



mHealth



Understanding the needs and wants of Community Healthcare Workers

South Africa, August 2014

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Overview and research objectives



This work builds on the recently published End Consumer Primary Research and aims to inform health and mobile stakeholders about the users of mHealth services in the public sector. The GSMA expects this market knowledge to lead to product design that is more aligned to the needs of users (consumers and health workers), greater adoption and achievement of economies of scale and sustainability, and robust partnerships between public and private sector stakeholders that ultimately reduce the widespread fragmentation of mHealth services in South Africa.

It is recognised that South Africa has a high per capita health expenditure with relatively poor health outcomes. One way in which the National Health Insurance (NHI) aims to address this is through Primary Health Care (PHC) re-engineering, whose focus is to strengthen the district health system (DHS), and to place greater emphasis on population health and outcomes. To achieve this, a strong emphasis will be placed on decentralising health care delivery through ward-based PHC outreach teams. These teams will include community healthcare workers (CHWs), responsible for delivering preventative, promotive, curative and rehabilitation services to families in their respective wards.

In the area of reproductive, maternal, newborn and child health (MNCH) specifically, CHWs provide support not only in the identification of pregnant women but also in the collection of vital patient information. Their role is crucial in providing care and driving demand for early and continual antenatal care (ANC), as well as for post natal care (PNC). Besides providing ANC and advocating for a healthy mom and baby, CHWs provide social support and a critical communication channel between the health facility and the pregnant woman and her family.

Given the ubiquity of mobile phone technology in South Africa, we are seeing an increasing availability of mHealth tools that support and enable CHWs to complete their work in a more connected, efficient and effective way. Companies and organisations like Cell-Life, Dimagi, Mezzanine Ware and Mobenzi have created mHealth solutions that assist with household surveys, patient scheduling, data surveillance and tracking systems for patient referrals to the closest healthcare facility for ANC or PNC.

The GSMA has conducted a number of focus group discussions, with more than 100 CHWs across five South African provinces, to understand their personal and professional needs and wants, as well as to identify opportunities for improvements in mHealth tools which will assist and strengthen the delivery of basic healthcare services in the communities that they serve.

About the GSMA



The **GSMA** represents the interests of mobile operators worldwide. Spanning more than 220 countries, the GSMA unites nearly 800 of the world's mobile operators with 250 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and Internet companies, as well as organisations in industry sectors such as financial services, healthcare, media, transport and utilities. The GSMA also produces industry leading events such as Mobile World Congress and Mobile Asia Expo.

For more information, please visit the GSMA corporate website at www.gsma.com. Follow the GSMA on Twitter: @GSMA

GSMA Mobile for Development brings together our mobile operator members, the wider mobile industry and the development community to drive commercial mobile services for underserved people in emerging markets. We identify opportunities for social, economic and environmental impact and stimulate the development of scalable, life-enhancing mobile services.

For more information, please visit the GSMA Mobile for Development website at www.gsma.com/mobilefordevelopment. Follow GSMA Mobile for Development on Twitter: @GSMAM4d

The **GSMA Mobile for Development mHealth** programme connects the mobile and health industries, with the aim of developing commercially sustainable mHealth services that meet public health needs. In June 2012, the GSMA mHealth programme launched the Pan-African mHealth Initiative (PAMI) to support the scale-up of mHealth in nutrition and maternal and child health. PAMI is closely aligned to the UN's Every Woman Every Child Initiative, Scaling Up Nutrition (SUN) and the Global Nutrition for Growth Compact.

For more information, please visit <http://www.gsma.com/mobilefordevelopment/programmes/mhealth>

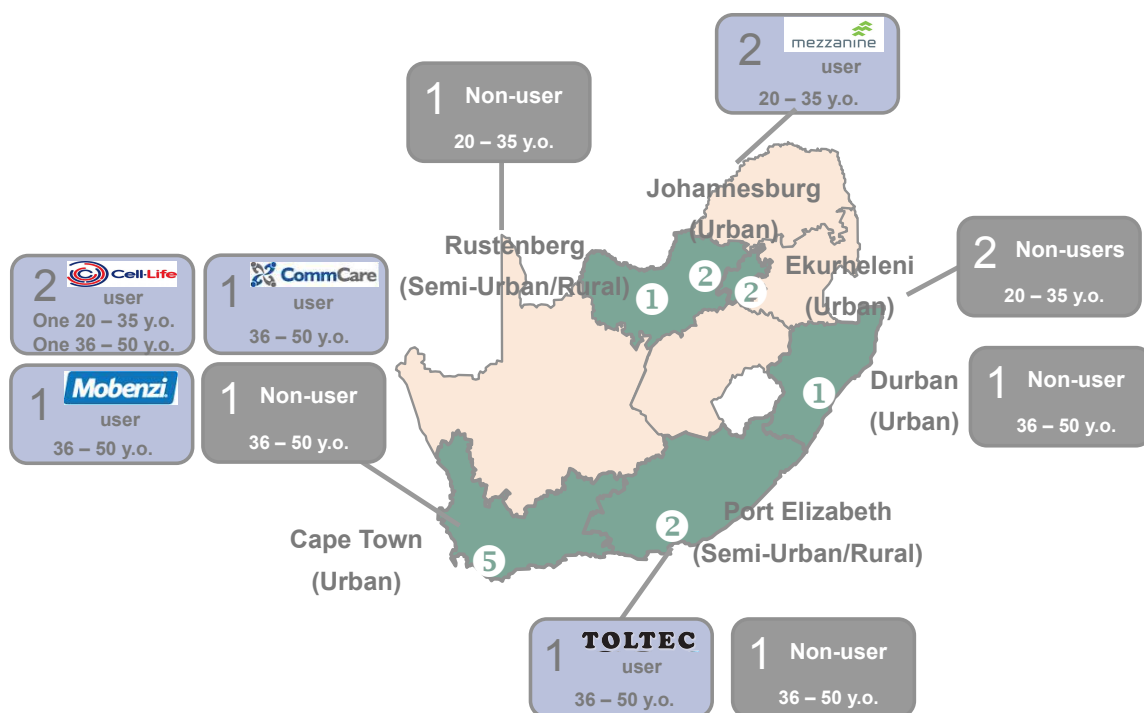
Summary, implications & recommendations



Key findings	Considerations for service design
<ul style="list-style-type: none">• CHWs play a crucial frontline role and have a positive impact on the communities they serve• As information gate-keepers, they could provide support beyond healthcare• Addressing their eight identified basic needs will provide empowerment	<ul style="list-style-type: none">• Is it feasible to tap CHWs for the delivery of other social support services?• How can mHealth tools be modified to fit with these new potential roles?• How can technology be used to meet more of their basic needs?
<ul style="list-style-type: none">• Technology is highly valued; however, existing mHealth tools are not fully utilised and are used primarily as communication and data collection tools• While a smartphone is the best phone type that can deliver “ideal phone features”, it is also feasible to support CHWs by offering services that can be accessed through SMS, USSD, IVR or voice channels	<ul style="list-style-type: none">• Can the provision of training and technical support allow them to maximise the usage of existing tools?• What tool features should be developed and prioritised in order to strengthen patient care and the delivery of other basic healthcare services, improve the knowledge of CHWs and develop commercially sustainable business models for mHealth?
Recommendations: <ul style="list-style-type: none">• The broadening of mHealth tool features and capabilities, along with regular training, will help support CHWs in their day-to-day work beyond health• CHWs could potentially be tapped as mobile agents, allowing them to supplement their current low, and in some cases non-existent, stipend, although this could distract from the fulfilment of their primary healthcare responsibilities• The identification of CHWs who can become informal “tech champions” in order to explain and optimise the usage of existing tools with fellow CHWs• Develop a data- and cost-efficient “WhatsApp” type app that allows moderated inter-channel communication (i.e. between the app and SMS) and that can be used by CHWs to communicate with patients and fellow CHWs	

Research design overview

100+ CHWs were interviewed across 5 provinces: Western Cape, Gauteng, Eastern Cape, KwaZulu Natal and North West



Organisations

- Donor: **UK aid from the Department for International Development (through Mott MacDonald)**
- Project oversight: **GSMA**
- Respondent recruitment and FGD moderation: **Ask Afrika**

Respondents

- 13 groups of CHWs who have some MNCH-related responsibility
- 7 are users or have used mHealth tools and 5 are non-users
- 6 groups are aged 20 – 35 year old and 7 groups are aged 36 – 50 years old

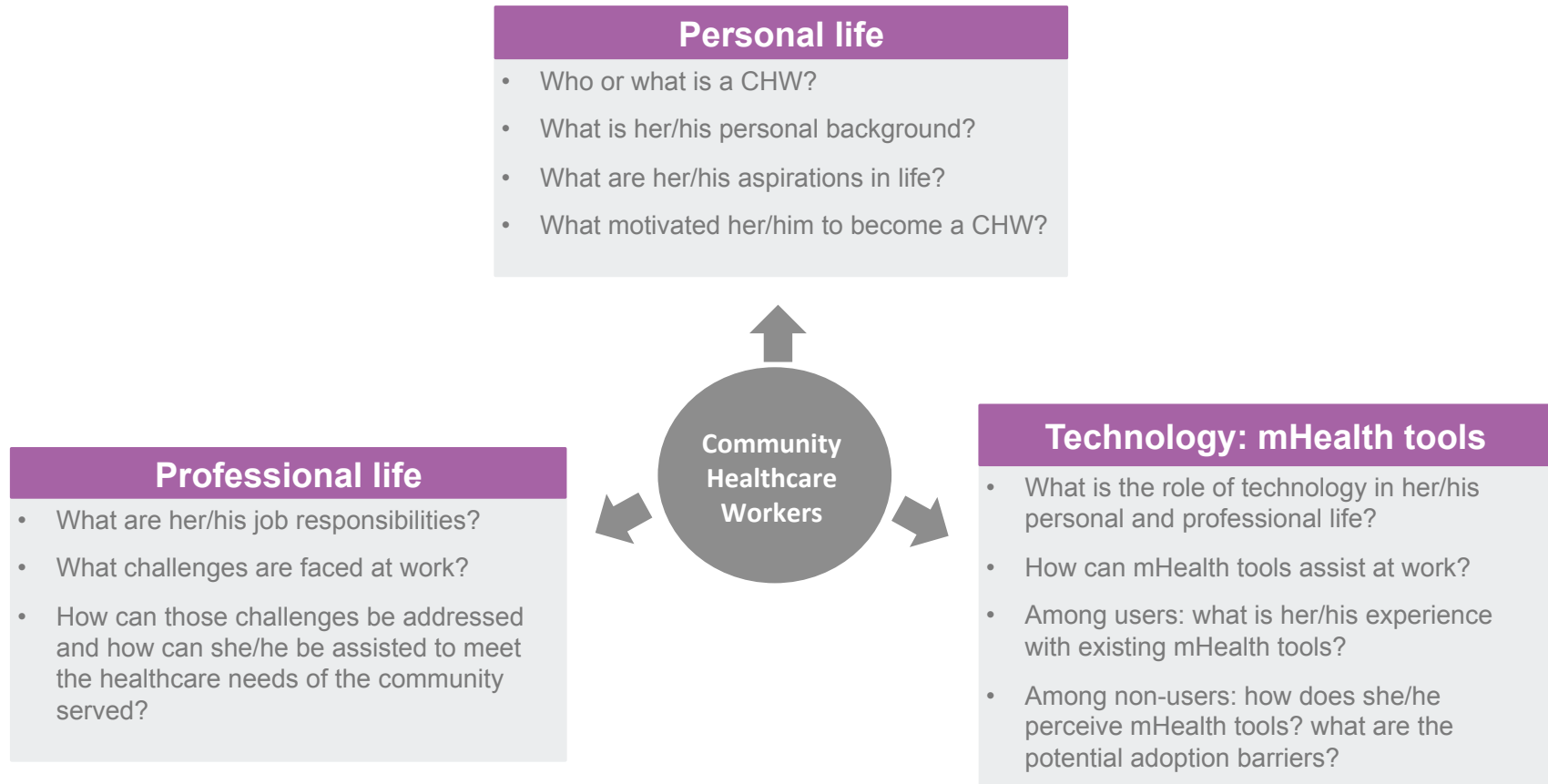
Methodology

- 1.5 hour focus group discussions

Fieldwork dates

- 12 groups: 27th Mar – 4th Apr, 2014
- 1 group: 5th May, 2014

Research topics



CHWs: who are they?

CHWs play a crucial role in the South African public healthcare system as front-liners who provide health information as well as basic healthcare services. They act as community caretakers, counsellors and protectors as well as information gatekeepers, informing their patients of their right to apply for social grants, for example.

Because of their contribution to society, CHWs have a strong sense of fulfilment in life. But just like the patients they serve, they are mired in poverty. While most are paid an average of R1,500 per month, similar to the minimum wage required by law, a few do not receive any stipend at all. The majority say they are motivated to stay at work because they genuinely like to help people. The reality is that many CHWs are trapped because they feel they have very limited opportunities, due to age (for those who are older) and lack of adequate qualifications.

All of the CHWs who participated in this study are highly capable individuals. Many of the younger CHWs dream to become either nurses or social workers and see their CHW role as a stepping stone to further achievements. They crave knowledge, to improve their chances of better job opportunities and to better serve their patients..

Some CHWs in South Africa are quite fortunate because they are now formally being integrated into the Ward Based Primary Health Care Outreach Teams (WBOT). The majority continue to work through NGO's, civil society organisations or simply as "volunteers" with little to no formalisation of the market to foster economic and personal growth.

As discussed in the succeeding section of this report, there are a number of ways to empower CHWs who are less fortunate. Some of these needs can be addressed with relatively low effort and investment. The provision of mHealth tools can address a greater collection of needs, requiring a higher investment, but potentially also delivering a higher return, in terms of impact and the improved health of the populace. We discovered that many CHWs are already using smartphones and, as they experience the value of mHealth tools, many would be willing to pay some amount to gain access to Mobile Value Added Service (mVAS) that would allow them to better fulfil their duties. In fact, many are already using their own personal phones to communicate with and provide assistance to fellow CHWs, and to reach out to patients.

Being a CHW provides a sense of fulfilment

But most of them are still mired in poverty just like the patients they serve



CHWs are highly capable and strongly motivated

Younger CHWs see the role as a stepping stone to becoming a nurse or social worker. Older CHWs feel trapped, due to age and lack of other options

"... [After just] a few months, I am already acting as a community health counsellor. But I'm not here to stay in this field forever because I want to see myself as a nurse one day... and that's my dream."

(20 - 35 y.o., mHealth tool non-user, Rustenberg)

"[While I would like to be a nurse,] I do not want to lie, I do not see myself like that because I'm 44 years old already and I do not know where I am going to be in five years because by then I will be almost 50. So I do not know, it is only God that knows if I will become a nurse one day."

(36–50 y.o., mHealth tool non-user, Port Elizabeth)

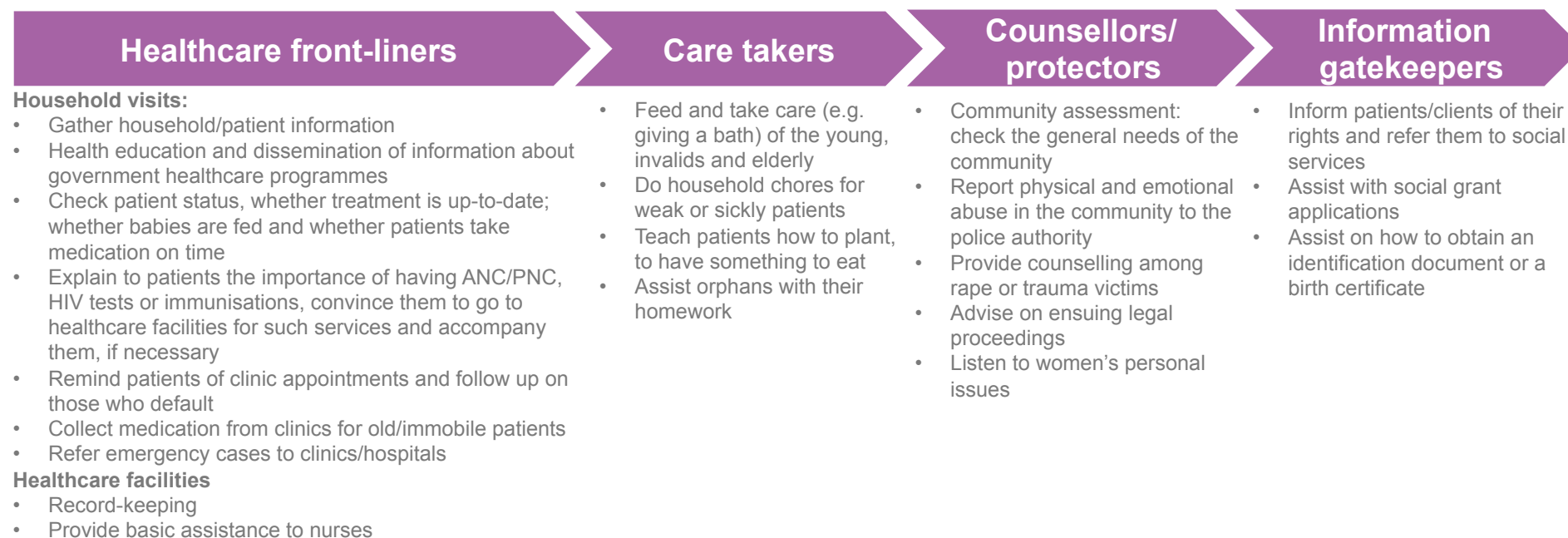


	20 -35 year olds	36 - 50 year olds
Education: <i>Younger CHWs tend to be better educated than older CHWs</i>	<ul style="list-style-type: none"> The majority (3 in 5) have completed post-matric education, have technikon diploma/degree or have adult basic education and training 	<ul style="list-style-type: none"> The majority (3 in 5) have some secondary or have completed secondary education with the remaining 2 in 5 having post matric, diploma or technikon diploma/degree
Marital status: <i>Younger CHWs tend to be single mothers</i>	<ul style="list-style-type: none"> The majority (3 in 5) are single or have never been married, and have an average of 1 to 2 children 	<ul style="list-style-type: none"> The majority (4 in 5) are married or cohabit with their partner, with an average of 2 children Some have grandchildren already
Consumer behaviour: <i>Most CHWs are generally tech savvy</i>	<ul style="list-style-type: none"> The majority, regardless of age, are already using smartphones although those who are rural-based continue to use basic phones The majority (3 in 5) continue to have strong affinity with Nokia because it is perceived to be more durable. The remainder use primarily Samsung or BlackBerry Among smartphone users, the majority use WhatsApp for work and personal reasons – they create WhatsApp groups to communicate with fellow CHWs and patients 	

CHWs contribute beyond health

Broadening the scope of existing mHealth tools to include delivery of other social services (e.g. social grant application) could widen opportunities for all stakeholders

- Generalists focus on broader disease areas and are called Community Healthcare Worker (CHWs) or Community Care Givers (CCGs). They tend to be non-users of mHealth tools
- Specialists tend to be more qualified and are called counsellors, mentor mothers or educators. Most are already using mHealth tools



The hierarchy of needs of the CHW

In order to fully empower CHWs, it is important to address their basic needs. 8 needs have been identified, commencing with **(1) stipend received** and access to **(2) protective clothing**, especially as many deal with infectious diseases. To better address the healthcare needs of their patients, CHWs desire to improve their **(3) knowledge** of first aid administration in cases of emergency.

As some CHWs work in communities where they are not originally from, **(4) security** is another fundamental need and indeed a worry for CHWs. Gaining their **(5) supervisors' respect** is also critical, as many feel that their supervisors do not value their contribution at the front line of the healthcare system.

In spite of the difficulties encountered with some patients, including lack of active appreciation, CHWs possess a strong sense of fulfilment from **(6) client respect**, especially when they see a patient's condition improve or a patient become healthier.

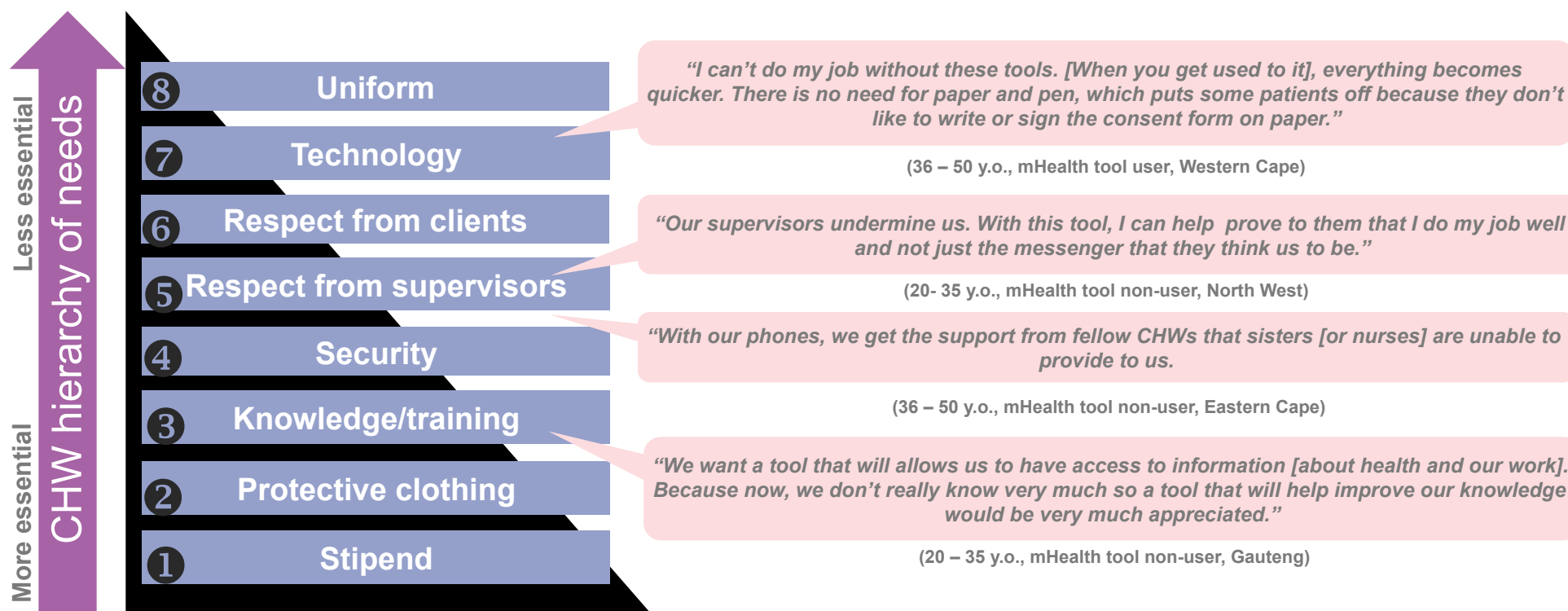
When asked whether **(7) technology** is important in their professional life, CHWs, especially those who are already using mHealth products/services, strongly expressed that these products/services have had a strong positive impact on their day-to-day work, by helping them to focus more on patient care and less on administrative tasks. They also believe that there exist opportunities to improve current products/services, to improve both personal and patient experience. One group expressed disappointment when their mHealth products/services were taken away after a three-month trial. For those who do not yet have access to mHealth products/services, the use of personal mobile phones allows CHWs to communicate with their patients to answer questions regarding conditions, remind them of their treatment appointment or the need to take medication on time.

This section of the report illustrates that the use of mHealth products/services can help address most of the identified basic needs including using it potentially as a **(8) badge or a form of identification** as an alternative to a uniform. But there are some reported reservations among a few CHWs who prefer not to be identified as a CHW for fear that a special case patient will in turn be identified by neighbours and stigmatised.

(Note: numbers refer to ranking in terms of importance as illustrated on the succeeding slide)

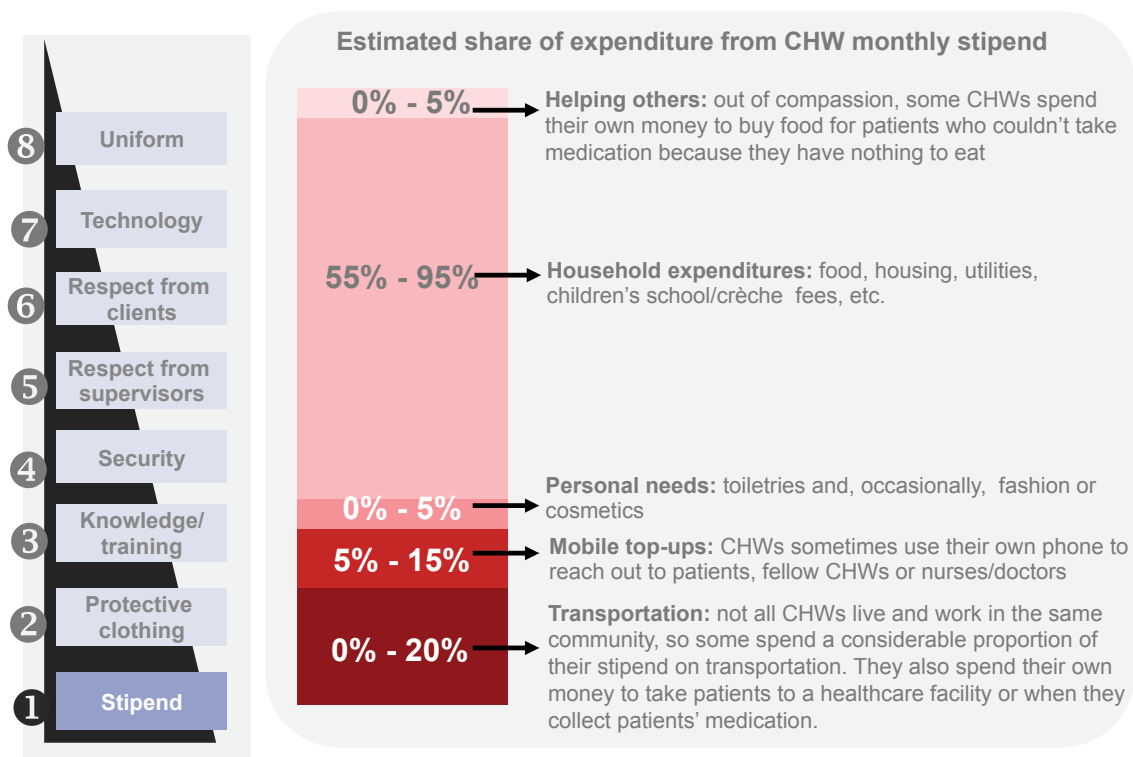
Technology is perceived to be a valuable tool

Addressing the fundamental needs of CHWs is crucial if they are to be empowered. Technology, especially mHealth tools, can help address some of their basic needs



CHWs receive on average R1,500 per month

CHWs could potentially become mobile agents, allowing them to supplement their stipend



With many CHWs being single-parents, it is not surprising that they struggle to survive with whatever money is left for household expenditure after deducting work-related expenditure from their monthly stipend

"Being able to help other people, I feel fulfilled working as a CHW. But I could hardly survive with the amount of money I receive every month. When I need emergency money, no bank would lend me because they think I have no income to pay for it and also because I have no collateral for the loan."

(36 – 50 y.o., mHealth tool non-user, Rustenberg)

- NGO**
- mHealth users tend to be paid and have fixed-term contracts
 - Some non-users get paid but others get paid only occasionally; a few do not get paid at all – they work on the premise that they will be hired eventually, without knowing when/if this will really happen
- Government**
- Government-contracted CHWs get paid but most have fixed-term contracts just like their NGO-counterparts

CHWs often deal with infectious diseases

mHealth tools could potentially include a safety check list, to drive awareness of and demand for personal protective equipment among CHWs



While CHWs who deal with infectious patients need personal protective equipment (e.g. masks and gloves), there also exists a fear that these create barriers between them and their patients

“No we don’t get any of these [masks or gloves]. I hope that you understand that because we are only care givers, we ourselves do not have medical cover. So if you contract the disease, you go to the clinic just like everyone else.”

(20 - 35 y.o., mHealth tool non-user, Rustenberg)

“We know some community caregivers who have died as they were exposed to [infectious diseases].”

(36 - 50 y.o., mHealth tool non-user, Durban)

“There are times when nurses send us to the TB room and there will be TB patients some of whom have MDR. But we care givers are not protected. We are really at risk. In fact, one of us is now infected with TB as we speak. She has not yet recovered and being sick makes it her own personal problem. She has to make her own plans on how she gets cured. It seems it’s no one else’s business. The senior nurses are having something to drink to prevent catching infection. But we caregivers, we don’t get anything.”

(20 - 35 y.o., mHealth tool non-user, Rustenberg)

CHWs crave knowledge

mHealth tools can be used as a repository of training materials, accredited continual professional development and incentivised learning

In order to do better at work and gain promotion, the majority are keen to learn. Training / workshops are only carried out once or twice a year and tend to focus on what they already know. Providing training certificates, which can be used as a proof of eligibility to promotion, can inspire CHWs to improve their knowledge and skills, thereby strengthening healthcare delivery



	Basic training needs	Advanced training needs
Technical skills: Health-related matters	<ul style="list-style-type: none"> Disease-related information (e.g. Reproductive health/MNCH, HIV/AIDS, TB, nutrition, etc.) and understanding disease symptoms How to conduct first-aid, basic diagnostics and how to deal with emergency cases How to deal with infectious diseases so they will avoid contracting them 	<ul style="list-style-type: none"> Getting blood samples for testing Taking blood pressure measurement Using pregnancy test kits at patient's residence Measuring blood sugar level
Soft skills: Dealing with emotional issues	<ul style="list-style-type: none"> Listening and counselling skills: learning how to become more confident and persuasive in dealing with difficult patients or special cases (e.g. rape victims) to make them "open up" or make them become more cooperative Stress management 	<p><i>"[After listening to painful stories of rape victims], you feel the stress, too. You yourself need some counselling because of all those emotional stuff. So it's so difficult when we get home, we carry the emotional burden. So when we speak with our own children, we speak louder and shout at them."</i></p>

(36 – 50 y.o., mHealth tool user, Cape Town)

Not all CHWs live & work in the same community

mHealth tools can be used as security, rather than a liability, by equipping them with anti-theft features such as a panic button and a GPS tracker

CHWs who live and work in two different communities can feel unsafe (and in need to look over their shoulders) at work. While most would like bigger touch screens, they are wary that these may make them targets for robbery



“Another big challenge, in areas where we work, we are not safe. So I must take off my ring, earrings and necklace. I work in an area that is very naughty because when we go there, people frighten us saying that we must be careful. So every time we go there for work, we pray hard in God’s name because we do not know what may happen to us. And we pray that we can go back home safely.”

(36 – 50 y.o., mHealth tool non-user, Port Elizabeth)

“Because these phones we are using for work belong to the organisation, they say that if we lose them, we will have to pay for them. Having GPS tracker is important so when I am robbed, I could ask them to check the device’s location and confirm that I didn’t steal it myself and that it is in someone else’s possession.”

(36 – 50 y.o., mHealth tool user, Cape Town)

“I was robbed once of all my possessions except for my phone. It would have been a disaster because I have got my work scripts saved there. My phone is my life so I was lucky that I managed to keep it.”

(20 – 35 y.o., mHealth tool user, Johannesburg)

“There are lots of crime in our neighbourhood and lots of people doing drugs so I feel unsafe.”

(20 – 35 y.o., mHealth tool user, Johannesburg)

If your cell phone is robbed, my organisation can’t pay for it. But when I do home visits, they would still want to contact me. How do you think I can answer them if I don’t have a phone? So I fear getting my phone stolen.

(36 – 50 y.o., mHealth tool non-user, Cape Town)

Supervisors can help motivate CHWs

mHealth tools improve communication between CHWs and their supervisors. They can help provide clarity on job objectives and allow progress tracking

While some CHWs feel that their supervisors value their contributions, others feel they are being treated as clerks / data collectors / messengers



Setting targets or objectives

- Not all have clear objectives; those who have set targets tend to have a better relationship with supervisors and be more motivated at work
- A typical target would be to visit an average of 0 patients or households per day
- Sometimes, “illogical” or unreasonable targets can cause confusion and frustration

Feedback and empathy

- Feedback on performance and coaching gives CHWs a sense of belonging and achievement
- A supervisor’s empathy and sense of urgency towards patients with emergency cases can make CHWs feel their work is being valued which in turn helps strengthen their relationships with patients

“During our monthly meeting, they will be reporting that rape case numbers have dropped. They don’t like that. They want us to report 100 rape cases per month. But it’s not possible because you cover the same households. What do they want us to do? I say to them ‘Give us penises for us to go and rape so we can reach our rape targets.’”

(36-50 y.o., mHealth tool user, Cape Town)

“We don’t get support from our seniors. Instead, they discourage you and will sometimes make you feel like you don’t exist at all or you are nothing.”

(20 - 35 y.o., mHealth tool non-user, Rustenberg)

“They don’t care much. If one of our patients is sick and you take them to one of the nurses, they will say ‘Yo, I’m so busy’. You’re left with no choice but to send your patient back home. The following day the same patient will be seriously sick. This situation is very painful because you treat a patient with love. The patient trusted you so much, but then when we get at the clinic that kind of situation makes it somehow worse.”

(20 - 35 y.o., non-user, Rustenberg)

Experience with CHWs is generally positive

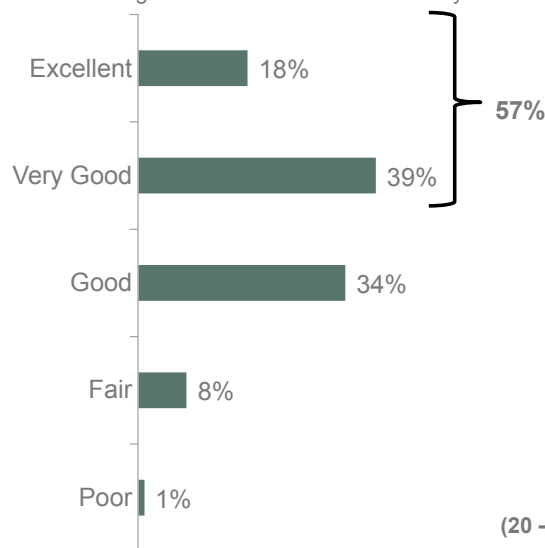
Technology can potentially allow CHWs to focus on more essential tasks, increasing visit frequency and households visited, and therefore improving patient experience

Patient empathy and respect and CHW expertise are the strongest drivers of a positive patient experience. In general CHWs are valued by patients but on occasions they are disrespected, because of the view that they are not real nurses



Overall experience with CHWs

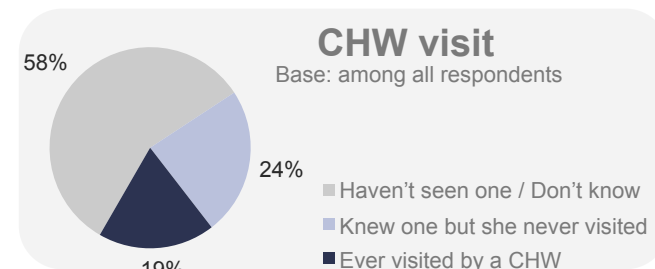
Base: among those who have been visited by a CHW



Source: Consumer research

"I help lots of sick people. Some are more sick than others but all of them need help. After a month of helping them, you see a change in them, that they become a lot better than before. Despite all the challenges in this work, this encourages me... that, at least, I have done something... that I made a difference in somebody's life."

(20 – 35 y.o., mHealth tool non-user, Rustenberg)



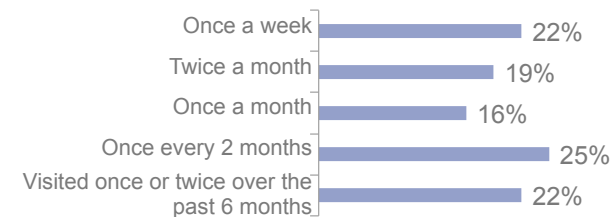
CHW visit

Base: among all respondents

Frequency of visit

(Ave. per month = 2)

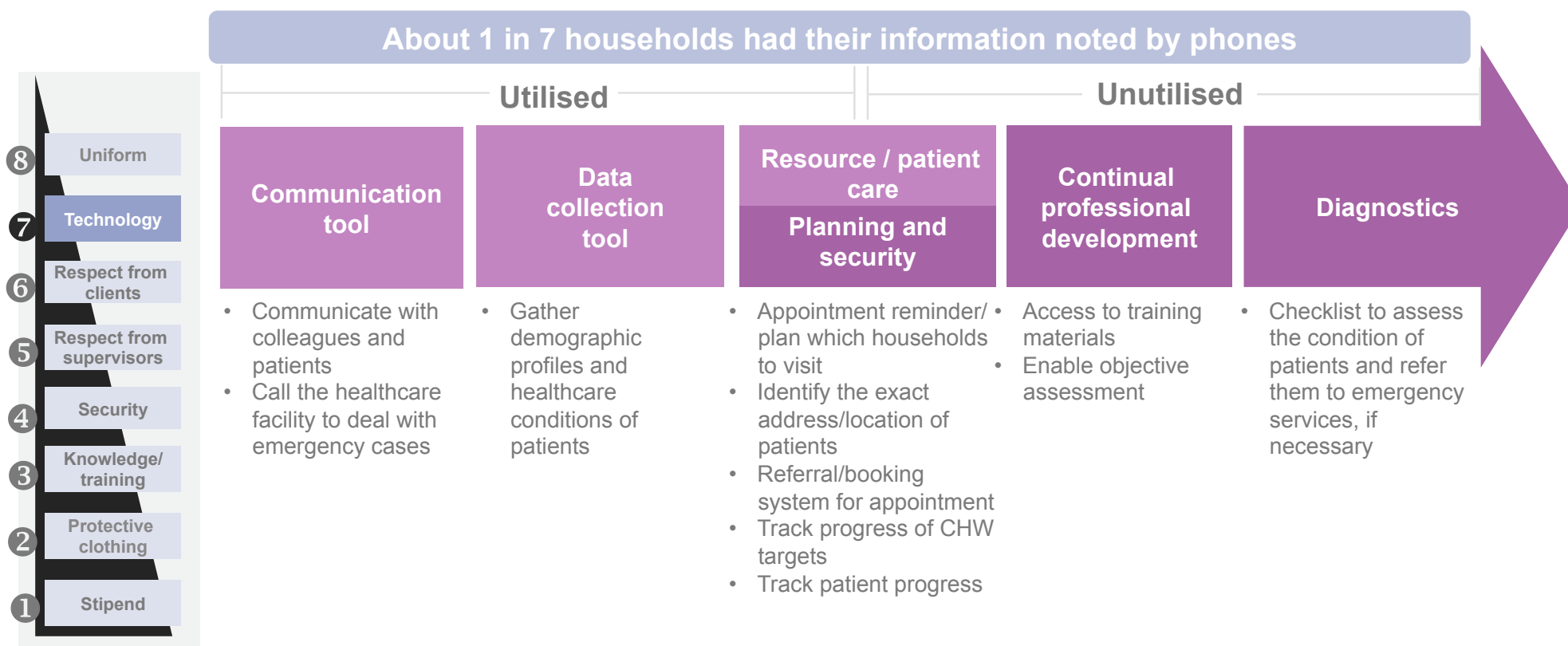
Base: Among those who have been visited by a CHW



Source: Consumer research

Existing tools already impact on the work of CHWs

Primarily used as communication and data collection tools, existing mHealth tool features are not fully utilised



Technology is highly valued despite difficulties

Informal tech-champion CHWs could be identified, to explain and optimise the use of existing mHealth tools with fellow CHWs

Incremental improvements in CHW experience can be achieved through training. Radical improvements require stronger stakeholder support



Community

- 1 in 4 patients feel uncomfortable when giving out information
- Unsafe to walk around with gadget – “If I lose it, I pay for it”

CHWs

- Inertia – fear of change
- “It is good but paper & pen is faster and allows me to spend more time with my client”

Employer/supervisor

- No clarity as to what the data is used for or why data gathering is important
- Supervisor sometimes is a deterrent
- Doctors/coordinators do not have access to database, requiring CHWs to also maintain paper & pen records

Tech provider

- Not enough training/ knowledge
- Don’t know who to ask for technical support

Barriers to fully utilising mHealth tools

Mobile operator

- Network connectivity issues
- Price perception – “consumes R50 in 2 to 7 days”

Hardware

- Low-end smartphone: “memory is too small and speed is so slow and constantly hangs”

Software

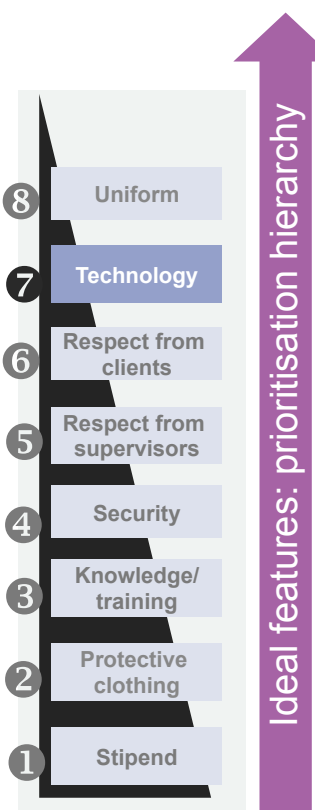
- Not so easy to use
- “Some data points can’t be captured correctly” (e.g. age of babies who under 1)

“Technology is not safe. If the phone is lost, somebody might be able to get hold of patient information. Because when patient data is mapped with the software and when it is hacked, then the patient can be easily identified and his information compromised.”

(20 – 35 y.o. CHW coordinator, mHealth tool user, Johannesburg)

The smartphone can deliver ideal tool features

Some features can also be offered via SMS, USSD, IVR or voice, allowing basic phone owners to improve delivery of healthcare to communities

		Purpose	CHW needs	Basic phone solutions	Feature / smartphone solutions
 <p>Ideal features: prioritisation hierarchy</p>	8 Uniform	Patient care planning	<ul style="list-style-type: none"> Alert system for patients who missed appointments Medication reminder 	<ul style="list-style-type: none"> SMS or IVR 	<ul style="list-style-type: none"> Web- / app-based system linked to mapping system Web- / app-based system that sends SMS auto-reminder to patients to take medication
	7 Technology	Data collection	<ul style="list-style-type: none"> Using "paper & pen" is sometimes preferred – more time to focus on patients; minimise duplicate work Data back-up 	<ul style="list-style-type: none"> (None) 	<ul style="list-style-type: none"> Camera with character-recognition app Voice recording capabilities
	6 Respect from clients	Resource planning and security	<ul style="list-style-type: none"> Identify the patient's location quickly / know area boundary / appointment system; Security: fear of getting robbed and losing phone 	<ul style="list-style-type: none"> Security: short code as a panic button 	<ul style="list-style-type: none"> Google or similar mapping service that provides the best recommendation on routing / closest healthcare facility and has GPS tracking device
	5 Respect from supervisors	Continual professional development	<ul style="list-style-type: none"> Improve knowledge about patients / diseases as well as counselling techniques Test new knowledge learned 	<ul style="list-style-type: none"> USSD or IVR 	<ul style="list-style-type: none"> Google search / access to web portal with health-related education materials / TedEx style videos Web- / app-based testing system (with gaming component)
	4 Security	Communication	<ul style="list-style-type: none"> Communicate with patients: follow ups, health-related questions Communicate with fellow CHWs/ nurses/ doctors: ask for support Communicate with police: emergency cases (e.g. report abuse, CHW victim of robbery) 	<ul style="list-style-type: none"> SMS and/or Voice 	<ul style="list-style-type: none"> WhatsApp group, social media (e.g. Facebook, Twitter, Patients Like Me type, LinkedIn type for CHWs) Camera/video-enabled phone to send photo/video to doctors for confirmation of emergency cases
	3 Knowledge/training	Communication and diagnostics	<ul style="list-style-type: none"> Ability to diagnose/conduct basic triage and refer emergency cases to healthcare facilities 	<ul style="list-style-type: none"> Voice: emergency services hotline USSD-based algorithm 	<ul style="list-style-type: none"> Built-in triage app and access to home made remedies Remote diagnostic solutions Camera/video-enabled phone to send photo/video to doctors for confirmation
	2 Protective clothing				
	1 Stipend				

A uniform can help some CHWs gain respect

While mHealth tools can potentially be used as work badges, some CHWs fear that they are unsafe to use as they may become targets for robbery



Some CHWs already have uniforms. Among those who don't, the generalists want a uniform, to be seen more professionally by patients, while specialists do not see the need due to some patients' fear of getting stigmatised by neighbours for being sick

"I do lots of things like getting blood pressure, conducting blood test... but I dress like a civilian, and that causes the patient to mistreat me [because I am not dressed up like a nurse.]"

(20 - 35 y.o., mHealth tool non-user, Rustenberg)

"Having one saves us [money]. Sometimes, we work at the hospital where we are supposed to be formal. But we don't have a uniform."

(36-50 y.o., mHealth tool non-user, Cape Town)

"Having uniform is good. When we visit a person, they can recognise us and it's easier to get people's trust. And it makes us presentable and tidy"

(36-50 y.o., mHealth tool user, Cape Town)

"Wearing a uniform in a facility is good. To go on home visits and you are wearing a uniform [which says TB, for example], people run away and therefore you can't do home visits anymore."

(36-50 y.o., mHealth tool user, Cape Town)

"Sometimes, I don't like uniform as people tease us that we are not really a nurse and just act like one."

(36-50 y.o., mHealth tool non-user, Cape Town)

"I can't say that I really want to wear a uniform. If our clients see a uniform, they think of us as a nurse or investigating officer, who they normally turn away."

(36-50 y.o., mHealth tool user, Cape Town)

Appendix: glossary of terminologies

ANC	Antenatal Care
CHW	Community Healthcare Workers , also known as Community Care Givers (CCGs) , lay health advisors, village health workers, community health aides or community health promoters. They are the healthcare systems' front-liners and they provide health or medical information as well as basic care to the communities in which they reside
IVR	Interactive Voice Response
MDR	Multidrug-Resistant Tuberculosis
mHealth	Mobile Health or health services delivered using mobile phones or supported by mobile devices
mHealth Tools	Mobile-based job-aid tools that are provided to CHWs. These are essentially mobile phones that run various applications or programmes provided by organisations like Cell-Life, Dimagi, Mezzanine Ware or Mobenzi that perform various functions including data gathering of patient information (instead of using "paper & pen") or resource/patient care planning
MNCH	Maternal, Newborn, and Child Health
mVAS	Mobile Valued-Added Services are services offered by mobile operators to consumer segment beyond standard voice, SMS, MMS and data services
PNC	Postnatal Care
SMS	Short Message Service
USSD	Unstructured Supplementary Service Data
WBOT	Ward-Based Outreach Teams are part of the primary healthcare re-engineering programme in South Africa, in which CHWs are integrated in the delivery of healthcare services to communities, families and individuals at community-based institutions and at a household level
WhatsApp	WhatsApp is a instant messaging smartphone application that uses data communication. Besides text messaging, it allows users to send images, audio and video media messages to other users

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This document is an output from a project funded by UK aid from the Department for International Development (DFID), managed through Mott MacDonald, for the benefit of developing countries.

The views expressed are not necessarily those of DFID or Mott MacDonald.

