

## Enhancing Health Literacy through a *Pregnancy Danger Signs* Visual Add-On for Malawi's Women's Health Passport

## Background

During antenatal clinic (ANC) visits midwives educate women about the internationally recognised signs of severe obstetric complications, known as ***pregnancy danger signs***. However, low literacy rates and limited access to technology, including phones, mean many women rely solely on their memory to recall this crucial information. Studies show that only 33% of women can recall at least two danger signs after their ANC appointment, and just 4% remember four or more<sup>3</sup>.

FORM 12

Ministry of Health

**MALAWI**

Version (Sept 2014)

**HEALTH PASSPORT  
WOMAN HEALTH PROFILE**

NAME: \_\_\_\_\_  
Dina / Zina

DATE OF BIRTH: \_\_\_\_\_  
Tilika Lelololwira 24/06/2014 day / month / year

VILLAGE: \_\_\_\_\_  
Muti / Kulapa

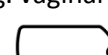
Please bring this book each time you come to use the nurse or doctor  
Chenje bwambwani kutikula pamwamba ndi dikulu kugaya mwambwani  
Chenje paphika kutikula ndi pamwamba ndi dikulu kugaya mwambwani

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In Malawi, individuals are responsible for carrying their own health records, as well as those of their children, in the form of health passports (see image above). Our proposal suggests integrating visual additions into these health passports to depict key pregnancy danger signs, enhancing maternal health education.

- **Culturally relevant illustrations or icons:** Depict urgent *pregnancy danger signs* (e.g. vaginal bleeding, severe headaches).
- **Waterproof stickers & health passport covers:** Made from eco-friendly recycled materials like flexible plastics, these durable stickers and covers will feature the culturally relevant *pregnancy danger signs* illustrations/icons. Stickers can be placed within the existing empty pages or on health passport cover.
- **Co-design:** Local women, healthcare providers and artists will collaborate to create culturally relevant, easy-to-understand illustrations or icons and other design elements that reflect the community's needs.



## Feasibility

This innovation is highly feasible and scalable. It extends Malawi's existing healthcare system and resources and co-opts a universal health document as a universal health promotion tool. Using pre-existing distribution channels will remove barriers that typically inhibit health innovations.

This innovation also aligns with the Ministry of Health’s goals for ongoing and current health passport improvement efforts led by Malawi Liverpool Wellcome Trust and the Malawi Ministry of Health. Partnerships with the Safe Motherhood Technical Working Group, Reproductive Health Directorate, USAID, NTIR, Kamuzu University of Health Sciences, and the University of Liverpool will ensure seamless integration into existing health strategies.

*‘What we are lacking are visuals to reflect this (pregnancy danger signs). And I think this could be a great area for us to work together’*

**Malawi Liverpool Wellcome Trust**  
(comment provided October 2, 2024)

Empowering mothers with knowledge and awareness of *pregnancy danger signs* can significantly improve health outcomes:

- **Reduced Mortality:** Targeting the 38.9% of mothers who don’t seek timely care could increase care-seeking by 80%. With 30% of these cases being treatable, this could save 704–2,009 infants annually, based on 2022 neonatal mortality data.<sup>5</sup>
- **Scalable Impact:** This innovation is easily adaptable and could be expanded to include danger signs at birth, danger signs in the first 28 days of life, and other health topics including family planning, and HIV, and even scaled to neighbouring countries with similar health passports. Future iterations may include barcodes and QR codes for more educational content, or to link digital records held in clinics or hospitals, supporting Malawi’s shift toward digital healthcare solutions.

The innovation cost-effective and sustainable, with stickers priced at A\$0.20–\$0.50 and health passport wallets at \$1.10–\$1.50. Our prospective social enterprise partners, Waste Advisors Malawi, suggested producing the visual add-ons *‘from abundant, single-use UHT milk sachets, involving young’*.

Funding sources include donor agencies, NGOs, or local business partnerships. It can sustain itself by being sold as part of routine healthcare costs, covering ongoing production and distribution.

**Table summarising the budget allocation (\$50,000) to support the innovation:**

Phase	Budget	Description
Project Management/Staffing	\$8,000	Project coordinator salary (local NGO employee or outsourced consultant) to oversee timelines, coordinate design, production, rollout, and evaluate Administrative and local support staff
Design Phase (Co-Design and Prototyping)	\$10,000	Conduct community co-design sessions with local mothers and healthcare providers and designers, with remuneration for time Create prototypes of health passport wallets or stickers featuring <i>pregnancy danger signs</i>
Production Phase (Manufacturing)	\$12,000	Manufacture 2000 eco-friendly visual add-ons for pilot Test durability and waterproof features
Distribution and Training	\$7,000	Roll out (transport and logistics) visual add-ons in Blantyre and Machinga via ANC clinics. Healthcare provider training on integrating visual add-ons into consultations. Costs for training materials to support messaging
Monitoring and Evaluation	\$8,000	Afield visits, data collection and analysis. Community feedback session. Assess the impact on maternal health literacy and care-seeking behaviours Collect feedback from mothers and healthcare workers for refinements
Other costs	\$5,000	Miscellaneous costs e.g. unforeseen expenses related to travel, communication, or unexpected project needs.

This innovative proposal, *Picture of Health*, leverages the power of education and simple, affordable, sustainable and impactful design to reduce maternal deaths in Malawi. Our addition to the existing health passport system can empower Malawian women with important health information and support Malawi's goals of improving both environmental sustainability and maternal and neonatal health outcomes.

**Team capabilities** include clinical expertise in midwifery and paediatric nursing with strong research, data analysis, and extensive project management and health promotion experience. Also, extensive experience in community engagement, stakeholder collaboration, and securing funding from government and philanthropic sources

## References

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3. Assaf S. Counseling and Knowledge of Danger Signs of Pregnancy Complications in Haiti, Malawi, and Senegal. *Matern Child Health J* 2018; **22**(11): 1659-67.
4. Mwaniki MK, Baya EJ, Mwangi-Powell F, Sidebotham P. 'Tweaking' the model for understanding and preventing maternal and neonatal morbidity and mortality in Low Income Countries: "inserting new ideas into a timeless wine skin". *BMC Pregnancy Childbirth* 2016; **16**: 14.
5. UNICEF. Neonatal Mortality. 2024. [https://data.unicef.org/wp-content/uploads/2019/09/Neonatal\\_Deaths\\_2023.xlsx](https://data.unicef.org/wp-content/uploads/2019/09/Neonatal_Deaths_2023.xlsx) (accessed 9 October, 2024).