



Policy brief | MomCare VBHC

Could value-based healthcare improve maternal newborn and child health (MNCH) outcomes by creating a high-quality health system in low- and middle-income countries (LMICs)?

Access to quality healthcare in pregnancy, during and after childbirth could prevent most of the maternal deaths in low -and middle-income countries (LMICs)¹. Research has shown that just improving accessibility and adherence does not necessarily guarantee better outcomes, whereas a **shift from a volume to a quality-driven** health system focused on patient-centeredness, resilience, equity and efficiency is more likely to achieve better outcomes².

VBHC advocates that health systems should be focused on the full care cycle, on process and outputs, on comprehensive outcome measurements and on reimbursement systems that incentivize providers to maximize value³. In high-income countries, the first results of value-based health care (VBHC) implementations seem to have a positive impact in the process of transforming health systems³⁻⁷.

However, implementing VBHC raises several methodological and operational challenges: (i) the VBHC framework does not provide an implementation methodology, (ii) patient-reported outcome measurements (PROMs) are sensitive to cultural variation and context-specific conditions, (iii) VBHC demands accountability over the full care cycle, which is difficult to guarantee, (iv) successful implementation requires clinical managerial and technological support to enable data collection, analysis and transparency.

The PharmAccess innovative MomCare approach to MNCH, with its digital care bundle addresses the above mentioned challenges, providing a prime example of how VBHC can be adapted in LMICs.

MomCare provides a digital care bundle for MNCH quality care delivered at a predetermined cost, pursuing the objective of improving MNCH care outcomes through access to high-quality care while informing both receivers and providers of care in semi-real time. Initially introduced in November 2017 in the urban areas in Nairobi, it was then extended to reach pregnant mothers and care providers in West Kenya from May 2019. Over the period of this study (2017-2020) 18

MomCare clinics supported 8821 pregnant mothers that were onboarded across 7 different cohorts (a new cohort starts every quarter when a new group of mothers is enrolled). Learnings of previous cohorts were used to adjust activities to improve deliverables and outcomes for later cohorts. Long term goals of MomCare are to ensure that mothers and babies are healthy, the healthcare providers are financially sustainable and that the outcomes and costs throughout the care journey are made transparent by use of a digital platform to all stakeholders throughout the care journey.

Since no prior implementation models were available, MomCare implemented multiple strategies sequentially or simultaneously over time, following a three-stage process:

First step is the **theory of change** (ToC) development process, wherein the desired long-term outcomes are sub-divided into smaller intermediate ones⁹, in a continuous design, monitor and evaluate cycle; akin to the agile methodology. An advantage of this approach is that it allows to create regular feedback cycles to continuously learn and improve during the implementation¹⁰.

Secondly, MomCare **adapted the VBHC framework** to reflect the differences in health systems and to account for the cultural, financial and social nuances that affect the efficacy of interventions on the health system. Therefore, the components of VBHC like outcome measurements, bundled payments and the digital platform was adapted and elaborated upon for the Kenyan MNCH delivery context. Finally, iterative **feedback cycles** - short and long duration cycles designed to continuously learn and improve implementation-were set in place. The results of the outcomes and outputs were fed back to improve the deployment of various aspects of the framework. These "*learnt improvements*" were implemented every time a new group of mothers (a cohort) was onboarded in the program. A total of seven cohorts, enrolled in the period from 2017 to 2020, were included in this study.

Additionally, several **challenges** were identified during rollout that contributed to further refinement of MomCare, like improving the quality of the data registry by enforcing consistency in data captured by providers. Shifting financial risk from payer to provider by introducing full bundled payments was considered a bridge too far for providers who are usually paid on a fee-for-service basis or via capitation. Alongside implementation the need to validate patient-reported outcome measures became increasingly apparent.

Progress was monitored using various indicators. First of all, the number of mothers reached during this study period increased by a factor of ten. Second, the patient journey scores that measure the "goodness of a mother's journey", and a variety of other outcomes measured during the study showed a positive effect of the VBHC framework. Third, transaction costs went down to one-fourth of the original price while increasing the number of enrollees in each cohort.

Key enablers for successfully deploying a VBHC model in LMIC include the ability of the implementation team to adapt the framework to the local culture and socioeconomics, the willingness of the health facilities to course-correct based on data-driven insights, the development of the IT infrastructure in place to enable digital communication and data collection, the proliferation or the possibility for the proliferation mobile phones in the community, the availability of mobile money, stakeholders buy in, digital skills, trusted third parties to connect payers to providers and create and high-trust environment, scalability of the program is key.

The implementation of the MomCare program as a VBHC model within the LMIC context brought clarity to the mission by (i) organizing care into integrated practice units, (ii) measuring outcomes and cost for every patient, (iii) reimbursing costs through bundled payment for the full care cycle, (iv) integrating care across different facilities, (v) replicating services/interventions with the best outcomes across geography, and (vi) creating an IT platform that maintains records and thus transparency across the workflow. MomCare portrays the VBHC implementation as a low cost and easy to adopt solution, leveraging the high mobile penetration and existing mobile money platforms in LMIC.

The present findings show that implementing the VBHC framework in LMICs is possible albeit with some adaptation to the local context. Initial results are positive, but further research will provide clarity on how this implementation model balances costs and quality of care.

More details on the paper submitted for peer review at <https://assets.researchsquare.com/files/rs-1071399/v1/75777640-09f8-4e1e-a26a-dc0fba5dcfb1.pdf?c=1637689621>

References

1. Trends in maternal mortality: 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: World Health Organization; 2019.
2. Kruk ME, Gage AD, Arsenault C, Jordan K, Leslie HH, Roder-DeWan S, et al. High-quality health systems in the Sustainable Development Goals era: time for a revolution. *Lancet Glob Health*, 2018;6(11);e1196-e252.
3. Van Deen WK, Spiro A, Burak Ozbay A, Skup M, Centeno A, Duran NE, et al. The impact of value-based healthcare for inflammatory bowel diseases on healthcare utilization: a pilot study. *Eur J Gastroenterol Hepatol* 2017;29(3);331-7.
4. Van Egdom LSE, Lagendijk M, van der Kemp MH, van Dam JH, Mureau MAM, Hazelzet JA, et al. Implementation of value based breast cancer care. *Eur J Surg Oncol* 2019;45(7);116370.
5. Nilsson K, Bååthe F, Andersson AE, Wikström E, Sandoff M. Experiences from implementing value-based healthcare at a Swedish University Hospital: a longitudinal interview study. *BMC Health Serv Res* 2017;17(1);1-12.
6. Gabriel L, Casey J, Gee M, Palmer C, Sinha J, Moxham J, et al. Value-based healthcare analysis of joint replacement surgery for patients with primary hip osteoarthritis. *BMJ Open Qual* 2019;8(2);e000549.
7. Goretti G, Marinari GM, Vanni E, Ferrari C. Value-based healthcare and enhanced recovery after surgery implementation in a high-volume bariatric center in Italy. *Obes Surg* 2020;30(7);2519-27.
8. Porter ME. What is value in health care. *N Engl J Med* 2010;363(26);2477-81.
9. Breuer E, Lee L, De Silva M, Lund C. Using theory of change to design and evaluate public health interventions: a systematic review. *Implement Sci* 2016;11(1);1-17.
10. Vogel I. Review of the use of "Theory of Change" in international development. Department for International Development; 2012.



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