

Evaluation of MSF's telemedicine pilot project in Madaoua, Niger: A Qualitative Study



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Background

MSF has piloted a hybrid model of telemedicine in Madaoua Hospital, Niger, where paediatric, neonatal, and maternity wards are supported.

Between November 2015 and January 2020, MSF has provided store-and-forward (*asynchronous*) and real-time (*synchronous*) telemedicine services for case consultations and input from remote specialists, aiming to inform diagnosis and treatment of complex patients.

Research objective

To gain an understanding of factors at micro, meso, and macro levels associated with uptake of the telemedicine project.

Methods

We performed qualitative research using semi-structured individual key-informant interviews and non-participant observation of telemedicine events, including a field visit in February 2019.

Study population comprised key stakeholders, including associated healthcare workers, coordinators, and managers (N=19). To consider a variety of perspectives, we included a few non-users (nurses). Our analysis applied an adaptation of the Dahlgren and Whitehead model.

The work was approved by the ethics review boards of MSF, McGill University, and by Niger's Comité National d'Éthique pour la Recherche en Santé; all participants provided written informed consent.

Findings

We present selected strengths and limitations of the Madaoua telemedicine pilot project.



MSF VSAT dish antenna in the Madaoua hospital compound, Niger (J. Pringle, February 2019)



It has been the journey of telemedicine at MSF.

Synergy between asynchronous and synchronous telemedicine

In 2015, MSF identified a need for telemedicine to support its medical team in Madaoua, but was on **“negative ground zero”** [P18] in terms of infrastructure. Therefore, MSF initiated a **“phased-in implementation of telemedicine”** [P18], starting with store-and-forward services and then scaling up to include real-time weekly sessions. This (the hybrid model) garnered much enthusiasm:

“the field was so keen to use the services, to be connected with the outer world for support. ... We saw this synergistic effect.” [P18]

Local doctors felt fortunate to have the telemedicine platform available and considered the medical referent specialists to be at its heart. Importantly for patient confidentiality, MSF's telemedicine platform prevented doctors from having to resort to less secure platforms (eg, WhatsApp) for consultations.

Need for appropriate advice and African medical referents

Participants noted that occasionally, medical advice from distant medical referents was inappropriate for the local context.

“In some cases, ... the advice that is provided is not realistic and not matching the need or cannot be implemented by the field.” [P19]

Too often, advice from **“foreign experts”** was considered **“Gospel”** [P05], inhibiting local doctors from critically probing and challenging advice. As such, one local doctor expressed a desire for Nigerien or other African medical referents to be engaged in the platform, particularly ones speaking the African French of West and Central Africa.

Deviating from MSF's medical guidelines

Doctors are responsible for their own practice and should not follow telemedicine advice blindly, but a clinical supervisor noted that occasionally, when asking why a doctor had deviated from the MSF protocol, the response would be:

“Because the telemedicine said so.’ And there would be no record of this.” [P07]

This highlighted the need for a searchable and trackable telemedicine database to uphold accountability and best practices in clinical documentation.

Technical and scheduling challenges

While the store-and-forward platform was the most frequently used method, participants were more enthusiastic about real-time weekly clinical case discussions. However, they often encountered technical problems: insufficient bandwidth and software glitches.

“Only rarely do we have a [telemedicine] discussion without a [technical] problem.” [P11]

Obtaining sufficient bandwidth was notoriously difficult in Madaoua, and the logistics team had to go to great lengths to boost the bandwidth to enable clinical case discussions.

Timing/scheduling of clinical case discussions was also challenging. Starting at 15:00 was difficult for those working since 07:00, suffering with fatigue or hunger. As a result, enthusiasm dwindled over time.

Need for nurse participation

Nurses play a vital role in clinical care, but were nominal or absent in telemedicine. Nurses would like to attend the sessions, but felt excluded.

““[It would be good] if we could have the doctors involve others, the nurses or midwives, in attending telemedicine. After all, it's about sharing. We'll benefit from knowing what is going on.” [P10]

Both nurses and doctors expressed an interest in the increased participation of nurses in telemedicine.



MSF's interactive telemedicine application with computer, webcam, and VSAT videoconferencing in a dedicated room within the Madaoua hospital compound, Niger (J. Pringle, February 2019)

Need to monitor and evaluate

Telemedicine managers acknowledged that monitoring and evaluation was neglected, and that it ought to have been included in the initial planning. MSF Canada plays an important role as an MSF **“innovation hub”** [P19] and has committed to robust monitoring and evaluation in its future telemedicine projects.

Study strengths and limitations

We present novel research of primary data pertaining to MSF's hybrid telemedicine platform in Madaoua. Results may have differed had the interviews been conducted at a different point in time or with follow-up.

Conclusion

Hybrid telemedicine platforms in MSF projects require many elements for success, such as substantial investment in ICT infrastructure, ongoing training for users, and a strong network of committed personnel. Findings exemplify that telemedicine is not a mere technical tool: it is network for solidarity with the goal of providing quality humanitarian health care.

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This study is dedicated to our late friend Sekou Kouyaté of Conakry (1980-2020).

