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## DIFFERENTIATED CARE FOR DIVERSE COMMUNITIES

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5th International African  
Palliative Care Conference

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Hosted by:

African Palliative Care Association  
Worldwide Hospice Palliative Care Alliance

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16-19 August 2016

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PRESENTER

**Dr Matthew Allsop**  
University of Leeds

Research Fellow in Applied Health





**UNIVERSITY OF LEEDS**

# Mobile devices in palliative care services: a methodological approach to identifying use and implementation by service providers in Africa

Matthew Allsop, Eve Namisango, Richard Powell

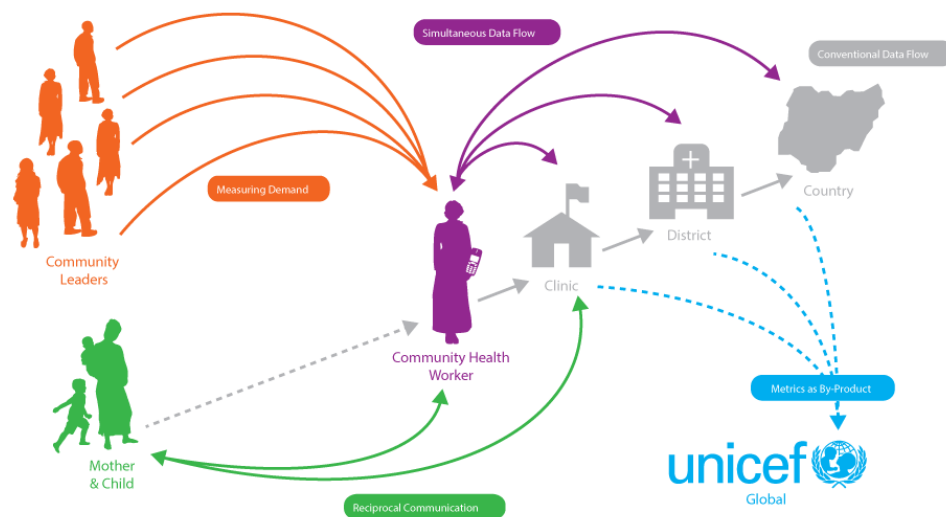
# Overview

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- Background & literature review
- Details of survey approach
- Findings from survey
- Conclusions
- Recommendations for research and practice

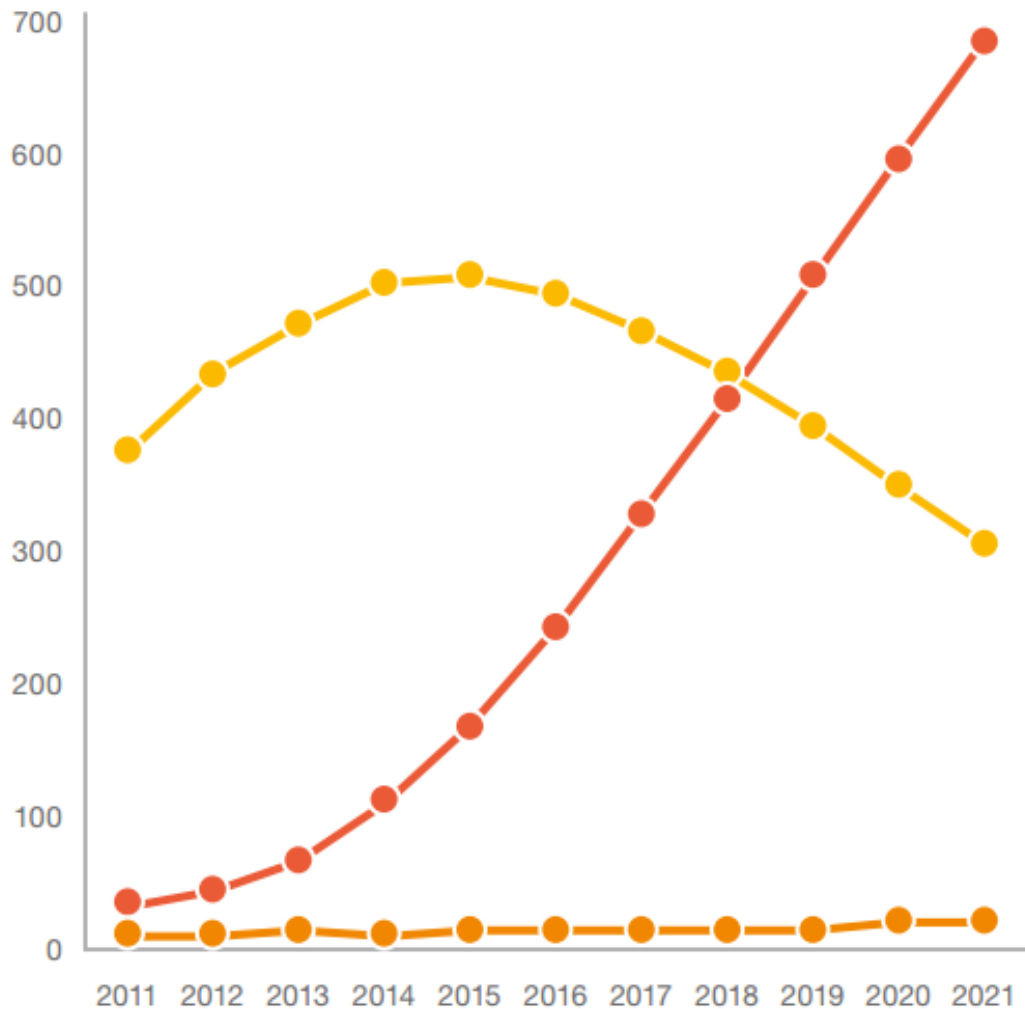
## Background: mHealth – what is it?

- mHealth – what is it?
- “mHealth or mobile health is medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices” (World Health Organization, 2011)
  - Voice and short messaging service (SMS)
  - General packet radio service (GPRS)
  - 3G and 4G systems
  - Global positioning system (GPS)
  - Bluetooth technology



# Background: mHealth – why?

- Smartphones
- Mobile PCs, tablets, mobile routers
- Basic phones



Ericsson Mobility Report, sub-Saharan Africa, November 2015

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HIGH-IMPACT USES FOR OUR TOOLS

- Disease surveillance
- Drug stock monitoring
- Childhood immunizations
- Antenatal care

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**OpenMRS**  
MEDICAL RECORD SYSTEM

Hello, Super. Welcome to Openmrs-Standalone.

[2]

ish (United Kingdom) | English (United States) | português | italiano | français | español | Last Build: Jul 14 2011

## Background: mHealth in palliative care – why?

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- Demand for palliative care is high and rapid development of services is urgently needed
- Particular attention needed for cancer and NCD agenda
- Innovative methods adopted by SSA PC services, such as roadside care delivery
- Examples of potential for mHealth include:
  - Address rural / urban access issues
  - Extend reach of palliative care services
  - Improve data accuracy and access
  - Improve patient care

## The state of mHealth development and use by palliative care services in sub-Saharan Africa: a systematic review of the literature

Matthew J Allsop,<sup>1</sup> Richard A Powell,<sup>2</sup> Eve Namisango<sup>3</sup>

### ABSTRACT

**Background** Current coverage of palliative care services in sub-Saharan Africa (SSA) remains woefully inadequate, but harnessing mHealth could be one approach to facilitate greater service coverage and engagement with patients with life-limiting progressive disease.

**Aims** A systematic literature review to identify

have access to supportive care.<sup>1</sup> In 2013, there were an estimated 24.7 million people living with HIV in SSA,<sup>2</sup> with 1.1 million deaths due to AIDS.<sup>3</sup> Additionally, in 2012 there were 847 000 new cancer cases (6% of the world total) and 591 000 deaths (7.2% of the world total) across the continent.<sup>4</sup> The demand

## Literature Review: mHealth use in palliative care services

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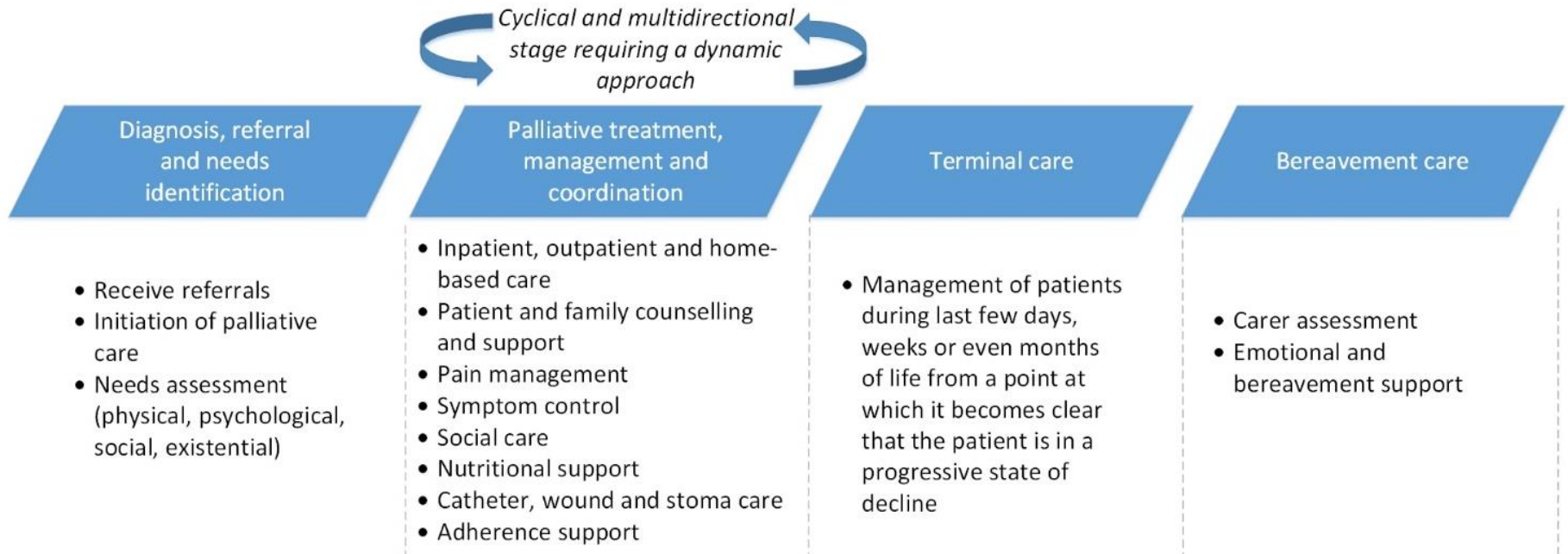
- To identify the development and use of mHealth in palliative care services in SSA
- Searched 13 databases for research articles discussing mHealth use
- Use in Nigeria, Uganda, Kenya and Malawi, mostly patient-to-provider contact reported, supporting palliative treatment, management and coordination
- Discussed at mHealth workshop in Kampala, July 2015

## Survey approach

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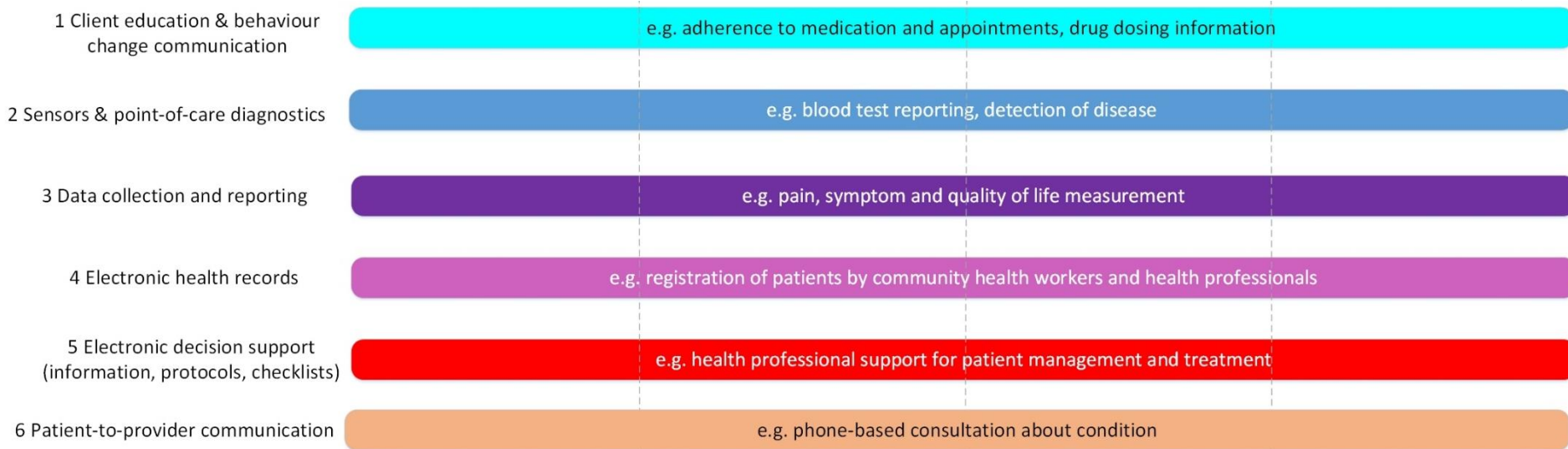
- Link to an electronic survey was emailed to palliative care providers in 30 sub-Saharan African countries, facilitated by APCA
- Survey designed to gather information on use of mHealth directly from palliative care providers
- Survey asked providers to document:
  - *At which stage(s) of the palliative care pathway*
  - *How mHealth was occurring*

# Survey content: palliative care pathway



# mHealth use: WHO framework for patients

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## Resolution to Action

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# mHealth use: WHO framework for health professionals

7 Provider-to-provider communication	e.g. telephone consultation between community volunteers, community teams and hospital teams
8 Registries / vital events tracking	e.g. operational service information (population, staffing, funding)
9 Provider workplanning & scheduling	e.g. patient visit planning, informing of pain medication levels required for community visits
10 Provider training and education	e.g. health professional palliative care training
11 Human resource management	e.g. registration and tracking of community volunteer workers
12 Supply chain management	e.g. drug verification and delivery
13 Financial transactions & incentives	e.g. incentives payment to community volunteer workers

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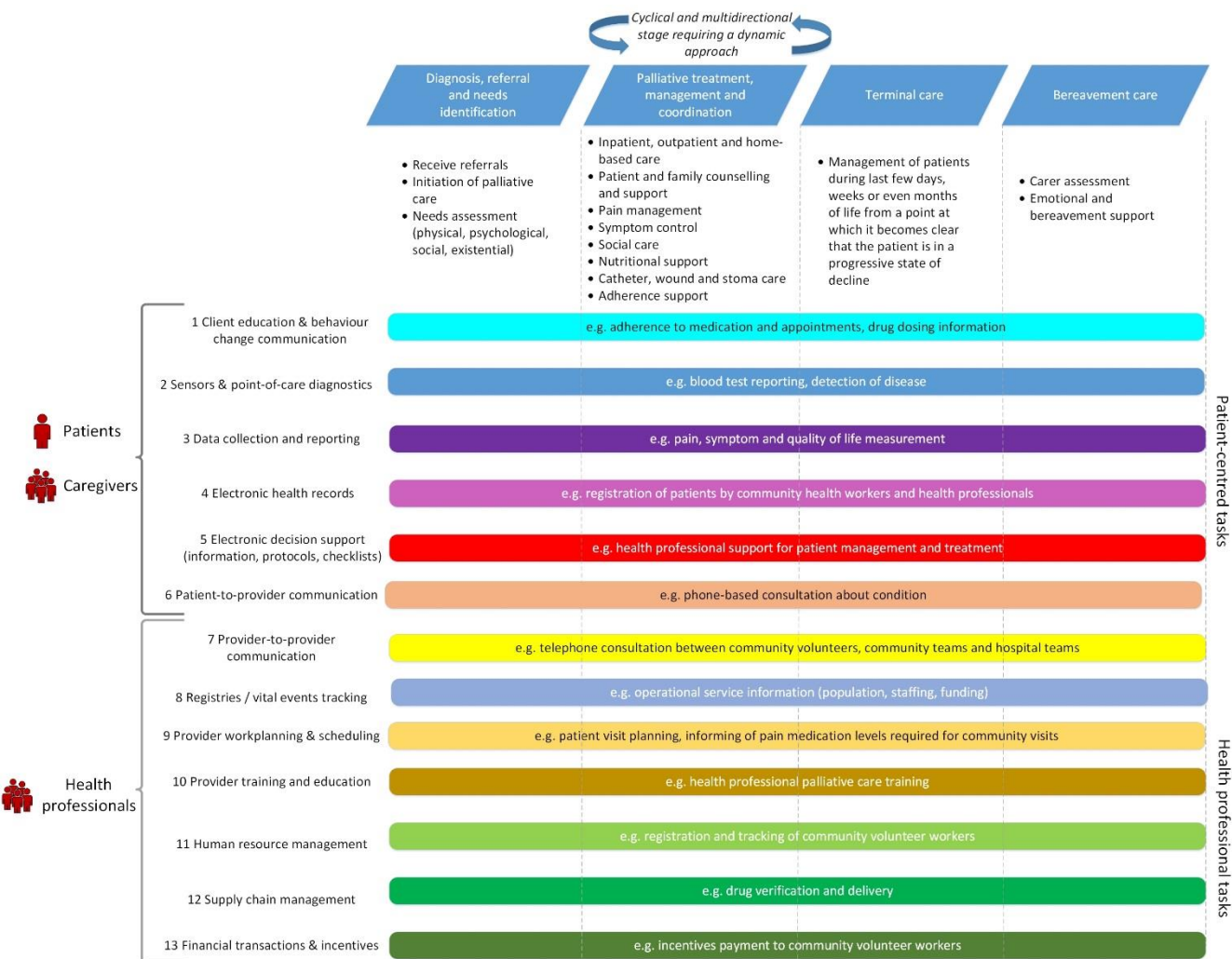
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# Combined WHO and mHealth Framework



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# mHealth use: Reported use in literature



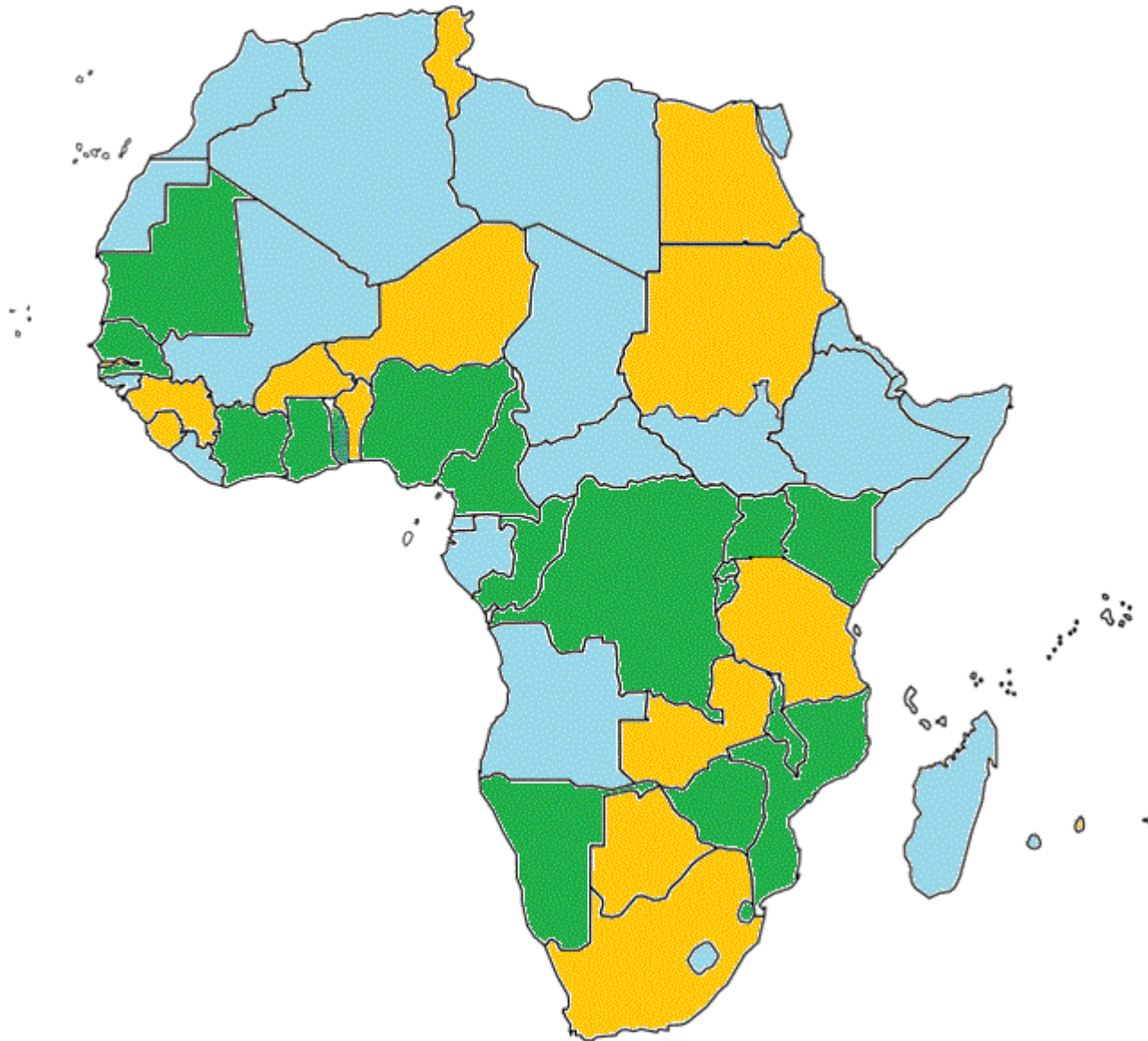
Patient-centred tasks

Health professional / process tasks

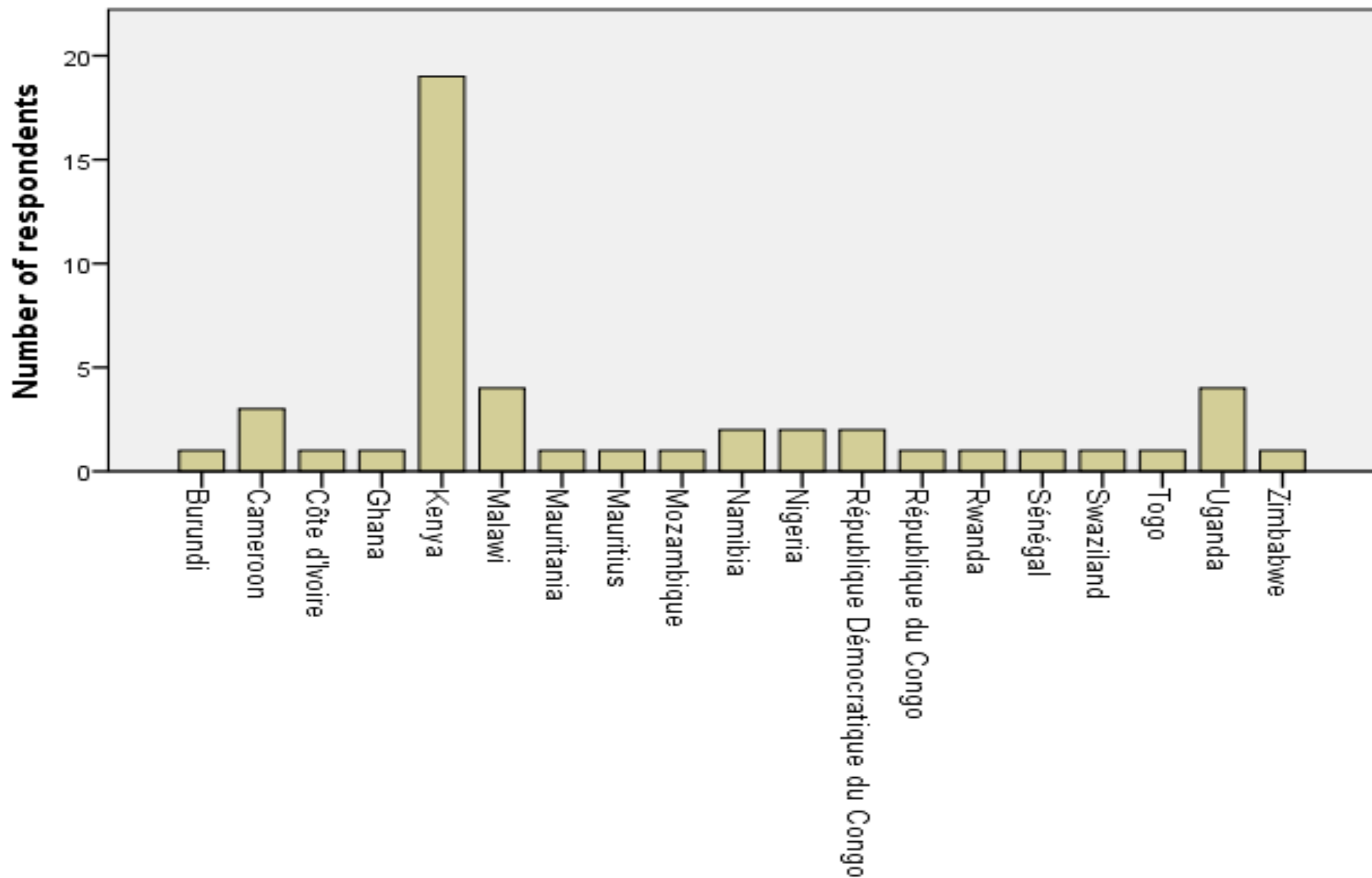


# mHealth survey: who responded?

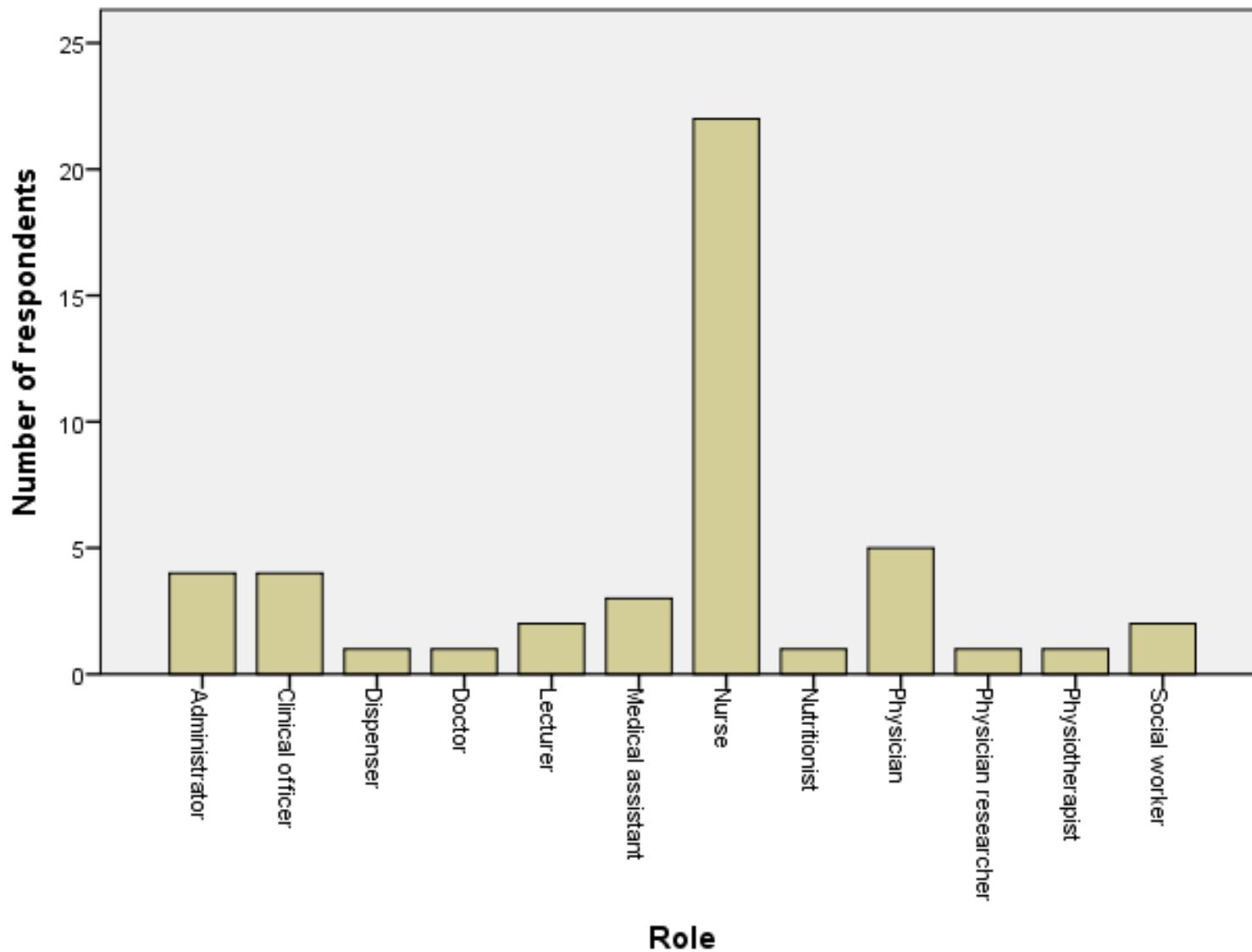
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## mHealth survey: which countries responded?



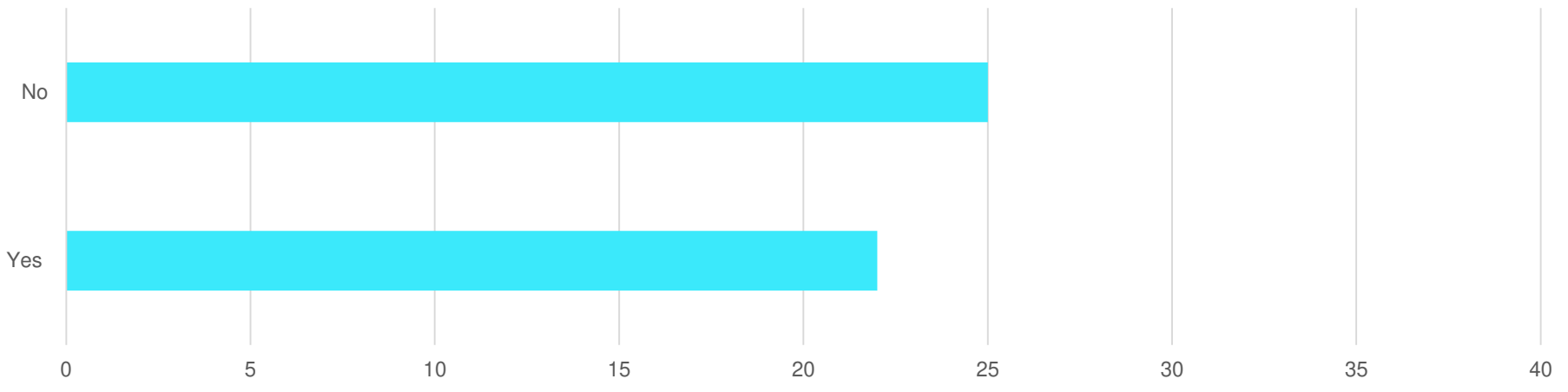
## mHealth survey: job roles of respondents



## mHealth use: findings from patient use

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### Patient education and behaviour change



**Cameroon:** To take appointments or confirm appointments with patients and to follow up patients or pass urgent information to patients

**Kenya:** Patients contact us via mobile phone if they have questions about medications, appointments or new symptoms, and we advise and respond to their questions

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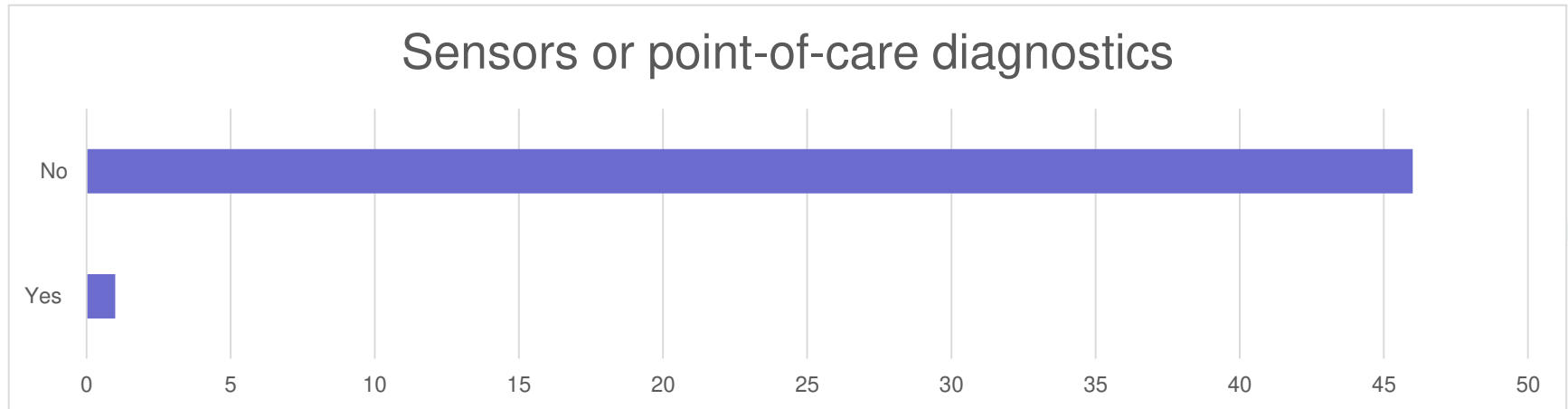
**Resolution to Action**

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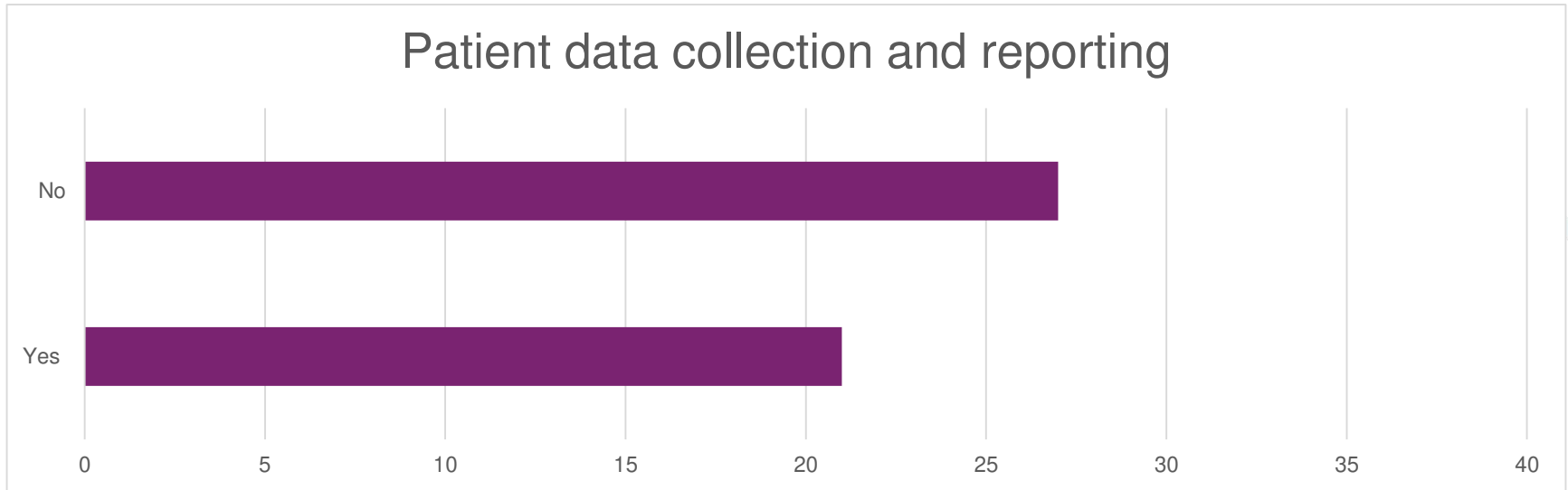
## mHealth use: findings from patient use

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**Togo:** communicating about blood tests or additional medical tests

## mHealth use: findings from patient use



**Mauritania:** We have both a pain visual analogue scale and a faces scale, on the tablet computer. The patient can either point somewhere on the line or a face on the scale, the clinician then records this by ticking the relevant box. This is still at early stages and is not our routine practice

**Uganda:** During treatment patients are called up to find out if their symptoms are improving on a given medication and the score of their symptom recorded

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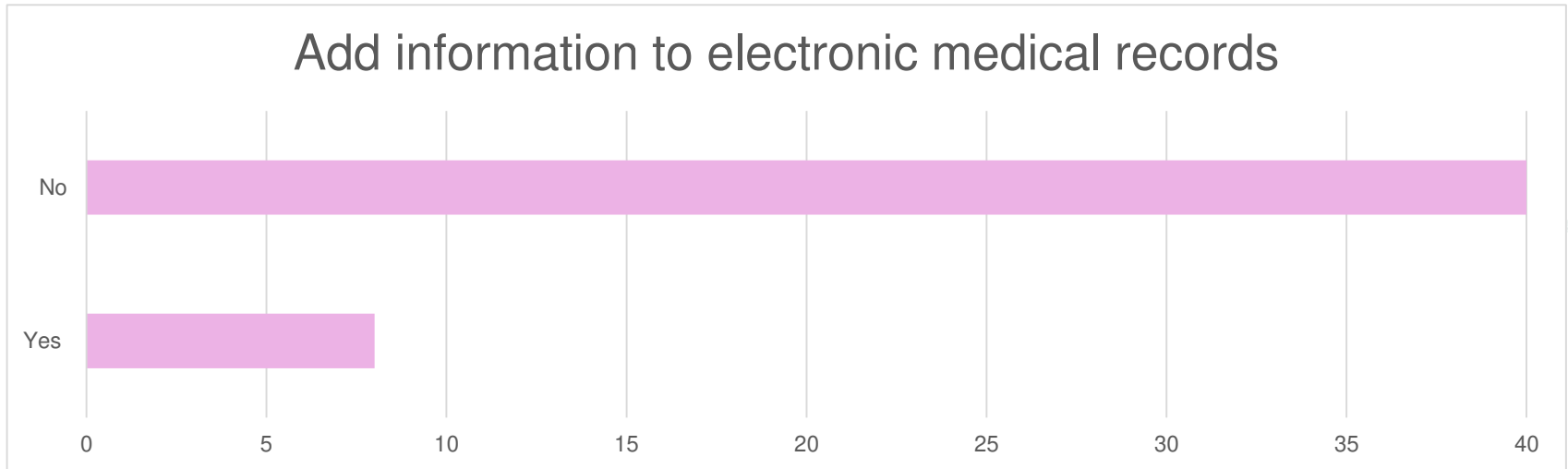
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## mHealth use: findings from patient use

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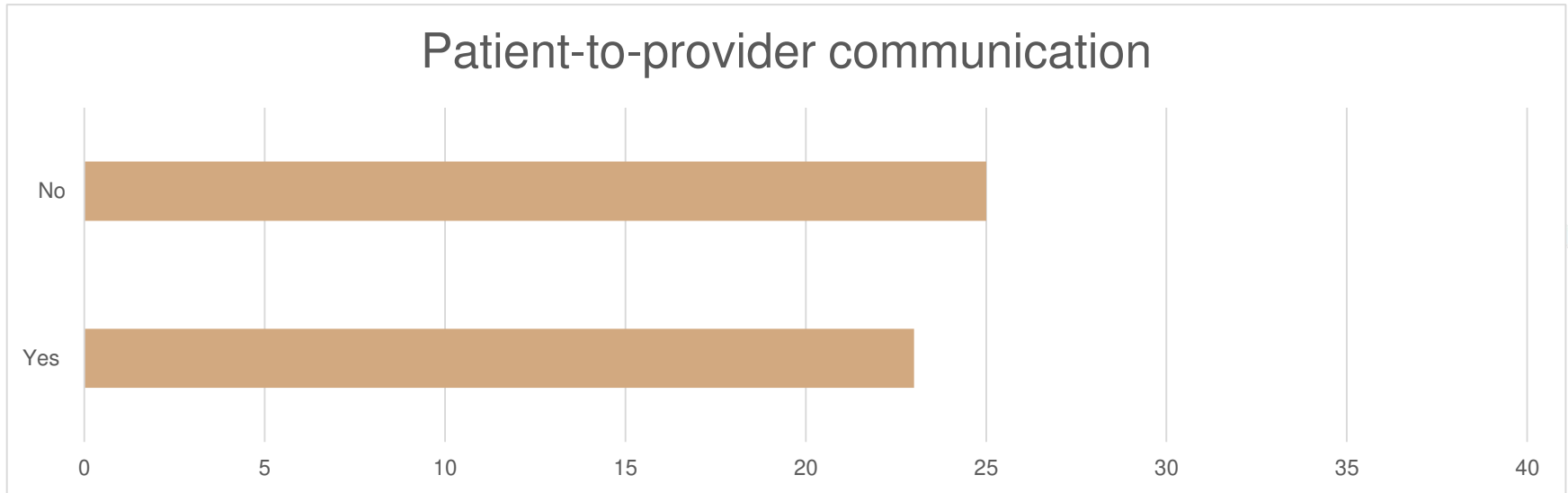


**Mauritania:** All health records within the project are electronic, with no hard copies. So it is only used internally within the project. I am not aware of any other electronic health records in the country.

**Kenya:** This helps us to identify treatments clients are on even if the files are missing

## mHealth use: findings from patient use

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**Kenya:** The patient or relative can call to consult, to inform that they are coming for services, to get clarification. For follow up especially if a patient is very sick to offer support to the family, just to be there but via the phone

**Kenya:** Patients can self-refer to the project by phoning one of the project's mobile phone numbers (kept with the local nurses). Patients and families can use this number to seek advice or request a visit.

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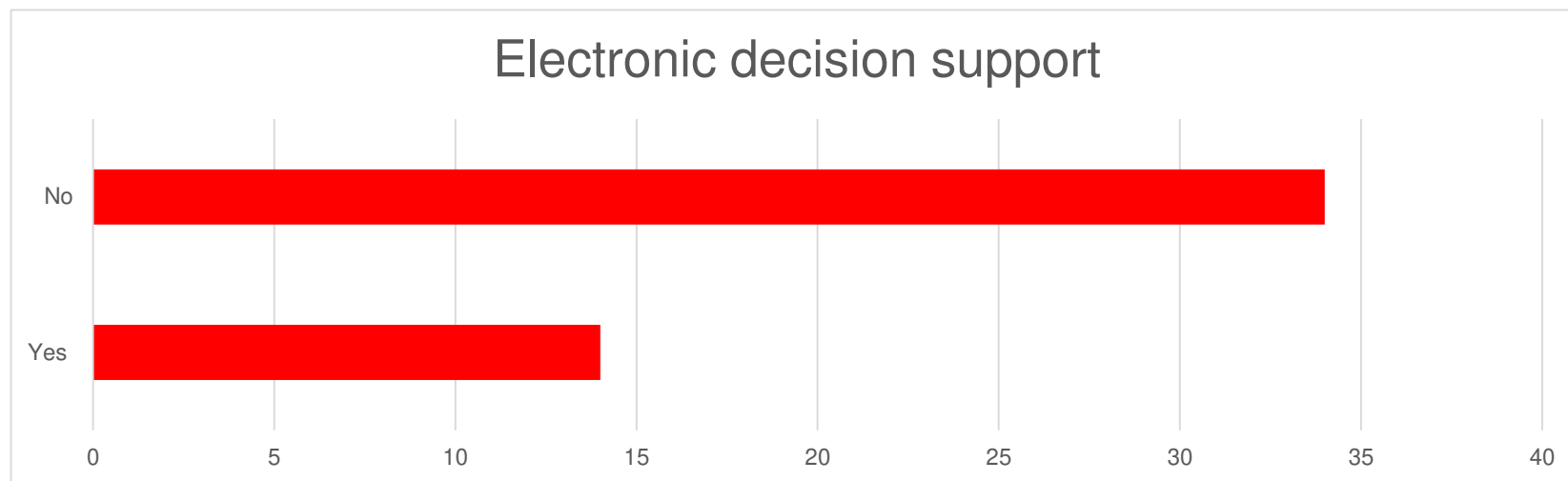
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# mHealth use: summary of health professional use

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7 Provider-to-provider communication	e.g. telephone consultation between community volunteers, community teams and hospital teams
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## mHealth use: summary of health professional use

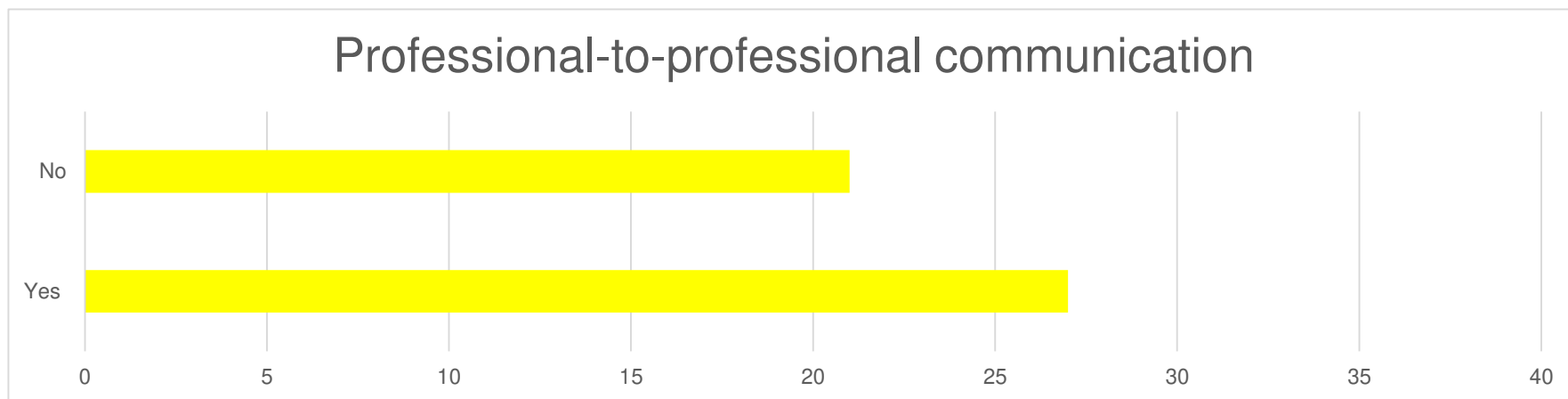


**Kenya:** For confirmation of treatment and protocols

**Kenya:** Software installed on the phone to some health professionals for use to inform consultations during the continuum of care

## mHealth use: summary of health professional use

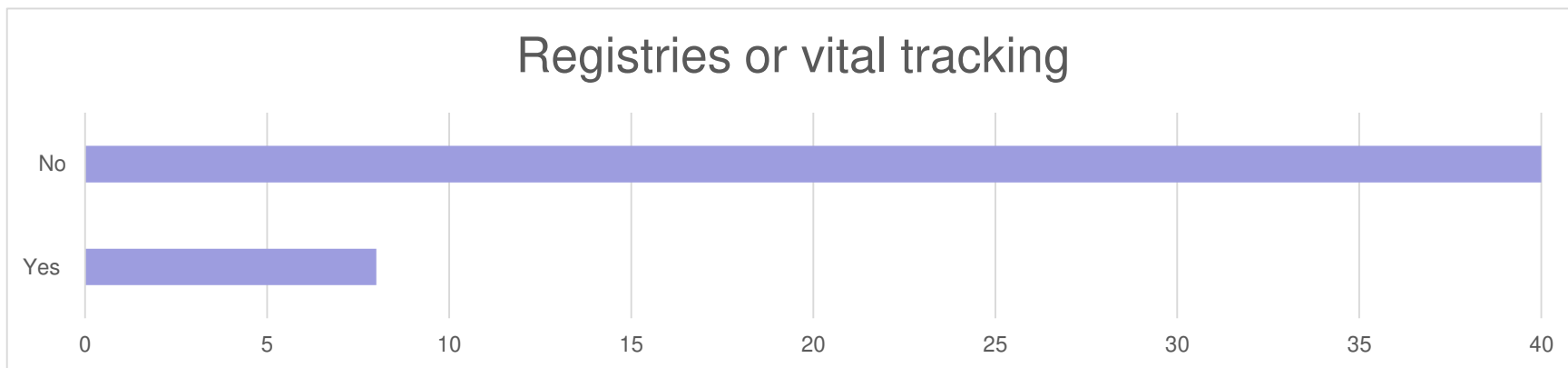
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**Kenya:** Everyone on the team has a mobile phone. We do face-to-face patient reviews as a team every day, but when questions or issues arise otherwise, we communicate by mobile phone

**Malawi:** Discuss management of case over phone, facilitate referral to another provider and even source medication that patients need

## mHealth use: summary of health professional use



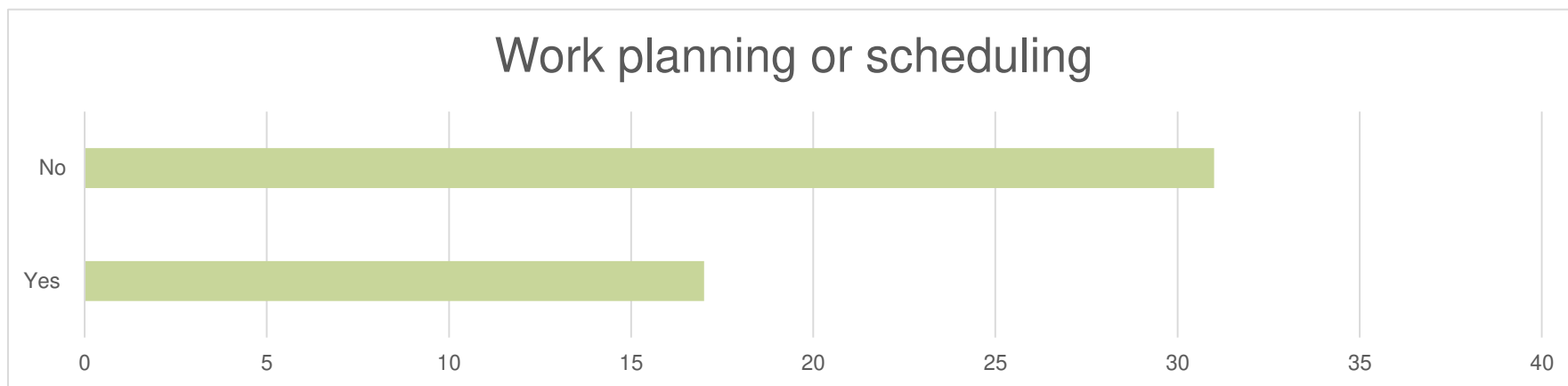
**Côte d'Ivoire:** Patient records stored in the database

**Kenya:** Palliative care unit report deaths of patients to Ministry of Health

**Kenya:** Monthly reports

## mHealth use: summary of health professional use

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**Côte d'Ivoire:** Call patients to schedule home visits and search for those lost to follow-up

**Kenya:** Making appointments for multidisciplinary team visits

Hospice and Palliative Care:

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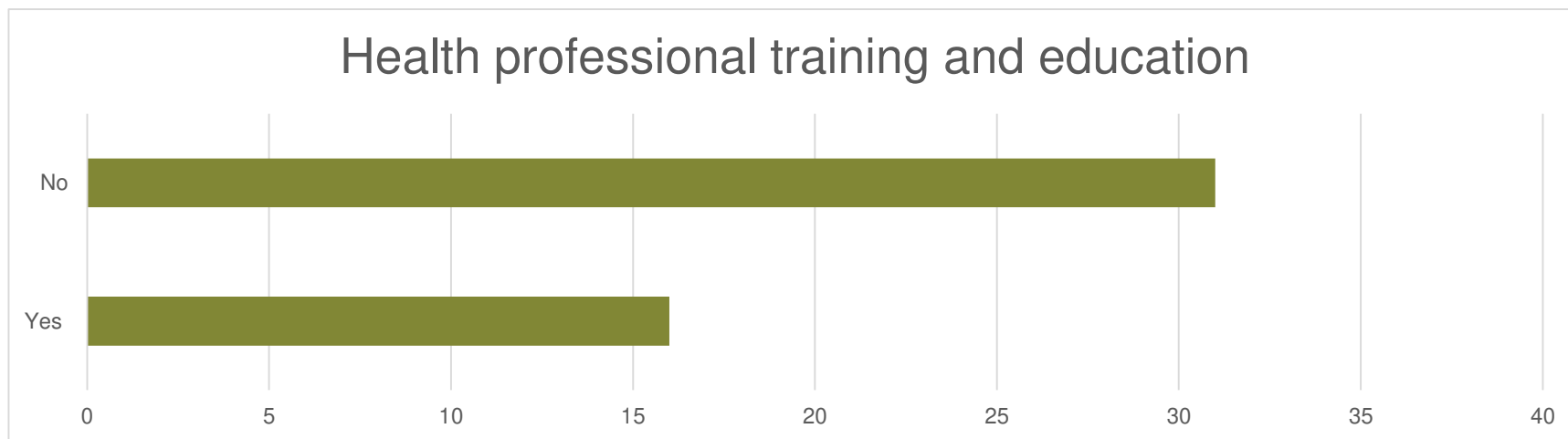
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## mHealth use: summary of health professional use

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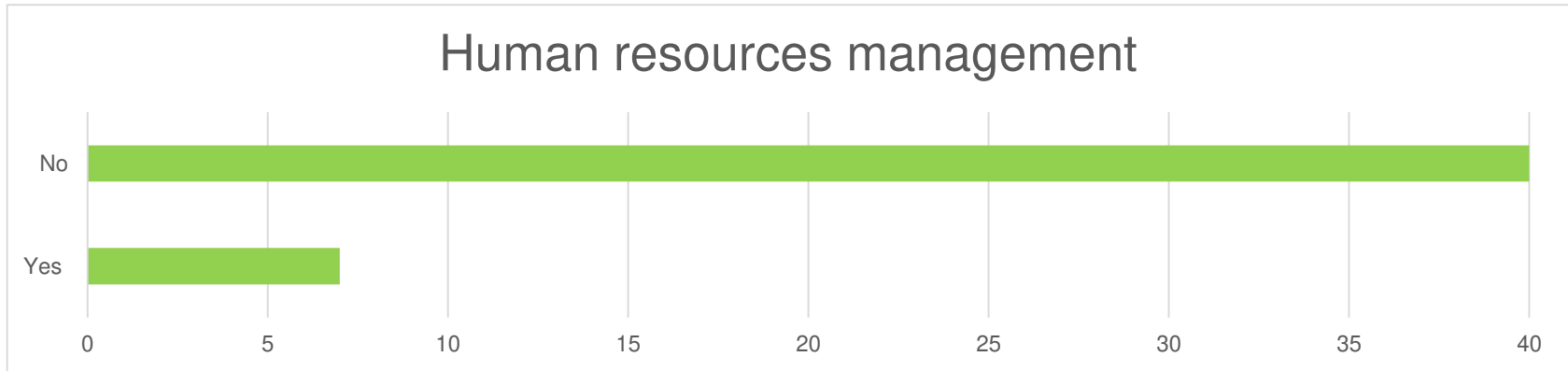


**Cameroon:** to encourage, give information to particular problem, give or repeat directives

**Mauritania:** online learning in the office and downloading of articles for offline educational use

# mHealth use: summary of health professional use

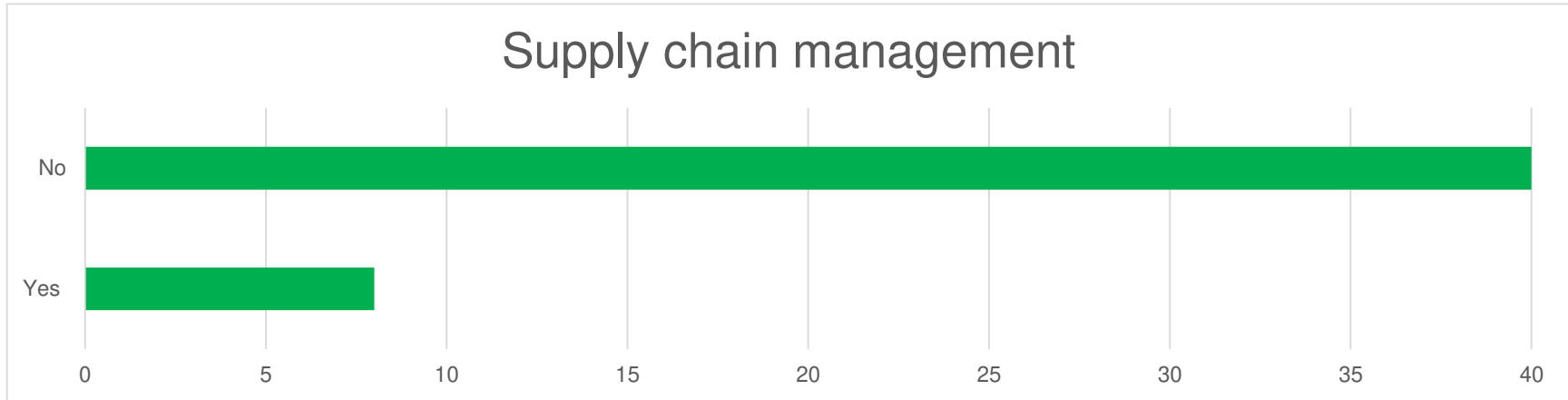
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**Togo:** This is very important to us because who does what in the chain must be made known to all, if any change in the partner teams must know

# mHealth use: summary of health professional use

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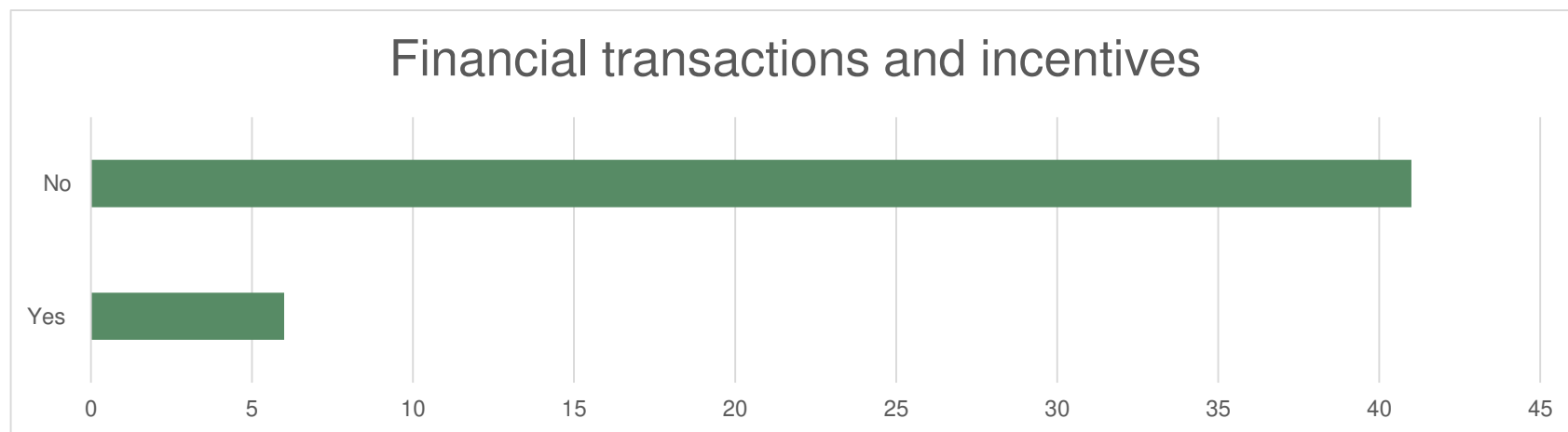


**Kenya:** using computer system in pharmacy to track amount of stocks remaining when dispensing medications to wards and patients

**Zimbabwe:** When ordering medication

## mHealth use: summary of health professional use

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**Ghana:** Patient and caregivers are able to settle bills via mobile money payments to palliative care unit account

**Côte d'Ivoire:** Money transfer by mobile money

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# mHealth use: Reported use in literature

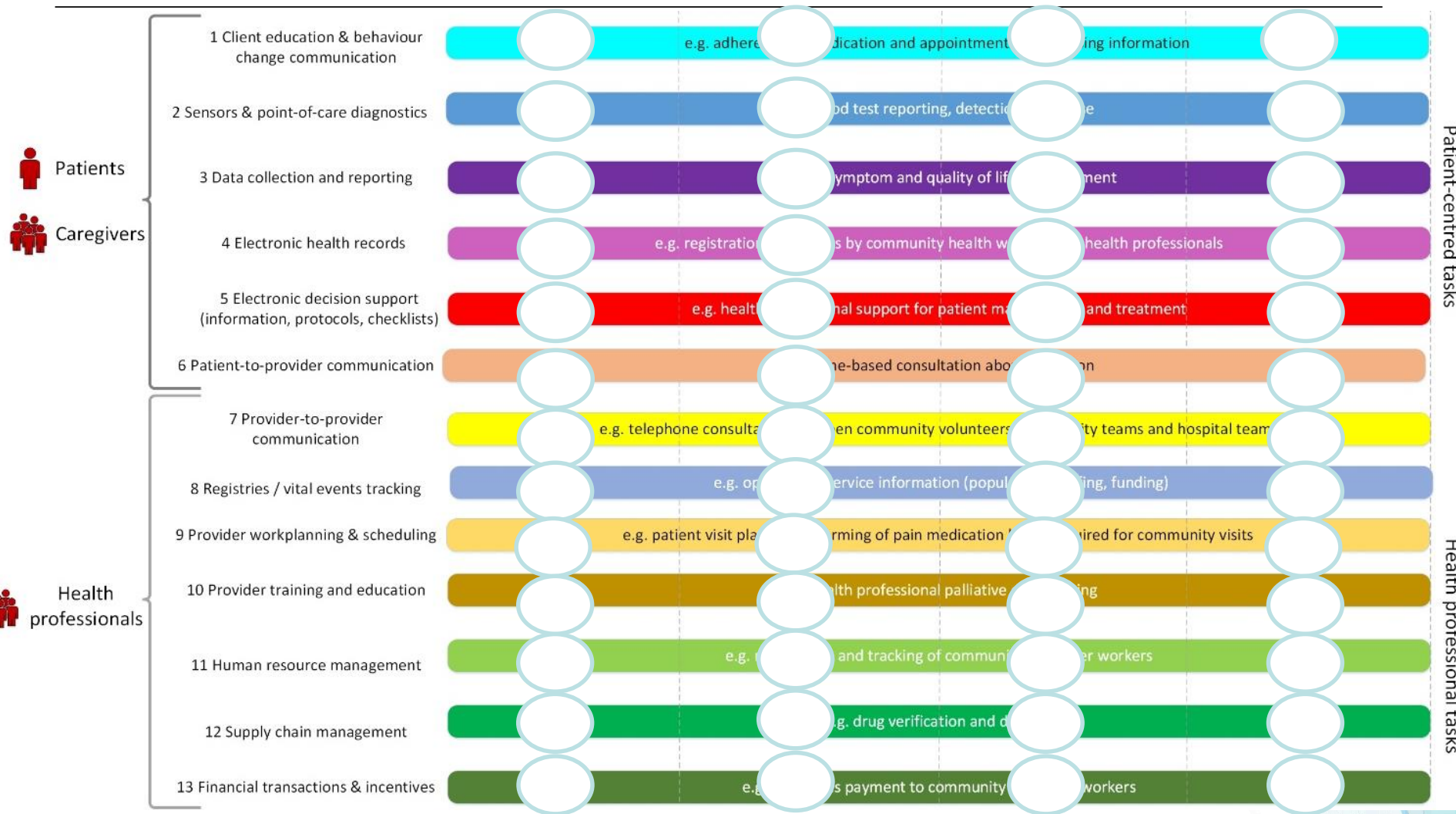


Patient-centred tasks

Health professional / process tasks



# mHealth use: Reported use in survey



## mHealth use: priorities and reported barriers

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- Using existing mobile phones and technology to improve communication between patients and health professionals
  - Concept seen as good, with support from many providers
  - Priorities emerging: communication, information and education
- 
- Funding to build capacity (e.g. computers, tablet computers)
  - Consistency and reach of existing mobile networks
  - Illiteracy of patients
  - Resistance if seen to replace human contact
  - Existing records are paper-based

## Limitations

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- Recruitment of respondents based on established contacts with APCA and not representative of each country
- Responses not obtained from all countries, but recruitment ongoing
- Where countries responded, only obtained an insight into a small proportion of mHealth activities
- Crossover in responses found when describing mHealth use, which could indicate a need to refine some of the definitions of mHealth uses

## Conclusions

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- mHealth is occurring in most palliative care services across the sub-Saharan Africa region
- The most commonly reported uses of mHealth are:
  - Patient education and behaviour change (47%)
  - Patient data collection and reporting (47%)
  - Patient-to-provider communication (49%)
  - Professional-to-professional contact (57%)\*
- mHealth is being explored for each health system strengthening approach identified by the WHO
- The research literature does not accurately reflect the level of mHealth development

## Recommendations for research and practice

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- Systematic evaluation of mHealth approaches can help to understand existing practice by providers
- While mHealth use is emerging, development of an evidence base is required to understand how to develop and implement mHealth interventions that are acceptable to patients and health professionals
- With diverse mHealth use and development occurring across palliative care services, a platform for sharing approaches and experiences may be beneficial

Thank you

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<https://leeds.onlinesurveys.ac.uk/mhealth>



AFRICAN PALLIATIVE CARE ASSOCIATION



WORLDWIDE HOSPICE PALLIATIVE CARE ALLIANCE