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Mobile Technology for Health

Bridging the Health System Gap in Maternal Health Care in Poor Countries

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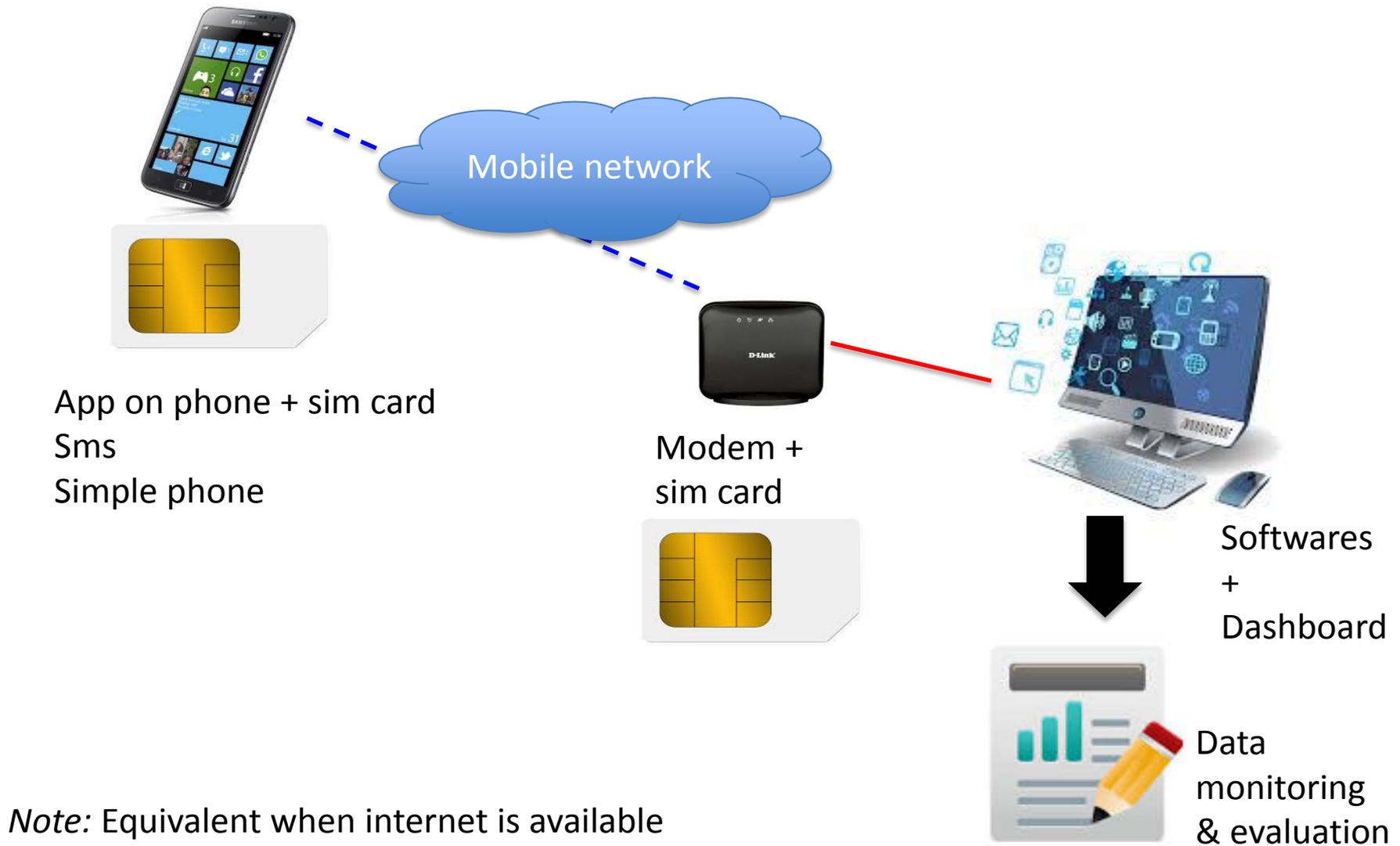
Background

- The massive spread of mobile phones and the growing access to mobile networks in low- and middle-income countries (LMIC), has become a great opportunity for:

  leveraging the ubiquity of Mobile Technology for Health (mHealth)

Main objective

- mHealth (also called ehealth) offers a great promise for strengthening monitoring surveillance capacity and responses

- This talk reviews the current evidence on the specific impacts of mobile technologies on tangible health outcomes, notably maternal and perinatal health in (LMICs).

Rationale of mHealth

Mobile network

App on phone + sim card
Sms
Simple phone

Modem +
sim card

Softwares
+
Dashboard

Data
monitoring
& evaluation

*Note:* Equivalent when internet is available

Methods

A systematic search of peer-reviewed publications were conducted on a series of electronic databases PubMed and Google Scholar for evidence base seeking over the last 10 years. The selection criteria are low-income-countries , mobile or electronic health, maternal and perinatal health status and seeking behavior for skilled health care services.

Results

In total, 24 peer-reviewed papers were included in the review process
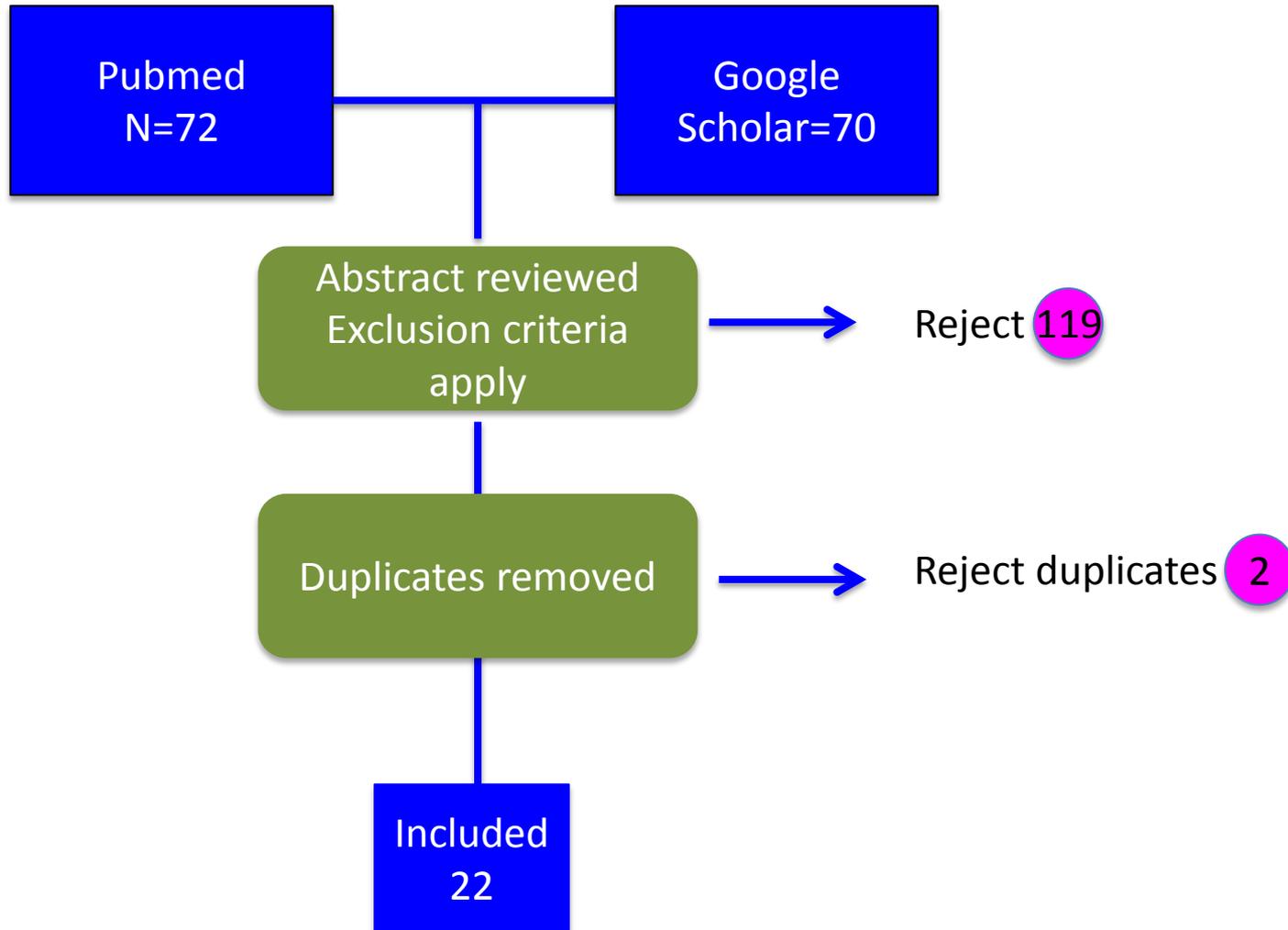
* peer-reviewed papers

Results

	Pubmed	Google Search
In low-income-settings in general	1	4
Africa	6	6 (2 in common)
Asia	4	
Middle-East	1	
South America		2
Total (22)	12	12(-2)

The concept of mHealth remains somehow poorly explored in the literature

Results

mHealth as an opportunity in maternal health for: contact

- Contacting isolated communities

(limited access to health care facilities)

- Improving education and prevention
- Increased appointment compliance

in ante- and post-natal care services

- Increased treatment adherence

Results

mHealth as an opportunity in maternal health for: strengthening monitoring surveillance **+** response capacity

- Real time coverage and follow-up of pregnant women and newborns (essential for remote communities)

- Following various maternal and perinatal outcomes

- Preventing adverse pregnancy outcomes such as pregnancy-related complications & maternal/perinatal death rates
  (identifying women with high risk obstetric care, improving time management, reducing time response, and reducing all the 3 phases of delay when complicated delivery (EmOC).

Results

mHealth as an opportunity in maternal health for: data gathering

- Increased frequency and quality of data (faster data entry and assembly avoidance of the errors, & analysis and storage costs associated with paper surveys, completeness & promptness)

- Availability of institutional and non institutional data on various maternal and perinatal outcomes (abortion, miscarriage, delivery births, still birth, and real time mortality monitoring)

Results

mHealth as an opportunity in maternal health for: creation of a social and interactive environment
(verbal, vocal and sometimes visual)

- **Between health providers and women**

  Participative approach: empowering women to make informed choices in relation to their health

  ✓ Take actions, ask questions (reassurance of pregnant women)

  ✓ Patient decision making

  ✓ Participation in decision for treatment

- **Between health workers**

  ✓ Interaction for cases and referrals

Results

mHealth limitations for:

- # Access

   Depending on which direction: women to health provider or inversely

✓ Still a communication challenge (low network and reception) for remote communities (mainly the marginalized women with some of the worst health outcomes).

✓ Difficulty for recruiting and gathering participants

✓ Time an dates issues among women

✓ Patient engagement/decision making is a new concept

✓ Challenge for non- and low-literate women

✓ Acceptation of the community (cultural norms)

Results

mHealth limitations for:

- Limited scale of intervention

    Most mHealth interventions have been focusing on regional and/or national health objectives

  ✓ Lack of representativeness

- Willingness of health workers

  ✓ Irritability, non cooperative attitude, higher burden of work, unskilled staff. Once a complication is reported or anticipated over phone, Community Skilled Birth Attendants either made a prompt visit to mothers or advised for direct referral (it is not often the case)

Discussion/conclusion

- There have been few mHealth implementation projects in LMIC and they have tended to be small-scale
- While the significance of mHealth is understood, evidence of its potential value and impact on maternal, newborn and child health in LMIC is less clear.
- Difficult to capture women at earlier stages of pregnancy
- Although improved antenatal attendance through the use of SMS /phone appointment reminders, evidence of impacts on maternal and child mortality and morbidity rates is less obvious.

◆ Options to consider:
  – Using a central toll free number,
  – Increase health provider's skills and knowledge + motivation over the phone
  – Encourage a local health worker at the local level to seek for new pregnant women
  – Forums of discussion with leaders of the community to increase the acceptance of the mHealth system.

Thank you