How can we improve community-based pre-eclampsia screening?

Challenge: Current pre-eclampsia screening can miss women outside of clinic settings

Screening for pre-eclampsia, the second leading cause of maternal mortality in low- and middle-income countries, can reduce the global burden of maternal mortality. However, current antenatal screening efforts are largely clinic-based and use devices that are not always adaptable for use in non-clinic settings. When many pregnant women do not have access to facility-based screening, what can be done to increase screening coverage for pre-eclampsia in both clinic and community settings?

Accelovate is a five-year, United States Agency for International Development (USAID)-funded program charged to increase availability of and access to lifesaving technologies and commodities in low-resource settings. In keeping with its mission, Accelovate addressed the challenge of improving community-based screening options for pre-eclampsia.

Challenge Background: Developing appropriate blood pressure and proteinuria devices for all contexts

Pre-eclampsia is a hypertensive disorder of pregnancy that threatens both mothers and their babies. Left untreated, it can lead to organ damage, seizures, and also death.[1] An estimated 52,000[2] women succumb to pre-eclampsia/eclampsia (PE/E) worldwide each year, making it the second leading cause of maternal mortality in low- and middle-income countries. Reducing the occurrence and severity of complications associated with PE/E depends on early detection through screening, followed by prompt case management.

Screening for PE/E involves the dual assessment of blood pressure (BP) and levels of protein in the urine. Although there are many BP and proteinuria devices for assessing these levels, certain challenges limit the use and availability of these devices in many developing world settings. These challenges necessitate the development of new methods, devices, and techniques for PE/E screening that are appropriate for their context.

Where facility access is low, can new technologies increase community-based screening?

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To understand what device improvements were necessary for PE/E screening, Accelovate identified existing screening solutions and limitations, and captured this in a Solution Landscape for PE/E Screening.

Accelovate's Solution: Identifying the current Solution Landscape

Data collected from country Demographic and Health Surveys on access to antenatal care services suggest an unmet need for both BP and proteinuria screening among women who are in community and peripheral health care settings. Accordingly, to increase the proportion of pregnant women who can be reached for PE/E screening in these contexts, a need exists for screening device innovations that enable their use by community health workers and/or pregnant women themselves. For BP screening devices, these innovations can pertain to either manual auscultatory or automated oscillometric devices. For urine protein testing, innovations can pertain to several point-of-care, portable, or laboratory-based methods.

To understand offerings in both areas, Accelovate outlined the Solution Landscape, which also gathered information on current screening methods, commercially available solutions, current limitations, and required solution specifications.

Results Achieved

In 2012, Accelovate documented the screening landscape in the developing world in its Solution Landscape on PE/E. This document served as the template for an updated 2014 summary by Jhpiego's Innovations Department, which compared PE/E screening technologies on exhibit at the Saving Lives at Birth DevelopmentXChange. A combined document may be accessed at www.jhpiego.org/accelovate.

Accelovate continues to advocate for improved screening technologies to build the capacity of frontline and community health workers to strengthen early detection, surveillance, and compliance, as well as quick referrals for complications.

Next Steps: Building on Accelovate's achievements

Accelovate's **work with strategic partners** to increase the screening for PE/E in both clinic and community settings included but was not limited to: product developers and partner implementation programs such as the USAID-funded Maternal and Child Health Integrated Program (MCHIP), and now the Maternal and Child Survival Project (MCSP).

Women in community and peripheral health settings face an unmet need for both blood pressure and proteinuria screening.

Accelovate outlined the solution landscape and documented current screening methods, available solutions and limitations, and solution specifications.

[1] Magnesium Sulfate. UN Commission on Life-Saving Commodities: 2013. Available at http://www.lifesavingcommodities.org/about/lifesaving-commodities/magnesium-sulfate/. Accessed 25 November 2014.
[2] Jhpiego. 2014. *Business Case: Investing in Production of High-Quality Oxytocin for Low-Resource Settings.* Publication prepared by C. Schocken through the Reproductive Health Supplies Coalition. Available at http://reprolineplus.org/oxytocin-case. Accessed 2 January 2015.

Accelovate—a Partnership in Accelerated Global Health Innovation

Accelovate is a global program dedicated to increasing the availability and use of lifesaving innovations for low-resource settings. Led by Jhpiego, the Accelovate program began in 2011 as a five-year, United States Agency for International Development (USAID)-funded program under the Technologies for Health (T4H) grant.

Also available from Accelovate:


Postpartum Hemorrhage


Rehabilitative Medicine


Pre-eclampsia & Eclampsia


Male Circumcision

Design Challenges promote the development of innovative solutions where appropriate technology is lacking

Solution Landscapes assess what solutions exist

Value Propositions assess the benefits and drawbacks of an array of solutions for our context

Business Cases assess manufacturability and commercial potential

Market Readiness Assessments evaluate a selected technology/solution for market-level readiness factors

Briefs describe technology access and utilization challenges in a topical area and outline Accelovate's approach

Excel Tools present raw data that implementers may develop for programming and advocacy purposes

Literature Reviews review secondary data, usually to understand a bottleneck

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Accelovate invites innovators, advocates, funders, and programmers addressing the procurement and use of maternal health drugs and technologies in low-resource settings to share our tools and join our efforts to ensure appropriate offerings for PE/E screening. To discuss **partnership opportunities around new solutions**, contact us at accelovate@jhpiego.org