LGAs) via CRVS databases. This data was from all Councils of the Iringa region (Rural and Urban Councils) which was the first region to decentralize death registration and deploy various interventions to improve the quality of causes of death data as completed by the clinicians through the Medical Certificate of Cause of Death forms. In addition, qualitative data was collected and analyzed to determine factors that led to the change in trends of CRVS data in Iringa, whereby the structured questions through a questionnaire were completed by officials at ward level who collect data and those who are decision-makers from the key CRVS implementing institutions (MoH, RITA, and PoRALG). Data on death registration completeness was analysed by using STATA and quality of causes of death was analysed by using ANACoD3.

Findings: This study included a total of 295 health facilities (privately and government-owned) and wards responsible for collecting and registering vital events in the Iringa region. The findings revealed an enhancement in the CRVS system following the

implementation of interventions in Iringa, specifically in the quality of medical certification of causes of death. The percentages increased from 86% in 2016 to 93% in 2019, 91% in 2020, 92% in 2021, and returned to 86% in 2022, aligning with the baseline level. Notably, seven ill-defined causes (Infectious and parasitic diseases, Neoplasms, Diseases of blood, Diseases of the circulatory system, Symptoms and signs, and External causes of morbidity and mortality) consistently appeared throughout the five-year study period. Meanwhile, the overall completeness of death registration in the entire region was initially low for both males (12.4%) and females (6.7%) before the necessary interventions. However, after the application of interventions, completeness increased to 15.2% for males and 14.9% for females in the year 2022. Over the five-year period, the trend in completeness for males was slightly higher compared to females. Scaling up interventions through institutionalization was observed to be a critical step towards CRVS improvement.

Conclusion: There has been a positive improvement in the quality of Civil Registration and Vital Statistics (CRVS) in the Iringa region during the study period. However, this improvement has been incremental, with some fluctuations in the quality of CRVS observed. These variations can be attributed to the challenges on negligence in using CRVS guidelines that persisted throughout the region over the years covered by the study. It is crucial for the government and other stakeholders to take into consideration the proposed interventions highlighted in this study. Addressing these interventions is essential to bridging the existing gaps before extending the interventions to additional regions.

Keywords: Civil Registration and Vital Statistics, Completeness, Medical Certification of Causes of Death, and death registration.

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ABBREVIATIONS

ANACoD	Analyzing mortality levels and causes-of-death
CHMIS FPs	Council Health Management Information System Focal Persons
COD	Cause of Death
CPD	Continuing Professional Development
CR	Civil Registration
CRVS	Civil Registration and Vital Statistics
DAS	District Administrative Secretary Offices
DHIS2	District Health Information Software 2
HMIS	Health Management Information System
ICD-10	International Statistical Classification of Diseases Tenth Revision
ICT	Information and Communication Technology
LGA	Local Government Authority
LMIC	Low- and Middle-income Countries
MCCD	Medical Certification of Causes of Death
MIC	Middle-income countries (LMIC)
MoH	Ministry of Health
NBS	National Bureau of Statistics
PORALG	President's Office, Regional Administration and Local Government
RHMIS FPs	Reginal Health Management Information System Focal Persons
RITA	Registration Insolvency and Trusteeship Agency
SMoL	Start-Up Mortality List
uCOD	Underlined Cause of Death
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
VA	Verbal Autopsy
VAI	Verbal Autopsy Interviewers
VS	Vital Strategies
WHO	World Health Organization

DEFINITIONS OF TERMS

Death: Is the complete loss of all signs of life at any point following a live birth (postnatal stoppage of vital functions without the ability to resuscitate).

Decentralization: Is the delegation of power and responsibility for performing public duties by the central government to lower authorities or essentially independent governmental entities and/or the private sector.

Civil Registration: Is universal, ongoing, permanent, and required recording of important events provided by decree or law in conformity with each nation's legal requirements?

Registration: The process of formally documenting an event at a civil registration office, where information on the event is entered by the registrar.

Certification: Is the issuance of a legal document certifying a birth or death by the Civil Registrar.

Underlying Cause: Refers to the disease or injury that set off the chain of morbid circumstances that resulted in the victim's death, or the events leading up to the accident or act of violence that caused the victim's fatal injury.

Completeness: Is the percentage of life-changing events (such as births or deaths) that were reported by the CRVS system during a reference time period compared to all events that were thought to have occurred in the study population during the same time frame.

Quality of CRVS data: It refers to how fully (percentage) death registration and accurately deaths are being registered and assigned ICD codes respectively.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

The legal recording and analysis of population-wide vital events are the focus of civil registration and vital statistics (CRVS) systems. Births, deaths (including the manner of death), marriages, divorces, and adoption are all considered to be significant occurrences. (1) where Civil Registration (CR) is the worldwide, ongoing, permanent, and obligatory recording of life events made available by decree or regulation in accordance with each country's legal criteria (2,3). The primary source of routine, fast, and accurate vital event data, including death data, must be civil registration and vital statistics systems globally for national and subnational governments to complete planning health care demands. Yet more than half of deaths worldwide go unreported due to decades of neglect in many nations for the strengthening of CRVS systems. (4). Alarmingly, 42 of the continent's 46 member states are unable to provide reliable statistics on death registration. Additionally, only 81 of the world's 194 nations report high quality data on cause-of-death information as per WHO international requirements (3).

In Tanzania, registration of vital events has been centralized at the district level for many years whereby applicants used to follow several processes in registering vital events including notification, registration, and follow-up of a copy of the death certificate to the district office (5). This resulted in failing to achieve adequate completeness of vital events registered. The completeness of registered deaths is even worse (6) as anticipated by the Registration Insolvency and Trusteeship Agency (RITA) to be 26% in 2017 (7). The quality of causes of death data on mortality have been unreliable for quite a long time (8). The publication which was done by the Ministry of Health in 2019 on improving the quality of medical certification of causes of death in health facilities in Tanzania, portrayed that the quality of cause of death data (usable causes) was 64% (9).

As part of improving the completeness of death registration together with quality of causes of death statistics, the government has recently amended legislation for registering births and deaths to empower the sub-district local government officials (Ward and Village Executive Officers) to act as assistant registrars, who, under the new law, are now

registering vital events at the local level (10). The amendment of the legislation enabled the government to start piloting decentralization of registration of death events in the Iringa Region. This pilot has been done in parallel with the improvement of the quality of certifying medical causes of death for which curricula of medical colleges and universities have been updated to incorporate the content of the WHO international certification of medical causes of death in pre-service training, and introduced the Medical Certification of Causes of Death (MCCD) eLearning tool and face-to-face training for in-service clinicians (9).

This research focuses on the registration of deaths and causes of death to answer the research question below. Registration of deaths through the civil registration system have been assessed by looking at the completeness of registered deaths within the time of occurrence. The causes of death have been evaluated by analysing a complete set of mortality statistics as collected from primary health facilities of the Iringa region through the electronic District Health Information System database (DHIS2) (11).

1.2 Statement of the Problem

Since 2013 the Government of Tanzania through the Registration Insolvency and Trusteeship Agency (RITA) in collaboration with other implementing partners (UNICEF, Canada, TIGO, Vital Strategies (VS) through Bloomberg Data for Health (D4H) Initiative) has been strengthening Civil Registration and Vital Statistics (CRVS) system to make sure that they are always functional and improving. However, the system is still facing low levels of registration completeness. By 2019 Birth and death registration rates range from 20-40%, indicating that most of the population remains uncounted. The main factors affecting the completeness of registration include poor coverage, a lack of accessibility to registration points, limitations in the CRVS legal framework, and a complex CRVS process for families (12). Preparing for future better CRVS systems the government has undertaken several reforms and started decentralizing CRVS services from the district level to lower levels (community and health facility), to bring services closer to the community, and to start with the government decided to demonstrate the initiative in the Iringa region, where the launching was done in 2016 (13)

Prior to decentralization, Tanzanian registration followed a well-known three-step process that included notification, registration, and certification. Many families felt that the lengthy procedure of having to make numerous, lengthy trips to the district registration offices prevented them from registering the majority of the important events. (5). Also, regarding the quality of causes of death, clinicians were not trained on how to write the proper medical certification of causes before graduating from their medical schools, as the content was not integrated into their curricula and were no further trainings to the Inservice clinicians (9)

To determine the consequences of moving CRVS services from the central level to the lower levels, some researches have been carried out. Decentralization is thought to increase the number of registration points by giving local governments and healthcare facilities control over registration, improving business operations, and managing already-existing registration records by switching from paper-based manual business operations to a combination of paper-based and digital processes. In consequence, the digital procedure will increase CRVS service accessibility, enable new services, generate new efficiencies, and reduce operational expenses for health, education, immigration, tax, and other governmental services. Tanzania, one of the nations that have implemented CRVS decentralization, saw an increase in the completeness of registered vital events (14)However, there is inadequate research setting evaluations on the implemented interventions. This study has evaluated the output and outcome of such interventions into details thus, will help the government to evaluate its pilot program for further systematic scaling up and the implementation of such interventions nationally.

1.3 Conceptual framework

The conceptual framework below (Figure 1.0) clearly illustrates the relationship between the problem, interventions (dependent variables) and output (independent variables) on improving the CRVS system in any country including Tanzania. It clearly portrays the quality component that was determined under CRVS where under completeness of death registration the number of registered deaths versus the expected number of deaths registered were determined. Under the MCCD Completeness and accuracies were determined where (distribution of garbage codes by severity, non-standard ICD codes, distribution of garbage codes by categories and age sex distribution of garbage codes by severity) were evaluated through ANACoD3 and ANACONDA tool version 5.0 (15)

In order to improve the completeness of death registration countries have been deploying several interventions like conducting sensitization meetings to community leaders in order to create awareness as well as imparting knowledge on the importance of death registration (16), make registration of vital events including deaths free (17), as well as amendment of death registration to allow the ward executive officers (WEOs) to register deaths, this being done purposely for bringing registration services closer to the community (18)

Several approaches of interventions are applied in improving the medical certification of cause of death like conducting a face-to-face training to clinicians working in health facilities (19), reviewing curricula of medical colleges to incorporate the MCCD content to equip graduates with MCCD knowledge as soon as they complete their studies (19). Multiple studies evidence the effectiveness of e-Learning in building and strengthening health workforce capacities in certifying causes of death (20)

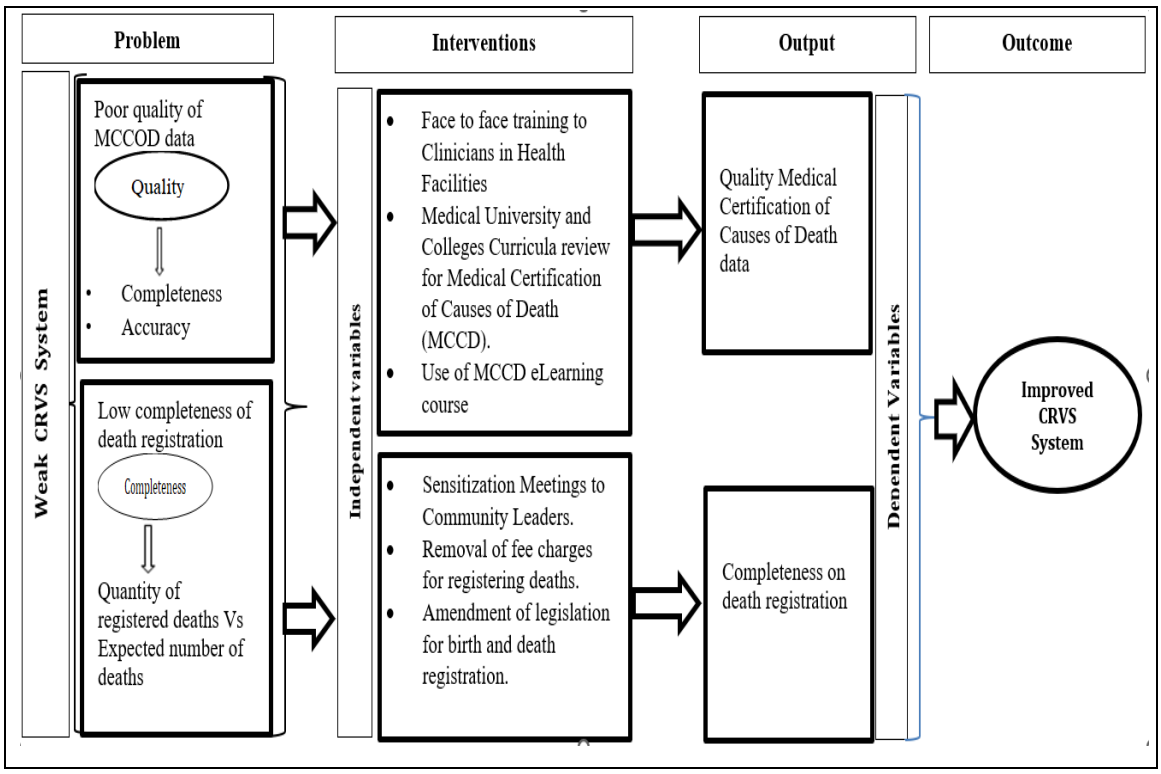


Figure 1: Conceptual Framework Showing the relationship between dependent and independent variables. Sources: Modified from (Wilson, 2019)

1.4 Rationale

This study is expected to help the decision makers from all CRVS implementing institutions (MoH, NBS, PoRALG, and RITA) to revisit the national scale-up plan of decentralizing CRVS services in the country by either revising it to address the identified gaps or maintain it for speeding up the expansion of the plan to other regions. The obtained findings may assist the government of Tanzania to accelerate the provision of CRVS services to all people from all geographical locations (Rural and Urban Councils) at lower levels (ward and health facility level), hence improving the overall completeness of deaths registered, completeness of deaths with ICD code, and produce mortality statistics with quality causes of death to be used for informed decision making.

1.5 Research questions.

1.5.1 Main Question

What is the quality of data after decentralisation of Civil Registration and Vital Statistics in Iringa region 2016 -2022?

1.5.2 Specific Question

1. What was the baseline level of completeness of CRVS in 2016 in Iringa region?
2. What is the trend in the annual completeness of death registration in Iringa Region from 2016 to 2022?
3. What are the factors associated with the change of trend of completeness of CRVS data during the study period 2016 – 2022?
4. What is the quality of medical certification of causes of death data submitted to DHIS2 from health facilities in the Iringa region across the years 2016 to 2022 spanning the before and after MCCD training period?

1.6 Research objectives

1.6.1 Main objective

To assess the quality of data after decentralisation of Civil Registration and Vital Statistics in Iringa region 2016 -2022

1.6.2 Specific Objectives

1. To determine the baseline level of completeness of CRVS in 2016
2. To assess the trend in the annual completeness of death registration in Iringa Region from 2016 to 2022.
3. To determine factors associated with the change of trend of completeness of CRVS data during the study period 2016 – 2022.
4. To assess the quality of medical certification of causes of death data submitted to DHIS2 from health facilities in the Iringa region across the years 2016 to 2022 spanning the before and after MCCD training period.

CHAPTER TWO:

2.0 LITERATURE REVIEW

2.1 Overview

This chapter covers literature on trends in the quality of civil registration and vital statistics data in the Iringa region following decentralization from the district to the health facility and ward levels during 2016-2022. It is arranged based on the specific objectives which are the baseline level of completeness of CRVS, trends in the annual completeness of death registration, factors associated with the change of trend of completeness of CRVS and the quality of medical certification of causes of death data submitted to DHIS2 from health facilities.

2.2 Decentralization of CRVS Services

Decentralization is the process by which decision-making authority is transferred from the central authorities to local governments or communities. (21). Decentralization of CRVS services, in the context of civil registration and vital statistics, refers to the transfer of responsibility for recording important vital events, such as births, deaths, marriages, and divorces, from the central government to local governments or communities (22)

Decentralization of the CRVS has the potential to improve the accuracy and completeness of vital statistics events because local governments and communities are frequently better equipped than the central government to gather and keep reliable records of births, deaths, and marriages. This is due to the fact that local government officials are more accessible, which encourages more individuals to register for vital events. (12,23). Also, decentralization of CRVS services can improve the timeliness of vital statistics events in a way that local governments and communities can register vital events more quickly than the central authorities as the result of the deployment of electronic technology to be used for data collection at lower levels, of which help to ensure that vital events are up to date (23).

The decentralization of CRVS services, however, has a number of challenges, such as inconsistent vital event registration because local governments and communities may have various registration standards and procedures, which can lead to inconsistent vital

event registration. This can make comparing important information across several districts, regions, and nations challenging (24). CRVS decentralization can result in a lack of resources to maintain the newly established or developed CRVS systems at lower levels hence leading into poor maintenance of accurate and up-to-date collected vital statistics (25). Furthermore, this may result in a lack of standardization and coordination of CRVS services among various districts and regions. It may be difficult to compare vital statistics across districts and regions when lower-level agencies are in charge of recording important events because there may be a lack of coordination and uniformity.

2.3 The completeness of Civil Registration and Vital Statistics System

Births, deaths, marriages, and other major life events must be accurately and timely recorded by the Civil Registration and Vital Statistics systems inside a nation. Numerous of these systems offer useful data on social welfare, public health, education, and economic development, and countries rely on them to make important decisions based on the timelines they are given (26). However, very few nations have continued to operate a comprehensive and complete Civil Registration and Vital Statistics System that complies with international standards and can support national development initiatives, the creation of a contemporary public health administration, and the protection of human rights (26,27).

Several studies have examined the completeness of CRVS systems globally specifically on death registration and deaths with ICD codes. Studies suggest that worldwide, around one-third of all births are not registered, with around half of all deaths going unrecorded ((22),23). In addition, out of 192 World Health Organization (WHO) member states, there were 115 members reported annual mortality data in the year 2005, of these only 70 countries had death registration systems that are considered to be essentially complete and produce timely annual statistics on cause-specific mortality fraction (24).

Similarly, similarly studies have revealed that 42 of the 46 African countries cannot report credible death registration data (3). In Tanzania, mainland by the year 2017 the completeness of death registration was estimated to be 26% (25). Based on the recorded causes of death from the health facility through DHIS2 from the year 2014-2019, 9.7% of expected annual deaths in Tanzania obtained a medically certified cause of death. Of

these, 52% of MCCD ICD-10 codes were usable for health policy and planning, with no significant improvement over 5 years (26).

2.4 Trends in the annual completeness of death registration (registered deaths/actual deaths).

The percentage of vital events (births or deaths) recorded by the CRVS system during a reference time period compared to the expected total number of events that happened in the study population during that same time period is known as a completeness. (28). It is the proportion of observed registered deaths versus expected deaths (calculated by taking the product of the annual population estimates times the annual crude death rates from the National Bureau of Statistics) (7). Access to registration points and the degree of death registration completion are highly correlated. Consequently, it is expected that registration completeness will grow as the access proportion does (24).

African literature indicates that the number of nations with active CRVS systems has increased over time. Low response rates from the countries indicate that many of them do not generate annual vital records data and are therefore unable to measure on a regular basis the degree of registration completeness in their registration system (24). For countries to have timely and disaggregated mortality estimates, it is crucial to evaluate the data that are now available and the evolution of the completeness of the data gathered using demographic approaches and other data sources (25).

Generally, there is evidence to show that the global level of data completeness for death registration has increased over time, although there are still sizable coverage gaps, especially in low- and middle-income nations. For the development of successful public health policies and interventions, improving the completeness of death registration data is essential for comprehending the causes and patterns of mortality in a population. (29).

2.5 Factors associated with the change of trend of completeness of CRVS.

An analysis of trends in the number of Civil Registrations and Vital Statistics registered can provide important insights into the status of vital registration efforts in the country. Trends should also be analyzed at the subnational level as this can highlight differences in registration coverage in different parts of the country. Some countries across the world have carried out registration campaigns, set up mobile registration, or instituted informal

reporting from primary healthcare workers to increase the completeness of death registration (28).

Countries in Eastern and Southern Africa are enhancing their CRVS systems using both technology and non-technological improvements. Additionally, it is acknowledged that digitizing registration records will improve government services' efficacy and efficiency by utilizing an interoperable ICT framework and distinctive personal identities (11). This has resulted in further improvement in the completeness of vital events registered.

Tanzania is also deploying the new decentralized registration process to address the three most important bottlenecks of the previous system through a phase-wise scale-up approach which are; Long distances to registration centers (CRVS services now have been brought closer to the community at the ward level and health facility level); The need for a second visit to the center to get the certificate or a third visit (when a death occurs there will be immediate issuing of the death certificate before the deceased is taken away for burial ceremonies) and providing the first copy of the certificate for free of charge (29). Further strengthening of the demand side through sensitization meetings and improving the working environment on the supply side has increased the completeness of registration of vital events in Tanzania (3).

2.6 The quality of medical certification of causes of death data submitted to DHIS2 from health facilities.

Quality A quality cause of death (COD) dataset is essential for analyzing disease distributions, monitoring public health programs, and allocating resources (32). Moreover, it can be used to enhance national health policies, track sustainable development progress, and assess epidemic and pandemic responses (7). Nevertheless, as reported by WHO, few countries are able to report high-quality or medium-quality data on deaths and causes of death, with only 81 of 194 reporting high-quality or medium-quality information (3). Among the 46 Member States in the World Health Organization from African Region, only one country can provide high-quality cause-of-death data, with another three able to provide low or medium-quality data (30).

The findings from the research on improving the quality of medical certification of causes of death in health facilities in Tanzania 2014-2019 portrayed that Data from less than 5%

of annual deaths in Tanzania are usable for informing policy. For deaths with medical certification, errors were prevalent in almost half. This constrains the capacity to monitor the 15 SDG indicators that require cause-specific mortality. Sustainable quality assurance mechanisms and interventions can result in rapid improvements in the quality of medically certified causes of death (7).

Tanzania has been taking crucial measures to address this challenge such as reviewing curricula of medical universities and colleges to incorporate the MCCD content, providing MCCD face-to-face training to in-service clinicians, developing the MCCD eLearning course, and using it as a requirement for continuous medical education on certification for in-service as they renew their license and conduct regular supportive supervisions as well as proving on the job training to the in-service clinicians (12).

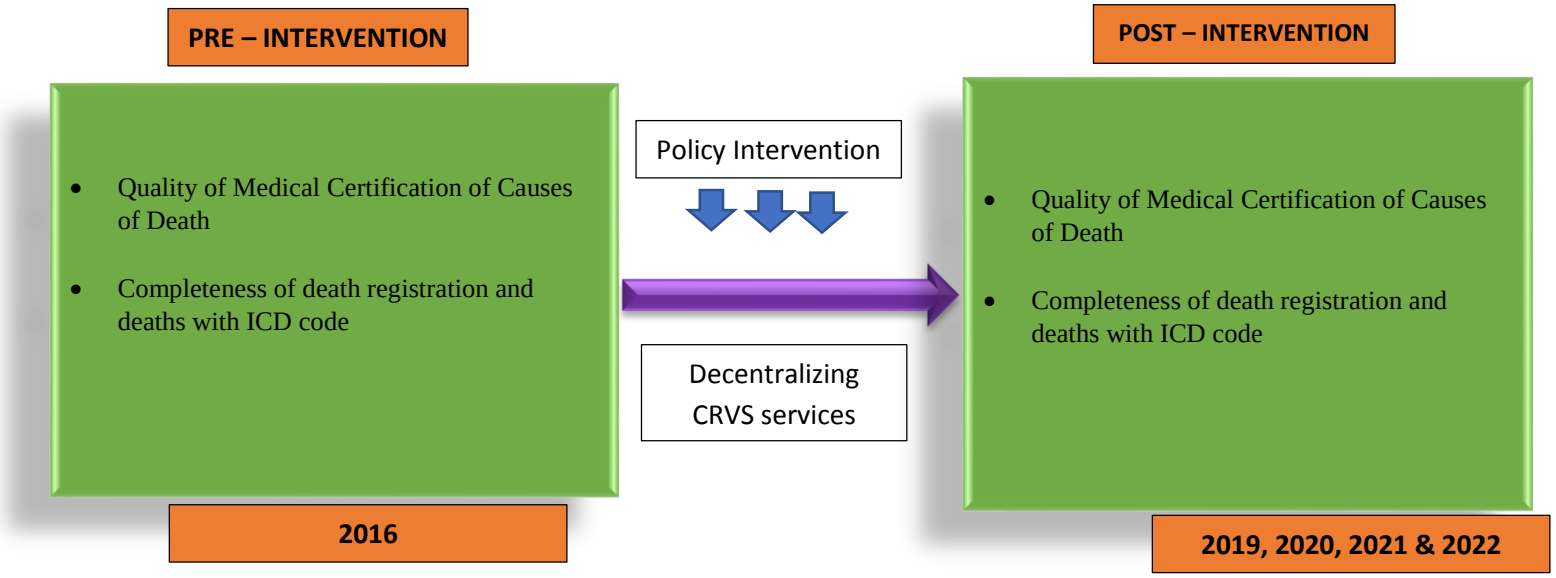
CHAPTER THREE:

3.0 MATERIALS AND METHODS

3.1 Study and design issues.

This study employed the mixed methods study design where the dependent variable (quality of medical certification of causes of death and completeness of death registration) were measured before and after intervention in the entire councils of the Iringa region (31). The methods were deployed so as to answer precisely all our research questions under this study. Quantitative analysis was conducted by using data on death registration and causes of death from all councils (rural and urban) as collected from all health facilities and wards. The dependent variables were assessed based on the actual status before decentralization and after the decentralization of CRVS services. Qualitative analysis was conducted to assess the opinions of the supervisors from all levels (district level, regional level, and national level) where it mainly aimed at knowing the factors associated with the change of trend of completeness of CRVS data during the study period 2016 – 2022. The years 2017 and 2018 were left in the study because it was when interventions to improve CRVS were deployed.

Figure 2: Before and after CRVS decentralization intervention design



3.2 Study sites description.

This study involved secondary data analysis generated from all CRVS registration centers including, all health facilities, all wards, and all District Administrative Secretary (DAS) offices from all Districts. This region has five local government authorities, which are Kilolo District Council, Mufindi District Council, Iringa District Council, Iringa Municipal Council, and Mafinga Town Council. The region is also subdivided into 15 divisions, 106 wards, 359 villages, 1,867 hamlets, and 222 local administrative units. The detailed description of the region as informed by its Regional Health Profiles & the regional investment guide is as follows: -

1. **Geographical location**: Iringa Region, the homeland of the second largest national park in Africa, Ruaha National Park, is strategically located to attract domestic and foreign investors. The region is located in the southern highlands zone of Tanzania Mainland, below the equator and between latitudes 600 55' and 900 00'. Longitudinally, it is situated between 3300 45' and 3600 55' east of Greenwich. Iringa Region borders five regions, namely Morogoro Region in the east, Njombe Region in the south, Dodoma and Singida regions in the North, and Mbeya Region in the west.
2. **Administrative Structure**: Iringa Region is administratively divided into three (3) Districts, namely Iringa, Kilolo, and Mufindi with five (5) LGAs namely Iringa Municipal, Mafinga Town, Iringa, Mufindi and Kilolo District Councils. The region is further sub - divided into 15 Divisions, 106 Wards, 360 Villages, 222 streets, and 1,859 hamlets.
3. **Population Characteristics**: According to the 2022 Census, the population of the Iringa region is 1,192,728 people (Iringa MC – 151,345 people, Iringa DC – 254,032, Mafinga TC - 51,902, Mufindi DC – 265,829) with an average annual growth rate of 2.4% whereas 618,415 (51.8%) are female and 574,313 (48.2%). The distribution of the population varied with the economic activities with the highest concentrations in urban areas. The population density is 27

people per sq. km, the population of women of childbearing age (15-49) is estimated to be 230,283 (47.1%) while that of below one-year-old is 26,970 (3%), and the under five-year-old children are 129,120 (14%).

4. **Climatic Condition**: Iringa Region, as part of the Southern Highlands of Tanzania, experiences long rainfall and short dry seasons with, more often, cool fairly moderate winds. The total rainfall of the region ranges between 500 mm and 1,600 mm per annum with a high geographical, seasonal, and annual variation. The rainy season is from November to May followed by dry and cold seasons from June to September. The temperature in Iringa Region varies according to changes in altitude and time of the year. The Temperatures range from 10o C in May/June to 25o C in October. There are also temperature variations observed between day and night – temperatures may rise up to 28o C in the afternoons and sometimes go down to a chilly 10o C during evenings and nights.
5. **Land and Water Area**: Iringa Region covers an area of 35,743 square kilometers and it occupies about 4.1 per cent of Mainland Tanzania's land area of 883,343 square kilometers, out of which 3,385 square kilometers are covered by water bodies. Iringa District Council has the largest area (19,055 sq km or 58.9%), followed by Kilolo District Council (6,797 sq km or 21.0%) and Iringa Municipal Council (330 sq km or 1.0%).

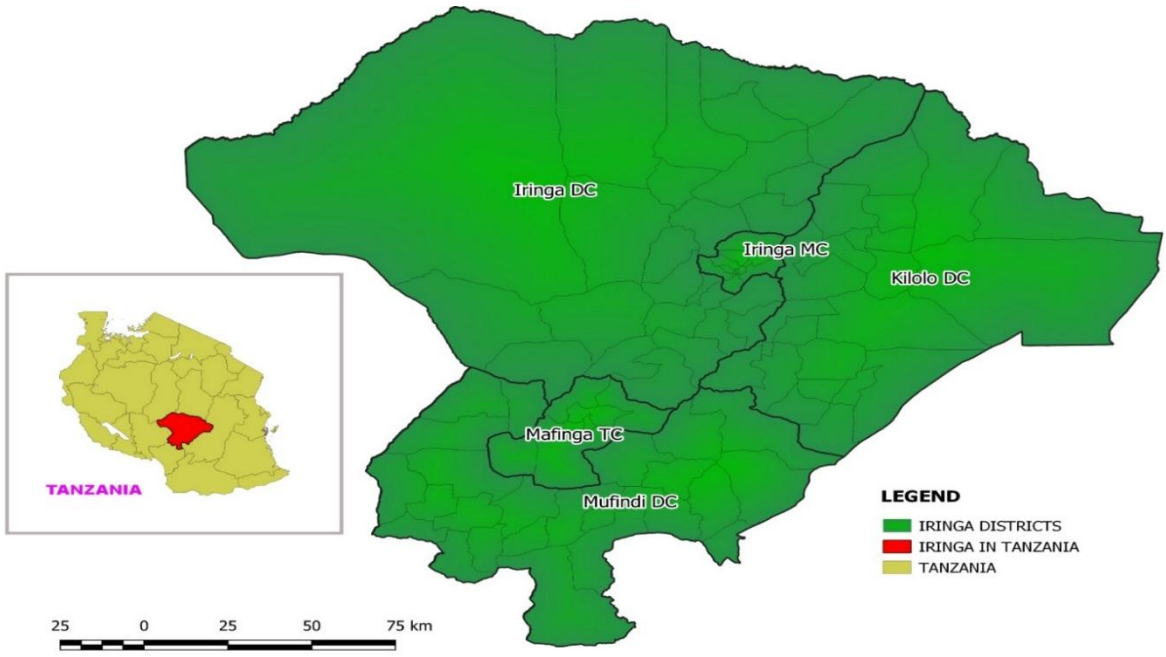


Figure 3: Map of Iringa region showing geographical distribution of study districts and wards

Source: National Bureau of Statistics 2023

3.3 Study population.

This study involved secondary data analysis from public and private primary health facilities of all levels (dispensaries, health centers, district referral hospitals, and regional referral hospitals). The study included data registered from the community and health facilities through the Ward Executive Officers (WEOs) and Health Care Workers. All these data were from both rural and urban councils collected from the years 2016-2022. The performance of the rural councils and urban councils were compared to see whether there is a difference in the completeness of deaths registered, those with ICD code, and the quality of causes of death. The trend was determined based on four consecutive years ie; 2019, 2020, 2021 and 2022 with 2016 as baseline, while leaving the years 2017 and 2018 as years when interventions to improve CRVS were deployed.

3.4 Study Variables

In this study the dependent variables were Quality of Medical Certification of Causes of Death (percentage of accurately coded deaths), and Completeness of death registration. Both are the attributes of quality of CRVS in our study.

The independent variables included in the study were face to face trainings, sensitization meetings, removal of fee charges, amendment of legislation for birth and death registration, use of MCCD eLearning course, and the medical Universities & colleges curricula review.

It was important to include these variables in the analysis due to the following reasons:

1) Face to face trainings has been cited as an independent variable that has a positive relationship with the improvement in the quality of causes of death where if the training is conducted to the in-service clinicians on MCCD their skills in certifying causes of death statistics will improve as well (17).
2) Sensitization meetings as independent variable was cited to accelerate the improvement of CRVS when conducted to community leaders so as to provide them with knowledge on the importance of registering CRVS vital events (16). These leaders will later use different forums available to communicate the message with the community under their territories.
3) Removal of fee charges refer to the costs charged after registering and being provided with the first copy of either a birth or death certificate. Costs shall be incurred when the family demands a second copy of the certificate (32). This was cited as an independent variable that improves CRVS system in the country.
4) Amendment of legislation for birth and death registration as an independent variable was included in the study due to that it empowers the Ward Executive Officers at the Ward level and Heath Care Providers at the Health Facility level to register vital events on behalf of the District Executive Officers. Hence bringing CRVS services closure to the community for easy accessibility (10). The Tanzania legislation was passed by the parliament in the year 2019.

5) Use of MCCD eLearning course sustains the skills of the clinicians especially the in-service clinicians hence leading to continuous quality provision of causes of death (9). Hence being cited as an independent variable in this study.
6) Medical Universities & colleges curricula review improves the skills of pre-service clinicians on MCCD as this content is included in the curricula where students are being taught while in medical schools (9). This helps the to write correctly the COD hence improve the quality of CRVS in any country.
7) Completeness of death registration as the dependent variable which depends on several other inputs refers to the percentage of a total number of registered deaths in a defined period of time divided by the total number estimated number of deaths (11). Its progress was measured by looking at the trend over years from 2012-2022.
8) Quality of Medical Certification of Causes of Death as the dependent variable refers to the causes of death statistics that meet WHO-prescribed standards (3). This will be measured by Looking the percentage of properly ICD-coded deaths divided by the total number of deaths recorded through the DHIS2 system, where the trend will be evaluated over years from 2016-2022.

3.5 Sample size.

3.5.1 Quantitative sample

All Councils (rural and urban) with all health facilities from the Iringa region were included in the study. The Councils included in the study were Iringa TC, Iringa DC, Kilolo DC, Mufindi DC, and Mafinga TC. A total number of 295 health facilities which comprised (10 Hospitals, 38 Health Centers, and 247 Dispensaries) that collect/register and submit mortality data through the District Health Information System (DHIS2) from the Iringa region were included in the study. In addition, a total number of 106 wards that are used as CRVS registration centers were also included in the study.

3.5.2 Qualitative sample

On a qualitative sample, purposive selection was employed where key informants were selected by virtue of their positions/roles, whereby prior analysis was done before

deciding the centers/clusters to be included in the study. A total number of 10 Ward Executive Officers (registrars at ward level) and 10 Health Care Workers (registrars at health facility level) from 5 Councils were interviewed whereby the researcher selected, 1 WEO from the best performing ward and another 1 from the least performing ward in each Council. In addition, the researcher selected, 1 registrar in one of the government health facilities and 1 registrar in one of the private health facilities. 4 Supervisors at Council level, 2 supervisors (RITA focal person and HMIS focal person) from the rural and urban council were selected and included in the study. At the regional level, 2 supervisors (HMIS focal person and RITA focal person) were interviewed. Finally, the 3 National CRVS coordinators from three CRVS implementing institutions (1-MoH, 1-PoRALG, and 1-RITA) were included in the study. All these individuals were interviewed to give their opinions on the factors which resulted in a change in CRVS completeness.

3.6 Inclusion and exclusion criteria

3.6.1 Inclusion criteria

The criteria for inclusion on the qualitative study was from all Councils any of the best and least performing wards on a total number of registered deaths in the recent year 2022. In addition, 1 private and 1 government health facility from each Council was included in the study. Among the 5 Councils, 2 of them were included in the study whereby, 1 was from rural setting and another 1 was from urban setting.

3.6.2 Exclusion criteria

Under the qualitative objective, all respondents were working at the Council level, regional level, and National level with a working experience of less than six years were excluded from the study. The reason was that they could not be key informants as they did not have enough information about the before and after situation of the study.

3.7 Validity and reliability of CRVS data

Mortality data are registered at the ward level and health facility level by either ward executive officers or designated health care providers. The medical certification of cause of death data is collected in all health facilities. To ensure the validity of the collected

data, all data which were included in the study were the ones that have been collected by using the WHO internationally recommended data collection tools. Furthermore, on ensuring the quality of collected data before and during analysis, the data set used were the ones collected by qualified professionals (clinicians and WEOs) as recommended by the law of the United Republic of Tanzania. Additionally in enhancing trustworthiness the qualitative data was collected from the professionals who are registering and certifying vital events and those appointed by the government to coordinate CRVS activities.

3.7.1 CRVS dataset description and manipulation

This study used CRVS data (death registration and causes of death data) that was extracted from the CRVS and DHIS2 database for the years 2016, 2019, 2020, 2021, and 2022. Death registration data was managed and analyzed by using Microsoft office excel, further analysis was done through STATA. Mortality data on the quality of causes of death was extracted from DHIS2 through a special Microsoft excel template recommended by WHO that fits in ANACoD3. The template with data set from all 5 years was uploaded into ANACoD3 software to assess the quality of medical certification of cause of death and ICD-10 coding for the underlying cause of death from all Councils of Iringa region.

3.8 Qualitative data collection

3.8.1 Development of qualitative data collection tools

An in-depth interview guide was one of the data collection tools employed in this study i.e Key Informant Interviews for CRVS coordinators at National, Regional and Council level and registrars at health facility and ward level *(See attached appendices II, III and IV)*. The Ward Executive Officers from 10 wards were included in the study. The open-ended questions were asked to obtain in-depth information about the factors which resulted into change in the CRVS completeness.

3.8.2 Qualitative data collection method

To ensure their suitability, the in-depth interview guides was pretested, and necessary adjustments were made. To guarantee that all information were documented, the in-depth

interview with key informant interviewees were taped. A written agreement for participating in the study and being recorded was given to each participant (Consent form attached as ***Appendix I*).**

3.9 Data analysis

3.9.1 Descriptive statistical analysis

Descriptively, data was analyzed through the use of the latest version of ANACoD3 software where the percentage distributions were visualized using MS excel statistical charts, graphs, and tables.

3.9.2 Qualitative data analysis

Interviewee responses were recorded in audio format, data was prepared by transcribing the field audio clips in Swahili language. The transcripts were translated into English and presented in MS Word. To prevent interviewer, recall bias and understand thoroughly the content, the transcriptions were completed in less than 24 hours. Data was organized in a way that is easy to access by categorizing responses by participant. It was then interpreted and presented by attaching meaning to the pre-established and emerging themes. Making sense of the data were accomplished by illustrating points with verbatim i.e Direct quotations from interviewees.

3.9.3 Data analysis techniques for each specific objective

Objective 1: To determine the baseline level of completeness of Civil Registration and Vital Statistics in the 2016.

The researcher computed the completeness of registered deaths and medically certified death for the years 2016 at the regional and council levels based on a simple aggregated analysis comparing the observed deaths (registered & ICD coded) with the expected deaths estimated as the product of the annual population estimates times the annual crude death rates from the National Bureau of Statistics Microsoft Excel and STATA software were used in such computations. The percentages of deaths with ICD codes and registered deaths were tabulated and compared across all councils (rural and urban).

Objective 2: To assess the trend in the annual completeness of death registration (registered deaths/actual deaths) in Iringa Region from 2016-2022.

The completeness of death registration in the Iringa region was assessed by comparing the completeness of deaths registered before the decentralization of the death registration system in the year 2016 and after the decentralization of the death registration system across the year 2019 to 2022. The numerator registered deaths as aggregate statistics was obtained from RITA for the five councils of the Iringa Region extracted from the civil registration system. The denominator of expected deaths was based on the Iringa Region census projections and crude death rate projections obtained from the National Bureau of Statistics. Analyses was disaggregated by rural and urban and compared across the 5 years to see whether there was any change.

Objective 3: To determine the factors associated with the change of trend of completeness of CRVS data during the study period 2016-2022.

Data from the respondents were prepared by transcribing the field audio clips in Swahili language. The transcripts were translated into English and presented in Microsoft Word. To prevent interviewer, recall bias, the transcriptions were completed in less than 24 hours. Data were interpreted and presented by attaching meaning to the pre-established and emerging themes. Making sense of the data was accomplished by illustrating points with verbatim i.e Direct quotations from interviewees.

Objective 4: To assess the quality of medical certification of causes of death data submitted to DHIS2 from health facilities in the Iringa region across the years 2016 to 2022 spanning the before and after MCCD training period.

The 2016, and 2019 to 2022 mortality data disaggregated by age and sex were extracted from the Ministry of Health database (DHIS2) as collected from health facilities of the Iringa region. This is since, after the year 2018 the interventions for improving the quality of causes of death (training of clinicians) were deployed throughout all health facilities of the entire region. Data was put in the latest Excel template released by WHO and uploaded into the ANACoD3 template ready for analysis and interpretation. The results on the quality of causes were determined under Step Number 10 of ANACoD3 output and tabulated to compare the performance of all councils across the years.

3.10 Ethical consideration

Ethical permission was sought and obtained from the Research and Publication Committee of Muhimbili University of Health and Allied Sciences (MUHAS). The researcher sought permission to access and utilize mortality data from the Ministry of Health and the Registration Insolvency and Trusteeship Agency (RITA). Additionally, approval was sought from the Ministry of Health (MOH), RITA, and the Iringa Regional Medical Officer (RMO) through the Presidents' Office of Regional Administration and Local Government (PoRALG) before conducting interviews with Ward Executive Officers (WEOs) and Civil Registration and Vital Statistics (CRVS) coordinators at the national, regional, and district levels. Upon presentation of the ethical clearance to the organizations, respondents from all levels were requested to participate in the research. Participants provided their consent before taking part and were required to sign a consent form before engaging in in-depth interviews, in addition to obtaining ethical approval.

CHAPTER FOUR

4.0 RESULTS

4.1 To determine the baseline level of completeness of Civil Registration and Vital Statistics in the 2016

The study assessed the completeness of civil registration and vital statistics in the Iringa region. Prior to the implementation of various interventions, including the decentralization of CRVS systems initiated in 2017, the completeness performance was at 19.6% for MCCD and 0.6% for death registration in the year 2016.

The study's results indicate that the completeness of Medical Certification of Causes of Death (MCCD) in urban areas was 73.8%, nearly five times higher than in rural areas. Additionally, the findings revealed that 0.7% of deaths were fully registered in rural areas, slightly surpassing the registration rate observed in urban areas (Figure 4).

4.1.1 Completeness of MCCD and Death registration by location

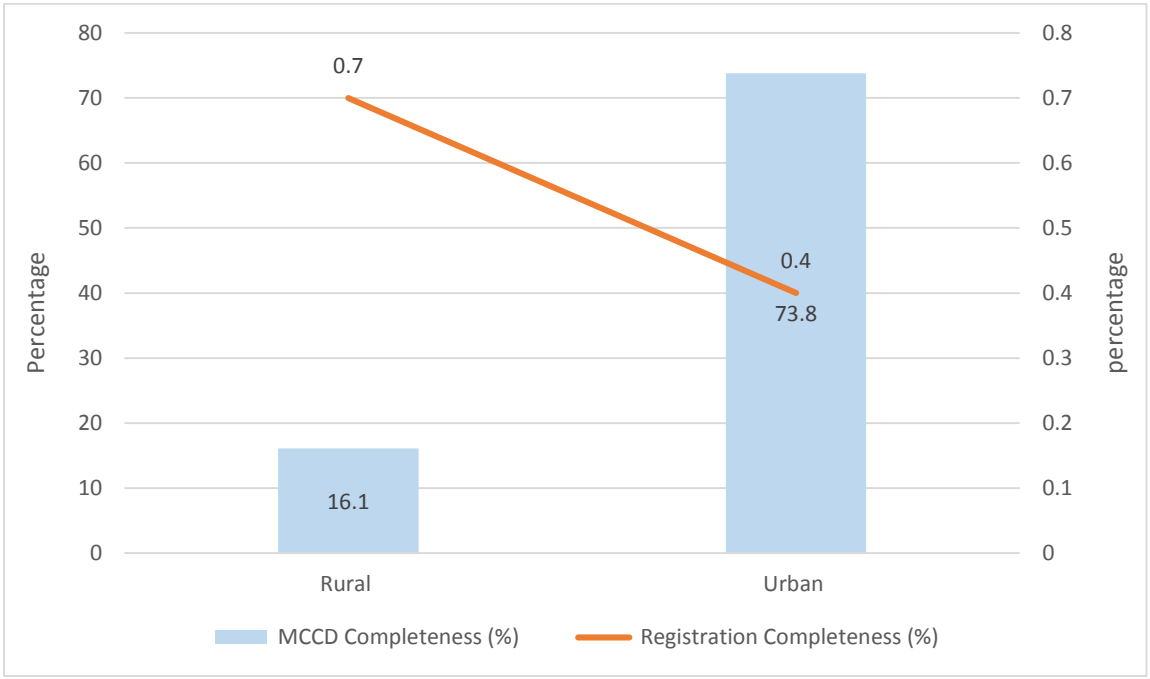


Figure 4: The baseline level of completeness of Civil Registration and Vital Statistics in the 2016 by location

4.1.2 Completeness of MCCD and Death registration by councils

Prior to the decentralization of the CRVS system in 2016, there were variations in the completeness of MCCD and death registration across councils. The findings portray that Mafinga TC showed the highest completeness for MCCD in 2016 at 142%, whereas Iringa MC had the lowest at 5.6%. In terms of death registration, Iringa DC was identified as the district with the highest percentage of registered deaths (1.7%), while Kilolo DC recorded the lowest at 0.1%, as depicted in Figure 5.

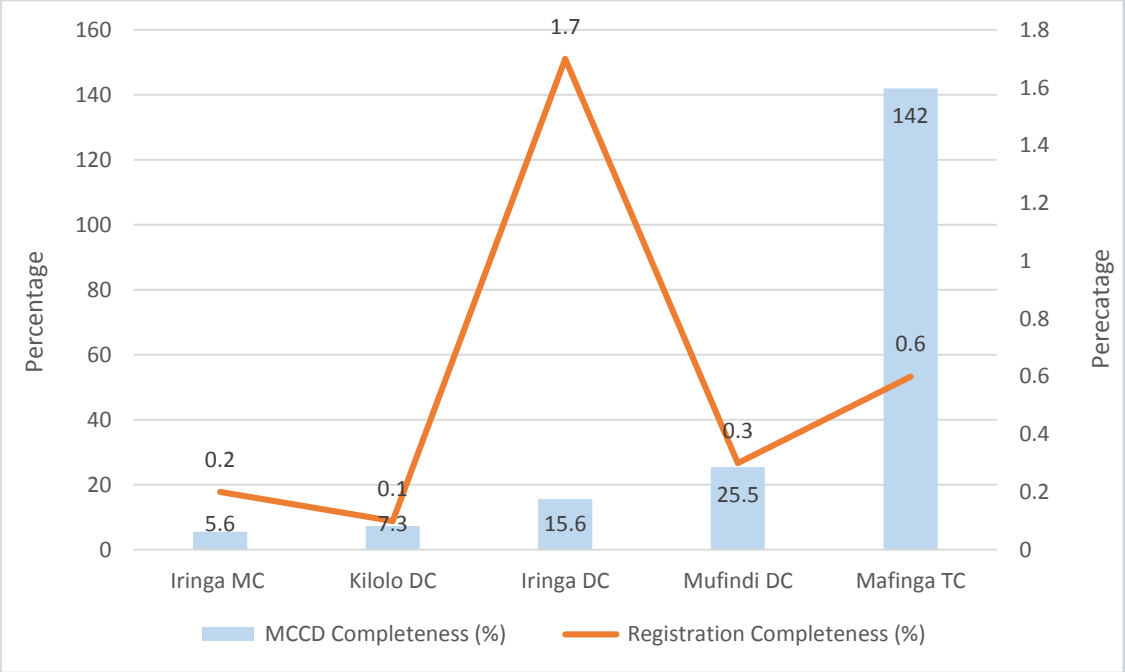


Figure 5: Baseline completeness of MCCD and death registration in Iringa Region in 2016

4.2 To assess the trend in the annual completeness of death registration in Iringa Region from 2016-2022

The researcher examined the trend in the completeness of death registration in the Iringa region based on gender, location, and administrative areas. This analysis was conducted both before and after implementing interventions that aimed at enhancing the Civil Registration and Vital Statistics system, with a specific focus on improving death registration

4.2.1 Completeness of death registration by Gender in Iringa Region

The study's `indicate that the overall completeness of death registration in the entire region was low for both males (12.4%) and females (6.7%) before implementing necessary interventions. However, following the application of these interventions, the completeness increased to 15.2% for males and 14.9% for females in the year 2022. Over the five-year period, the trend in completeness for males was slightly higher compared to females (figure 6).

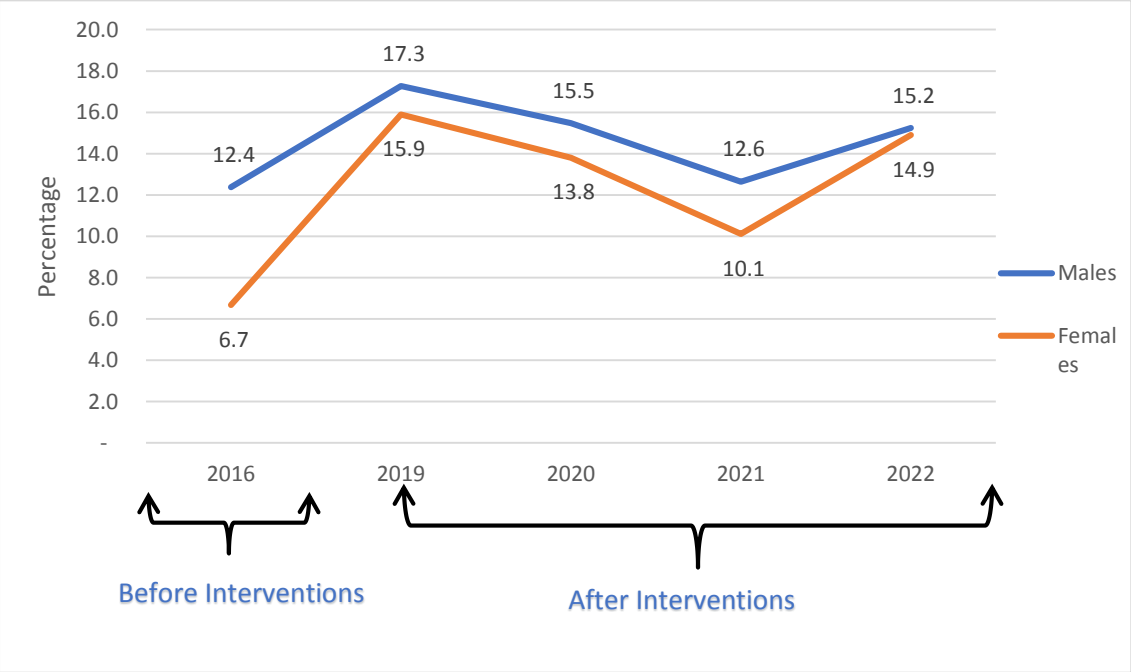


Figure 6: Completeness of death registration by gender in Iringa region from 2016-2022

4.2.2 Completeness of death registration by location in Iringa Region

The study findings reveal that, before interventions in 2016, death registration in rural areas was slightly higher at 0.7% compared to urban areas at 0.4%. Subsequently, after interventions, completeness in death registration consistently remained higher in urban areas over four years. However, from 2021 to 2022, there was a decline in completeness in both rural and urban areas, with a particularly steep decrease observed in urban areas (figure 7)

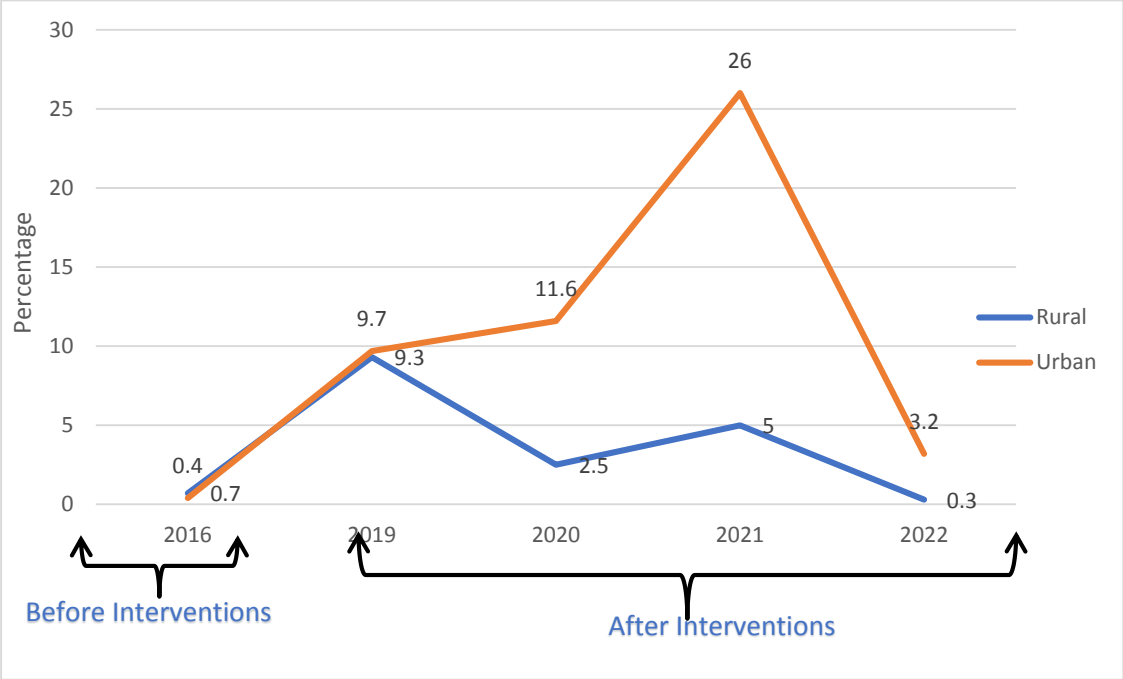


Figure 7: Completeness of death registration per location in Iringa region 2016-2022

4.2.3 Completeness of death registration by Council in Iringa Region

The results indicate that death registration completeness in Iringa region was exceptionally low at 0.6% in 2016. However, there were noticeable improvements post-intervention, with completeness percentages showing an upward trend in subsequent years: 9.3% (2019), 4% (2020), 9.0% (2021), and 1.0% (2022). Although the overall regional performance increased in 2022 compared to 2016, the trend was not consistently upward. Notably, Kilolo DC demonstrated an immediate improvement in completeness, rising from 0.1% in 2016 to 25.9% in 2019, followed by a consistent decline from 2020 (1.6%) to 2022 (0%). Similarly, Mafinga TC and Iringa MC exhibited positive performance post-intervention. Mafinga TC's completeness increased from 0.6% in 2016 to 13% in 2022, while Iringa MC showed an upward trend from 0.2% in 2016 to 34% in 2022.

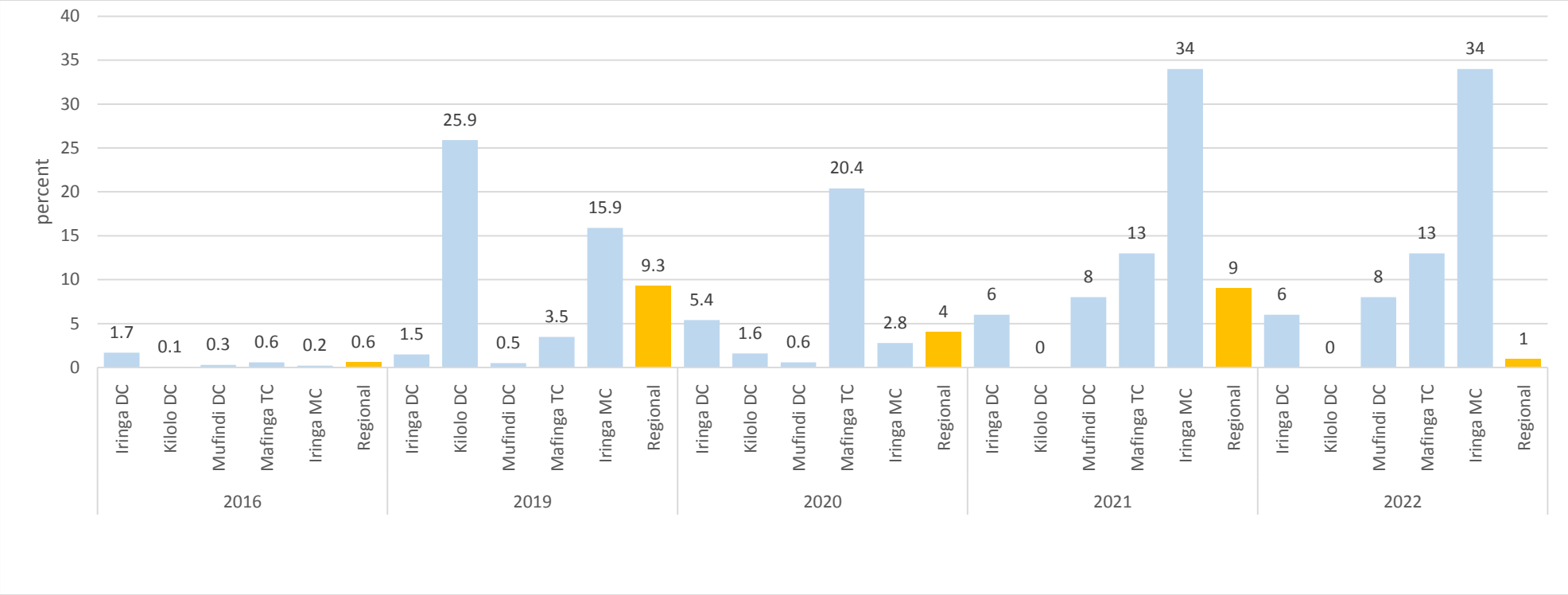


Figure 8: Completeness in death registration in Iringa Region, 2016-2022

4.3 To determine factors associated with the change of trend of completeness of CRVS data during the study period 2016 – 2022.

4.3.1 Accessibility of CRVS services

The decentralization of Civil registration and vital statistics services from the district level to lower levels, particularly to the ward and health facility levels, has emerged as a critical strategy for improving the completeness of vital event registrations within health services, as revealed through in-depth interviews. Importantly, the registration services have been brought closer to the citizens, significantly reducing the distance that they had to travel to access vital event registration services, including death registration. This reduction in travel distance is particularly advantageous in rural areas where transportation from remote villages to district registration centers has historically been challenging due to poor road conditions.

Moreover, the decentralization of CRVS services has significantly reduced the multiple steps that citizens previously had to follow to access CRVS services. This has led to the establishment of a one-stop center for registering vital events, facilitating the quicky completion of the registration process.

The national Registration manager from RITA was quoted saying:

> "…….. *Decentralizing the authority for registering vital events, including births and deaths, brings services closer to citizens, particularly considering Tanzania's large size, where distances from citizens' residences to district headquarters can be significant. Therefore, this devolution of registration services has helped to reduce the burden of travel and make services more accessible to citizens, especially in the areas where they reside, ensuring that all events, including deaths, are registered and recognized"*.
>
> "*Before decentralization. we used to follow multiple steps for the registration of vital events, but now, we have a one-step, single-visit registration process. Therefore, we can say that these are significant achievements that have resulted in the registration of many vital events.*"

The findings from this study have revealed that, with the decentralization of civil registration and vital statistics services, there has been an increase in the completeness of vital event registrations including death registration. This is primarily due to the fact that before the decentralization process, there were costs that all citizens seeking for CRVS services were required to pay before being served, which some citizens couldn't afford. To enhance motivation and encouragement for citizens to access these services in a timely manner, the government decided to waive all fees or costs that citizens are required to pay. This move has facilitated timely registrations of vital events by citizens, benefitting the government in the process.

One of the regional Civil Registration and Vital Statistics Coordinator from RITA was quoted saying:

> "…….. *Another aspect is that, in order to complete the registration of vital events in the past, these tasks were done with costs; meaning there were expenses that the client had to incur or contribute towards accessing the service. But after decentralization, the government removed all the costs that the citizen had to incur. This has led into increase in a number of events being registered timely without waiting for several years until the person needs to register them as they demand for other services that need birth or death certificates.*"

The Comprehensive training provided to clinicians from health facilities in Iringa has led to an improvement in the quality of medical certification of causes of death data annually. Given that most deaths occur in hospitals and health centers, and less frequently in dispensaries, the government has trained an appropriate number of clinicians based on these levels. Additionally, the availability of medical certification of causes of death forms (ICD 10 books) has made it easier to certify mortality events occurring in health facilities, consequently boosting the completeness of medical certification of causes of death data.

One of the districts HMIS Focal Person was quoted saying:

> "…….. *First and foremost, I congratulate the Ministry of Health for conducting MCCD training because before this training, the availability of such statistics*

was very low due to the lack of ICD 10 books in healthcare facilities. Moreover, these trainings have led to the generation of better-quality statistics produced by doctors immediately after being equipped with skills by a team of experts from the headquarters".

4.3.2 CRVS coordination and supportive supervision.

Findings further reveal that institutionalized supportive supervision at lower levels (health facility and ward level) has played a critical role in improving the quality of registered vital events at the respective centers. This is because standardized checklists have been prepared and disseminated to all levels, and the responsible technical staff regularly conduct such supportive supervisions for registrars in health facilities and wards. During these supportive supervisions, on-the-job trainings are conducted, resulting in continuous quality improvement of registered vital events. Furthermore, to ensure the institutionalization of the supportive supervision program, the registration office allocates a budget from government sources to ensure that registration centers are regularly visited, and problems are resolved.

One of the national CRVS coordinator from PoRALG was quartered saying:

"…….. *To be honest supportive supervision efforts made by RITA, in collaboration with other stakeholders, have significantly contributed to ensuring the accuracy of registered vital events. These supervisions have also been instrumental in providing the on-job training for new employees at the respective centers, thus enhancing their skills and competencies. Furthermore, RITA's strategy to allocate a budget for supportive supervision through internal government sources has greatly facilitated to a continuous supervision process by ensuring that such activities are consistently implemented through regional and council coordinators to regularly visit health facilities and wards.*"

The efficient coordination of the decentralized CRVS system among various organizations responsible for registering vital events who are the Ministry of Health, President's Office Regional Administration Local Government, together with the Ministry of Constitution and Legal Affairs has been pivotal in improving communication

among stakeholders, leading to a smoother registration process and an increase in the number of events registered. This improved communication has also facilitated the continued implementation of registration duties at registration centers and supervisors at regional and council levels, whereby all these are employees of PoRALG. These efforts have resulted in the institutionalization of decentralized CRVS systems throughout the entire Iringa region.

The national CRVS manager was quartered saying:

> "…… *well, we get cooperation from the MoH, PoRALG, who are the main CRVS stakeholders, whereby we do have the CRVS technical working group that always meet and discuss CRVS matters, although this is not regularly implemented. So, overall, we give support to each other as you see the workers and supervisors employed by PoRALG are registering vital events. In anyhow there is still a room to furthermore strengthen our cooperation by reinforcing these technical working groups to at least meet once a quarter to discuss the process of decentralization system for further improvement*".

4.3.3 Regulations and guidelines.

The number of registered vital events has decreased in some registration centers across councils over the years because, according to existing regulations, there is no law mandating citizens to register any vital events. This has allowed many citizens to choose not to register them on time or even not register them at all, resulting in a decrease in the completeness of registered vital events. However, a few services are linked to the registration of some vital events. For example, the registration of pupils in primary schools is tied to having a birth certificate, and access to loans at the university level is linked to having a death certificate if any of the parents has passed away, along with the birth certificates of all applicants.

The national CRVS coordinator from the Ministry of Health was quartered saying:

> "….. *From my perspective, the decline in registered events may be because the process of registering vital events depends on an individual's willingness and is not legally mandated. If it were tied to other services, registrations might increase. For instance, when enrolling a student in primary school, a birth certificate is mandatory. If this were the case in many other services, we might observe more vital events being registered*".

Further findings revealed a consistent decline in the registration of vital events year after year in certain councils. This trend can be attributed to a lack of regular registration of deaths that previously occurred in health facilities. This irregular registration was caused by changes in the guidelines after decentralization, introducing new requirements for vital event registration, such as the need for a NIDA number. Many people did not possess this number, resulting in delays or even failures to complete the registration process. Moreover, registrars faced challenges in meeting the new guidelines, such as not using blue pens for issuing certificates but only black pens and using ink for individuals who are blind when signing certificates. Despite the introduction of these new tools by the registration office, they were not provided to the registrars, making it difficult for them to fulfill their responsibilities.

One of the registrars in one of the government health facilities was quartered saying:

> "……*for the slight decline in registered vital events can be attributed by the newly required attachments that individuals must present when applying for certificates. However, it remains unclear what consequences individuals may face if we attempt to register a vital event without these attachments. For instance, the new guidelines mandate that individuals must provide their NIDA number*".

Another registrar from the ward was quartered saying:

> "……*with these new guidelines, they want us to use black pens when writing these certificates, but they have not provided us with these pens. We are also required to use ink for people who are blind. However, they have not supplied us with any of these new tools, leading to delay or even not registering the events*".

4.4 To assess the quality of medical certification of causes of death data submitted to DHIS2 from health facilities in the Iringa region across the years 2016 to 2022 spanning the before and after MCCD training period.

The study assessed the quality of medical certification of causes of death data as completed by the clinicians in Iringa region before applying interventions and after applying the interventions for the purpose of improving the overall CRVS system in the entire region. The study went further by assessing the trend of distribution of ill-defined causes across the years by age groups.

4.4.1 Quality of MCCD data in Iringa region across the years 2016, 2019 to 2022

The findings from the study as presented in Figure 6 illustrate an improvement in the quality of medical certification of causes of death data in Iringa after the implementation of interventions compared to the pre-intervention period. Nevertheless, the results indicate a slight fluctuation in the quality of medical certification of causes of death data, with a rise and fall pattern observed in 2019 (93%), 2020 (91%), and 2021 (92%). Interestingly, the MCCD data quality for the year 2022 remained consistent with the baseline, standing at 86%.

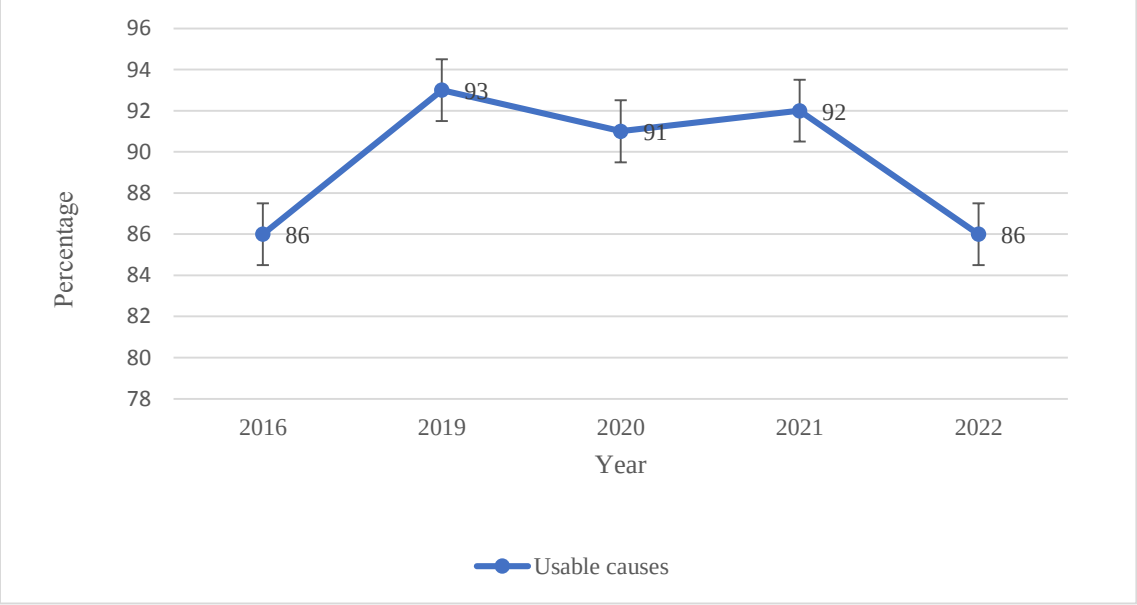


Figure 9: Quality of Medical Certification of Causes of Death

4.4.2 The distribution of ill-defined causes across years 2016, 2019 to 2022

The study results revealed a consistent decrease in the percentage of ill-defined causes in the Iringa region over the years: 2016 (14%), 2019 (7%), 2020 (9%), and 2021 (8%). Interestingly, in 2022, the percentage reverted to the baseline level of 2016 at 14%, despite the implementation of interventions such as face-to-face training and the introduction of the MCCD eLearning course for in-service clinicians. Among the various ill-defined causes that clinicians could assign when certifying MCCD, only seven consistently appeared throughout the five years of the study. These causes included Infectious and parasitic diseases, Neoplasms, Diseases of blood, Diseases of the circulatory system, Symptoms and signs, and External causes of morbidity and mortality. Notably, symptoms and signs emerged as the most frequently assigned ill-defined causes, constituting 77% of all ill-defined causes in 2016 and maintaining high prevalence at 74% in 2022. On the other hand, external causes of morbidity and mortality showed minimal representation, accounting for 0% in 2016 and only 1% in 2022 of all ill-defined causes in the respective years.

S/N	Ill-defined Cause	2016	2019	2020	2021	2022
	All causes (defined & ill-defined causes)	**747**	**1,208**	**1,025**	**7,88**	**1,006**
1	Infectious and parasitic diseases	0 (0%)	1 (1%)	6 (7%)	0 (0%)	3 (2%)
2	Neoplasms	23 (23)	4 (5%)	1 (1%)	1 (2%)	0 (0%)
3	Diseases of blood	0 (0%)	0 (0%)	2 (2%)	0 (0%)	2 (1%)
4	Diseases of circulatory system	0 (0%)	29 (35%)	28 (31%)	17 (28%)	20 (14%)
5	Diseases of genitourinary system	0 (0%)	13 (15%)	12 (13%)	7 (11%)	10 (7%)
6	Symptoms and signs	75 (77%)	35 (42%)	41(46%)	36 (59%)	104 (74)
7	External causes of morbidity and mortality	0 (0%)	2 (2%)	0 (0%)	0 (0%)	2 (1%)
	Total of ill-defined	**98**	**84**	**90**	**61**	**141**
	% of Ill-defined causes from all causes	**14%**	**7%**	**9%**	**8%**	**14%**

Table 1: The distribution of ill-defined causes

4.4.3 The distribution of ill-defined causes by age and sex across years 2016, 2019 to 2022

The study findings suggest that ill-defined causes were distributed almost equally between males and females both before and after interventions, with the total number of ill-defined causes for females consistently slightly lower than that for males over the years. However, in the baseline year 2016, ill-defined causes assigned to females were slightly higher than those assigned to males. Upon examining the distribution of ill-defined causes by age groups in the trustworthiness years 2016 and 2022, it was observed that a significant number of ill-defined causes were assigned to individuals under 50 years old. This trend persisted both before and after the implementation of interventions aimed at improving the Medical Certification of Causes of Death (MCCD).

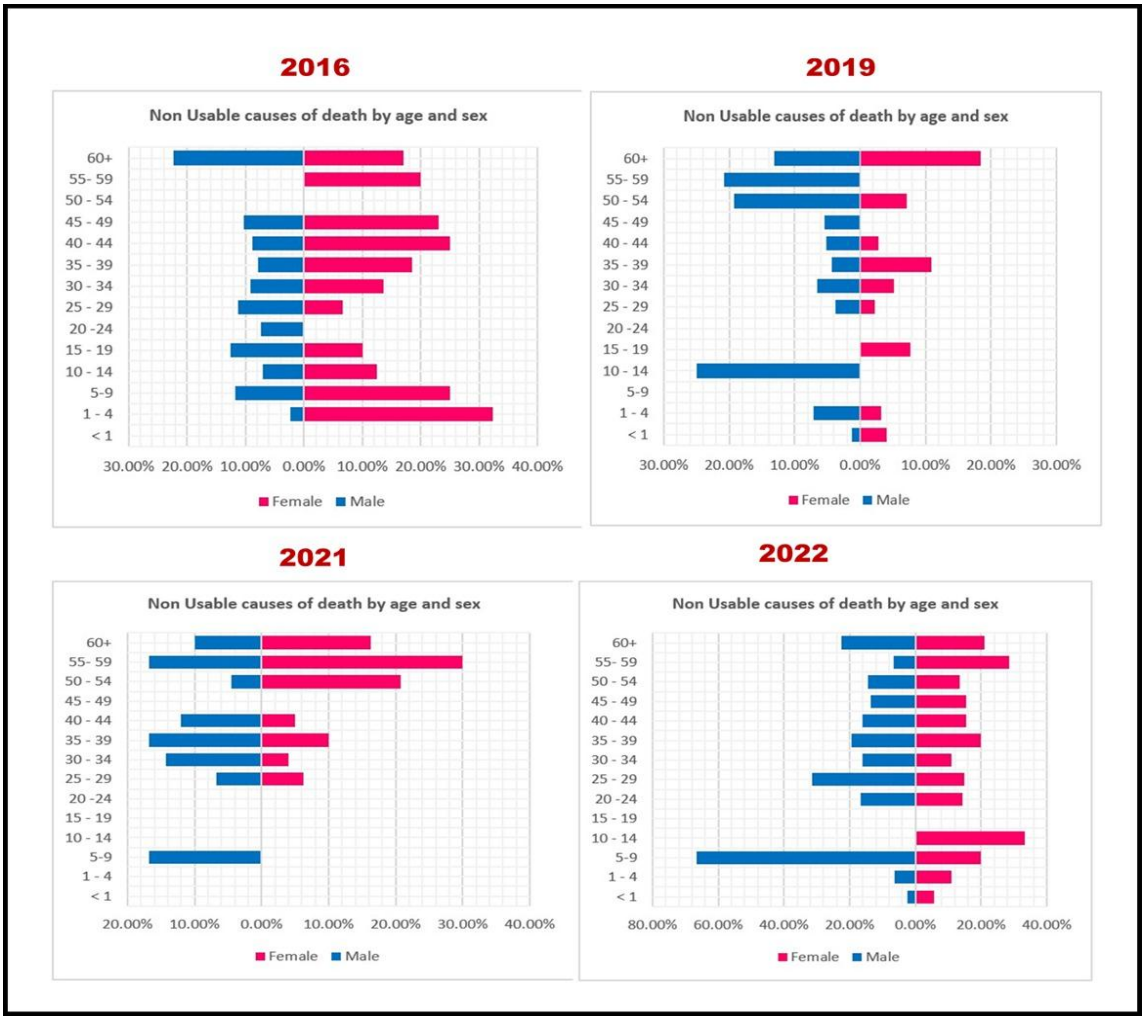


Figure 10: Distribution of ill-defined causes by age and sex

4.4.4 The comparison of mean score difference in the quality of medical certification of causes of death data before and after intervention implementation

The study used the paired t-test to assess whether there was a significant change in the mean quality of cause-of-death data by comparing performance in the baseline year 2016 to that in 2021 after interventions. The aim was to determine if there were statistically significant changes in the usability of cause-of-death data from 2016 to 2021.

The paired t-test yielded a statistic of 2.61 with a p-value of 0.031, indicating a statistically significant difference in the quality of cause-of-death statistics before and after the intervention, at a significance level of 0.05 ($p < 0.05$). This suggests that the interventions implemented post-baseline assessment had a notable impact on the quality of cause-of-death data, hence CRVS at large.

Furthermore, the mean difference between the quality of cause-of-death statistics before and after the interventions was 9.12 units. This positive mean difference indicates that, on average, the quality of cause-of-death statistics increased following the necessary interventions compared to before. These findings support the conclusion of a positive impact resulting from the intervention.

Time point	N	Mean(±SE**)	95%CI	Mean diff*(±SE)	Paired T-test
Before Intervention	60	85.84(5.84)	(78.29, 92.79)	9.12 (3.49)	2.61 (P: 0.031)
After intervention	60	94.66(5.19)	(88.22, 101.09)		
Combined mean	120	90.1(7.09)	(85.03, 95.17)		

Table 2: Paired T-test for testing the mean scores of before and after interventions

*diff-mean difference

**SE-standard error

CHAPTER FIVE

5.0 DISCUSSION OF FINDINGS

5.1 Overview

In this section, the study discusses the study findings, drawing comparisons with those reported in other studies. This discussion provides insights into the significance, utility, and implications of the study findings, exploring how they align or diverge with similar research conducted elsewhere.

5.2 Baseline level of completeness of Civil Registration and Vital Statistics in the 2016

The baseline results indicated that the completeness of both medical certification of causes of death and death registration was inadequate compared with the expectation of 100%. This suggests that the government and other stakeholders might face challenges in utilizing the collected data for policy decision-making. Consistent with findings in other literature, this conclusion underscores the limitations associated with using Civil Registration and Vital Statistics data with very low completion rates (33). Acknowledging the crucial role of vital statistics, countries are strongly advised to utilize data from civil registration systems, regardless of the registration completeness rate. This practice will empower them to promptly identify crucial areas that require attention for the improvement of Civil Registration and Vital Statistics (34).

This study revealed a higher level of Medical Certification of Causes of Death completeness in urban areas compared to rural areas. This discrepancy may be due to the unequal distribution of MCCD data collection tools between the two settings. It is imperative for the government to address this issue by ensuring an equitable distribution of data collection tools across all health facilities, irrespective of their rural or urban designation or ownership status, whether private or government operated. The study aligns with numerous other research findings (35), emphasizing that the unequal distribution of MCCD data collection tools or guidelines among various locations or types of health facilities can result in a substantial underreporting of deaths. Such disparities consequently contribute to variations in MCCD completeness across different areas or health facilities.

This study results further indicated that the completeness of death registration in rural settings was slightly better compared to urban settings. This difference could be attributed to the increased awareness among people in rural areas regarding the importance of registering vital events, including deaths. This awareness may have been developed through sensitization meetings on Civil Registration and Vital Statistics (36). These findings are in line with various studies which support the idea that enhanced citizen awareness about the timely registration of vital events leads to a higher completeness of death registration, irrespective of whether the areas are rural or urban in nature (37).

5.3 Assessment of the trend in the annual completeness of death registration in Iringa Region from 2016-2022

The study revealed a positive impact resulting from interventions aimed at enhancing the quality of the Civil Registration and Vital Statistics Systems in Iringa region, including the completeness of death registration. This implies that initiatives such as decentralizing the CRVS system from the district level to lower levels (ward and health facility level) significantly expedited the enhancement of the CRVS system in the county. As supported by various literatures, this approach brought vital event registration services closer to the community, thereby simplifying their accessibility (38). Furthermore, the study revealed that the removal of fee charges on the deaths which were registered within ninety days accelerated the rate of death registration completeness in Iringa region (39).

This study also indicated a notable improvement in death registration completeness for both males and females in the years following the implementation of necessary interventions to enhance Civil Registration and Vital Statistics in the Iringa region. Over the years post-intervention, the overall completeness of death registration remained higher in males compared to females. This discrepancy may be attributed to social and cultural beliefs, such as property ownership being predominantly associated with males, thereby limiting access to death registration certificates among individuals of different genders. Similar findings on variations in death registration completeness between males and females have been documented in various societies in existing literature (40–42).

The study reveals an improvement in the completeness of death registration in Iringa following the implementation of necessary interventions in both rural and urban areas.

This increase is accompanied by variations in the recorded death rates over the years in the two settings, with urban areas consistently reporting higher death rates than rural areas. This suggests that urban areas benefit from better healthcare and infrastructure, facilitating easier travel and access to civil registration services (43). The observed difference may also be attributed to a higher awareness of the importance of registering vital events in urban settings compared to rural settings, as suggested by other literature (44). Furthermore, the inadequacy of registration centres for vital events, particularly in rural areas, has been highlighted, forcing individuals to travel long distances to complete the registration procedures (45).

This study again has evidenced that there were variations in the completeness of death registration among the districts in the Iringa region after implementing necessary interventions to strengthen the Civil Registration and Vital Statistics system. Some districts experienced a consistent positive increase in death registration completeness each year following the interventions. In contrast, certain districts witnessed an initial increase within a year of intervention, followed by a subsequent decline in completeness over the years. The observed trend in districts where death registration initially increased but later declined may indicate a lack of adherence to established standards in coordinating CRVS activities at the district or regional level including conducting of regular. This could involve shortcomings in maintaining public awareness regarding the ongoing importance of registering vital events or ensuring a consistent reporting of registered vital events over time as revealed also by other studies on the similar topic (46). Another study on the similar topic had revealed the same findings on the reasons for declining of CRVS completeness after applying interventions for CRVS improvement due to week coordination system (47).

5.4 Factors associated with the change of trend of completeness of CRVS data during the study period 2016 – 2022.

This study revealed that strong, supportive supervision, conducted at lower levels where registrars work, contributes to the quality of vital event registration in the field. This is because, when technical experts from higher levels regularly visit registrars, they provide on-the-job training to newly employed staff or those who may have forgotten certain content. Therefore, it is crucial for the government to institutionalize supportive

supervision interventions, ensuring that financial resources for these activities are budgeted using government funds. This will also ensure the sustainability of supportive supervision processes for vital events. This corresponds to another study which revealed the critical role of regularly supportive supervision to registrars for the purpose of improving the quality of registered vital events as implemented by experts from higher levels (48)

The decentralization of civil registration and vital statistics services to citizens has been shown to significantly improve the completeness of death records and the quality of cause-of-death statistics in Iringa. By bringing CRVS services closer to where citizens reside, this approach reduces the costs associated with accessing such services, as individuals have to travel shorter distances. Furthermore, this strategy was accompanied by a change in the law, allowing citizens to register vital events free of charge, which motivated many to register events in a timely manner. Other studies have also highlighted the positive impact of decentralization and legislative changes on the completeness of registered vital events (22,49).

The Civil Registration and Vital Statistics System is a dynamic system that requires regular updates to its guidelines in order to meet the current needs of all stakeholders, including citizens and decision-makers. This study has shown that, as the government continually updates its guidelines, there has been a lack of orientation for registrars working in the field to ensure that they are all aware of and adhere to the new changes. This lack of orientation has led to a decrease in the quality of vital events being registered. Additionally, the government needs to provide the tools necessary for registration work, including the updated guidelines, so that they are always available in the field. Failure to do so will result in a weakened CRVS system and a decrease in the total number of vital events being registered. Another study has highlighted the importance of orientation for registrars and the availability of tools in the field, which leads to an improvement in the CRVS system (50,51).

This study also revealed that face-to-face training to clinicians in health facilities and registrars in registration centers, including wards, is crucial for improving the skills of these staff members in properly documenting the causes of death information on medical

certification of causes of death and completing death registration records, hence improve CRVS system. However, it's important that the government looks for sustainable means of improving the skills of these responsible staff members. It's advisable to consider reviewing the curricula of medical colleges and universities to include the content on medical certification of causes of death so that all graduates have knowledge of MCCD before they graduate. For in-service clinicians, it's essential to link the MCCD eLearning course with the Medical Councils to make it mandatory each year when they are required to renew their licenses. The study by Nyondo et al. (2019) also revealed that such interventions could assist in improving the quality and completeness of death statistics when applied to any region or country (9).

The study also revealed that registrars in registration centers, responsible for registering vital events, also have other duties due to inadequate staffing. This leads to staff overload, as long queues of people waiting for registration services and this reduce the efficiency of the registration process. It's important for the government, through the registration office, to employ staff dedicated primarily to registration services or to exempt current staff from other responsibilities so that they can focus on their registration duties. Another study has shown that less effective Civil Registration and Vital Statistics system may be due of shortage of staff where those available can be heavily engaged in non-CRVS responsibilities (52)

5.5 Assessment of quality of medical certification of causes of death data submitted to DHIS2 from health facilities in the Iringa region across the years 2016 to 2022 spanning the before and after MCCD training period.

This study demonstrates that interventions implemented after the baseline have had a positive impact on enhancing the quality of medical certification of causes of death in the Iringa region. The quality of MCCD showed improvement after the interventions when compared to the baseline level. This suggests that the government could consider extending these interventions to other regions in the country. Previous research findings have also indicated that interventions such as face-to-face training for in-service clinicians, the use of the MCCD eLearning course for the in-service and updating curricula for pre-service clinicians can effectively impart MCCD knowledge, enabling clinicians to properly complete MCCD forms (9).

The study also revealed that, after four years of implementing interventions in the Iringa region, the quality of medical certification of causes of death had regressed to the baseline level. This suggests a necessity for refresher training sessions for clinicians on MCCD. The technical training team should consistently conduct supportive supervision in health facilities and offer on-job training to clinicians. This aligns with findings from various studies that recommend the adoption of such approaches to uphold the quality of MCCD in any country (53).

This study identified seven ill-defined causes, namely Infectious and parasitic diseases, Neoplasms, Diseases of blood, Diseases of the circulatory system, Symptoms and signs, and External causes of morbidity and mortality, consistently assigned by clinicians in the Iringa region during and after the baseline. Notably, Symptoms and signs had a higher proportion during the baseline year and continued to be prominent thereafter. This suggests a need for the Ministry to organize refresher training for clinicians, specifically focusing on proper documentation of MCCD when assigning one of the frequently used ill-defined causes. Similar approaches to refresher training have been recommended in other literature to enhance MCCD knowledge among clinicians (54).

This study has discovered that the majority of ill-defined causes were attributed to individuals below the age of 50. It is well-established that this age group actively engages in various activities within society, making them more susceptible to accidents compared to other age groups. Numerous literature sources have indicated that this specific type of cause of death significantly contributes to the high percentages of ill-defined causes. Consequently, there should be an increased emphasis on training clinicians in assigning causes of death related to such age groups and types of causes (55)

This study has revealed a significant improvement in the quality of cause-of-death statistics, particularly in the usability of the data, following the implementation of interventions immediately after the baseline assessment. These findings support the potential effectiveness of deploying similar interventions in future regions as the government progressively expands its efforts to strengthen Civil Registration and Vital Statistics (CRVS) systems. In consistent with these results, another study also advocated

for the continued use of interventions to maintain positive changes in outcome variables (9)

5.6 Study limitations and Mitigation Measures

1. Some data from the Registration Insolvency and Trust sheep Agency specifically on death registration and several missing variables. Therefore, these were excluded from the analysis (56).

Despite the limitations mentioned the following is the strength of this study.

1. A detailed disaggregated analysis was conducted to examine the quality of Civil Registration and Vital Statistics, specifically focusing on death registration and the quality of medical certification of causes of death. This analysis involved a breakdown by age, sex, and location to obtain comprehensive insights.
2. The study has used the inferential statistical analyses, allowing the findings to be generalized to infer characteristics of the broader population.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

There has been an improvement in the quality of Civil Registration and Vital Statistics in the Iringa region during the period covered by this study. This positive change may be attributed to effective government interventions aimed at enhancing the quality of CRVS data, intending to replicate these initiatives in other regions and utilize the data for informed policy decision-making. Interventions, such as face-to-face training for clinicians and registrars, contributed to the observed improvement in the quality of Medical Certification of Causes of Death. The decentralization of the CRVS system predicted a modest positive change in the completeness of death registration. However, the overall improvement in CRVS data quality did not consistently show a positive increase throughout the study period, indicating the necessity of on job training for clinicians and registrars. This gap could also be addressed by implementing sustainable measures or programs for CRVS improvement, such as the utilization of CRVS eLearning courses. The persistent number of ill-defined causes may be attributed to the lack of frequent supportive supervision at lower levels or registration centers and the existence of weak streamlined coordinated CRVS activities throughout the entire region. Therefore, it is important for the government to address the observed challenges in Iringa before rolling out such interventions in furthermore regions across the country.

6.2 Recommendations

1. The Ministry of Health should organize refresher training sessions for in-service clinicians in the Iringa region to refresh their knowledge of MCCD content. It has been a considerable amount of time since their initial training, and this initiative will help them enhance their performance in completing MCCD forms. The same approach could be used to the CRVS registrars at ward level and health facility level.

2. The government should provide education to individuals of all genders on the importance of registering vital events and oversee the implementation of

guidelines set to ensure equal rights in registering these vital events. This will help reduce the disparity in CRVS completeness between males and females, as observed throughout the assessment period of this study.

3. The Ministry of Health and the Registration Insolvency and Trusteeship Agency should ensure the continuous Quality management of the CRVS activities at lower levels (ward level, council level, district level, and regional level). This will aid in decentralizing responsibilities of CRVS matters from the national level to lower levels, thereby enhancing sustainability and efficiency in performance. There should also be strengthened link between health sector and civil registration office as key pillars of decentralization process.

4. The Ministry of Health should rigorously oversee the MCCD eLearning course established and provided to doctors through the Medical Council of Tanganyika. The ministry should explore ways to ensure that every doctor is mandated to complete the course annually, as recommended, rather than it being optional as it is currently. This could also serve as a sustainable method for refreshing clinicians' knowledge of MCCD content.

5. The government, through the Ministry of Health and the Registration Insolvency and Trusteeship Agency, and Presidents' Office, Regional Administration and Local Government should ensure the creation of conducive operational environments, particularly in strengthening Civil Registration and Vital Statistics in both rural and urban areas. This includes providing essential tools for effective work, such as MCCD forms, death registration data collection tools, and death notification forms at the ward level, always ensuring availability.

6. To ensure that the collected CRVS statistics meet the required quality standards for making various policy decisions, the government, through the responsible institution for CRVS improvement, should take the initiative to digitize all CRVS services. It is crucial to ensure that CRVS systems from all relevant agencies are interconnected.

7. The government should ensure that all CRVS guidelines for registering vital events are consistently updated and promptly disseminated, especially to the lower levels, primarily at the ward and health facility levels, as they are the ones responsible for registering vital events at the source.

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LIST OF APPENDICES

Appendix I: Consent Form (English Versions)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED HEALTH SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS

ID NO

QUALITY OF DATA AFTER DECENTRALISATION OF CIVIL REGISTRATION AND VITAL STATISTICS IN IRINGA REGION 2016 -2022

Greetings,

My name is Gisbert Msigwa. I am a student at Muhimbili University of Health and Allied Sciences pursuing a Master of Public Health. I am doing a study on "Trends of the quality of Civil Registration and Vital Statistics data after decentralization from district to the health facility and ward level in Iringa region during 2016-2022.

Purpose of the study:

The study aims to assess the trend of the quality of CRVS data after decentralization from District to the health facility and ward level in Iringa Region during 2016-2022.

Procedures:

I will ask you questions about your background, factors associated with the change of trend of completeness of CRVS data from 2016 to 2022. This involves tape recording and will take about 30 minutes.

Benefits

Although you may not directly benefit from this survey, the information you provide will be used by stakeholders to improving CRVS implementation process.

Potential Risks

Participating in this study carries no risk because no one will acquire your name or other personal information. All forms and study materials will use an individual identification number (IDI #), not any personal information. All data gathered will only be used for this study's objectives.

Statement of Rights and Confidentiality

It is optional to take part in the study. Your right to get care will not be affected if you choose not to take part in this study. Any question you don't wish to answer can be skipped. We sincerely hope that you engage fully since your opinions are noteworthy.

Right to withdraw and alternatives:

Your participation in this study is entirely voluntary, and if you decide not to take part or decide to stop, you won't face any consequences.

Who to contact:

If you have any questions concerning the study, contact the principal investigator, Gisbert Msigwa from Muhimbili University of Health and Allied Sciences at Mobile Phone: 0757728758, Email: gisbertmsigwa@gmail.com , P. O. Box 743, Dodoma.

If you ever have quarries about your rights as a participant Communicate with Director of Research and Publications at Tel: +255 22 2152489, Email: drp@muhas.ac.tz, P.O. Box 65001 Dar es Salaam, Chairman of MUHAS Institutional Review Board at 022-2152489, P.O. Box 65001 Dar es Salaam and Prof. David Urassa who is the main Supervisor, at 0754279553, Email: durassa2@yahoo.co.uk

Do you have any questions?

Do you agree?

Participant agrees……. Participant does NOT agree …….....

I have read the content of this form.

My questions have been answered. I agree to participate in this study

Signature participant……. Date of signed consent …….

Signature witness……... Date of signed consent …….....

Appendix II: Key Informant Interview guide to national CRVS Coordinator

Question	Probes and guides
Participant information	❖ I would like to hear a bit about you, for how long have you been serving under CRVS desk?
1. Why do you think that decentralization is an important strategy towards improving the completeness of CRVS in Iringa?	❖ Use of information system technology (ICT) ❖ Reduces travel costs upon accessing CRVS cervices ❖ One stop process in registering vital events
2. Are the Process Maps and SOPs for decentralized CRVS already in place? After how long are they being updated?	❖ Yes, they are in place ❖ They are detailed and understood by every once ❖ RITA and other stakeholders always review them and incorporate the needs at that particular time
3. How are supportive supervisions on CRVS organized from national to Council level?	❖ Integrated to the general supportive supervision ❖ Independent of supportive supervision ❖ Supervision visit at least ones per year as the guideline stipulates
4. What are the achievements witnessed so far in as far as decentralization of CRVS is concerned in Iringa region?	❖ Completeness of CRVS events have gone up ❖ Great awareness among people in registering vital events
5. What might be the reasons for such improvements on CRVS completeness?	❖ Birth & death certificates being one of the requirements in many spheres of life ❖ Services are provided for free ❖ Sensitization to the community ❖ The legal review which has been passed
6. What are the weaknesses witnessed so far in as far as implementation of CRVS decentralization is concerned?	❖ A soon as the system is upgraded there is always a need of further trainings. ❖ Availability of electronic devices ❖ Infrastructure e.g Electricity, internet connectivity ❖ Availability IT personnels

7. What are the prevailing challenges in implementation of CRVS decentralization in Iringa?	❖ Huge start-up costs ❖ Need for mass campaign before launching ❖ Still some areas are remotely allocated
8. What do you think should be done to improve/institutionalize decentralized CRVS implementation process?	❖ Look for more resources (financial and human) ❖ Revise the criteria for distributing data collection tools ❖ Refresher training to registrars ❖ Incorporate the training content into curricular of colleges/universities
9. What criteria do you use upon deciding to the next region in decentralizing CRVS services	❖ Availability of resources ❖ Geographical location ❖ Based on donor priorities ❖ Results from the evaluation reports of the region which is expected to be the next

Appendix III: Key Informant Interview guide to regional & Council CRVS Coordinators

Question	Probes and guides
Participant information	❖ I would like to hear a bit about you, for how long have you been serving as a CRVS regional /council coordinator?
1. Why do you think that decentralization is an important strategy towards improving the completeness of CRVS in Iringa?	❖ Use of information system technology (ICT) ❖ Reduces travel costs upon accessing CRVS cervices ❖ One stop process in registering vital events
2. How is registration of vital events in health facilities and wards being conducted?	❖ Notification of vital event ❖ Family members/close relatives involved in a process ❖ Issuing of certificates
3. How are supportive supervisions on CRVS organized from national to Council level?	❖ Integrated to the general supportive supervision ❖ Independent of supportive supervision ❖ Supervision visit at least ones after every six months
4. What are the achievements witnessed so far in as far as decentralization of CRVS is concerned in your region?	❖ Completeness of CRVS events have gone up ❖ Great awareness among people in registering vital events
5. What might be the reasons for such improvements on CRVS completeness?	❖ Birth & death certificates being one of the requirements in many spheres of life ❖ Services are provided for free ❖ Sensitization to the community ❖ The legal review which has been passed
6. What are the weaknesses witnessed so far in as far as implementation of CRVS decentralization is concerned?	❖ A soon as the system is upgraded there is always a need of further trainings. ❖ Availability of electronic devices ❖ Infrastructure e.g Electricity, internet connectivity ❖ Availability IT personnels
7. What are the prevailing challenges in implementation of CRVS decentralization in Tanzania?	❖ Huge start-up costs ❖ Need for mass campaign before launching ❖ Still some areas are remotely allocated
8. What do you think should be done to improve decentralized CRVS implementation process?	❖ Look for more resources (financial and human) ❖ Revise the criteria for distributing data collection tools ❖ Refresher training to registrars

Appendix IV: Key Informant Interview guide to Ward and health facility CRVS registrars.

Question	Probes and guides
Participant information	❖ I would like to hear a bit about you, for how long have you been serving as a CRVS CRVS registrar?
1. Why do you think that decentralization is an important strategy towards improving the completeness of CRVS in Iringa?	❖ Use of information system technology (ICT) ❖ Reduces travel costs upon accessing CRVS cervices ❖ One stop process in registering vital events
2. How is registration of vital events in health facilities and wards being conducted?	❖ Notification of vital event ❖ Family members/close relatives involved in a process ❖ Issuing of certificates
3. How are supportive supervisions on CRVS organized from national to Council level?	❖ The national, regional and council teams visit regularly ❖ Live demonstration of registering vital events is being done
4. What are the achievements witnessed so far in as far as decentralization of CRVS is concerned in your region?	❖ Completeness of CRVS events have gone up ❖ Great awareness among people in registering vital events
5. What might be the reasons for such improvements on CRVS completeness?	❖ Birth & death certificates being one of the requirements in many spheres of life ❖ Services are provided for free ❖ Sensitization to the community ❖ The legal review which has been passed
6. What are the weaknesses witnessed so far in as far as implementation of CRVS decentralization is concerned?	❖ A soon as the system is upgraded there is always a need of further trainings. ❖ Availability of electronic devices ❖ Infrastructure e.g Electricity, internet connectivity ❖ Availability IT personnels
7. What are the prevailing challenges in implementation of CRVS decentralization in Tanzania?	❖ Need for mass campaign/sensitization meeting ❖ Still some areas are remotely allocated ❖ Face resistance from some of the family members
8. What do you think should be done to improve decentralized CRVS implementation process?	❖ Revise the criteria for distributing data collection tools ❖ Refresher training to registrars

Appendix V: Format of MCCD data Set to be extracted DHIS2 and Analyzed by using ANACoD3

country_a	iso3_code	year4	data_type	icd_code	sex_code	total_num	age_00	age_01	age_05	age_10	age_15	age_20	age_25	age_30	age_35	age_40	age_45	age_50	age_55	age_60	age_65	age_70	age_75	age_80	age_85	age_90	age_95	age_unkno
Trainingla	USA	2015	population		1	30723011	398381	1581721	1985350	1962103	1970535	1966674	1923071	1906246	2158214	2161210	2153462	2045319	1982958	1894929	1226922	1082914	938393.5	663707	479717	235262.7	5924.417	0
Trainingla	USA	2015	population		2	34375083	381341	1514620	1895798	1867231	1883059	1940747	1966459	1940473	2173185	2196984	2221392	2145024	2100753	2014302	1355864	1314368	1304758	1103294	1130871	1005754	918810.5	0
Trainingla	USA	2015	mortality	AAA	1	2304	8	5	1	0	0	6	4	10	14	29	62	111	125	184	266	327	341	380	298	97	31	5
Trainingla	USA	2015	mortality	AAA	2	1248	7	3	6	0	0	1	1	3	2	8	15	17	23	49	102	136	196	245	256	126	52	0
Trainingla	USA	2015	mortality	AAA	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trainingla	USA	2015	mortality	A020	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Trainingla	USA	2015	mortality	A022	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Trainingla	USA	2015	mortality	A040	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Trainingla	USA	2015	mortality	A041	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Trainingla	USA	2015	mortality	A043	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Trainingla	USA	2015	mortality	A043	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trainingla	USA	2015	mortality	A047	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Trainingla	USA	2015	mortality	A048	1	24	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	3	6	2	4	1	0	0
Trainingla	USA	2015	mortality	A048	2	30	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	6	4	4	6	4	0	0
Trainingla	USA	2015	mortality	A049	1	38	0	0	0	0	0	1	0	0	0	0	1	0	1	5	3	4	8	5	6	4	0	0
Trainingla	USA	2015	mortality	A049	2	31	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	2	4	7	8	4	1	0
Trainingla	USA	2015	mortality	A053	1	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Trainingla	USA	2015	mortality	A059	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Trainingla	USA	2015	mortality	A059	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Trainingla	USA	2015	mortality	A064	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0
Trainingla	USA	2015	mortality	A080	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trainingla	USA	2015	mortality	A084	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trainingla	USA	2015	mortality	A084	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Trainingla	USA	2015	mortality	A09	1	347	6	4	1	0	0	2	3	0	4	4	3	10	7	22	27	35	40	74	61	30	14	0
Trainingla	USA	2015	mortality	A09	2	485	6	3	4	0	0	1	0	0	1	1	3	4	4	13	27	29	64	91	130	64	40	0
Trainingla	USA	2015	mortality	A159	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Trainingla	USA	2015	mortality	A162	1	1734	0	0	0	0	0	2	1	9	8	24	56	95	111	140	216	261	262	274	204	51	15	5
Trainingla	USA	2015	mortality	A162	2	619	0	0	0	0	0	0	1	3	0	7	11	10	18	24	64	87	110	128	104	42	10	0
Trainingla	USA	2015	mortality	A163	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Trainingla	USA	2015	mortality	A164	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Trainingla	USA	2015	mortality	A164	2	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0	0	0	0
Trainingla	USA	2015	mortality	A165	1	92	0	0	0	0	0	0	0	1	1	0	0	1	2	4	7	12	18	17	18	10	1	0
Trainingla	USA	2015	mortality	A165	2	35	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	5	4	7	4	9	1	0
Trainingla	USA	2015	mortality	A169	1	26	0	0	0	0	0	0	0	0	1	0	0	2	1	3	4	6	2	2	3	1	1	0
Trainingla	USA	2015	mortality	A169	2	12	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	2	1	3	1	0	0
Trainingla	USA	2015	mortality	A170	1	10	0	1	0	0	0	1	0	0	0	1	0	1	0	1	1	0	1	3	0	0	0	0
Trainingla	USA	2015	mortality	A170	2	10	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	1	2	1	0	0	0
Trainingla	USA	2015	mortality	A178	1	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Trainingla	USA	2015	mortality	A178	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Trainingla	USA	2015	mortality	A180	1	14	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	4	2	0	1	0	0	0
Trainingla	USA	2015	mortality	A180	2	16	0	0	0	0	0	0	0	0	0	0	0	1	0	3	1	3	5	3	0	0	0	0
Trainingla	USA	2020	population		1	30723011	398381	1581721	1985350	1962103	1970535	1966674	1923071	1906246	2158214	2161210	2153462	2045319	1982958	1894929	1226922	1082914	938393.5	663707	479717	235262.7	5924.417	0
Trainingla	USA	2020	population		2	34375083	381341	1514620	1895798	1867231	1883059	1940747	1966459	1940473	2173185	2196984	2221392	2145024	2100753	2014302	1355864	1314368	1304758	1103294	1130871	1005754	918810.5	0
Trainingla	USA	2020	mortality	AAA	1	2304	8	5	1	0	0	6	4	10	14	29	62	111	125	184	266	327	341	380	298	97	31	5
Trainingla	USA	2020	mortality	AAA	2	1248	7	3	6	0	0	1	1	3	2	8	15	17	23	49	102	136	196	245	256	126	52	0
Trainingla	USA	2020	mortality	AAA	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trainingla	USA	2020	mortality	A020	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
Trainingla	USA	2020	mortality	A022	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Trainingla	USA	2020	mortality	A040	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Trainingla	USA	2020	mortality	A041	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Trainingla	USA	2020	mortality	A043	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Trainingla	USA	2020	mortality	A043	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trainingla	USA	2020	mortality	A047	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Trainingla	USA	2020	mortality	A048	1	24	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4	3	6	2	4	1	0	0
Trainingla	USA	2020	mortality	A048	2	30	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	6	4	4	6	4	0	0
Trainingla	USA	2020	mortality	A049	1	38	0	0	0	0	0	1	0	0	0	0	1	0	1	5	3	4	8	5	6	4	0	0
Trainingla	USA	2020	mortality	A049	2	31	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	2	4	7	8	4	1	0
Trainingla	USA	2020	mortality	A053	1	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Trainingla	USA	2020	mortality	A059	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Trainingla	USA	2020	mortality	A059	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Trainingla	USA	2020	mortality	A064	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0
Trainingla	USA	2020	mortality	A080	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trainingla	USA	2020	mortality	A084	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trainingla	USA	2020	mortality	A084	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Trainingla	USA	2020	mortality	A09	1	347	6	4	1	0	0	2	3	0	4	4	3	10	7	22	27	35	40	74	61	30	14	0
Trainingla	USA	2020	mortality	A09	2	485	6	3	4	0	0	1	0	0	1	1	3	4	4	13	27	29	64	91	130	64	40	0
Trainingla	USA	2020	mortality	A159	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Trainingla	USA	2020	mortality	A162	1	1734	0	0	0	0	0	2	1	9	8	24	56	95	111	140	216	261	262	274	204	51	15	5
Trainingla	USA	2020	mortality	A162	2	619	0	0	0	0	0	0	1	3	0	7	11	10	18	24	64	87	110	128	104	42	10	0
Trainingla	USA	2020	mortality	A163	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Trainingla	USA	2020	mortality	A164	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Trainingla	USA	2020	mortality	A164	2	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0	0	0	0
Trainingla	USA	2020	mortality	A165	1	92	0	0	0	0	0	0	0	1	1	0	0	1	2	4	7	12	18	17	18	10	1	0
Trainingla	USA	2020	mortality	A165	2	35	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	5	4	7	4	9	1	0
Trainingla	USA	2020	mortality	A169	1	26	0	0	0	0	0	0	0	0	1	0	0	2	1	3	4	6	2	2	3	1	1	0
Trainingla	USA	2020	mortality	A169	2	12	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	2	1	3	1	0	0
Trainingla	USA	2020	mortality	A170	1	10	0	1	0	0	0	1	0	0	0	1	0	1	0	1	1	0	1	3	0	0	0	0
Trainingla	USA	2020	mortality	A170	2	10	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2	1	2	1	0	0	0
Trainingla	USA	2020	mortality	A178	1	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Trainingla	USA	2020	mortality	A178	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Trainingla	USA	2020	mortality	A180	1	14	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	4	2	0	1	0	0	0
Trainingla	USA	2020	mortality	A180	2	16	0	0	0	0	0	0	0	0	0	0	0	1	0	3	1	3	5	3	0	0	0	0

Swahili versions for consent form and qualitative data collection tools

Kiambatisho VI: Fomu ya Ridhaa

Fomu ya Ridhaa (Swahili Version)

ID No……

RIDHAA YA KUSHIRIKI KATIKA UTAFITI UNAOHUSIANA UBORA WA TAKWIMU BAADA YA UGATUZI WA MAMLAKA YA KUSAJILI MATUKIO MUHIMU YA BINADAMU KATIKA MKOA WA IRINGA 2016 -2022

Salamu! Jina langu ni Gisbert Msigwa, mwanafunzi wa Shahada ya Uzamili katika Chuo Kikuu cha Afya na Sayansi za Tiba Muhimbili. Ninafanya utafiti juu ya matokeo ya upelekwaji fedha moja kwa moja katika vituo vya kutolea huduma za afya ya msingi katika kuzingatia viwango vya ubora wa huduma nchini Tanzania.

Madhumuni ya utafiti:

Utafiti huo unalenga kupata ufahamu kuhusiana na mwenendo wa ubora wa takwimu za CRVS baada ya ukasimishaji wa madaraka ya usajili kutoka Wilayani hadi ngazi ya kituo cha afya na kata katika Mkoa wa Iringa katika kipindi cha mwaka 2016-2022.

Mchakato/Hatua za utafiti:

Ili kupata majibu takikana kuhusiana na hali halisi, nitakuuliza maswali mbalimbali ikiwemo utendaji kazi wako na kisha ueleze mambo yanayohusiana na mabadiliko ya mwenendo wa usajili wa matukio ya CRVS kutoka mwaka 2016-2022. Zoezi hili litahusisha kurekodiwa kwa kutumia kifaa maalum na litatumia takribani dakika 30.

Faida za utafiti:

Huenda utafiti huu usiwe na manufaa ya moja kwa moja kwako, ila majibu yatakayopatikana yatasaidia kutunga, kurekebisha sera lakini pia kuimarisha utekelezaji wa usajili wa matukio muhimu ya binadamu.

Madhara/Athari:

Haitarajiwi kuwepo kwa madhara yatakayotokana na utafiti huu, nakala ngumu kwa ajili ya rejea hatizahusisha taarifa zako binafsi bali namba maalum ya utambulisho. Taarifa utakazotoa zitatumika kwa ajili ya utafiti tu na si vinginevyo.

Tamko juu ya haki na utunzaji siri zako utakazo zitoa

Ushiriki wa utafiti huu ni wa hiari. Kutoshiriki kwako hakuna athari yoyote ambapo unaweza kuruka swali usilo taka kujibu. Hata hivyo mtazamo wako ni muhimu sana na tungependa ushiriki wako ulio thabiti.

Uhuru wakushiriki:

Kushiriki katika utafiti huu ni hiari yako. Unaweza kuacha kushiriki katika utafiti huu wakati wowote, hata kama ni baada ya kutoa ridhaa.

Nani wa kuwasiliana naye

Kama una maswali kuhusiana na utafiti huu, wasiliana na Mtafiti: Gisbert Msigwa wa Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, Namba ya simu: 0757728758, Barua Pepe: gisbertmsigwa@gmail.com, S. L. P. 743, Dodoma.

Kama una swali kuhusu stahili zako kama mshiriki unaweza kumpigia simu Mkurugenzi wa Tafiti na Uchapishaji kupitia Namba ya Simu: +255 22 2152489, Barua pepe: drp@muhas.ac.tz, S.L.P 65001 Dar es Salaam, Mwenyekiti wa Bodi ya Mapitio ya Tafiti MUHAS, Simu: +255 (0) -22 2152489, S.L.P 65001 Dar es Salaam na msimamizi mkuu wa utafiti huu Prof. David Urassa, Namba ya Simu: 0754279553, Barua pepe: durassa2@yahoo.co.uk

Kukubali Kushiriki

Mimi……., mwenye nambari ya ushiriki……., nimeelezwa na nimesoma yaliyomo katika fomu hii, maswali yangu yamejibiwa. Nimekubali kushiriki katika utafiti huu.

Sahihi ya Mshiriki/Mlezi……

Sahihi ya Shahidi (kama Mshiriki / Mlezi hajui kusoma)……

Sahihi ya Mtafiti Msaidizi……

Tarehe ya Ridhaa…….

KiambatishoVII: Hojaji maalum kwa mratibu wa CRVS kitaifa

Swali	Maswali ongozi
Taarifa za mhojiwa	❖ Ningependa kupata ufahamu kuhusu wewe, ni kwa muda gani umekuwa ukihudumu katika dawati/nafasi hii ya kuratibu kazi za matukio muhimu ya binadamu (CRVS)?
1. Kwa nini unadhani mkakati wa ugatuzi wa madaraka hususani upelekaji wa huduma za usajili wa matukio muhimu ya binadamu (CRVS) katika ngazi ya chini (kata na vituo vya kutolea hudumza za afya) ni mkakati muhimu katika kuboresha ubora matukio muhimu ya binadamu katika Mkoa wa Iringa?	❖ Matumizi ya tehama ❖ Kupunguza gharama za kuifikia huduma ya usajili wa matukio muhimu ya binadamu ❖ Mchakato wa hatua moja
2. Je ramani za mchakato (process maps) pamoja na ainisho la taratibu za utekelezaji (SOPs) wa kazi za usajili wa matukio muhimu ya binadamu vipo?	❖ Ndiyo, vipo ❖ Zinaainisha utendaji kwa undani na zinaeleweka na kila mtu ❖ RITA pamoja na wadau wengine hufanya mapitio na kuongeza yale ambayo yanahitajika katika wakati husika.
3. Ni kwa namna gani usimamizi shirikishi katika eneo la usajili wa matukio muhimu ya binadamu (CRVS) unaratibiwa kuanzia ngazi ya Taifa hadi ngazi ya Halmashauri.	❖ `Umeunganishwa na utaratibu wa kiujumla wa usimamizi shirikishi. ❖ Haujaunganishwa na utaratibu wa kiujumla wa usimamizi shirikishi ❖ Usimamizi shirikishi hufanyika mara moja kwa mwaka kulingana na mwongozo unavyoelezea
4. Ni mafanikiao gani yameshuhudiwa mpaka sasa kutokana na ugatuzi wa utoaji wa huduma za usajili wa matukio muhimu ya binadamu katika Mkoa wa Iringa	❖ Kumekuwa na ongezeko/ubora wa matukio ambayo yamesajiliwa ❖ Watu wamekuwa na uelewa juu ya umuhimu wa kusajili matukio muhimu ya binadamu
5. Ni sababu gani inaweza kuwa imepelekea kuongezeka kwa ubora/wingi wa matukio muhimu ya binadamu ambayo yamesajiliwa?	❖ Vyeti vya vizazi na vifo vimekuwa hitaji la muhimu katika maeneo mengi ya kimaisha ❖ Uhamasishaji kwenye jamii ❖ Huduma za usajili wa matukio ya binadamu zinatolewa pasipo malipo

	❖ Maboresho ya sheria mpya ambayo yameshapitishwa
6. Ni mapungufu gani yameshuhudiwa katika ugatuzi wa utekelezaji wa usajili wa matukio muhimu ya binadamu?	❖ Maboresho ya mfumo yanapofanyika kunahitajika kuwa na mafunzo zaidi kwa watumishi ❖ Uwepo wa vifaa ambavyo vinatumia umeme ❖ Miundombinu; umeme, intaneti ❖ Uwepo wa wataalamu wa tehama
7. Ni changamoto gani zipo katika utekelezaji wa ugatuzi wa usajili wa matukio muhimu ya binadamu katika mkoa wa Iringa?	❖ Gharama kubwa za kuanzia ❖ Inahitajika kuwa na kampeni kubwa kabla ya kuanza utekelezaji ❖ Bado kuna baadhi ya maeneo ambayo yapo vijijini sana
8. Unadhani nini kifanyike kwa ajili ya kuboresha ugatuzi wa utoaji wa huduma za usajili wa matukio muhimu ya binadamu?	❖ Kutafuta zaidi rasilimali fedha na watu ❖ Kuboresha vigezo vya ugawaji wa nyenzo za kukusanyia takwimu ❖ Mafunzo ya ziada kwa wasajili ❖ Kuingiza maudhui ya mafunzo katika mitaala ya vyuo vya kati na vyuo vikuu
9. Ni vigezo gani ambavyo mnavitumia katika kuamua mkoa ambao utafuata katika kufanya ugatuzi wa mamlaka ya usajili wa matukio muhimu ya binadamu?	❖ Uwepo wa rasilimali ❖ Miundombinu ya kijiografia ❖ Vipaumbele vya mfadhili ❖ Matokeo ya taarifa kutoka katika mikoa ambayo inadhaniwa itafuata

KiambatishoV III: Hojaji maalum kwa waratibu wa CRVS Mkoa na Halmashauri

Swali	Maswali ongozi
Taarifa za mhojiwa	❖ Ningependa kupata ufahamu kuhusu wewe, ni kwa muda gani umekuwa ukihudumu kama mratibu wa usajili wa matukio muhimu ya binadamu katika ngazi ya Mkoa/Halmashauri?
1. Kwa nini unadhani mkakati wa ugatuzi wa madaraka hususani upelekaji wa huduma za usajili wa matukio muhimu ya binadamu (CRVS) katika ngazi ya chini (kata na vituo vya kutolea hudumza za afya) ni mkakati muhimu katika kuboresha ubora matukio muhimu ya binadamu katika Mkoa wa Iringa?	❖ Matumizi ya tehama ❖ Kupunguza gharama za kuifikia huduma ya usajili wa matukio muhimu ya binadamu ❖ Mchakato wa hatua moja
2. Ni kwa namna gani usajili wa matukio muhimu ya binadamu katika vituo vya kutolea huduma za afya pamoja na kata hufanyika?	❖ Utangazaji wa tukio lililotokea ❖ Wanafamilia kuhusishwa katika mchakato mzima wa usajili ❖ Utoaji wa vyeti
3. Ni kwa namna gani usimamizi shirikishi katika eneo la usajili wa matukio muhimu ya binadamu (CRVS) unaratibiwa kuanzia ngazi ya Taifa hadi ngazi ya Halmashauri.	❖ `Umeunganishwa na utaratibu wa kiujumla wa usimamizi shirikishi. ❖ Haujaunganishwa na utaratibu wa kiujumla wa usimamizi shirikishi ❖ Usimamizi shirikishi hufanyika mara moja kwa mwaka kulingana na mwongozo unavyoelezea
4. Ni mafanikiao gani yameshuhudiwa mpaka sasa kutokana na ugatuzi wa utoaji wa huduma za usajili wa matukio muhimu ya binadamu katika Mkoa wa Iringa	❖ Kumekuwa na ongezeko/ubora wa matukio ambayo yamesajiliwa ❖ Watu wamekuwa na uelewa juu ya umuhimu wa kusajili matukio muhimu ya binadamu

5. Ni sababu gani inaweza kuwa imepelekea kuongezeka kwa ubora/wingi wa matukio muhimu ya binadamu ambayo yamesajiliwa?	❖ Vyeti vya vizazi na vifo vimekuwa hitaji la muhimu katika maeneo mengi ya kimaisha ❖ Uhamasishaji kwenye jamii ❖ Huduma za usajili wa matukio ya binadamu zinatolewa pasipo malipo ❖ Maboresho ya sheria mpya ambayo yameshapitishwa
6. Ni mapungufu gani yameshuhudiwa katika ugatuzi wa utekelezaji wa usajili wa matukio muhimu ya binadamu?	❖ Maboresho ya mfumo yanapofanyika kunahitajika kuwa na mafunzo zaidi kwa watumishi ❖ Uwepo wa vifaa ambavyo vinatumia umeme ❖ Miundombinu; umeme, intaneti ❖ Uwepo wa wataalamu wa tehama
7. Ni changamoto gani zipo katika utekelezaji wa ugatuzi wa usajili wa matukio muhimu ya binadamu katika mkoa wa Iringa?	❖ Gharama kubwa za kuanzia ❖ Inahitajika kuwa na kampeni kubwa kabla ya kuanza utekelezaji ❖ Bado kuna baadhi ya maeneo ambayo yapo vijijini sana
8. Unadhani nini kifanyike kwa ajili ya kuboresha ugatuzi wa utoaji wa huduma za usajili wa matukio muhimu ya binadamu?	❖ Kutafuta zaidi rasilimali fedha na watu ❖ Kuboresha vigezo vya ugawaji wa nyenzo za kukusanyia takwimu ❖ Mafunzo ya ziada kwa wasajili

Kiambatisho IX: Hojaji maalum kwa wasajili wa matukio ya CRVS ngazi ya kata na vituo vya kutolea huduma za afya.

Swali	Maswali ongozi
Taarifa za mhojiwa	❖ Ningependa kupata ufahamu kuhusu wewe, ni kwa muda gani umekuwa ukihudumu kama mratibu wa usajili wa matukio muhimu ya binadamu katika ngazi ya Mkoa/Halmashauri?
1. Kwa nini unadhani mkakati wa ugatuzi wa madaraka hususani upelekaji wa huduma za usajili wa matukio muhimu ya binadamu (CRVS) katika ngazi ya chini (kata na vituo vya kutolea hudumza za afya) ni mkakati muhimu katika kuboresha ubora matukio muhimu ya binadamu katika Mkoa wa Iringa?	❖ Matumizi ya tehama ❖ Kupunguza gharama za kuifikia huduma ya usajili wa matukio muhimu ya binadamu ❖ Mchakato wa hatua moja
2. Ni kwa namna gani usajili wa matukio muhimu ya binadamu katika vituo vya kutolea huduma za afya pamoja na kata hufanyika?	❖ Utangazaji wa tukio lililotokea ❖ Wanafamilia kuhusishwa katika mchakato mzima wa usajili ❖ Utoaji wa vyeti
3. Ni kwa namna gani usimamizi shirikishi katika eneo la usajili wa matukio muhimu ya binadamu (CRVS) unaratibiwa kuanzia ngazi ya Taifa hadi ngazi ya Halmashauri.	❖ `Timu za taifa, mkoa na halmashauri hututembelea mara kwa mara ❖ Kufanyika kwa maonyesho ya nmna usajili unavyotakiwa kuendeshwa/kufanywa
4. Ni mafanikiao gani yameshuhudiwa mpaka sasa kutokana na ugatuzi wa utoaji wa huduma za usajili wa matukio muhimu ya binadamu katika Mkoa wa Iringa	❖ Kumekuwa na ongezeko/ubora wa matukio ambayo yamesajiliwa ❖ Watu wamekuwa na uelewa juu ya umuhimu wa kusajili matukio muhimu ya binadamu

5. Ni sababu gani inaweza kuwa imepelekea kuongezeka kwa ubora/wingi wa matukio muhimu ya binadamu ambayo yamesajiliwa?	❖ Vyeti vya vizazi na vifo vimekuwa hitaji la muhimu katika maeneo mengi ya kimaisha ❖ Uhamasishaji kwenye jamii ❖ Huduma za usajili wa matukio ya binadamu zinatolewa pasipo malipo ❖ Maboresho ya sheria mpya ambayo yameshapitishwa
6. Ni mapungufu gani yameshuhudiwa katika ugatuzi wa utekelezaji wa usajili wa matukio muhimu ya binadamu?	❖ Maboresho ya mfumo yanapofanyika kunahitajika kuwa na mafunzo zaidi kwa watumishi ❖ Uwepo wa vifaa ambavyo vinatumia umeme ❖ Miundombinu; umeme, intaneti ❖ Uwepo wa wataalamu wa tehama
7. Ni changamoto gani zipo katika utekelezaji wa ugatuzi wa usajili wa matukio muhimu ya binadamu katika mkoa wa Iringa?	❖ Inahitajika kuwa na kampeni kubwa kabla ya kuanza utekelezaji ❖ Kuna baadhi ya maeneo ambayo yapo vijijini sana ❖ Kuna baadhi ya wanfamilia wanazigomea huduma
8. Unadhani nini kifanyike kwa ajili ya kuboresha ugatuzi wa utoaji wa huduma za usajili wa matukio muhimu ya binadamu?	❖ Kuboresha vigezo vya ugawaji wa nyenzo za kukusanyia takwimu ❖ Mafunzo ya ziada kwa wasajili

Appendix X: Ethical clearance letter

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATION

Ref. No.DA.282/298/01.C/1791 Date: 07/07/2023

MUHAS-REC-07-2023-1791
GISBERT MSIGWA
SHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: QUALITY OF DATA AFTER DECENTRALIZATION OF CIVIL REGISTRATION AND VITAL STATISTICS IN IRINGA REGION 2016 -2022

Reference is made to the above heading,

I am pleased to inform you that the Chairperson has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 07/07/2023
EXPIRATION DATE OF APPROVAL: 07/07/2024

STUDY DESCRIPTION:
Purpose:
To assess the quality of data after decentralization of Civil Registration and Vital Statistics in Iringa region 2016 -2022.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided:
https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2014843.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain data transfer agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain material transfer agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country,
8. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
9. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
10. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.

Dr. Nahya Salim Masoud,

Chairperson, MUHAS Research and Ethics Committee

