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Proceedings Paper:

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

Hospice and Palliative Care:
Resolution to Action
DIFFERENTIATED CARE FOR DIVERSE COMMUNITIES

Overview

- Background & literature review

- Details of survey approach

- Findings from survey

- Conclusions

- Recommendations for research and practice

Hospice and Palliative Care:
Resolution to Action
DIFFERENTIATED CARE FOR DIVERSE COMMUNITIES

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
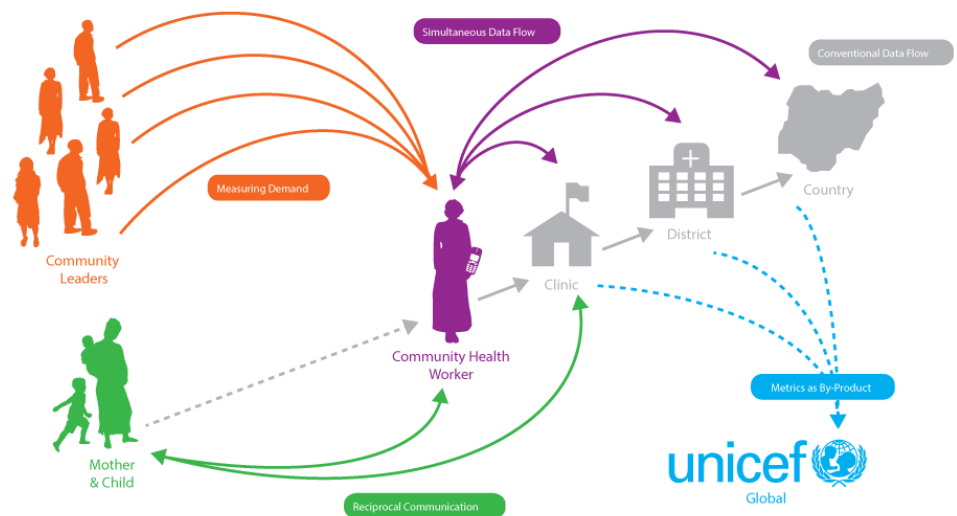
Hospice and Palliative Care:

Resolution to Action
DIFFERENTIATED CARE FOR DIVERSE COMMUNITIES

Background: mHealth – why?
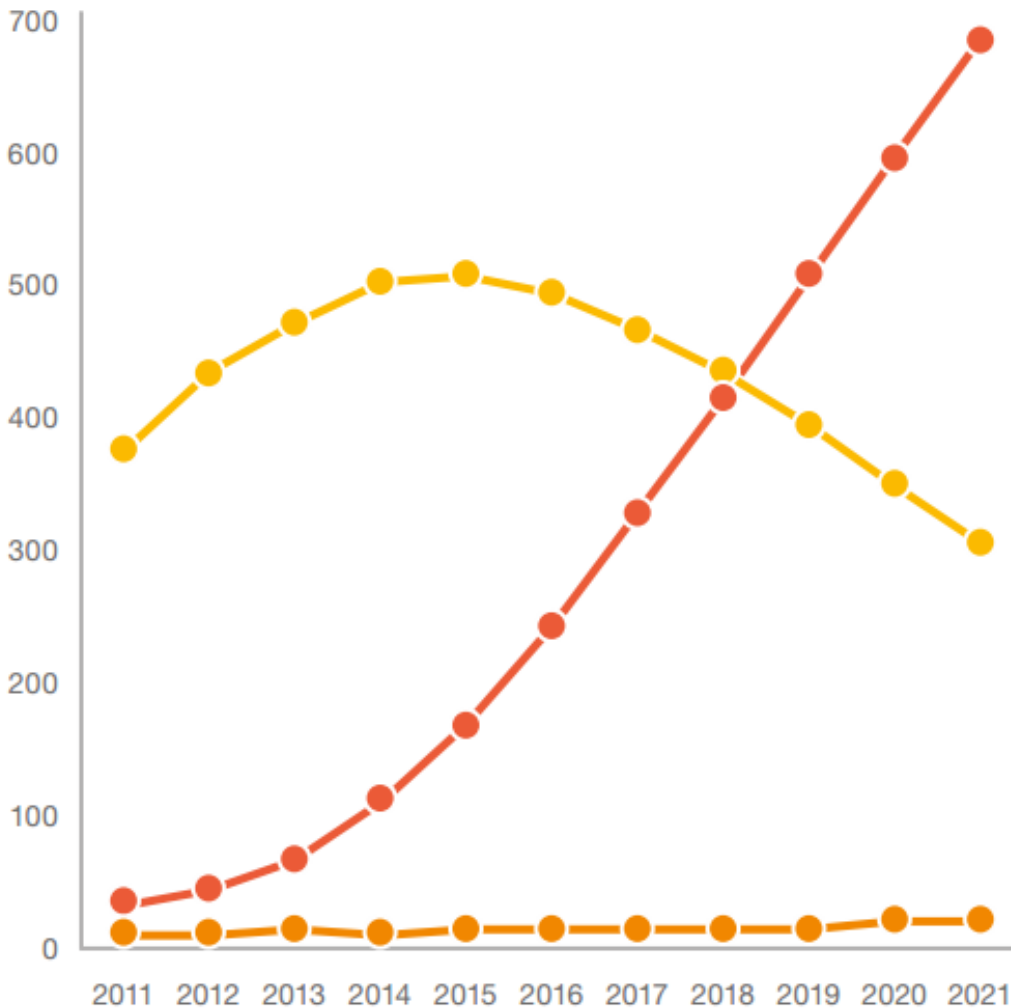
Ericsson Mobility Report, sub-Saharan Africa, November 2015

Background: mHealth in palliative care – why?

- 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

Review

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

Matthew J Allsop,[1] Richard A Powell,[2] Eve Namisango[3]

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.

have access to supportive care.[1] In 2013, there were an estimated 24.7 million people living with HIV in SSA,[2] with 1.1 million deaths due to AIDS.[3] 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.[4] The demand

Literature Review: mHealth use in palliative care services

- 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

- 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

Cyclical and multidirectional stage requiring a dynamic approach

Diagnosis, referral and needs identification

- Receive referrals
- Initiation of palliative care
- Needs assessment (physical, psychological, social, existential)

Palliative treatment, management and coordination

- Inpatient, outpatient and home-based care
- Patient and family counselling and support
- Pain management
- Symptom control
- Social care
- Nutritional support
- Catheter, wound and stoma care
- Adherence support

Terminal care

- Management of patients during last few days, weeks or even months of life from a point at which it becomes clear that the patient is in a progressive state of decline

Bereavement care

- Carer assessment
- Emotional and bereavement support

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mHealth use: WHO framework for patients
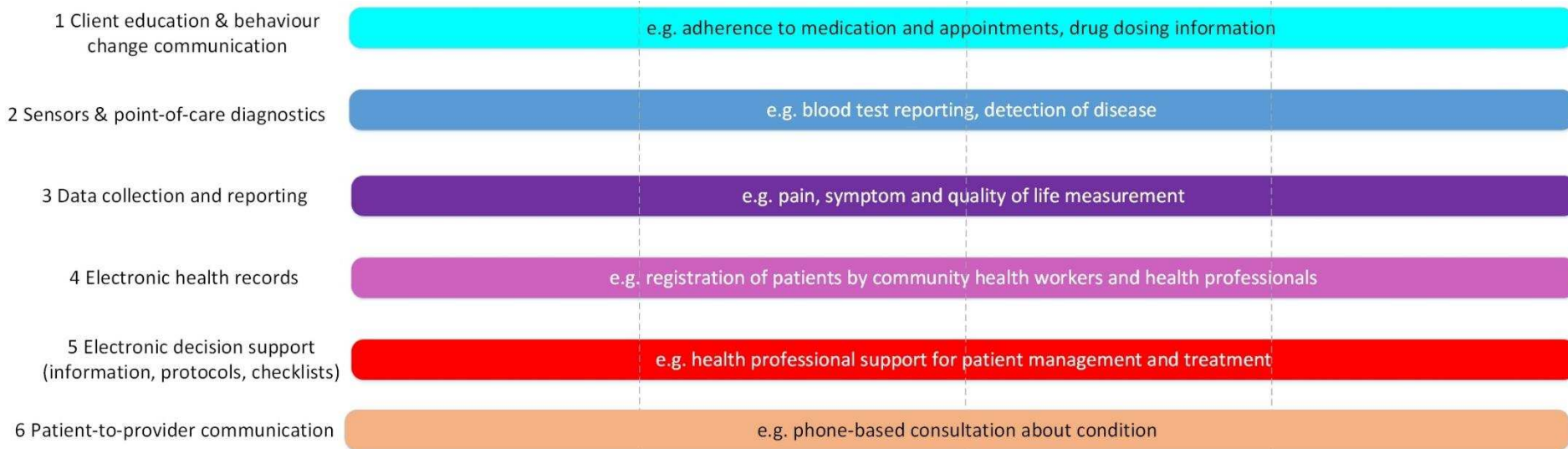
1 Client education & behaviour change communication	e.g. adherence to medication and appointments, drug dosing information
2 Sensors & point-of-care diagnostics	e.g. blood test reporting, detection of disease
3 Data collection and reporting	e.g. pain, symptom and quality of life measurement
4 Electronic health records	e.g. registration of patients by community health workers and health professionals
5 Electronic decision support (information, protocols, checklists)	e.g. health professional support for patient management and treatment
6 Patient-to-provider communication	e.g. phone-based consultation about condition

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

Combined WHO and mHealth Framework
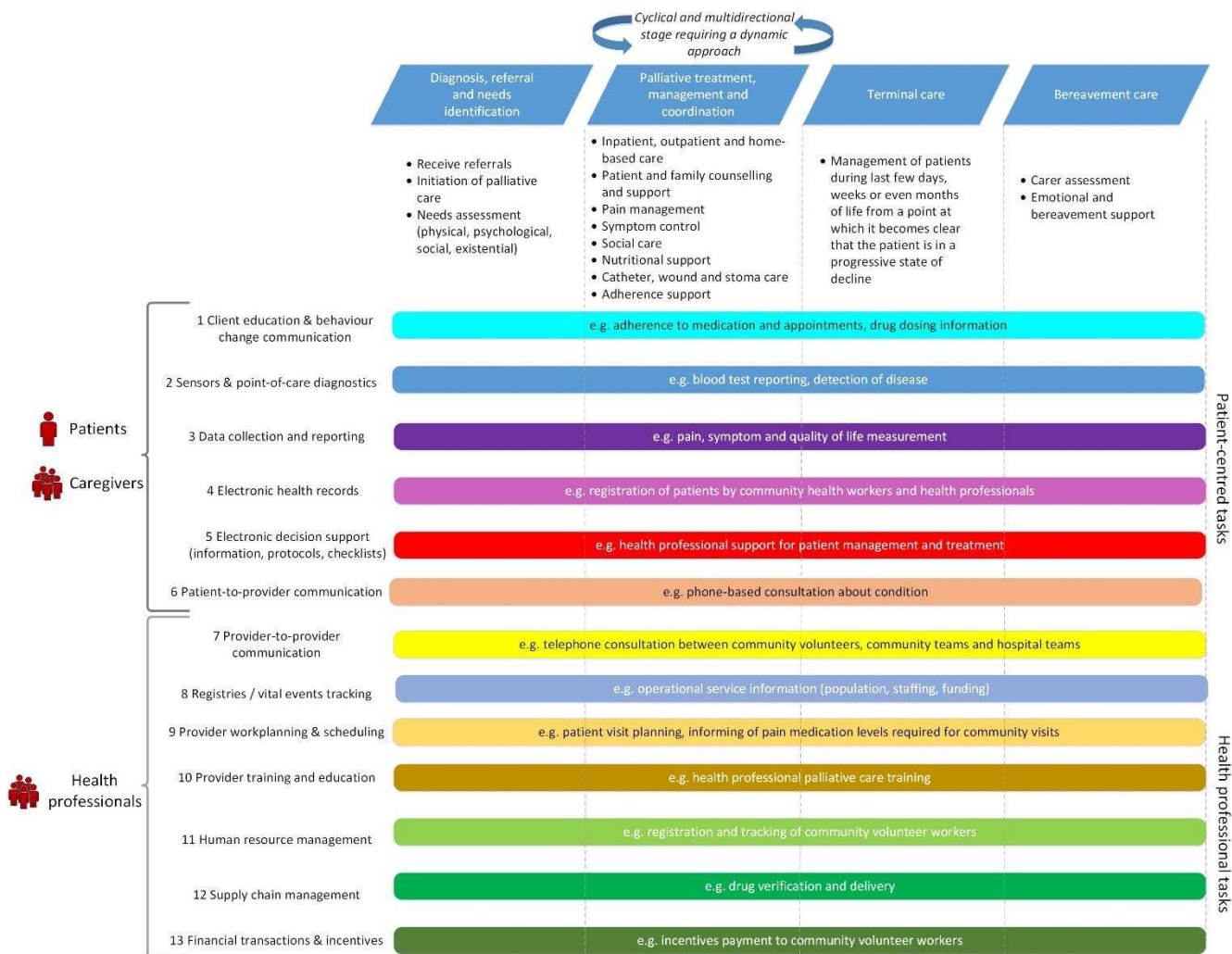

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mHealth use: Reported use in literature

mHealth survey: which countries responded?

mHealth survey: job roles of respondents
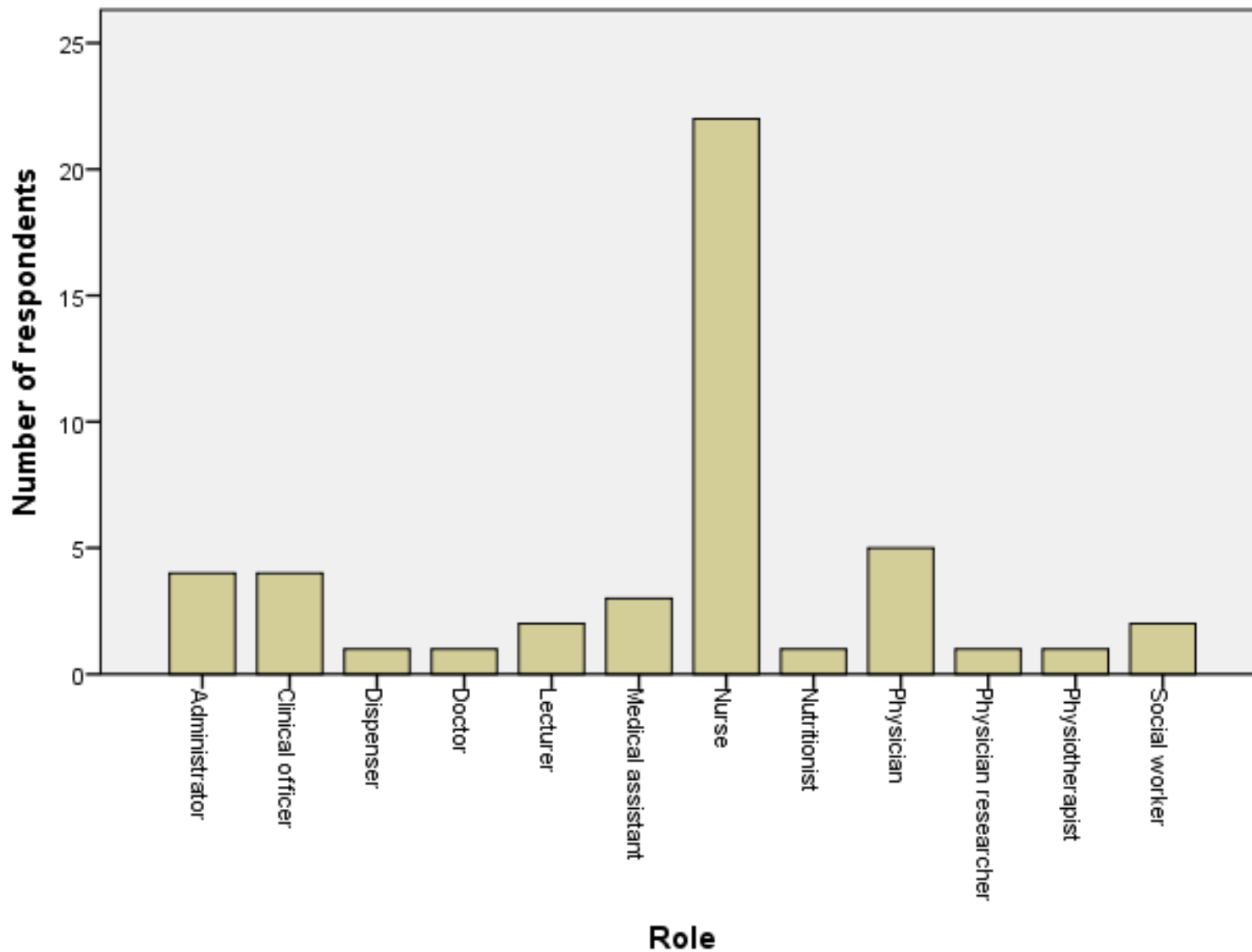
mHealth use: findings from patient use

Patient education and behaviour change
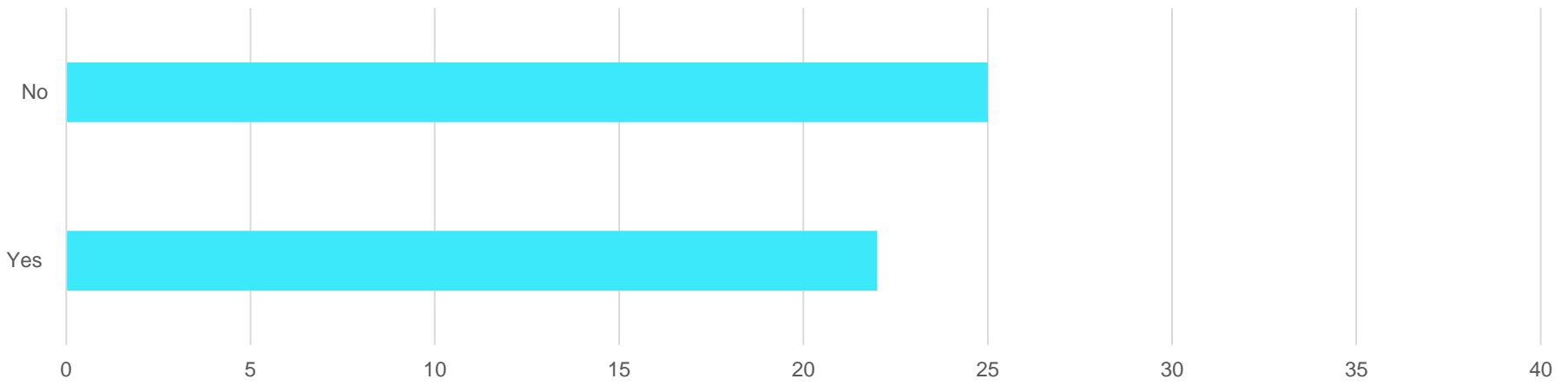
Cameroon: To take appointments or confirm appointments with patients and to follow up patients or pass urgent information to patients

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

Hospice and Palliative Care:
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DIFFERENTIATED CARE FOR DIVERSE COMMUNITIES

mHealth use: findings from patient use

Sensors or point-of-care diagnostics
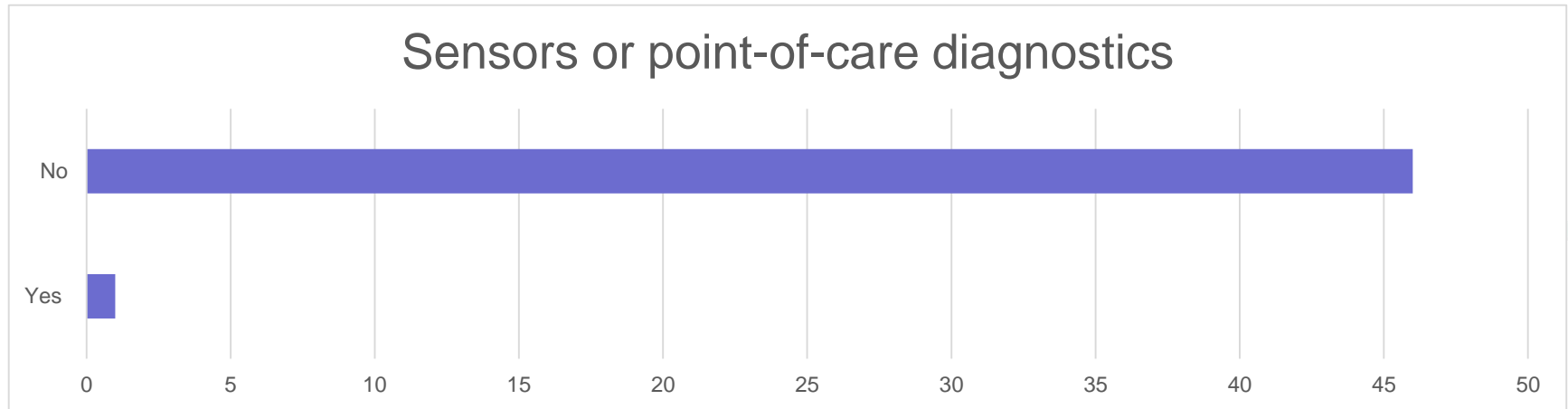
Togo: communicating about blood tests or additional medical tests

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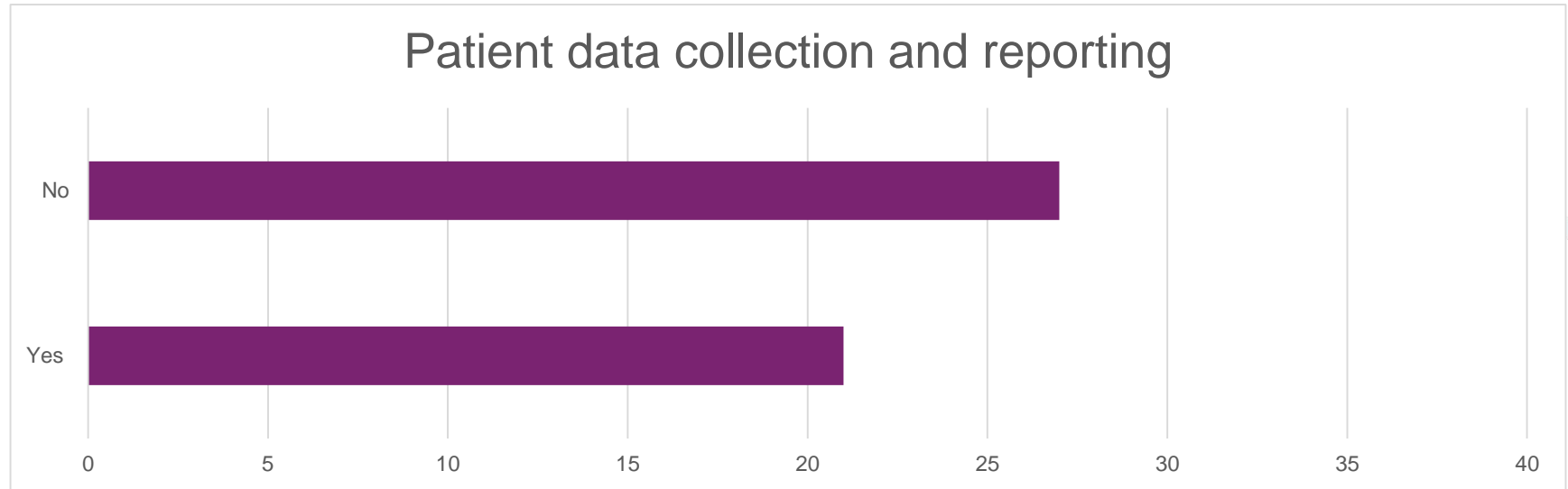
Mauritania: We have both a pain visual analogue scale and a faces scale, on the tablet computer. The patient can either point somewhere on the line or a face on the scale, the clinician then records this by ticking the relevant box. This is still at early stages and is not our routine practice

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

mHealth use: findings from patient use

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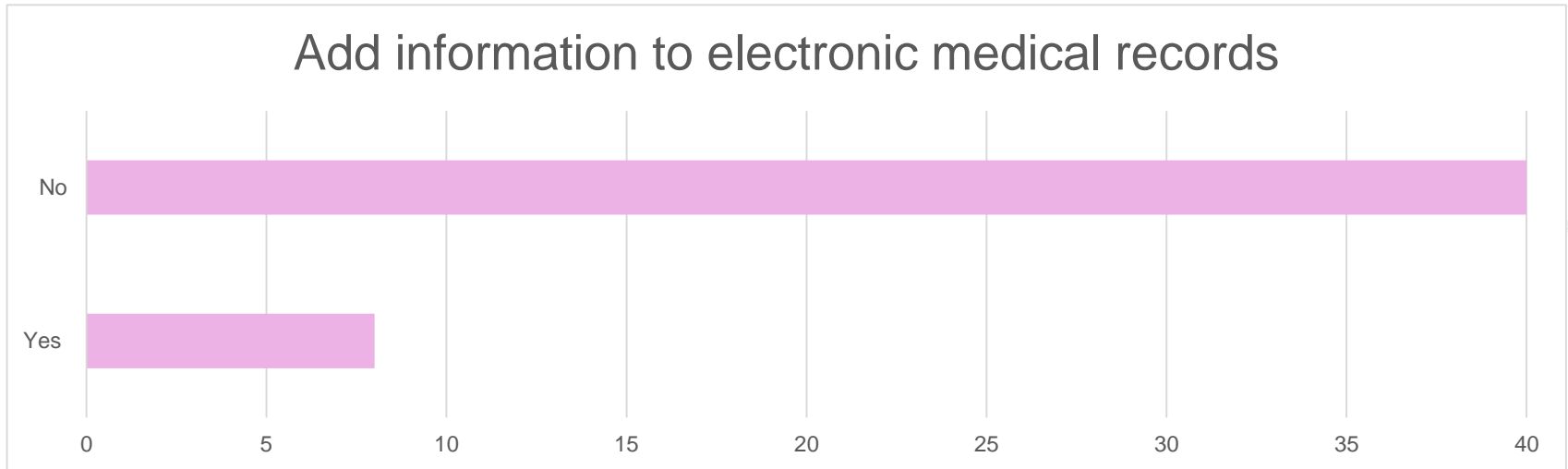
Mauritania: All health records within the project are electronic, with no hard copies. So it is only used internally within the project. I am not aware of any other electronic health records in the country.

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

mHealth use: findings from patient use

Patient-to-provider communication

(Bar chart showing "No" at approximately 25 and "Yes" at approximately 23, x-axis from 0 to 40)

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.

mHealth use: summary of health professional use

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
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mHealth use: summary of health professional use

Electronic decision support
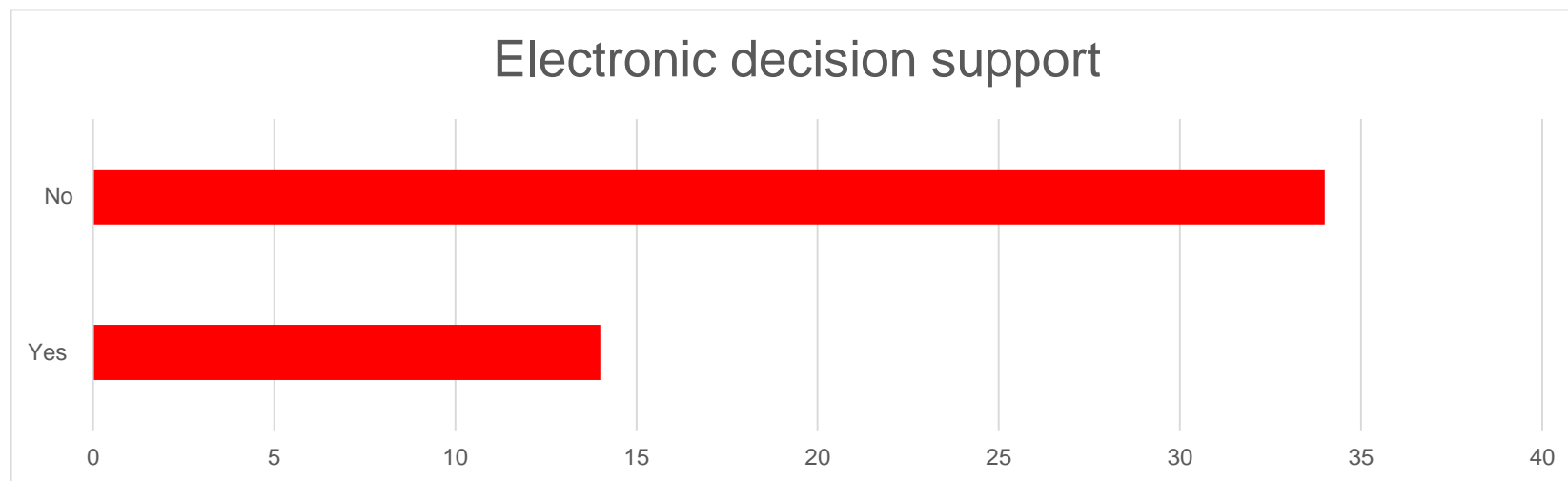
Kenya: For confirmation of treatment and protocols

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

Hospice and Palliative Care:
Resolution to Action
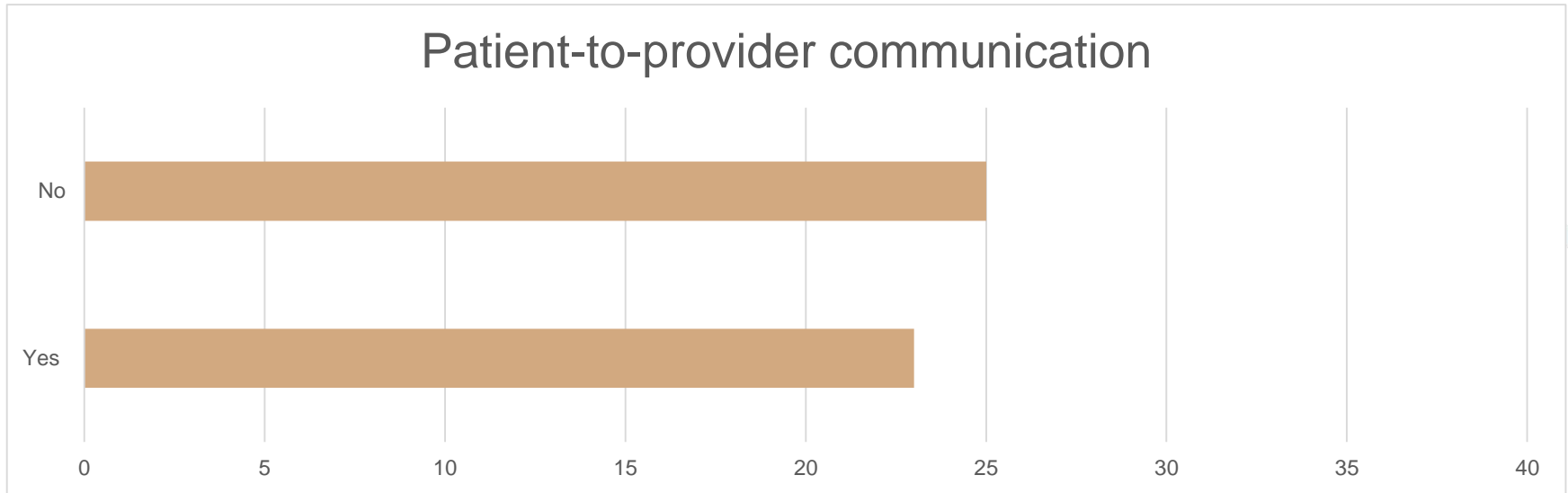DIFFERENTIATED CARE FOR DIVERSE COMMUNITIES

mHealth use: summary of health professional use

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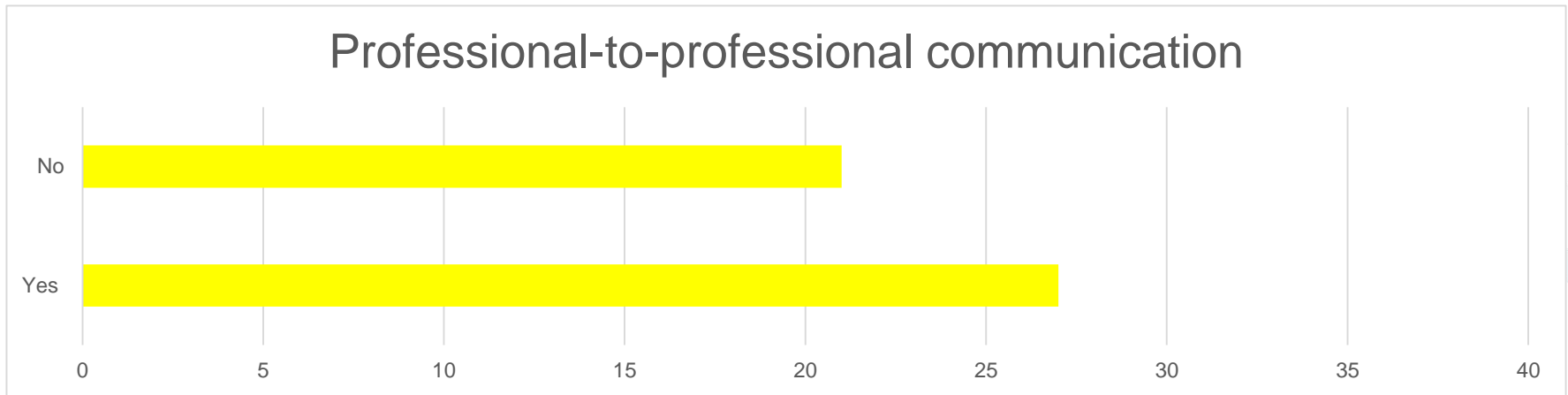
Kenya: Everyone on the team has a mobile phone. We do face-to-face patient reviews as a team every day, but when questions or issues arise otherwise, we communicate by mobile phone

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

Registries or vital tracking
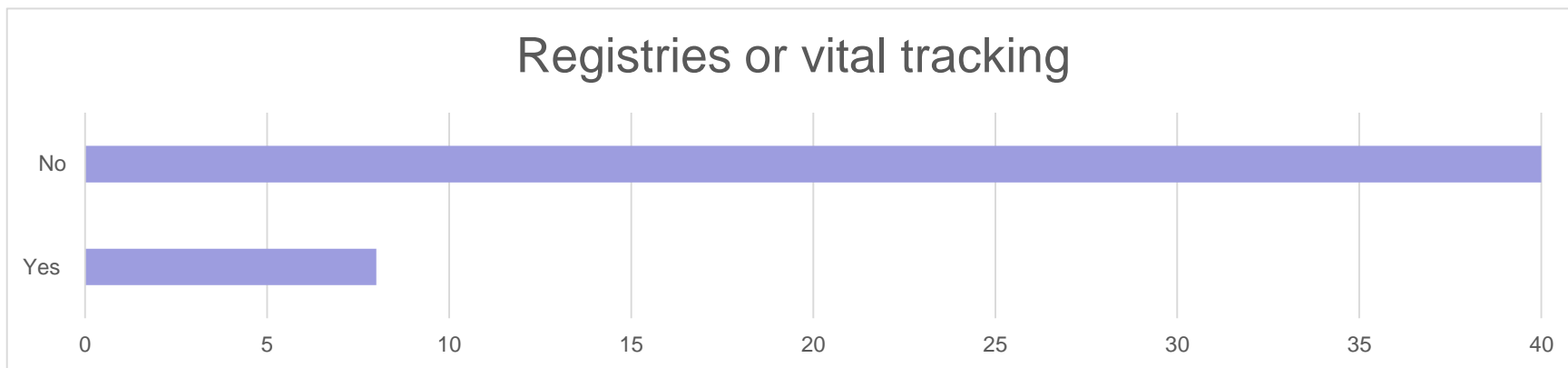
Côte d'Ivoire: Patient records stored in the database

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

Kenya: Monthly reports

mHealth use: summary of health professional use

Work planning or scheduling

(Horizontal bar chart)
- No: ~31
- Yes: ~17

X-axis: 0, 5, 10, 15, 20, 25, 30, 35, 40
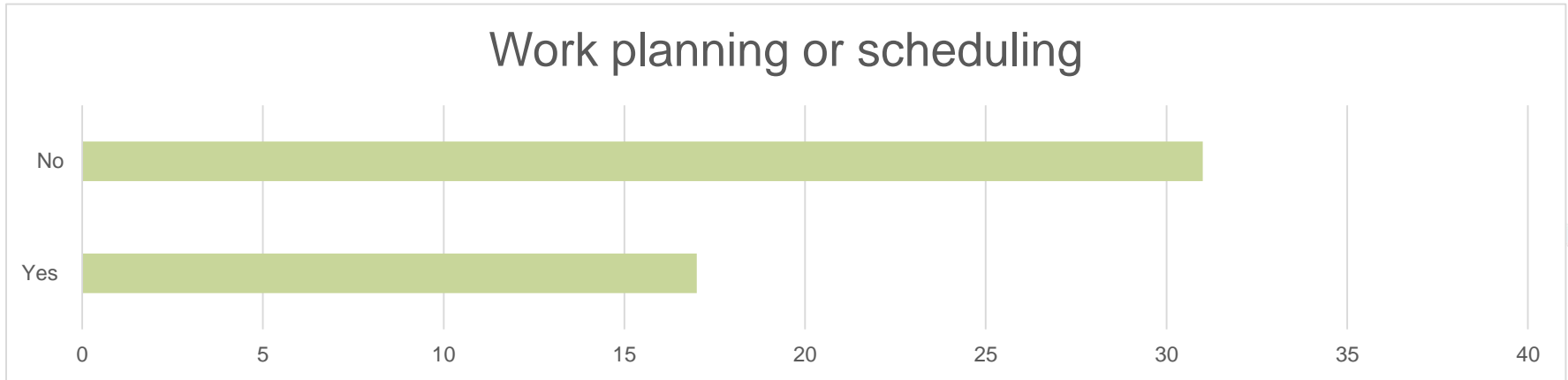
Côte d'Ivoire: Call patients to schedule home visits and search for those lost to follow-up

Kenya: Making appointments for multidisciplinary team visits

mHealth use: summary of health professional use

Health professional training and education
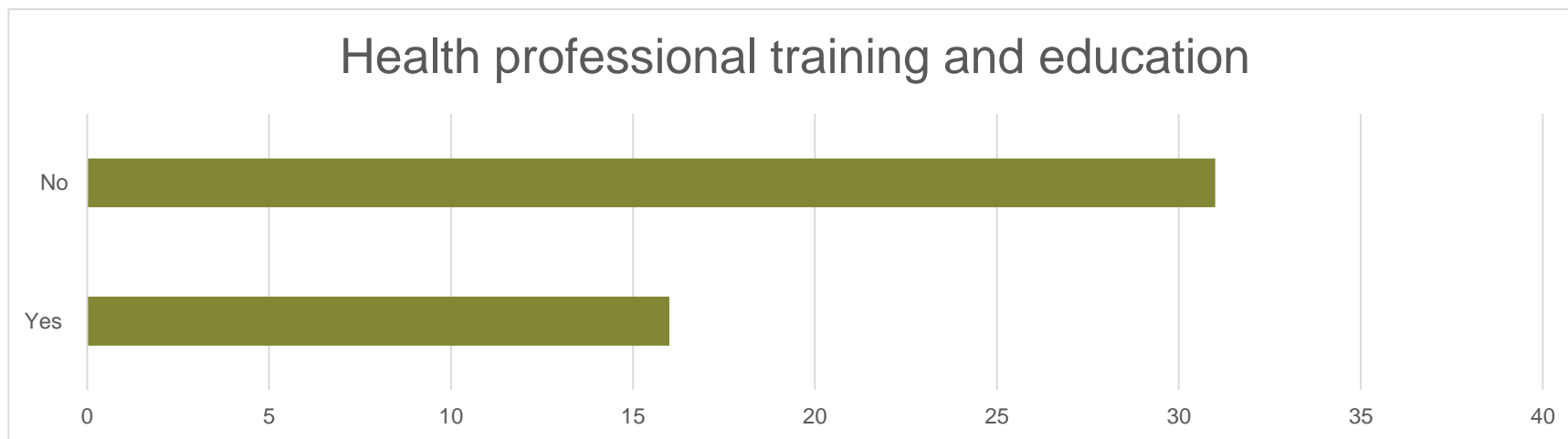
Cameroon: to encourage, give information to particular problem, give or repeat directives

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

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DIFFERENTIATED CARE FOR DIVERSE COMMUNITIES

whpca

mHealth use: summary of health professional use

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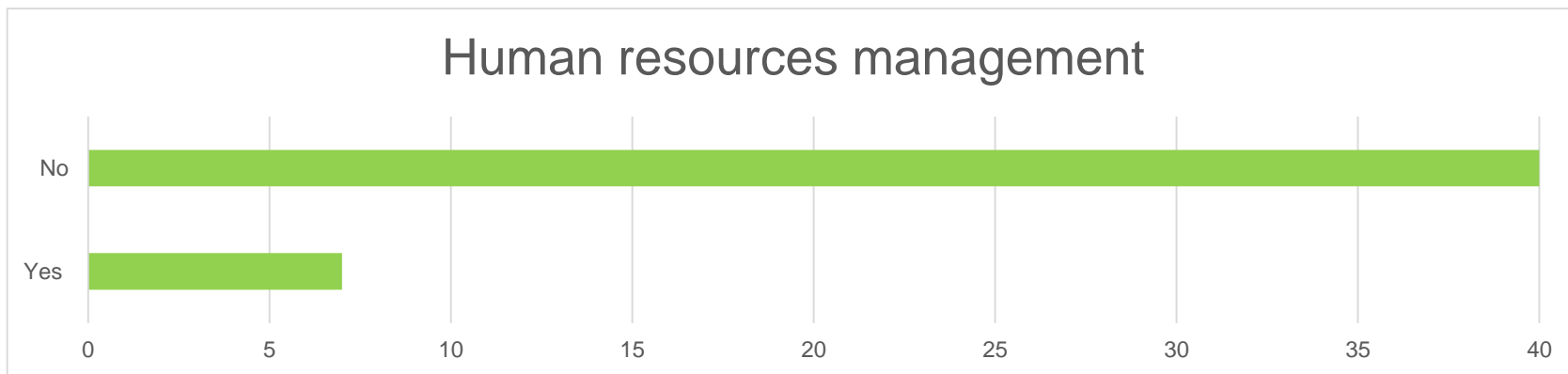
Togo: This is very important to us because who does what in the chain must be made known to all, if any change in the partner teams must know

mHealth use: summary of health professional use
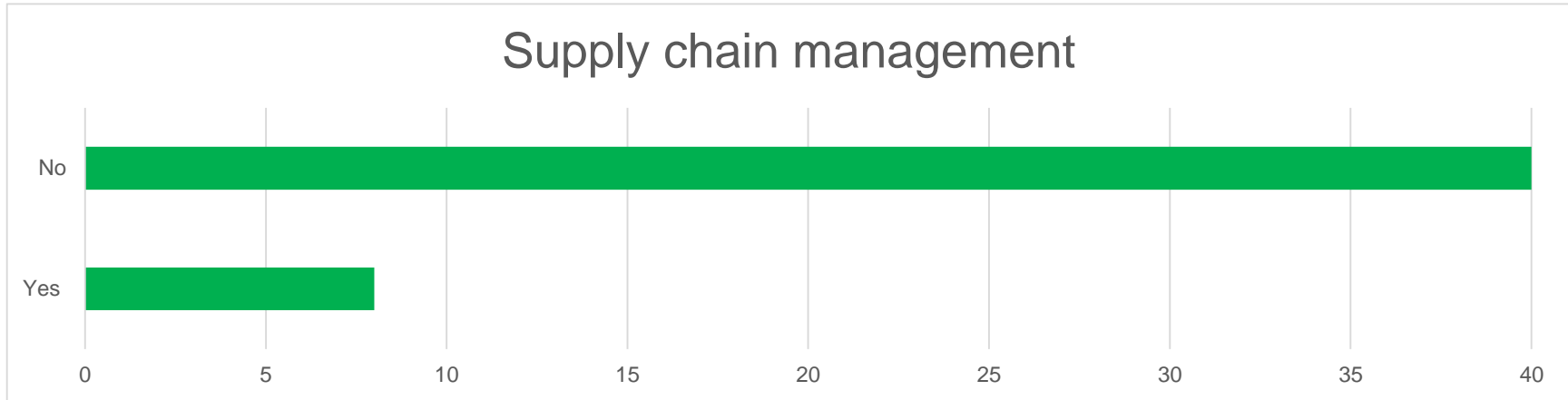
Kenya: using computer system in pharmacy to track amount of stocks remaining when dispensing medications to wards and patients

Zimbabwe: When ordering medication

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mHealth use: summary of health professional use

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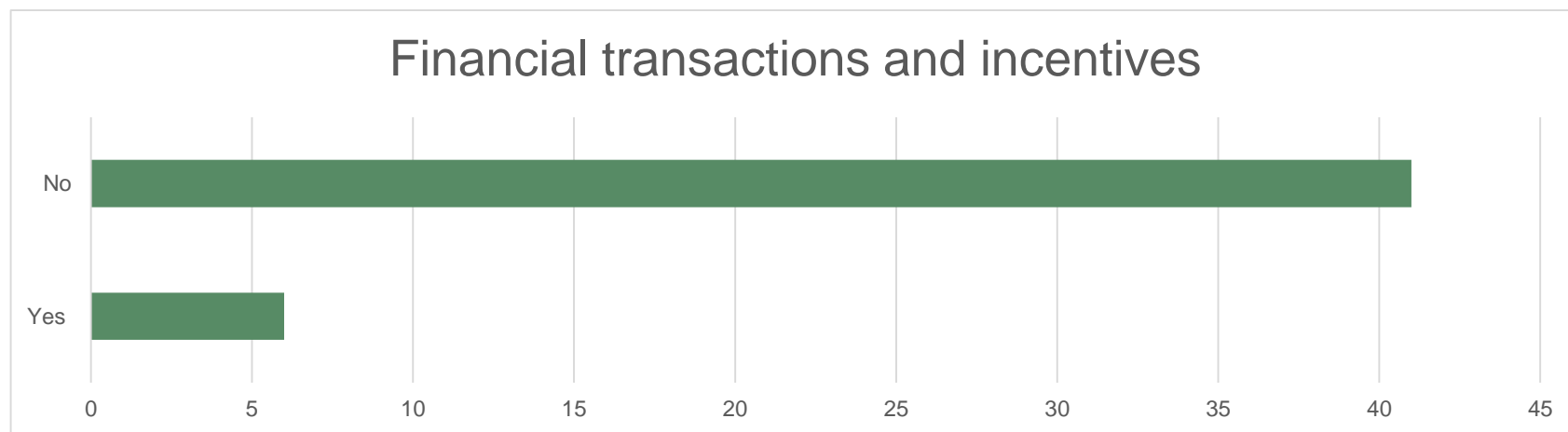
Ghana: Patient and caregivers are able to settle bills via mobile money payments to palliative care unit account

Côte d'Ivoire: Money transfer by mobile money

mHealth use: Reported use in literature

1 Client education & behaviour change communication — e.g. adherence to medication, drug dosing information

2 Sensors & point-of-care diagnostics — e.g. drug dosing information, emergency support

3 Data collection and reporting — e.g. pain, symptom and quality of life measurement

4 Electronic health records — e.g. automatic registration of patients by community health workers and health professionals

5 Electronic decision support (information, protocols, checklists) — e.g. health professional support for patient management and treatment

6 Patient-to-provider communication — e.g. phone-based consultation about condition

Health professionals — Supportive needs identified | Treatment management | Terminal care | Bereavement care

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 submission (population, staffing, funding)

9 Provider workplanning & scheduling — e.g. patient visit planning, informing of pain medication levels required for community visits

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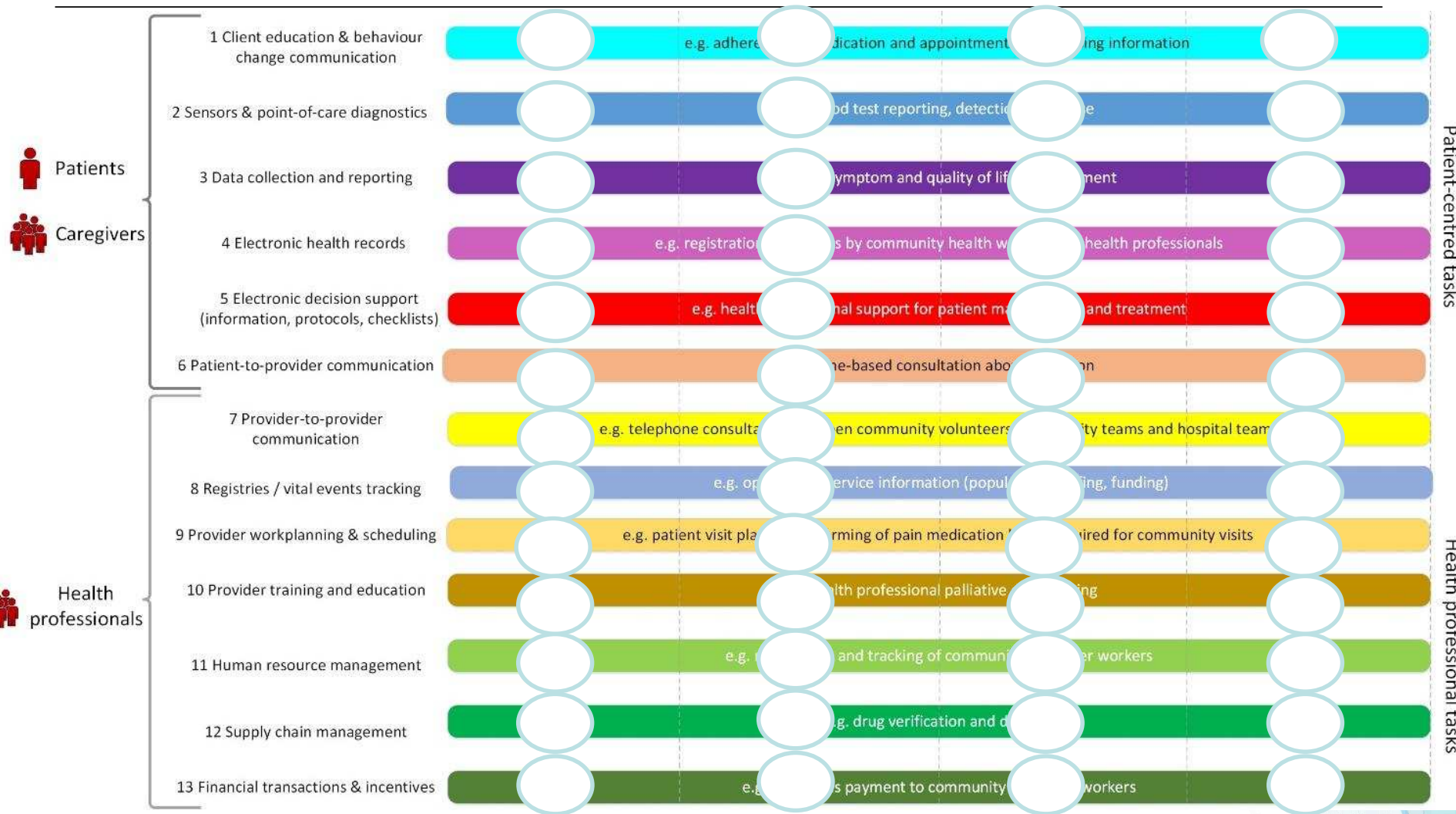Patient-centred tasks

Health professional / process tasks

mHealth use: Reported use in survey

mHealth use: priorities and reported barriers

- 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

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- 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

- 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

- 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

- Systematic evaluation of mHealth approaches can help to understand existing practice by providers

- While mHealth use in 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