Virtual Mentor: A virtual assistant for health care workers

Anthony Wanyoro, MD

Conflict of interest: None

*PPH Community of Practice Annual Meeting*
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Our team

Anthony Wanyoro is an OBGYN at Kenyatta University and co-founder of Virtual Mentor Health

Tiffany Lundeen is a certified nurse-midwife who conceived of the Virtual Mentor concept, and a co-founder

Dilys Walker is an OBGYN at UCSF and directs the Global Maternal Newborn Child Health Research Group and a co-founder

Hannah Park is deputy director of the MNCH Research Group at UCSF and a co-founder

KENYATTA UNIVERSITY
School of Medicine

UCSF
Institute for Global Health Sciences
Who needs a Virtual Mentor?

- In resource-constrained settings, nurses and midwives are often alone
- A 2017 report by the government of Kenya found that in 91% of maternal deaths, “a different management of care could have made a difference to the outcome.”*
- Resources requiring manual manipulation, such as printed wall charts, paper checklists, and online courses and mobile apps, are of little use to workers who need both hands to respond to an obstetric emergency.


Health workers need decision support tools to implement evidence- and situation-based treatment protocols, especially during emergencies when every second counts.
Our objective and output

• Virtual Mentor (VM) aims to help providers effectively manage PPH every time.

• PPH management guidelines programmed into a dynamic branching algorithm as a mobile app.

• VM engages providers in guided spoken conversation and can function either online or offline.
Virtual Mentor is a hands-free, computer voice that breaks the paralysis of indecision, providing context-specific guidance.
VIRTUAL MENTOR

A video demonstrating how the VM works is available at:

https://vmh.c1dv.com/how-it-works/
16 midwives/nurses pilot tested VM for PPH in Kenya

- February 2020, tested first prototype in PPH simulation
- Assessed PPH knowledge and confidence:
  - Pre- and post- interaction with VM during simulated PPH
- Assessed user experience
- June 2020, tested next generation improved VM prototype with same set of providers
VM increased PPH knowledge after just one use

- 20-40 iu oxytocin is treatment dose for PPH
- 1 g TXA correct dose for PPH
- 800-1000 mcg correct dose misoprostol for PPH
- Max dose oxytocin 24 hrs = 80 iu
- 10-15 min correct infusion time for 1 g TXA
- 2-3 times blood volume lost is correct IV volume replacement to infuse over 24 hours
- Sublingual preferred route for misoprostol to treat PPH

N=16 nurses and midwives, Kenya
VM increased PPH confidence after just one use

“On a scale of 0-10, with 10 being most confident, how confident are you that you can do the following?”

- I can correctly administer oxytocin to treat PPH
- I can correctly administer misoprostol to treat PPH
- I can correctly administer TXA to treat PPH
- I can correctly administer IV volume replacement to a woman with PPH
- I can tell that a woman with PPH is in hypovolemic shock
- I am capable to effectively manage PPH

N=16 nurses and midwives, Kenya

February 2020
All 16 providers who tested VM rated its potential usability in clinical care

“How helpful would Virtual Mentor be to you in real patient care?”

On a scale of 0 to 10, with 10 being most helpful in clinical care

N = 16, June 2020
Feedback from nurses and midwives

“In emergencies that is what you need—you need somebody to talk to you and somebody to listen to you. It’s like you’re talking to someone.”
Next steps for Virtual Mentor

- **Continued testing** in simulation training for PPH-Madagascar
- **Exploring opportunities** to use VM in existing **in-service training programs**
- **Fund raising** for clinical care pilot to assess feasibility and usability in clinical care followed by an effectiveness study
- **Build VM** for **other clinical conditions**—preeclampsia, shoulder dystocia, etc.
Questions?

wanyoro.anthony@ku.ac.ke