

# ASSESSMENT TOOL FOR EQUITABLE USE OF TECH TO ADDRESS MATERNAL HEALTH DISPARITIES

AUGUST 2022

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# Our team



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# Points for discussion:

Topics and highlights

- Background
- Problem Statement
- Research Questions
- Study Design
- Policy Recommendations



# Imagine if...

Health care institutions could assess their tech bias?



AUGUST 2022



SEPTEMBER  
2020

**810**

Global deaths per day

**60,000+**

Severe Maternal Morbidity cases per year



## **Maternal health disparities**

Black women are at greatest risk and three times more likely to die from a pregnancy-related cause than White women

# Where are we now?

- Disproportionate access
- The blindspot
- The power dynamic





# Research Questions

What current technology is available for maternal health services during a public health emergency or humanitarian crisis?

What components support more equitable use of technology for maternal health services during a public health emergency or humanitarian crisis?



CCAN	.012	.148	-.50	1.62	1.98
DRGS	36.1	.536	-.64	1.03	1.6
HTLV	45.8	.142	.002	.053	1.2
WRK	24.1	.390	.022	1.23	3.66
SHT	12.3	.354	.036	.065	3.1
FCKT	.018	3.3	-.258	3.32	2.65

14009

# Study Design



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## Methods

Systematic literature review and an in-depth interview with an expert and front-line provider using technology for maternal health services..

## Data collection

Findings and themes from literature review, and in-depth interview informed the development of a checklist.

## Web application

Checklist was converted into an index and survey that was launched as a web-based application.



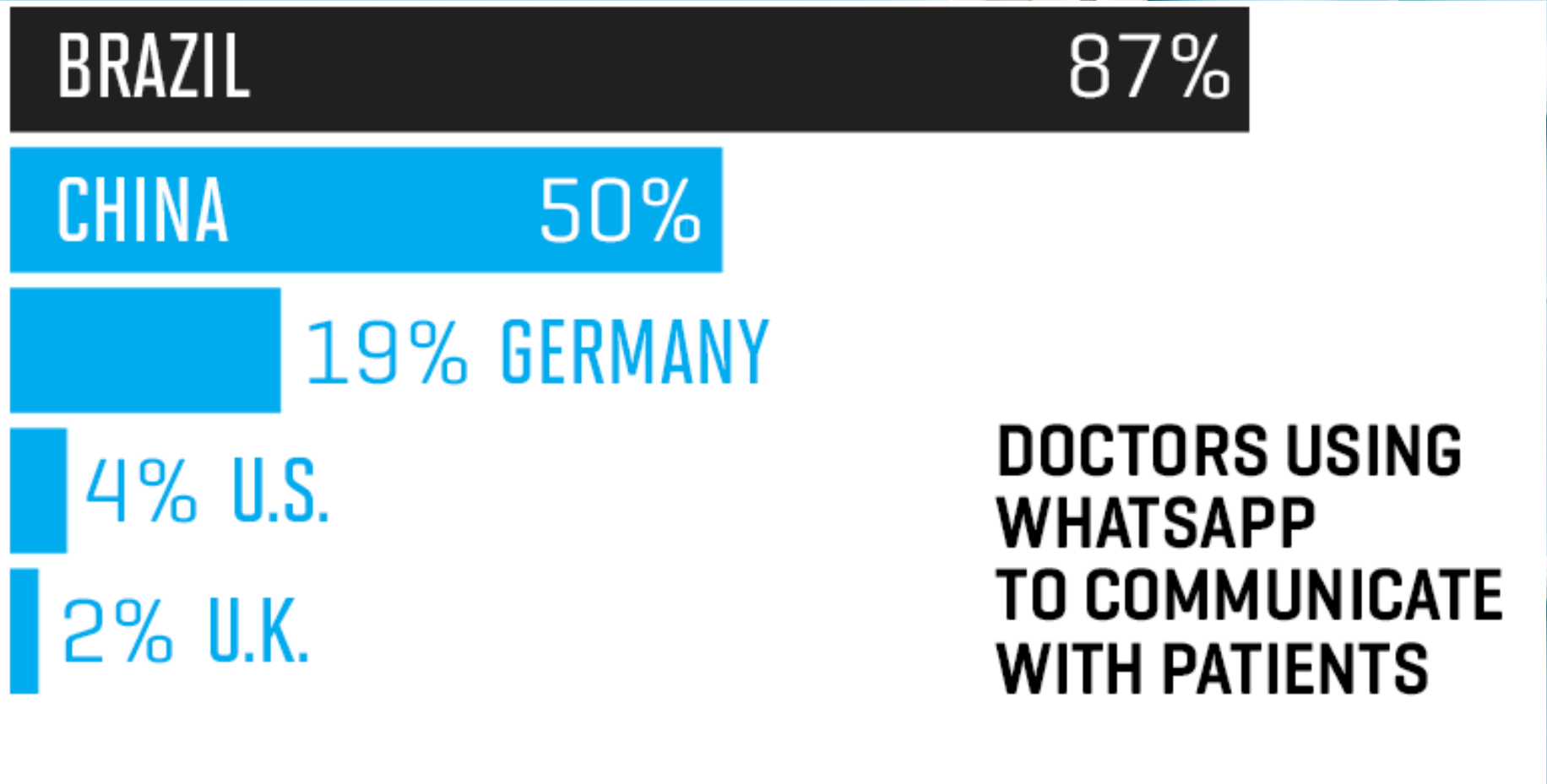
Baganizi Erick, MD, MPH

Director of Maternal, Newborn, Child and Adolescent Health at Partners In Health / Inshuti Mu Buzima Provides technical leadership across maternal, newborn, child and adolescent health activities and works in close collaboration with the central Ministry of Health (MOH) and Rwanda Biomedical Center (RBC)

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# Study findings

Benefits of tech



## Access to care

Technology played a critical role in streamlining care continuity particularly for patients in quarantine due to COVID-19 (e.g., Rapid testing)



## Information distribution

Ability to circulate health information to patients faster with a huge impact especially in low and middle income countries as compared to the developed world

# Study findings

## Barriers to implementation



### Data sharing

Patient data sharing remains a challenge which may be influenced by patient literacy challenges as well as differing knowledge, attitudes and cultural practices of community members



### Access to tech

Lack of access to technology is a persistent burden, especially for rural populations and the lack of adaptability of some technologies to women and children presents difficulties for patients and providers

# Study findings

Barriers to implementation

Limited financial  
resources

Provider  
workload  
challenges

Information  
technology  
expertise

Internet  
connectivity

Data security

# Why establish a readiness index?



intervention



evaluation



administration



# ***READINESS INDEX***



## ***Systems & Operations***

Does the technology require any training/education prior to use?

Does the hospital directly manage the security of the data it collects from patients?

Do you conduct coding audits for racial or gender-bias?

Is the technology accessible in the local language of your target population?

Is the technology accessible for users with literacy challenges?

Is the technology partially functional without internet connectivity?

## ***Maintenance***

Does the application automate incident-tracking and reporting?

Do you conduct coding audits for racial or gender-bias?

Can patients report accessibility challenges through the system?

Does the application undergo routine maintenance and updating?

Do you conduct an annual security assessment?

## ***Patient Treatment and Care Continuity***

Is the technology inclusive to all patients (race/ethnicity, gender)?

Is the application acceptable by community leadership?

Does the technology facilitate patient access to their health data?

Are language interpreters available for patients both online and offline?

Is your health facility equipped with gender and age-appropriate equipment for maternal health screenings?

Do you offer follow-up consultations for maternal health services?

Are follow-up consultations for maternal health services subsidized or free for low-income patients?

## ***Prevention***

If applicable, do you provide technological equipment that patients can borrow?

Do you provide alternatives to technological equipment for patients with limited access to reliable electricity?

Does your hospital/facility offer patient transportation? (Public and/or Private)

Do you subsidize the cost of your technology-based health services for low-income patients?





## CommCare

- [CommCare] is a mobile application and data collection platform.
- Used across 80 countries for the management of cases with offline capabilities and data visualization.
- Easy use for all parties involved





TechReadinessIndex

Followup Form

Saved App Summary Manage Case

UPDATES AVAILABLE TO PUBLISH

+ Add Question

- Case List
- Demographics
- Followup Form
- Add...

- Does the technology require any training/education prior to use?
  - Add Choice
  - Yes
  - No
- If training required, who administers the training?
  - Add Choice
  - Internal staff
  - External consultant
- If yes, how long is the training?
  - Add Choice
  - 8 weeks or less
  - More than eight weeks
- Does the hospital directly manage the security of the data it collects from patients?
  - Add Choice
  - Yes
  - No
- Does the technology or its operating system allow patients or clients to use it independently?
  - Add Choice
  - Yes

App Properties

Search...  
case  
case\_name

Does the technology require any training/education prior to use?

Multiple Choice [Delete]

Display Text: Does the technology require any training/education prior to use?

Question ID: does\_the\_technology\_require\_any\_trainingeducation,

Required:

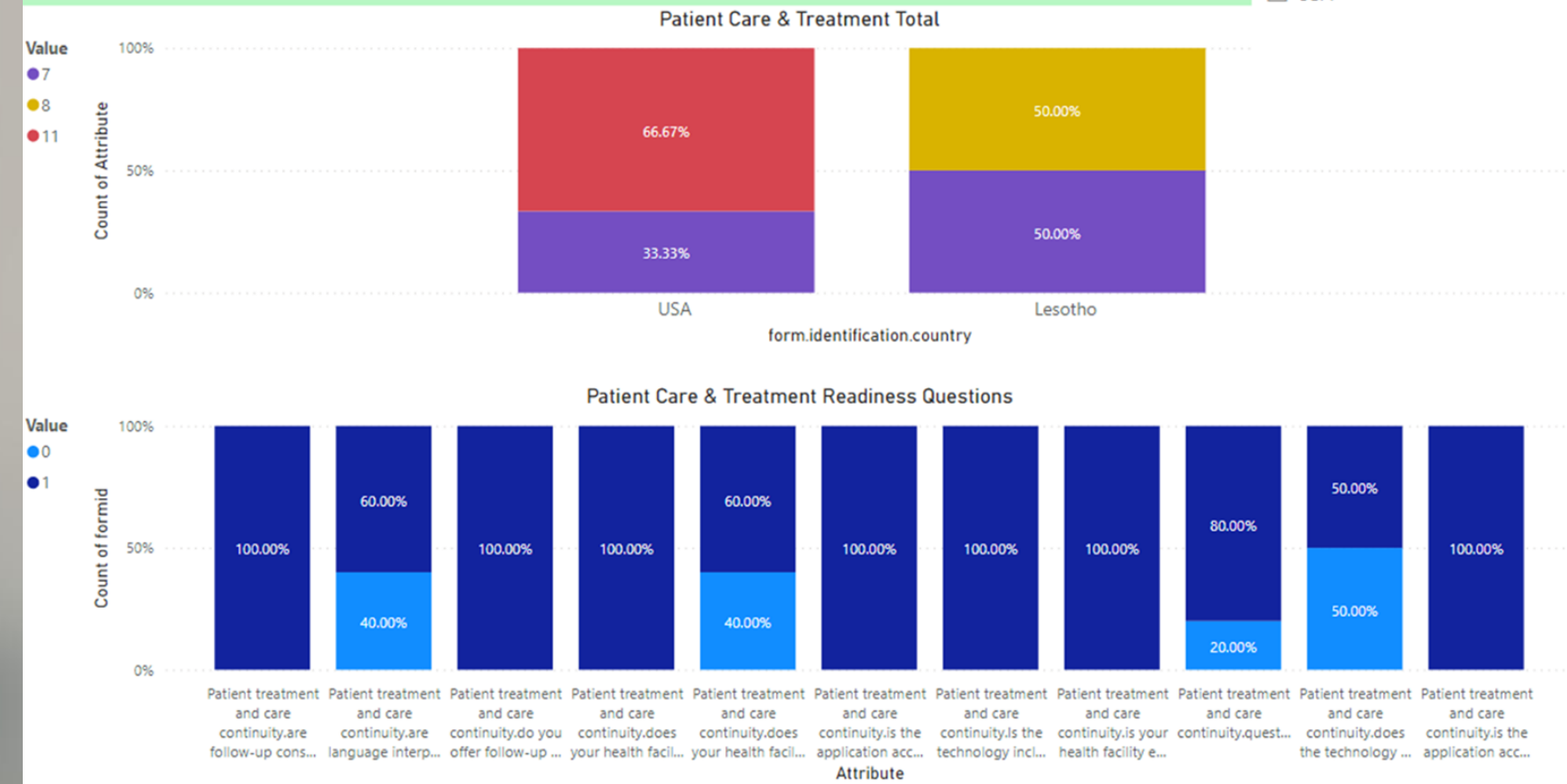




# Power BI

Visualize trends with CommCare's built-in reporting tool or via the turnkey integration with BI tools Power BI and Tableau

## Patient Care & Treatment



## Tech Readiness

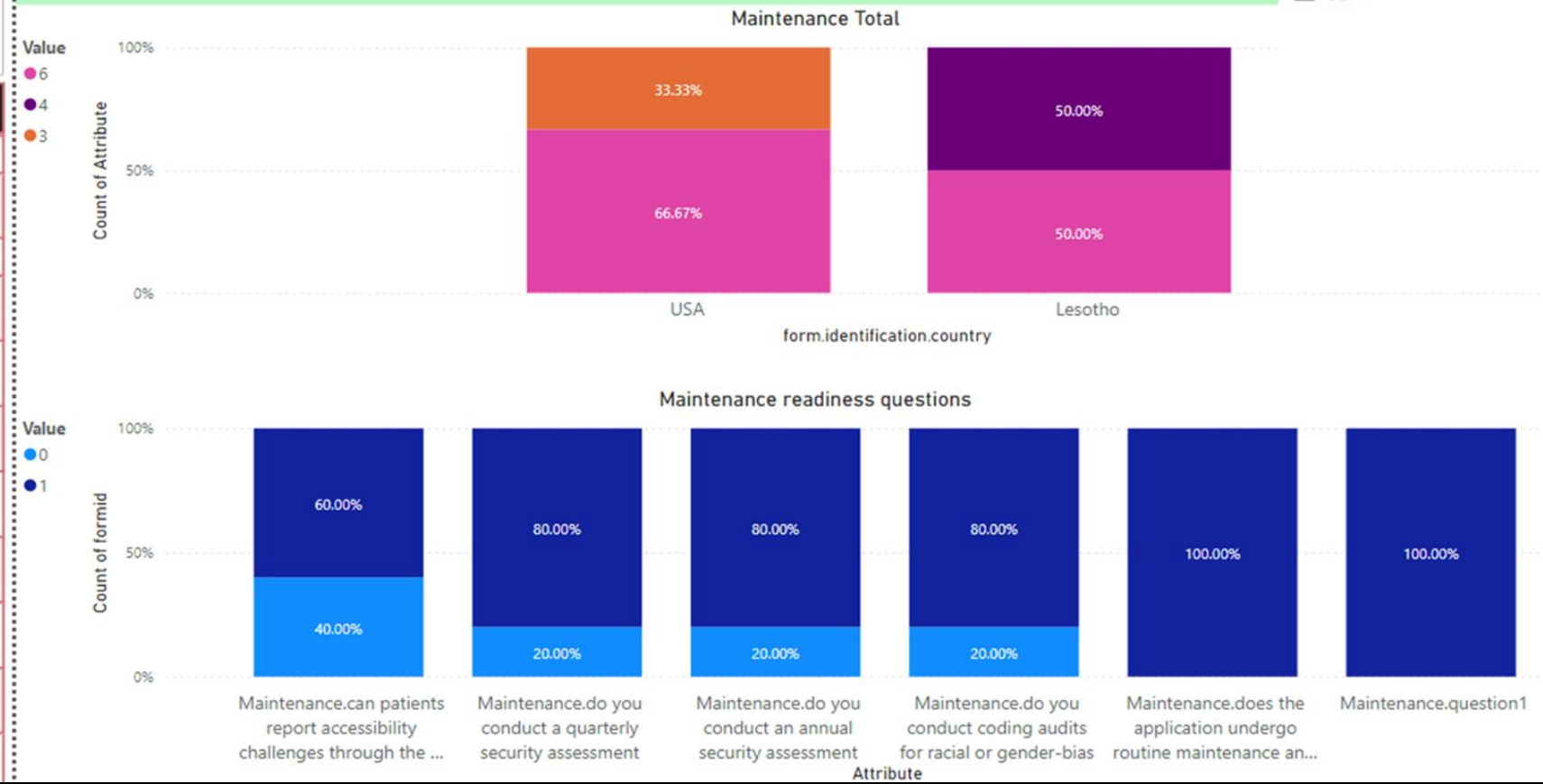
Total percentage of survey's looking at the maintenance measures for tech readiness from 5(n) survey's

Attribute	Maintenance %
Maintenance.question1	83.33%
Maintenance.does the application undergo routine maintenance and updating	83.33%
Maintenance.do you conduct coding audits for racial or gender-bias	66.67%
Maintenance.do you conduct an annual security assessment	66.67%
Maintenance.do you conduct a quarterly security assessment	66.67%
Maintenance.can patients report accessibility challenges through the system	50.00%

Total percentage of survey's looking at the patient care and treatment measures for tech readiness from 5(n) survey's

Attribute	Patient Treatment %
Patient treatment and care continuity.question9	36.36%
Patient treatment and care continuity.is your health facility equipped with gender and age-appropriate equipment	45.45%
Patient treatment and care continuity.Is the technology inclusive	45.45%
Patient treatment and care continuity.is the application acceptable by the community	36.36%
Patient treatment and care continuity.is the application acceptable by the community	45.45%
Patient treatment and care continuity.is the application acceptable by the community	45.45%
Patient treatment and care continuity.do you offer follow-up consultations for maternal health services	27.27%
Patient treatment and care continuity.do you have adequate units of technology for labor and delivery	45.45%
Patient treatment and care continuity.do you have adequate units of technology for labor and delivery	18.18%
Patient treatment and care continuity.do you offer follow-up consultations for maternal health services	45.45%
Patient treatment and care continuity.are language interpreters available for patients both online and offline	27.27%
Patient treatment and care continuity.are follow-up consultations for maternal health services subsidized or free	45.45%

## Maintenance





# → Limitations

- Quantitative data

Despite a thorough and systematic literature review, it was exploratory in nature. As a result, we lacked quantitative results.

- Emerging topic

Research published on COVID-19, technology and maternal health is still emerging, it restricted the expansiveness of our findings.

- Time constraints

Our study did not include a thorough pre-testing of our assessment tool.

# Policy Recommendations

Academic institutions and public health agencies should invest in innovative strategies to understand and address the gaps of modern technology to better meet maternal health needs.

Producing such data will enable public health institutions and agencies to make more informed decisions and deploy technology solutions with minimum bias.



The New Times  RWANDA'S LEADING DAILY

News Opinions Sports Lifestyle Video Jobs & Tenders Epaper Podcast

**OPINIONS**

## **Technology is failing women of color. How can we address its blind spot and reverse the rising maternal mortality?**

 Kumba Sennaar, Vanessa Palomares & Idah Zvoushe

Published July 01, 2022 | Updated July 01, 2022

## Meta-analysis of the literature

This process would provide a more exhaustive and comprehensive assessment and allow for quantitative analysis.

## Pilot testing of web application

Thorough pre-testing of the survey could be conducted to improve the effectiveness of the index.

## Website with interactive dashboard

Hosting and maintenance of interactive dashboard on a publicly available website with secure data management. This website could potentially serve as a trusted resource for the public health community and a foundation for future research studies.



**Looking ahead to Phase 2**



**THANK YOU!**



**KAPOR CENTER**  
LEVELING THE PLAYING FIELD IN TECH



**Partners  
In Health**

**Brandeis**

THE HELLER SCHOOL  
FOR SOCIAL POLICY  
AND MANAGEMENT