Scaling digital solution for healthcare access
Telemedicine enabled by smart glasses:
creating access to affordable, quality healthcare in underserved areas
in Democratic Republic of the Congo

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Scientific article

Telemedicine Leveraged by Smart Glasses to Improve Primary Healthcare Services in a Remote Rural District, Kingandu, DRC, 2019–2020
Global Health Action · May 19, 2021
https://www.tandfonline.com/doi/full/10.1080/16549716.2021.2004729

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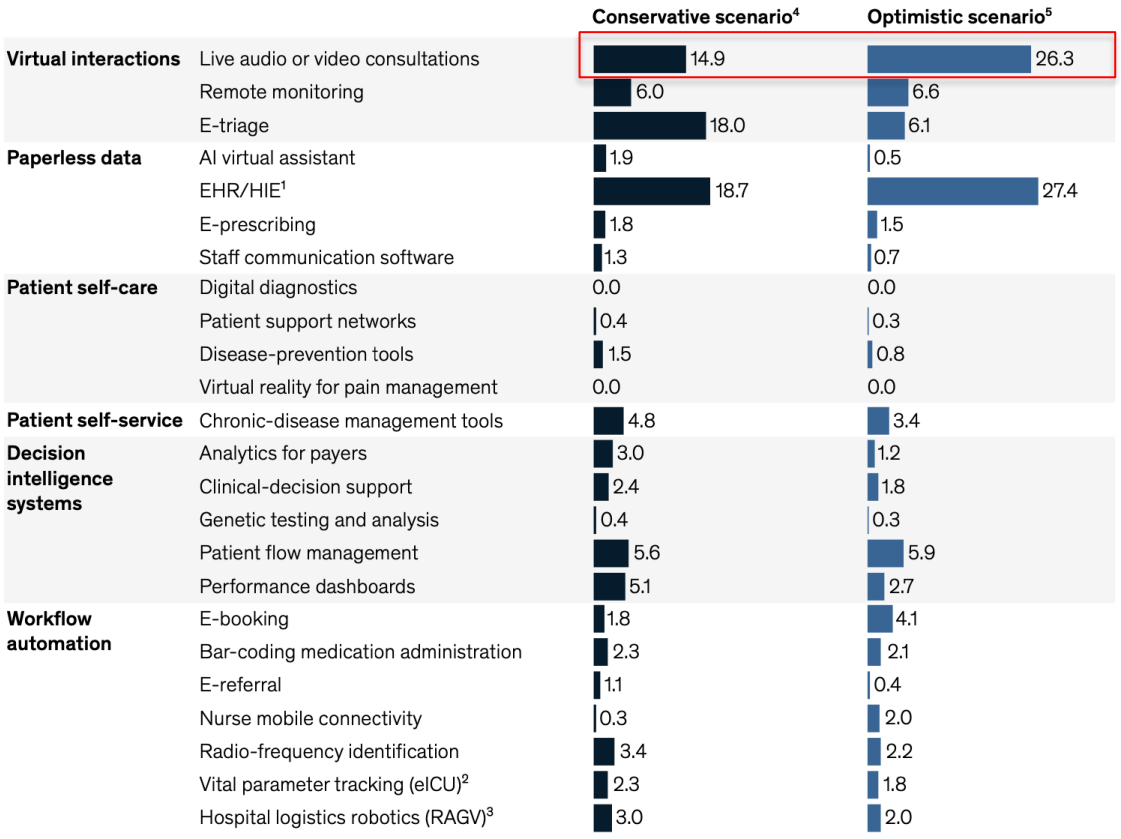
Potential efficiency gains (*)

Share of total savings from digital adoption in South Africa, 2030, %



(*) McKinsey 2023: How digital tools could boost efficiency in African health systems

Making a successful, industrial tech innovation available and affordable for the under-served

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www.iristick.com

- Smart safety glass (Assisted Reality)
- Launched June 2017 in CA, USA
- First to leverage the mobile phone

HORIZON 2020

reddot design award
winner 2018

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3 GOOD HEALTH AND WELL-BEING

SUSTAINABLE DEVELOPMENT GOALS

- Making high quality health care accessible and affordable
- Providing remote, on the job training
- Supporting remote maintenance of medical & other equipment
- …

AFRICA museum

D4D PRIZE Digital for Development

Smart Glasses

specific features

- Central camera (natural viewpoint) & optical zoom
- Touchpad or voice commands
- 3-axis display for unobstructed view
- Robust (safety glasses) while comfortable to wear
- Processing power of mobile phone (iOS or Android)
- Full shift battery

The Challenge

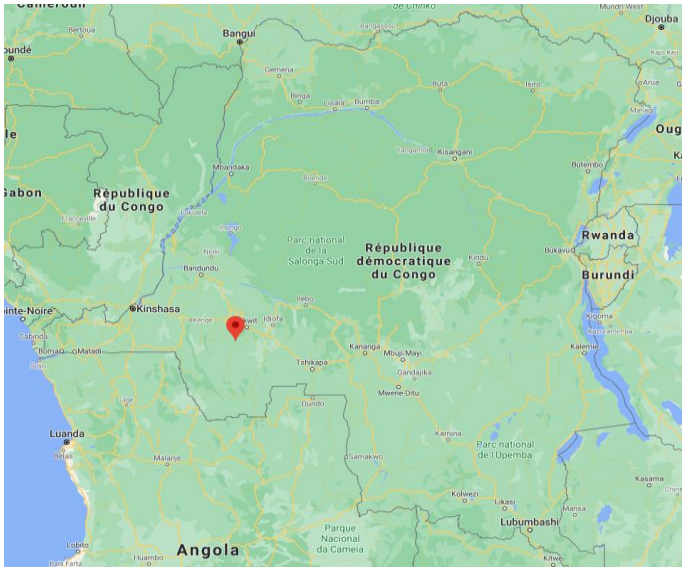
No access to affordable, quality healthcare (SDG3)

- 57 countries, 36 of them in sub-Saharan Africa, face a 'critical shortage', mainly in primary healthcare
- DRC in particular is witnessing a very complex and long standing health and humanitarian crises.
  - About 13 mio people in dire need of assistance
  - less than 1 physician per 10.000 people
  - about 1 district hospital and 15 rural health centers per 200.000 people

Skill shortage

The WHO estimates a projected shortfall of 18 million health workers by 2030, mostly in low- and lower-middle income countries

The setting



1 Rural District hospital (Kingandu) with 3 general physicians

18 rural health centers in primary health care

Pilot in District hospital and 3 rural health centers: Sondji, Kimbimbi, Katenda (33 Villages with 20.483 peoples)

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Telemedicine in rural area: a multi-stakeholder approach

Partners

USAID FROM THE AMERICAN PEOPLE

UKaid

WITH SUPPORT FROM
Grand Challenges Canada
Grands Défis Canada

memisa
Together for health

AVANTI

INSTITUTE OF TROPICAL MEDICINE ANTWERP

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Telemedicine solution: 4 components

Technical Solutions
- Smart glasses: a tool for the nurse
- Connectivity (VSATs)

+

Processes
- Communication flow
- Medical protocols
- Data collecting with DHIS2 capture

+ +

Infrastructure
- Emergency motorcycle
- Rapid Diagnostics Tests

+

People
- Sensitization of villagers
- Nurse – doctor relation

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The impact: some numbers

- Context: 629 teleconsultations
  - 1 out of 10 visits applies tele-consultation.
  - 39% of tele-consultations lead to referral to the district hospital
  - 30% of referrals are emergency cases
- Better patient outcomes: 63 lives saved - 209 lives improved
  - Income of RHC increased by 45%
  - Much improved referral system: 92% arrivals instead of 70 to 75%

The impact: qualitative

- More robust (and efficient) healthcare system
  - Major improvement in relation between health district and health centres. Both ways.
  - Up-skilling health centre staff, both on clinical and technical medical skills
  - Improved data collection (digital)
- Improved convenience and access to care for underserved population
  - Increased confidence of population
  - More people visiting the health centres

Learnings

- Patient journey: additional tools and equipment needed to enable local healthcare workers to take appropriate action after diagnosis (e.g. motor cycle for emergency referrals)
- Enlarged health care service: introduction of additional, more sophisticated tools, such as Rapid Diagnostic Tests, enhancing the quality of care delivered
- Incentives: Alignment of telemedicine solution with income incentives of healthcare staff is crucial
- Trust: involvement of local community and community officials is critical
- Only one piece of the puzzle: The tech solution (smart glasses, telecommunication) is a critical lever, but should be firmly embedded in a larger, patient centric solution.
- Cost: The initial investment cost is important, but operating cost is very acceptable under the condition that telecommunication costs are low. VSAT communication, unless subsidized, is not affordable

Some other applications

tele-consultation in mental healthcare in the context of Covid 19 for health centres and district hospitals in Mali

Pilot on Primary Healthcare in Karnataka

To provide smooth and effective technical guidance and support from Japan on infectious disease control and other research fields, to researchers in Ghana and Zambia performing laboratory work

Use of Iristick smart glasses in DRC to support front line healthcare workers in rural areas

Technical and logistics support in CAR and other countries

Remote support for 3D printed, low cost, high quality prosthetics in Kinshasa, DRC