Feasibility and Utility of Mobile Phone Technology to Improve ADS Services

PRESENTED BY

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Background

- In Uganda, availability and access to drugs is a problem both in public and private sector especially in the very remote and underserved rural communities.

- This is alleviated by lack of communication, monitoring, supervision and reporting tools within the health sector that could assist the public to report and give feedback on the effect of accessible channels for drugs.

- The use of mobile and wireless technologies to support the achievement of health objectives (mHealth) has the potential to transform the face of health service delivery across the globe.

- A powerful combination of factors is driving this change. These include rapid advances in mobile technologies and applications, a rise in new opportunities for the integration of mobile health into existing eHealth services, and the continued growth in coverage of mobile cellular networks.

Assessment Objectives

General Objective:

- The overall objective of the survey was to assess and develop a strategy on the feasibility and utility of using mobile technology to strengthen ADS services in areas of product availability and quality.

Specific Objectives:

- Perform a needs assessment of the Implementation of Mobile based application to improve access to essential pharmaceutical products and services in remote areas.

- Identify existing mHealth projects using mobile technology and assess ADS reporting system.

- Understand ADS and Class C drug shop business operations and how mobile technology can be used to improve these operations.

Methodology

- Desk review

- Questionnaires were designed to collect data

- Face-to-face interaction with the Drug shop Owners and Sellers

- Visited the individual shops for observation and further confirmation of collected data on the questionnaires

- Management officials were also interviewed at both local and central levels.

- A database in Access was constructed and used to capture the data

- This report displays various graphical outputs, tables and figures in addition to descriptive findings to present the results.

Facilitating data collection

Consultants explaining elements of the questionnaire to a drug shop seller

Avytel consultant interviewing drug shop owners and sellers

Distribution of Participants in the survey across 4 districts

The survey was conducted among a total number of 59 Drug shops in 4 districts distributed as shown below:

| Location	No. Visited
Kamuli	26
Kyenjonjo	5
Kamwengye	9
Mityana	19
Total	**59**

Levels of education of the drug sellers and owners by gender

The owners and sellers were then gauged on the level of education and the distribution across gender as represented in the figure
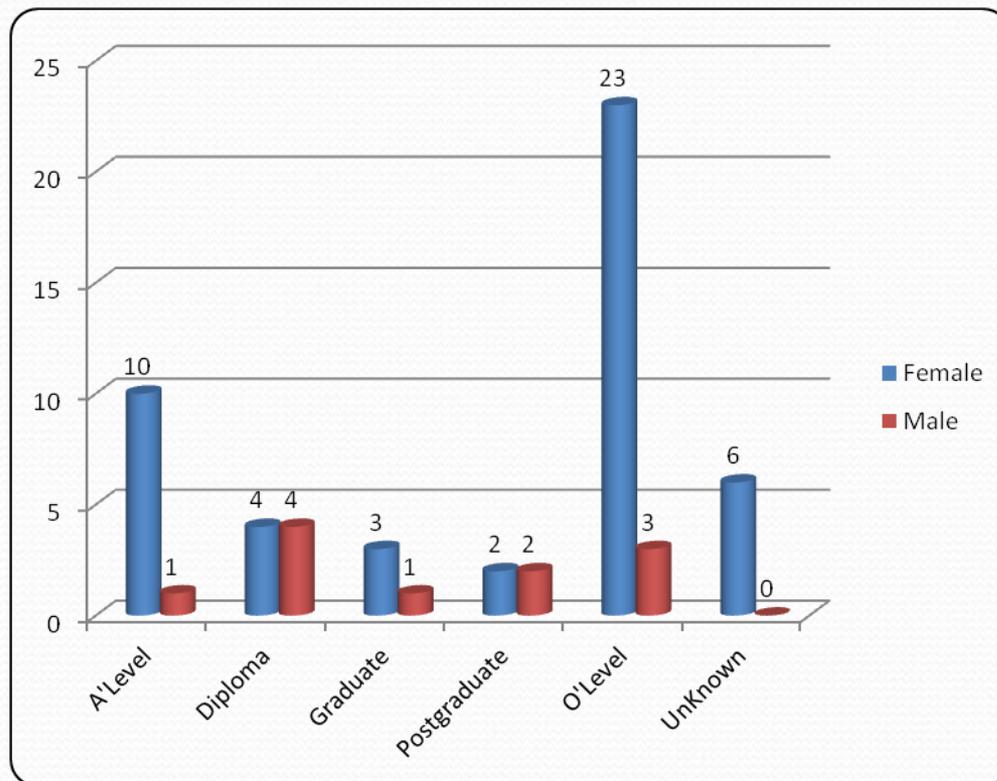
Drug shop owners and sellers own rating of the level of assistance received from NDA

The drug sellers and owners were asked to rate the level of assistance they receive from NDA regarding the challenges they faced. The findings are summarized in the figure.

Legend:
- Did not answer
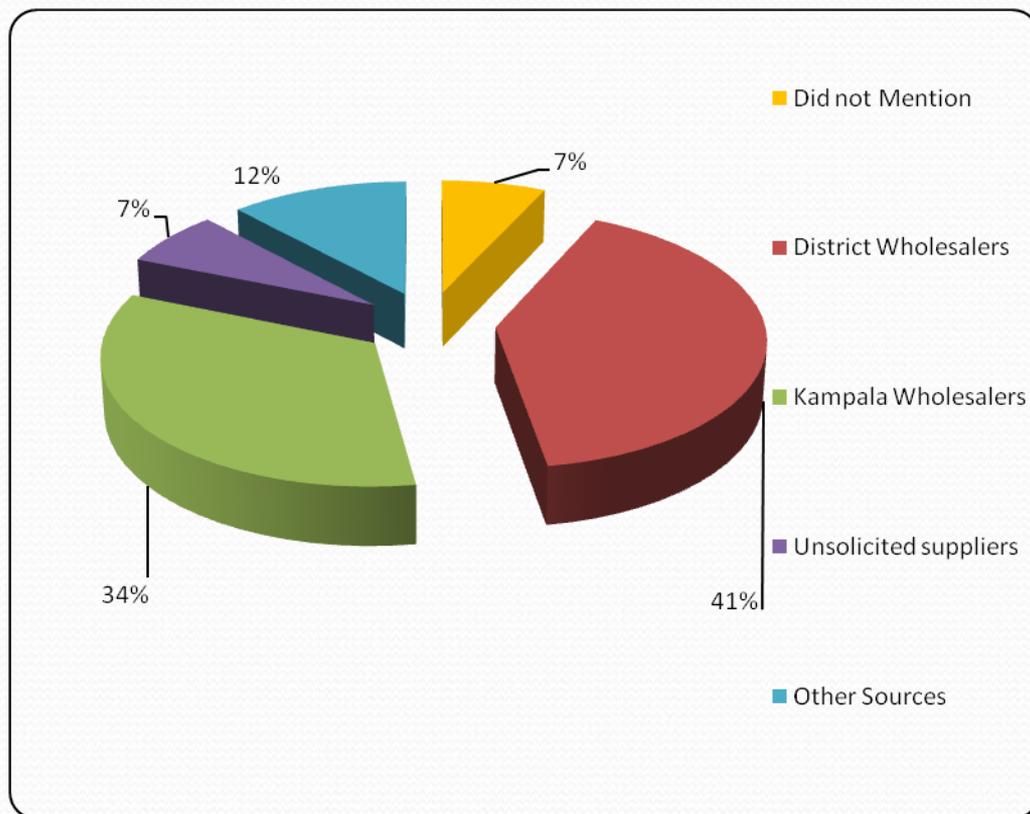- Very low
- Low
- High
- Very high

12%
8 %
7%
41%
32%
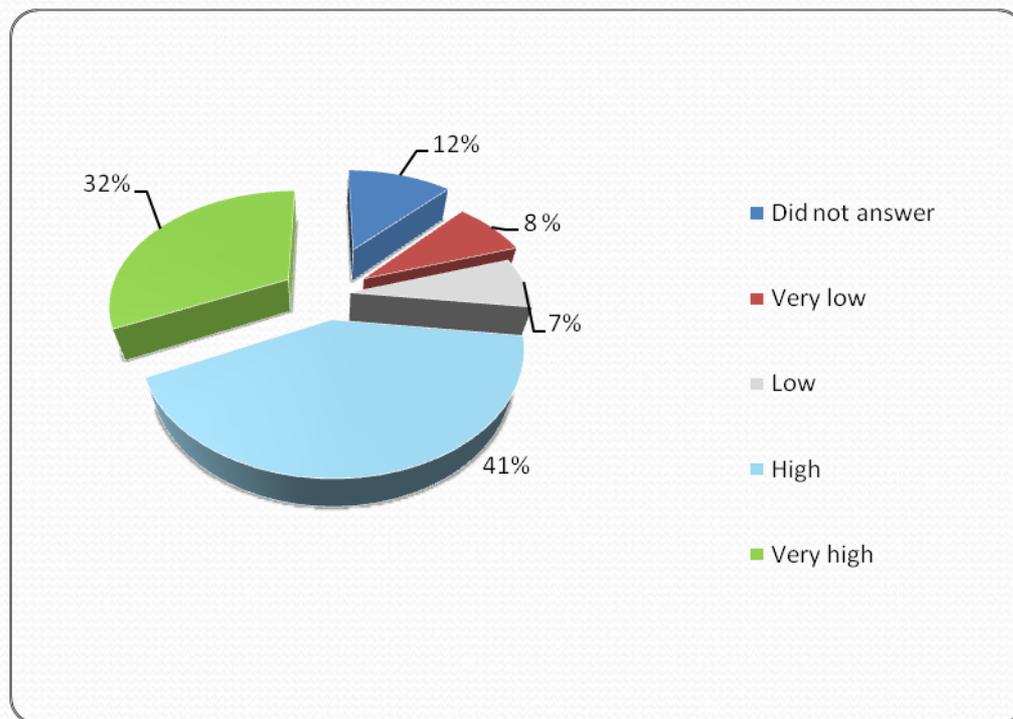
Frequency of communication between the sellers, owners and NDA inspectors

We also set to find out frequency of communication between the sellers, owner and with NDA inspectors. The findings are as shown below.
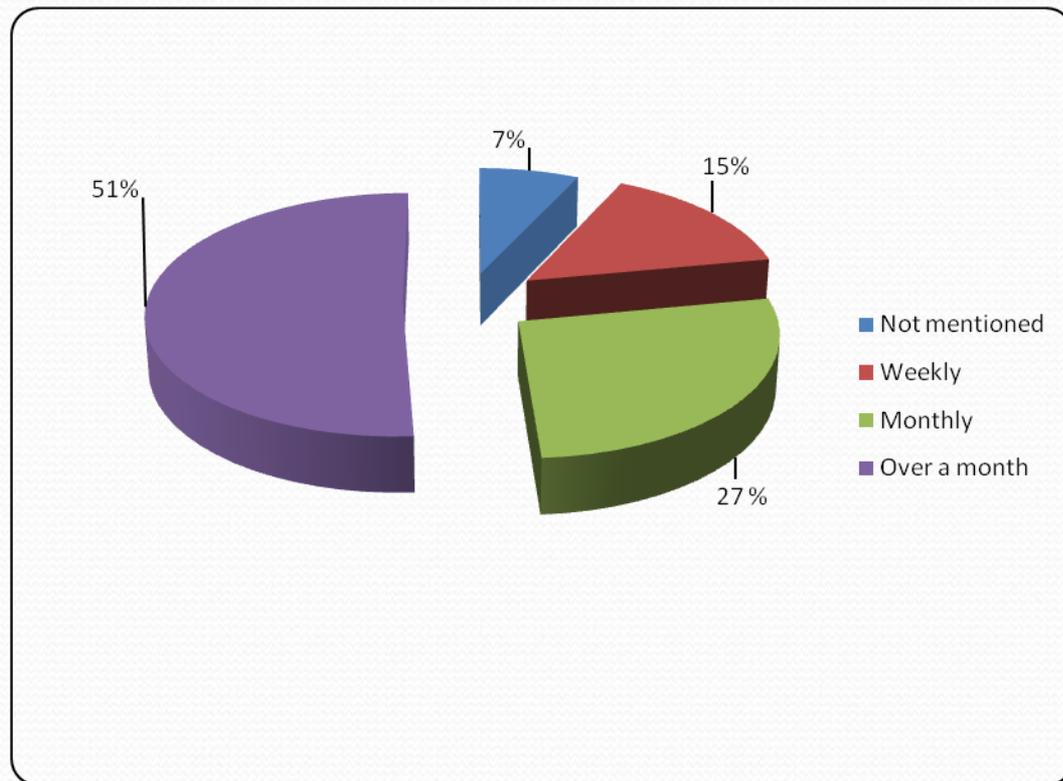
Drug Shops' Sources of supply

The drug sellers were asked to indicate their common sources of supply for their stock

Legend:
- Did not Mention — 7%
- District Wholesalers — 41%
- Kampala Wholesalers — 34%
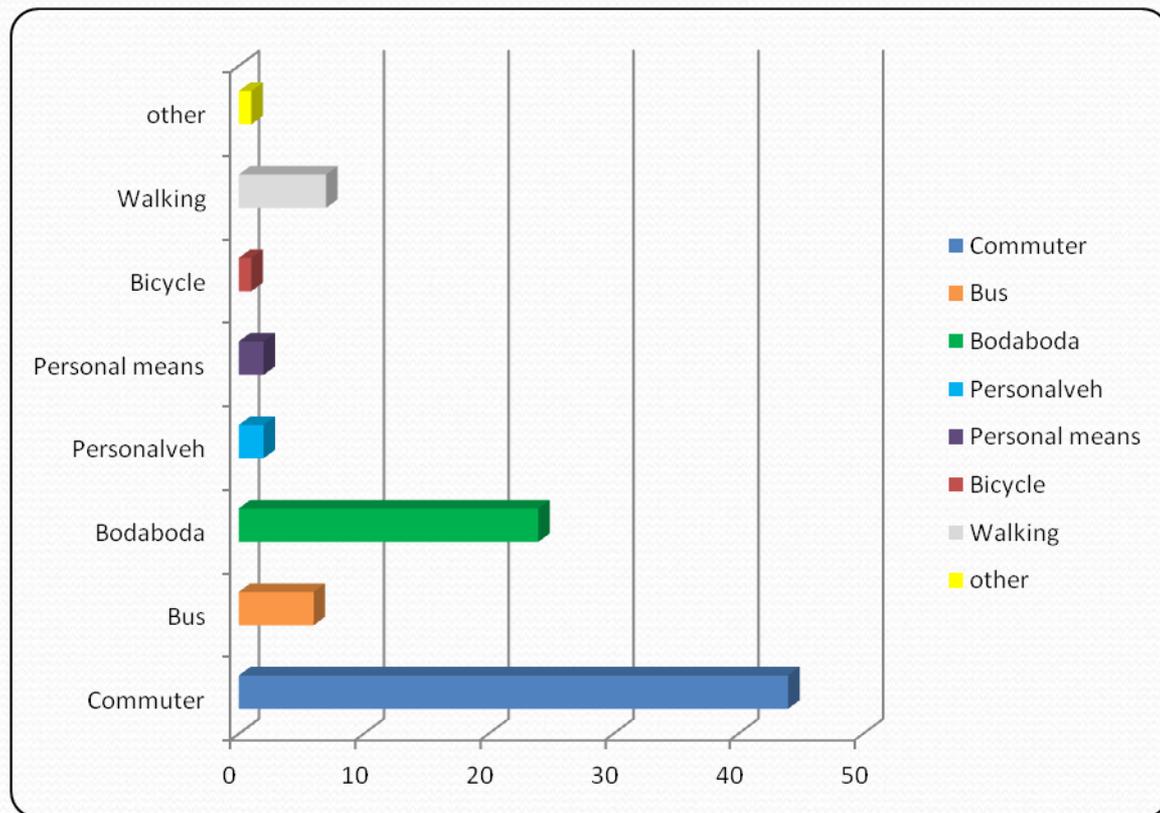- Unsolicited suppliers — 7%
- Other Sources — 12%

Mode of communication when placing orders

The drug sellers were asked to indicate their common mode of communication when placing orders for their stock
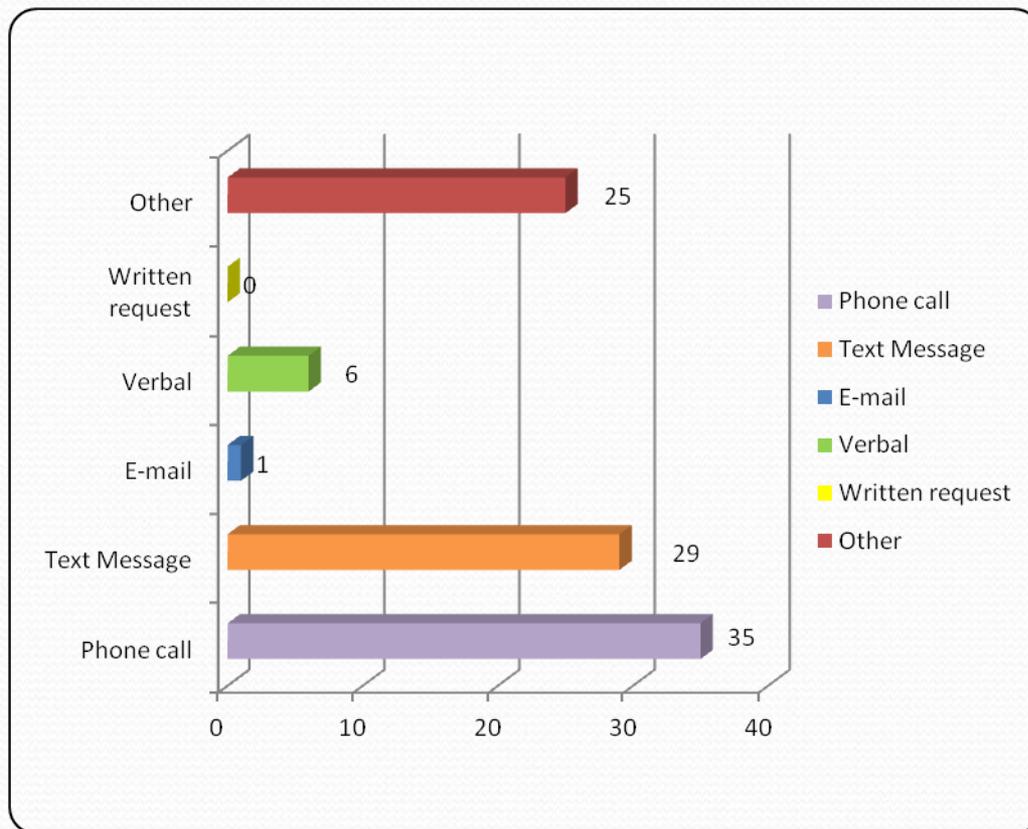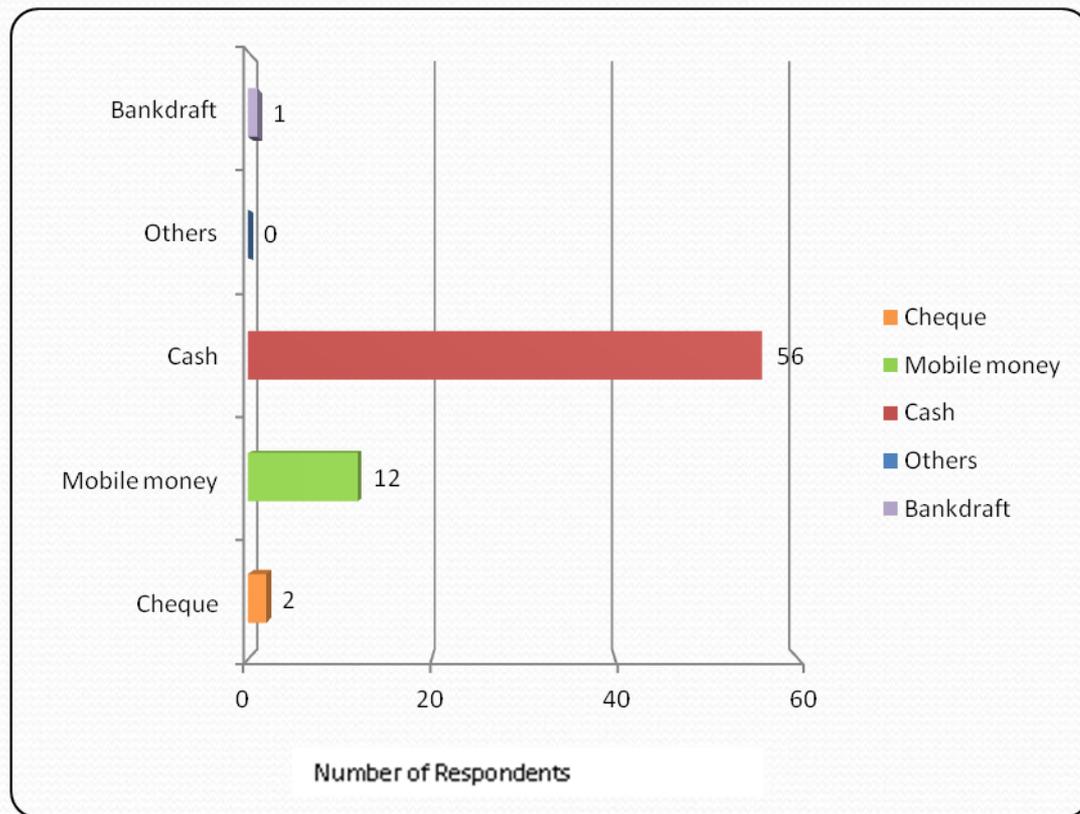
Transportation modes during stock replenishment

The drug sellers were asked to indicate their common mode of Transportation for stock replenishment
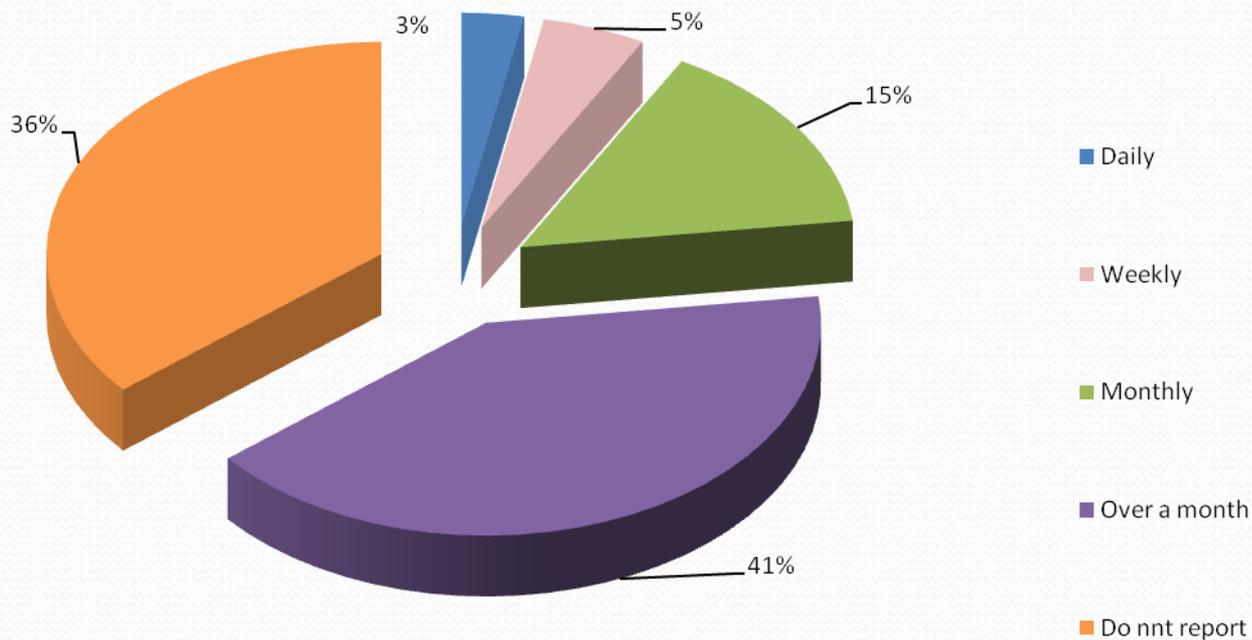
Modes of Payments by Drug Shops

The drug sellers were asked to indicate the modes of payments they have used for their stock replenishment

Frequency of Reporting expired drugs

How frequently do you report expiry of drugs?

- Daily — 3%
- Weekly — 5%
- Monthly — 15%
- Over a month — 41%
- Do nnt report — 36%

Access to a Mobile Phone
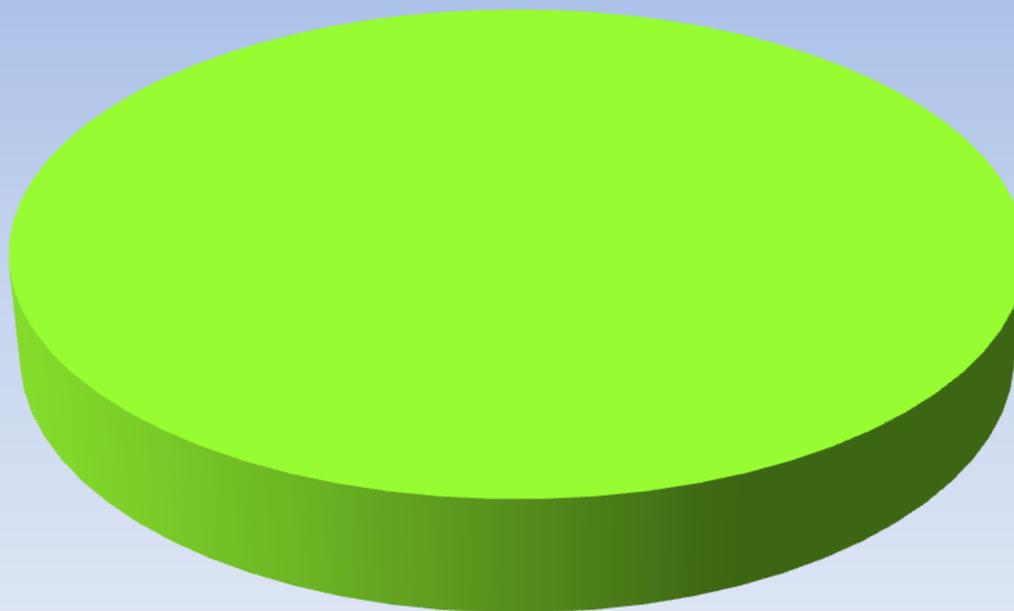
Satisfactory availability of Telecommunication Network across the Various districts

Drug Sellers' own assessment of using mobile technology to improve their business

Can mobile phone technology be used to Improve your business ?

3%

Did not Answer   Yes

97 %

Willingness of Seller/Owner to contribute to the cost

8%

2%
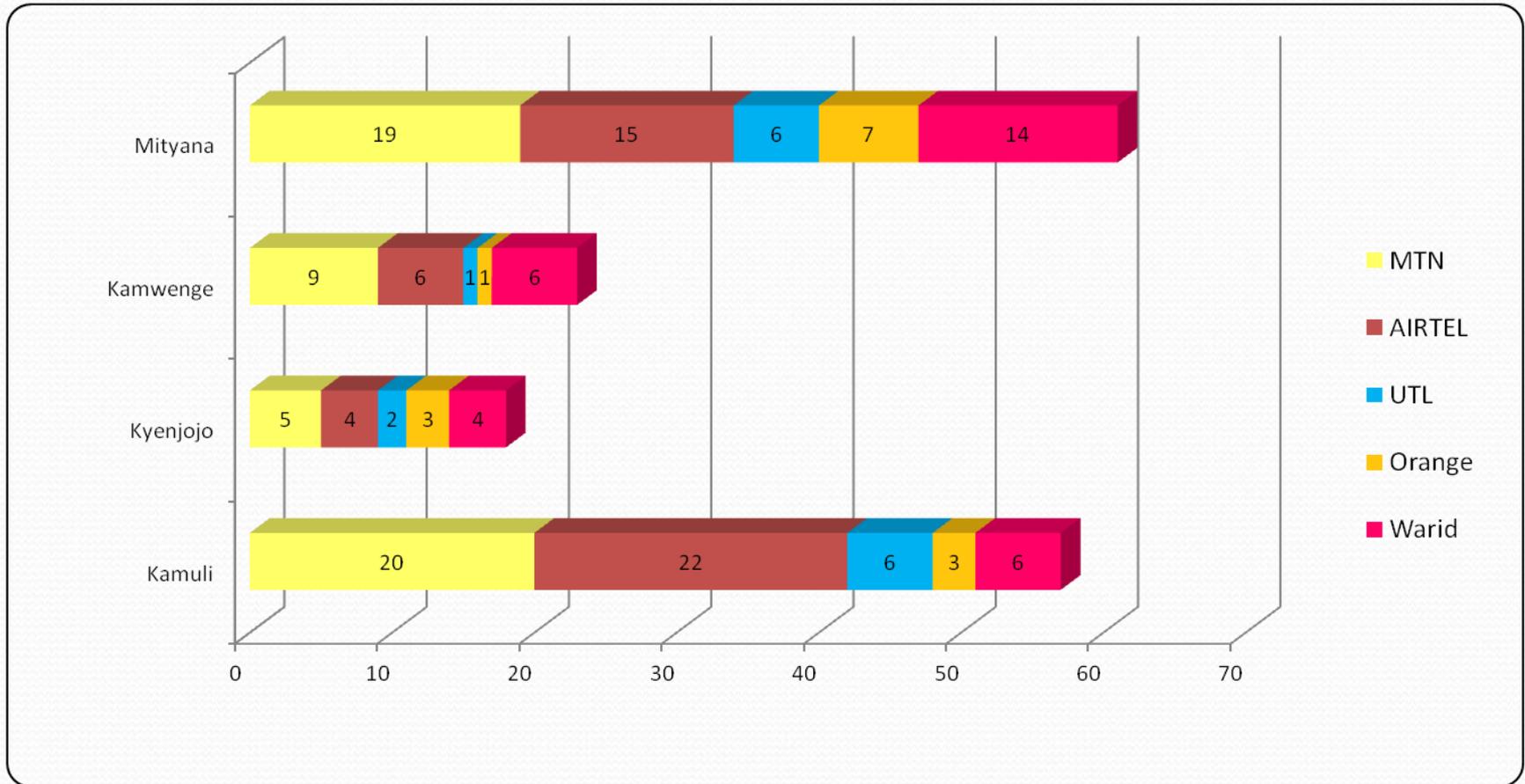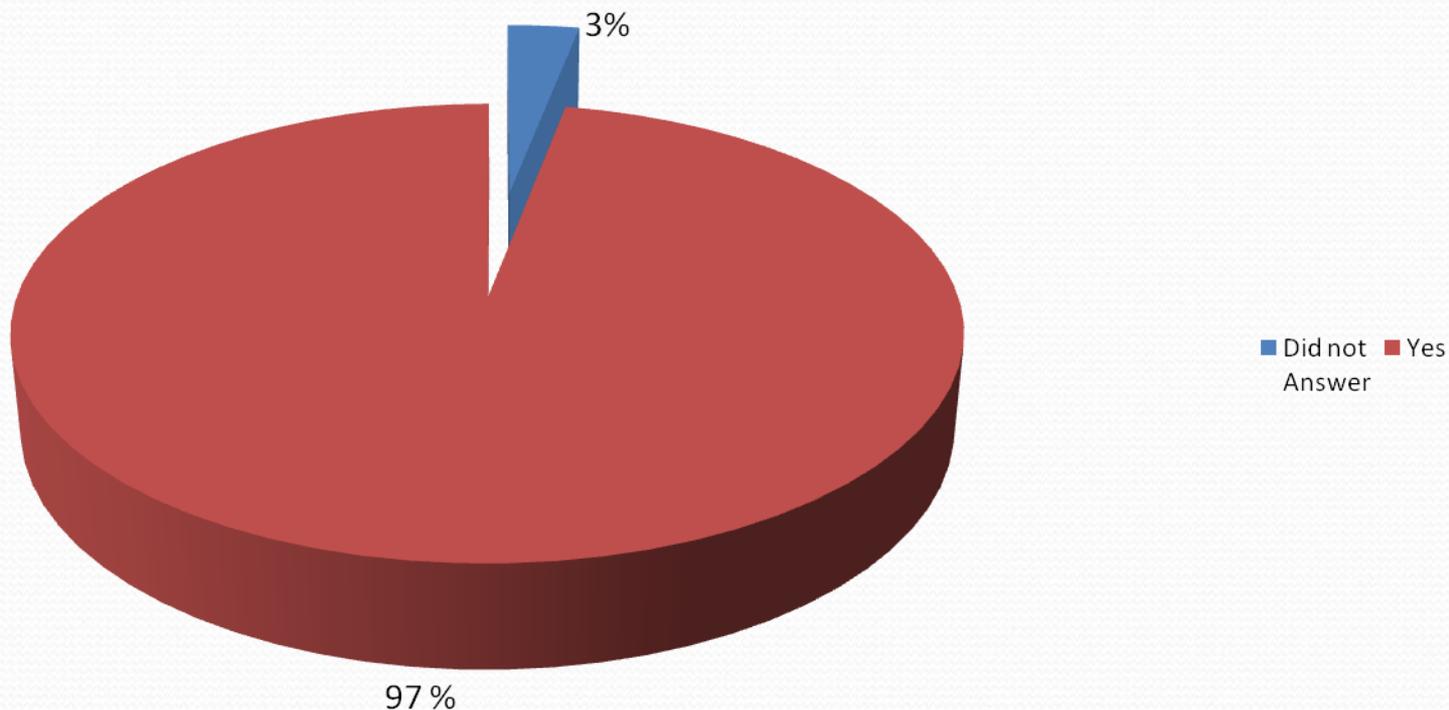
90%

- Did not answer
- No
- Yes
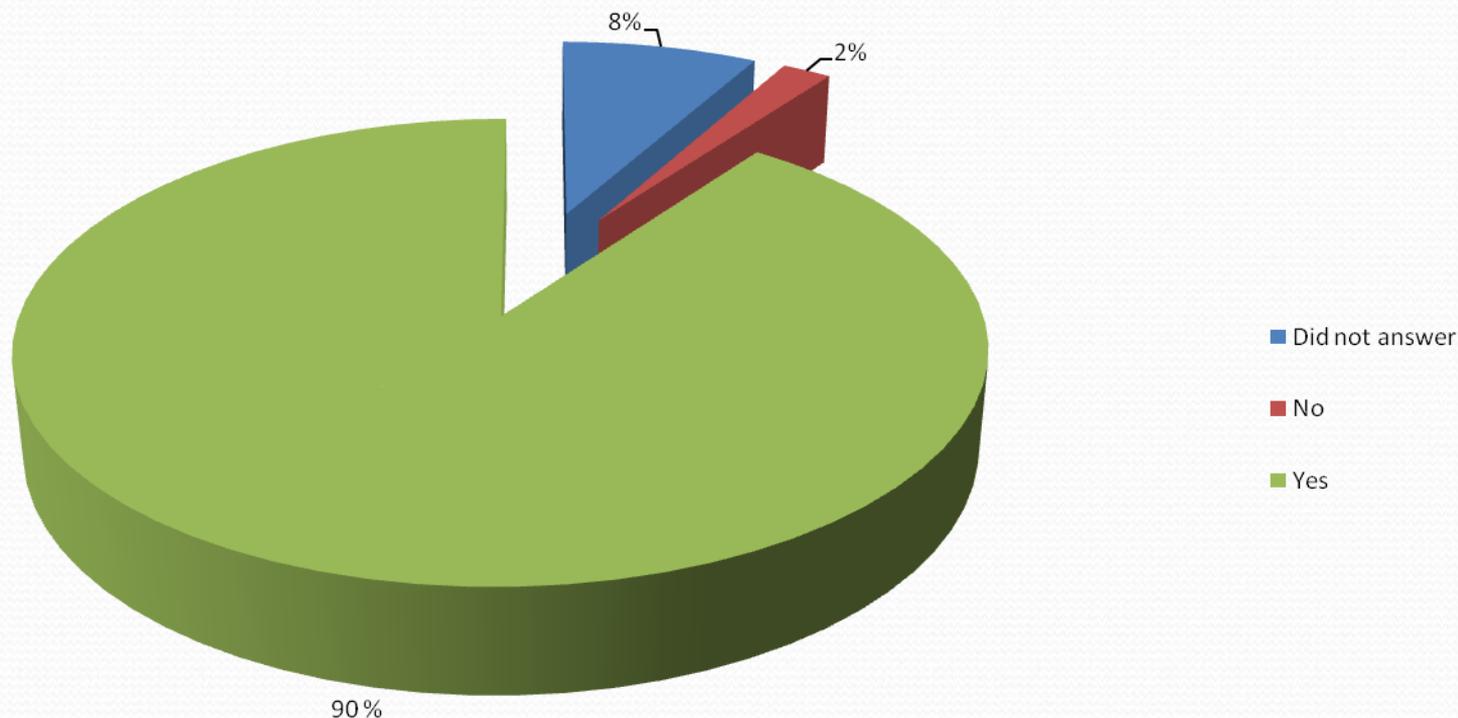
End User with a mobile phone (low end/high end) acts as source of data at the drug shop

Protocol to send data in certain format for processing e.g. For registration User sends SMS text looking like:

DRUGSHOPNAME#DISTRICT#OWNER#PP/ID Number

Server with equipped Modem to receive and transmit messages PERFORMS SMS processing.

Server has a web and/or WAP based interface for reporting.

System Functions

- Drug Seller Registration
- Patient registration
- Inventory Registration
- Dispensing Drugs
- Reporting Expired Drug Batches

System Functions Cont'd

- Reporting Adverse Events
- Drug recall notifications
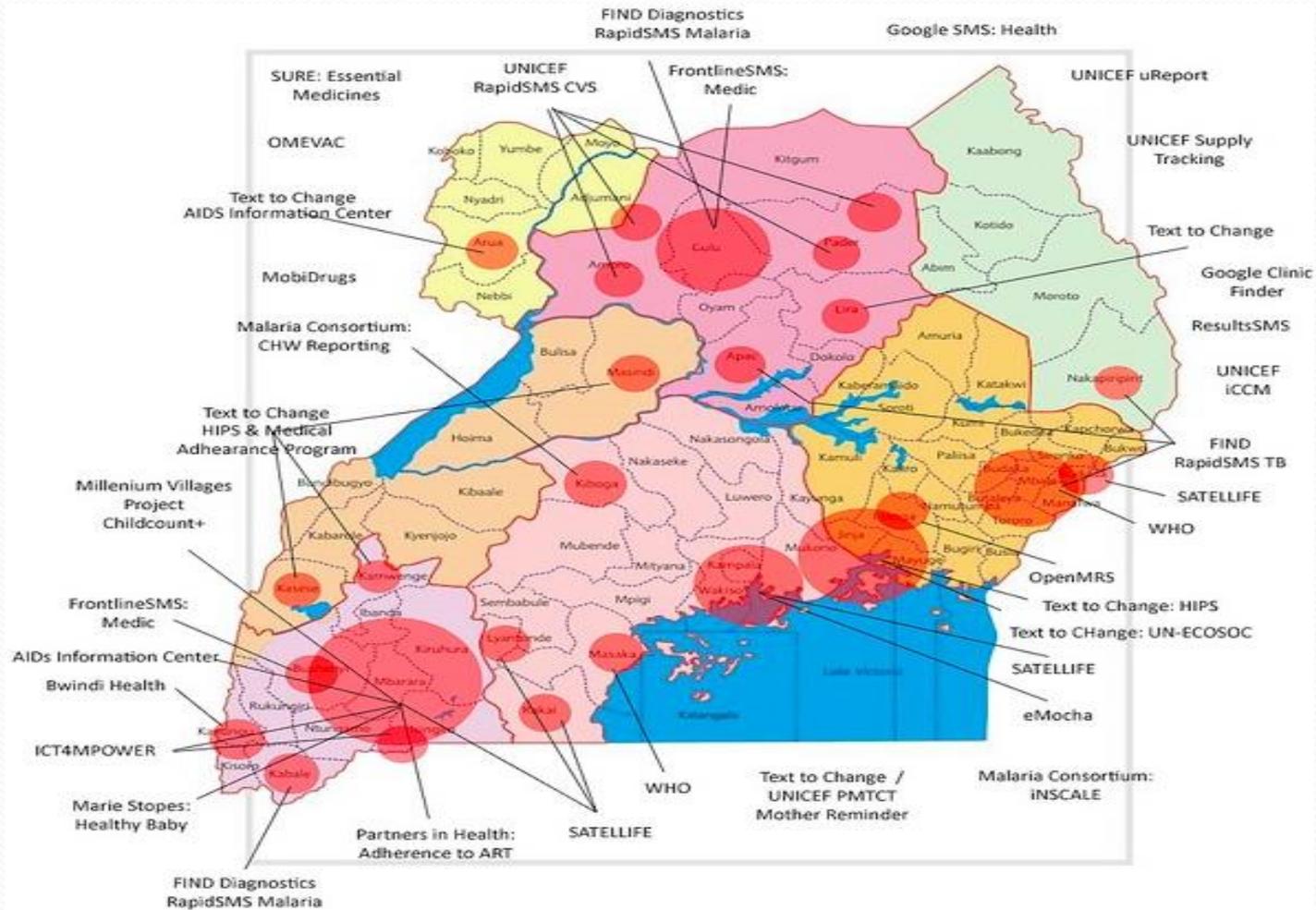- Disseminating New Drug guidelines
- Receiving registration/accreditation payments
- Mobile money for business payments
- Management Reports
- Interactive voice response to disseminate general information via voice.

Conceptual Design

ADS_Payments
OutletID
Payment ID
Amount Paid
Date Paid
Payment Type

SMS
Outlet id
SMS type **(Received/Sent)**
Mobile phone no
Date Sent/Received
SMS Text

PATIENT
Outlet id
Patient ID
Patient Name
Date of Birth
Diagnosis
Has prescription
Purchase Purpose
Mobile phone no
District ID
NationalID/PPNO

OUTLET
Outlet id
Outlet Owner
Outlet type
Mobile phone no
District ID
NationalID/PPNO

Adverse Events
Outlet id
CareGiver ID
National ID/PPNO
Adverse Event
name
Batch No

Drug Register
Outlet id
Batch No
Drug name
Country of origin

Outlet Inventory
Outlet id
Batch No
Order No
Quantity in stock
Reorder-level
Quantity Issued
Expired Drug
Batch No
Quantity
Date Reported

Other Mhealth Projects

Organization	Project	Areas addressed	Stage of Implementation
UNICEF	MTRAC	Tracking medication stocks and Patient information at the country's 5000 health facilities and 8000 local medication distribution centers .	National Rollout Planned for November
UNICEF	CVS	Collect routine data via SMS from field workers on a variety of factors, including disease outbreaks, birth/death rates, and nutrition information .	

UNICEF	UREPORT	This is a citizen feedback service, to get information from beneficiaries about what's happening on the ground for the CVS and Mtrac systems	
UNICEF/PMTCT	Text To Change	Uses SMS to transmit information regarding HIV/AIDS to the community, and obtain feedback on the same.	Already Piloted in Mbarara as early as 2008.
FIND	Find Diagnostics RapidSms Malaria	Uses RAPIDSMS™ to monitor Malaria as well as ACT levels in rural Health facilities in Gulu and Kabale	Already implemented in Gulu and Kabale districts of Uganda

Conclusion and Recommendations

From our findings above, the use of mobile technology to support the management of drug shops for SDSI initiatives is feasible.

- All the drug shop owners and seller have access to a Mobile phone (no initial cost of providing the required device to implement the system).

- The levels of education of most drug sellers is above 0 level (training on usage of any mobile phone technology systems will require minimal effort).

- The communication between NDA/DADI inspectors takes over a month (use of mobile technology this gap can be bridged)

- Frequency of reporting expired drugs takes over a month for most of the survey participants due to communication and transportation challenges, (mobile phone technology would be useful to expedite the reporting of expired drugs)

Conclusions and recommendations- cont'd

- Most shop owners and officials identified high transportation charges as a challenge (implementation of mobile phone technology would contribute to the reduction of some of the transportation charges).

- There was availability of mobile phone telecommunication networks in their areas of operation thereby confirming the feasibility of establishing a mobile phone-based solution.

- There was also a consensus that the telecommunication network services were affordable with a majority of the survey participants indicating willingness to meet the costs of utilizing the technology to improve their sales and services.

- The survey revealed that there is an mHealth (Mtrac) solution implemented by MOH and relevant stake holders in the public health sector.

Conclusion and Recommendations

- In conclusion therefore, it is feasible to develop a mobile phone-based system using available technologies such as sms and interactive voice response to disseminate as well as collect information from the drug shops.

- The above report identifies that other initiatives are already on the ground such as the M-track supported by UNICEF. Their willingness to partner with others can be exploited since they already have an existing system.

- Further technical understanding of their system can be explored further in future to inform the process of implementation of the mobile-based technology solution.

Thank You