MMS Bulletin #157

Digital age: challenges for health systems worldwide

Digitisation in health in Zimbabwe is making progress

Towards country-level capacity for Electronic Health Facilities

By Trymore Chawurura, Ronald Manhibi, Janneke H van Dijk, Gertjan van Stam

Urban Health Facilities like city clinics, larger hospitals and other health facilities are common in Africa. They contain a mix of public and private institutes. Rural Health Facilities (RHF) like rural hospitals, clinics or health posts comprise most health facilities dispersed in African countries. In those remotely located areas, public health is usually supported by institutes, like churches and companies, in addition to the government patronage. COVID-19 and digital advancements have pushed for an addition to these two categories of facilities with a third: The Electronic Health Facilities (EHF), providing access to national health systems by means of communication devices.

Agents in the DICP Contact Centre during a training session, Sept 2020. Photo by Liveson Gutu

The digitisation process in health, where phones provide additional access to care, is similar to that of digitisation in finance where wallets or finance institutions are augmented with electronic access to funds and services. Pushed by the COVID pandemic, digitisation in education has become mainstream: it provides access to learning where physical access became hampered.

In the process towards the Electronic Health Facilities (EHFs), two main movements can be witnessed:

- the move of decentering digital platforms
- the introduction of digital health intervention portfolios

Decentering digital platforms

USAID envisions 'country-level capacity in digital health' as the first priority (USAID, 2020). Along with national planning, digital health is to run on national infrastructures. However, the digital platform economy features a concentration of power: Two countries (China, USA) capitalise 90% of the digital platforms globally (UNCTAD, 2019). The African and Latin American continent – together – account for 1% only (UNCTAD, 2019). The action of decentering in digitisation, therefore, becomes topical. In the words of the French president

Emmanuel Macron: "The battle we're fighting is one of sovereignty… If we don't build our own champions in all areas – digital, artificial intelligence – our choices will be dictated by others" (rfi, 2019).

Leaders warn about the risk of unequal power distribution in digital health and its consequences (Thatcher, J. et al., 2016): "If we are to be serious about using I[nformation] C[ommunication] T[echnologies] as a way of improving the lives for people living in the developing world, we need to empower [them] to create their own designs" (Marsden, G., 2008).
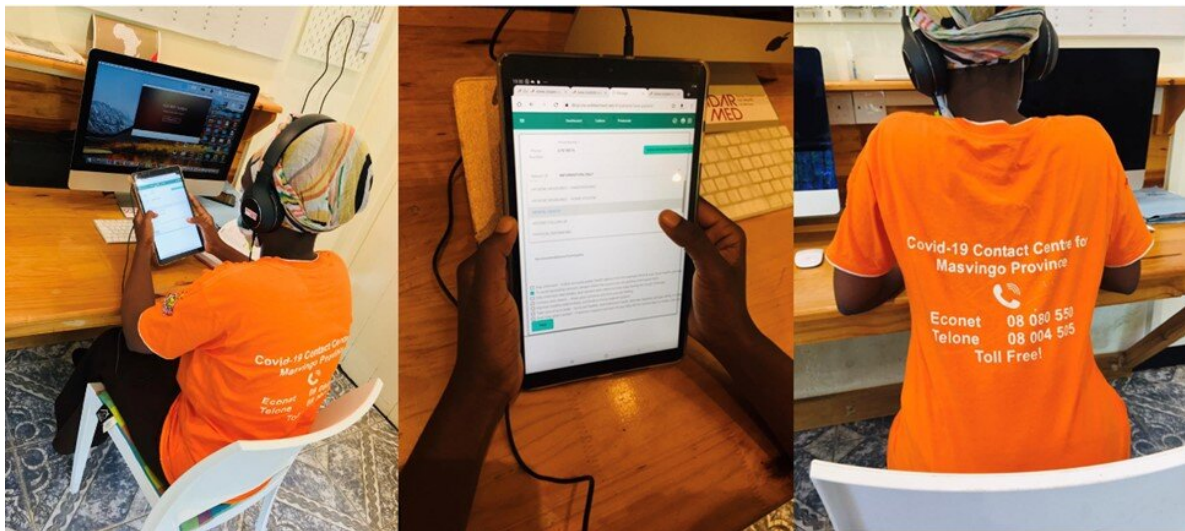
Agent working with specially printed T-shirts for further promotion of the existence of the DICP platform, December 2020. Photo: © SolidarMed

Decentering expands on the term 'polycentric' that the UN Secretary-General positioned as a critical digital cooperation principle (UN, 2020). Decentering involves respecting local authorities, policies, regulations and requirements related to integrating digital technologies in African health systems. It acknowledges sovereignty, agency and national capacity for Africans to steer digital health in Africa.

Community engagement embeds digital health, crucial for acceptance, legitimacy, and sustainability of its emergence and continuity. It puts communities in their rightful place: as resident inhabitants with agency – stewards – and coproducers of digital health in their distinct environments. Inclusiveness blurs the roles of all participants, community members, researchers, and all national and international partners as focus shifts to seeking shared experiences, common understanding and mutual learning (AfriCHI, 2021).

> *"The battle we're fighting is one of sovereignty… If we don't build our own champions in all areas – digital, artificial intelligence – our choices will be dictated by others."*
>
> *— French president Emmanuel Macron*

Digital health intervention portfolios, toward Electronic Health Facilities

The World Health Organisation provides guidance for digital health interventions (WHO, 2019). Such intervention is in need of appropriate design, production, operations and assessments in line with the environment, available skills, and culture. Agenda setting involves the communities of care seekers, communities of digital practice, and communities of digital health experts. In Zimbabwe, SolidarMed engages with relation-holders and stakeholders in the communities it serves in Masvingo province. As a result, Public Private Community Partnerships emerged to produce knowledgeable and motivated community members who convened hackathons (Hobbins, M. et al., 2018), utilized participatory video (Makamba, P. et al., 2019), engaged with health and technology experts, and became members of the Ministry of Health and Child Care's Technical Working Groups at national level. This also resulted in a sandwich of Zimbabwean developed digital health interventions, where local developments interface with national services (i.e. Electronic Health Registration (Impilo EHR) and laboratory information systems).
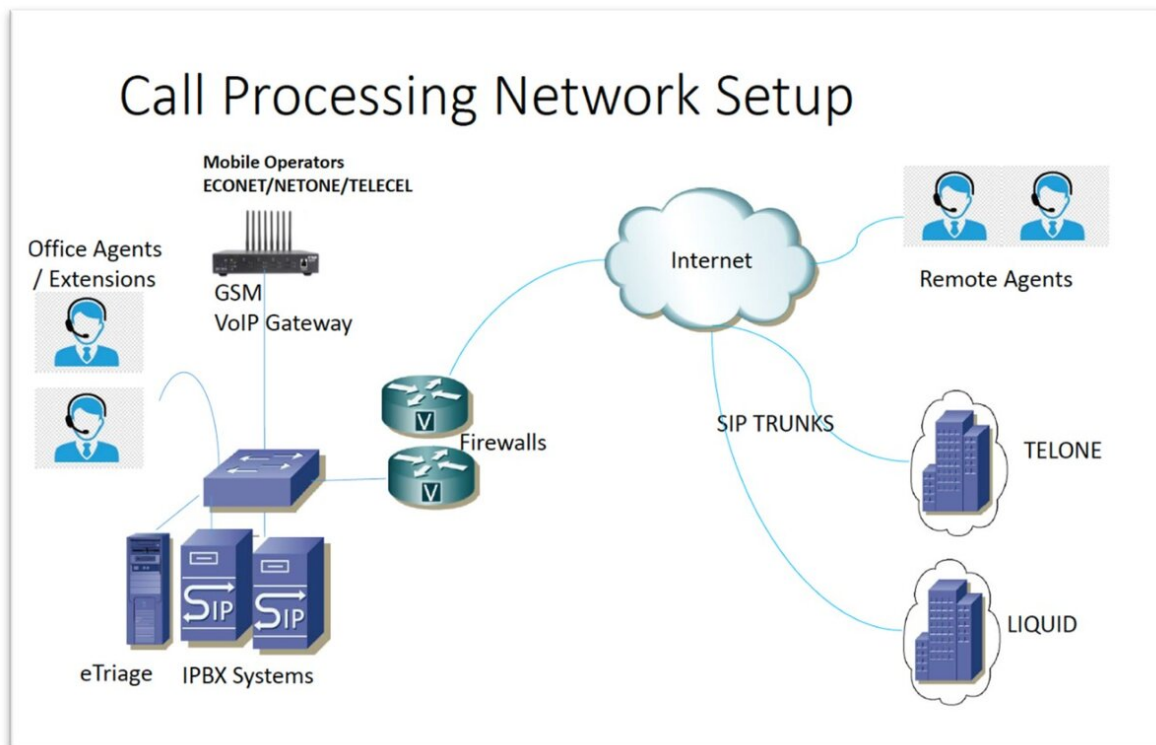
Network set up for call centre integration set up, worked on in collaboration with Signal Telecom. Photo: SolidarMed

> *"Decentering involves respecting local authorities, policies, regulations and requirements related to integrating digital technologies in African health systems. It acknowledges sovereignty, agency and national capacity for Africans to steer digital health in Africa."*
>
> —

A Digital Information and Consultation Platform (DICP) was developed and operationalized in 2020, to open an additional freely accessible communication channel next to the stressed physical health facility infrastructure during the COVID-19 pandemic. With the advertisement of toll-free phone-numbers to access the COVID-19 contact centre for information and consultation in Masvingo province and nationwide, the Ministry of Health defacto commenced Electronic Health Facilities' operations.

Digital health augments any activity in health, or in the words of the USAID leadership: "we will integrate the smart use of digital technologies into all of our health programs" (USAID, 2020, p. 2). The locally developed portfolio of digital health services in Zimbabwe consists of

- digital health interventions, e.g. Teleophthalmology (Manhibi, R. et al., 2020)
- digital health platforms, e.g., Impilo EHR and LIMS
- digital health services, e.g., HIT_BL, Clinical Monitoring, and Supportive Supervision.

The Zimbabwean government allotted over USD 4 mln to the national roll out of its self-developed and owned, open-source Impilo EHR. Many Zimbabwe-developed digital health interventions and platforms are proposed for national scale-up within the emerging national digital health strategy.

This overview shows how (sovereign) *digital health platforms* appear, born from community engagement and an embedded workforce. They strengthen existing health services, open new access channels, and 'amplify what is going well'. They have also shown to continue service provisioning, access to care, even when the physical access to health infrastructure challenged due to pandemic restrictions.

Various team members working and interacting remotely during the development phase of the DICP. Photo: © SolidarMed

> "This overview shows how (sovereign) digital health platforms appear, born from community engagement and an embedded workforce. They strengthen existing health services, open new access channels, and 'amplify what is going well'."
>
> —

Conclusion

In the African setting, digital health needs *scaffolding* – where partnerships sustain engagement and workforce enhancement, local thought leadership facilitate tasks that go beyond individual abilities. These partnerships will evolve, when digitalisation ubiquitous, and when the Electronic Health Facility is enshrined as 'business as usual' (Cozza, M. et al., 2015). In close participatory and holistic approaches, *who does what* pertaining the use, design, implementation, modification, maintenance and redesign, is continuously shifting, depending on the context and political circumstances. In this setting, *the narratives* of thought leaders describe the experiences and understandings that become the *infrastructure* from which activities scale (Karasti, H., 2014).

African health systems have faced major challenges in providing equity and quality health care, especially in rural areas. The existence of these challenges has resulted in mounting interests in the potential of digital health, in a decentered manner. A reflected and carefully planned approach is needed that proceeds with diligence to involve all, leaving nobody behind.

This narrative provides a glimpse of what is ahead: a reality augmented by the emergence of Electronic Health Facilities through digitization and expanding access towards universal health coverage in Africa.

References

- AfriCHI, (2021). Going beyond empowered design by scaffolding inter-community engagement (not yet published). (2021). *AfriCHI 2021*
- Cozza, M., & De Angeli, A. (2015). Scaling up participatory development. In S. Kowalski, P. Bednar, & I. Bider (Eds.), *Socio-Technical Perspective in IS Development* (pp. 106–113) http://ceur-ws.org/Vol-1374/paper9.pdf
- Hobbins, M., Kavenga, M., Manhibi, R., van Dijk, J. H., & van Stam, G. (2018). eHealth: Connecting communities for health, selected cases in Zimbabwe. *Medicus Mundi Bulletin, Swiss Online Journal for International Cooperation and Health, 148* *https://www.medicusmundi.ch/de/advocacy/publikatio...*
- Karasti, H. (2014). Infrastructuring in participatory design. *ACM International Conference Proceeding Series, 1*, 141–150 https://dl.acm.org/doi/10.1145/2661435.2661450
- Makamba, P., Matewa, C. E. F., van Dijk, J. H., van Stam, G., & Vhoko, P. (2019). Participatory Video, giving Voice and Respect to the Epistemic Sovereignty of communities in rural Zimbabwe. In P. Nielsen & H. C. Kimaro (Eds.), *Information and Communication Technologies for Development. Strengthening Southern-Driven Cooperation as a Catalyst for ICT4D. ICT4D 2019. IFIP Advances in Information and Communication Technology, vol 552* (pp. 110–121). Springer https://www.springerprofessional.de/en/participato...
- Manhibi, R., Mashamba, M., Musengi, A., Mutengerere, A., van Dijk, J. H., & van Stam, G. (2020). Teleophthalmology in rural Zimbabwe, a case of platform development using a bottom-up approach. *Public Health Conference (ICOPH 2020)* *https://www.researchgate.net/publication/346192309...*

- Marsden, G. (2008). Towards empowered design. *Computer, 41*(6), 42–46 https://ieeexplore.ieee.org/document/4548171
- rfi. (2019). *Macron throws € 5 billion at digital start-ups*. Rfi. https://www.rfi.fr/en/france/20190918-macron-throw...
- Thatcher, J., O'Sullivan, D., & Mahmoudi, D. (2016). Data colonialism through accumulation by dispossession: New metaphors for daily data. *Environment and Planning D: Society and Space, 34*(6), 990–1006 https://core.ac.uk/download/pdf/37777115.pdf
- UN SG High-Level Panel. (2020). *The age of digital interdependence. Report of the UN Secretary-General's high-level panel on digital cooperation*. United Nations https://www.un.org/en/pdfs/DigitalCooperation-repo...
- UNCTAD. (2019). *Digital economy report 2019: Value creation and capture - implications for developing countries*. United Nations https://unctad.org/webflyer/digital-economy-report...
- USAID. (2020). *A vision for action in digital health, 2020-2024. Accelerating the journey to self-reliance through strategic investments in digital technologies*. USAID https://www.usaid.gov/sites/default/files/document...
- World Health Organization. (2019). *WHO guideline: Recommendations on digital interventions for health system strengthening*. World Health Organization https://www.who.int/reproductivehealth/publication...

Trymore Chawurura is responsible for all ICTs at Zimbabwe's Ministry of Health and Child Care. He co-authored various papers, expanding the Zimbabwean experience into a wider context. He is participant in the development of Medicus Mundi's Transnational Framework Digital Health in International Cooperation.

Ronald Manhibi, eHealth Project Manager at SolidarMed Zimbabwe. Previously Ronald worked as a Technical Information and Communication Technologies (ICT) Director at the Reformed Church University for about 6 years. His experience in managing Information Systems projects for public government institutes focused on agriculture, higher and tertiary education is being utilized in steering eHealth projects in Zimbabwe.

Janneke H van Dijk, Country Director SolidarMed Zimbabwe. Janneke studied medicine in the Netherlands, where she also obtained her DTM&H and PhD. Since 2000 she has worked as Medical Doctor in India and Zimbabwe, and as Clinical Research Director of the Macha Research Trust in rural Zambia. In 2015 she was appointed Country Director of SolidarMed Zimbabwe, which has its country offices in Masvingo – Zimbabwe, and its head-office in Lucerne, Switzerland.

Gertjan van Stam *(PhD, MTech), Great Zimbabwe University.*
http://www.vanstam.net/gertjan-van-stam
Gertjan lives in Zimbabwe. He has been involved with strategic developments in ICT in Africa since 1987. He holds an MTech (cum laude) from Nelson Mandela Metropolitan University and a PhD in Cultural Studies from Tilburg University. His research is focused on the mechanisms of society and technologies in (rural) Africa under the banner of 'community engagement, culture, and digital technologies'. Email

Kontakt

Deutschschweiz

Medicus Mundi Schweiz

Murbacherstrasse 34

CH-4056 Basel

Tel. +41 61 383 18 10

info@medicusmundi.ch

Suisse romande

Route de Ferney 150

CP 2100

CH-1211 Genève 2

Tél. +41 22 920 08 08

contact@medicusmundi.ch