SOCIAL INNOVATION IN HEALTH INITIATIVE

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THE MEDICAL CONCIERGE GROUP LTD

CONTINENT	Africa
COUNTRY	Uganda
HEALTH FOCUS	Primary health care
AREAS OF INTEREST	Private providers, Digital technology
HEALTH SYSTEM FOCUS	Service delivery

THE MEDICAL CONCEIRGE GROUP Ltd, UGANDA

A Ugandan social enterprise providing free access to health care professionals and health information via existing communication technology platforms in response to changing health-seeking behaviour of key population groups.

Authors: Lindi van Niekerk and Rachel Chater

This case study forms part of the Social Innovation in Health Initiative Case Collection.

The Social Innovation in Health Initiative (SIHI) is a collaboration by the Special Programme for Research and Training in Tropical Diseases, at the World Health Organization, in partnership with the Bertha Centre for Social Innovation and Entrepreneurship, at the University of Cape Town, the Skoll Centre for Social Entrepreneurship, at Oxford University, and the London School of Hygiene and Tropical Medicine.

This case study was prepared by the Bertha Centre for Social Innovation and Entrepreneurship, Graduate School of Business, University of Cape Town, on behalf of the Social Innovation in Health Initiative. Research was conducted in 2015. This account reflects the stage of social innovation at that time.

SIHI Academic Advisory Panel: Lucy Gilson; Lenore Manderson; and Rosanna Peeling

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SUGGESTED CITATION:
van Niekerk, L, & Chater, R. (2016). *The Medical Concierge Group Ltd, Uganda*. Social Innovation in Health Initiative Case Collection. [Online] WHO, Geneva: Social Innovation in Health Initiative, Available at: [insert URL used]

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ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
CEHURD	Center for Health, Human Rights and Development
HIV	Human Immunodeficiency Virus
HIWA	HIV/Health Initiatives in Workplaces Activity
ILRI	International Livestock Research Institute
IoT	Internet of Things
MoH	Ministry of Health
MSM	Men who have sex with men
SMS	Short message service
THE	Total health expenditure
TMCG	The Medical Concierge Group
UGX	Uganda shilling
UK	United Kingdom
UNICEF	United Nations Children's Fund
US$	United States dollar
USAID	United States Agency for International Development

CASE INTRODUCTION

The Medical Concierge Group (TMCG) is a Ugandan social enterprise providing free access to health care professionals and health information via existing communication technology platforms such as Facebook, WhatsApp Messenger, Skype and Twitter. It was developed in response to the opportunities presented with the rise of mobile phone technologies, and the challenges around accessing affordable, convenient, quality health care services.

Founded in 2012, TMCG is structured as a limited liability company. It is comprised of diverse health care professionals, including doctors and pharmacists, who work from the TMCG call centre in Kampala. These professionals operate in shifts to respond 24 hours a day, seven days a week to a multitude of incoming questions on health and wellbeing. The primary target beneficiaries for TMCG are Ugandan young adults, between the age of 18 and 35 years who are looking to be empowered with health knowledge and who are asking for new and interactive mechanisms to do so. Users pay standard call rates or data rates to access mobile platforms, but the consultative service with a health professional is free of charge. For revenue generation, TMCG operates as a service provider for development agencies, health insurance companies and research organizations.

The TMCG case study shows how technology is becoming an increasingly viable and affordable option to increase access to health information and provide health care services to low-income communities, while also reducing the burden on public health facilities. This is especially relevant in the context of changing health-seeking behaviour of youth in African countries to favour technology-enabled, on-demand and user-friendly services from health-care providers. It will be important for national regulatory frameworks to start engaging with the advances in technology and the potential impact, both positive and negative, on health care delivery.

"If you look at the Ugandan, East African and generally African demographics, we are young people. We are a young population, and people want modern modes and interesting ways of getting information. It's no longer enough to say I will give you a health talk when you come to hospital. How can I get it in a more engaging way, like when I'm looking at my Twitter feed, when I'm looking at my Facebook timeline, and then I see this cool new condom ad that I will actually use?"
(Dr Davis Musinguzi, Co-founder, TMCG)

1. INNOVATION PROFILE AT A GLANCE

Organization Details

Organization name	The Medical Concierge Group Limited (TMCG)
Founding year	2012
Founders names	Dr Davis Musinguzi & Dr John-Mark Bwanika
Founder nationality	Ugandan
Current head of organization	Dr Davis Musinguzi (Managing Director)
Organizational structure	Limited Liability Company (for-profit)
Size	17

Innovation Value

Value proposition	A Ugandan social enterprise providing free access to health care professionals and health information via existing communication technology platforms in response to changing health-seeking behaviour of key population groups.
Beneficiaries	Young adults and university students (18 – 35 years) Specialized population groups: e.g. HIV positive police officers Marginalized population groups: commercial sex workers, men who have sex with men (MSM)
Key components	• Providing medical consultations, advice and information telephonically or via existing communication platforms (e.g. WhatsApp Messenger, Facebook) • Acting as a service provider/ partner to large development agencies or private companies serving specific population groups.

Operational Details

Main income streams	• Partnership projects with development agencies • Contracts as a service provider to health insurance companies or research organizations
Annual expenditure	US$ 120 000
Cost per person served	US$ 0.2

Scale and Transferability

Scope of operations	Uganda, Kenya, Nigeria
Local engagement	Aligned to the eHealth Policy of Uganda, Kenya and Nigeria
Scalability	Scaling of TMCG is possible in the following enabling conditions: • National regulatory frameworks permitting remote medical consultations • Internet-based communication platforms • Communities accepting of technology-enabled communication
Sustainability	• Acceptance and support of TMCG services by the Ugandan National Ministry of Health; • Utilization of popular technology communication platforms with a high user-base (e.g. WhatsApp Messenger); • Building up a high user base through free services, which in turn enhances the company's value proposition as a service provider to development agencies.

2. CHALLENGES

Uganda has seen some impressive gains in health care. It has surpassed the Millennium Development Goals (MDGs) target on halving poverty by 2015, and has made significant progress in reducing the population that suffers from hunger, promoting gender equality, and empowering women (World Bank, 2016). Uganda has a population of just over 39 million people, with a fertility rate of 5.9 births per woman and one of the fastest growing population rates in Africa (United Nations, 2015). Over half of the population is under the age of 15 years, making Uganda's population one of the world's youngest (World Bank, 2016).

Despite these positive developments in Uganda, challenges remain in all four dimensions of health care access: availability, geographic accessibility, affordability and acceptability (Penchansky & Thomas, 1981; Jacobs et al., 2012). Uganda's health care system is structured with decentralized governance across 112 districts and has tiered hospital structure, from academic referral hospitals to primary health care centres. The total health expenditure (THE) in 2010 was US$ 59 per capita. The proportion of per capita expenditure supported by government was US$ 11.2 (22% of THE), which is less than that required by government to deliver the National Minimum Health care Package (World Health Organization, 2014b). In 2001, the current President Yoweri Museveni abolished user fees, and while this has led to an increase in the utilization of public health care facilities, it has not reduced the significant health expenditure incurred by poor households. Out-of-pocket expenditure on health care remains high at 42% (Ministry of Health, Government of Uganda, 2013; Chandler et al., 2013; Xu et al., 2006). Distance to health facilities and associated high transport costs are further barriers affecting health-seeking behaviours. The 2008 National Service Delivery Survey reported the distance to the nearest public health care facility or private health care facility to be 5,7km and 4,7km respectively, however, in some regions it is up to a 3km difference (Ministry of Public Service & Uganda Bureau of Statistics, 2008). Studies done on health-seeking behaviour for malaria have found that private providers such as drug shops and private clinics are preferred as they are nearer, have more reliable medical supplies and may give treatment on credit (Rutebemberwa et al., 2009). A further barrier to accessing health care services is the severe shortages in human resources. With only 14 doctors, nurses and midwives per 10 000 population, resources are well below the minimum recommended 23 per 10 000, resulting in prolonged waiting times (World Health Organization, 2014a). Health care worker skills, knowledge and attitudes further reduce the user confidence in public services (Kiwanuka et al., 2008).

One domain that is providing a promising hope to addressing some of the challenges in health care access, as experienced by resource constrained low- and middle-income countries, is mobile technology. Over the past decade, global mobile phone penetration has soared. A similar trend has been experienced in low- and middle-income countries (Information and Communications for Development [ICD], 2012). At the end of 2013, there were 311 million individuals using mobile devices in Sub-Saharan Africa, a figure expected to more than double by 2020, reaching 49% penetration or 504 million people. Internet access via mobile phones as well as the usage of smart phones is also rapidly increasing (Olsen, 2008). In Uganda, 65% of adults own a cell phone and an additional 15% have access to a smartphone. Mobile phone utilization is influenced by education level, English-speaking literacy and gender (Pew Research Centre, 2015). Even amongst homeless youth of Uganda, 45% own and use a mobile phone daily (Swahn et al., 2014).

In response to this growing trend, policy makers, donors and programme implementers are starting to embrace the implementation of multiple new and innovative technology initiatives. Mobile Health (mHealth), a component of eHealth, is defined as medical and public health practices supported by mobile devices (World Health Organization, 2011). To date, mobile phones have been applied by health service implementers to

support a range of health activities including: preventive health care education; patient follow-up and medication adherence; staff training, support and motivation; drug supply and stock monitoring; disease surveillance and data collection. Patients have reported the benefits of mobile phones in facilitating the requests of services; reducing communication delays, transportation time and costs; improving health workers' compliance to treatment protocols; improving adherence to treatment; and enhancing privacy and confidentiality, especially for sensitive health care issues such as HIV and sexual health (Aranda-Jan, Mohutsiwa-Diben & Loukanova, 2014).

Uganda has been a testing ground for mHealth initiatives and pilot studies. In 2008 and 2009, it was found that a vast number of pilots were underway with no central coordination and that approximately 23 of 36 mHealth initiatives in Uganda never succeeded beyond the pilot phase (Lemaire, 2011). In January 2012, the Ugandan Ministry of Health issued a moratorium ceasing all eHealth and mHealth initiatives until greater harmonization and coordination could be achieved. Subsequently, efforts were undertaken to collaboratively develop an integrated eHealth policy, and the moratorium was lifted in 2013. The policy gives recognition of information and communication technology as an enabler of health care delivery and seeks to provide guidance on the role of eHealth and mHealth initiatives (Omaswa, 2013). Elements influencing the success of mHealth initiatives include: programmes adapted to the local context and language; a structured integration system and ongoing participation by government; and public-private partnerships and collaborations between universities, research institutes, non-profit organizations, private sector and public and private hospitals (Aranda-Jan, Mohutsiwa-Diben & Loukanova, 2014; Tomlinson et al., 2013).

3. INNOVATION IN INTERVENTION

Two young Ugandans, Dr Davis Musinguzi and Dr John-Mark Bwanika, established The Medical Concierge Group (TMCG) in 2012. Operating out of Kampala, Uganda, these two medical entrepreneurs have a vision to revolutionize accessibility to health care for local populations in Africa. Since their early days as medical doctors, they have dealt with some of the deficiencies within the health care system and knew they were faced with a difficult decision: *"So I had the choice to make: either to be the best doctor in a broken system, or to actually fix the system so that every other doctor that comes after me has a much better experience of delivering care."* (Dr Davis Musinguzi, Co-founder, TMCG)

The earliest challenge Dr Musinguzi and Dr Bwanika wanted to overcome was the acceptance of the modern transactional nature of health care. TMCG believes it can provide patients and members of the community with a relational and personalized experience of health care. Addressing issues of accessibility and high costs of health care within the local East African and larger African context was a second stimulus for the creation of TMCG.

TMCG's mission is to design, implement and scale up sustainable models for unlimited access to a holistic, affordable and quality health care products and services guided by community engagement and innovation. The company is comprised of diverse health care professionals, including doctors and pharmacists, who work in shifts from the TMCG call centre in Kampala. These professionals collectively respond 24 hours a day, seven days a week to a multitude of incoming questions on health and wellbeing. The primary target beneficiaries for TMCG are Ugandan young adults, between the age of 18 and 35 years, who are looking to be empowered with health knowledge and who are seeking new and interactive mechanisms to do so. Information and

advice are all provided free to beneficiaries and end users.

If you look at the Ugandan, East African and generally African demographics, we are young people. We are a young population, and people want modern modes and interesting ways of getting information. It's no longer enough to say I will give you a health talk when you come to hospital. How can I get it in a more engaging way, like when I'm looking at my Twitter feed, when I'm looking at my Facebook timeline, and then I see this cool new condom ad that I will actually use?
(Dr Davis Musinguzi, Co-founder, TMCG)

The service offering of TMCG includes:

- Providing individualised medical advice and consultations to individuals who contact its call centre with a personal health or medical question, especially around sexual and reproductive health, pregnancy and dermatology issues.
- Disseminating health information through online social platforms.
- Providing a service-directory on health-care providers based on proximity to the patient's home and price comparison.
- Operating as a partner to development agencies who are running health campaigns and require beneficiaries to be supported by on-call medical expertise.
- Providing analytical expertise to identify any disease outbreaks based on incoming requests from different geographical areas.
- Providing strategic patient engagement initiatives over mobile technology, supporting clients of health insurance companies and health-care providers through automated reminder systems, post-hospitalization follow-up, and satisfaction surveys.

TMCG are able to utilize its platform in an agile way to provide partners and beneficiaries with access to health care professionals. They are currently engaged in several development projects:

U-Report, in partnership with UNICEF

The U-report social connection text messaging platform was created by UNICEF as a way to help young Ugandans engage on issues that are relevant and pressing to them, and to provide bi-directional communication between youth and Members of Parliament. By February 2016, U-report had 278 000 active users. Of the multiple interactions on the U-report platform, it was found that 60 to 70% of interactions were health-related. TMCG has been working in partnership with the UNICEF U-report team to provide U-reporters with free health care consultations delivered straight to their mobile phones. All incoming questions to U-report automatically get scanned for health-related keywords. These questions immediately get responded to by TMCG's qualified team of health professionals. In a recent polio campaign organized by UNICEF, U-report was used to check immunization coverage. Communities were able to direct any questions or concerns about immunization directly to TMCG, and over three days more than 5 000 messages were received.

World Vision Uganda

The USAID/Uganda HIV/Health Initiatives in Workplaces Activity (HIWA) is a five-year, US$ 15 million programme. This is a national programme implemented in Uganda by World Vision Inc in partnership with TMCG as the mHealth-lead organization. The goal of the Activity is to improve the health of the members of the Uganda Police Force, Private Security Guards, Uganda Wildlife Authority and selected hotels. The benchmarks for the achievement of this goal will be a demonstrable reduction in the incidence of HIV and AIDS and other communicable diseases, and improved quality of care for those infected or affected. In order to achieve the desired goal and purpose, the activities are designed to meet three intermediate results, namely increased availability and access to comprehensive HIV and AIDS and health services, improved quality of HIV and AIDS and other health services, increased uptake and utilization of HIV and AIDS and other health services.

Indigo Trust UK partnership

The Indigo Trust is a UK-based grant-making foundation that funds technology-driven projects to bring about social change, largely in African countries. It focuses mainly on innovation,

transparency and citizen empowerment. Since 2014, Indigo Trust has been in partnership with TMCG to provide mobile health care services to students in Ugandan universities. This has seen improvement in the health-seeking behaviour of these youths using social media platforms like Facebook, Twitter and WhatsApp Messenger.

GSMA and International Livestock Research Institute (ILRI)

The nutrition initiative was launched in September 2013. This eight-country initiative aims to improve the health of at least 0.5 million people by 2016, rising to 1 million by 2018 by developing and disseminating information on best nutrition practices. TMCG is the East African nutrition content development partner. This work involves developing and managing various themes and categories of new media nutrition content that are disseminated to the target beneficiaries for behavioural change and impact.

Center for Health, Human Rights and Development (CEHURD) Uganda

CEHURD is an indigenous, non-profit, research and advocacy organization with a vision to promote social justice and human rights in Uganda and the East African Region. CEHURD and TMCG collaborate in areas of health rights advocacy and empowerment on the part of CEHURD, and in medical and health information service provision on the part of TMCG. This partnership is aimed at providing comprehensive support on patient rights advocacy, health rights empowerment and referral to appropriate health related services.

4. IMPLEMENTATION

4.1. INNOVATION IN IMPLEMENTATION

Leveraging existing platforms to provide a user-centred service

Uganda's young population and increasing mobile penetration rates is resulting in different demands and expectations of health care delivery. Beyond traditional communication, these technology-accustomed users are using their phones for a variety of purposes, including relying on these devices for health care services and health care information.

In 2013, TMCG publicly launched with a voice call service. Through user feedback, they soon realized that this was only the preferred medium of accessing health care professionals for an older population. With the aim of keeping its service delivery costs lean, yet still providing a relevant service, TMCG made the conscious decision to leverage existing technology platforms instead of creating a new stand-alone one. Currently, TMGG has seven channels through which users can access health professionals and receive ongoing health information. Platforms include Facebook, WhatsApp Messenger, SMS, Twitter, Skype, email and a voice call line. Since adopting more text-based communication platforms, voice calls have reduced dramatically, signalling the acceptance and trust of these messaging platforms not only in social domains but also in health provision.

We didn't start with WhatsApp, but it is a good platform. We started with a voice call service. When we introduced the WhatsApp platform, we realized the number of engagements really went high. People find it very simple and easy to use, and it's very affordable. (Dr John-Mark Bwanika, Co-founder)

4.2. BUSINESS MODEL

TMCG is a for-profit limited liability company currently registered in Uganda, Kenya and Nigeria. This registration enables TMCG to place its social mission as the primary outcome, with profit as a secondary objective. Processes are underway to establish a registered non-profit arm as a hybrid organizational structure, which will provide flexibility, based on the requirements and nature of partnerships.

TMCG is providing all services at the standard cost of access. Users pay standard call rates or data rates to access mobile platforms, but the advisory or consultative service with a health professional is free of charge. The decision to ensure that the service is free for users was made both on the aspirations of the founders and the cultural health care spending context in Uganda. Similar organizations in Kenya and South Africa have been funded through user-paid subscriptions. In countries with a strong private health sector where populations are known to pay for health services, these business models have worked well. However, health care in Uganda, like some other African countries, is largely state- and donor-funded, with expectations to receive free health care, and thus there is a limited market for a user-paid subscription model. With access to affordable medical professionals, it has enabled TMCG to deliver the service at an affordable cost.

To fund operations, TMCG has identified a business model that enables it to act as a service provider for, and partner on, other population-based and private sector projects. TMCG's revenue-generating model focuses on building user numbers, which subsequently opens a variety of revenue streams through:

- **Developmental Agencies:** TMCG joins as an mHealth/eHealth service provider on large-scale population based projects implemented by these agencies.
- **Health Insurance Companies:** providing a value-added service to health insurance clients through easy access to health professionals, thus reducing unnecessary costs on specialist visits or hospital admissions.
- **Private health care providers:** enabling these private providers to enhance patient engagement and loyalty through regular supportive messaging and surveys.
- **Clinical Research Studies:** facilitating real-time medical data collection from cohorts of patients participating in clinical trials.

4.3. ORGANIZATION AND PEOPLE

Founded by Dr Davis Musinguzi and Dr John-Mark Bwanika, straight out of medical school, the company has become an example of entrepreneurial ambition and passion to see health care delivered differently for a future generation. Alongside these two change-makers are 15 other colleagues with diverse expertise in technology, medicine, pharmacy and business development.

The company was initially bootstrapped by founder capital investment. Until 2014, it operated on a part-time basis while Dr Musinguzi and Dr Bwanika were gaining expertise via their work in development and clinical research.

What excites and unites all those involved in TMCG is the desire to overcome the frustrations that they experienced in their clinical years, and to challenge the status quo of health care service delivery. Not only are they pushing the boundaries of how patients access health care services, but also how health care professionals should be trained and equipped in the future to deliver care outside the traditional consultation room. This agile and creative environment has drawn other young professionals to join the company.

Before joining TMCG, I was working in a pharmacy … It was always the same routine. I would always receive prescription, look for medicine in the counter and then bring the medicine pack them and give to the patients and explain … Now, working here, it has new challenges every day. … Each day brings new challenges and it gives me an opportunity to learn. Secondly, it always puts me at task for looking for information. That helps me to update the information that I have. Every day I have to keep reading, updating myself. That is one thing that I love about working here.
(Employee pharmacist, TMCG)

5. OUTPUTS AND OUTCOMES

5.1. IMPACT ON HEALTH CARE DELIVERY

As a relatively new company, TCGG has not yet conducted any impact evaluation studies. However, it has the ability to do real-time monitoring of its user interactions, and to utilize this information to streamline its service offerings.

On average, outside of any project partnership, TMCG interacts with 2 500 people daily, with the majority utilizing Facebook, followed by WhatsApp Messenger, SMS and voice calls. Interactions across all platforms average between 50 000 and 70 000 per month. Users range from 18 to 35 years of age, 60% are male, 40% are female. Users reside mainly in urban settings and the majority are from Uganda, though with fast-growing numbers in Kenya and Nigeria. Among reasons for contacting TMCG, 70% of interactions relate to primary health care issues, 27% for advice and referral to specialist care, and 3% are for general information.

The main outcome TMCG is striving for in health care is increased accessibility to quality health care at an affordable cost. Accessibility is vastly enhanced through a 90% reduction in time to see a health professional, which could take on average five hours in Uganda. Cost of care is reduced by 95% on a voice call and 98% on mobile platforms by comparing phone and data costs with regular consultation costs.

I think this is really innovative, in terms of being able to deliver 10 times more value and reduce the cost tremendously, and now the cost of a data bundles is 500 Uganda shillings [US$ 0.15] for 20 MB. I mean, you compare that to consultation at health care facilities, you will easily pay 30 000 shillings [US$ 10], which is many times more. (Dr Musinguzi, Co-founder, TMCG)

5.2. COMMUNITY AND PATIENT EXPERIENCES

The beneficiaries of TMCG vary, and include students, young professionals and mothers seeking advice and information. There is also a cohort of young medical professionals looking for guidance or a second opinion on complicated cases.

The general experiences of beneficiaries are very positive. Beneficiaries express their satisfaction with the service and how it has increased their health-seeking behaviour due to increased confidentiality and reduction in cost and time. Beneficiaries did report initial scepticism with a free service, but concerns were soon appeased and trust gained after a quality interaction with a TMCG health professional.

So yes, people are becoming more impatient. They can't afford to sit at a facility for more than three to four hours waiting. It doesn't matter if you are the best doctor in town [who] everyone talks about. People get impatient. Opportunities like these provide an alternative for me to get to do what I am supposed to do in the shortest available time. (Beneficiary)

5.3. ORGANIZATIONAL MILESTONES

The founders have been recognized for their work with the 2014 Google Africa Connected Award, UCC ICT4D Award, Ericsson Excellence in Innovation Award, African Development Bank eHealth Award, Deutsche Telekom Innovation Award and Microsoft Health Innovation Award. Their work, experiences and lessons have also been shared and showcased at local and international events, conferences and symposia.

6. SUSTAINABILITY AND SCALABILITY

TCMG is a growing company with the desire to increasingly penetrate the Ugandan and the African market. TMCG has prioritized being aligned with, and contributors to, National eHealth Policies and has fostered good relationships with the Ugandan Ministry of Health and its local and international development partners. In 2013, Dr Eliodia Tumwesigye, the current Cabinet Minister for Health of Uganda, endorsed TMCG.

Leveraging available communication technology platforms with established user bases has supported TMCG in avoiding unnecessary expenditure in developing a new platform. Time and investment is rather spent generating user-friendly health content and professional advice.

The main scaling strategy for TMCG is through partnership projects with development agencies and private health care players. Through its partners, TMCG is looking to start rolling out its tested models to Kenya, Nigeria and other African countries such as Tanzania, Malawi, Zambia, Swaziland and Benin.

To improve its service offering, the company is looking to add more value to its customers by not only offering remote consultations, but, in time, growing to open up its own house call clinical practice powered by Internet of Things (IoT) in medical diagnostic devices. Extending free coverage to rural areas is another priority due to the lack of existing services in many of these areas.

If we had unlimited resources I would really like to see TMCG provide a full breath of end-to-end services. From the first point of contact for anybody that needs a health care service to us being able to see them through the entire continuum of care with services, doctor visits and every single point of care that could possibly exist. (Dr Musinguzi, Co-founder, TMCG)

7. KEY LESSONS

7.1. IMPLEMENTATION LESSONS

Across Africa, multiple young health care professionals are searching for non-traditional means to improve health services. Although there has been an increase in the technology-supported incubators and investment capital, many of these resources are not specific or tailored for health care entrepreneurs. TMCG founders had to pool their own savings for start-up capital. The founders continued to support the company during the early years by working to earn a salary independent of TMCG. They have since transitioned to full-time positions in the company.

TMCG started with a lean medical call centre as a minimum viable service. This was in a context of significant health care challenges, such as the very low doctor:patient ratio; limited patient engagement; and the inflation of health expenditure. There was also opportunity to respond to the rapid proliferation of mobile technology.

The founders of TMCG continue to be fuelled by their vision. Regular user-interaction and feedback sessions inform the adaption of TMCG's service.

The biggest challenges that TMCG has had to overcome are the traditional perceptions and mindsets of people and providers as to how health care services should be delivered. In the early days, users would initially distrust the service, believing free and easy access to a private health care professional to be too good to be true. Continuous quality service has contributed to changing these perceptions and

resulted in word-of-mouth referrals from satisfied users.

I think to us as a team, [the] people that we serve keep us going. Every time we get a response or a testimonial from someone that we have served through our system who is excited about the service that we are giving. It is the people that are starting to get health information or get medical emergency care that keep us going every day because we know that we are providing a service that no-one [else] is providing in the system. (Dr Bwanika, Co-founder, TMCG)

7.2. PERSONAL LESSONS

Determined to change the status quo, Dr Musinguzi and Dr Bwanika had to challenge and overcome their own paradigms as to what health care could look like, often very contrary to the view that was prescribed during their medical training.

Many eHealth and mHealth interventions have struggled to achieve longevity. However, these founders are committed to a long-term investment. They strive to make integrity the core value of their company and the service they provide.

The values that are most important to me are integrity, excellence and ingenuity. More because people have to trust that we will do what we promise to do. That we will keep their information safely; we will keep their interactions private. This has taken several different interventions to make sure of that. Integrity is extremely key; excellence on the services that we deliver the clinical end with the health consultations; and with the data research that we are able to do to innovate towards people's health. (Dr Musinguzi, Co-founder, TMCG)

CASE INSIGHTS

1. Health-seeking behaviour of youth across Africa is changing. With the rise of mobile phone communication, young Africans are expecting technology-enabled, on-demand and user-friendly service from their health-care providers.

2. Technology is becoming an increasingly viable and affordable option to increase access to health information and provide health care services to low-income communities while also reducing the burden on public health care facilities.

3. National regulatory frameworks will increasingly face the need to start engaging with the advances in technology and its potential impact, positive and negative, on health care delivery.

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