

Enhancing community health through the Boma Health Initiative

Seven years of progress in South Sudan

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Introduction

Malaria Consortium: Connecting communities with quality care

Primary healthcare remains the most inclusive, equitable and cost-effective way to achieve universal health coverage, yet nearly half of all people globally still lack full coverage of essential health services.^[1,2] In sub-Saharan Africa, easily preventable, treatable illnesses including malaria, pneumonia, diarrhoea and malnutrition continue to cause thousands of child deaths in areas with limited access to essential health services. Malaria in particular can cause severe complications in pregnant women, leading to maternal and neonatal mortality, miscarriage, low birth weight and stillbirth. The World Health Organization (WHO) recommends swift diagnosis and treatment of malaria in pregnancy, alongside the use of preventive measures such as long-lasting insecticide-treated nets and intermittent preventive treatment.^[3]

Malaria Consortium is a leader in reaching communities that have limited access to health services, and those at the greatest risk of exposure to disease, including women, children under five, and mobile and displaced communities. We are reducing the health services coverage gap, helping to connect individuals with timely, quality care. We do this through community health services such as integrated community case management (iCCM) — a key health intervention that increases access to child healthcare — skilled birth attendance and newborn immunisation, as well as sexual health and family planning services.

South Sudan's health context

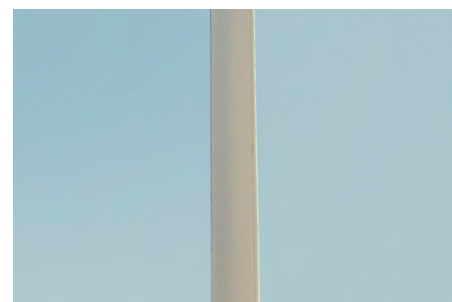
In South Sudan, more than half of the population (56 percent) live more than five kilometres from the nearest health facility,^[4] which inhibits their access to health services. Mortality rates are high in infants and children under five.^[5] Malaria, pneumonia and diarrhoea are the greatest threats to child survival, accounting for 75 percent of all

child deaths registered.^[6,7] South Sudan also has the world's highest maternal mortality rate,^[8] with a skilled professional being present at less than 40 percent of births.^[9]

Following its independence from Sudan in 2011, South Sudan inherited a weak health system, exacerbated by systemic underfunding. The health system further deteriorated to near collapse following civil conflicts in 2013 and 2016, subsequent transitional government arrangements, and a series of severe floods and droughts. Given the unprecedented humanitarian crisis arising from these disruptions — including the displacement of more than two million people — support to the health sector has mainly focused on delivering basic essential life-saving health services and humanitarian response.

The situation in South Sudan remains serious, with 80 percent of the population living below the poverty line and an overall life expectancy of 55 years.^[10] Low levels of literacy, which are worse among women, are also linked to poorer health outcomes due to associated risk factors and behaviours, such as waiting longer to seek medical help.^[11] Government spending on health is low and only about half of all health facilities are supported by external funding. This has resulted in out-of-pocket spending accounting for 54 percent of total health expenditure,^[12] deterring health-seeking behaviour and pushing many families deeper into poverty.

Recognising the need to transition from humanitarian relief to longer-term development of the health sector — and conscious of the need to do more with less, making the most of limited resources through integrated services — the South Sudan government committed to nationwide efforts to consolidate and improve fragmented community health services.^[12]



“From the transition conversations, it was agreed that all fragmented community structures be incorporated into BHI. Many partners were working in silos – you would find a partner recruiting over 8,000 volunteers who would only attend to nutrition response (screening and referral). Another partner would have other 1,000 social mobilisers and so on. There was a lot of confusion and a waste of resources that warranted a holistic approach towards community interventions.”

National BHI Coordinator

The Boma Health Initiative

The Boma Health Initiative (BHI) is a nationwide community health programme established by South Sudan's government to strengthen the health system and efficiently deliver an integrated package of health promotion and disease prevention activities at the *boma* (village) level. With many individuals living in remote areas with limited access to essential health services, connecting communities to accessible, affordable, quality services became a national priority. To deliver these services, a cadre of community health workers, known locally as boma health workers, (BHWs) receive training in three critical areas that reflect the most pressing health concerns across the country:

- Child health and iCCM
- Maternal health (safe motherhood)
- Communicable diseases and surveillance.

The BHI connects primary healthcare units (PCHU), the lowest level of health facilities at the village level, with the national hospitals (see Figure 1). Around 12–16 BHWs are attached to a PHCU, with each BHW allocated 40 households for close monitoring and service provision. While not originally designed to offer maternal health services, some PHCUs have been upgraded to offer delivery services.

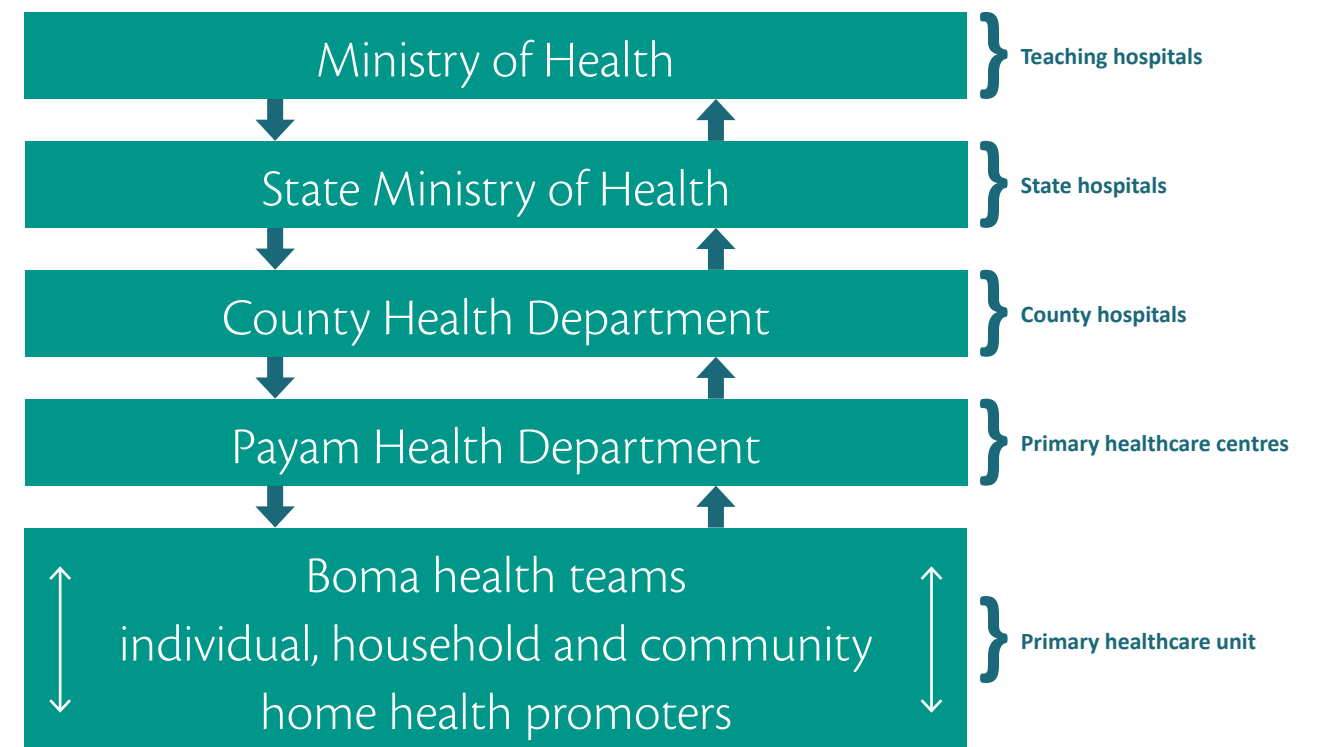
PHCUs refer emergency cases to primary healthcare centres, and refer complicated cases directly to hospitals. There are currently no existing county hospitals, and plans are underway to enable state hospital in Aweil to double as teaching hospitals.

The State Ministry of Health has a mandate over all health facilities, providing technical expertise and guidance.

The National Ministry of Health similarly offers technical support to health facilities.

Drawing on our experience in Africa and Asia of improving equitable access to health services for remote and hard-to-reach communities, with a particular focus on women and children under five, Malaria Consortium has played a key role in supporting the Ministry of Health to transition the BHI from policy into practice. The timeline on pages 5 and 6 trace the history of the BHI.

Figure 1: South Sudan health system structure (Source: Ministry of Health, 2015)



The history of the Boma Health Initiative

2013–2016

Malaria Consortium implements iCCM in three states as part of a programme funded by the UK Department for International Development

Objectives: improved child survival through increased access to health services for early diagnosis and treatment of malaria, pneumonia and diarrhoea, early detection of severe acute malnutrition, and referral to nutrition services.

5,472

community distributors trained

2,598,689

children under five reached

2016

Ministry of Health institutionalises a community health system

Long-term strategic framework developed to harmonise the implementation of health actions and strengthen the health system. The Ministry of Health's National Health Policy recommends establishing a community health system that will engage communities at household level.

2017

Malaria Consortium develops guidance to support the BHI

Drawing on lessons from the iCCM project Malaria Consortium collaborates with the Ministry of Health to develop guidelines, a facilitator's manual and tools for the BHI.

A boma health worker shows a caregiver how to spot danger signs in children as part of the iCCM programme, Aweil south, 2014



The (former) Honorable Minister of Health, National Ministry of Health, Dr Riek Gai Kok officially passing graduate boma health workers following completion of their training in Twic County, 2018



2018

Malaria Consortium pilots BHI in Twic county, Warrap state

Malaria Consortium implements a community health and information system governed by salaried boma health teams.

October 2022 – December 2023

Scale-up of the BHI

Malaria Consortium supports the Ministry of Health to scale up and implement the Boma Health Initiative in Aweil South and Aweil Centre counties.

Number of children under five treated in 2022

9,164

for diarrhoea

28,294

for malaria

12,513

for pneumonia

June 2023 – June 2025

Digitalisation of the BHI

Malaria Consortium and the Ministry of Health co-develop a digital health tool to strengthen implementation of the BHI with a view to its expansion

From pilot to scale-up

Collaborating with South Sudan's Ministry of Health, Malaria Consortium was pivotal in developing the BHI guidelines, facilitator's manual and tools, using our lessons learnt from an iCCM programme implemented between 2013 and 2016, funded by the former Department for International Development (now the Foreign, Commonwealth and Development office). This process began with consultations from payam (district) to county, state and national levels. Community members who took part in sensitisation meetings at county and payam levels participated in the selection of boma health committee and team members.

Malaria Consortium went on to pilot the new BHI structure in Twic county, Warrap state, implementing a community health and information system delivered by salaried boma health teams. Activities included health promotion; provision of screening and treatment services for selected diseases including malnutrition, pneumonia, malaria and diarrhoea; and case referral.

Following the successful completion of the pilot phase, we then supported the Ministry of Health to scale up and implement the BHI in Aweil South and Aweil Centre counties, in Northern Bahr el Ghazal state.

Over the past seven years, we have helped to improve health service delivery to women, children and remote and hard-to-reach communities. This has been achieved through targeted training and supervision for boma health workers, skills development for supervisors in the use of supportive supervision guidelines and tools, and the establishment of monthly supervision meetings for BHWs, supervisors and health facility clinical and management teams to review progress and discuss case referral and strategies for follow-up care. We have also improved stakeholder engagement with, and acceptance of, the BHI.

We have increased community awareness of the targeted diseases by working with stakeholders, implementing partners and the local community — including marginalised groups and those lacking access to healthcare — at both

the state and county levels. The use of routine behaviour change communications, health education and counselling sessions (including for family planning and sexual and reproductive health), and stakeholder awareness meetings has helped to create awareness around prevention and treatment of disease and the importance of early health-seeking behaviours.

Alongside these activities, we have supported the coordination and distribution of medical commodities and assisted health facilities to reduce stockouts through monitoring stock levels. This has been critical to ensuring that communities are able to access well-stocked health facilities offering the full range of essential healthcare services.

Digitalising the Boma Health Initiative

Building on our established partnership with the Ministry of Health, we are now collaborating with them to digitalise the BHI. We are co-developing a new digital health tool to strengthen the implementation, and ultimate expansion, of the BHI, supporting BHWs to deliver improved quality care to their communities, improving BHW motivation and retention, and strengthening the quality and accuracy of health data.

After development and field testing, we will determine the tool's feasibility, acceptability and impact compared with standard practice to determine the digital intervention's suitability for scale-up. This digital tool will function as a job aid for BHWs, facilitating correct treatment and collection of accurate health data. This will help to address identified gaps in data and reporting and ensure the long-term sustainability and impact of the initiative. Additional features include offline capability, integrated with District Health Information System (DHIS2) for data storage and decision-making, stock management, supervision, community disease surveillance and early warning systems.



Boma health worker Asunta Ageng speaks through a megaphone to conduct community sensitisation and mobilisation on malaria in Panthou village, Aweil South, 2023

Boma health workers: Providing a lifeline to communities

Boma health workers (BHWs) are essential for improving healthcare in complex, challenging situations. They bridge the gap between communities and health facilities to improve access to and uptake of health services. BHWs are recommended by local chiefs and recruited from within their communities, which is integral to building trust with community members.

Each BHW is allocated 40 households situated five kilometres or more away from the nearest health facility and tasked with delivering a standard package of health promotion, prevention and selected curative health services at the boma level (a boma is a lowest-level administrative division, below payams, in South Sudan). Health services include care for malaria, diarrhoea and pneumonia in children under five, as well as antenatal care for pregnant women and adolescents, and sexual and reproductive health services, including family planning counselling for women and girls.

These community health responders are fundamental in fostering home-based management as well as encouraging healthcare seeking behaviours by addressing the health information gaps that exist within their communities.

Case study: Protecting neonatal and maternal health for community resilience

Through the BHI, hundreds of BHWs and supervisors have been recruited and trained to deliver essential health services to their communities. The BHI has also greatly improved skilled deliveries, leading to a continuous reduction of maternal and neonatal deaths in Aweil Centre County, Northern Bahr el Ghazal state.

The initiative has been a lifeline for women like Sarah from Udhaba in Aweil Centre. She recounts how, overnight, her one-year-old daughter developed a high fever and refused to breastfeed. With the nearest health facility over four hours' journey away, Sarah wondered how her daughter would make it through the night. She then recalled a BHW who had provided health education during a church service one Sunday morning. As soon as it was light, Sarah headed to the BHW's home, where her child was quickly seen to.

Thanks to the BHW in Udhaba, Sarah's child was stabilised within 30 minutes of receiving medication. She concluded that, without the support of Malaria Consortium's BHI project, she would have lost her daughter that day. BHWs are making a real difference in people's lives, despite challenges such as limited resources and underfunding in the health sector.

Lessons learnt

At the end of 2023, after seven years of BHI implementation — and in preparation for the upcoming digitalisation phase — Malaria Consortium captured some key achievements that have been registered in the Bahr el Ghazal region to date.

This process of learning documentation involved key interviews and a desk review. We identified respondents based on their experience, involvement and expertise in fostering the BHI at national and subnational levels. These included the National BHI Coordinator, Northern Bahr el Ghazal State BHI Coordinator, Aweil Centre Deputy Primary Health Care Officer and Malaria Consortium staff involved in implementation of the BHI. Participants selected for interviews demonstrated a broad and deep understanding of the BHI and health system strengthening in general.

The lessons that follow offer insights into the reach and impact of the BHI, as well as the challenges experienced and how we overcame them. This learning is valuable in informing scale-up to other regions of South Sudan, and in shaping the future community health response.

Enhancing the skills and motivation of boma health workers has improved community surveillance and reporting

Thanks to enhanced capacity developed through BHI training and supervision, BHWs have been instrumental in collecting and reporting valuable epidemiological data on malaria, pneumonia and diarrhoea from their communities. In so doing, they have strengthened linkages between the community and health facilities, facilitating community access to healthcare and ensuring that cases are correctly identified and either treated or referred to health facilities as appropriate.

Critically, this capacity development has strengthened the ability of BHWs to adapt swiftly to changing circumstances, and to support existing programmes seamlessly and effectively. BHWs were able to take the lead in the COVID-19 response, detecting and referring cases of illness to health facilities for follow-up. Their participation in the Expanded Programme on Immunisation has contributed towards



Volunteer registrars use tablets to distribute mosquito nets at Mayom Akoon village, Aweil West, 2023

contact tracing of children who have missed immunisations (immunisation defaulters). Through consistent reporting via a monthly summary form, BHWs have been able to improve uptake of the pentavalent vaccine among missed children, offering protection from diphtheria, whooping cough, tetanus, hepatitis B and Haemophilus influenzae type B.

“It is important for us to take a moment and appreciate how instrumental BHI has been towards the Expanded Programme on Immunisation (EPI) — especially COVID-19 response. The COVID outbreak struck fear among the communities; however, BHWs under BHI responded in mitigating these fears by sharing accurate information, timely referrals, and reporting. We managed to contain COVID because of BHI.”

State Ministry of Health Official

Offering incentives has proved to be an effective approach for motivating BHWs to sustain the quality of data collection and reporting. BHWs who shared accurate reports and attended monthly meetings consistently (three months in a row) received verbal recognition for good performance, as well performance rewards in the form of clothing, such as gumboots, raincoats and t-shirts).

6,400 consultations in 2019 to over 60,000 in 2023

Strengthening the capacity of boma health workers improved the quality of service delivery and reduced pressure on health facilities

With training, BHWs have become highly skilled in managing cases of malaria, pneumonia and diarrhoea among children under five, which includes assessment, classification and treatment. They have similarly improved referrals of pregnant

women to antenatal and postnatal care. On-the-job training has proved to be effective in empowering BHWs to understand and correctly interpret tools for assessment and reporting, as well as to appropriately refer women and children to health facilities for treatment of complications. Health facilities have registered a reduction in the number of curative consultations in areas where BHWs are active. This has dramatically reduced the workload for health workers.

98% of defaulters referred for immunisation in 2022 and 2023

“BHI has been very important in decongesting many of our health facilities. Many health in charges that I have interacted with have attributed this to the easy access (time and distance) caregivers have to BHWs. Some who used to move 20 kilometres to the nearest health facility, now come five kilometres. Even more, communities without nearby health facilities appreciated BHI despite only three drugs being administered (for malaria, diarrhoea and pneumonia).”

State BHI Coordinator Northern Bahr el G hazal

Fostering community trust and engagement has increased health-seeking behaviours

BHWs are recruited from within their communities. As one key informant noted, caregivers feel more comfortable about seeking healthcare from familiar faces. This, coupled with consistent community awareness campaigns and door-to-door health education, has helped to embed a strong sense of trust between BHWs and the communities in which they work. The information BHWs share has been instrumental in

influencing pregnant women to attend antenatal care appointments at the closest health centre, and to take their children for screening.

We additionally observed that mothers were more inclined to take their child to see a BHW if they were aware of additional services offered by the BHW that they might directly benefit from, such as awareness on family planning. This offers great potential to scale up the integrated community package offered by BHWs when the next BHI strategy review is due.

Joyful mother Akuol Wien holds her newborn daughter (1 month old) after successful delivery facilitated by a midwife working at Panthou Primary Health Care Centre, Aweil South, 2023



“One interesting thing we noticed is caregivers/mothers were more comfortable taking their children to BHWs who were from their communities [because they knew them] unlike those who were recruited from distant communities. From these learnings, as the state we directed the CHD [Country Health Department] to prioritise recruitment of BHWs from the same community”

Key informant, State Ministry of Health Official

Local involvement in the BHW recruitment process can foster community ownership and accountability when coupled with guidance from technical staff

The BHI has galvanised local ownership of the health response in South Sudan. Local chiefs are involved in screening BHWs for recruitment, which has fostered accountability, given that those who are recommended are from the same community. However, we found that low literacy levels proved to be a challenge in recruitment, even where local leaders had recommended BHWs for placement. To mitigate the recruitment of potentially unsuitable candidates, one

key informant highlighted the importance of involving technical staff to work alongside local chiefs to help streamline the recruitment process.

“Selection of BHWs by local chiefs has caused a lot of problems to the CHD as well as State Ministry of Health. These chiefs wield a lot of influence, which would not be an issue, but they often refer BHWs who ... cannot read and write. It is important that technical [CHD] are in charge of recruitment... in fact, recruitment of BHWs should be streamlined.”

Key Informant, County Health Department Official

The formation of boma health committees has also encouraged BHWs to champion quality assurance within the BHI. The committees comprise representatives for women, young people and those living with disabilities, religious leaders, and boma administrators and health facility in-charges.

These committees guide BHWs on implementation of the approved health service packages in communities. They further oversee BHWs' performance, report unresolved issues and recommend replacement of non-performing BHWs to the recruiting authority as well as monitor drug usage by BHWs to ensure that no drugs are missed or sold.

Empowering the boma health committees and country health departments (CHDs) is an effective mechanism for sustainable accountability and ownership. These are a direct linkage between BHWs and health facilities to which they are attached.

Strengthened coordination and collaboration between national and state levels has led to greater health programme sustainability

The involvement of BHI coordinators from both the State Ministry of Health and the National Ministry of Health has been pivotal in strengthening the BHI structure, fostered by joint supportive supervision and review meetings at the county and state levels. With further scale-up of the BHI anticipated, the multilevel partnerships that are key to ensuring the sustainability of the current programme can be mirrored elsewhere.

Implementing a system of drug rotation ensured that BHWs always have access to supplies

Poor weather characterised by excessive flooding delayed the delivery of medicines to BHWs. Additionally, stockouts of antimalarials and medicines for pneumonia and diarrhoea affected the referral mechanism. When caregivers heard from their peers that BHWs did not have stocks of essential drugs, they went directly to the health facilities for treatment, often overloading those facilities. To address these gaps, we employed a system of drug rotation — the process of switching one medicine for another — at the health facility level. This innovation has created sustainable access to drug stocks. Drug rotation guarantees that the health facilities from which BHWs operate are always stocked, so the BHWs always have access to supplies. (Under the previous iCCM programme, drugs were delivered directly to BHWs, which presented challenges around quality control and accountability.)

Practical training and mentorship can help BHWs to overcome challenges with low literacy

Low literacy among some BHWs proved challenging, particularly considering the critical role BHWs play in disseminating accurate information within their communities and recording and reporting data correctly. While using visual aids to enhance their understanding was beneficial, we found practical solutions for training yielded faster outcomes. On-the-job mentorship and training proved to be particularly effective. CHDs and Malaria Consortium staff used mentorship sessions to address capacity shortfalls among BHWs. We found this to be cost-effective and largely sustainable, given that costs such as venue hire and stationary are not needed.

Results at a glance: 2019–2023

390,857

people reached with health education

12,868

individuals provided services for mental health

29,013

deliveries facilitated by a skilled birth attendant

Mothers referred for first antenatal care visit increased by

222%

Mothers referred for follow-up antenatal care visits increased by

196%

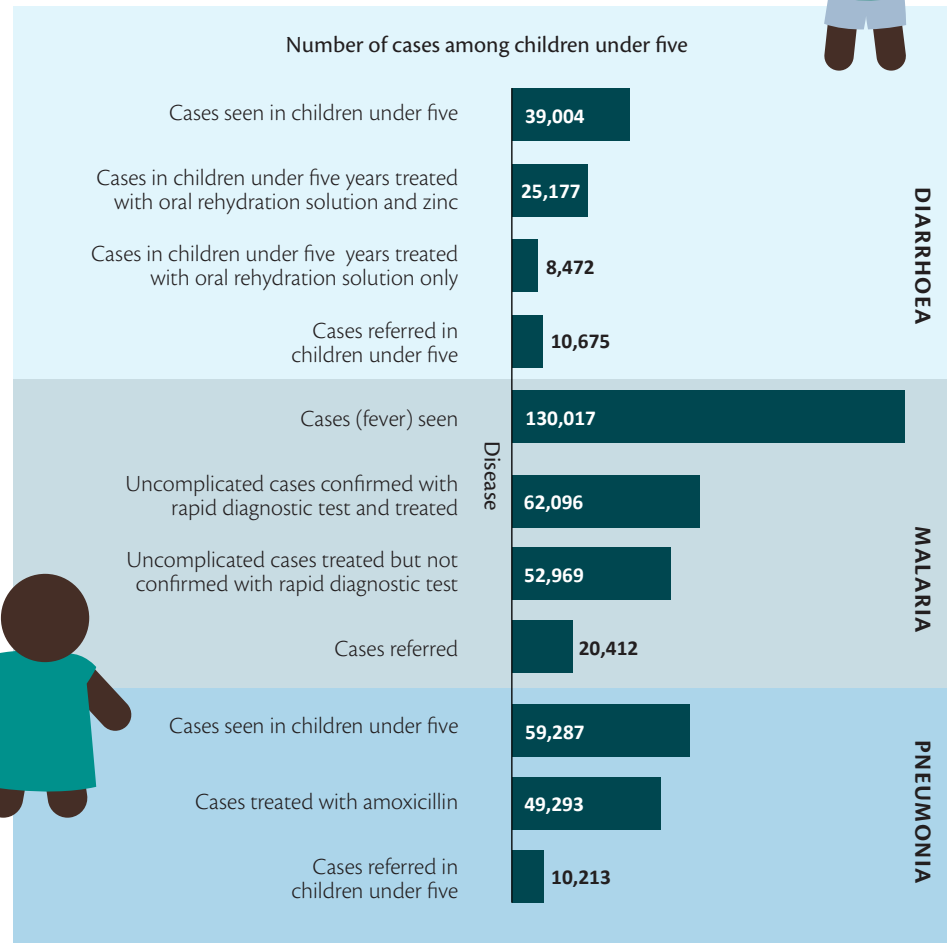


Figure 2: Number of children reached by boma health workers between July 2019 and November 2023 in Aweil South and Centre (DHIS2)

Recommended next steps for continued progress and scale-up

1

The government and partners must make deliberate efforts to further include persons of concern — such as refugee settlements and those living with a disability — and complex environments into the BHI strategy. This will strengthen equitable access to health services for marginalised communities, moving national efforts closer to achieving universal health coverage.

2

The government and donors should prioritise and roll out digitalisation of the BHI for effective and efficient retrieval of data for decision-making. Digitalisation efforts should include linking the BHI into the District Health Information System.

3

There is a need to recruit a greater proportion of women BHWs, particularly given that the majority BHI activities are geared towards child survival. At present, only 60 percent of BHWs in Aweil Centre and Aweil South are women, yet most BHWs' activities interface with women who are also primarily caregivers. Women's involvement in the BHI should be encouraged at the recruitment stage. To achieve this, dialogues should be held with local chiefs to promote buy-in, given that local chiefs are solely responsible for recommending BHWs.

4

The BHI strategy must be explicit on integration, providing clarity on what should be included in the basic package of health offered by BHWs. Stocking family planning commodities, such as condoms and oral contraceptives, and including nutrition services for sustainable defaulter tracing could strengthen both child and maternal health. Integration will be a catalyst for sustainable health-seeking behaviours.

5

Extensive lobbying and advocacy are needed to ensure that the government's commitment to the BHI translates into increased budgeting for a guaranteed community health response. An operational toolkit should be developed — one that highlights and guides community/local resource mobilisation. A deep-dive analysis of the financial constraints would enrich the potential solutions and opportunities to improve resource allocation.

6

More BHWs are needed to achieve full coverage of remote and hard-to-reach communities. BHWs must cover long distances to reach households in sparsely populated communities, especially when carrying out community awareness campaigns. Some BHWs do not have supervisors, while in other cases supervisors are overstretched, with one supervisor being responsible for BHWs in multiple payams. Increasing BHW numbers will be critical for scale-up to other regions.

Looking ahead

Several opportunities lie ahead as South Sudan looks to scale up its community health initiatives. Although partners and donors do provide supplies, we have identified gaps in the available stocks of medicines and other supplies, which will need to be addressed. The BHI programme currently covers just 40 percent of the population, highlighting the need to scale up across all states to reach the remaining 60 percent. Development and implementation of the BHI digital tool is planned in two counties, with the aim of expanding the coverage of this intervention and implementing it across a wider geographical area.

In addition to ongoing digitalisation efforts that will help to streamline implementation and reporting across the country, a promising innovation is the use of drone technology for the cost-effective delivery of medical supplies to people in areas affected by natural disasters, conflicts and emergencies. In countries such as Rwanda, drone technology has already proved its worth in the healthcare sector through the delivery of critical medical supplies such as vaccines, medication, blood products and diagnostic samples to remote and hard-to-reach areas. Such technologies can offer a solution to geographical barriers and floods, quickly transporting medical supplies to patients and improving access to healthcare services.

If the global health community, and South Sudan, are to deliver on the sustainable development goals (SDGs) by 2030, we must continue to prioritise building strong, accessible and sustainable community health systems. Intensive action is needed to strengthen policies, prioritise innovations that expand coverage and quality of primary healthcare, and scale-up evidence-based interventions that are accessible to all.

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