# World Health Day 2026: Together for health. Stand with science

**Science serves everyone,everywhere - but only when it reaches the people**

In South Sudan, this has meant turning data into action: identifying who is most at risk, guiding interventions to where they are needed most, and responding to public health threats with evidence, not assumptions. This includes understanding how human health is shaped by environmental conditions, climate-related risks, and disease patterns that cross communities and ecosystems.

Across programmes and emergencies, scientific analysis is increasingly shaping decisions, helping ensure that health services are not only available, but targeted, timely, and effective.

This is the story of how science is being translated into impact, strengthening the health system and improving lives in one of the most challenging contexts.

## 15 Years of Evidence Generation: The Milestones

From no data to predictive intelligence. Five eras, one transformation. Each phase represents a shift in how the system generates, analyses, and uses evidence, from absence of data to real-time, predictive intelligence.

1. **Pre-2010 | "The Void"**
   Inadequate routine data and systems. Limited evidence.
2. **2010-2014 | "The Foundation"**
   First HMIS built. First Annual Report. National data flow established.
3. **2015-2017 | "Surveillance Saves Lives"**
   Multiple outbreaks, surveillance systems strengthening
4. **2018-2019 | "The Digital Leap"**
   DHIS2 national. 80 counties.
5. **2020-2025 | "Full-Spectrum Science"**
   Including predictive intelligence

This is a 15-year transition from a health system with no evidence base to one where scientific analysis continuously informs decisions, improves performance, and saves lives.

# Where we started

**1,436**
Maternal deaths per 100,000 live births
2015

**135**
Under-5 mortality per 1,000 live births
2010

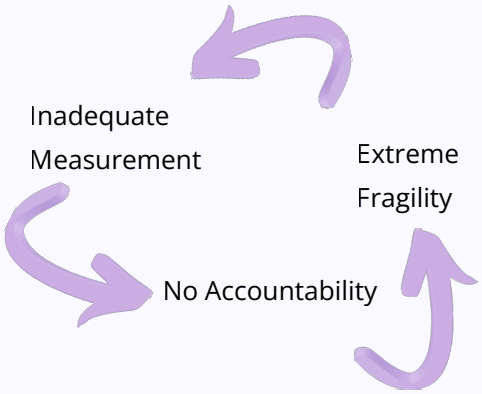
**0**
Counties with functional HMIS or routine data reporting
2010

**<10%**
Health facility reporting rate
2010

**80%**
Population with no access to formal health services
2010

**55.9**
Life expectancy
2005, among the lowest globally

South Sudan gained independence in 2011 with limited health data infrastructure, a health system devastated by decades of conflict, and some of the worst health indicators in the world.




With limited baseline data, there was no way to measure progress, allocate resources, or respond to outbreaks.

The data revolution described in this document begins from that starting point, taking us through evidence generation and science led interventions.

# Data systems as the engine of evidence, science and action

Evidence doesn't sit in dashboards. It triggers responses, guides resources, and saves lives.

> **Without data, we respond to assumptions. With data, we respond to reality.**

South Sudan's health information system has evolved from delayed, paper-based reporting into a digital real-time reporting, integrated intelligence system. Data is now routinely aggregated, analysed, and translated into evidence that guides decisions across disease programmes, emergency response, and service delivery.

This is not reporting for compliance. It is a system where evidence triggers action, redirects resources, and measures performance in real time.

- Data is analysed routinely, not retrospectively
- Programmes are targeted based on evidence, not assumptions
- Resources are allocated to identified gaps, not evenly distributed
- Performance is measured continuously, not periodically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What does it mean to stand with science?
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# 1. Mortality Outcomes Progress with Persistent Gaps

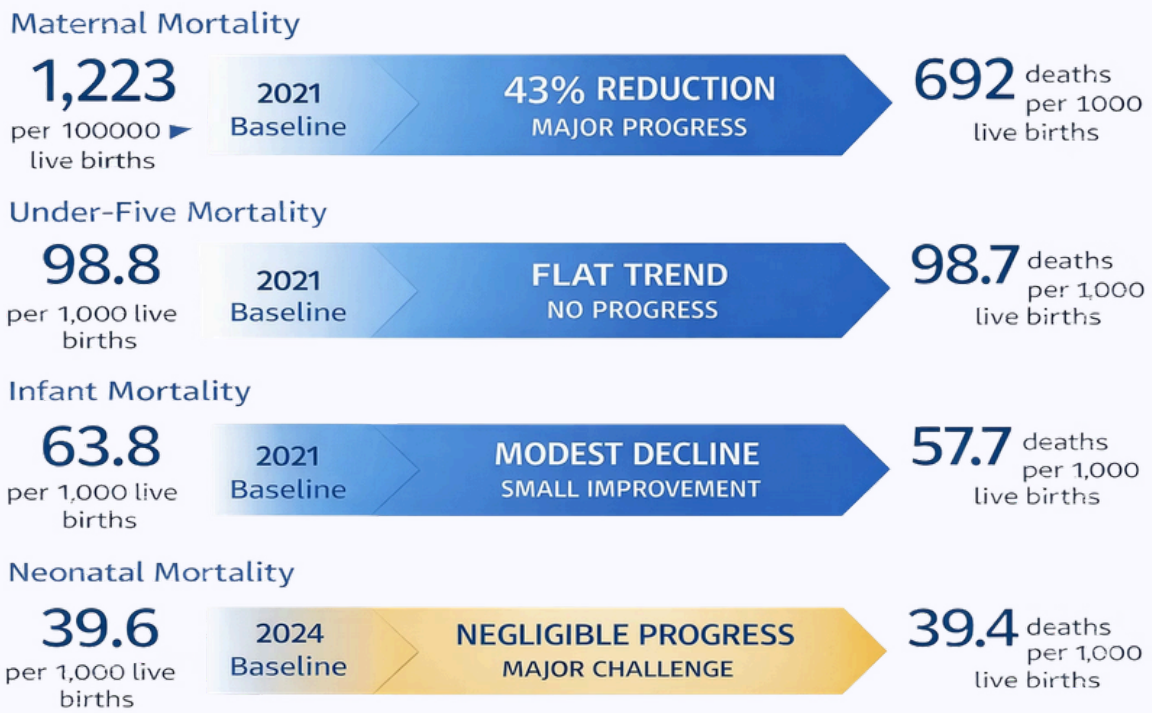
South Sudan now has nationally representative mortality data, published in its very first mortality report **"TRENDS WITH DEATH BY CAUSE IN SOUTH SUDAN (2019 - 2024)"**

## All-cause mortality

Total deaths increased from 146,443 in 2019 to 174,200 in 2024 (19% increase) highlighting sustained system pressure and persistent gaps in access and quality of care. Disparities between sex observed as more men are lost compared to women. Mortality trends are further varying across the life course.

| Mortality among ages 15–29 | Mortality among ages 30–49 | Older Adults (50+) |
|---|---|---|
| High mortality, especially among males. Driven by injuries, violence, and road traffic incidents. | Substantial mortality from communicable and maternal causes | Increasing deaths driven by NCDs (stroke, heart disease, diabetes) → Emerging epidemiological transition |

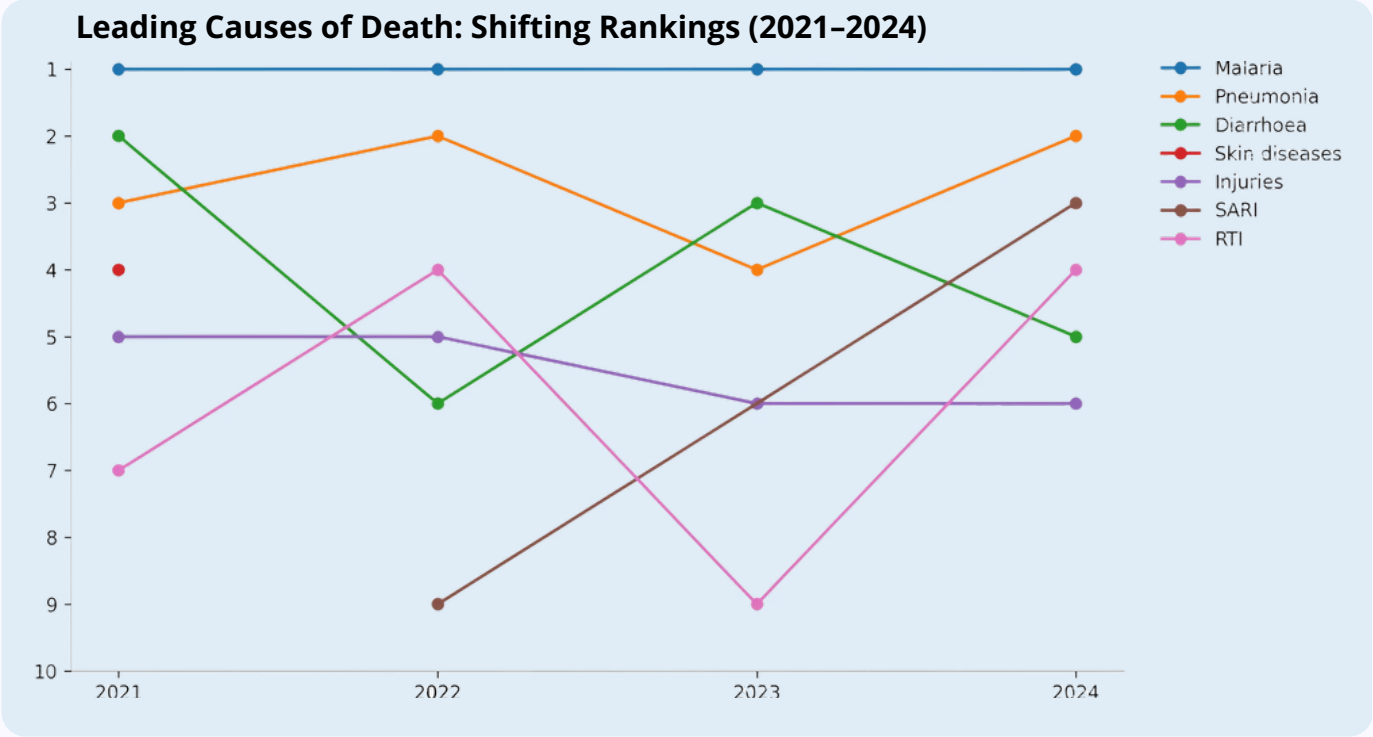
## Maternal, Neonatal and Child mortality




The Maternal Mortality Ratio in South Sudan has reduced remarkably, however, remlains one of the highest globally. Changes in Under-5 mortality and neonatal mortality remain rather constant. This shows that although gains have been made, innovation and extra effort is needed.

## Leading Causes of Death

Despite improvements in service delivery and data systems, mortality outcomes remain high, reflecting persistent gaps in access, quality of care, and timely utilization of services.




In the last 4 years, malaria has held the top rank consistently across all years; a persistent, preventable burden. Most strikingly, SARI (Severe Acute Respiratory Infection) climbed sharply from near-invisible to third by 2024, signaling an emerging threat that demands urgent surveillance and response. These shifting rankings are not random: they reflect the combined effect of climate, conflict, displacement, and gaps in primary care.

In a fragile, conflict-affected setting, this is a landmark achievement. Without measurement, there is no accountability, no targeting, and no proof of progress. These figures now make all three possible. South Sudan now has a clearer picture of where and how to distribute resources to protect the lives of the people. Innovative science-led interventions can expedite these transformation.

**Mortality trends show where science must work harder to reach everyone.**

# 2. Immunization Data in Action: The Big Catch-Up

The data showed the gap. Science designed the response. The Rapid Convenient Monitoring (RCM) measured the change. This demonstrates a shift from campaign-based delivery to a continuous, data-driven learning system. The BCU strengthened routine immunization through microplanning and integrated outreach delivery.

**The Evidence That Demanded Action**

513,964 children missed routine vaccination between 2019-2022 due to compounded emergencies

**EPI data Revealed the Gap**

Data identified geographic concentration of unvaccinated children by county and age group, triggering the BCU

**Targeting**

DHIS2 zero-dose analysis identified 26 high-burden counties for BCU implementation across multiple states

**Delivery**

Multi-antigen BCU delivered via PIRI, measles integration, and strengthened routine sessions, reaching fixed sites and hard-to-reach settlements

**Monitoring**

28 independent supervisors deployed with ODK Collect across all 26 counties. Real-time field data on coverage, barriers, and card retention

**Adjustment**

Barriers mapped (awareness 38%, distance 37%). Social mobilizers activated, community networks were mobilized to identify and refer missed children.

## RCM Results: What the data showed after

*Getting zero-dose children vaccinated is the key to leveling the playing field in primary health care; because **every kid deserves** a **shot!***

**Zero-dose gap closed**

Yei, Morobo, Twic, Duk, Magwi, Mayendit: ≥90% Penta- 1. Effective mobilisation, reliable sessions, missed children found.

**Residual gap - BCU Round 3 priority**

Gogrial West (24% Penta-1), Panyikang (90% but BCG only 23%), Renk (59%), Budi (35%), Kajo-Keji (36%): access barriers, awareness gaps, population movement persist.

This marks a shift from campaign-based immunization delivery to a continuous, data-driven learning system, where gaps are identified in real time, responses are adapted dynamically, and impact is measured and fed back into decision-making. Lessons from BCU are now integrated into routine immunization planning and district-level decision-making.

**From data gap → targeted response → measured impact. This is what science for action looks like at the last mile.**

# 3. HIV, Malaria & TB

South Sudan's three highest-burden diseases are transformed by the same force: evidence that demanded action.

### HIV: Closing the Cascade Gap

#### Baseline

- Low service access and inadequate Health information systems
- ART coverage at 32% (2020).
- Mother-to-child transmission at 4.85% (2022)

#### Evidence in Action

- Expansion of services over the years.
- Roll out of DHIS2 and improved reporting rates through introduction of DHIS2

#### System Change & Impact

- In 2024, 50% of those diagnosed were on ART.
- Viral load (VL) testing coverage among PLHIV on ART reached 85% in 2024
- Mother-to-child transmission at 2.23% (2024)

### Malaria: From Blanket to Precision Targeting

#### Baseline

- Reporting rates for malaria were 6%, not sufficient for use in decision-making

#### Evidence in Action

- Reporting rates improved to 60% in 2024 and more meaningful.
- Data on confirmed cases directly informs ACT distribution and stock management.

#### System Change & Impact

- Risk-stratified response replaced blanket distribution.
- Earlier and more targeted response  actions to gaps in the system

### TB: Finding the Missing Cases

#### Baseline

- Treatment coverage at 50% in 2014.
- Most cases undetected and untreated.
- In 2014, only 14 MDR cases detected

#### Science in Action

- TB notifications integrated into DHIS2.
- GeneXpert rollout beyond Juba, to 64 sites ( including hard-to-reach)
- The BHI strengthened community TB and improved outcomes

#### System Change & Impact

- Treatment coverage: Increased to 86% by 2025.
- MDR TB detection increased to up to 229 cases annually by 2024.

Three diseases. Three data-driven transformations. Systems that turned fragmented numbers into coordinated, life-saving action.

**32% → 50%**
**HIV ART coverage**

**2M+**
**nets targeted by burden data**

**50% → 86%**
**TB treatment coverage**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Human health.
Animal health.
Environmental health.
Inseparable.
Together they form One Health
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# 4. Predictive Intelligence: Forecasting Risk Before It Arrives

South Sudan's data system now anticipates outbreaks.

**Multi-Source Integration**
IDSR surveillance trends, cholera case data, flood projection maps, population vulnerability indices and facility functionality data integrated into a unified analytical framework.

**Predictive Analysis**
Time-series trend analysis, spatial hotspot mapping and forecast modelling applied. County-level risk thresholds monitored. Risk stratification produced weeks before outbreak onset.

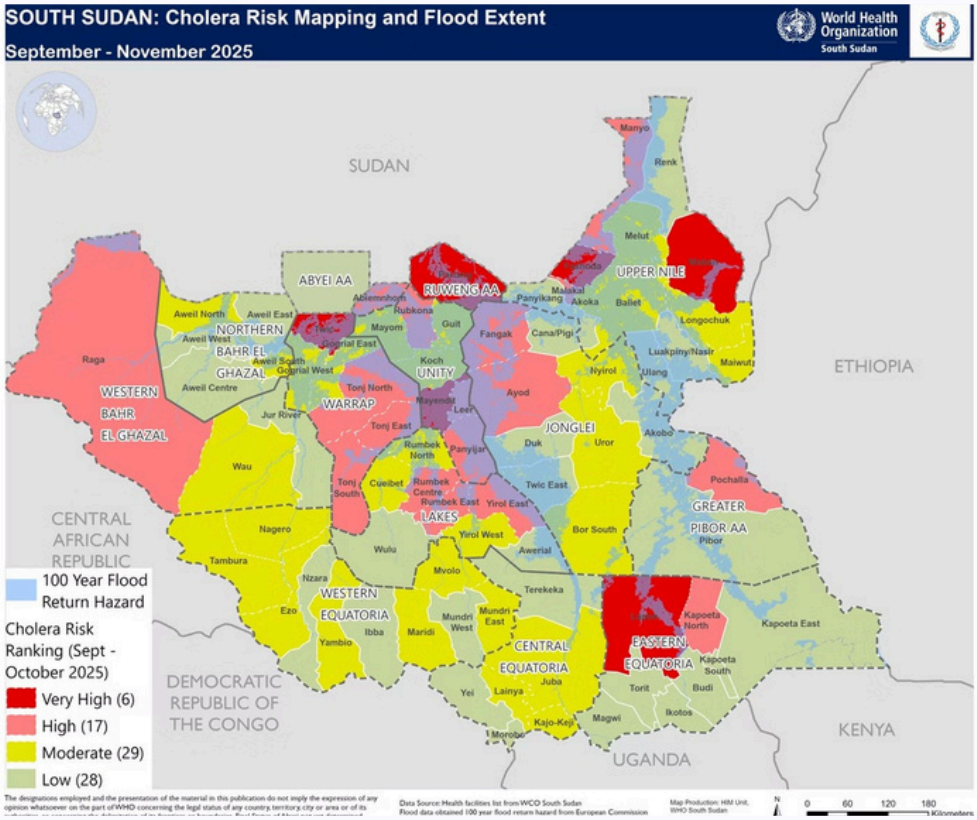
**Risk Intelligence Generated**
County-level cholera risk forecasts: 6 Very High, 17 High, 29 Moderate risk counties identified. Evidence-based prioritization of pre-emptive response resources.

**Pre-emptive Action**
Supplies pre-positioned to high-risk counties. Targeted cholera response activated. Vulnerable populations protected. Before outbreak escalation.

*One Health in Practice*

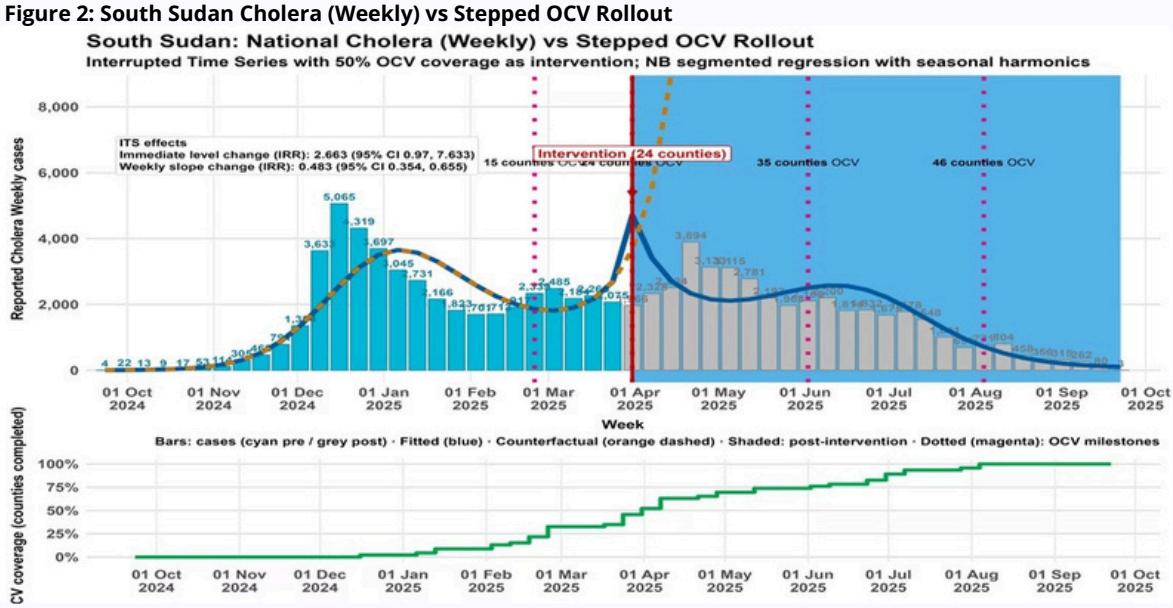
*Health risks are not isolated, they are shaped by environmental conditions, climate variability, and population movement. Integrating these signals with health data enables earlier detection, better preparedness, and more effective response.*

**Figure 1: South Sudan Cholera Risk & Flood Extent: September to November 2025**



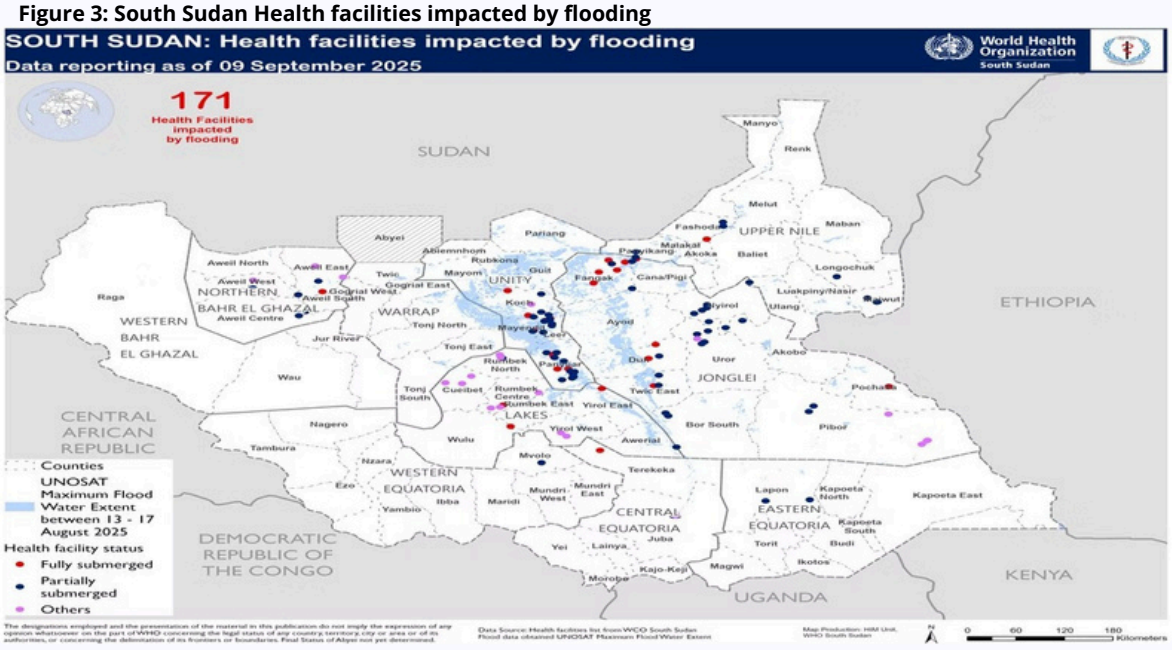

Spatial hotspot mapping combined flood return hazard data with cholera risk rankings across all counties. Flood projections and environmental data were integrated with surveillance systems to anticipate health risks, enabling pre-emptive action before outbreaks occurred. This enabled pre-emptive targeting before outbreaks peaked.

**Figure 2: South Sudan Cholera (Weekly) vs Stepped OCV Rollout**




Time-series analysis revealed a significant immediate reduction in cholera cases following OCV rollout. As coverage expanded from 15 to 46 counties, weekly case counts declined sharply. This demonstrated direct impact of data- driven vaccine deployment.

**Figure 3: South Sudan Health facilities impacted by flooding**




171 health facilities identified as impacted by flooding. GIS-linked facility data enabled rapid prioritization of emergency medical supply pre-positioning and alternative service delivery.

> **Predictive intelligence is no longer aspirational. South Sudan's data system is actively forecasting risk, guiding pre-emptive action, and saving lives before outbreaks escalate.**

# The Evidence-Driven Health System Where We Are Now

From reactive data collection to anticipatory health intelligence. Validated at the 4th South Sudan Health Summit.

**692**
**Maternal deaths per 100,000 live births**
2024

**98.7**
**Under-5 mortality per 1,000 live births**
2020

**37%**
**Population with no access to formal health services**
2025

**80**
**Counties with functional HMIS reporting**
2025

**59.6%**
**Overall health sector performance index**
2024/2025

**58.6**
**Life expectancy (years)**
2024

**December 2025:** The 4th South Sudan Health Summit reviewed the Annual Health Sector Performance Report 2024/25. Evidence from DHIS2, IDSR, and programme databases validated by Technical Working Groups confirmed measurable gains in community health, emergency response, and disease surveillance. It also identified critical gaps requiring accelerated action.


1

**Evidence Base Established**

Annual Health Sector Performance Report, Health Statistics Abstract 2025, and Trends in Deaths by Cause (2019-2024) launched. First-ever mortality cause analysis from observed data.

2

**Gains Validated by Data**

BHI at 96.95%, emergency preparedness at 75.1%, HIV ART coverage up to 50%, TB treatment coverage up to 86%. Skilled birth attendance still low at 32%. Maternal mortality from 2,054/100,000 to 692/100,000. Data confirms what works.

3

**Gaps Identified for Action**

Maternal mortality still high at 692/100,000. Under-5 mortality at 98.7/1,000. Essential medicines stock-outs rose to 45%. Data drives the roadmap.

4

**Political Commitment Secured**

Presidential Health Transformation Compact announced. Whole-of-government taskforce established. Public accountability dashboard mandated. Science now has political backing.

The data system that once didn't exist now drives national policy, presidential compacts, and life-saving action across every county.

## Across Every Disease, Every County, Every Life

South Sudan's system now does more than report. It generates evidence, guides decisions, and drives measurable improvements in health system performance.

What began as an absence of data has become a system capable of:

- Identifying gaps
- Targeting interventions
- Forecasting risk
- Sustaining national accountability

**Data isn't just numbers, it is the engine of health transformation.**

## The Next Phase

The next stage is not system creation, it is optimization:

- Scaling predictive intelligence across all health threats
- Closing persistent gaps identified through data
- Strengthening last-mile data generation and use
- Embedding evidence in every level of decision-making

## Sustain the System. Use the Evidence. Act on What We Know.

South Sudan's experience demonstrates that even in the most fragile settings, science can and should drive system transformation and save lives at scale.

**This is one of the WHO South Sudan Knowledge Series written by:** Tumisang Malebo Madisa (WHO), Geofrey Owino (WHO), Hassan Dakat (WHO) & Joseph Mung'atu (WHO).

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**The development of these knowledge series is coordinated by Tumisang Malebo Madisa, Strategic Health Information, WHO, South Sudan**