

# First child vaccinated with typhoid conjugate vaccine in Africa

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Four-year-old Golden Kondowe with his dad, Christopher, after receiving his vaccine. Credit: MLW

History was made in the fight against typhoid fever today, as the first child in Africa was vaccinated in a clinical trial using a new generation of typhoid vaccines.

The clinical trial in Malawi is being led by Professor Melita Gordon of

the University of Liverpool and the Malawi-Liverpool-Wellcome Trust (MLW) Clinical Research Programme.

The goal of the trial is to assess the efficacy and cost-effectiveness of a new typhoid conjugate vaccine (TCV) in African children. In the densely-populated low-income urban townships of Blantyre, Malawi, 24,000 children aged nine months to 12 years will be enrolled as part of the [Typhoid Vaccine Acceleration Consortium \(TyVAC\)](#) study, funded by the Bill & Melinda Gates Foundation.

## **Substantial public health problem**

Typhoid fever, a bacterial bloodstream infection caused by *Salmonella Typhi*, causes fever, abdominal pain and, in severe cases, jaundice and bleeding or perforation of the bowel. There are an estimated 12 million cases and more than 128,000 deaths due to typhoid each year.

Four year-old Golden Kondowe is the first child to be vaccinated in the trial. His mother was out at work, and he was brought by his father Christopher, who said: "We decided we want our child to be protected against this serious disease - it will help him and other children in Malawi, too. We are humbled to have this chance."

The recent emergence of the global multidrug-resistant 'H58' strain has resulted in an increase in cases across Africa. A Malawi-based team of researchers from the University of Liverpool and the Liverpool School of Tropical Medicine identified new epidemics of typhoid peaking in young and school-age children. They see at first hand the impact typhoid has on hard-pressed health services and hospitals, and how the circumstances of poverty mitigate against good sanitation in these urban townships.

## Twenty years of work

"This clinical trial is the culmination of over 20 years of research focused on Salmonella disease here in Malawi," said Professor Melita Gordon. "Our teams of health workers, our local scientists, and our longstanding partners in the Malawi Ministry of Health and College of Medicine are tremendously excited to see the impact our research could finally have for [health](#). We're ready to go, and really feel like Africa is watching us, with hope."

TCVs are the first major advance in typhoid vaccines in a generation. They have been found to improve immunological response and memory with the promise of increasing [vaccine](#) efficacy from around 55 to over 90%. The newly prequalified World Health Organization (WHO) TCV, Typhar-TCV, manufactured and licensed by Bharat Biotech in Hyderabad, India, has been found to be safe, well-tolerated and effective for adults, children, and infants as young as six months. Following WHO prequalification, GAVI, the Vaccine Alliance has announced US\$85 million in funding for eligible countries to introduce TCVs in 2019 and 2020.

"Conjugate vaccines have been well-tolerated and highly effective against other diseases. The introduction of Typhar-TCV is an enormous practical step for control of typhoid," said Myron Levine, MD, DTPH, the Simon and Bessie Grollman Distinguished Professor of Medicine and Associate Dean for Global Health, Vaccinology and Infectious Diseases at the University of Maryland School of Medicine.

TyVAC, a partnership between the Center for Vaccine Development (CVD) at the University of Maryland School of Medicine, the Oxford Vaccine Group at the University of Oxford, and PATH, is conducting studies in Africa and Asia to accelerate the introduction of TCVs in high burden countries.

Kathleen Neuzil, MD, MPH, Director of the CVD and Institute for Global Health, and Chief Investigator of TyVAC, is leading a team of local and international partners to conduct impact studies of Typbar-TCV in Malawi, Nepal, and Bangladesh. TyVAC launched its first field trial in Nepal in November 2017 and Bangladesh is slated for mid-2018. TCVs have previously been trialled in Asia, but none have ever been used in Africa.

"We are excited and honored to be part of this historical moment - a first for Africa and a critical step in the fight to Take on Typhoid," said Dr. Neuzil. "Our partners in Malawi have worked tirelessly to prepare for this study that will collect essential data in endemic settings with a high typhoid burden."

Blantyre's District Health Officer, Dr Gift Kawalazira, said: "We are proud that Malawi is leading the way for this continent in [typhoid](#) vaccination."

Provided by University of Liverpool

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