TIMCI
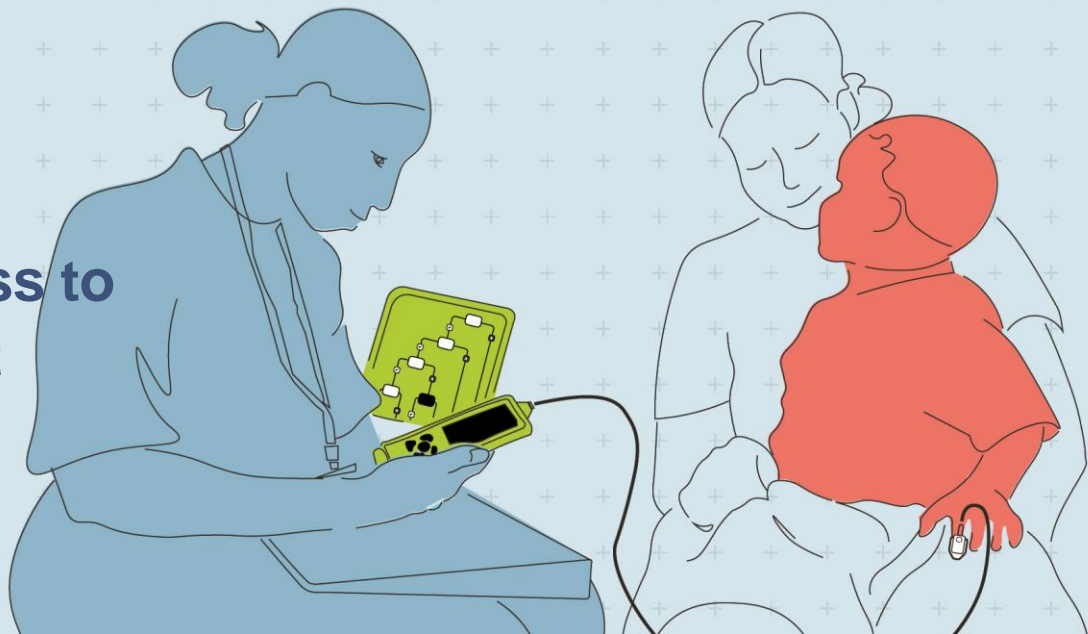## Tools for Integrated Management of Childhood Illness

Improving access to tools that detect severe illness

Empowering health workers to deliver more accurate screening, diagnoses, and care

In 2018, more than 5 million children under the age of five died from preventable and treatable diseases.

When sick children arrive at primary health care (PHC) facilities, it is critical that they are appropriately screened, diagnosed, and managed, and if needed, referred to urgent care without delay.

Clinical signs alone do not detect all indicators of severe illness in children. In order for health care workers to make the right diagnosis, they must be equipped with the right tools and training. The following tools are vital to ensure accurate identification of the leading causes of illness and death in children, facilitating rapid treatment and recovery:

+ **Pulse oximetry:** Tools for measuring vital signs, such as pulse oximeters (POs), are essential for alerting health care workers to signs of severe illness and need for urgent treatment. POs are noninvasive devices that measure pulse rate and oxygen saturation in the blood; they provide objective patient information that improves a health care worker's ability to identify children who are severely ill. Evidence shows that POs correctly identified hypoxemia in 20%–30% more children than relying on clinical signs alone.[i]

+ **CDSA:** Evidence and guidelines exist for case management but are not always followed by health care workers. Electronic clinical decision support algorithms (CDSAs) help organize patient information and symptoms through digital applications and connect that information to the relevant Integrated Management of Childhood Illness guidelines. CDSAs promote adherence to guidelines, strengthen their implementation, and help enhance health care workers' ability to accurately manage sick children.

When appropriate for the setting and operating correctly, these critical screening and decision support tools help frontline health care workers accurately identify children who require immediate attention, improving their chances of recovery. In addition, accurate screening and diagnosis can help avoid misuse of medicines and antibiotics, stemming the rise of antimicrobial resistance.

In many facilities across low- and middle-income countries, these critical tools are not broadly available, not functioning properly, not suited for newborns and children under one year old, or providers lack appropriate training and support.

In addition, there is often no comprehensive policy to help countries select the best devices for their environments, and little information is available on their health impact, cost-effectiveness, or suitability in PHC settings.

Tools for Integrated Management of Childhood Illness

PATH, with support from Unitaid, and in partnership with the Swiss Tropical and Public Health Institute, is implementing an initiative to improve accurate screening and diagnosis of illness in children under five in India (Uttar Pradesh), Kenya, Senegal, and Tanzania.

Goal: The Tools for Integrated Management of Childhood Illness (TIMCI) project aims to improve access to affordable and

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appropriate tools to help health care workers identify critically ill children and refer them for treatment without delay.

What is TIMCI set to achieve?

Between 2019 and 2024, TIMCI will work in collaboration with the governments of India, Kenya, Senegal, and Tanzania and global partners to:

+ **Introduce** POs and CDSAs in PHC facilities across the project countries, equipping health care workers with critical tools to detect severe illness in sick children.
+ **Generate** data on impact, cost-effectiveness, and best practices for utilization of these tools in PHC settings, helping to address evidence gaps and inform global guidance.
+ **Strengthen** the market for next generation pulse oximeters (POs with additional features to measure respiratory rate, temperature, and/or hemoglobin), including development of a target product profile, market intelligence, and field evaluations, making severe illness detection even more robust.
+ **Collaborate** with governments and financing partners to ensure sustainability and scale-up, connecting this work to the global progress toward stronger primary health care systems and universal health coverage targets.

In addition, in response to the COVID-19 pandemic, TIMCI provided technical assistance to ministries of health to execute response plans, including support to unlock relief funding and increase access to respiratory care systems to improve treatment of patients with COVID-19. This work helped strengthen health systems in TIMCI countries and improve capacity to meet the need for respiratory therapy in response to the pandemic and beyond.

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[i] World Health Organization (WHO). *Oxygen Therapy for Children Manual.* Geneva: WHO; 2016.

About the TIMCI partnership

PATH is a global organization that works to accelerate health equity by bringing together public institutions, businesses, social enterprises, and investors to solve the world's most pressing health challenges. With expertise in science, health, economics, technology, advocacy, and dozens of other specialties, PATH develops and scales solutions—including vaccines, drugs, devices, diagnostics, and innovative approaches to strengthening health systems worldwide.

The Swiss Tropical and Public Health Institute (Swiss TPH) is a world-leading institute in global health with a particular focus on low- and middle-income countries. Associated with the University of Basel, Swiss TPH delivers research, services, education, and training at the local, national, and international levels to improve health through better understanding of disease and health systems and subsequent programming. Its more than 800 staff (from more than 70 nations) work on infectious and noncommunicable diseases, environment, health systems, and health interventions. Their expertise spans from the bench to the field, clinical research to operational implementation.

Unitaid is an international organization that invests in innovations to prevent, diagnose and treat major global health problems more quickly, affordably and effectively. It works in HIV/AIDS, tuberculosis and malaria, as well as cross-cutting areas like hepatitis C, cervical cancer and is playing a lead role in addressing the COVID-19 pandemic. Unitaid is a hosted partnership of the World Health Organization.

To learn more about TIMCI, please contact TIMCI@path.org.

Hand-held pulse oximeter