REPUBLIC OF SOUTH SUDAN

Trends with Deaths by Cause in South Sudan (2019-2024)

Produced by the Ministry of Health and the National Bureau of Statistics

FOREWORD

As the National Minister of Health, I present the inaugural Total and Cause-Specific Mortality Report for the Republic of South Sudan. Covering 2019–2024, this report marks a pivotal moment in our nation's commitment to data-driven governance and effective public resource management. For the first time since independence, we have a scientifically grounded view of mortality across our country—how many lives are lost, where, and from which causes.

In 2024, South Sudan experienced a significant national mortality burden, with an estimated 174,200 deaths and a crude death rate (CDR) of 11.42 per 1,000, underscoring the urgent need for comprehensive health-system improvements. Tragically, more than 40% of these deaths—over 70,000—occurred among children under five, many of which are preventable through basic health-care interventions. Preventable conditions such as lower respiratory infections, diarrheal diseases, and malaria accounted for 28% of total deaths, revealing gaps in primary care, access to clean water and sanitation, and disease-control measures. Maternal and newborn health also remains a concern: preterm birth complications, birth asphyxia/trauma, and maternal causes are leading contributors, pointing to persistent weaknesses in emergency obstetric and neonatal care. The report further shows a shift in disease burden, with noncommunicable diseases (NCDs) now accounting for 29% of deaths, requiring renewed approaches within the health system. Injuries comprise 8% of deaths and disproportionately affect young men, contributing to higher male mortality. Mortality rates vary across the country, with some states facing acute surges associated with conflict, displacement, and restricted access to essential services.

These findings have direct implications for budgeting and strategic planning. Prioritizing investments in primary health care, child and maternal health, and preventive measures will yield the greatest impact. Targeted resource allocation must ensure that states and counties with the highest burden receive proportional support. This evidence calls for a shift from reactive to proactive, data-informed health-system management.

To improve child survival, the Ministry of Health (MoH) will intensify community-based interventions targeting malaria, pneumonia, diarrheal disease, and malnutrition, while expanding immunization and improving water, sanitation, and hygiene (WASH). Strengthening maternal and newborn care requires dedicated investment in training, equipping, and deploying skilled health workers nationwide, and ensuring the availability of emergency obstetric and neonatal services in all regions. Integrating chronic disease management will begin with routine screening and treatment for hypertension, diabetes, and other NCDs at the primary-care level. Injury prevention will be enhanced through cross-ministerial development and enforcement of road-safety and violence-prevention strategies. Crucially, this report's evidence should guide the precise allocation of resources—funding, essential supplies, and personnel—to areas with the greatest burden and need.

Honorable Sarah Cleto Rial
Minister of Health
Republic of South Sudan

This report is the product of exceptional cooperation among the National Bureau of Statistics, the Ministry of Health, international partners, and technical agencies. Continued cross-sector collaboration is essential. I urge all government ministries, departments, and agencies; development partners; and stakeholders to maintain and deepen this partnership, thereby strengthening the national statistical system.

In summary, I call upon all concerned to use this evidence as our compass for policy, planning, and resource allocation. I urge policymakers and the Ministry of Finance and Planning to act decisively: align budgets, mobilize resources, and implement targeted interventions. Only through collective accountability and evidence-based decision-making can we translate these findings into improved health and prosperity for every citizen of South Sudan.

ACKNOWLEDGEMENT

The Ministry of Health extends its deepest gratitude to the partners whose collaboration was instrumental in producing this inaugural Total and Cause-Specific Mortality Report for South Sudan.

We first acknowledge the National Bureau of Statistics (NBS) for its pivotal role in providing the foundational demographic and population data that underpins this entire assessment.

Within our own institution, we recognize the invaluable contributions of routine health service delivery data and health information systems, which offer the essential national context for calibrating mortality estimates.

We are also profoundly grateful for the sustained technical support of the World Health Organization (WHO) and for the comprehensive models and data from the Global Burden of Disease (GBD) study, which were critical in developing the cause-specific mortality profiles.

This report stands as a testament to the power of partnership. The evidence contained herein will be vital in shaping national health policies, guiding strategic planning, and informing resource allocation to better serve the people of South Sudan.

Hon. Dr. Kennedy Gaaniko Baime

Undersecretary, Ministry of Health
Republic of South Sudan

NATIONAL BUREAU OF STATISTICS

PREFACE

As the Director General of the National Bureau of Statistics, I am honored to introduce the inaugural Total and Cause-Specific Mortality Report for South Sudan, underscoring the significance and responsibility of this undertaking.

In a country where comprehensive civil registration and vital statistics (CRVS) systems remain aspirational, the pursuit of accurate and actionable data is not merely technical; it is also a moral imperative. This report marks a significant milestone in that pursuit, demonstrating how strategic data partnerships can illuminate the health and demographic realities of our nation.

The National Bureau of Statistics is proud to have provided the demographic foundation for this work. Our contribution centered on delivering the most reliable population estimates, disaggregated by age, sex, and geographic location, and based on our ongoing demographic projections and analyses. While a population census offers a more nuanced demographic picture, understanding the dynamic nature of our population, particularly its growth, mobility, and structure, is essential for accurately measuring mortality. It is this granularity that allows us to move from abstract rates to concrete numbers of lives lost.

This effort underscores a fundamental truth: no single institution holds all the answers. The Ministry of Health's routine service data provided essential context on health system performance, while globally benchmarked models from the Global Burden of Disease study offered a validated framework for cause-of-death analysis. By integrating demographic, administrative, and global data sources, we have produced a more complete and credible picture of mortality than any single dataset could offer.

This report is a testament to what can be achieved through interagency collaboration and technical partnership. I firmly believe that the evidence contained within these pages will serve as an indispensable compass for policymakers, guiding decisions on health resource allocation, program design, and national development strategy for years to come.

The National Bureau of Statistics remains committed to strengthening South Sudan's statistical system and advancing collaborative efforts that ensure our national story is told through increasingly robust, reliable, and transformative data.

Hon. Augustino Ting Mayai, Ph.D.
Director General of the National Bureau of Statistics
Republic of South Sudan

DIRECTORATE OF POLICY, PLANNING, BUDGETING & MONITORING AND EVALUATION

PREFACE

As the Director General responsible for guiding the strategic direction and resource allocation of our national health system, I am routinely presented with requests for funding and programmatic support. Historically, the ability to justify these decisions has been constrained by a critical gap in our evidence base: we lacked a precise, nationally representative understanding of who is dying, where, and from what causes. This inaugural Total and Cause-Specific Mortality Report decisively addresses that gap.

Today, we shift from estimation to evidence. The epidemiological profile presented in this report is both a sobering confirmation of our challenges and a clear roadmap for our response. The finding that over 40% of all deaths occur among children under five, and that three preventable conditions (lower respiratory infections, diarrheal diseases, and malaria) account for more than a quarter of all mortality, provides an irrefutable mandate to prioritize primary healthcare and child survival interventions.

Yet the true power of this report lies in its granularity. Knowing the leading causes of death at the national level is essential; understanding their geographic and gender distribution is what enables targeted, strategic action. The disproportionate burden of injuries among young men in specific states calls for a different response than the high maternal mortality affecting women elsewhere. The emerging rise of noncommunicable diseases among our aging population signals the urgency of adapting our health services to meet future needs, starting now.

These data form the cornerstone of strategic, equitable, and accountable health governance. They will directly inform the next National Health Sector Strategy, guide our budgetary submissions to the Ministry of Finance, and serve as the definitive baseline against which we will measure progress. We now have the evidence to allocate resources with precision, to hold ourselves accountable for reducing specific causes of death in specific populations, and to build a health system that is truly responsive to the needs of the people of South Sudan.

Dr. John Pasquale Rumunu
Director General, Policy, Planning, Budget, Research, Monitoring and Evaluation
Ministry of Health
Republic of South Sudan

NOTE FROM WHO

PREFACE

The World Health Organization (WHO) congratulates the Government of South Sudan on the release of its inaugural Total and Cause-Specific Mortality Report. This landmark achievement reflects a strong commitment to evidence-based health governance and aligns with WHO's mandate to support Member States in strengthening health information systems and advancing universal health coverage.

The report applies internationally recognized estimation methodologies adapted to South Sudan's epidemiological context. By integrating demographic projections, routine health service data, and globally benchmarked cause-of-death models, it provides a credible mortality envelope in the absence of complete civil registration and vital statistics systems. This approach ensures that the findings are robust enough to guide policy, planning, and resource allocation.

The mortality profile presented in this report offers a clear picture of the health challenges facing South Sudan, including the persistent burden of preventable diseases, maternal and neonatal conditions, and the emerging rise of noncommunicable diseases. These insights are critical for shaping strategies that improve health outcomes and accelerate progress toward national and global targets, including the Sustainable Development Goals.

WHO recently supported the Ministry of Health to introduce ICD 11 (International Classification of Diseases, 11th Revision) into the country's health information system. This will standardize cause-of-death reporting, improve diagnostic accuracy, and enable interoperability with global health data platforms–marking a significant step toward modernizing health information management and strengthening evidence for decision-making.

WHO remains committed to supporting South Sudan in institutionalizing mortality measurement, improving data systems, and translating evidence into action.

Dr. Humphrey Karamagi
WHO Representative
Republic of South Sudan

TOTAL AND CAUSE-SPECIFIC MORTALITY AT A GLANCE

REPUBLIC OF SOUTH SUDAN

174,200 deaths in 2024

77,301 females

96,899 males

11.42 Per 1,000 population

Crude death rate (CDR)

40%

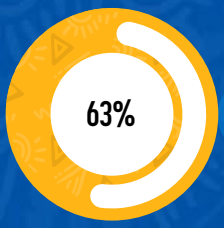
of all deaths occur among children under five,

Among the youngest age group (**0 - 4 years**)

70,327

deaths were reported

In 2024, communicable, maternal, perinatal, and nutritional conditions accounted for:

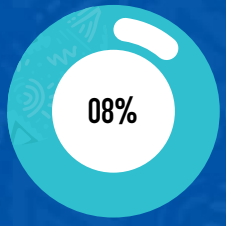


of all deaths in South Sudan

Noncommunicable diseases contributed:

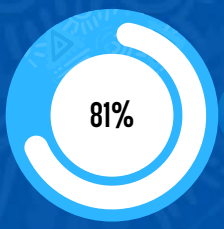
of deaths overall

Injuries made up



of total deaths

The top 20 leading causes of death account for:



of all the deaths

EXECUTIVE SUMMARY

The first-ever **Total and Cause-Specific Mortality Report** for the Republic of South Sudan marks a major step in our commitment to evidence-based health governance. Covering **2019-2024**, it provides comprehensive, modeled estimates of mortality across the country–how many people died, where, and from which causes.

Produced in response to the urgent need for accurate mortality data, the report addresses the absence of a complete vital registration system and the high share of deaths occurring outside health facilities–factors that have long obscured the true picture of population health. By offering a robust scientific foundation, it enables policymakers to make informed decisions, target interventions, and save lives across South Sudan.

Methodology

This report uses a multi-source, estimation-based approach. Population figures and demographic projections were produced and then disaggregated by state, age, and sex to form the foundational dataset. Cause-of-death profiles and mortality assumptions were adapted from internationally recognized methodologies and tailored to South Sudan's epidemiological context to reflect the country's unique disease patterns. Routine health data–including Bacillus Calmette-Guérin (BCG) immunization records–were incorporated to model internal migration, ensuring population estimates account for movement across states. The resulting model provides both a comprehensive national overview and detailed chapters for each state and administrative area, supporting localized mortality analysis and planning.

National Mortality Profile

TThis section presents key findings from the report, each highlighting a critical challenge requiring urgent attention. The six principal findings are: the scale of national mortality; the disproportionate impact on children under five; the dominance of preventable diseases; the ongoing crisis in maternal and newborn health; the growing burden of noncommunicable diseases (NCDs); and the impact of injuries and gender disparity. Each dimension of the mortality profile is summarized below:

01

National Mortality Burden: In 2024 alone, 174,200 citizens died, corresponding to a crude death rate of 11.42 per 1,000 population.

02

Children Under Five Disproportionately Affected: Children under five account for over 40% of deaths–about 70,327 cases.

03

Dominance of Preventable Diseases: Lower respiratory infections, diarrheal diseases, and malaria are the top three causes of death, together accounting for 28% of all mortality.

04

Maternal and Newborn Health Crisis: Preterm birth complications, birth asphyxia, and maternal conditions remain leading causes of death, underscoring critical deficiencies in skilled birth attendance, emergency obstetric care, and neonatal resuscitation across the country.

05

Rising Burden of Noncommunicable Diseases (NCDs): While infectious diseases remain a challenge, NCDs such as stroke, heart disease, and diabetes now account for 29% of deaths, indicating an epidemiological transition for which the current health system is not fully prepared.

06

Injuries and Gender Disparity: Injuries contribute 8% of deaths, disproportionately affecting young men through road traffic injuries and interpersonal violence.

The state-level analysis shows that this national burden is not evenly distributed. While high-population states such as Central Equatoria, Northern Bahr el Ghazal, and Warrap see the highest absolute numbers, states such as Jonglei, Eastern Equatoria, and Upper Nile have experienced alarming surges in mortality, often linked to conflict, displacement, and severe access constraints. This finding underscores the importance of moving beyond a one-size-fits-all approach and ensuring that resources reach the most vulnerable. Together, these findings call for coordinated action by the Ministry of Health, the Government, and all partners to address the urgent health challenges facing South Sudan.

Policy Directions

This report marks the beginning of a new phase for South Sudan's health sector, guided by robust, data-driven evidence. The findings herein are intended to serve as the principal strategic reference for all stakeholders. The following policy recommendations are advanced for immediate consideration and implementation:

01 Accelerate child survival efforts: Prioritize the expansion of high-impact, community-based interventions targeting malaria, pneumonia, diarrheal disease, and malnutrition. Scale up immunization coverage and enhance water, sanitation, and hygiene (WASH) standards as fundamental measures to improve public health outcomes.

02 Strengthen maternal and newborn care: Emphasize the training, equipping, and deployment of skilled birth attendants to ensure the availability and functionality of Basic and Comprehensive Emergency Obstetric and Newborn Care (BEmONC/CEmONC) services nationwide.

03 Integrate noncommunicable disease (NCD) management into primary health care: Immediately integrate screening and treatment for hypertension and diabetes, alongside ongoing management of chronic conditions, within primary health-care facilities.

04 Implement multisectoral injury-prevention strategies: Collaborate with the Ministries of Interior, Transport, and Peacebuilding to formulate and enforce road-safety policies and conflict-mitigation approaches.

05 Target resource allocation: Use the evidence provided by this report to direct human resources, medical supplies, and financial investments to states and counties with the highest burden of disease.

06 Lastly, all sector leaders–including those within the national Ministry of Health, state health ministries, and development partners–are expected to internalize and widely disseminate the results of this report, to ensure that strategic planning and budgeting processes align with the evidence provided and that robust accountability mechanisms are established to monitor progress and outcomes.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

01.

Introduction

This report presents the first comprehensive, modelled estimates of mortality for South Sudan, covering the period from 2019 to 2024. It provides a detailed accounting of all-cause and cause-specific mortality, disaggregated by age, sex, and subnational geography (states and administrative areas). The primary objective of this report is to quantify the number of deaths, their spatial distribution and their underlying causes.

The generation of reliable mortality data in South Sudan has been, for long, impeded by systemic challenges. The absence of a fully functional Civil Registration and Vital Statistics (CRVS) system, coupled with the fact that most deaths occur outside of health facilities; often without medical certification; results in a significant data deficit. Even for deaths occurring within healthcare institutions, reporting remains inconsistent due to low implementation of the ICD 11 coding standard, limited technical capacity, and operational constraints. Consequently, routine data sources are inadequate for capturing the true magnitude and epidemiological profile of mortality across the population.

To address these pervasive data gaps, this report employs a structured, model-based methodology. This approach synthesizes multiple data inputs: demographic projections, including age- and sex-structured population estimates, are sourced from the National Bureau of Statistics. Cause-of-death distributions are derived from the Global Burden of Disease (GBD) study framework and subsequently calibrated to reflect the unique epidemiological context and disease patterns of South Sudan. This hybrid model enables the generation of plausible mortality estimates in the absence of complete empirical data, while explicitly acknowledging the underlying assumptions and associated uncertainties.

Acknowledging the dynamic demographic shifts within the country, the model incorporates adjustments for internal migration. This is achieved by utilizing routine service-delivery data, specifically Bacillus Calmette-Guérin (BCG) immunization coverage, as a proxy for inter-state population movement factor. This refinement allows for a more reliable geographical attribution of mortality, facilitating the development of localized mortality profiles. Each state and administrative area is subsequently examined in a dedicated chapter to enable targeted subnational analysis and inter-regional comparison.

The report is structured to cater to a diverse audience, including technical experts and policymakers. It commences with a national-level synthesis of mortality trends, followed by granular, subnational analyses that explain spatial variations in the patterns of mortality. Age-and sex-specific patterns are examined to guide targeted health interventions, resource allocation, and equity-focused programming. Temporal comparisons are included to identify emergent trends and persistent disparities in the number of deaths over the period.

It is imperative to note that this report does not purport to be a definitive record of mortality in South Sudan. Rather, it represents a foundational step towards the development of a strong and sustainable mortality surveillance system. The estimates presented herein should be interpreted as indicative, providing a data-informed baseline. Future iterations will be refined through improved data availability, advanced modelling techniques, and strengthened multi-sectoral collaboration. By establishing this baseline and demonstrating the viability of model-based estimation, this initiative lays the groundwork for systematic efforts to ensure that every death is counted, documented, and acted upon.

This report is structured to deliver a comprehensive analysis of mortality in South Sudan. The following chapters present modelled estimates for the nation and its subnational units, offering detailed profiles of mortality patterns by cause, age, and sex. By detailing who is dying, where, and from what causes, this report equips policymakers, health professionals, and development partners with the evidence needed to guide resource allocation, strengthen health systems, and prioritize interventions. Establishing a baseline for future assessment, this report initiates a sustainable framework for evidence-based public health action and equitable intervention.

Population Estimation Framework

The foundational population figures used in this analysis were obtained from the National Bureau of Statistics (NBS), drawing on the most recent census projections and demographic updates. These data were disaggregated by state, age group, and sex, providing a granular demographic structure essential for downstream mortality modelling and health-system planning.

Recognizing the dynamic nature of internal migration across South Sudan - particularly interstate movements driven by seasonal labour, displacement, and differential access to services - the raw population figures were adjusted for internal migration. This adjustment used a migration factor derived from routine service-delivery data, specifically BCG immunization records. Because BCG is administered shortly after birth, it serves as a reliable proxy for early-life population presence; the resulting distribution was then apportioned to the entire population using the NBS age-specific proportions. This approach preserved demographic consistency while capturing spatial shifts in residency (see the 2025 Health Statistics Report for the methodology).

Ministry of Health, National Bureau of Statistics.
2025 Health Statistics Report. Republic of South Sudan; 2025.

02.

Methodology for Estimating Population and Mortality Experience

2.1. Population Estimation Framework

The foundational population figures used in this analysis were obtained from the National Bureau of Statistics (NBS), drawing on the most recent census projections and demographic updates. These data were disaggregated by state, age group, and sex, providing a granular demographic structure essential for downstream mortality modeling and health-system planning.

Recognizing the dynamic nature of internal migration across South Sudan–particularly interstate movements driven by seasonal labor, displacement, and differential access to services–the raw population figures were adjusted for internal migration. This adjustment used a migration factor derived from routine service-delivery data, specifically BCG immunization records. Because BCG is administered shortly after birth, it serves as a reliable proxy for early-life population presence; the resulting distribution was then apportioned to the entire population using the NBS age-specific proportions. This approach preserved demographic consistency while capturing spatial shifts in residency.

2.2. Mortality Experience Estimation

Cause-specific mortality profiles were derived from the Global Burden of Disease (GBD) dataset, which provides comprehensive estimates of disease burden across countries and regions. These assumptions were adapted to reflect South Sudan's unique epidemiological context, including high burdens of malaria, respiratory infections, maternal mortality, and injury-related deaths. The GBD data supplied the assumptions needed to estimate mortality patterns in the absence of complete vital registration.

While routine health data offer an alternative source, limited access to health facilities for much of the population means causes of death are often underreported or misclassified, and not captured in their true proportions.

Mortality rates are stratified by age group and sex using GBD-derived life tables and mortality envelopes. This stratification enables estimation of age-specific death rates (ASDRs) and facilitates identification of sex disparities in mortality. Such disaggregation is critical for targeted policy interventions and resource allocation.

The stratified mortality rates were applied to the adjusted population figures to generate estimates of total deaths by cause, age group, sex, and geographic location. This integration produced a mortality envelope that reflects both demographic shifts and disease-burden realities, offering a comprehensive view of South Sudan's mortality experience.

2.3. Limitations and Considerations

While this methodology provides a good framework for estimating population and mortality experience, several limitations must be acknowledged. First, the absence of a complete vital registration system necessitated reliance on modeled estimates and proxy indicators. Second, the migration adjustment factor and cause-of-death profiles are sensitive to contextual shifts such as conflict, epidemics, and displacement, requiring periodic recalibration. Third, while BCG coverage data offer a strong triangulation point, they primarily reflect early-life population dynamics and may not fully capture movements among older age groups.

03.

National Trends

3.1. Country Profile

South Sudan, covering 644,330 square kilometers, is a country of vast geographic diversity and dynamic demographic change. The projected population grew from 13.25 million (6.78 million males and 6.47 million females) to 15.79 million (8.05 million males and 7.74 million females), reflecting a national average annual growth rate of 3.57% between 2020 and 2025. This expansion–driven by high fertility, post-conflict recovery, and internal migration–places increasing pressure on infrastructure, health systems, and governance. Administratively, the country is divided into 10 states and 3 special administrative areas, comprising 79 counties and hundreds of payams. While decentralization has progressed, disparities in service access and institutional capacity remain stark, particularly in remote and conflict-affected regions.

Malaria is the most widespread disease, with consistently high alert volumes across all states. Cholera, measles, hepatitis E, and acute respiratory infections are also prevalent, often exacerbated by seasonal flooding, displacement, and poor sanitation. Emerging threats–such as mpox, cVDPV2, anthrax, and viral hemorrhagic fevers–have been reported in multiple states, signaling the need for strengthened surveillance and early-warning systems. Health infrastructure is unevenly distributed, with many facilities lacking essential equipment, trained personnel, and reliable supply chains. Political instability, intercommunal violence, and the ongoing Sudan crisis continue to disrupt service delivery and population movement, particularly in border regions and historically contested areas.

Country area: 644,330 Km²

Annual Growth Rate: 3.57%

Administration: 10 states, 3 special administrative areas, 79 counties, hundreds of payams

Population in 2020: 13.25 million

6.47 million females | 6.78 million males

Population in 2025: 15.79 million

7.74 million females | 8.05 million males

Major disease: Malaria (highest alert levels across all states)

Emerging Threats: Mpox, cVDPV2, anthrax, viral hemorrhagic fevers

3.2. Mortality profile - National

In 2024, South Sudan recorded 174,200 deaths (96,899 males and 77,301 females) across all age groups and causes (Table 1). This corresponds to a crude death rate of 11.42 per 1,000 (12.46 for males and 10.34 for females). The mortality landscape is heavily shaped by communicable, maternal, perinatal, and nutritional conditions, which accounted for 109,061 deaths (57,496 males; 51,565 females)–about two-thirds of all deaths. These conditions disproportionately affected children under five, who accounted for 70,327 deaths (38,827 males; 31,500 females), or over 40% of total mortality, underscoring the persistent burden of preventable childhood mortality and the urgent need for strengthened maternal and child health services.

Among the youngest age group (0–4 years), 70,327 deaths were recorded (38,827 males; 31,500 females), with communicable and nutritional causes dominating–65,438 deaths (36,060 males; 29,378 females). This reflects ongoing challenges in immunization coverage, neonatal care, and access to clean water and sanitation. The next most affected age group was 70 years and above, with 46,017 deaths (26,594 males; 19,423 females), largely driven by noncommunicable diseases (NCDs), which accounted for 28,083 deaths (16,216 males; 11,867 females). This shift signals an emerging epidemiological transition, where chronic diseases are taking hold alongside infectious threats.
Gender disparities are also evident. Males accounted for 96,899 deaths, compared to 77,301 among females.

Male mortality was higher across nearly all age groups–particularly among adolescents and young adults (15–29), where injuries and violence-related deaths were more pronounced: 2,132 deaths among males versus 649 among females. In this age bracket, males experienced more than triple the number of injury-related deaths compared to females, reflecting greater exposure to conflict, road accidents, and interpersonal violence.

For females, mortality was more concentrated in the early years and among reproductive-age women. Among women 15–49, 10,635 deaths were due to communicable and maternal causes (3,173 aged 15–29; 4,461 aged 30–49), highlighting gaps in reproductive health services, antenatal care, and emergency obstetric response.
Noncommunicable diseases accounted for 50,244 deaths overall (29,307 males; 20,937 females), with the majority occurring in older age groups–particularly those 60 years and above, where 36,321 deaths were recorded (21,409 males; 14,912 females). This trend suggests a growing need to integrate NCD prevention and management into primary health care, especially as life expectancy gradually improves and the population ages.

Injuries contributed to 13,996 deaths (9,502 males; 4,494 females), with a notable concentration among youth and working-age adults. These deaths were more prevalent among males and reflect broader systemic issues, including road safety, conflict exposure, and limited trauma-care capacity. (Table 1).

In 2024, communicable, maternal, perinatal, and nutritional conditions accounted for 63% of all deaths in South Sudan (60% for males; 67% for females), underscoring their dominant role in the national mortality profile. Noncommunicable diseases contributed 29% of deaths overall (30% for males; 27% for females), reflecting a growing burden of chronic illness, particularly among older populations. Injuries made up 8% of total deaths (10% for males; 6% for females), with a pronounced gender disparity driven by violence and trauma among young men. These proportions, drawn from Table 1, are visualized in Figure 1. Figures 2–4 provide a breakdown of the numbers for each of the major conditions over the years.

3.3. Cause specific mortality - National

Between 2019 and 2024, South Sudan's mortality profile remained dominated by preventable and treatable conditions, with the top 20 causes accounting for 81% of all deaths in 2024 (Table 3). The leading contributors were lower respiratory infections (19,464 deaths: 11,318 males; 8,356 females), diarrheal diseases (15,947 deaths: 8,389 males; 7,501 females), and malaria (14,290 deaths: 7,219 males; 7,046 females). Together, these three conditions accounted for 28% of all deaths, reflecting persistent gaps in public health infrastructure, access to clean water, and basic health-care services. The slight decline in deaths from these conditions in 2024 compared to 2023 suggests gains from targeted interventions–such as improved case management, vector control for malaria, and expanded access to safe drinking water and sanitation. While some pneumonia and diarrheal deaths are vaccine-preventable, much of the observed burden reflects access and quality gaps in preventive and curative services.

Preterm birth complications (10,531 deaths: 6,022 males; 4,542 females), birth asphyxia/trauma (7,118 deaths: 4,071 males; 3,069 females), and maternal conditions (2,902 deaths among females) continue to drive mortality among neonates and women of reproductive age (Tables 3-5). These figures underscore the urgent need to strengthen maternal and newborn health services, including antenatal care, skilled birth attendance, emergency obstetric care, and neonatal resuscitation.

Deaths from HIV/AIDS (11,023 deaths: 4,778 males; 6,294 females) and tuberculosis (7,298 deaths: 4,094 males; 3,294 females) remain high and have increased in recent years, pointing to gaps in chronic disease management, testing, and treatment adherence (Tables 3-5). These conditions require sustained investment in community-based testing, antiretroviral therapy scale-up, and TB case detection and treatment.

The rise in deaths from noncommunicable diseases (NCDs) reflects an emerging epidemiological transition. Stroke (8,918 deaths: 5,352 males; 3,744 females), diabetes mellitus (3,857 deaths: 2,502 males; 1,479 females), ischemic heart disease (5,483 deaths: 3,441 males; 2,180 females), and hypertensive heart disease (2,706 deaths: 1,132 males; 1,574 females) increasingly affect older adults, particularly those 60 years and above (Tables 3-5). These trends signal the need to integrate NCD prevention and management into primary care systems, including hypertension screening, lifestyle modification, and access to essential medicines.

Digestive diseases (6,245 deaths: 4,209 males; 2,157 females) and genitourinary diseases (4,934 deaths: 3,075 males; 2,023 females) also feature prominently, suggesting broader systemic issues in nutrition, sanitation, and chronic-disease care (Tables 3,4,5).
Injuries remain significant contributors to mortality, especially among males 15-49. Road injuries caused 3,286 deaths (2,125 males; 1,161 females), and interpersonal violence caused 2,135 deaths (1,514 males; 621 females) (Tables 3-5). These deaths reflect broader societal challenges, including conflict exposure, weak enforcement of road safety, and limited trauma-care capacity. Interventions should focus on multisectoral approaches–such as road-safety legislation, conflict mitigation, and trauma-system strengthening.

Gender-specific trends reveal notable disparities. Males consistently experience higher mortality from infectious diseases, injuries, and NCDs. In 2024, male deaths from lower respiratory infections (11,318), malaria (7,219), and diarrheal diseases (8,389) exceeded female deaths by 2,962, 173, and 888, respectively (Tables 4-5). Interpersonal violence and road injuries were also significantly higher among men, reflecting gendered exposure to conflict and mobility risks.

3.3. Cause specific mortality - National

Among females, mortality is more concentrated in the reproductive and early-childhood years. Maternal conditions (2,902 deaths), preterm birth complications (4,542), and birth trauma (3,069) are prominent causes of death, alongside infectious diseases such as malaria (7,046) and HIV/AIDS (6,294) (Table 5). [Note: If "rheumatic heart disease" appears as the second leading cause among women (8,148 deaths), confirm the extract; that ranking is atypical and may reflect a table alignment error.] Overall, the mortality landscape in South Sudan shows that infectious and maternal conditions remain dominant, while NCDs and injuries are rising in significance.

The trends highlight critical intervention points: improving maternal and neonatal health services, expanding access to chronic-disease care, and addressing injury prevention through multisectoral strategies. Gender-sensitive programming and age-targeted interventions will be essential to reduce avoidable deaths and build a more resilient health system. (Tables 3, 4, and 5.)

Table 1: Total number of deaths in 2024 by Age and Gender in South Sudan

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	174,200	70,327	11,073	8,238	14,631	10,159	13,755	46,017
Communicable, maternal, perinatal and nutritional conditions	109,061	65,438	6,966	4,345	8,845	4,431	4,340	14,696
Noncommunicable diseases	50,244	2,799	1,463	1,091	3,889	4,681	8,238	28,083
Injuries	13,996	2,089	2,617	2,781	1,781	963	1,036	2,729

	Age group							
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	96,899	38,827	5,464	3,828	8,457	5,235	8,494	26,594
Communicable, maternal, perinatal and nutritional conditions	57,496	36,060	3,267	1,172	4,384	1,932	2,466	8,215
Noncommunicable diseases	29,307	1,590	693	513	2,516	2,586	5,193	16,216
Injuries	9,502	1,176	1,489	2,132	1,479	666	736	1,824

	Age group							
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	77,301	31,500	5,609	4,410	6,174	4,924	5,261	19,423
Communicable, maternal, perinatal and nutritional conditions	51,565	29,378	3,699	3,173	4,461	2,499	1,874	6,481
Noncommunicable diseases	20,937	1,209	770	578	1,373	2,095	3,045	11,867
Injuries	4,494	913	1,128	649	302	297	300	905

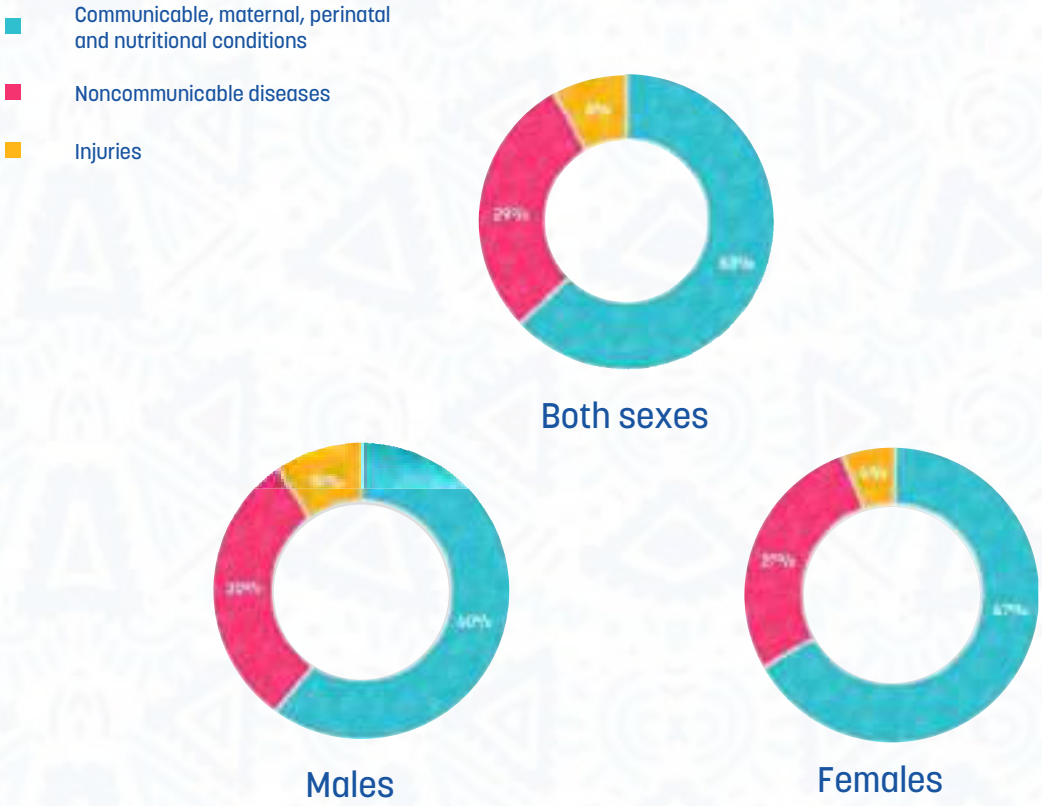


Figure 1 : The proportion of the deaths from major causes of death

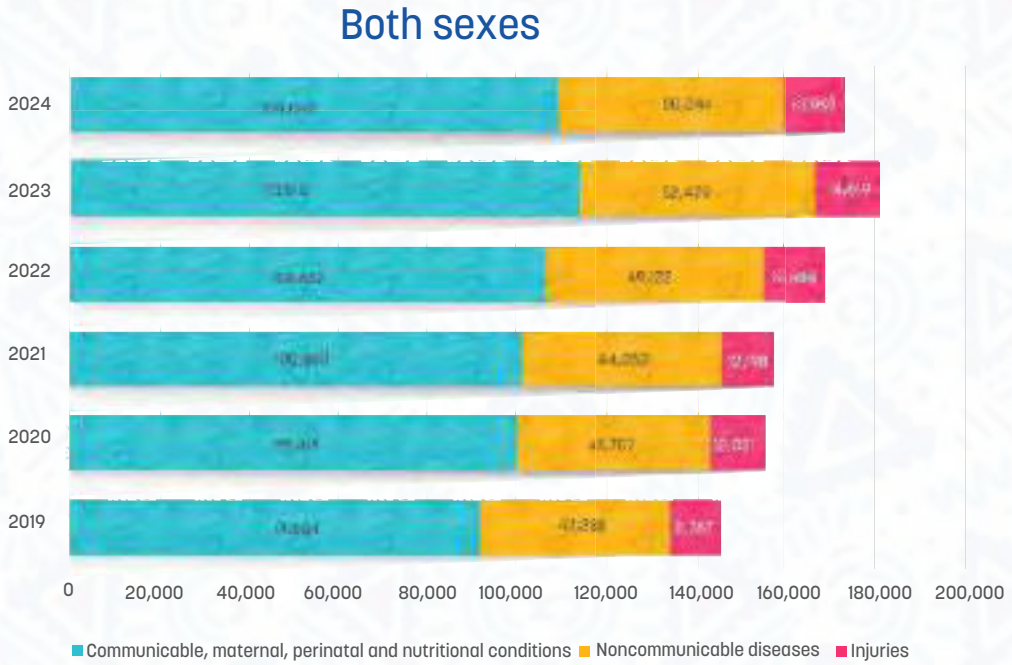


Figure 2 : Total number of deaths by major cause between 2019 and 2024 in South Sudan, both sexes

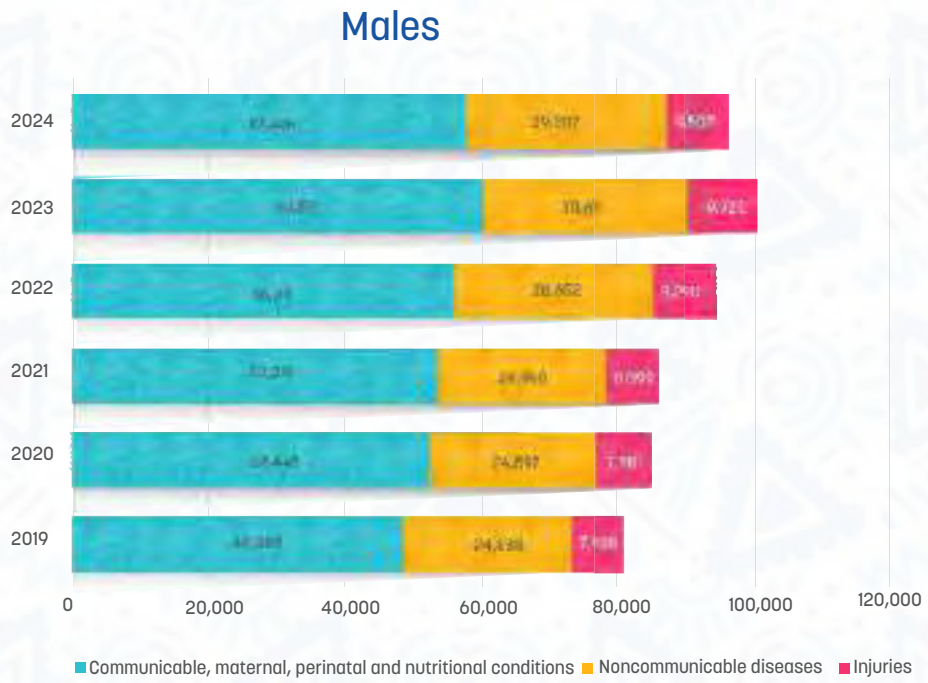


Figure 3 :Total number of deaths by major cause between 2019 and 2024 in South Sudan, Males

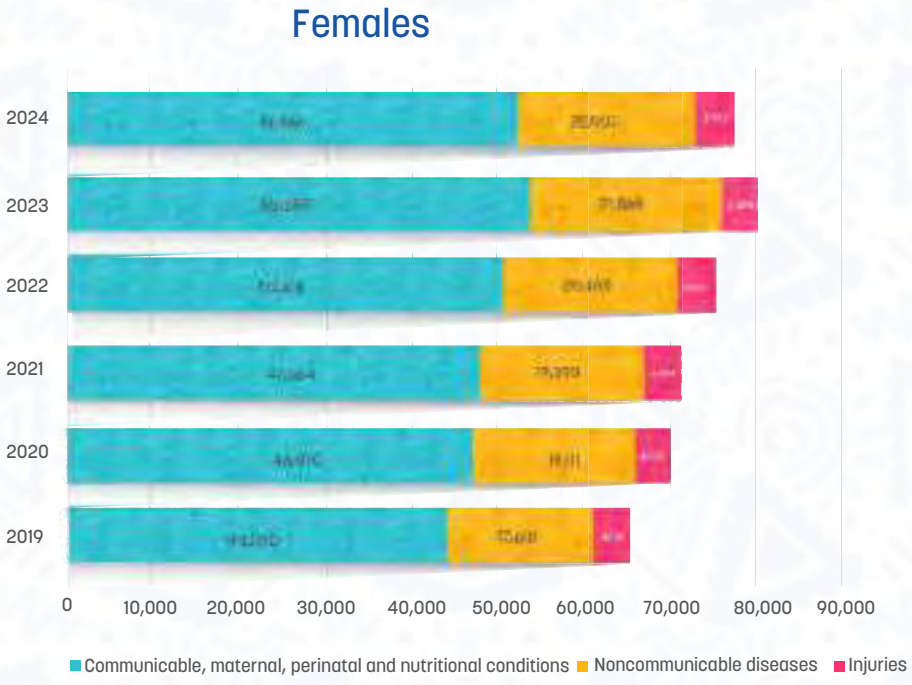


Figure 4 :Total number of deaths by major cause between 2019 and 2024 in South Sudan, Females

04

State Level Trends

Mortality trends across the States and Administrative Areas

Between 2019 and 2024, South Sudan recorded 988,091 deaths from all causes across its states, with annual mortality rising from 146,443 in 2019 to a peak of 181,947 in 2023, before declining slightly to 174,200 in 2024 (Table 2). Central Equatoria (CEQ), Northern Bahr el Ghazal (NBG), and Warrap consistently reported the highest death tolls. In 2024 alone, CEQ registered 22,857 deaths (12,714 males; 10,143 females), NBG 24,212 (13,468 males; 10,744 females), and Warrap 22,679 (12,615 males; 10,064 females), together accounting for 39% of national mortality that year (Table 2). These patterns closely mirror population distribution, with more populous states tending to register higher absolute mortality.

Jonglei experienced a dramatic spike in 2020, with deaths surging from 5,543 in 2019 to 18,231 in 2020 (10,013 males; 8,218 females), more than tripling the previous year's figure. Although the total declined in subsequent years, mortality remained elevated, with 13,432 deaths in 2024 (7,471 males; 5,960 females) (Table 2). Eastern Equatoria (EEQ) and Upper Nile also showed sustained increases: EEQ rose from 12,780 deaths in 2019 to 19,077 in 2024 (10,612 males; 8,466 females), while Upper Nile climbed from 9,903 to 18,245 over the same period (10,149 males; 8,096 females) (Table 2).

Gender disparities persisted across all states and years. In 2024, male deaths exceeded female deaths in every state, with the largest gaps observed in Unity (7,162 males vs. 5,713 females), Jonglei (7,471 vs. 5,960), and NBG (13,468 vs. 10,744). Nationally, males accounted for 96,899 deaths in 2024, compared with 77,301 among females–56% of total mortality (Table 2). These trends reflect both chronic health-system challenges and shifting regional dynamics, underscoring the need for targeted interventions, population-adjusted surveillance, and equitable resource allocation.

Table 2: Total mortality from all causes across the states

State	Both sexes						Male						Female					
	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
Abyei AA	763	851	806	704	912	1,078	424	467	443	391	507	599	338	383	363	312	405	478
CEQ	21,254	20,468	21,302	23,607	25,116	22,857	11,823	11,242	11,700	13,131	13,971	12,714	9,432	9,226	9,602	10,476	11,145	10,143
EEQ	12,780	17,119	15,707	18,316	19,887	19,077	7,109	9,402	8,627	10,188	11,062	10,612	5,671	7,717	7,080	8,128	8,825	8,466
Greater Pibor AA	2,048	3,272	3,772	2,928	2,335	2,633	1,139	1,797	2,072	1,629	1,299	1,465	909	1,475	1,700	1,299	1,036	1,169
Jonglei	5,543	18,231	12,859	13,421	13,415	13,432	3,083	10,013	7,063	7,466	7,462	7,471	2,460	8,218	5,796	5,956	5,953	5,960
Lakes	16,346	13,616	11,781	12,006	13,929	13,444	9,093	7,478	6,470	6,678	7,748	7,478	7,254	6,138	5,310	5,328	6,181	5,966
NBG	24,744	15,890	21,426	23,947	25,067	24,212	13,764	8,728	11,768	13,320	13,943	13,468	10,980	7,163	9,658	10,626	11,123	10,744
Ruweng AA	1,872	2,360	2,800	2,859	2,343	2,567	1,041	1,296	1,538	1,590	1,303	1,428	831	1,064	1,262	1,268	1,040	1,139
Unity	7,535	10,782	11,330	13,420	15,015	12,875	4,191	5,922	6,223	7,465	8,352	7,162	3,344	4,860	5,107	5,955	6,663	5,713
Upper Nile	9,903	15,697	12,510	14,483	17,154	18,245	5,508	8,621	6,871	8,056	9,542	10,149	4,394	7,076	5,639	6,427	7,612	8,096
Warrap	17,793	19,006	21,546	20,836	23,775	22,679	9,898	10,439	11,834	11,590	13,225	12,615	7,896	8,567	9,712	9,246	10,550	10,064
WBG	9,533	7,287	9,139	8,053	7,818	7,282	5,303	4,003	5,020	4,479	4,349	4,051	4,230	3,285	4,120	3,573	3,469	3,231
WEQ	16,329	12,359	14,277	15,729	15,182	13,819	9,083	6,788	7,842	8,749	8,445	7,687	7,246	5,571	6,436	6,980	6,737	6,132
Total	146,443	156,938	159,256	170,307	181,947	174,200	81,459	86,195	87,468	94,733	101,208	96,899	64,984	70,743	71,787	75,574	80,739	77,301

Table 3: Number of deaths from each of the top 20 leading causes of death in South Sudan, both sexes

Pos	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	16,363	17,638	17,899	19,029	20,330	19,464
2	Diarrhoeal diseases	13,406	14,154	14,363	15,591	16,656	15,947
3	Malaria	12,013	12,084	12,263	13,971	14,925	14,290
4	Preterm birth complications	8,853	9,396	9,535	10,295	10,999	10,531
5	HIV/AIDS	9,267	9,078	9,212	10,777	11,514	11,023
6	Stroke	7,497	7,704	7,818	8,719	9,315	8,918
7	Birth asphyxia and birth trauma	5,984	6,557	6,654	6,959	7,434	7,118
8	Tuberculosis	6,135	5,699	5,784	7,135	7,623	7,298
9	Digestive diseases	5,250	5,518	5,600	6,106	6,523	6,245
10	Ischaemic heart disease	4,609	4,763	4,834	5,360	5,727	5,483
11	Genitourinary diseases	4,148	4,326	4,390	4,824	5,154	4,934
12	Nutritional deficiencies	3,788	3,981	4,040	4,405	4,706	4,506
13	Meningitis	3,249	3,500	3,552	3,778	4,036	3,864
14	Diabetes mellitus	3,242	3,353	3,403	3,770	4,028	3,857
15	Road injury	2,762	3,175	3,222	3,212	3,432	3,286
16	Respiratory diseases	3,122	3,161	3,207	3,631	3,879	3,714
17	Maternal conditions	2,252	2,620	2,659	2,618	2,797	2,678
18	Hypertensive heart disease	2,275	2,380	2,415	2,646	2,826	2,706
19	Neurological conditions	1,900	2,003	2,032	2,210	2,361	2,261
20	Interpersonal violence	1,795	1,897	1,925	2,087	2,230	2,135

Note: The top 20 leading causes of death account for 81% of all the deaths.

Table 4: Number of deaths from each of the top 20 leading causes of death in South Sudan, both sexes, Males

Pos	Males	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	9,515	10,058	10,207	11,065	11,822	11,318
2	Diarrhoeal diseases	7,053	7,256	7,363	8,202	8,762	8,389
3	Malaria	6,069	6,082	6,172	7,058	7,540	7,219
4	Preterm birth complications	5,062	5,372	5,451	5,887	6,289	6,022
5	Stroke	4,499	4,393	4,458	5,233	5,590	5,352
6	HIV/AIDS	4,017	4,003	4,062	4,672	4,991	4,778
7	Birth asphyxia and birth trauma	3,423	3,749	3,804	3,980	4,253	4,071
8	Digestive diseases	3,538	3,620	3,674	4,115	4,396	4,209
9	Tuberculosis	3,441	3,150	3,196	4,002	4,276	4,094
10	Ischaemic heart disease	2,893	2,855	2,897	3,364	3,594	3,441
11	Genitourinary diseases	2,585	2,563	2,601	3,006	3,211	3,075
12	Respiratory diseases	2,262	2,196	2,228	2,631	2,811	2,691
13	Nutritional deficiencies	2,020	2,082	2,113	2,349	2,510	2,403
14	Diabetes mellitus	2,103	2,075	2,106	2,446	2,613	2,502
15	Road injury	1,786	2,039	2,069	2,078	2,220	2,125
16	Meningitis	1,812	1,920	1,949	2,107	2,251	2,155
17	Interpersonal violence	1,273	1,339	1,358	1,480	1,581	1,514
18	Other COVID-19 pandemic-related outcomes	498	1,173	1,190	579	619	593
19	Other neonatal conditions	1,001	1,073	1,089	1,165	1,244	1,191
20	Other unintentional injuries	991	1,071	1,087	1,153	1,232	1,179

Table 5: Number of deaths from each of the top 20 leading causes of death in South Sudan, both sexes, Females

Pos	Females	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	7,025	7,715	7,829	8,170	8,728	8,356
2	Rheumatic heart disease	6,849	172	7,508	7,966	8,510	8,148
3	Diarrhoeal diseases	6,306	6,795	6,895	7,333	7,835	7,501
4	Malaria	5,923	5,976	6,064	6,889	7,359	7,046
5	HIV/AIDS	5,291	5,108	5,183	6,153	6,574	6,294
6	Preterm birth complications	3,818	4,054	4,114	4,440	4,744	4,542
7	Stroke	3,147	3,391	3,441	3,660	3,910	3,744
8	Birth asphyxia and birth trauma	2,580	2,828	2,870	3,000	3,205	3,069
9	Maternal conditions	2,440	2,824	2,866	2,837	3,031	2,902
10	Tuberculosis	2,769	2,605	2,643	3,220	3,441	3,294
11	Ischaemic heart disease	1,833	1,984	2,013	2,131	2,277	2,180
12	Digestive diseases	1,814	1,969	1,998	2,109	2,253	2,157
13	Nutritional deficiencies	1,786	1,907	1,936	2,077	2,218	2,124
14	Genitourinary diseases	1,701	1,866	1,893	1,978	2,113	2,023
15	Meningitis	1,451	1,589	1,612	1,687	1,803	1,726
16	Hypertensive heart disease	1,323	1,426	1,447	1,539	1,644	1,574
17	Diabetes mellitus	1,244	1,355	1,375	1,446	1,545	1,479
18	Respiratory diseases	1,070	1,147	1,164	1,244	1,329	1,272
19	Road injury	993	1,145	1,161	1,155	1,233	1,181
20	Neurological conditions	881	955	969	1,024	1,094	1,048

4.1

Abyei Administrative Area

4.1.1 The Administrative Area's Profile

The Abyei Special Administrative Area, covering 10,546 square kilometers, occupies a politically sensitive and strategically vital corridor between South Sudan and Sudan. Governed through a unique administrative arrangement, Abyei consists of one county and one payam, reflecting its transitional status and contested governance.

As of 2025, the population stands at 94,269, shaped by seasonal migration, intercommunal displacement, and the ongoing dispute over territorial control. Demographic fluidity is driven by the movement of pastoralist groups such as the Misseriya, who migrate southward during dry seasons, and by returnees fleeing conflict in Sudan–particularly after the April 2023 crisis, which brought 22,701 new arrivals through the Amiet point of entry.

Despite its relatively small population, Abyei faces disproportionate health challenges. The area experiences recurrent outbreaks of malaria, cholera, and hepatitis E, exacerbated by poor sanitation, limited access to clean water, and under-resourced health infrastructure. Recent efforts by the Ministry of Health, in collaboration with UNICEF, WHO, and Médecins Sans Frontières, have introduced malaria-vaccination campaigns targeting children 5-18 months of age, alongside diarrhea-prevention programs for infants. However, delivery of these services remains constrained by logistical barriers, insecurity, and limited mobility, especially in remote areas.

Climate change adds another layer of vulnerability, with floods, droughts, and livestock-disease outbreaks threatening livelihoods and food security. In 2022, unprecedented flooding led to widespread displacement and the loss of up to 80% of livestock in some communities.

4.1.2 Mortality Profile in Abyei

In 2024, the Abyei Administrative Area recorded 1,078 deaths across all age groups and causes (600 males; 478 females), reflecting the health vulnerabilities of a population navigating environmental hardship and political uncertainty (Table 6). Mortality was heavily concentrated among children under five, who accounted for 435 deaths (240 males; 195 females)–over 40% of the total–underscoring persistent gaps in maternal and child health services, nutrition, and access to clean water and sanitation.

The leading contributors to mortality were communicable, maternal, perinatal, and nutritional conditions, responsible for 675 deaths (355 males; 320 females), or 63% of the total. These causes were especially pronounced in the youngest age group, with 405 deaths among children under five (223 males; 182 females), and continued to affect older adults–particularly those 70 years and above, where 91 deaths were recorded (51 males; 40 females). This pattern reflects endemic disease pressures and limited access to preventive care and basic health services. Immunization primarily addresses vaccine-preventable diseases (e.g., measles, pertussis) that may contribute to under-five mortality, though these are not explicitly disaggregated in this dataset.

Noncommunicable diseases (NCDs) accounted for 310 deaths (181 males; 129 females), with the majority occurring in older age groups. Notably, 173 deaths were recorded among those 70 years and above (100 males; 73 females), indicating a growing burden of chronic conditions such as cardiovascular disease, diabetes, and age-related complications.

This trend signals the need to begin integrating NCD management into primary health care, even in low-resource settings like Abyei.
Injuries contributed to 87 deaths (58 males; 29 females), with a notable concentration among adolescents and young adults (5-29 years), where 49 deaths occurred (22 males; 27 females). Male injury-related mortality was highest among those 15-29 years, with 13 deaths compared with 4 among females, reflecting broader exposure to mobility risks, conflict-related trauma, and limited emergency-care capacity.

Gender differences in overall mortality are also evident. Males accounted for 600 deaths, while females accounted for 478. Male mortality was higher across nearly all age groups, particularly among older adults and those 15-49 years. Among females, mortality was more concentrated in early childhood and the reproductive years, with maternal and perinatal conditions contributing significantly to the burden (Table 6).

4.1.3 Numbers of Leading Causes of Death in Abyei

Between 2019 and 2024, Abyei Administrative Area's mortality burden was consistently shaped by a mix of preventable infectious diseases, maternal and neonatal conditions, and emerging noncommunicable diseases (NCDs). The top 10 causes of death accounted for 657 deaths in 2024–61% of the area's total mortality (1,078 deaths) that year–highlighting both systemic health challenges and demographic vulnerabilities (Table 7).

Diarrheal diseases ranked second, with deaths increasing from 70 in 2019 to 99 in 2024. These figures reflect ongoing challenges in water, sanitation, and hygiene (WASH), particularly in displacement settings and underserved communities. The rise in diarrheal mortality signals the need for expanded access to clean water, oral rehydration therapy, and community-based health education (Table 7).

Malaria remained the third leading cause, with deaths climbing from 63 to 88 over the same period. Despite being preventable and treatable, malaria continues to claim lives due to limited access to diagnostics, antimalarial drugs, and vector control. Seasonal transmission and environmental factors such as flooding further complicate containment efforts (Table 7).

Preterm birth complications and birth asphyxia/trauma together accounted for 109 neonatal deaths in 2024 (65 and 44, respectively), highlighting critical gaps in maternal and newborn care–including shortages in skilled birth attendance, emergency obstetric services, and neonatal resuscitation. Strengthening facility-based delivery and referral systems remains essential to reduce these preventable deaths (Table 7).

HIV/AIDS mortality rose from 48 deaths in 2019 to 68 in 2024, indicating ongoing transmission and challenges in treatment adherence, stigma, and access to antiretroviral therapy. The upward trend suggests a need to scale up testing, community outreach, and integration of HIV services into primary care (Table 7).

Among NCDs, stroke, digestive diseases, and ischemic heart disease showed gradual increases: stroke deaths rose from 39 to 55, digestive diseases from 27 to 39, and heart disease from 24 to 34. These trends reflect a growing burden of chronic conditions–particularly among older adults–and signal the need for early detection, lifestyle interventions, and long-term management (Table 7).

Tuberculosis remained a persistent threat, with deaths increasing from 32 in 2019 to 45 in 2024. This reflects ongoing transmission and challenges in case detection, treatment completion, and community awareness. TB control efforts must be reinforced through active case finding, improved diagnostics, and community-based DOTS programs (Table 7).

Table 6: Total number of deaths in 2024 by Age and Gender in Abyei Administrative Area

		Age group						
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	1,078	435	69	51	90	62	86	285
Communicable, maternal, perinatal and nutritional conditions	675	405	43	27	55	27	27	91
Noncommunicable diseases	310	17	9	7	24	29	51	173
Injuries	87	13	16	17	11	6	7	17

		Age group						
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	600	240	34	24	52	32	53	165
Communicable, maternal, perinatal and nutritional conditions	355	223	20	7	27	12	15	51
Noncommunicable diseases	181	10	4	3	16	16	32	100
Injuries	58	7	9	13	9	4	5	11

		Age group						
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	478	195	35	27	38	30	33	120
Communicable, maternal, perinatal and nutritional conditions	320	182	23	20	28	15	12	40
Noncommunicable diseases	129	7	5	4	8	13	19	73
Injuries	29	6	7	4	2	2	2	6

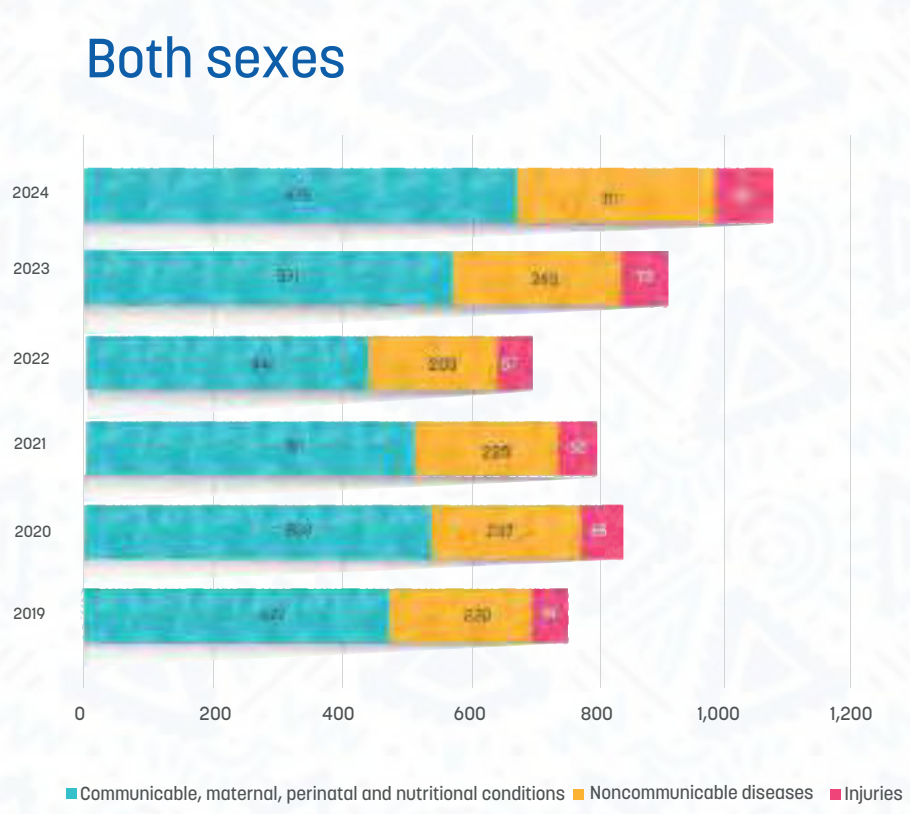
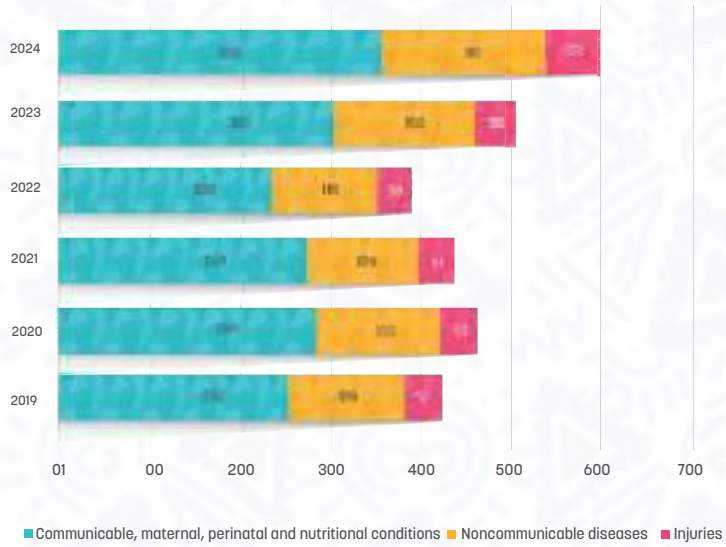
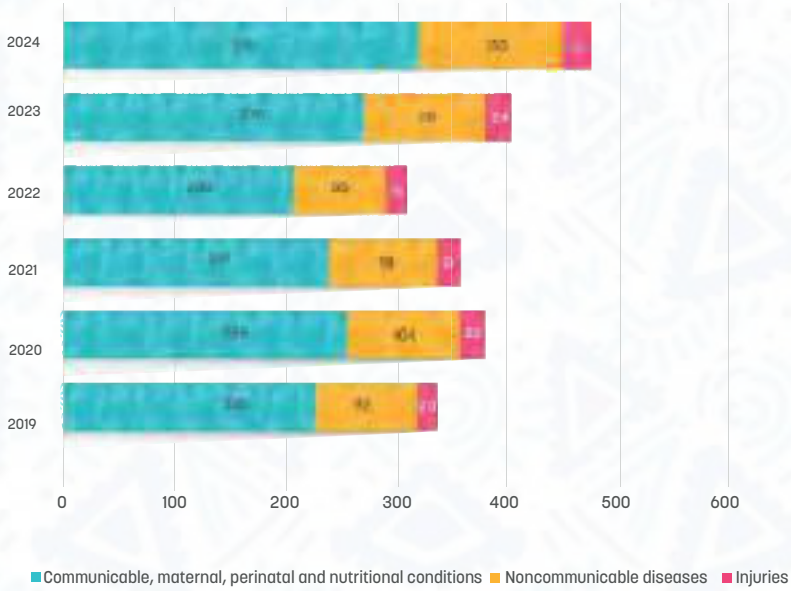


Figure 5 : Total number of deaths by major cause between 2019 and 2024 in Abyei Administrative Area, both sexes



Males

Figure 6 : Total number of deaths by major cause between 2019 and 2024 in Abyei Administrative Area, Males



Females

Figure 7 : Total number of deaths by major cause between 2019 and 2024 in Abyei Administrative Area, Females

Table 7: The number of deaths for the top 10 leading causes (2019 - 2024), in Abyei Administrative Area

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	85	96	91	79	102	120
2	Diarrhoeal diseases	70	77	73	64	89	99
3	Malaria	63	66	62	58	75	88
4	Preterm birth complications	46	51	48	43	55	65
5	HIV/AIDS	48	49	47	45	58	68
6	Stroke	39	42	40	36	47	55
7	Birth asphyxia and birth trauma	31	36	34	29	37	44
8	Tuberculosis	32	31	29	29	38	45
9	Digestive diseases	27	30	28	25	33	39
10	Ischaemic heart disease	24	26	24	22	29	34

4.2

Central Equatoria State

4.2.1 The Profile of Central Equatoria

Central Equatoria State, covering 43,057 square kilometers, is the political, economic, and administrative nucleus of South Sudan. Home to the national capital, Juba, the state plays a pivotal role in governance, commerce, and international diplomacy. Its population grew from 1,750,020 in 2020 (908,513 males; 841,507 females) to 2,064,462 by 2025 (1,068,427 males; 996,035 females), reflecting a 3.35% growth rate–slightly above the national average. This expansion is driven by both natural growth and migration, as displaced populations and economic seekers gravitate toward Juba and surrounding urban centers.

Administratively, Central Equatoria is divided into six counties and 46 payams–Juba, Lainya, Morobo, Terekeka, Yei, and Kajo-Keji. Each county presents distinct geographic and sociopolitical dynamics, ranging from the densely populated urban sprawl of Juba to the agriculturally rich yet conflict-affected zones of Yei and Kajo-Keji. The state's central location and relatively developed infrastructure make it a hub for national and regional connectivity, while also exposing it to heightened pressures from urbanization, land disputes, and resource competition.

The health profile of Central Equatoria is marked by frequent alerts for malaria, mpox, cholera, circulating vaccine-derived poliovirus type 2 (cVDPV2), and measles. These outbreaks are exacerbated by urban flooding–particularly in Juba–where poor drainage and informal settlements contribute to stagnant water and increased disease transmission. Sanitation gaps, including limited access to clean water and waste management, further amplify public-health risks, especially in densely populated neighborhoods and displacement camps.

4.2.2 Mortality profile of Central Equatoria State

In 2024, Central Equatoria State recorded 22,858 deaths across all age groups and causes (12,715 males; 10,143 females), reflecting the complex health challenges facing South Sudan's political and economic hub (Table 8). Mortality was heavily concentrated at two demographic extremes: children under five accounted for 9,227 deaths (5,094 males; 4,133 females), or 40% of the total, while older adults (70 years and above) contributed 6,039 deaths (3,490 males; 2,549 females), representing 26% of all deaths. This dual vulnerability underscores persistent gaps in maternal and child health services, as well as the growing burden of chronic disease among aging populations.

The leading contributors to mortality were communicable, maternal, perinatal, and nutritional conditions, responsible for 14,310 deaths (7,545 males; 6,765 females), or 63% of the total (Table 8). These causes were especially pronounced among children under five, with 8,587 deaths (4,732 males; 3,855 females), and among older adults (70 years and above), with 1,928 deaths (1,078 males; 850 females). The high burden reflects ongoing challenges in neonatal care, infectious-disease control, and nutrition, particularly in peri-urban and underserved communities. Immunization is relevant primarily for vaccine-preventable diseases contributing to under-five mortality, though the table does not disaggregate these causes.

Noncommunicable diseases (NCDs) accounted for 6,592 deaths (3,845 males; 2,747 females), with the majority occurring in adults 50 years and above. Among those 70 years and above, 3,685 deaths were recorded (2,128 males; 1,557 females), indicating a rising tide of cardiovascular disease, diabetes, and other chronic conditions (Table 8). This trend signals an epidemiological shift and highlights the need to integrate NCD prevention and management into primary health care.

Injuries contributed to 1,836 deaths (1,246 males; 590 females), with a notable concentration among adolescents and young adults (5-29 years), where 708 deaths occurred (475 males; 233 females). Male injury-related mortality was highest among those 15-29 years, with 280 deaths compared with 85 among females. This gender disparity reflects broader exposure to road-traffic injuries, interpersonal violence, and occupational hazards, and points to the need for targeted prevention and trauma care (Table 8).

Gender differences in overall mortality are significant. Males accounted for 12,715 deaths, while females accounted for 10,143. Male mortality was higher across nearly all age groups, particularly among working-age adults and the elderly. Among females, mortality was more concentrated in early childhood and the reproductive years, with maternal and perinatal conditions contributing substantially to the burden (Table 8). These patterns highlight the need for gender-sensitive health programming and equitable resource allocation across age groups.

4.2.3 Numbers of Leading Causes of Death

Between 2019 and 2024, Central Equatoria's mortality burden was shaped by a combination of infectious diseases, maternal and neonatal conditions, and noncommunicable diseases (NCDs). The top 10 causes of death accounted for 13,959 deaths in 2024–61% of the state's total mortality (22,858 deaths) that year–reflecting both persistent public-health challenges and emerging epidemiological shifts (Table 9).

At the forefront were lower respiratory infections, which remained the leading cause of death throughout the six-year period. Deaths rose from 2,375 in 2019 to a peak of 2,806 in 2023, before declining slightly to 2,554 in 2024. This trend underscores the ongoing vulnerability of children and older adults to pneumonia and related conditions, exacerbated by poor air quality, overcrowding, and limited access to timely treatment (Table 9).

Diarrheal diseases consistently ranked second, with deaths increasing from 1,946 in 2019 to 2,299 in 2023, then easing to 2,092 in 2024. These figures reflect enduring challenges in water, sanitation, and hygiene (WASH), particularly in informal settlements and peri-urban areas. Despite being preventable, diarrheal diseases continue to claim lives due to gaps in clean-water access, hygiene practices, and community-level health education (Table 9).

Malaria remained the third leading cause, with deaths rising from 1,744 in 2019 to 2,060 in 2023, before declining to 1,875 in 2024. The seasonal nature of transmission, coupled with environmental factors such as flooding, contributes to recurrent outbreaks. While vector control and treatment access have improved, the disease remains a major public-health threat (Table 9).

Preterm birth complications and birth asphyxia/trauma together accounted for 2,316 neonatal deaths in 2024–1,382 from preterm complications and 934 from birth trauma. These figures highlight critical gaps in maternal and newborn care, including limited access to skilled birth attendants, emergency obstetric services, and neonatal resuscitation, particularly outside urban centers (Table 9).

HIV/AIDS mortality rose from 1,345 deaths in 2019 to 1,589 in 2023, before declining slightly to 1,446 in 2024. This trajectory suggests both progress in treatment access and ongoing transmission challenges. Stigma, late diagnosis, and inconsistent antiretroviral therapy coverage continue to hinder control efforts (Table 9).

Among NCDs, stroke, ischemic heart disease, and digestive diseases showed gradual increases. Stroke deaths rose from 1,088 in 2019 to 1,286 in 2023, then declined to 1,170 in 2024. Ischemic heart disease followed a similar pattern, increasing from 669 deaths in 2019 to 791 in 2023, before dropping to 719 in 2024. Digestive-disease deaths rose from 762 in 2019 to 819 in 2024 (Table 9). These trends reflect a growing burden of chronic conditions–particularly among older adults–and signal the need for integrated NCD management within primary care.

Tuberculosis remained a persistent threat, with deaths increasing from 743 in 2020 to 958 in 2024. This resurgence highlights the importance of community-based outreach, improved diagnostics, and sustained funding for control programs (Table 9).

Table 8: Total number of deaths in 2024 by Age and Gender in Central Equatoria State

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	22,858	9,227	1,453	1,081	1,920	1,333	1,805	6,039
Communicable, maternal, perinatal and nutritional conditions	14,310	8,587	914	570	1,160	581	570	1,928
Noncommunicable diseases	6,592	368	192	143	510	614	1,080	3,685
Injuries	1,836	274	343	365	234	126	136	358

	Age group							
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	12,715	5,094	717	502	1,110	687	1,115	3,490
Communicable, maternal, perinatal and nutritional conditions	7,545	4,732	429	154	575	253	324	1,078
Noncommunicable diseases	3,845	209	91	67	330	339	681	2,128
Injuries	1,246	154	195	280	194	87	97	239

	Age group							
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	10,143	4,133	736	579	579	646	690	2,549
Communicable, maternal, perinatal and nutritional conditions	6,765	3,855	485	416	416	328	246	850
Noncommunicable diseases	2,747	159	101	76	76	275	399	1,557
Injuries	590	120	148	85	85	39	39	119

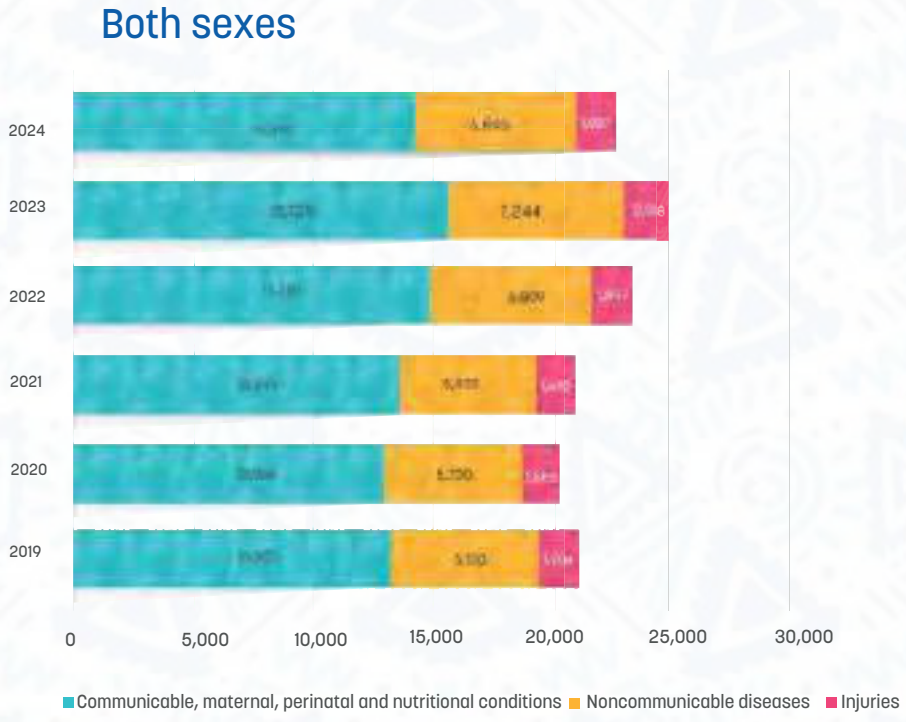
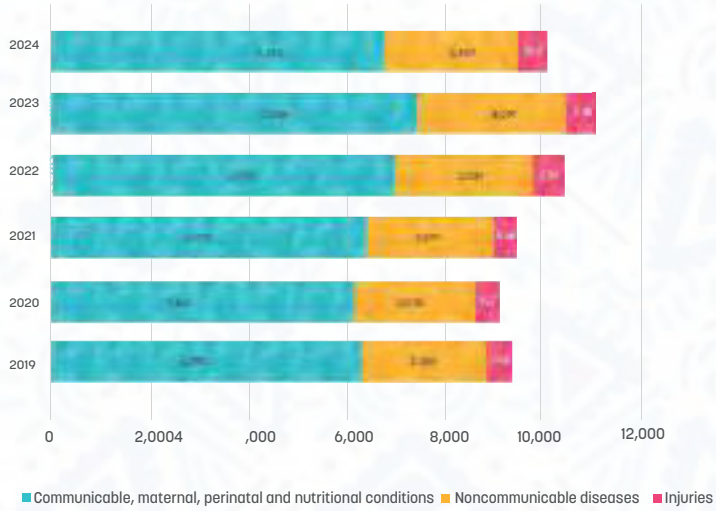


Figure 8 :Total number of deaths by major cause between 2019 and 2024 in Central Equatoria State, both sexes

Males

Figure 9 : Total number of deaths by major cause between 2019 and 2024 in Central Equatoria State, Males



Females

Figure 10 : Total number of deaths by major cause between 2019 and 2024 in Central Equatoria State, Females

Table 9: The number of deaths for the top 10 leading causes (2019 - 2024), in Central Equatoria State

1	Lower respiratory infections	2,375	2,300	2,394	2,638	2,806	2,554
2	Diarrhoeal diseases	1,946	1,946	1,921	2,161	2,299	2,092
3	Malaria	1,744	1,576	1,640	1,937	2,060	1,875
4	Preterm birth complications	1,285	1,226	1,275	1,427	1,518	1,382
5	HIV/AIDS	1,345	1,184	1,232	1,494	1,589	1,446
6	Stroke	1,088	1,005	1,046	1,209	1,286	1,170
7	Birth asphyxia and birth trauma	868	855	890	965	1,026	934
8	Tuberculosis	890	743	774	989	1,052	958
9	Digestive diseases	762	720	749	846	900	819
10	Ischaemic heart disease	669	621	647	743	791	719

4.3

Eastern Equatoria State

4.3.1 The Profile of Eastern Equatoria

Eastern Equatoria State, located in southeastern South Sudan, spans 73,082 square kilometers and is undergoing rapid demographic expansion, with an annual population growth rate of 4.00%. The population increased from 1,583,043 in 2020 (795,702 males; 787,341 females) to a projected 1,925,440 by 2025, with an almost perfectly balanced distribution of 962,638 males and 962,802 females. Administratively, the state is divided into eight counties and 53 payams, each with unique cultural and geographic characteristics. Its strategic location–bordering Uganda, Kenya, and Ethiopia–makes it a critical corridor for regional integration, trade, and cross-border cooperation, while also exposing it to transboundary health risks.

Public health in Eastern Equatoria faces recurring challenges, particularly during the rainy season, when outbreaks of malaria, cholera, and measles tend to spike. These seasonal surges are compounded by flooding, which disrupts access to health care, contaminates water sources, and facilitates disease transmission. The state's vulnerability is heightened by porous borders and frequent population movement, which increase the risk of cross-border spread. In addition, climate variability–droughts in Kapoeta East, Kapoeta North, Torit, and Budi, and seasonal flooding in Lafon County–has severely affected agricultural productivity and displaced communities.

4.3.2 Mortality Profile in Eastern Equatoria

In 2024, Eastern Equatoria State recorded 19,076 deaths across all age groups and causes (10,611 males; 8,465 females), reflecting a complex public-health landscape shaped by both endemic disease pressures and emerging chronic conditions (Table 10). The mortality burden was concentrated at two ends of the age spectrum: children under five accounted for 7,702 deaths (4,252 males; 3,450 females)–40% of the total–while older adults (70 years and above) contributed 5,040 deaths (2,913 males; 2,127 females), representing 26% of all deaths. These figures underscore persistent gaps in maternal and child health services, as well as the growing impact of noncommunicable diseases among aging populations.
The leading contributors to mortality were communicable, maternal, perinatal, and nutritional conditions, responsible for 11,944 deaths (6,297 males; 5,647 females), or 63% of the total (Table 10). These causes were especially pronounced among children under five, with 7,166 deaths (3,949 males; 3,217 females), and among older adults (70 years and above), with 1,610 deaths (900 males; 710 females). The high burden reflects ongoing challenges in neonatal care, infectious-disease control, and nutrition, particularly in rural and flood-prone areas.

Noncommunicable diseases (NCDs) accounted for 5,501 deaths (3,210 males; 2,291 females), with the majority occurring in adults 50 years and above. Among those 70 years and above, 3,076 deaths were recorded (1,776 males; 1,300 females), indicating a rising tide of cardiovascular disease, diabetes, and other chronic conditions (Table 10). This trend signals an epidemiological shift and highlights the need to integrate NCD prevention and management into primary health care, especially as life expectancy gradually improves.

Injuries contributed to 1,534 deaths (1,042 males; 492 females), with a notable concentration among adolescents and young adults (5–29 years), where 591 deaths occurred (397 males; 194 females). Male injury-related mortality was highest among those 15–29 years, with 234 deaths compared with 71 among females. This gender disparity reflects broader exposure to road-traffic injuries, interpersonal violence, and occupational hazards, and points to the need for targeted prevention, trauma care, and community-safety initiatives (Table 10).

Gender differences in overall mortality are significant. Males accounted for 10,611 deaths, while females accounted for 8,465. Male mortality was higher across nearly all age groups, particularly among working-age adults and the elderly. Among females, mortality was more concentrated in early childhood and the reproductive years, with maternal and perinatal conditions contributing substantially to the burden (Table 10). These patterns highlight the need for gender-sensitive health programming and equitable resource allocation across age groups.

4.3.3 Numbers of Leading Causes of Death

Between 2019 and 2024, Eastern Equatoria's mortality burden was shaped by a persistent dominance of preventable infectious diseases, maternal and neonatal conditions, and a steadily rising tide of noncommunicable diseases (NCDs). The top 10 causes of death accounted for 11,665 deaths in 2024–61% of the state's total mortality (19,076 deaths) that year–reflecting both systemic health challenges and demographic vulnerabilities (Table 11).

Lower respiratory infections remained the leading cause of death throughout the six-year period, rising from 1,428 deaths in 2019 to a peak of 2,222 in 2023, before declining slightly to 2,132 in 2024. This trend reflects the ongoing vulnerability of children and older adults to pneumonia and related conditions, exacerbated by poor air quality, overcrowding, and limited access to timely treatment and vaccination (Table 11).

Diarrheal diseases ranked second, with deaths increasing from 1,170 in 2019 to 1,746 in 2024. These figures highlight persistent gaps in water, sanitation, and hygiene (WASH), particularly in rural and flood-prone areas. Despite being preventable, diarrheal diseases continue to claim lives due to inadequate access to clean water, poor hygiene practices, and limited community-level health education (Table 11).

Malaria remained the third leading cause, with deaths rising from 1,048 in 2019 to 1,565 in 2024. Seasonal transmission, environmental factors such as stagnant water and flooding, and limited access to diagnostics and treatment contribute to its enduring burden. While vector-control efforts have expanded, malaria remains a major public-health threat across all age groups (Table 11).

Preterm birth complications and birth asphyxia/trauma together accounted for 1,932 neonatal deaths in 2024–1,153 from preterm complications and 779 from birth trauma. These figures underscore critical gaps in maternal and newborn care, including limited access to skilled birth attendants, emergency obstetric services, and neonatal resuscitation–particularly outside urban centers (Table 11). HIV/AIDS mortality rose from 809 deaths in 2019 to 1,207 in 2024, indicating ongoing transmission and challenges in treatment adherence, stigma reduction, and access to antiretroviral therapy. The upward trend suggests a need to scale up testing, community outreach, and integration of HIV services into primary care (Table 11).

Among NCDs, stroke and ischemic heart disease showed gradual increases. Stroke deaths rose from 654 in 2019 to 977 in 2024, while ischemic heart disease deaths increased from 402 to 600 over the same period. These trends reflect a growing burden of chronic conditions–particularly among older adults–and signal the need for early detection, lifestyle interventions, and long-term management strategies (Table 11).

Tuberculosis remained a persistent threat, with deaths increasing from 535 in 2019 to 799 in 2024. This reflects ongoing transmission and challenges in case detection, treatment completion, and community awareness. TB control efforts must be reinforced through active case finding, improved diagnostics, and community-based DOTS programs (Table 11).

Digestive diseases, often linked to malnutrition, chronic infections, and poor dietary habits, accounted for 684 deaths in 2024, up from 458 in 2019. This steady rise points to broader systemic issues in nutrition, food security, and access to specialized care (Table 11).

Table 10: Total number of deaths in 2024 by Age and Gender in Eastern Equatoria State

		Age group						
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	19,076	7,702	1,212	902	1,602	1,112	1,506	5,040
Communicable, maternal, perinatal and nutritional conditions	11,944	7,166	763	475	969	486	475	1,610
Noncommunicable diseases	5,501	306	160	119	426	512	902	3,076
Injuries	1,534	229	286	305	195	106	114	299

		Age group						
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	10,611	4,252	598	598	419	926	930	2,913
Communicable, maternal, perinatal and nutritional conditions	6,297	3,949	358	358	128	480	270	900
Noncommunicable diseases	3,210	174	76	76	56	276	569	1,776
Injuries	1,042	129	163	163	234	162	81	200

		Age group						
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	8,465	3,450	614	483	676	539	576	2,127
Communicable, maternal, perinatal and nutritional conditions	5,647	3,217	405	347	489	274	205	710
Noncommunicable diseases	2,291	132	84	63	150	229	333	1,300
Injuries	492	100	123	71	33	33	33	99

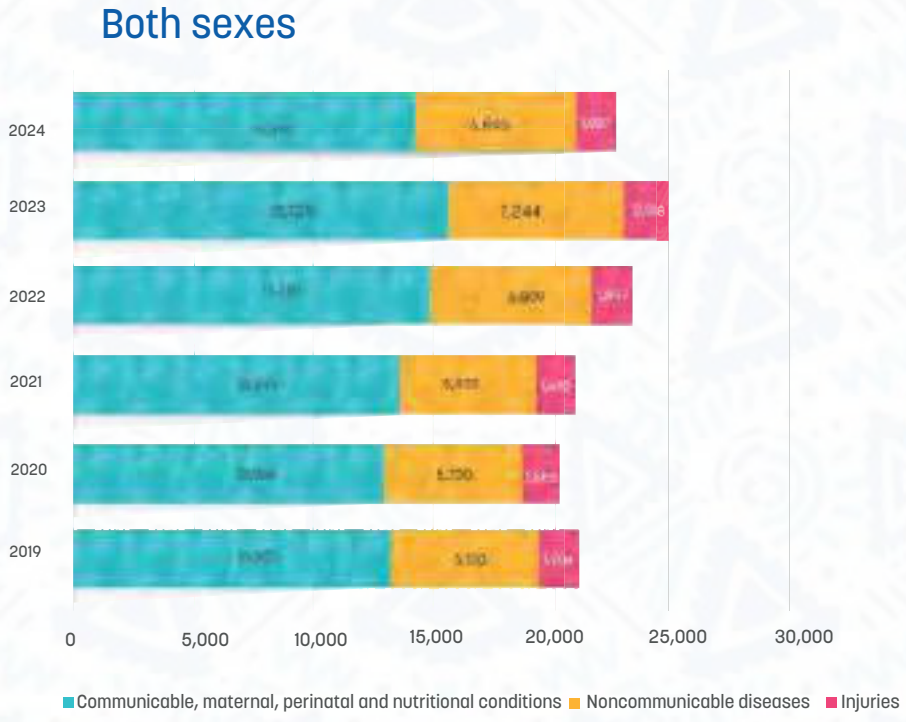
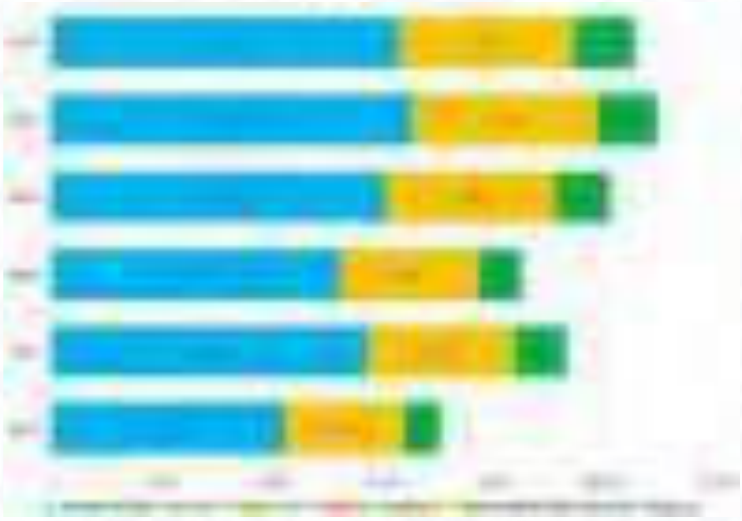
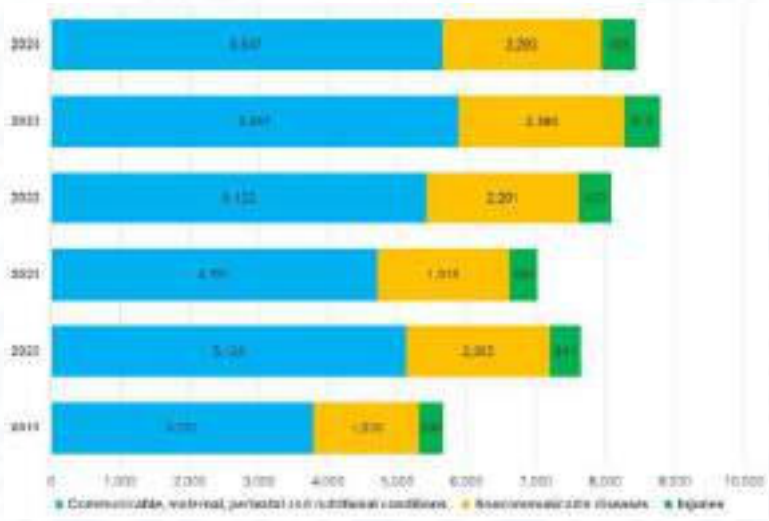


Figure 11 : Total number of deaths by major cause between 2019 and 2024 in Eastern Equatoria State, both sexes



Males

Figure 12 : Total number of deaths by major cause between 2019 and 2024 in Eastern Equatoria State, Males



Females

Figure 13 : Total number of deaths by major cause between 2019 and 2024 in Eastern Equatoria State, Females

Table 11: The number of deaths for the top 10 leading causes (2019 - 2024), in Eastern Equatoria State

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	1,428	1,924	1,765	2,046	2,222	2,132
2	Diarrhoeal diseases	1,170	1,544	1,417	1,677	1,821	1,746
3	Malaria	1,048	1,318	1,209	1,502	1,631	1,565
4	Preterm birth complications	773	1,025	940	1,107	1,202	1,153
5	HIV/AIDS	809	990	909	1,159	1,258	1,207
6	Stroke	654	840	771	938	1,018	977
7	Birth asphyxia and birth trauma	522	715	656	748	813	779
8	Tuberculosis	535	622	570	767	833	799
9	Digestive diseases	458	602	552	657	713	684
10	Ischaemic heart disease	402	520	477	576	626	600

4.4

Greater Pibor Administrative Area

4.4.1 Profile of the Greater Pibor

The Greater Pibor Administrative Area (GPAA), covering 40,502 square kilometers, is a uniquely governed region in South Sudan, formed through negotiated autonomy following years of intercommunal conflict and political marginalization. As of 2025, GPAA is home to 230,343 people, with its population primarily composed of pastoralist communities such as the Murle, Kachipo, and Jie/Jiye, whose high mobility and seasonal migration patterns complicate service delivery, data collection, and population tracking. Administratively, GPAA consists of two counties–Pibor and Pochalla–and 13 payams, each with distinct geographic and cultural characteristics, ranging from the Lotilla plains in the northwest to the Boma plateau in the southeast.

The region faces a persistent health burden, with frequent alerts for cholera, acute watery diarrhea (AWD), acute respiratory infections (ARI), and malaria. These diseases are driven by endemic transmission, poor sanitation, and limited access to clean water–especially during the rainy season, when flooding isolates communities and damages infrastructure.

Strategically located near Jonglei and Eastern Equatoria, and bordering Ethiopia, GPAA serves as a critical zone for cross-border coordination, disease surveillance, and regional peacebuilding efforts. Its demographic growth and geopolitical relevance make it a priority for integrated development, combining humanitarian response with long-term investments in infrastructure, education, livelihoods, and governance reform.

4.4.2 Mortality Profile of the Greater Pibor

In 2024, the Greater Pibor Administrative Area (GPAA) recorded 2,634 deaths across all age groups and causes (1,465 males; 1,169 females), offering a sobering reflection of the health challenges facing this uniquely governed and geographically expansive region (Table 12). The mortality burden was most severe among children under five, with 1,063 deaths (587 males; 476 females), and among older adults (70 years and above), with 696 deaths (402 males; 294 females). These figures highlight the vulnerability of both the youngest and oldest populations, where preventable deaths continue to occur due to systemic gaps in care.

The leading causes of death were communicable, maternal, perinatal, and nutritional conditions, responsible for 1,647 deaths (868 males; 779 females), or 63% of total mortality (Table 12). These conditions heavily affected children under five, accounting for 989 deaths (545 males; 444 females), and continued to impact older adults, with 222 deaths among those 70 years and above (124 males; 98 females). The numbers point to persistent challenges in immunization, maternal health, nutrition, and infectious-disease control–areas where timely, community-based interventions could dramatically reduce mortality.

Noncommunicable diseases (NCDs) claimed 759 lives (442 males; 317 females), with the burden rising sharply in older age brackets. Among those 70 years and above, 424 deaths were attributed to chronic conditions such as heart disease, diabetes, and stroke (245 males; 179 females) (Table 12). These figures signal a growing shift in the disease landscape, demanding stronger integration of NCD screening and management into primary health care–even in remote, pastoralist communities.

Injuries accounted for 213 deaths (144 males; 69 females), disproportionately affecting adolescents and young adults. Among those 15-29 years, 42 deaths were recorded (32 males; 10 females), with males bearing the brunt. These deaths reflect broader risks, including mobility-related trauma, intercommunal violence, and limited access to emergency care (Table 12).

Gender disparities are stark. Males accounted for 1,465 deaths, with higher mortality across nearly every age group. Among men 70 years and above, 402 deaths were recorded, compared with 294 among females. Male deaths from injuries and NCDs were significantly higher, especially in older age groups. For females, the mortality burden was concentrated in early childhood and the reproductive years. In 2024, 476 girls under five died, and maternal and perinatal conditions contributed to 779 female deaths overall (Table 12). These figures underscore the need for expanded maternal health services, skilled birth attendance, and culturally sensitive outreach tailored to GPAA's pastoralist dynamics.

4.4.3 Numbers of Leading Causes of Death

Over the six-year period from 2019 to 2024, the Greater Pibor Administrative Area (GPAA) faced a persistent, deeply entrenched burden of preventable mortality. The top 10 causes of death accounted for 1,607 deaths in 2024–61% of the area's total mortality (2,634 deaths) that year–reflecting a health system under pressure, where infectious diseases, maternal and neonatal complications, and emerging chronic conditions continue to claim lives across all age groups (Table 13).

Lower respiratory infections consistently ranked as the leading cause of death, with fatalities rising from 229 in 2019 to a peak of 424 in 2021, before stabilizing at 294 in 2024. These deaths are concentrated among children and older adults, driven by poor access to antibiotics, delayed care-seeking, and limited availability of oxygen therapy. Seasonal outbreaks and overcrowded living conditions further exacerbate risk (Table 13).

Diarrheal diseases followed closely, with deaths increasing from 187 in 2019 to 241 in 2024. These figures reflect ongoing challenges in water, sanitation, and hygiene (WASH), particularly in pastoralist and flood-prone communities. Despite being preventable, diarrheal diseases remain lethal due to inadequate access to clean water, poor hygiene practices, and limited health education (Table 13).

Malaria remained a major killer, with deaths rising from 168 in 2019 to 216 in 2024. The disease thrives where stagnant water, weak vector control, and limited access to diagnostics and treatment persist. Malaria's seasonal spikes–and its impact on children and pregnant women–make it a continuing public-health threat (Table 13).

Preterm birth complications and birth asphyxia/trauma together accounted for 267 neonatal deaths in 2024–159 from preterm complications and 108 from birth trauma. These figures underscore critical gaps in maternal and newborn care, including limited access to skilled birth attendants, emergency obstetric services, and neonatal resuscitation–especially in remote areas with minimal facility coverage (Table 13).

HIV/AIDS mortality remained high, with 167 deaths in 2024, up from 130 in 2019. This trajectory signals ongoing transmission and challenges in testing, treatment adherence, and stigma reduction. The burden is particularly acute among young adults and women of reproductive age, highlighting the need for integrated HIV services and community outreach (Table 13).

Among noncommunicable diseases (NCDs), stroke and ischemic heart disease showed gradual increases. Stroke deaths rose from 105 in 2019 to 135 in 2024, while ischemic heart disease deaths increased from 64 to 83. These trends reflect a growing burden of chronic conditions–particularly among older adults–and signal the need for early detection, lifestyle interventions, and long-term management strategies, even in low-resource settings (Table 13).

Tuberculosis remained a persistent threat, with deaths increasing from 86 in 2019 to 110 in 2024. This reflects ongoing transmission and challenges in case detection, treatment completion, and community awareness. TB control efforts must be reinforced through active case finding, improved diagnostics, and sustained funding (Table 13).

Digestive diseases, often linked to malnutrition, chronic infections, and poor dietary habits, accounted for 94 deaths in 2024, up from 73 in 2019. This steady rise points to broader systemic issues in nutrition, food security, and access to specialized care (Table 13).

Overall, GPAA's mortality profile reveals a dual burden: infectious and maternal conditions remain dominant, while NCDs are steadily rising. These patterns call for integrated, age-sensitive, and locally adapted health interventions to reduce avoidable deaths and strengthen system resilience.

Table 12: Total number of deaths in 2024 by Age and Gender in Greater Pibor Administrative Area

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	2,634	1,063	168	125	221	153	208	696
Communicable, maternal, perinatal and nutritional conditions	1,647	989	105	66	133	67	65	222
Noncommunicable diseases	759	42	22	17	59	71	124	424
Injuries	213	32	40	42	27	14	16	42

	Age group							
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	1,465	587	83	58	128	79	128	402
Communicable, maternal, perinatal and nutritional conditions	868	545	49	18	66	29	37	124
Noncommunicable diseases	442	24	10	8	38	39	78	245
Injuries	144	18	23	32	22	10	11	28

	Age group							
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	1,169	476	85	67	93	74	80	294
Communicable, maternal, perinatal and nutritional conditions	779	444	56	48	67	38	28	98
Noncommunicable diseases	317	18	12	9	21	32	46	179
Injuries	69	14	17	10	5	4	5	14

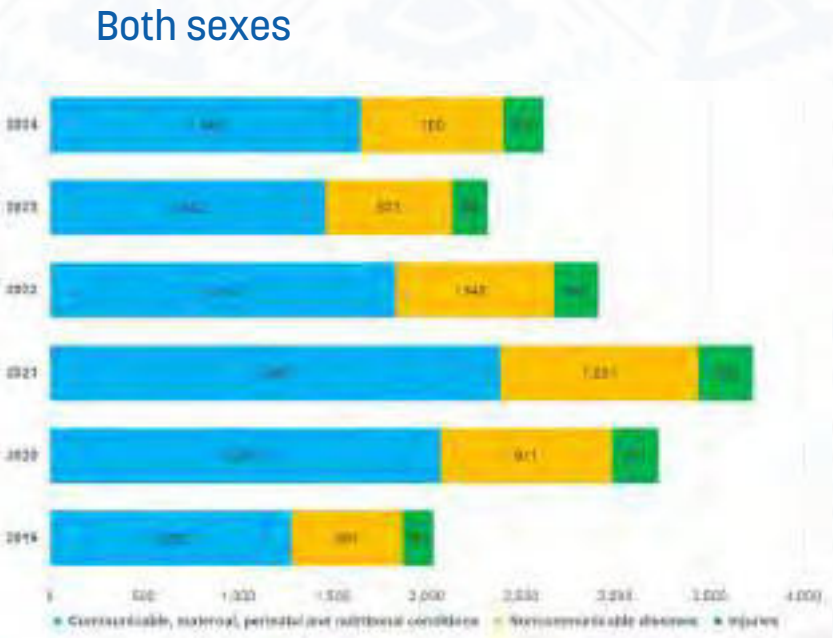
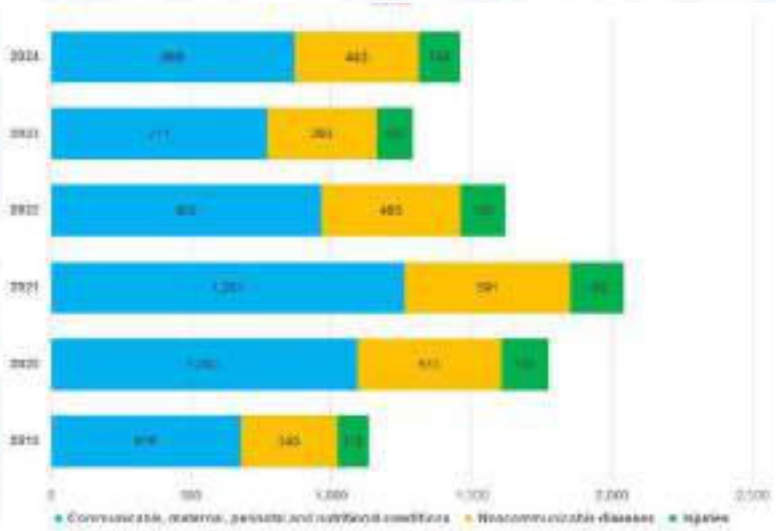
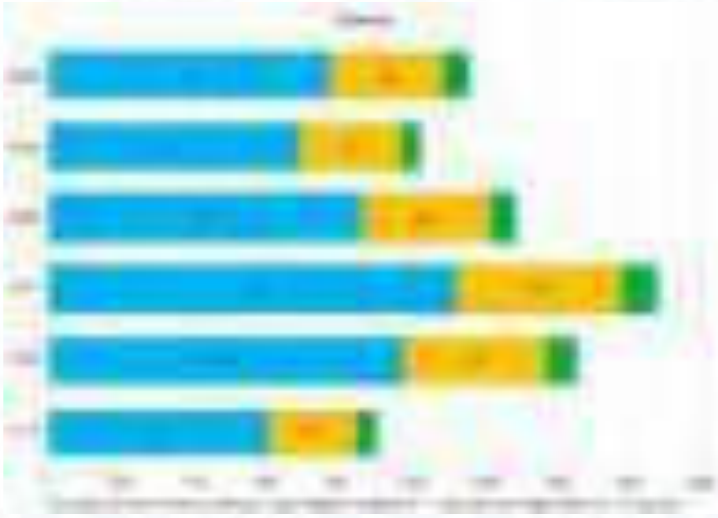


Figure 14 :Total number of deaths by major cause between 2019 and 2024 in Greater Pibor Administrative Area, both sexes



Males

Figure 15 : Total number of deaths by major cause between 2019 and 2024 in Greater Pibor Administrative Area, Males



Females

Figure 16 : Total number of deaths by major cause between 2019 and 2024 in Greater Pibor Administrative Area, Females

Table 13: TThe number of deaths for the top 10 leading causes (2019 - 2024), in Greater Pibor Administrative Area

Sno	Cause of death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	229	368	424	327	261	294
2	Diarrhoeal diseases	187	295	340	268	214	241
3	Malaria	168	252	290	240	192	216
4	Preterm birth complications	124	196	226	177	141	159
5	HIV/AIDS	130	189	218	185	148	167
6	Stroke	105	161	185	150	120	135
7	Birth asphyxia and birth trauma	84	137	158	120	95	108
8	Tuberculosis	86	119	137	123	98	110
9	Digestive diseases	73	115	133	105	84	94
10	Ischaemic heart disease	64	99	114	92	73	83

4.5

Jonglei State

4.5.1 The Profile of Jonglei

Jonglei State, one of South Sudan's largest and most geographically expansive regions, spans 80,631 square kilometers and is experiencing steady demographic growth. Its population increased from 2,068,494 in 2020 (1,080,000 males; 988,494 females) to a projected 2,412,000 by 2025 (1,240,000 males; 1,172,000 females), reflecting a 3.21% growth rate. Administratively, Jonglei is divided into nine counties and 59 payams, including Bor South, Akobo, Ayod, Uror, Duk, Nyirol, Pigi/Canal, Twic East, and Fangak. Despite its size and population potential, governance in Jonglei is frequently undermined by intercommunal violence, cattle raiding, and armed activity, which disrupt local administration and service delivery.

The health landscape in Jonglei is complex and fragile. The state faces persistent outbreaks of malaria, cholera, hepatitis E, measles, and viral hemorrhagic fevers, many of which intensify during the rainy season. Flooding is a recurrent and devastating hazard, displacing tens of thousands of residents, contaminating water sources, and damaging homes, farmland, and critical infrastructure. In 2025 alone, over 263,000 people across Jonglei and neighboring states were affected by floods, with 95,000 displaced to higher ground. In areas such as Old Fangak and Paguir Payam, flooding has led to alarming rates of malnutrition, with Global Acute Malnutrition (GAM) rates exceeding 37%, far above emergency thresholds.

4.5.2 Mortality Profile in Jonglei

In 2024, Jonglei State recorded 13,433 deaths across all age groups and causes (7,472 males; 5,961 females), reflecting the enduring health challenges of one of South Sudan's most complex, crisis-prone regions (Table 14). The mortality burden was most acute among children under five, with 5,423 deaths (2,994 males; 2,429 females), and among older adults (70 years and above), with 3,549 deaths (2,051 males; 1,498 females). These figures highlight the vulnerability of both ends of the age spectrum, where preventable deaths continue to occur due to systemic gaps in care, access, and infrastructure.

The leading causes of death were communicable, maternal, perinatal, and nutritional conditions, responsible for 8,409 deaths (4,432 males; 3,977 females)–63% of total mortality (Table 14). These conditions heavily affected children under five, accounting for 5,045 deaths (2,780 males; 2,265 females), and continued to impact older adults, with 1,133 deaths among those 70 years and above (633 males; 500 females). The numbers reflect persistent challenges in immunization, maternal health, nutrition, and infectious-disease control–particularly in flood-prone and conflict-affected counties where access to services remains limited.

Noncommunicable diseases (NCDs) claimed 3,874 lives (2,259 males; 1,615 females), with the burden rising sharply in older age brackets. Among those 70 years and above, 2,165 deaths were attributed to chronic conditions such as stroke, heart disease, and diabetes (1,250 males; 915 females) (Table 14). These figures signal a growing shift in the disease landscape, demanding stronger integration of NCD screening and management into primary health care–even in remote, underserved communities.

Injuries accounted for 1,079 deaths (733 males; 346 females), disproportionately affecting adolescents and young adults. Among those 15-29 years, 214 deaths occurred (164 males; 50 females), with males bearing the brunt. These deaths reflect broader risks, including mobility-related trauma, intercommunal violence, and limited access to emergency care (Table 14).

Gender disparities are pronounced. Males accounted for 7,472 deaths, with higher mortality across nearly every age group. Among men 70 years and above, 2,051 deaths were recorded, compared with 1,498 among females. Male deaths from injuries and NCDs were significantly higher, especially in older age groups. For females, the mortality burden was concentrated in early childhood and the reproductive years. In 2024, 2,429 girls under five died, and maternal and perinatal conditions contributed to 3,977 female deaths overall (Table 14). These figures underscore the need for expanded maternal health services, skilled birth attendance, and culturally sensitive outreach tailored to Jonglei's diverse communities.

4.5.3 Numbers of Leading Causes of Death

Between 2019 and 2024, Jonglei State's mortality profile was shaped by a persistent burden of preventable infectious diseases, maternal and neonatal complications, and steadily rising noncommunicable diseases (NCDs). The top 10 causes of death accounted for 9,192 deaths in 2024–68% of the state's total mortality (13,433 deaths) that year–underscoring the systemic health challenges facing one of South Sudan's most flood-prone and conflict-affected regions (Table 15).

Lower respiratory infections remained the leading cause of death, with fatalities surging from 619 in 2019 to 2,049 in 2020, before stabilizing around 1,500 deaths annually–1,501 in 2024. This sustained high burden reflects widespread vulnerability among children and older adults, compounded by poor access to antibiotics, oxygen therapy, and early diagnosis–especially during seasonal outbreaks and displacement crises (Table 15).

Diarrheal diseases followed closely, with deaths rising from 507 in 2019 to 1,230 in 2024. These figures highlight persistent failures in water, sanitation, and hygiene (WASH), particularly in flood-prone counties and informal settlements. Despite being preventable, diarrheal diseases continue to claim lives due to unsafe water sources, poor hygiene practices, and limited access to oral rehydration therapy (Table 15).

Malaria remained a major killer, with deaths increasing from 455 in 2019 to 1,102 in 2024. The disease continues to thrive in Jonglei's swampy terrain and conflict-affected zones, where vector control is weak and access to diagnostics and treatment is inconsistent. Seasonal surges and limited community outreach compound the challenge (Table 15).

Preterm birth complications and birth asphyxia/trauma together accounted for 1,361 neonatal deaths in 2024–812 from preterm complications and 549 from birth trauma. These figures underscore critical gaps in maternal and newborn care, including limited access to skilled birth attendants, emergency obstetric services, and neonatal resuscitation–particularly in remote areas with minimal facility coverage (Table 15).

HIV/AIDS mortality remained high, with 850 deaths in 2024, up from 351 in 2019. This trajectory signals ongoing transmission and challenges in testing, treatment adherence, and stigma reduction. The burden is particularly acute among young adults and women of reproductive age, highlighting the need for integrated HIV services and community-based outreach (Table 15).

Among NCDs, stroke and ischemic heart disease showed steady increases. Stroke deaths rose from 284 in 2019 to 688 in 2024, while ischemic heart-disease deaths increased from 174 to 423. These trends reflect a growing burden of chronic conditions–particularly among older adults–and signal the need for early detection, lifestyle interventions, and long-term management strategies, even in low-resource settings (Table 15).

Tuberculosis remained a persistent threat, with deaths increasing from 232 in 2019 to 563 in 2024. This reflects ongoing transmission and challenges in case detection, treatment completion, and community awareness. TB control efforts must be reinforced through active case finding, improved diagnostics, and sustained funding (Table 15).

Digestive diseases, often linked to malnutrition, chronic infections, and poor dietary habits, accounted for 482 deaths in 2024, up from 199 in 2019. This steady rise points to broader systemic issues in nutrition, food security, and access to specialized care (Table 15).

Overall, Jonglei's mortality landscape reveals a dual burden: infectious and maternal conditions remain dominant, while NCDs are steadily rising. These patterns call for integrated, age-sensitive, and locally adapted health interventions to reduce avoidable deaths and strengthen system resilience.

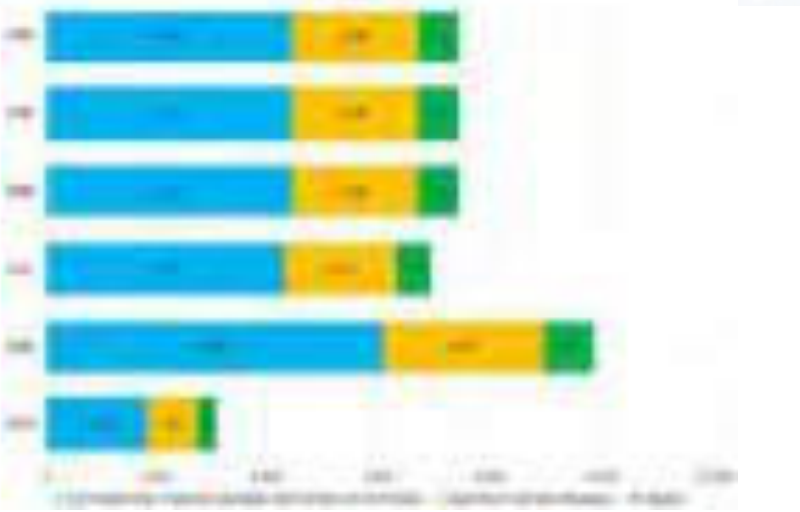
Table 14: Total number of deaths in 2024 by Age and Gender in Jonglei State

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	13,433	5,423	853	635	1,128	784	1,061	3,549
Communicable, maternal, perinatal and nutritional conditions	8,409	5,045	537	335	682	342	335	1,133
Noncommunicable diseases	3,874	216	112	85	300	361	635	2,165
Injuries	1,079	161	202	214	137	74	80	211

	Age group							
Males, 2024	All ages	0-4	5-14	15-29	30-49	50-59	60-69	70+
All Causes	7,472	2,994	421	295	652	404	655	2,051
Communicable, maternal, perinatal and nutritional conditions	4,432	2,780	252	90	338	149	190	633
Noncommunicable diseases	2,259	123	53	40	194	199	400	1,250
Injuries	733	91	115	164	114	51	57	141

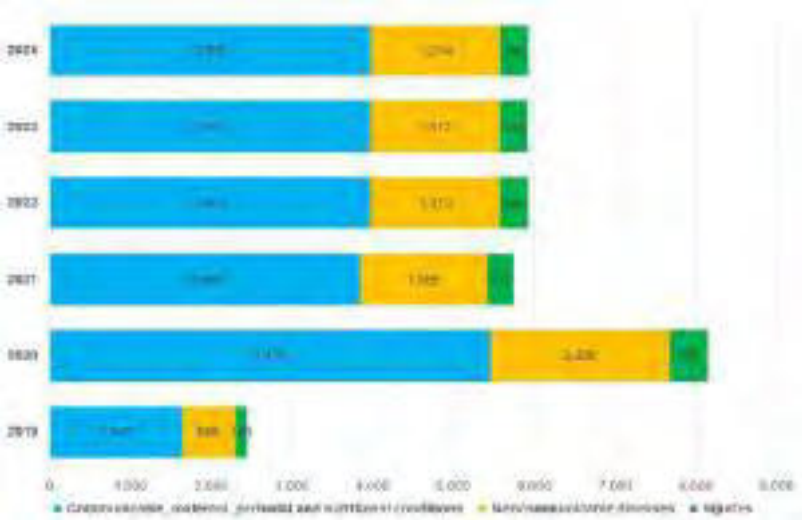
	Age group							
Females, 2024	All ages	0-4	5-14	15-29	30-49	50-59	60-69	70+
All Causes	5,961	2,429	432	340	476	380	406	1,498
Communicable, maternal, perinatal and nutritional conditions	3,977	2,265	285	245	344	193	145	500
Noncommunicable diseases	1,615	93	59	45	106	162	235	915
Injuries	346	70	87	50	23	23	23	70

Figure 17 : Total number of deaths by major cause between 2019 and 2024 in Jonglei State, both sexes



Males

Figure 18 : Total number of deaths by major cause between 2019 and 2024 in Jonglei State, Males



Females

Figure 19 : Total number of deaths by major cause between 2019 and 2024 in Jonglei State, Females

Table 15: The number of deaths for the top 10 leading causes (2019 - 2024), in Jonglei State

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	619	2,049	1,445	1,500	1,499	1,501
2	Diarrhoeal diseases	507	1,644	1,160	1,229	1,228	1,230
3	Malaria	455	1,404	990	1,101	1,100	1,102
4	Preterm birth complications	335	1,092	770	811	811	812
5	HIV/AIDS	351	1,055	744	849	849	850
6	Stroke	284	895	631	687	687	688
7	Birth asphyxia and birth trauma	226	762	537	548	548	549
8	Tuberculosis	232	662	467	562	562	563
9	Digestive diseases	199	641	452	481	481	482
10	Ischaemic heart disease	174	553	390	422	422	423

4.6

Lakes State

4.6.1 The Profile of the Lakes State

Lakes State, located in the heart of South Sudan, spans 43,306 square kilometers and is experiencing one of the fastest population growth rates in the country–4.06% annually. Its population has surged from 1,196,067 in 2020 (613,246 males; 582,821 females) to a projected 1,462,742 by 2025 (745,469 males; 717,273 females). Administratively, Lakes is divided into eight counties and 50 payams, with Rumbek serving as the state capital and central hub for governance and commerce. The state borders Warrap, Western Equatoria, Unity, and Jonglei, and its proximity to the White Nile enhances its strategic importance for trade, mobility, and resource access.

Despite relative political stability, Lakes State faces a severe public-health burden. It consistently records the highest malaria alert volumes nationally, reflecting endemic transmission zones and limited vector-control infrastructure. In addition to malaria, the state grapples with frequent outbreaks of acute watery diarrhea (AWD), acute respiratory infections (ARI), cholera, and mpox, particularly during the rainy season, when flooding becomes a major environmental hazard. These floods not only displace communities and destroy homes but also contaminate water sources, disrupt health services, and accelerate the spread of waterborne and vector-borne diseases.

The health system in Lakes is under strain, with limited access to essential services, low immunization coverage, and inadequate disease surveillance. While the state has made strides in peacebuilding and governance, the intersection of environmental stress, disease outbreaks, and under-resourced health infrastructure demands urgent attention. Community engagement is critical to improving health outcomes, especially in rural areas where traditional practices and limited awareness hinder early treatment-seeking behavior.

4.6.2 Mortality Profile in Lakes State

In 2024, Lakes State recorded 13,443 deaths (7,478 males; 5,965 females), revealing a health system grappling with both persistent infectious threats and rising chronic-disease burdens (Table 16). Mortality was concentrated among the most vulnerable: children under five accounted for 5,427 deaths (2,996 males; 2,431 females), and older adults (70 years and above) recorded 3,551 deaths (2,052 males; 1,499 females). These figures reflect critical gaps in early-childhood survival and geriatric care, demanding urgent attention across the life course.

The leading causes of death were communicable, maternal, perinatal, and nutritional conditions, responsible for 8,415 deaths (4,436 males; 3,979 females). These causes were particularly lethal for children under five, with 5,050 deaths (2,783 males; 2,267 females), and for older adults (70+ years), with 1,134 deaths (634 males; 500 females), underscoring the need for expanded immunization, improved maternal health services, and stronger disease surveillance. The burden remains high across all counties, especially in areas affected by seasonal flooding and limited health infrastructure.

Noncommunicable diseases (NCDs) claimed 3,879 lives (2,263 males; 1,616 females), with the majority occurring in adults 50 years and above. Notably, 2,167 deaths were recorded among those 70+ years (1,251 males; 916 females), reflecting the growing impact of stroke, heart disease, diabetes, and other chronic conditions. This shift signals an epidemiological transition and highlights the need to integrate NCD screening and management into primary health care, even in rural and underserved settings.

Injuries contributed to 1,080 deaths (734 males; 346 females), with a sharp concentration among adolescents and young adults (5–29 years). Among males 15–29 years, 165 deaths were recorded, pointing to risks associated with road-traffic injuries, interpersonal violence, and occupational hazards. The gender disparity is clear: males accounted for 734 injury-related deaths, compared with 346 among females, reflecting broader exposure to mobility- and conflict-related trauma.

Gender differences in overall mortality are significant. Males accounted for 7,478 deaths, with higher mortality across nearly every age group. Among men 70 years and above, 2,052 deaths were recorded, compared with 1,499 among females. Male deaths from NCDs and injuries were notably higher, especially in older and working-age groups.

For females, mortality was concentrated in early childhood and the reproductive years. 2,431 girls under five died in 2024, and communicable, maternal, perinatal, and nutritional conditions contributed to 3,979 female deaths overall. These figures highlight the urgent need for skilled birth attendance, emergency obstetric care, and culturally sensitive outreach tailored to Lakes State's diverse communities (Table 16).

4.6.3 Numbers of Leading Causes of Death

Between 2019 and 2024, Lakes State experienced a sustained, multifaceted mortality burden, shaped by preventable infectious diseases, maternal and neonatal complications, and a rising tide of noncommunicable diseases (NCDs). The top 10 causes of death reflect a health system under pressure, where endemic threats and chronic conditions continue to claim lives across all age groups (Table 17).

Lower respiratory infections remained the leading cause of death throughout the six-year period, consistently exceeding 1,300 deaths annually. In 2024 alone, 1,502 deaths were recorded, down slightly from a peak of 1,556 in 2023 (Table 17). These deaths reflect persistent vulnerability among children and older adults, driven by poor access to antibiotics, limited oxygen therapy, and delayed care-seeking–especially during seasonal outbreaks and in overcrowded settings.

Diarrheal diseases followed closely, with 1,231 deaths in 2024, a modest decline from 1,496 in 2019 (Table 17). Despite being preventable, these deaths highlight systemic failures in water, sanitation, and hygiene (WASH), particularly in flood-prone and underserved areas. Unsafe water sources, poor hygiene practices, and limited access to oral rehydration therapy remain key drivers.

Malaria continued to be a major killer, with 1,103 deaths in 2024, reflecting ongoing transmission in Lakes State's swampy terrain and limited vector control. Although slightly lower than the 2019 figure of 1,341, the burden remains high due to seasonal surges, gaps in diagnostic coverage, and inconsistent access to treatment–especially for children and pregnant women (Table 17).

Preterm birth complications (813 deaths) and birth asphyxia/trauma (549 deaths) together accounted for 1,362 neonatal deaths in 2024 (Table 17). These figures underscore critical gaps in maternal and newborn care, particularly in remote counties with minimal facility coverage and limited access to skilled birth attendants, emergency obstetric services, and neonatal resuscitation.

HIV/AIDS mortality remained high, with 851 deaths in 2024, down from 1,034 in 2019 (Table 17). This decline is encouraging but still reflects ongoing transmission and challenges in testing, treatment adherence, and stigma reduction. The burden is particularly acute among young adults and women of reproductive age, reinforcing the need for integrated HIV services and community-based outreach.

Among NCDs, stroke and ischemic heart disease showed declines: stroke deaths fell from 837 in 2019 to 688 in 2024, while ischemic heart-disease deaths decreased from 514 to 423 over the same period (Table 17). Even with these reductions, the chronic-disease burden among older adults underscores the need for early detection, lifestyle interventions, and long-term management–even in low-resource settings.

Tuberculosis remained a persistent threat, with 563 deaths in 2024, up from 494 in 2020 (Table 17). Digestive diseases, often linked to malnutrition, chronic infections, and poor dietary habits, accounted for 482 deaths in 2024, up from 414 in 2021 (Table 17). This steady rise points to broader systemic issues in nutrition, food security, and access to specialized care.

Table 16: Total number of deaths in 2024 by Age and Gender in Lakes State

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	13,443	5,427	855	635	1,129	784	1,062	3,551
Communicable, maternal, perinatal and nutritional conditions	8,415	5,050	537	335	682	342	335	1,134
Noncommunicable diseases	3,879	216	113	85	300	362	636	2,167
Injuries	1,080	161	202	215	137	74	80	211
	Age group							
Males, 2024	All ages	0-4	5-14	15-29	30-49	50-59	60-69	70+
All Causes	7,478	2,996	422	295	295	653	404	656
Communicable, maternal, perinatal and nutritional conditions	4,436	2,783	252	90	90	338	149	190
Noncommunicable diseases	2,263	123	54	40	40	194	200	401
Injuries	734	91	115	164	165	114	51	57
	Age group							
Females, 2024	All ages	0-4	5-14	15-29	30-49	50-59	60-69	70+
All Causes	5,965	2,431	433	340	476	380	406	1,499
Communicable, maternal, perinatal and nutritional conditions	3,979	2,267	285	245	344	193	145	500
Noncommunicable diseases	1,616	93	59	45	106	162	235	916
Injuries	346	70	87	50	23	23	23	70

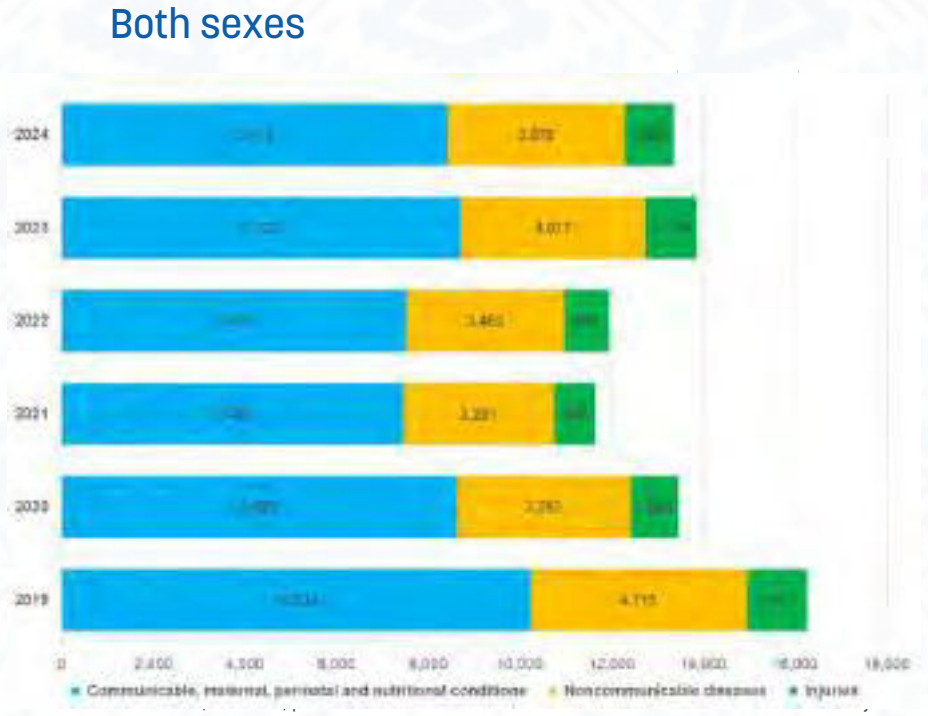
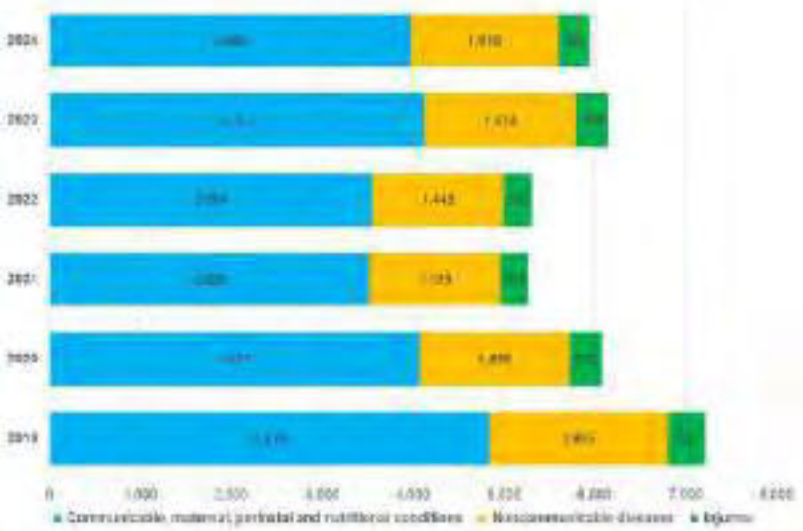


Figure 20 :Total number of deaths by major cause between 2019 and 2024 in Lakes State, both sexes

Males

Figure 21 : Total number of deaths by major cause between 2019 and 2024 in Lakes State, Males



Females

Figure 22 : Total number of deaths by major cause between 2019 and 2024 in Lakes State, Females

Table 17: The number of deaths for the top 10 leading causes (2019 - 2024), in Lakes State

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	1,826	1,530	1,324	1,342	1,556	1,502
2	Diarrhoeal diseases	1,496	1,228	1,063	1,099	1,275	1,231
3	Malaria	1,341	1,048	907	985	1,143	1,103
4	Preterm birth complications	988	815	705	726	842	813
5	HIV/AIDS	1,034	788	681	760	881	851
6	Stroke	837	668	578	615	713	688
7	Birth asphyxia and birth trauma	668	569	492	491	569	549
8	Tuberculosis	685	494	428	503	584	563
9	Digestive diseases	586	479	414	430	499	482
10	Ischaemic heart disease	514	413	358	378	438	423

4.7

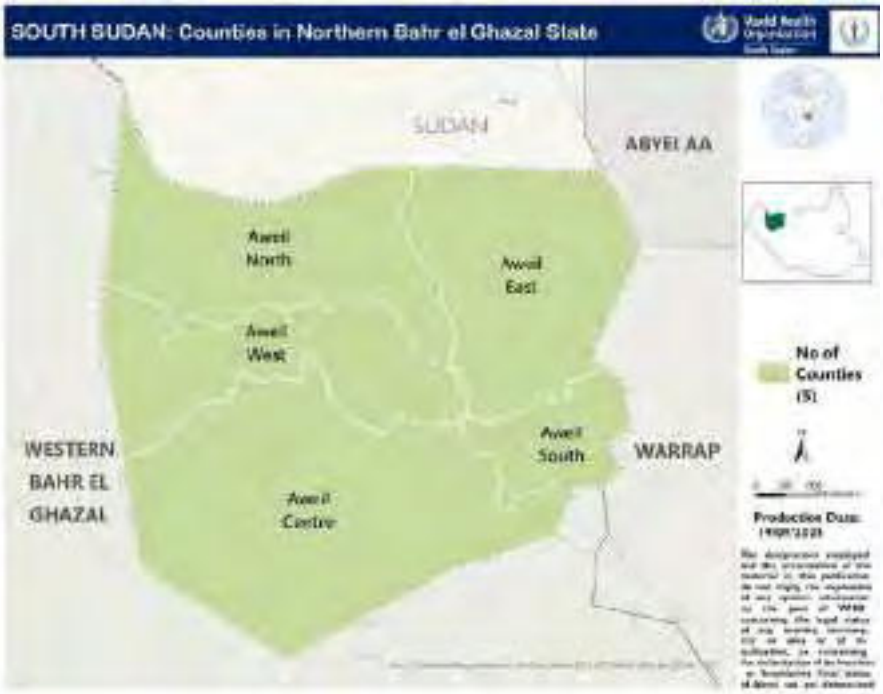
Northern Bahr el Ghazal State

4.7.1 Profile of Northern Bahr el Ghazal

Northern Bahr el Ghazal, occupying 31,160 square kilometers in northwestern South Sudan, is experiencing steady population growth at 3.59% annually. Its population expanded from 1,133,147 in 2020 (546,310 males; 586,837 females) to a projected 1,350,100 by 2025 (650,917 males; 699,183 females). Administratively, the state is divided into five counties and 39 payams, with Aweil serving as the capital and central hub for governance and trade.

Despite its demographic resilience, Northern Bahr el Ghazal faces persistent health challenges, including regular alerts for cholera, measles, malaria, and meningitis, which strain its under-resourced health system.

The state's vulnerability is compounded by seasonal migration, which disrupts continuity of service delivery and complicates health outreach. Flooding, especially during the rainy season, remains a recurring hazard–damaging infrastructure, displacing communities, and contaminating water sources. These environmental pressures, coupled with limited access to health care, education, and clean water, underscore the need for strategic investment in rural health systems, livelihood diversification, and climate-resilient infrastructure. With its growing population and geographic significance, Northern Bahr el Ghazal presents a valuable opportunity for integrated development approaches that strengthen community resilience and improve long-term well-being.



4.7.2 Mortality Profile in Northern Bahr el Ghazal

In 2024, Northern Bahr el Ghazal State recorded 24,211 deaths (13,467 males; 10,744 females), revealing a heavy, complex mortality burden across all age groups (Table 18). The highest concentration of deaths occurred among children under five, with 9,774 deaths (5,396 males; 4,378 females), and older adults (70 years and above), with 6,396 deaths (3,696 males; 2,700 females). These figures underscore the vulnerability at both ends of the age spectrum and the urgent need for targeted interventions in early-childhood survival and geriatric care.

The leading contributors to mortality were communicable, maternal, perinatal, and nutritional conditions, responsible for 15,158 deaths (7,991 males; 7,167 females). These conditions heavily affected children under five, accounting for 9,095 deaths (5,012 males; 4,083 females), and continued to impact older adults (70+ years), with 2,043 deaths (1,142 males; 901 females) (Table 18). These figures reflect persistent gaps in immunization, maternal health, nutrition, and infectious-disease control, particularly in rural areas where access to essential services remains limited.

Noncommunicable diseases (NCDs) accounted for 6,982 deaths (4,073 males; 2,909 females), with the majority occurring in adults 60 years and above. Notably, 3,903 deaths were recorded among those 70+ years (2,254 males; 1,649 females), driven by chronic conditions such as stroke, heart disease, and diabetes (Table 18). This trend signals an epidemiological shift and highlights the need to integrate NCD screening and management into primary health care, especially as life expectancy gradually improves.

Injuries contributed to 1,946 deaths (1,321 males; 625 females), with a sharp concentration among adolescents and young adults (5–29 years). Among males 15–29 years, 296 deaths were recorded, pointing to risks associated with road-traffic injuries, interpersonal violence, and occupational hazards (Table 18). The gender disparity is stark: male injury-related deaths were more than double those of females, reflecting gendered exposure to mobility- and conflict-related trauma.

Gender disparities in overall mortality are significant. Males accounted for 13,467 deaths, with higher mortality across nearly every age group. Among men 70 years and above, 3,696 deaths were recorded, compared with 2,700 among females. Male deaths from NCDs and injuries were notably higher, especially in older and working-age groups (Table 18).

For females, mortality was concentrated in early childhood and the reproductive years. In 2024, 4,378 girls under five died, and communicable, maternal, perinatal, and nutritional conditions contributed to 7,167 female deaths overall (Table 18). These figures highlight the urgent need for skilled birth attendance, emergency obstetric care, and culturally sensitive outreach tailored to Northern Bahr el Ghazal's diverse communities.

4.7.3 Numbers of Leading Causes of Death

The data from Table 19 reveal consistently high mortality across all major disease categories in Northern Bahr el Ghazal State, underscoring the urgent need for health-system strengthening and targeted interventions.

Lower respiratory infections remained the leading cause of death throughout the six-year period. Deaths peaked at 2,801 in 2023 before easing to 2,705 in 2024 (Table 19). These infections–primarily pneumonia and bronchitis–are especially lethal among children and older adults, and their prevalence reflects limited access to vaccinations, antibiotics, and clean-air environments.

Diarrheal diseases ranked second, with deaths declining slightly from 2,265 in 2019 to 2,216 in 2024, despite a dip to 1,433 in 2020 (Table 19). These deaths are largely preventable through improved sanitation, clean water, and basic hygiene education, yet they continue to claim many young children.

Malaria, endemic to the region, remained the third leading cause of death. Fatalities fell slightly from 2,030 in 2019 to 1,986 in 2024, with a notable dip in 2020 (1,224 deaths) (Table 19). The disease's persistence highlights the need for sustained vector control, ready access to antimalarial treatment, and community-level prevention strategies.

Tuberculosis also remained a significant threat, with deaths rising from 577 in 2020 to 1,014 in 2024 (Table 19). Despite being curable, TB continues to claim lives due to delayed diagnosis, treatment interruptions, and HIV co-infection.

Preterm birth complications and birth asphyxia/trauma ranked fourth and seventh, respectively. Preterm-related deaths rose from 951 in 2020 to 1,464 in 2024, while birth-trauma deaths increased from 664 to 989 over the same period (Table 19). These figures point to critical gaps in maternal and newborn care, including limited access to skilled birth attendants, emergency obstetric services, and neonatal support.

HIV/AIDS remained a major contributor to mortality, with deaths increasing from 919 in 2020 to 1,532 in 2024 (Table 19). Stroke and ischemic heart disease, ranking sixth and tenth respectively, also rose steadily–stroke from 780 to 1,240, and heart disease from 482 to 762 (Table 19). These conditions are often linked to hypertension, poor diet, and lack of preventive care, signaling a shift in the disease burden toward lifestyle-related health challenges.

Digestive diseases, including liver and gastrointestinal disorders, contributed 868 deaths in 2024, up from 559 in 2020 (Table 19). These conditions often reflect poor nutrition, unsafe food and water, and limited access to diagnostic services.

Table 18: Total number of deaths in 2024 by Age and Gender in Northern Bahr el Ghazal State

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	24,211	9,774	1,539	1,145	2,033	1,412	1,912	6,396
Communicable, maternal, perinatal and nutritional conditions	15,158	9,095	968	604	1,229	615	604	2,043
Noncommunicable diseases	6,982	389	203	151	541	650	1,145	3,903
Injuries	1,946	291	364	386	248	134	144	379

	Age group							
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	13,467	5,396	759	532	1,175	728	1,181	3,696
Communicable, maternal, perinatal and nutritional conditions	7,991	5,012	454	163	609	268	343	1,142
Noncommunicable diseases	4,073	221	96	71	350	359	722	2,254
Injuries	1,321	164	207	296	206	93	102	253

	Age group							
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	10,744	4,378	780	613	858	684	731	2,700
Communicable, maternal, perinatal and nutritional conditions	7,167	4,083	514	441	620	347	261	901
Noncommunicable diseases	2,909	168	107	80	191	291	423	1,649
Injuries	625	127	157	90	42	41	42	126

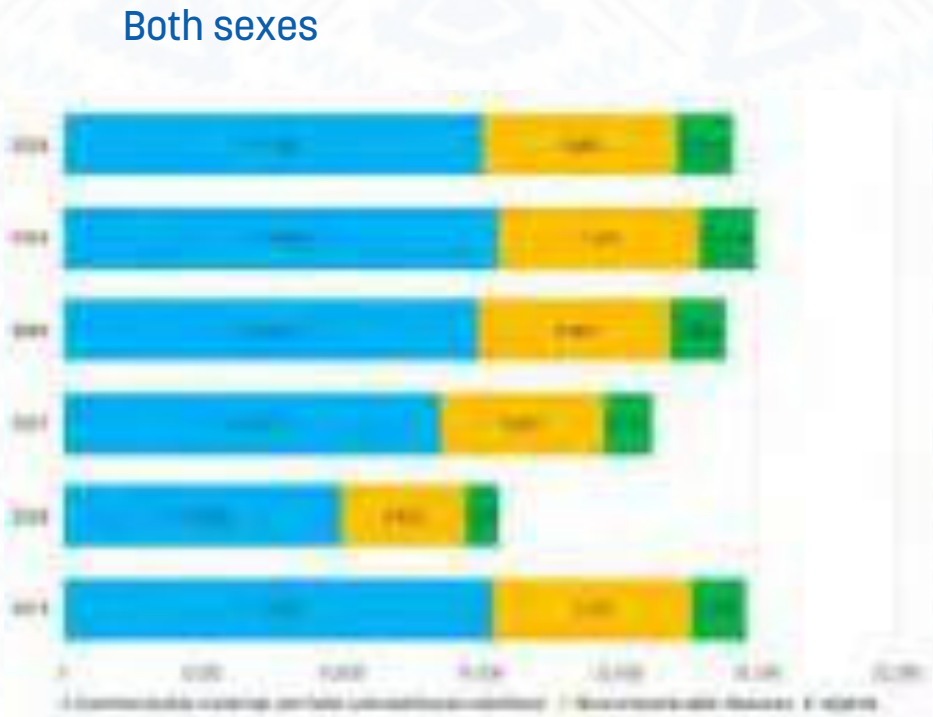
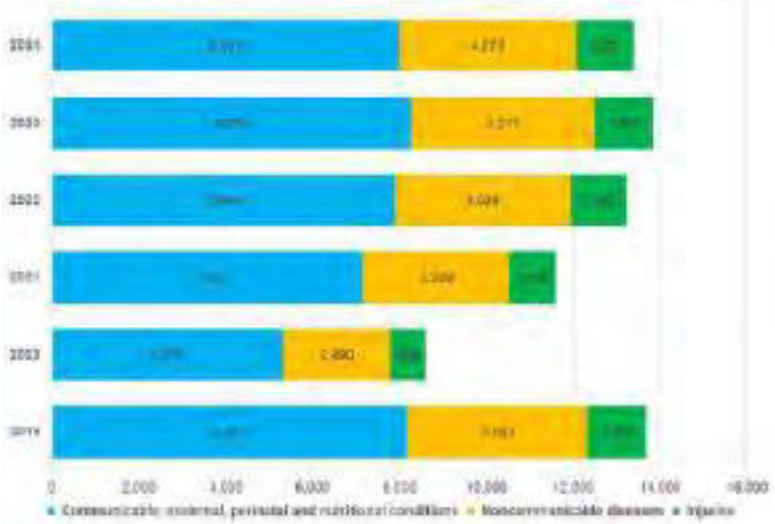


Figure 23 : Total number of deaths by major cause between 2019 and 2024 in Northern Bahr el Ghazal State, both sexes



Males

Figure 24 : Total number of deaths by major cause between 2019 and 2024 in Northern Bahr el Ghazal State, Males

Females

Figure 25 : Total number of deaths by major cause between 2019 and 2024 in Northern Bahr el Ghazal State, Females

Table 19: The number of deaths for the top 10 leading causes (2019 - 2024), in Northern Bahr el Ghazal State

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	2,765	1,786	2,408	2,676	2,801	2,705
2	Diarrhoeal diseases	2,265	1,433	1,932	2,102	2,295	2,216
3	Malaria	2,030	1,224	1,650	1,964	2,056	1,986
4	Preterm birth complications	1,496	951	1,283	1,448	1,515	1,464
5	HIV/AIDS	1,566	919	1,239	1,515	1,586	1,532
6	Stroke	1,267	780	1,052	1,226	1,283	1,240
7	Birth asphyxia and birth trauma	1,011	664	895	978	1,024	989
8	Tuberculosis	1,037	577	778	1,003	1,050	1,014
9	Digestive diseases	887	559	753	859	899	868
10	Ischaemic heart disease	779	482	650	754	789	762

4.8

Ruweng Administrative Area

4.8.1 Profile of the Ruweng Administrative Area

The Ruweng Administrative Area (RAA), located in northern South Sudan, spans 11,370 square kilometers and has a 2025 population of 224,569, distributed across two counties and 11 payams. Despite its modest population, Ruweng plays an outsized role in the national economy and geopolitical landscape. It is South Sudan's most oil-producing region, contributing approximately 80% of the country's output, with major fields such as Unity/Darbim, Heglig/Panthou, Tomasouth/Kaloj, and Toor/Anthony forming the backbone of its industrial infrastructure. This concentration of extractive activity brings both economic opportunity and public-health challenges, as communities face elevated risks of environmental contamination, water pollution, and exposure to industrial waste.

Recent health alerts have included cholera, hepatitis E, malaria, and viral hemorrhagic fever (VHF), reflecting both endemic disease pressure and the consequences of poor sanitation and limited access to clean water. The proximity of oil operations to residential areas has raised concerns about toxic runoff, air pollution, and soil degradation, which in turn affect livelihoods, food security, and reproductive-health outcomes. The region's ecological sensitivity—including the presence of Lake Jau and Lake No (Dhoo)—adds urgency to calls for environmental-health monitoring and sustainable resource management.

The Sudan crisis, which escalated in 2023, has directly affected Ruweng, with thousands of refugees and returnees crossing into the area, straining local services and disrupting community stability. The influx has complicated humanitarian coordination, especially in Pariang, the administrative capital, where infrastructure is limited and service delivery is hampered by logistical constraints. The 2025/26 fiscal plan, recently approved by the Ruweng Council, prioritizes infrastructure development, health care, and agriculture, signaling a renewed commitment to improving basic services and promoting resilience.

Culturally, Ruweng is home to the Panaruu Dinka and Aloor (Ruweng Biemnom Dinka) communities, comprising 18 sub-tribes with rich traditions and strong local governance structures. These communities rely heavily on pastoralism, fishing, and subsistence farming, but face growing challenges due to climate variability, livestock disease, and land degradation. The region's border with Sudan, and its adjacency to Unity, Upper Nile, Jonglei, Warrap, and Abyei, make it a critical zone for cross-border coordination, peacebuilding, and disease surveillance.

4.8.2 Mortality profile in Ruweng Administrative Area

In 2024, the Ruweng Administrative Area recorded 2,568 deaths (1,428 males; 1,140 females), reflecting a mortality profile dominated by preventable, treatable conditions in early childhood alongside rising age-related vulnerabilities (Table 20). The highest concentration of deaths occurred among children 0–4 years (1,036; 572 males; 464 females) and older adults (70+ years) (678; 392 males; 286 females), underscoring the need for targeted interventions at both ends of the age spectrum.

Communicable, maternal, perinatal, and nutritional conditions were responsible for 1,608 deaths (846 males; 762 females), with the greatest burden among children under five, who accounted for 964 deaths (531 males; 433 females) (Table 20). These figures highlight persistent gaps in immunization, maternal health, nutrition, and infectious-disease control–particularly in remote areas with limited access to essential services.

Noncommunicable diseases (NCDs) contributed 741 deaths (432 males; 309 females), disproportionately affecting older age groups. Among those 70+ years, 414 deaths were recorded (239 males; 175 females), driven by chronic conditions such as stroke, heart disease, and diabetes (Table 20). This trend signals an epidemiological shift and underscores the importance of integrating NCD screening and long-term management into primary care.
Injuries accounted for 205 deaths (140 males; 65 females), with a notable concentration among adolescents and young adults (5–29 years). Among males 15–29 years, 31 deaths were recorded, reflecting risks associated with road-traffic injuries, interpersonal violence, and occupational hazards (Table 20). The gender disparity is evident, with males experiencing more than double the injury-related deaths compared with females.

Gender differences in overall mortality are significant. Males accounted for 1,428 deaths, with higher mortality across nearly every age group: 846 from communicable and nutritional conditions, 432 from NCDs, and 140 from injuries. Female mortality totaled 1,140 deaths: 762 due to communicable and nutritional causes, 309 from NCDs, and 65 from injuries (Table 20). Among females, the burden was highest in early childhood, with 464 deaths among girls under five.

4.8.3 Numbers of the Leading causes of death

The mortality landscape in the Ruweng Administrative Area from 2019 to 2024 reveals a persistent, troubling burden of preventable and treatable diseases, particularly among vulnerable populations. As shown in Table 21, the top 10 leading causes of death over this six-year period underscore the dominance of infectious diseases, neonatal complications, and chronic conditions, each contributing significantly to the region's public-health challenges.

At the forefront are lower respiratory infections, consistently the leading cause of death, with fatalities rising from 209 in 2019 to a peak of 319 in 2022, before declining slightly to 287 in 2024 (Table 21). These infections—often linked to pneumonia and other acute respiratory conditions—are especially lethal among children and older adults, and their prevalence reflects gaps in timely medical care, vaccinations, and clean-air environments.

Diarrheal diseases rank second, with deaths increasing from 171 in 2019 to 235 in 2024 (Table 21). Largely preventable through improved sanitation, clean water, and oral rehydration therapy, they remain a major killer—particularly of young children—suggesting persistent infrastructural and hygiene-related challenges.

Malaria, endemic to the region, ranks third, with deaths climbing from 154 in 2019 to 211 in 2024 (Table 21). Despite global efforts (e.g., insecticide-treated nets and antimalarial drugs), its continued toll in Ruweng points to the need for sustained, localized interventions.

Among neonatal and maternal health concerns, preterm birth complications and birth asphyxia/trauma rank fourth and seventh, respectively. Preterm-related deaths rose from 113 in 2019 to 155 in 2024, while birth-trauma deaths increased from 76 to 105 (Table 21). These figures highlight systemic weaknesses in maternal health care, including limited access to skilled birth attendants, neonatal intensive care, and emergency obstetric services.

HIV/AIDS remains a significant contributor to mortality, with deaths increasing from 118 in 2019 to 162 in 2024 (Table 21). This trend reflects ongoing transmission and challenges in sustaining antiretroviral-therapy coverage and adherence, underscoring the importance of community education, stigma reduction, and stronger health-care infrastructure. Chronic noncommunicable diseases (NCDs) are also rising. Stroke deaths increased from 96 in 2019 to 131 in 2024, while ischemic heart disease deaths climbed from 59 to 81 (Table 21). Often linked to hypertension, poor diet, and lack of preventive care, these conditions signal a shifting burden toward lifestyle-related illnesses that are frequently underdiagnosed and undertreated in resource-limited settings.

Tuberculosis—another infectious disease tied to poverty and weakened immune systems—rose from 78 deaths in 2019 to 108 in 2024 (Table 21). Despite being curable, TB remains a major threat due to delayed diagnosis, treatment interruptions, and HIV co-infection.

Finally, digestive diseases—including liver and gastrointestinal disorders—contributed 92 deaths in 2024, up from 67 in 2019 (Table 21). These conditions often reflect poor nutrition, unsafe food and water, and limited access to diagnostic services.

Table 20: Total number of deaths in 2024 by Age and Gender in Ruweng Administrative Area

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	2,568	1,036	164	121	216	150	203	678
Communicable, maternal, perinatal and nutritional conditions	1,608	964	103	64	131	65	64	217
Noncommunicable diseases	741	41	21	17	57	69	122	414
Injuries	205	30	39	41	26	14	15	40

	Age group							
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	1,428	572	81	56	125	77	125	392
Communicable, maternal, perinatal and nutritional conditions	846	531	48	17	65	28	36	121
Noncommunicable diseases	432	23	10	8	37	38	77	239
Injuries	140	17	22	31	22	10	11	27

	Age group							
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	1,140	464	83	65	91	73	78	286
Communicable, maternal, perinatal and nutritional conditions	762	433	55	47	66	37	28	96
Noncommunicable diseases	309	18	11	9	20	31	45	175
Injuries	65	13	17	10	4	4	4	13

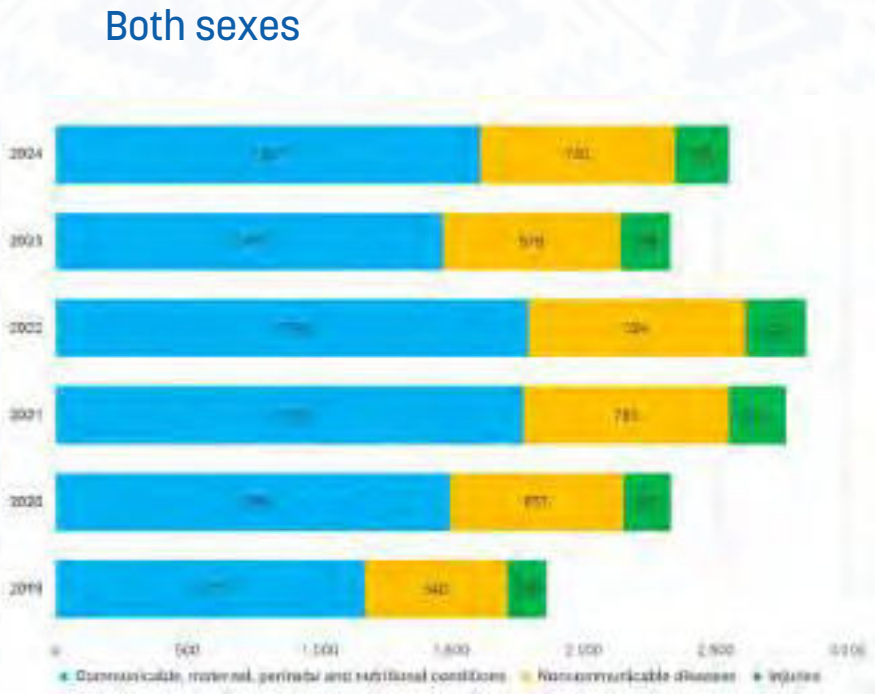
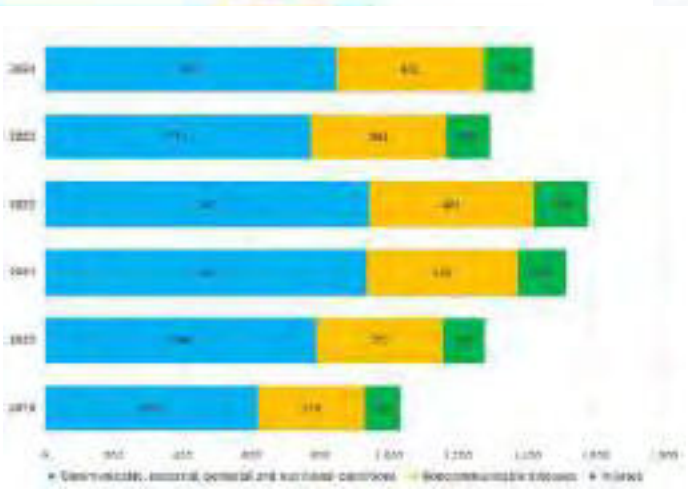
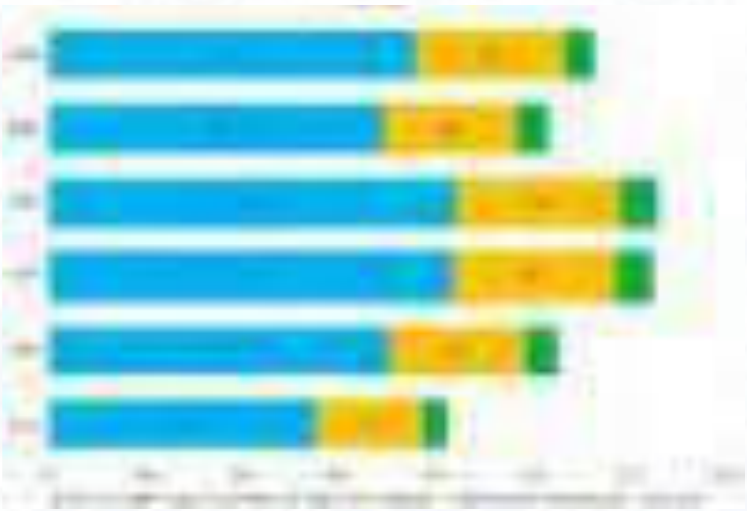


Figure 26 : Total number of deaths by major cause between 2019 and 2024 in Ruweng Administrative Area, both sexes



Males

Figure 27 : Total number of deaths by major cause between 2019 and 2024 in Ruweng Administrative Area, Males



Females

Figure 28 : Total number of deaths by major cause between 2019 and 2024 in Ruweng Administrative Area, Females

Table 21: The number of deaths for the top 10 leading causes (2019 - 2024), in Ruweng Administrative Area

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	209	265	315	319	262	287
2	Diarrhoeal diseases	171	213	252	262	214	235
3	Malaria	154	182	216	234	192	211
4	Preterm birth complications	113	141	168	173	142	155
5	HIV/AIDS	118	137	162	181	148	162
6	Stroke	96	116	137	146	120	131
7	Birth asphyxia and birth trauma	76	99	117	117	96	105
8	Tuberculosis	78	86	102	120	98	108
9	Digestive diseases	67	83	98	102	84	92
10	Ischaemic heart disease	59	72	85	90	74	81

4.9

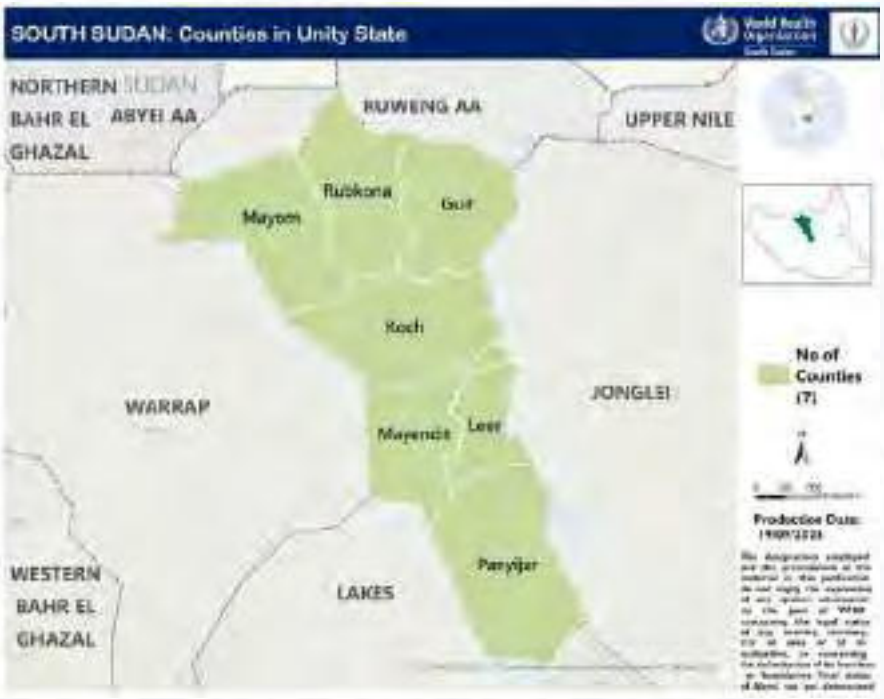
Unity State

4.9.1 Profile of Unity State

Unity State, located in northern South Sudan, spans 25,773 square kilometers yet stands out as one of the country's fastest-growing regions, with a robust annual population growth rate of 4.16%. The population expanded from 990,898 in 2020 (504,524 males; 486,374 females) to 1,215,747 by 2025 (618,529 males; 597,218 females). Administratively, Unity is divided into seven counties and 62 payams, including Bentiu, Koch, Leer, Mayom, Rubkona, Guit, and Panyijiar, each with distinct livelihood zones and sociopolitical dynamics.

Despite its demographic momentum, Unity State faces a complex, fragile health landscape. It consistently registers high alert levels for communicable diseases, including malaria, cholera, hepatitis E, measles, anthrax, and viral hemorrhagic fevers (VHF). These outbreaks often intensify during the rainy season, when flooding becomes a recurrent hazard–displacing communities, contaminating water sources, and disrupting access to health services. In recent years, flooding has intensified across counties such as Panyijiar and Rubkona, damaging crops, isolating villages, and increasing the risk of waterborne and vector-borne diseases.

The state's health vulnerabilities are further compounded by the legacy of prolonged conflict and oil-related environmental degradation. Unity has been a focal point of South Sudan's oil production, and decades of extraction have left contaminated soil and water–particularly around oil fields. This environmental damage has contributed to poor health outcomes, including increased rates of malnutrition, skin diseases, and reproductive-health complications, especially among women and children.



4.9.2 Mortality profile in Unity State

In 2024, Unity State recorded 12,877 deaths (7,163 males; 5,714 females), reflecting a substantial mortality burden across all age groups (Table 22). The highest concentrations occurred among children under five (5,198; 2,870 males; 2,328 females) and older adults (70+ years) (3,402; 1,966 males; 1,436 females), underscoring critical gaps in early-childhood survival and geriatric care. Communicable, maternal, perinatal, and nutritional conditions were responsible for 8,061 deaths (4,249 males; 3,812 females), accounting for nearly two-thirds of all fatalities (Table 22). This category overwhelmingly affected children under five, who accounted for 4,836 deaths (2,665 males; 2,171 females), highlighting inadequate access to basic health care, immunization, nutrition, and maternal services.

Noncommunicable diseases (NCDs) were the second leading cause of death, responsible for 3,714 deaths (2,167 males; 1,547 females). Their impact was most pronounced among older adults, with 2,076 deaths recorded in the 70+ age group (1,199 males; 877 females) (Table 22). This trend reflects an epidemiological transition, with cardiovascular disease, diabetes, and cancer increasingly shaping mortality patterns in aging populations.

Injuries contributed to 1,033 deaths (702 males; 331 females), with a notable concentration among adolescents and young adults (5–29 years). This age group accounted for 431 injury-related deaths (268 males; 163 females), suggesting significant exposure to violence, accidents, and occupational hazards (Table 22).

Gender disparities in mortality are evident. Males accounted for 7,163 deaths, with higher mortality across all categories. Communicable and nutritional conditions claimed 4,249 male lives, while NCDs and injuries contributed 2,167 and 702 deaths, respectively (Table 22). The male burden was particularly high in the 0–4 and 70+ age groups, indicating vulnerability at both ends of the life course.

Females experienced 5,714 deaths, with communicable and maternal conditions responsible for 3,812 deaths–concentrated among young children and women of reproductive age. NCDs accounted for 1,547 deaths, with a steep rise in older age groups, while injuries resulted in 331 deaths, with fewer fatalities among young women compared with their male counterparts (Table 22).

4.9.3 Cause specific mortality in Unity state

The leading causes of death in Unity State from 2019 to 2024 reflect a complex, evolving public-health landscape in which infectious diseases, neonatal complications, and chronic noncommunicable conditions converge to shape mortality trends. According to Table 23, the top 10 causes of death reveal both persistent challenges and emerging threats, underscoring the need for comprehensive interventions across all age groups.

Lower respiratory infections consistently ranked first. Deaths surged from 842 in 2019 to a peak of 1,678 in 2023, then declined slightly to 1,439 in 2024 (Table 23). These infections—primarily pneumonia and other acute respiratory illnesses—are especially deadly among children and older adults, and their sustained toll suggests gaps in vaccination coverage, limited access to antibiotics, and environmental factors such as indoor air pollution.

Diarrheal diseases followed closely, with deaths rising from 690 in 2019 to 1,375 in 2023, then dipping to 1,179 in 2024 (Table 23). Largely preventable, these conditions remain a major killer—particularly of young children—pointing to systemic failures in water infrastructure, sanitation, and hygiene education.

Malaria, endemic to Unity State, remained a formidable threat. Deaths increased from 618 in 2019 to 1,232 in 2023, before easing to 1,056 in 2024 (Table 23). Despite global tools (e.g., insecticide-treated nets and antimalarial drugs), the continuing toll reflects the need for sustained local interventions and community engagement.

Among neonatal and maternal concerns, preterm birth complications and birth asphyxia/trauma ranked fourth and seventh, respectively. Preterm-related deaths rose from 456 in 2019 to 778 in 2024, while birth-trauma deaths climbed from 308 to 526 (Table 23). These figures highlight critical gaps in maternal and newborn care, including availability of skilled birth attendants, neonatal intensive care, and emergency obstetric services.

HIV/AIDS remained a significant contributor, with deaths increasing from 477 in 2019 to 950 in 2023, then declining to 815 in 2024 (Table 23). This trajectory reflects ongoing transmission and challenges in maintaining consistent antiretroviral therapy access, underscoring the importance of stigma reduction, community outreach, and stronger health-care infrastructure.

Chronic noncommunicable diseases (NCDs) continued to rise. Stroke deaths increased from 386 in 2019 to 659 in 2024, while ischemic heart disease deaths climbed from 237 to 405 (Table 23). These trends signal a growing burden of lifestyle-related illnesses, often underdiagnosed and undertreated in resource-limited settings.

Tuberculosis—another infectious disease linked to poverty and weakened immunity—rose from 316 deaths in 2019 to 539 in 2024 (Table 23). Despite being curable, TB remains a major threat due to delayed diagnosis, treatment interruptions, and HIV co-infection.

Finally, digestive diseases—including liver and gastrointestinal disorders—contributed 462 deaths in 2024, up from 270 in 2019 (Table 23), reflecting poor nutrition, unsafe food and water, and limited access to diagnostic services.

Table 22: TTotal number of deaths in 2024 by Age and Gender in Unity State

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	12,877	5,198	819	609	1,081	751	1,017	3,402
Communicable, maternal, perinatal and nutritional conditions	8,061	4,836	514	322	654	328	321	1,086
Noncommunicable diseases	3,714	207	108	81	287	346	609	2,076
Injuries	1,033	154	193	206	131	71	76	202

	Age group							
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	7,163	2,870	404	283	625	387	628	1,966
Communicable, maternal, perinatal and nutritional conditions	4,249	2,665	241	87	324	143	182	607
Noncommunicable diseases	2,167	118	51	38	186	191	384	1,199
Injuries	702	87	110	158	109	49	54	135

	Age group							
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	5,714	2,328	415	326	456	364	389	1,436
Communicable, maternal, perinatal and nutritional conditions	3,812	2,171	273	235	330	185	139	479
Noncommunicable diseases	1,547	89	57	43	101	155	225	877
Injuries	331	67	83	48	22	22	22	67

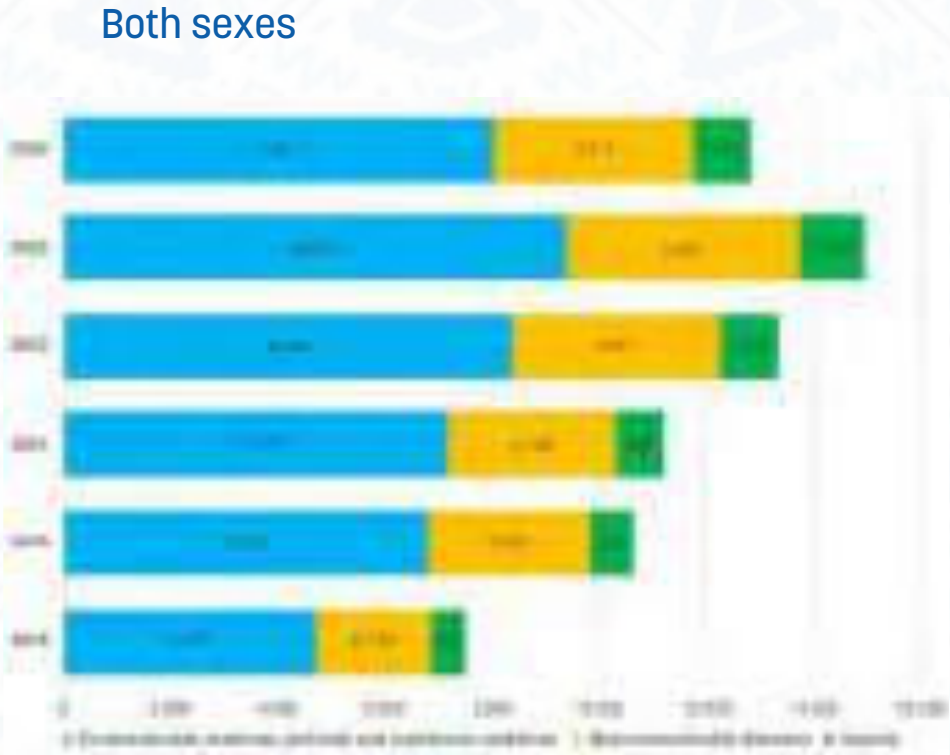
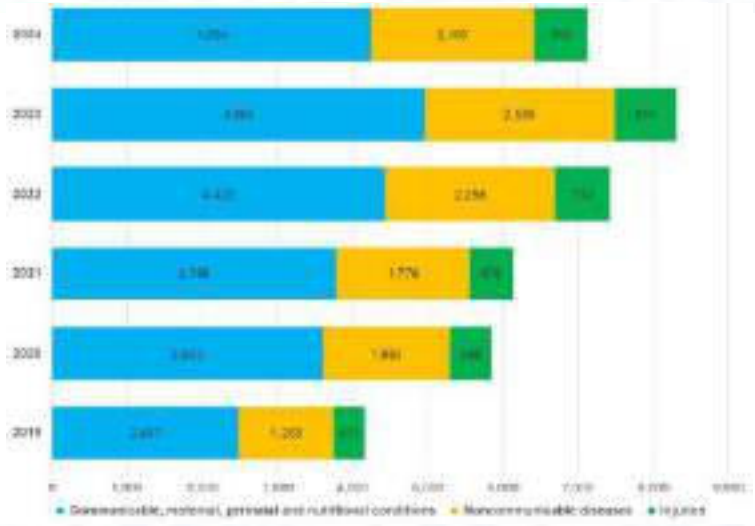
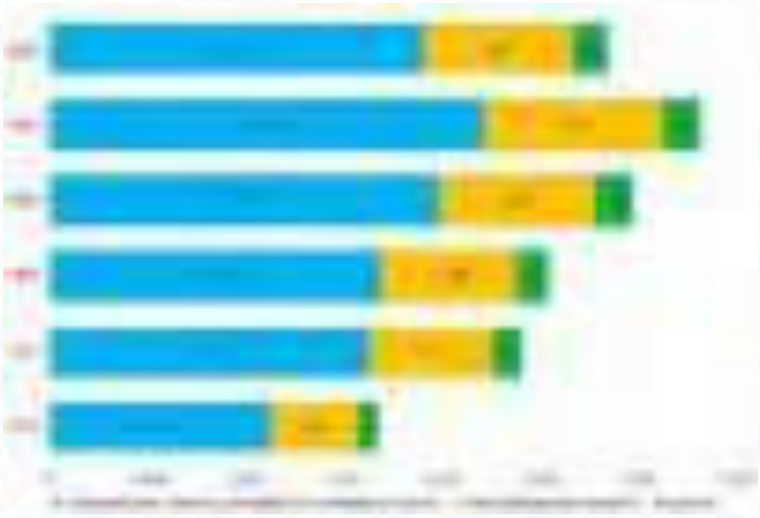


Figure 29 : Total number of deaths by major cause between 2019 and 2024 in Unity State, both sexes



Males

Figure 30 : Total number of deaths by major cause between 2019 and 2024 in Unity State, Males



Females

Figure 31 : Total number of deaths by major cause between 2019 and 2024 in Unity State, Females

Table 23: The number of deaths for the top 10 leading causes (2019 - 2024), in Unity State

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	842	1,212	1,273	1,499	1,678	1,678
2	Diarrhoeal diseases	699	972	1,022	1,229	1,375	1,375
3	Malaria	618	830	872	1,101	1,232	1,232
4	Preterm birth complications	456	646	678	811	908	908
5	HIV/AIDS	477	624	655	849	950	950
6	Stroke	386	529	556	687	769	769
7	Birth asphyxia and birth trauma	308	450	473	548	613	613
8	Tuberculosis	316	392	411	562	629	629
9	Digestive diseases	270	379	398	481	538	538
10	Ischaemic heart disease	237	327	344	422	473	473

4.10

Upper Nile State

4.10.1 The Profile of Upper Nile State

Upper Nile State, in northeastern South Sudan, spans 77,004 square kilometers, making it one of the country's largest and most strategically significant regions. The population rose from 1,550,846 in 2020 (816,892 males; 733,954 females) to 1,863,383 by 2025 (975,502 males; 887,881 females), a 3.69% annual growth rate–slightly above the national average–driven by natural increase and the influx of displaced persons due to regional instability.

Administratively, Upper Nile is one of South Sudan's most complex states, divided into 13 counties and 69 payams, including Malakal, Maban, Nasir, Ulang, Longochuk, and Baliet. Governance and service delivery are frequently challenged by the state's vast geography, diverse ethnic composition, and ongoing insecurity. The Sudan crisis that escalated in 2023 has had a profound impact, with tens of thousands of refugees and returnees entering counties such as Maban and Renk, placing immense pressure on already overstretched health and humanitarian services.

Upper Nile's health burden is severe and multifaceted, with frequent outbreaks of measles, cholera, hepatitis E, mpox, and malaria. These are exacerbated by poor sanitation, limited access to clean water, and inadequate health infrastructure. In counties such as Nasir and Ulang, conflict-related damage has led to the closure or looting of dozens of health facilities, disrupting services for over 30,000 residents and halting critical interventions, including cholera response and malnutrition treatment. Seasonal flooding–particularly along the Sobat River and White Nile–further isolates communities, damages roads and clinics, and heightens waterborne-disease risk.

The state's strategic location along the borders with Sudan and Ethiopia makes it a focal point for cross-border disease surveillance, refugee coordination, and humanitarian logistics.

4.10.2 Mortality profile in Upper Nile

The 2024 mortality profile of Upper Nile State reveals a significant public-health burden, with 18,245 deaths (10,149 males; 8,096 females) recorded across all age groups (Table 24). The highest concentrations occurred among children under five (7,366; 4,067 males; 3,299 females) and older adults (70+ years) (4,819; 2,785 males; 2,034 females), underscoring persistent vulnerabilities at both ends of the life spectrum.

Communicable, maternal, perinatal, and nutritional conditions were the leading contributors to mortality, responsible for 11,421 deaths (6,021 males; 5,400 females)–nearly two-thirds of all fatalities (Table 24). This category was especially lethal among children under five, with 6,854 deaths (3,777 males; 3,077 females), highlighting ongoing challenges in child health, maternal care, immunization, and access to basic medical services. Noncommunicable diseases (NCDs) were the second leading cause, contributing 5,264 deaths (3,071 males; 2,193 females). Their impact intensified with age, particularly among those 70+ years, where 2,941 deaths were recorded (1,698 males; 1,243 females) (Table 24). This trend reflects the growing toll of chronic illnesses–cardiovascular disease, diabetes, cancer–and signals an epidemiological shift toward age-related, lifestyle-driven conditions that require long-term management and preventive care.

Injuries accounted for 1,466 deaths (995 males; 471 females), with a notable concentration among adolescents and young adults (5-29 years). This age group recorded 765 injury-related deaths (379 males; 386 females), suggesting high exposure to violence, accidents, and possibly conflict-related trauma among youth and working-age populations (Table 24).

Gender-specific data show that males bear a higher mortality burden–10,149 deaths versus 8,096 among females. Male deaths were particularly high in the 0-4 and 70+ age groups (4,067 and 2,785, respectively). Communicable and nutritional conditions claimed 6,021 male lives, while NCDs and injuries contributed 3,071 and 995 deaths (Table 24). Elevated male mortality in injury-related deaths–especially among those 15-29 years, with 223 deaths–points to gendered risks in mobility, labor, and social exposure.

Among females, the mortality profile was similarly shaped by preventable causes. Communicable and maternal conditions led to 5,400 deaths, with the highest toll among children under five (3,299 deaths) and women of reproductive age. NCDs accounted for 2,193 deaths, with a steep rise in older age groups, while injuries resulted in 471 deaths–fewer than among their male counterparts (Table 24).

4.10.3 Cause specific mortality in Upper Nile

The leading causes of death in Upper Nile State from 2019 to 2024 paint a stark picture of a region grappling with persistent infectious diseases and a rising tide of chronic conditions. According to Table 25, the top 10 causes of death reveal a troubling upward trend across nearly all categories, underscoring the urgent need for comprehensive health-system strengthening.

Lower respiratory infections topped the list, surging from 1,106 deaths in 2019 to 2,039 in 2024 (Table 25). These infections–primarily pneumonia and other acute respiratory illnesses–are especially deadly among children and older adults. Their continued rise suggests widespread exposure to indoor air pollution, overcrowded living conditions, and limited access to timely treatment and vaccinations.

Diarrheal diseases ranked second, with deaths increasing from 907 in 2019 to 1,670 in 2024 (Table 25). Largely preventable through improved sanitation, clean water, and basic health education, they remain a major killer–particularly of young children–pointing to systemic failures in water infrastructure and hygiene services.

Malaria remained the third leading cause, with fatalities rising from 812 in 2019 to 1,497 in 2024 (Table 25). Despite global tools such as insecticide-treated nets and antimalarial drugs, the continued toll reflects the need for sustained community-level interventions and robust public-health campaigns.

Among neonatal and maternal concerns, preterm birth complications and birth asphyxia/trauma ranked fourth and seventh, respectively. Preterm-related deaths climbed from 599 in 2019 to 1,103 in 2024, while birth-trauma deaths increased from 405 to 745 (Table 25). These figures point to critical gaps in maternal and newborn care, including the availability of skilled birth attendants, emergency obstetric services, and neonatal intensive care.

HIV/AIDS remained a significant contributor, with deaths rising from 627 in 2019 to 1,155 in 2024 (Table 25). This trend reflects ongoing transmission and challenges in sustaining antiretroviral-therapy coverage and adherence.

Chronic noncommunicable diseases (NCDs) also increased steadily. Stroke deaths rose from 507 in 2019 to 934 in 2024, while ischemic heart disease deaths climbed from 312 to 574 (Table 25). Often linked to hypertension, poor diet, and lack of preventive care, these conditions signal a growing burden of lifestyle-related illnesses, frequently underdiagnosed and undertreated in resource-limited settings.

Tuberculosis–another infectious disease tied to poverty and weakened immunity–rose from 415 deaths in 2019 to 764 in 2024 (Table 25). Despite being curable, TB remains a major threat due to delayed diagnosis, treatment interruptions, and HIV co-infection.

Finally, digestive diseases–including liver and gastrointestinal disorders–contributed 654 deaths in 2024, up from 355 in 2019 (Table 25), reflecting poor nutrition, unsafe food and water, and limited access to diagnostic services.

Table 24: Total number of deaths in 2024 by Age and Gender in Upper Nile State

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	18,245	7,366	1,159	863	1,533	1,064	1,441	4,819
Communicable, maternal, perinatal and nutritional conditions	11,421	6,854	729	455	926	464	454	1,539
Noncommunicable diseases	5,264	294	154	114	408	490	863	2,941
Injuries	1,466	219	274	291	187	101	108	286
	Age group							
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	10,149	4,067	572	401	886	548	890	2,785
Communicable, maternal, perinatal and nutritional conditions	6,021	3,777	342	123	459	202	258	860
Noncommunicable diseases	3,071	167	73	54	264	271	544	1,698
Injuries	995	123	156	223	155	70	77	191
	Age group							
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	8,096	3,299	587	462	647	516	551	2,034
Communicable, maternal, perinatal and nutritional conditions	5,400	3,077	387	332	467	262	196	679
Noncommunicable diseases	2,193	127	81	60	144	219	319	1,243
Injuries	471	96	118	68	32	31	31	95

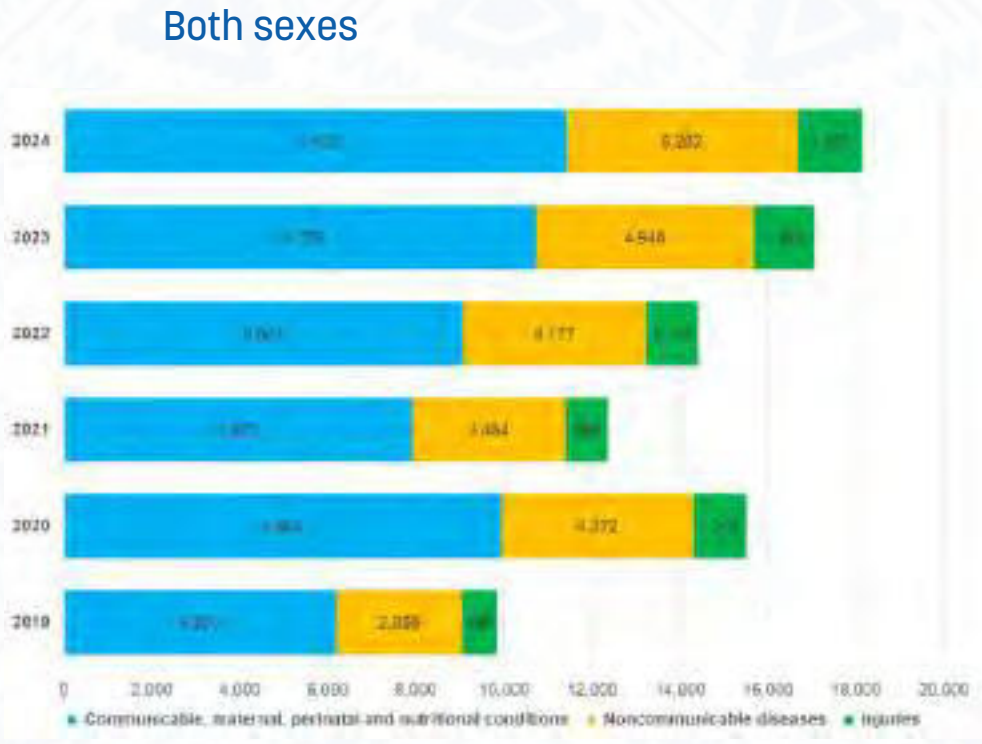
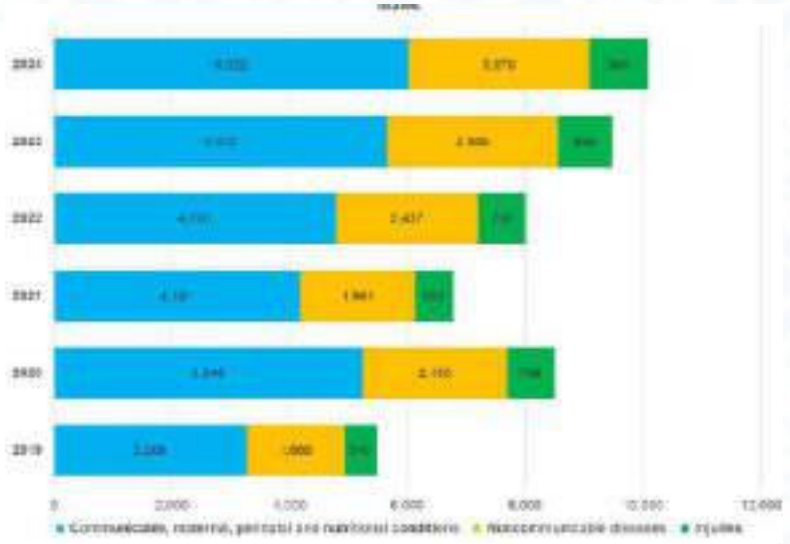
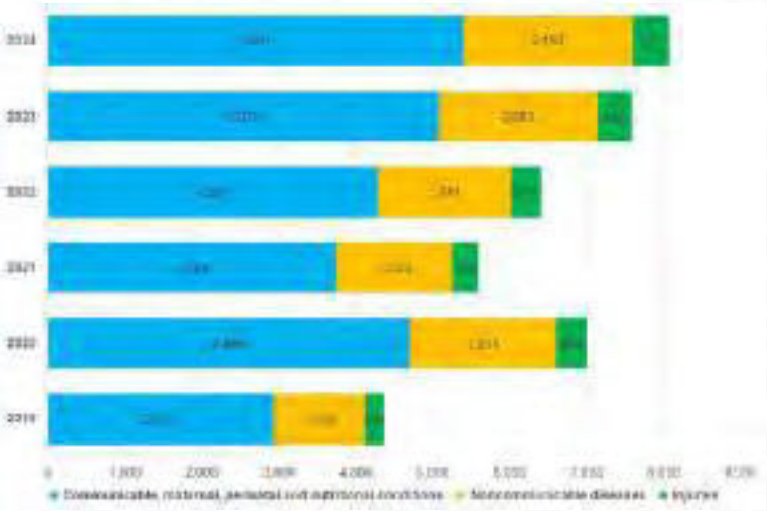


Figure 32 : Total number of deaths by major cause between 2019 and 2024 in Upper Nile State, both sexes



Males

Figure 33 : Total number of deaths by major cause between 2019 and 2024 in Upper Nile State, Males



Females

Figure 34 : Total number of deaths by major cause between 2019 and 2024 in Upper Nile State, Females

Table 25: The number of deaths for the top 10 leading causes (2019 - 2024), in Upper Nile State

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	1,106	1,764	1,406	1,618	1,917	2,039
2	Diarrhoeal diseases	907	1,416	1,128	1,326	1,570	1,670
3	Malaria	812	1,209	963	1,188	1,407	1,497
4	Preterm birth complications	599	940	749	876	1,037	1,103
5	HIV/AIDS	627	908	724	916	1,085	1,155
6	Stroke	507	771	614	741	878	934
7	Birth asphyxia and birth trauma	405	656	523	592	701	745
8	Tuberculosis	415	570	454	607	719	764
9	Digestive diseases	355	552	440	519	615	654
10	Ischaemic heart disease	312	476	380	456	540	574

4.11

Warrap State

4.11.1 The Profile of Warrap State

Warrap State, in northwestern South Sudan, spans 36,017 square kilometers and is experiencing steady demographic expansion. Its population grew from 1,532,386 in 2020 (747,189 males; 785,197 females) to 1,812,283 by 2025 (885,563 males; 926,720 females), reflecting a consistent annual growth rate of 3.42%. Administratively, Warrap is divided into six counties and 47 payams, including Gogrial East, Gogrial West, Tonj North, Tonj South, Tonj East, and Twic County. The state is predominantly inhabited by the Dinka, whose rich cultural heritage and clan structures shape local governance and social dynamics.

Despite relative political stability, Warrap faces a complex array of public-health and environmental challenges. The state regularly reports health alerts for cholera, measles, malaria, anthrax, and hepatitis E, with outbreaks typically intensifying during the rainy season. These seasonal surges are exacerbated by flooding, which damages infrastructure, contaminates water sources, and isolates communities from essential services. In recent years, counties such as Twic and Tonj East have been particularly affected, with floodwaters displacing thousands and disrupting access to clinics, schools, and markets.

These challenges are compounded by gaps in service delivery–especially in rural and flood-prone areas–where access to clean water, sanitation, and health care remains limited. While the government has made efforts to improve governance and promote peace, the scale of need demands targeted investments in health-system strengthening, education, and disaster preparedness. Community-based initiatives–including early-warning systems, mobile health outreach, and school-feeding programs–can play a vital role in building resilience and improving outcomes for vulnerable populations.

4.11.2 Mortality profile in Warrap State

The 2024 mortality profile of Warrap State reveals a heavy public-health burden, with 22,678 deaths (12,614 males; 10,064 females) recorded across all age groups (Table 26). The highest concentrations occurred among children under five (9,156; 5,055 males; 4,101 females) and older adults (70+ years) (5,991; 3,462 males; 2,529 females), underscoring persistent vulnerabilities at both ends of the life spectrum.

Communicable, maternal, perinatal, and nutritional conditions were the leading causes of death, responsible for 14,200 deaths (7,486 males; 6,714 females)–nearly 63% of all fatalities (Table 26). This category was especially lethal among children under five, who accounted for 8,520 deaths (4,695 males; 3,825 females), highlighting critical gaps in child health services, maternal care, nutrition, and access to basic medical interventions.

Noncommunicable diseases (NCDs) were the second leading cause, contributing 6,541 deaths (3,816 males; 2,725 females). Their impact intensified with age, particularly among those 70+ years, where 3,656 deaths were recorded (2,111 males; 1,545 females) (Table 26). This reflects a growing prevalence of chronic conditions–cardiovascular disease, diabetes, and cancer–which require long-term management and preventive care.

Injuries accounted for 1,823 deaths (1,238 males; 585 females), with a notable concentration among adolescents and young adults (5-29 years). This age group recorded 703 injury-related deaths (472 males; 231 females), suggesting significant exposure to violence, accidents, and possibly conflict-related trauma among youth and working-age populations (Table 26).

Gender-specific data show that males bear a higher mortality burden–12,614 deaths compared with 10,064 among females. Male deaths were particularly high in the 0-4 and 70+ age groups (5,055 and 3,462, respectively). Communicable and nutritional conditions claimed 7,486 male lives, while NCDs and injuries contributed 3,816 and 1,238 deaths (Table 26). Elevated male mortality in injury-related deaths–especially among those 15-29 years, with 278 deaths–points to gendered risks in mobility, labor, and social exposure.

Among females, the mortality profile was similarly shaped by preventable causes. Communicable and maternal conditions led to 6,714 deaths, with the highest toll among children under five (4,101 deaths) and women of reproductive age. NCDs accounted for 2,725 deaths, with a steep rise in older age groups, while injuries resulted in 585 deaths–fewer than among their male counterparts (Table 26).

4.11.3 Cause specific mortality in Warrap state

The 2019-2024 cause-specific mortality profile of Warrap State reveals a persistent, intensifying burden of preventable and treatable diseases alongside a growing impact of chronic noncommunicable diseases (NCDs). The top 10 causes of death reflect both early-life vulnerabilities and the challenges of aging populations, with most causes trending upward over the six-year period (Table 27).

Lower respiratory infections remained the leading cause of death, rising from 1,988 in 2019 to a peak of 2,656 in 2023, before easing to 2,534 in 2024 (Table 27). These infections–primarily pneumonia and bronchitis–are especially deadly among children and older adults, signaling gaps in vaccination coverage, access to antibiotics, and environmental health.

Diarrheal diseases ranked second, with fatalities increasing from 1,629 in 2019 to 2,076 in 2024 (Table 27). Largely preventable through improved sanitation, clean water, and basic health education, they continue to claim thousands of lives annually–particularly among children under five–reflecting systemic challenges in water infrastructure and hygiene practices.

Malaria, endemic to the region, remained the third leading cause, rising from 1,460 deaths in 2019 to 1,860 in 2024 (Table 27). Despite tools such as insecticide-treated nets and antimalarial drugs, malaria continues to exact a heavy toll, especially in rural and underserved communities.
Among neonatal and maternal concerns, preterm birth complications and birth asphyxia/trauma ranked fourth and seventh, respectively. Preterm-related deaths increased from 1,076 in 2019 to 1,371 in 2024, while birth-trauma deaths rose from 727 to 927 (Table 27). These figures highlight critical gaps in maternal and newborn care, including access to skilled birth attendants, emergency obstetric services, and neonatal intensive care.

HIV/AIDS remained a significant contributor, with deaths climbing from 1,126 in 2019 to 1,435 in 2024 (Table 27). This trend reflects ongoing transmission and challenges sustaining antiretroviral-therapy coverage and adherence, underscoring the need for stigma reduction, community outreach, and long-term treatment infrastructure.

Chronic NCDs are increasingly prominent. Stroke and ischemic heart disease ranked sixth and tenth, respectively. Stroke deaths rose from 911 in 2019 to 1,161 in 2024, while ischemic heart-disease deaths increased from 560 to 714 (Table 27), signaling a shift toward lifestyle-related illnesses tied to hypertension, diet, and limited preventive care.

Tuberculosis–another infectious disease linked to poverty and weakened immunity–rose from 745 deaths in 2019 to 950 in 2024 (Table 27). Despite being curable, TB remains a major threat due to delayed diagnosis, treatment interruptions, and HIV co-infection.

Finally, digestive diseases–including liver and gastrointestinal disorders–contributed 813 deaths in 2024, up from 638 in 2019 (Table 27), reflecting poor nutrition, unsafe food and water, and limited access to diagnostic services.

Table 26: Total number of deaths in 2024 by Age and Gender in Warrap State

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	22,678	9,156	1,441	1,072	1,905	1,322	1,791	5,991
Communicable, maternal, perinatal and nutritional conditions	14,200	8,520	907	566	1,152	576	565	1,914
Noncommunicable diseases	6,541	364	190	142	507	610	1,072	3,656
Injuries	1,823	272	341	362	232	126	135	355

	Age group							
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	12,614	5,055	711	498	1,101	681	1,106	3,462
Communicable, maternal, perinatal and nutritional conditions	7,486	4,695	425	153	571	251	321	1,070
Noncommunicable diseases	3,816	207	90	67	328	337	676	2,111
Injuries	1,238	153	194	278	193	87	96	237

	Age group							
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	10,064	4,101	730	574	804	641	685	2,529
Communicable, maternal, perinatal and nutritional conditions	6,714	3,825	482	413	581	325	244	844
Noncommunicable diseases	2,725	157	100	75	179	273	396	1,545
Injuries	585	119	147	84	39	39	39	118

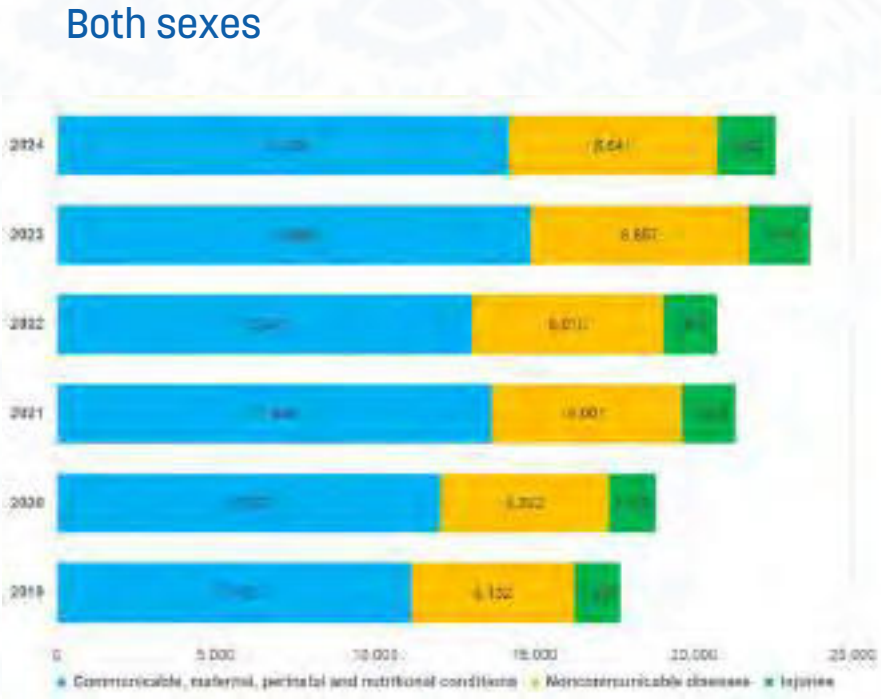
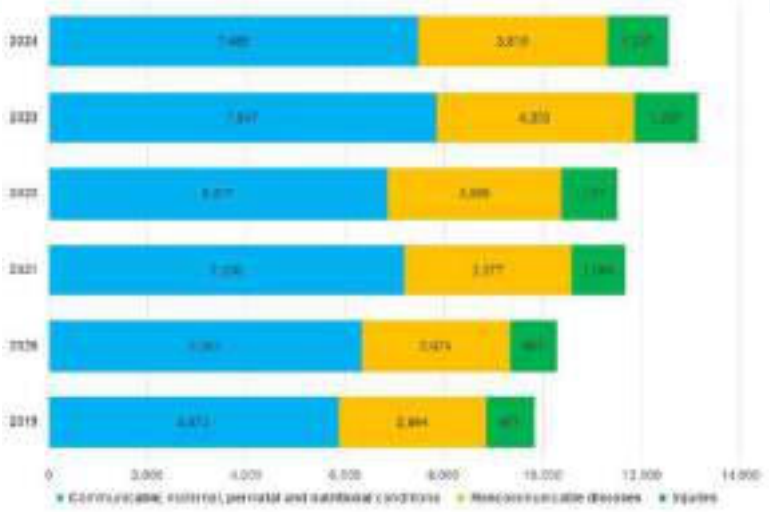
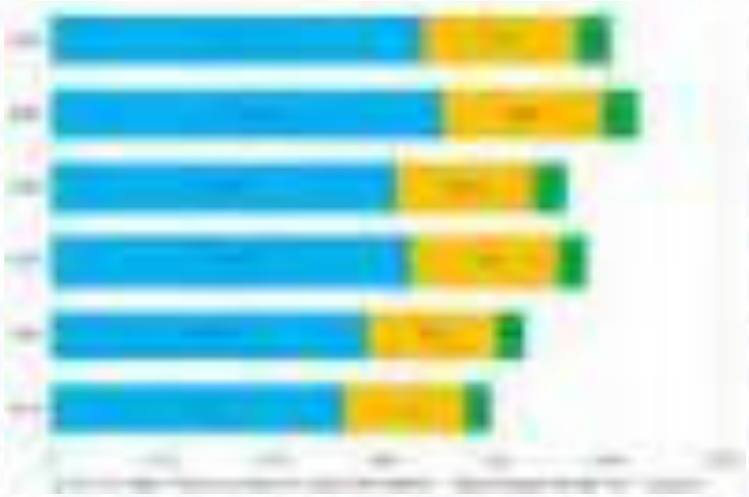


Figure 35 : Total number of deaths by major cause between 2019 and 2024 in Warrap State, both sexes



Males

Figure 36 : Total number of deaths by major cause between 2019 and 2024 in Warrap State, Males



Females

Figure 37 : Total number of deaths by major cause between 2019 and 2024 in Warrap State, Females

Table 27: The number of deaths for the top 10 leading causes (2019 - 2024), in Warrap State

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	1,988	2,136	2,422	2,328	2,656	2,534
2	Diarrhoeal diseases	1,629	1,714	1,943	1,907	2,176	2,076
3	Malaria	1,460	1,463	1,659	1,709	1,950	1,860
4	Preterm birth complications	1,076	1,138	1,290	1,260	1,437	1,371
5	HIV/AIDS	1,126	1,099	1,246	1,318	1,504	1,435
6	Stroke	911	933	1,058	1,067	1,217	1,161
7	Birth asphyxia and birth trauma	727	794	900	851	971	927
8	Tuberculosis	745	690	782	873	996	950
9	Digestive diseases	638	668	758	747	852	813
10	Ischaemic heart disease	560	577	654	656	748	714

4.12

Western Bahr el Ghazal State

4.12.1 The Profile of Western Bahr el Ghazal

Western Bahr el Ghazal, South Sudan's largest state by land area, spans 92,537 square kilometers, yet remains one of the country's least densely populated regions. Its population grew modestly from 526,652 in 2020 (272,675 males; 253,977 females) to a projected 623,568 by 2025 (320,671 males; 302,897 females), reflecting a steady annual growth rate of 3.47%. This demographic profile–marked by low population density and slow urbanization–presents unique challenges for governance and service delivery.

Administratively, the state is divided into three counties and 15 payams: Wau, Jur River, and Raga. The capital, Wau, serves as the primary urban center and administrative hub, while vast stretches–particularly in Raga County–remain remote and underdeveloped. The state's size, limited road infrastructure, and sparse settlements make it difficult to deliver consistent public services, especially in health, education, and water access.

Western Bahr el Ghazal's health profile is shaped by recurring alerts for cholera, hepatitis E, anthrax, malaria, and viral hemorrhagic fevers (VHF). These outbreaks are often seasonal, peaking during the rainy months when flooding disrupts sanitation systems and isolates communities. Proximity to the borders with Sudan and the Central African Republic further increases the risk of cross-border disease transmission, particularly among nomadic and pastoralist populations moving across porous boundaries.

4.12.2 Mortality profile in Western Bahr el Ghazal

The 2024 mortality profile of Western Bahr el Ghazal State reflects a multifaceted public-health landscape shaped by infectious diseases, chronic conditions, and injury-related deaths across age and gender groups. A total of 7,282 deaths were recorded (4,051 males; 3,231 females), with the highest concentrations among children under five (2,940; 1,623 males; 1,317 females) and older adults (70+ years) (1,924; 1,112 males; 812 females) (Table 28).

The leading contributors to mortality were communicable, maternal, perinatal, and nutritional conditions, responsible for 4,559 deaths (2,403 males; 2,156 females)–approximately 63% of all fatalities (Table 28). These conditions disproportionately affected the youngest age group, with 2,735 deaths among children under five (1,507 males; 1,228 females), highlighting persistent challenges in child health, maternal care, and access to basic medical services. The burden remained significant across all age groups, with notable spikes in middle-aged and elderly populations due to weakened immunity and limited health-care access.

Noncommunicable diseases (NCDs) accounted for 2,099 deaths (1,224 males; 875 females), with impact intensifying with age. Among individuals 70+ years, NCDs contributed 1,174 deaths (678 males; 496 females)–more than half of the total NCD burden (Table 28). This reflects the growing prevalence of chronic illnesses such as cardiovascular disease, diabetes, and cancer, which require sustained management and preventive care–resources often scarce in the region.

Injuries were responsible for 585 deaths (397 males; 188 females), with a notable concentration among adolescents and young adults (5–29 years). This age group accounted for 225 injury-related deaths among males and 74 among females, suggesting exposure to violence, accidents, and possibly conflict-related trauma among youth and working-age individuals (Table 28).

Gender-specific data show that males experienced a higher mortality burden–4,051 deaths compared with 3,231 among females. Male deaths were particularly high in the 0–4 and 70+ age groups. Communicable and nutritional conditions claimed 2,403 male lives, while NCDs and injuries contributed 1,224 and 397 deaths, respectively (Table 28). Elevated male mortality in injury-related deaths–especially among those 15–29 years, with 89 deaths–points to gendered risks in mobility, labor, and social exposure.

Among females, the mortality profile was similarly shaped by preventable causes. Communicable and maternal conditions led to 2,156 deaths, with the highest toll among children under five (1,317 deaths) and women of reproductive age. NCDs accounted for 875 deaths, with a steep rise in older age groups, while injuries resulted in 188 deaths–fewer than among their male counterparts (Table 28).

4.12.3 Cause specific mortality

The leading causes of death in Western Bahr el Ghazal State from 2019 to 2024 reflect a persistent struggle with preventable infectious diseases and a growing burden of chronic conditions. Data from Table 29 reveal a consistent pattern: early-childhood illnesses, communicable diseases, and noncommunicable conditions continue to dominate mortality, with only modest fluctuations over the six-year period (Table 29).

Lower respiratory infections remained the leading cause of death throughout. Deaths declined from 1,065 in 2019 to 814 in 2024, yet numbers remain high, indicating ongoing challenges in respiratory health–particularly among children and older adults (Table 29). These infections, often linked to pneumonia and bronchitis, are exacerbated by poor air quality, overcrowded living conditions, and limited access to timely care.

Diarrheal diseases ranked second, with deaths decreasing from 873 in 2019 to 667 in 2024 (Table 29). Despite the downward trend, persistently high mortality underscores gaps in sanitation, clean-water access, and hygiene education. Largely preventable, these diseases remain a major killer–especially of young children.

Malaria, endemic to the region, held the third position, with deaths dropping from 782 in 2019 to 597 in 2024 (Table 29). While this decline suggests progress in control efforts, malaria still poses a significant threat, particularly in rural areas where access to insecticide-treated nets and antimalarial treatment may be limited.

Among neonatal and maternal concerns, preterm birth complications and birth asphyxia/trauma ranked fourth and seventh, respectively. Preterm-related deaths fell from 576 to 440, and birth-trauma deaths from 390 to 298 (Table 29). These figures reflect gradual improvements in maternal and newborn care but still point to gaps in skilled birth attendance, emergency obstetric services, and neonatal support.

HIV/AIDS remained a major contributor, with deaths declining from 603 in 2019 to 461 in 2024 (Table 29). This trend may reflect improved antiretroviral therapy access and awareness efforts, though the disease continues to affect vulnerable populations and requires sustained investment in prevention and treatment infrastructure.

Chronic noncommunicable diseases (NCDs) were increasingly prominent. Stroke and ischemic heart disease ranked sixth and tenth, respectively. Stroke deaths decreased from 488 in 2019 to 373 in 2024, while ischemic heart-disease deaths fell from 300 to 229 (Table 29). Often linked to hypertension, poor diet, and limited preventive care, these illnesses signal a shifting burden toward lifestyle-related health challenges.

Tuberculosis–another infectious disease tied to poverty and compromised immunity–declined from 399 deaths in 2019 to 305 in 2024 (Table 29). Despite being curable, TB remains a threat due to delayed diagnosis, treatment interruptions, and HIV co-infection.

Finally, digestive diseases–including liver and gastrointestinal disorders–contributed 261 deaths in 2024, down from 342 in 2019 (Table 29), reflecting poor nutrition, unsafe food and water, and limited access to diagnostic services.

Table 28: Total number of deaths in 2024 by Age and Gender in Western Bahr el Ghazal State

	Age group							
Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	7,282	2,940	462	344	612	425	575	1,924
Communicable, maternal, perinatal and nutritional conditions	4,559	2,735	292	182	370	185	181	614
Noncommunicable diseases	2,099	117	61	45	162	196	344	1,174
Injuries	585	87	109	116	75	40	44	114

	Age group							
Males, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	4,051	1,623	228	160	354	219	355	1,112
Communicable, maternal, perinatal and nutritional conditions	2,403	1,507	137	49	183	81	103	343
Noncommunicable diseases	1,224	66	29	21	105	108	217	678
Injuries	397	49	62	89	62	28	31	76

	Age group							
Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	3,231	1,317	234	184	258	206	220	812
Communicable, maternal, perinatal and nutritional conditions	2,156	1,228	155	133	187	104	78	271
Noncommunicable diseases	875	51	32	24	57	88	127	496
Injuries	188	38	47	27	13	12	13	38

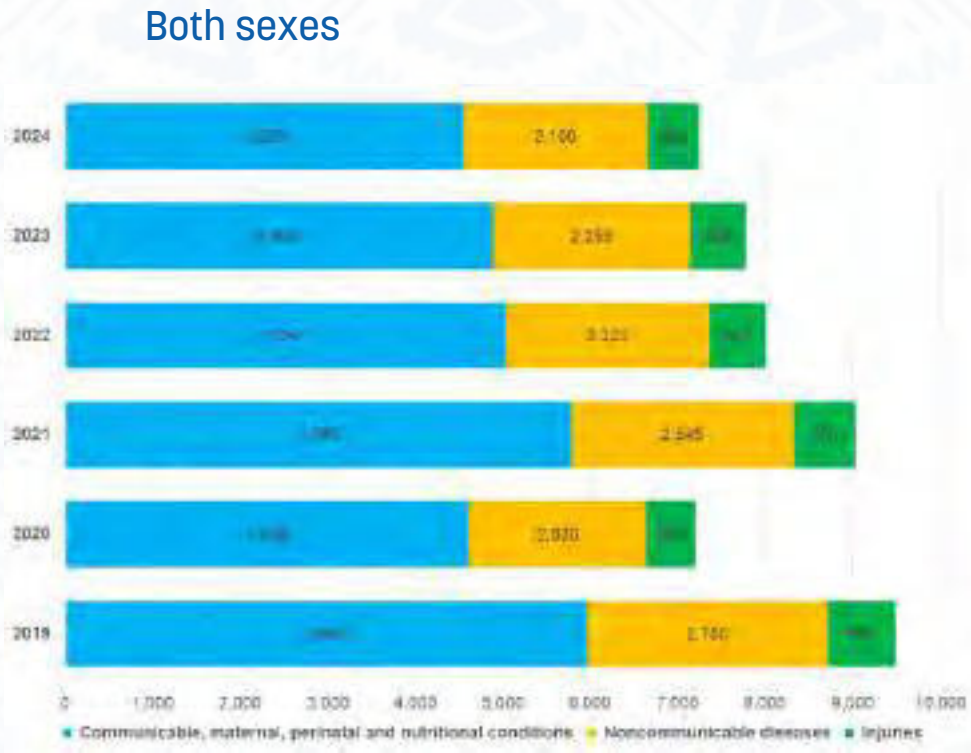
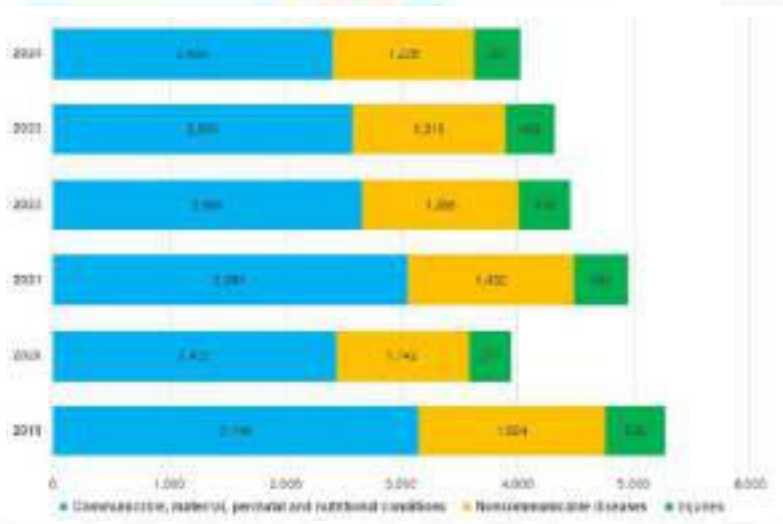
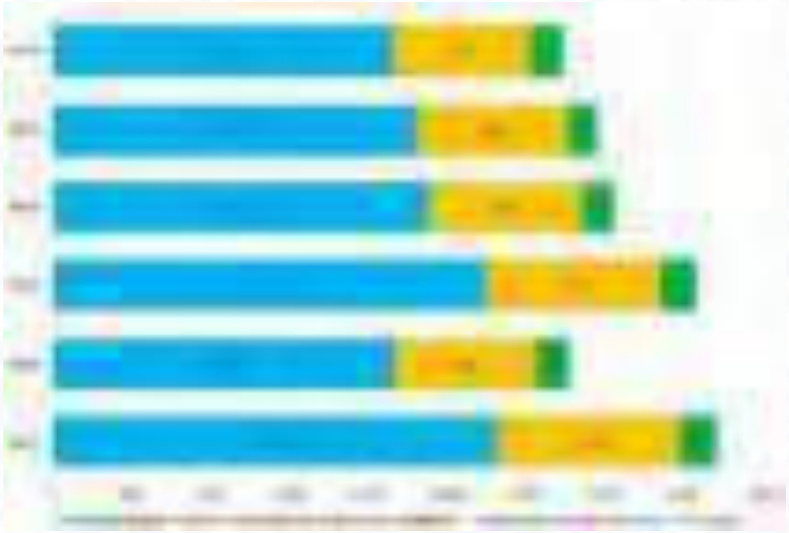


Figure 38 : Total number of deaths by major cause between 2019 and 2024 in Western Bahr el Ghazal State, both sexes



Males

Figure 39 : Total number of deaths by major cause between 2019 and 2024 in Western Bahr el Ghazal State, Males



Females

Figure 40 : Total number of deaths by major cause between 2019 and 2024 in Western Bahr el Ghazal State, Females

Table 29: The number of deaths for the top 10 leading causes (2019 - 2024), in Western Bahr el Ghazal State

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	1,065	819	1,027	900	873	814
2	Diarrhoeal diseases	673	657	824	737	716	667
3	Malaria	782	561	704	661	641	597
4	Preterm birth complications	576	436	547	487	473	440
5	HIV/AIDS	603	422	529	510	495	461
6	Stroke	488	358	449	412	400	373
7	Birth asphyxia and birth trauma	390	304	382	329	319	298
8	Tuberculosis	399	265	332	337	328	305
9	Digestive diseases	342	256	321	289	280	261
10	Ischaemic heart disease	300	221	277	253	246	229

4.13

Western Equatoria State

4.13.1 Profile of Western Equatoria State

Western Equatoria State, located in southwestern South Sudan, spans a vast and ecologically rich area of 79,585 square kilometers, making it one of the country's most biodiverse regions. Despite its natural wealth, the state has the slowest population growth rate nationally at 2.51%, with its population increasing from 870,055 in 2020; comprising 444,430 males and 425,625 females, to 983,388 by 2025, including 501,649 males and 481,739 females. This modest growth reflects both demographic trends and the impact of displacement and insecurity on settlement patterns.

Administratively, Western Equatoria is divided into 10 counties and 47 payams, including key areas such as Yambio, Nzara, Maridi, Ibba, Ezo, Tambura, Nagero, Mundri East, Mundri West, and Mvolo. The state's terrain is heavily forested, with dense vegetation and fertile soils that support farming, timber harvesting, and wild food collection. However, this same terrain presents logistical challenges for infrastructure development and service delivery, particularly in remote and flood-prone areas.

The public health landscape in Western Equatoria is marked by recurring alerts for malaria, measles, circulating vaccine-derived poliovirus type 2 (cVDPV2), and viral hemorrhagic fevers (VHF). These outbreaks are often exacerbated by insecurity linked to armed groups, which restricts humanitarian access, disrupts disease surveillance, and hinders vaccination campaigns. In counties like Nagero and Tambura, recent clashes have displaced thousands of residents, further straining local health systems and increasing the risk of epidemic spread. The state's porous borders with the Democratic Republic of Congo (DRC) and the Central African Republic (CAR) heighten the risk of cross-border disease transmission and zoonotic spillover, especially in forested zones where human-wildlife interaction is frequent. Additionally, the presence of armed cattle herders and intercommunal tensions in border areas has led to the destruction of farmland and displacement of vulnerable populations, compounding food insecurity and malnutrition risks.

4.13.2 Mortality profile in Western Equatoria

The mortality profile of Western Equatoria State in 2024 reveals a complex public health landscape shaped by preventable diseases, chronic conditions, and injury-related deaths. A total of 13,820 deaths were recorded (7,687 males; 6,133 females), with the highest mortality concentrated among children under five, accounting for 5,579 deaths (3,080 males; 2,499 females), and older adults aged 70 and above, with 3,651 deaths (2,110 males; 1,541 females) (Table 30). These figures underscore the vulnerability of the youngest and oldest populations and highlight the urgent need for targeted health interventions.

The leading contributors to mortality were communicable, maternal, perinatal, and nutritional conditions, responsible for 8,653 deaths (4,562 males; 4,091 females), or nearly 63% of all fatalities (Table 30). This category was especially devastating among children under five, who accounted for 5,192 deaths (2,861 males; 2,331 females), reflecting persistent challenges in child health, maternal care, nutrition, and access to basic medical services. The burden remained significant across all age groups, with notable spikes in middle-aged and elderly populations due to weakened immunity and limited healthcare access.

Noncommunicable diseases (NCDs) were the second major cause of death, responsible for 3,986 deaths (2,325 males; 1,661 females). Their impact intensified with age, particularly among those aged 70 and above, who accounted for 2,227 deaths (1,286 males; 941 females)–more than half of the total NCD burden (Table 30). This reflects the growing prevalence of chronic illnesses such as cardiovascular disease, diabetes, and cancer, which require long-term management and preventive care, often lacking in resource-constrained settings.

Injuries contributed to 1,109 deaths (753 males; 356 females), with a notable concentration among adolescents and young adults aged 5-29. This age group accounted for 427 injury-related deaths (287 males; 140 females), suggesting significant exposure to violence, accidents, and possibly conflict-related trauma among youth and working-age individuals (Table 30).

Gender-specific data shows that males experienced a higher mortality burden, with 7,687 deaths compared to 6,133 among females. Male deaths were particularly high in the youngest (0-4) and oldest (70+) age groups. Communicable and nutritional conditions claimed 4,562 male lives, while NCDs and injuries contributed 2,325 and 753 deaths, respectively (Table 30). The elevated male mortality in injury-related deaths–especially among those aged 15-29, with 169 deaths–points to gendered risks in mobility, labour, and social exposure.

Among females, the mortality profile was similarly shaped by preventable causes. Communicable and maternal conditions led to 4,091 deaths, with the highest toll among children under five (2,499 deaths) and women of reproductive age. NCDs accounted for 1,661 deaths, with a steep rise in older age groups, while injuries resulted in 356 deaths, with fewer fatalities among young women compared to their male counterparts (Table 30).

4.13.3 Cause specific mortality in Western Equatoria

The leading causes of death in Western Equatoria State from 2019 to 2024 reveal a persistent and multifaceted health crisis, where preventable infectious diseases, neonatal complications, and chronic noncommunicable conditions continue to claim thousands of lives annually. The data from Table 30 shows that while some causes have seen modest declines, the overall burden remains high and deeply rooted in systemic healthcare challenges.

Topping the list are lower respiratory infections, which consistently rank as the leading cause of death. Although the number of deaths decreased from 1,825 in 2019 to 1,544 in 2024, the figures remain alarmingly high. These infections–primarily pneumonia and bronchitis–are especially lethal among children and the elderly, and their prevalence reflects limited access to vaccinations, antibiotics, and clean air environments.

Diarrheal diseases follow closely, with deaths declining from 1,495 to 1,265 over the six-year period. Despite being largely preventable through improved sanitation, clean water, and basic hygiene education, these diseases continue to be a major killer, particularly among young children. Their persistence underscores infrastructural gaps and the need for community-level interventions.

Malaria, endemic to the region, remains the third leading cause of death, with fatalities dropping from 1,340 in 2019 to 1,134 in 2024. While this decline suggests some progress in malaria control, the disease still poses a significant threat, especially in rural areas where access to insecticide-treated nets and antimalarial medications may be inconsistent.

Among neonatal and maternal health concerns, preterm birth complications and birth asphyxia and trauma rank fourth and seventh, respectively. Preterm-related deaths fell from 987 to 835, and birth trauma deaths from 667 to 565, indicating gradual improvements in maternal and newborn care. However, these figures still point to critical gaps in skilled birth attendance, emergency obstetric services, and neonatal support.

HIV/AIDS remains a major contributor to mortality, with deaths decreasing from 1,033 in 2019 to 874 in 2024. This trend may reflect improved access to antiretroviral therapy and awareness campaigns, though the disease continues to affect vulnerable populations and requires sustained investment in prevention and treatment infrastructure.

Chronic noncommunicable diseases are increasingly prominent. Stroke and ischaemic heart disease rank sixth and tenth, respectively. Stroke deaths declined from 836 to 707, and heart disease deaths from 514 to 435, indicating a slow but steady rise in age-related conditions. These illnesses are often linked to hypertension, poor diet, and lack of preventive care, and their persistence signals a shift in the disease burden toward lifestyle-related health challenges.

Tuberculosis, another infectious disease with strong links to poverty and compromised immunity, saw a decline from 684 to 579 deaths. Despite being curable, TB remains a threat due to delayed diagnosis, treatment interruptions, and co-infection with HIV.

Finally, digestive diseases, which include liver and gastrointestinal disorders, contributed to 495 deaths in 2024, down from 585 in 2019. These conditions often reflect poor nutrition, unsafe food and water, and limited access to diagnostic services.

Table 30: *Total number of deaths in 2024 by Age and Gender in Western Equatoria State*

Both sexes, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	13,820	5,579	878	654	1,161	806	1,091	3,651
Communicable, maternal, perinatal and nutritional conditions	8,653	5,192	552	345	702	351	345	1,166
Noncommunicable diseases	3,986	222	116	87	309	371	654	2,227
Injuries	1,109	165	207	220	141	77	82	217

Males 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	7,687	3,080	433	304	671	415	674	2,110
Communicable, maternal, perinatal and nutritional conditions	4,562	2,861	259	93	348	153	196	652
Noncommunicable diseases	2,325	126	55	41	200	205	412	1,286
Injuries	753	93	118	169	117	53	58	145

Females, 2024	All ages	0-4	5'-14	15-29	30-49	50-59	60-69	70+
All Causes	6,133	2,499	445	350	490	391	417	1,541
Communicable, maternal, perinatal and nutritional conditions	4,091	2,331	293	252	354	198	149	514
Noncommunicable diseases	1,661	96	61	46	109	166	242	941
Injuries	356	72	89	51	24	24	24	72

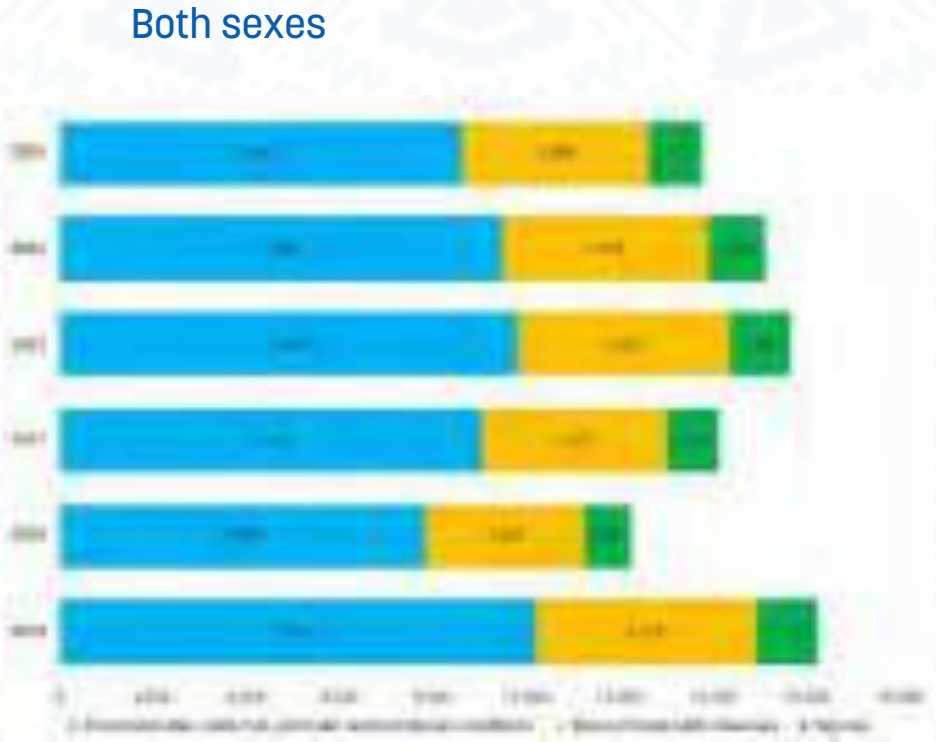
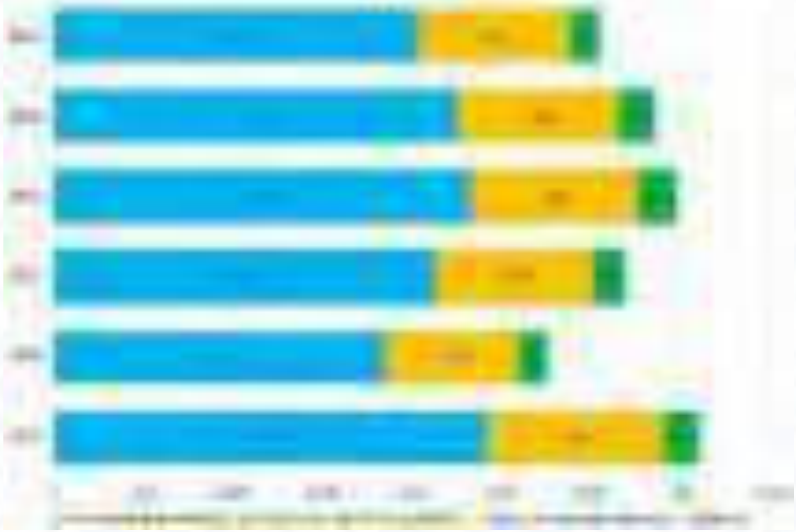


Figure 41 : Total number of deaths by major cause between 2019 and 2024 in Western Equatoria State, both sexes

Males

Figure 42 : Total number of deaths by major cause between 2019 and 2024 in Western Equatoria State, Males



Females

Figure 43 : Total number of deaths by major cause between 2019 and 2024 in Western Equatoria State, Females

Table 31: The number of deaths for the top 10 leading causes (2019 - 2024), in Western Equatoria State

SNo	Cause of Death (Diagnosis)	2019	2020	2021	2022	2023	2024
1	Lower respiratory infections	1,825	1,389	1,605	1,758	1,696	1,544
2	Diarrhoeal diseases	1,495	1,115	1,288	1,440	1,390	1,265
3	Malaria	1,340	952	1,099	1,290	1,245	1,134
4	Preterm birth complications	987	740	855	951	918	835
5	HIV/AIDS	1,033	715	826	995	961	874
6	Stroke	836	607	701	805	777	707
7	Birth asphyxia and birth trauma	667	516	597	643	620	565
8	Tuberculosis	684	449	519	659	636	579
9	Digestive diseases	585	435	502	564	544	495
10	Ischaemic heart disease	514	375	433	495	478	435

5.

Way forward

The findings of the first-ever Total and Cause-Specific Mortality Report for the Republic of South Sudan present both a sobering assessment and a critical opportunity for transformative action. The persistent burden of preventable diseases, the alarmingly high proportion of childhood and maternal deaths, and the emerging rise in noncommunicable diseases collectively highlight a health system at a crossroads. These results underscore the urgent need for a comprehensive, multisectoral response grounded in evidence, equity, and sustainability.

The implications are clear: achieving me aningful reductions in mortality will require not only targeted health interventions but also robust institutional coordination and sustained partnerships at every level. The analysis shows that the mortality burden is not evenly distributed–certain states and administrative areas, as well as specific population groups, bear a disproportionate share of preventable deaths. Addressing these disparities demands that resource allocation, program design, and policy priorities be explicitly informed by the insights provided in this report.

A call to action is, therefore, anchored in the following policy imperatives:

1. Strengthen Institutional Coordination:

The Ministry of Health, National Bureau of Statistics, and state-level health authorities must institutionalize mechanisms for regular data sharing, joint planning, and coordinated responses. This should include integrating mortality surveillance into routine health information systems and establishing interagency task forces to address the most urgent health challenges.

2. Foster Strategic Partnerships:

Sustained collaboration with international partners, civil society, and community organizations is essential to leverage technical expertise, mobilize resources, and ensure that interventions are contextually appropriate and locally owned. The success of this inaugural report demonstrates the value of harnessing diverse data sources and expertise to build a shared evidence base for action.

3. Prioritize Equity and Accountability:

Policy responses should be tailored to the needs of the most vulnerable–children under five, women of reproductive age, and populations in conflict-affected or hard-to-reach regions. Transparent monitoring and reporting mechanisms should be established to track progress, identify gaps, and ensure that all stakeholders are held accountable for results.

4. Invest in Health System Resilience:

Scaling up community-based primary health care, strengthening maternal and child health services, integrating noncommunicable disease management, and improving emergency response capacity are essential steps. Furthermore, investments in workforce development, supply chain management, and infrastructure will be critical to sustaining gains and responding to emerging threats.

In conclusion, this report provides an evidentiary platform for shaping the future of health in South Sudan. The path forward will require unwavering commitment, bold policy choices, and a renewed spirit of partnership–across government, development partners, and communities alike. By anchoring interventions in robust institutional coordination and leveraging the power of collaborative action, South Sudan can chart a course toward a healthier, more resilient future for all its people.


CERF
World Health Organization
South Sudan

REPUBLIC OF SOUTH SUDAN

Trends with Deaths by Cause in South Sudan (2019-2024)

October 2025