

F'AI'R Hackathon

**Recommendation  
System to Support  
Obstetrics Training**

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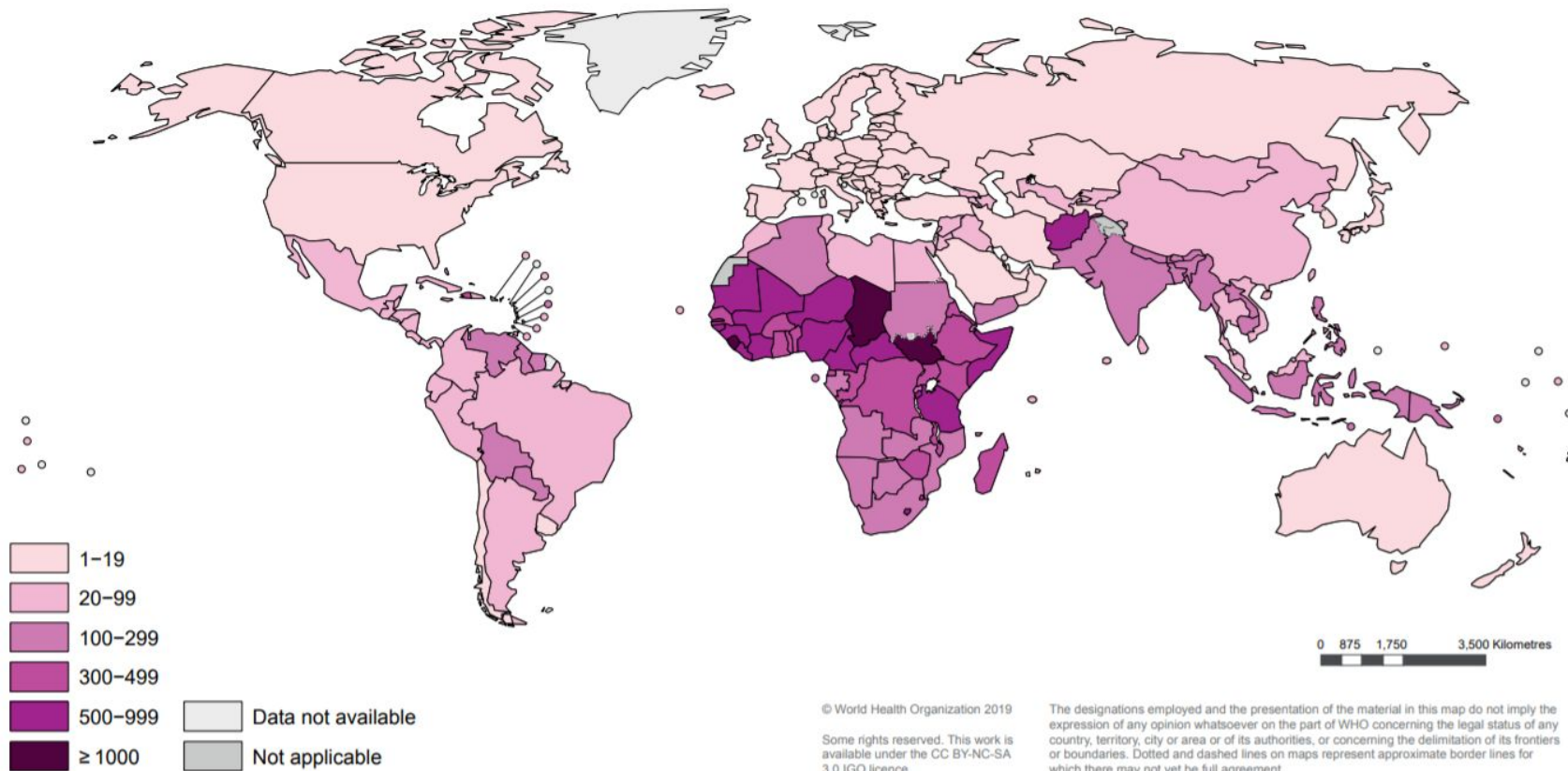
# Agenda

- ▶ Problem Description
- ▶ Proposed Solution
  - ▷ Web Application
- ▶ Future development

Every 11 seconds, a pregnant woman or newborn dies somewhere around the world.



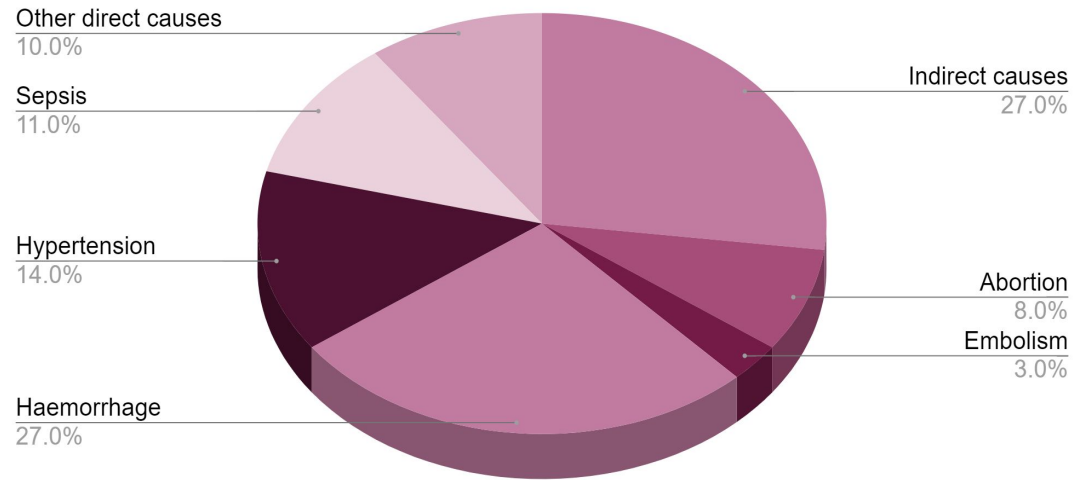
**Figure 4.1. Maternal mortality ratio (MMR, maternal deaths per 100 000 live births), 2017**



# Problem Description

- ▶ Most causes of maternal mortality are identifiable by trained staff and preventable.

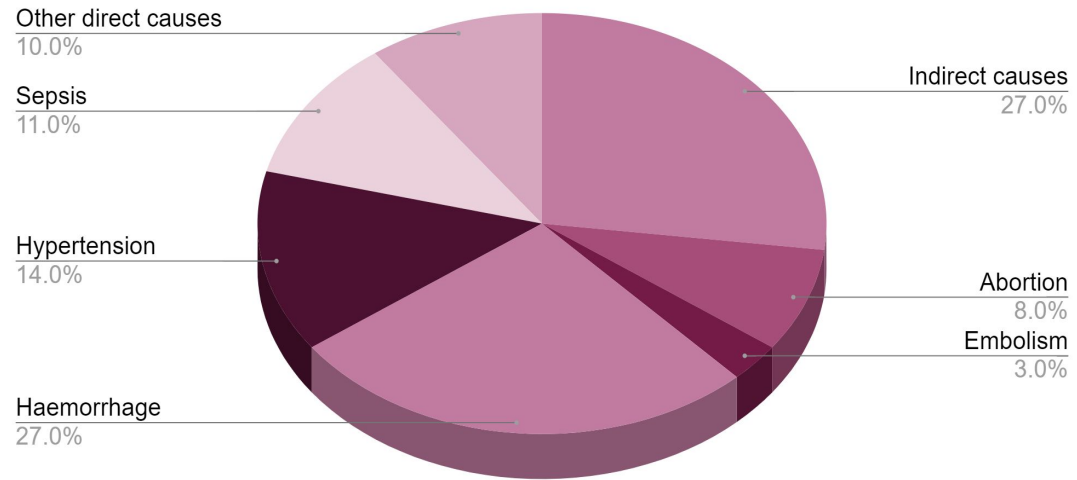
**Causes of maternal mortality<sup>[3]</sup>**



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- ▶ Many expectant mothers stay at home due to the complications of driving far to hospitals.

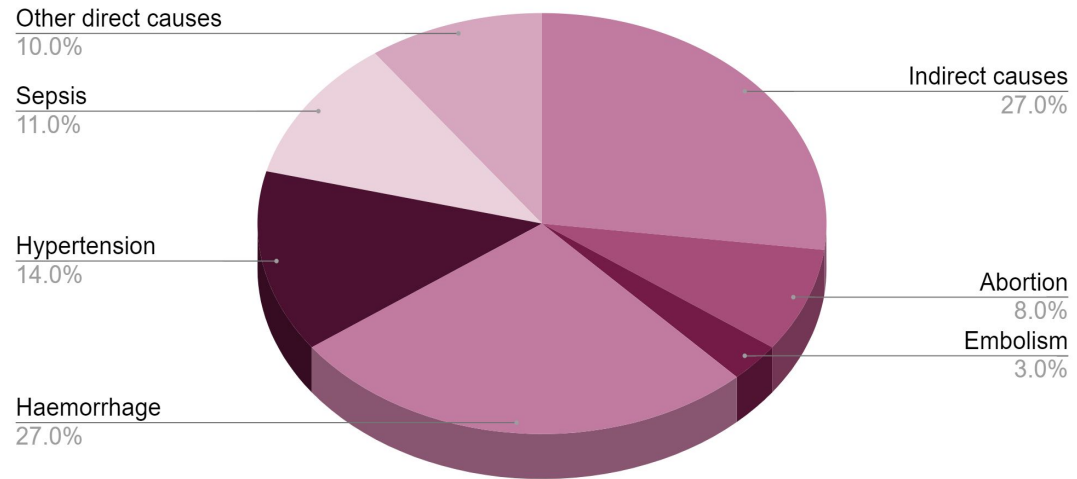
**Causes of maternal mortality<sup>[3]</sup>**



# Problem Description

- ▶ Most causes of maternal mortality are identifiable by trained staff and preventable.
- ▶ Many expectant mothers stay at home due to the complications of driving far to hospitals.
- ▶ This indicates an urgent need for **better obstetric training at the community level.**

**Causes of maternal mortality<sup>[3]</sup>**



# Proposed Solution: Overview



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- ▶ **Target Group**

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- ▶ **Solution**

A web application that facilitates access to obstetric training resources at the community level

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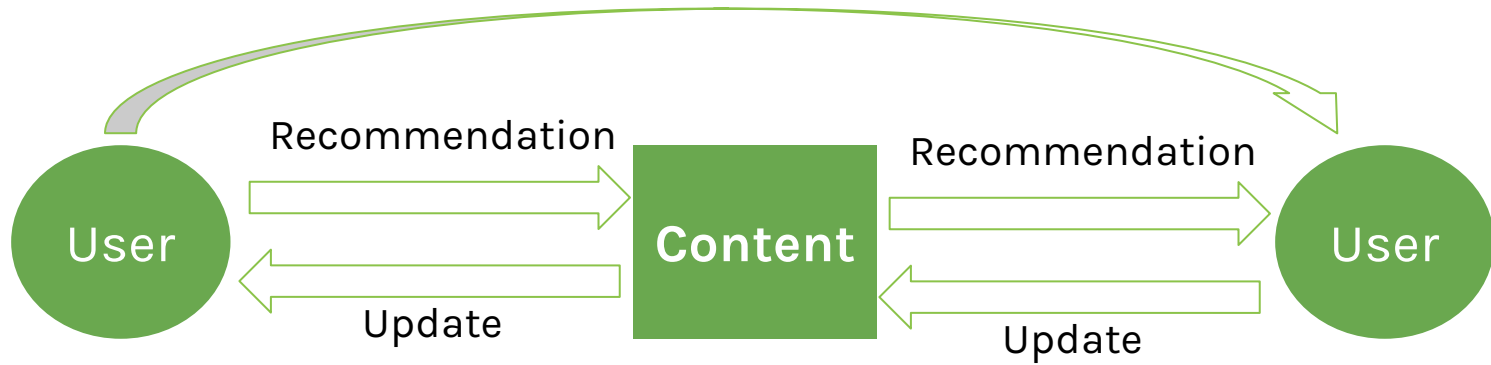
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- ▶ Personalized Content Recommendation
- ▶ Automated Update of User Profile

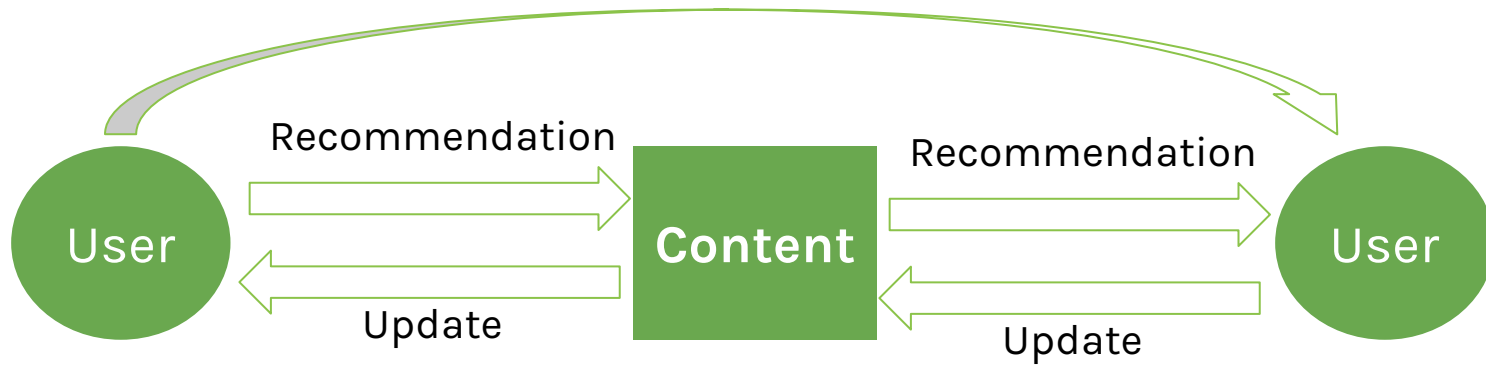
# Web Application: Functionality

- ▶ Skills Assessment → User profile
- ▶ Personalized Content Recommendation
- ▶ Automated Update of User Profile
- ▶ Learning Buddy

# **Proposed Solution: Video Demo**

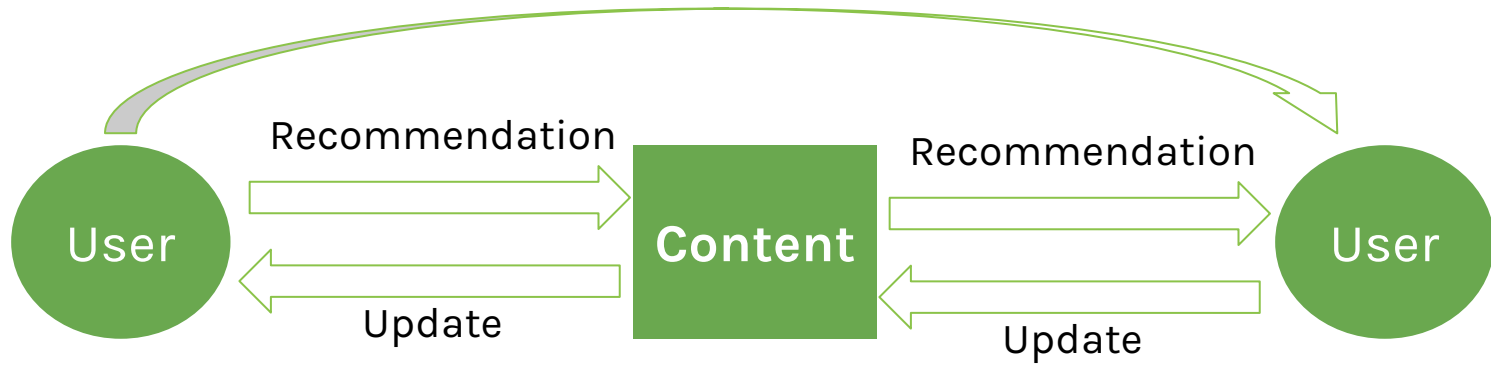
## Proposed Solution: Implementation





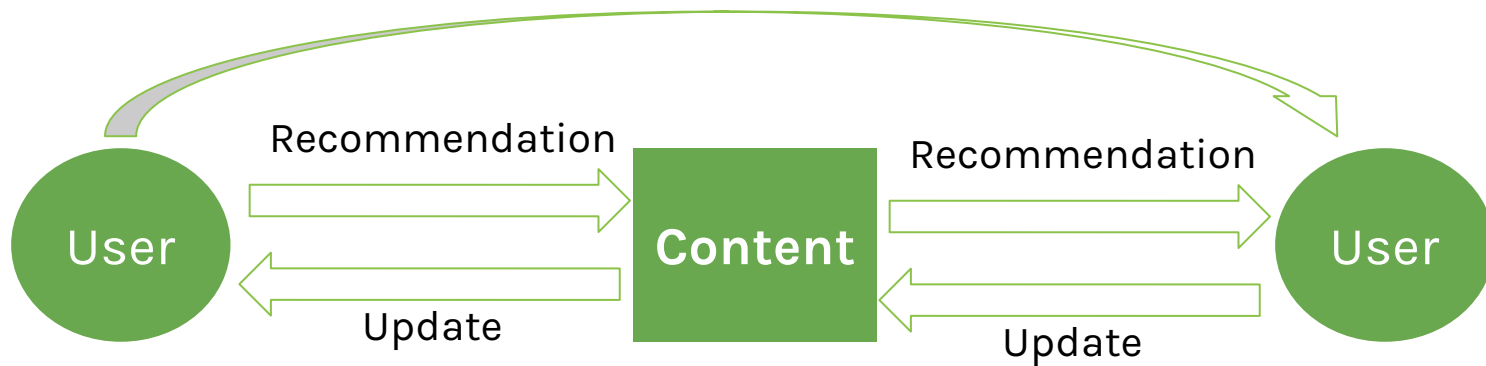
- ▶ Database of obstetric training resources
- ▶ Clustered according to predefined skills



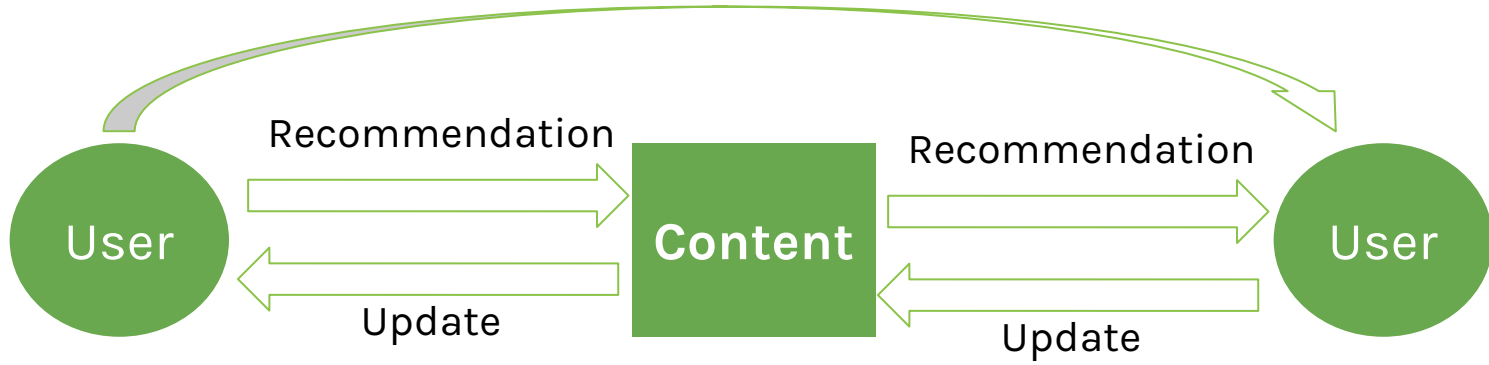


- ▶ User model based on proficiency assessment
- ▶ Update user model based on consumed content

- ▶ Select the lowest skills of a user
- ▶ Recommend content for improving the selected skills



- Recommend learning buddy and enable shared folder



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  - ▷ Reflection prompts
  - ▷ Article comments for buddy
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  - ▷ Summarize learned concepts
- ▶ Certificate of learning content

**Thank you!**

**Questions/Comments?**

# References

- [1] <https://obgynkey.com/category/obstetrics/>
- [2] Izugbara, Chimaraoke O., Eleanor Krassen Covan, and Elizabeth Fugate-Whitlock. *Women's Health in Africa: Issues, Challenges and Opportunities*. Routledge, 2017.
- [3] World Health Organization. "Trends in maternal mortality 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division." (2019).
- [4] Hart, Leah, et al. "Strengthening nursing education and practice in Ethiopia: A cross sectional task analysis study." *International journal of Africa nursing sciences* 9 (2018): 136-140.
- [5] <https://www.internationalmidwives.org/assets/files/general-files/2019/1/poster-icm-competencies-en-screens--final-oct-2019.pdf>

# Web application: User model

12 skills

- ▶ Obstetrics Emergency
- ▶ Using specialized tools
- ▶ Providing antenatal care
- ▶ Treating Postnatal complications
- ▶ Advising new mothers about breastfeeding
- ▶ Risk Assessment
- ▶ Appropriate communication
- ▶ Handling fetal risks
- ▶ Administering medication
- ▶ Treating retained placenta
- ▶ Research knowledge
- ▶ Psychological distress management