

IMPACT REPORT

Reducing the malaria burden in Sierra Leone

Strengthening Health Systems
to Improve Fever Management
(SHIFT) project

Tackling malaria in partnership

Malaria has a frightening grip on Sierra Leone, as in many countries in Sub-Saharan Africa. Its entire population, some 7 million people, are vulnerable to this deadly disease.

The numbers in Sierra Leone alone are staggering. Over 2,240,000 hospital visits are attributable to malaria each year with almost half of those children under the age of five¹. Thousands of people of all ages – parents, siblings, neighbours, friends – die unnecessarily at the hands of this curable disease.

Those who survive malaria often struggle to work or attend school due to its residual effects. Families often have to step in to support patients with money they don't have. Despite vast improvements in malaria care over the last decade, the burden of malaria in Sierra Leone remains ever-present and long-lasting.

It is in this challenging context that King's Global Health Partnerships in Sierra Leone has delivered Strengthening Health Systems to Improve Fever management (SHIFT). SHIFT is a three-and-a-half year project funded by Comic Relief and GSK to improve

the quality of care for patients that suffer from fever, a major symptom of malaria.

King's Global Health Partnerships (KGHP) works with health facilities, academic institutions and governments to strengthen health systems and improve the quality of care in four countries: Somaliland, Sierra Leone, the Democratic Republic of Congo and Zambia.

We bring together expertise from King's College London, the UK's National Health Service (NHS) and our international partners to educate, train and support healthcare workers; strengthen healthcare and training institutions; and enhance national health policies and systems.

The SHIFT project, which began in September 2017, used a health system strengthening (HSS) approach to build capacity, skills and processes at Connaught Hospital.

During the project, KGHP's multidisciplinary team has supported a range of areas across the hospital, including clinical support, monitoring and evaluation, supply chain management, patient support and advocacy and laboratory capacity building. The project has been completed in close collaboration with the Ministry of Health and Sanitation (MoHS) and the National Malaria Control Programme (NMCP).

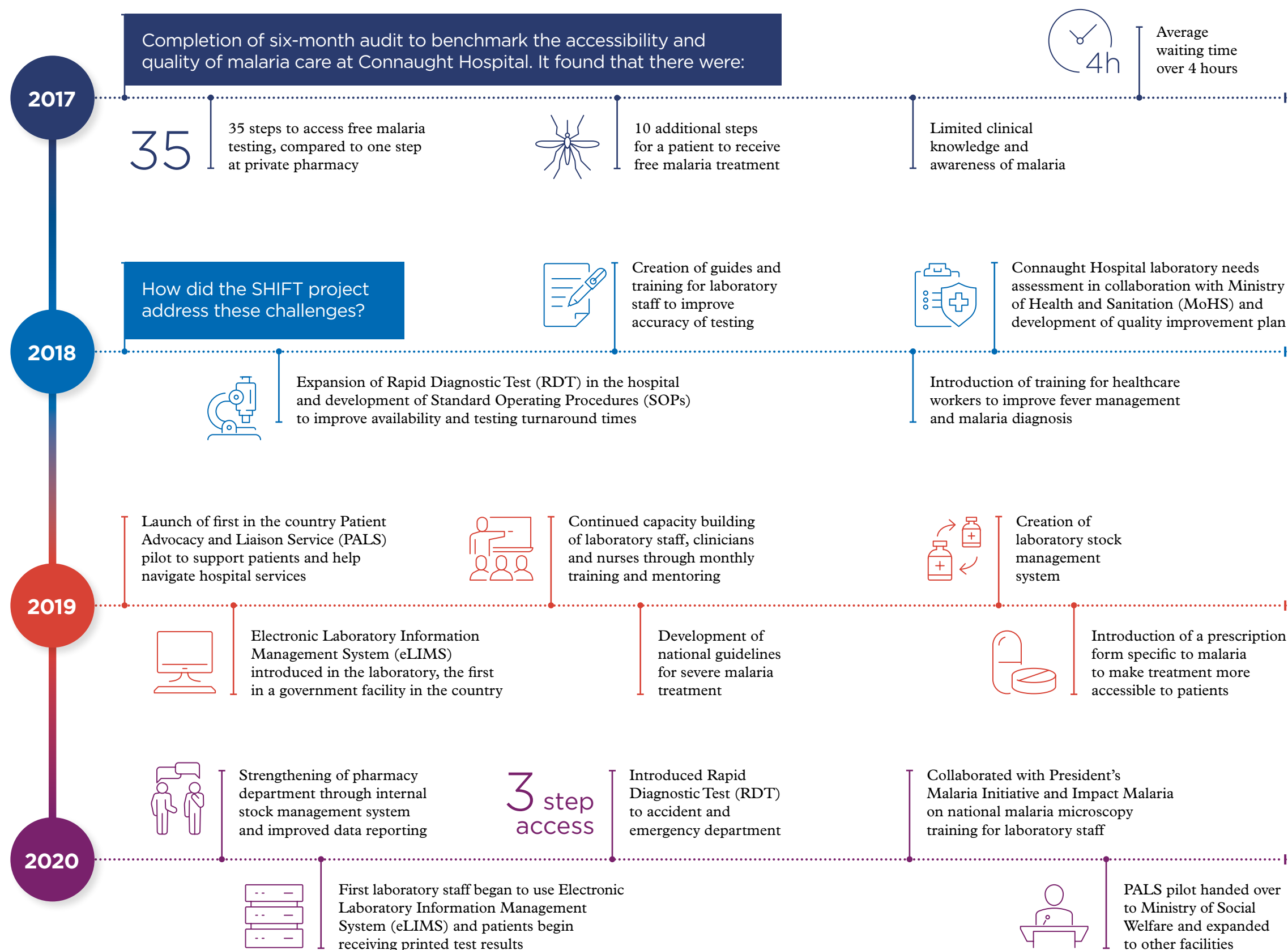
Reducing the burden of malaria in Sierra Leone is a complex challenge. Improvements are needed at all parts of a patient's diagnosis and treatment if the country is to rid itself of the disease.

This is the story of the SHIFT project as told through a typical patient's journey through Connaught Hospital, Sierra Leone's main tertiary referral hospital based in Freetown, where thousands of patients visit every year.

¹ PRESIDENT'S MALARIA INITIATIVE, 2018-2019 SIERRA LEONE MALARIA OPERATIONAL PLAN



Steps to success



SHIFT in numbers

42 months of the grant to improve malaria care

members of the multidisciplinary team working to improve supply chain management, clinical standards, patient advocacy and laboratory capacity

600+

junior doctors, nurses, lab technicians, pharmacists and surveillance officers at Connaught Hospital trained and mentored

step reduction for patients to access free malaria testing. Prior to SHIFT it was 35 steps; now there are only 3 steps for patients to access care

32

97% of nurses and doctors surveyed were able to correctly identify first-line antimalarial medication, as a result of SHIFT project

of nurses, doctors and laboratory staff that said that the impact of SHIFT project on malaria management and diagnosis was 'positive' or 'very positive'

95%

Services strengthened by SHIFT

INCREASED MALARIA TESTING AT TRIAGE

When a patient with suspected malaria arrives at Connaught Hospital, they will have an array of symptoms including fever, muscle aches, nausea and headaches. As they wait to be seen in the triage area, they may also be suffering from vomiting and diarrhoea.

Once they are called, one of the on-duty nurses will quickly and carefully check the severity of their condition in order to ensure that the most unwell patients are seen as soon as possible by a doctor.

Prior to the SHIFT project, malaria rapid diagnostic tests (RDTs) were rarely carried



Whenever a patient comes for treatment, we should make sure we diagnose properly to know what the illness is that has brought that patient to the hospital”



**SISTER FINDA CHRISTIANA
KPANGE, NURSING OFFICER,
CONNAUGHT HOSPITAL**



out in triage, due to poor knowledge of hospital guidelines, unregulated prescribing practices and a limited supply of tests. Now, if a patient is suspected of having malaria, a trained nurse will do a malaria RDT before sending them to a doctor to receive the correct treatment.

The SHIFT project has made a vital intervention: redesigning the patient charts to include a designated space for malaria RDT results. The effect has been to ensure RDTs are routinely carried out and to increase the likelihood that patients will receive appropriate care.

Furthermore, the project has provided practical RDT training for over 30 nurses, and developed flowcharts describing how to treat malaria. This has improved confidence among frontline workers; one nurse said that they were “proud to tell the patient that I’m going to do the test”.

On top of that, ledgers have been introduced to keep track of malaria testing and treatment commodities, increase transparency of supplies and improve accountability. Small group training sessions of nurses in all wards has also reiterated the importance of data collection for the regular supply of RDTs and, more widely, a successful healthcare system.



BETTER PATIENT INFORMATION AND ADVOCACY

Getting treatment at Connaught Hospital is not always straightforward, especially for patients who are visiting for the first time. For those with suspected malaria in particular, getting the right treatment can be challenging and, at times, daunting.

This is where Patient Advocacy and Liaison Service (PALS) has proved useful. As part of the SHIFT project, patients are able to speak

to a PALS officer to answer questions about Connaught and the hospital services offered on site. Posters around the hospital explain how they can contact the PALS officer, who is also available via phone during working hours.

Feedback from patients that have used PALS – which was the first service of its kind at a government facility in Sierra Leone – suggests it has helped to reduce patient stress by making it easier to navigate the hospital and clarifying the cost of treatment.

Those who have benefited from the expertise of the PALS officer said that they would recommend the service to family members and others in their community. Its impact has also led to the Ministry of Social Welfare and Connaught’s management team to maintain the service after the SHIFT project, with the planned posting of social workers to Connaught.



[The PALS officer] supported me to get my medical request approved and facilitated the process for me to get treatment quickly. It would have been difficult for me if you were not around to assist me, because I virtually do not have any understanding of the processes”

PATIENT AT CONNAUGHT HOSPITAL

IMPROVED MALARIA MANAGEMENT BY DOCTORS



approximately one third of patients present with fever at Connaught



85% of patients correctly suspected of malaria have a confirmatory test (an increase of 65% between October 2018 and August 2020)



92% of patients with confirmed malaria receive first line treatment (an increase of 47%)

After being triaged and, in some cases, consulting the PALS officer, patients wait to see the duty doctor in a nearby consultation room. This is a crucial step in the diagnosis and treatment of malaria.

However, with only a limited time to see each patient and pressures on demand, doctors can fail to recognise malaria symptoms. In the past, it has sometimes taken a long time to get accurate results from tests. This meant doctors sometimes gave antimalarials without a positive malaria diagnosis, so some patients were misdiagnosed.

Fever management training provided by the SHIFT team in partnership with Ministry of Health and Sanitation (MoHS) has helped to equip over 100 house officers with the knowledge and tools to conduct a comprehensive assessment.

The sessions encourage junior doctors to consider all possible causes of fever, which became especially important in March 2020 when the global COVID-19 pandemic hit Sierra Leone.

There is still work to be done, particularly when it comes to documentation and treating cases of severe malaria. But this intervention, and the transfer of teaching materials to the hospital for ongoing rollout, ensures all junior doctors in Sierra Leone are effectively and routinely trained to identify key symptoms of malaria.



I noticed after the training, [house officers] are more confident to say why they've prescribed such and such drug for a patient and why they make such a decision to treat for it as severe malaria or uncomplicated malaria"



DR SORIE CONTEH,
CO-ORDINATOR OF
MALARIA CARE AT
CONNAUGHT HOSPITAL



GOING DIGITAL: ELECTRONIC LABORATORY SYSTEM

When doctors can't be sure of the cause of fever, patients are referred to Connaught's on-site laboratory for diagnostic testing. Here, quick turnaround and accurate results can be the key to effectively managing malaria symptoms and correct diagnosis through funded malaria testing.

However, Connaught's paper-based test reporting system meant that it has been under-utilised by clinicians, resulting in patients being confused about how to get a test and often paying for tests at private laboratories. This means patients don't get the care they need or pay for tests.

A new electronic system for securely storing and printing patient results was introduced to increase the standard of testing processes and substantially decrease patient waiting time. Through a simple set up of four laptops and a dedicated server, the Electronic

Laboratory Information Management System (eLIMS) has supported laboratory staff by helping to improve turnaround time, reduce clerical work and limit the risk of errors.

Alongside this, twice-monthly training has been provided to laboratory staff on topics including good laboratory practice, phlebotomy and malaria microscopy. New standard operating procedures and one-on-one mentorship by the SHIFT team have also increased confidence among the laboratory staff and the wider hospital.

Laboratory results are now rarely misplaced, which was a common occurrence before implementation, and doctors are increasingly sending patients for further testing. This bodes well for the long-term future of Connaught laboratory and the standard of treatment received by patients.



Entering samples before was time-consuming. With this eLIMS system, it reduces the timeframe and I now have more time to spend in a queue of patients when I have a lot of them"



OSMAN CONTEH, MEDICAL
LABORATORY SCIENTIST





BETTER SUPPLY CHAIN MANAGEMENT AT PHARMACY



73% of confirmed malaria cases are now receiving free, first line treatment

For patients diagnosed with malaria, Connaught's on-site pharmacy is the next destination. Here, patients receive free treatment supplied by the National Malaria Control Programme (NMCP) that have been prescribed by the doctor.

However, a complex system of requesting for supplies meant that 'stock outs' were all too common. Patients, already tired and weak, were asked to come back with their

prescription another day. This, understandably, undermined confidence in the hospital.

Due to changes in guidelines, doctors were also in the habit of incorrectly prescribing patients with branded anti-malarials that required payment, even when the free, generic version was available.

Thanks to SHIFT, Connaught has a more sustainable system of requesting, storing and supplying antimalarials. An improved stock management system with stock cards enables store managers to quickly, efficiently and reliably monitor their stock levels.

The introduction of a specific malaria prescription form has enabled the prescription of NMCP-funded, generic medication and reduced the likelihood of patients having to pay for treatment.

These changes are supported by enhanced reporting of usage of supplies and malaria rates within the hospital, resulting in just one stock out since the start of 2020. It means thousands of patients have been able to access the right drugs to deal with their fever.



We have tried to really minimise [stock outs] because of the intervention of SHIFT...

now we have tried to put some mechanisms in place"



**DR MOHAMMAD BAWOH,
HEAD OF PHARMACY AT
CONNAUGHT HOSPITAL**

IMPACT BEYOND CONNAUGHT HOSPITAL

As well as improvements to patient care at Connaught, the SHIFT project's close collaboration with the Ministry of Health and Sanitation (MoHS) has meant that other healthcare facilities have benefited from work of the last three and a half years.

For example, step-by-step guides and clinical resources for patients with severe malaria have been disseminated to government hospitals in Freetown and nationally, saving precious time and resources. Members of the SHIFT

team have also assisted with national malaria microscopy training in collaboration with the President's Malaria Initiative and Impact Malaria project.

The MoHS has also rolled out eLIMS nationally and the Ministry of Social Welfare will implement PALS in seven other healthcare facilities within the next year. This demonstrates SHIFT's wider impact on the quality of malaria diagnoses and treatment in Sierra Leone.

Future opportunities

The quality of malaria care has improved considerably at Connaught Hospital as a result of the SHIFT project. Nurses have a steady supply of RDT tests to diagnose patients; doctors have the confidence to differentiate between malaria and other diseases; and patients can be more confident about the diagnosis and treatment given to them at Connaught Hospital. Diagnosis and treatment have improved. Lives have been saved.

However, there is clearly a long way to go before malaria is eradicated in Sierra Leone. Prevention and treatment interventions, like the SHIFT project, are a crucial part of the National Malaria Control Programme's strategy. KGHP calls on funding organisations to continue to invest in work like this that

will lead to malaria-free zones in Africa within the next decade, and the eventual eradication of the disease by 2040.

Until then, malaria will continue to affect the lives of Sierra Leoneans and pose a threat to children and women, in particular. There is no time to waste.

THANKS AND ACKNOWLEDGEMENTS

We are grateful to all the dedicated staff at Connaught Hospital that have worked alongside King's Global Health Partnerships during the SHIFT project. We couldn't have done it without them.

In particular, we would like to thank the Ministry of Health and Sanitation (MoHS), National Malaria Control Programme (NMCP) and College of Medicine and Allied Health Sciences (COMAHS) for their commitment to working in partnership with us to strengthen the health system of Sierra Leone.

Finally, a note of thanks for the support provided by the team at Comic Relief and GSK during the coronavirus pandemic. Their flexibility and adaptability enabled the SHIFT team to work closely with the hospital at a time of great need.

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