What is COMEMR?

Overview

COMEMR is a comprehensive open-source digital healthcare platform offering advanced solutions for managing clinical and administrative workflows in resource-constrained settings. The platform is certified as a digital public good and Global Good for Health and we work with Ministries of Health to plan for long-term country-ownership.

Digitization is not enough. Data collection alone does not drive outcomes. At Medtronic LABS, we enable health systems to collect high-quality data and use data insights to make decisions that drive outcomes.

Rather than community health and facility level care operating in silos, COMEMR bi-directionally links community health work with facility services with closed-loop referrals and counter-referrals. Community Health Workers receive targeted community-based follow-up for longitudinal patient management based on clinical algorithms. At the facility level doctor visits, pharmacy and lab workflows are augmented clinical decision support. Ultimately, the community and primary care model enabled by COMEMR drives improved health outcomes for patients.

Healthcare delivered at the community level delivered via community health workers has been disconnected from care delivered within formal health system. With COMEMR-enabled care models, the patient's journey is seamless regardless of whether they visit a facility, receive an SMS, talk on the phone with a provider, or welcome a visit from a community health worker. Closing the loop between facilities and communities is one key to driving treatment plan adherence and health outcomes.

COMEMR Features

COMEMR focuses on data-driven, outcomes-focused care at both the community and primary care levels. The platform enables health systems to collect high quality data coordinated across levels of care and includes algorithm-driven disease pathways for various conditions, such as maternal health, child health, malaria, and non-communicable diseases such as hypertension and diabetes, ensuring compliance with WHO and country-specific protocols.

The platform enhances operational efficiency through administrative management tools (Admin portal) and dashboards to enable data-driven decision making. COMEMR is HL7 FHIR compliant and is architected to support the WHO SMART guidelines and seamless system interoperability with other health management information systems (HMIS) and health information exchanges (HIE).

Designed for diverse users, including Community Health Workers (CHWs), the system facilitates offline-first community workflows, longitudinal patient records, and clinical

decision support to enhance diagnostic accuracy and treatment efficiency. COMEMR provides tailored treatment plans based on a patient's risk-level, and these can be monitored remotely Community Health Workers (CHWs) and clinical staff, who both play a crucial role in our care delivery model.

What's New in COMEMR 2.0?

COMEMR 2.0 expands the clinical disease areas to include malaria, antenatal care (ANC), postnatal care (PNC), child health, and integrated community case management. In an upcoming release in March the platform will be enhanced to include tuberculosis (TB), HIV, and immunization workflows, fully supporting the entire spectrum of primary care conditions out of the box. The workflows have been built to ensure adherence to both WHO and national guidelines.

COMEMR 2.0 has offline workflows designed for community health workers (CHWs) to ensure seamless household registration and bi-directional linkages between communities and healthcare facilities. The platform's offline-first functionality ensures it operates efficiently in areas with limited or no internet connectivity, syncing data once the user regains connectivity.

At the facility level, COMEMR provides the ability for a clinician to perform a medical review, confirm diagnoses, prescribe medications, and order medications to comprehensively care for patients. COMEMR generates a customized treatment plan for the patient which includes a combination of community-based assessments (tagged as follow-up activities for the CHWs) and facility medical reviews (depending on the clinical workflow). Throughout the entire care pathway COMEMR generates a longitudinal patient record for the clinician to track progress over time and meaningfully measure clinical outcomes.

COMEMR also features administrative support features that include advanced dashboards, automated performance metrics, and autogenerated monthly reports to enhance operational efficiency by recording patient visits, diagnoses, treatments, and outcomes. COMEMR's data analytics capabilities offer real-time tracking, population health insights, and visualizations of key performance indicators (KPIs), generating actionable reports for patient care, program evaluation, and health surveillance.

Built with interoperability in mind, the platform adheres to FHIR standards, allowing for seamless integration with DHIS2 and other national health systems. COMEMR 2.0 is built on a modular architecture, allowing for flexibility and customization. COMEMR leverages open-source technologies and standards, ensuring interoperability and sustainability.

Impact

Medtronic LABS is expanding its focus beyond non-communicable diseases to strengthen primary healthcare systems with the introduction of COMEMR 2.0, built to address the full spectrum of primary care diseases. By continuing to integrate technology-driven solutions with community-based care models, LABS is building sustainable, patient-centered healthcare ecosystems that extend beyond mere disease management to improve health access and outcomes.

This transition places a strong emphasis on preventive care, early diagnosis, and continuous treatment through local partnerships, empowering primary care providers to offer comprehensive, long-term solutions. The focus on continuous care reassures our stakeholders about the quality of service we deliver.

By empowering COMEMR users across all levels of the health system and fostering bi-directional linkages between providers, LABS is building cohesive primary care networks that strengthen healthcare delivery and drive sustainable improvements in community health. The goal is to transform primary healthcare into a first-line defense against chronic diseases, thereby contributing to greater global health equity and enhancing community resilience.

To date, COMEMR-enabled programs have screened over one million patients with non-communicable diseases (NCDs), enrolled more than 270,000 individuals, and trained approximately 7,000 healthcare workers. These programs have had a measurable impact on the health of patients, improving the lives of hypertensive patients by 60% compared to the control group, and diabetic patients by 54% compared to the control group, on a global scale. Medtronic LABS has played a significant role in this success, demonstrating substantial reductions in clinical indicators such as blood pressure and blood glucose through multiple peer-reviewed studies conducted across Bangladesh and various sub-Saharan African countries.

Our outcomes data indicates the following:

- Our Journal of Hypertension publication reports a-15.2 mmHg reduction in systolic blood pressure in the uncontrolled subgroup.
- Our Journal of Clinical Hypertension reports-17.6 mmHg reduction in systolic blood pressure in the uncontrolled subgroup
- Real-world evidence studies involving 84,700 hypertension patients over six months across six countries (Bangladesh, Ghana, Kenya, Rwanda, Sierra Leone, Tanzania) show a reduction of 8.6 mmHg in systolic blood pressure, with control rates improving by 19 %. This also reflects a shift in the severity of hypertension toward less severe classifications, suggesting a potential reduction in the risk of complications. That is, Base Line Grade 3 shows a 6% reduction, while Base Line Grade 2 shows a 9% reduction.

- Real-world evidence studies of over 32,000 diabetic patients over six months, (which is 46% of patients with Diabetes who have completed at least 6 months in the program) also across six countries (Bangladesh, Ghana, Kenya, Rwanda, Sierra Leone, Tanzania), demonstrate improvements in both fasting and random blood glucose control. This positive change could lead to a reduced risk of diabetic complications.