DEF COVID-19 GROUND REPORT SERIES

Understanding the Role and Potential of M-Health during Covid-19 Crisis in India

PART 5

VIDISHA LAL

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May 2021
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Author: Vidisha Lal
Editor: Anoushka
Reviewer: Anulekha Nandi
Design and Layout:
Year of Publication: 2021

DEF Paper Series/SN-05/2021

You can read the online copy at www.defindia.org/publication-2

Published and Distributed by:
Digital Empowerment Foundation
Email: def@defindia.net | URL: www.defindia.org

Recommendations for improving m-health sector in India

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THE USE OF INFORMATION AND COMMUNICATION Technology (ICT) to address healthcare needs has become a salient practice around the world. This practice is referred to as digital health or e-health[1]. Mobile health is a subset of e-health where mobile phones are used for the purpose of accessing health related services or information[2]. Similarly telemedicine services can be accessed over any ICT enabled device (smartphones, tablets) for teleconsultation, teleconference etc. over health related matters[3].

The mobile health sector in the past few years has contributed in increasing primary healthcare benefits in far flung areas at low cost, decreasing the communication gap and response time between patients and healthcare workers and trained the healthcare workers with necessary skills required for community intervention[4]. However, a lot remains to be accomplished. Given below is a list of recommendations that could be pondered upon by the government as well as non-governmental agencies to make the sector more efficient and robust.

[1] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

[2] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

[3] Baker, J.(Sept, 2019), Telemedicine, Telehealth, e-Health - What's the Difference?, Retrieved from: https://www.ortho-live.com/blog/telemedicine-telehealth-e-health-whats-the-difference

[4] Bassi, A., John,O., Praveen, D., Maulik, P.K., Panda,R., Jha,V. (Oct, 2018), Current Status and Future Directions of mHealth Interventions for Health System Strengthening in India: Systematic Review, Journal of Medical Internet Research, Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6229512/

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We need well-designed and cost effective studies from all over India to avoid half-baked evidence of our accomplishments. It will help our policy makers in designing rules and laws that would extend health benefits to a larger population

1. Digital health is an outgrowth of digital revolution that happened in the West with the emergence of computers and internet, so it is likely for the applications to carry western influences. Western influences[5] can be in terms of the language it communicates in, or assumptions it makes about patient's economic, social or political background while delivering medical advises[6]. Therefore to make the field more accessible and inclusive, m-health should come up with applications which are relevant to a community's culture and in the language they communicate in. The government is already in the process to include several indigenous languages as an option to choose from while going through mobile applications[7]; however the options need to be wider for wider access. The background of target audience must be kept in mind while addressing the issues they face and suggesting a solution.

2. Mobile health is a fairly new addition to existing healthcare services[8]. Researches and studies are working on finding out the quality, affordability and accessibility of m-health services[9]. For example, Reducing Maternal and Newborn Deaths (ReMiND) program was conducted in two blocks of Kaushambi district in Uttar Pradesh to assess the cost effectiveness of m-health intervention by community health workers for reducing maternal and newborn mortality in rural Uttar Pradesh, India[10]. The standard of these researches however remain suboptimal[11]. They lack adequate scientific evaluation and quality of sample collection which will go on to ensure context based evaluation of m-health initiatives on ground[12]. The collected sample is majorly from South India, Delhi or Maharashtra, with none from Jammu and Kashmir or North-east India[13]. This points out towards a clear geographical disparity in evidence of m-health interventions. Besides, we have abundant reports on flagship m-health programs but few on their implementation. We therefore need well-designed and cost effective studies from all over India to avoid half-baked evidence of our accomplishments. It will help our policy makers in designing rules and laws that would extend health benefits to a larger population.

[5] Perez-Uribe, R., Salcedo-Perez, C., Ocampo-Guzman, D.(April, 2018), Handbook of Research on Intrapreneurship and Organizational Sustainability in SMEs, Retrieved from: https://books.google.co.in/books?id=RrVSDwAAQBAJ&printsec=frontcover#v=onepage&q&f=false

[6] Prasad, K.(2012), E-Governance Policy for Modernizing Government through Digital Democracy in India, Journal of Information Policy , Vol. 2, pp. 183-203, Penn State University Press, Retrieved from: https://www.semanticscholar.org/paper/E-Governance-Policy-for-Modernizing-Government-in-Prasad/a8b3ca2e893db594649d507872923cc37d79e1b0

[7] Prasad, K.(2012), E-Governance Policy for Modernizing Government through Digital Democracy in India, Journal of Information Policy , Vol. 2, pp. 183-203, Penn State University Press, Retrieved from: https://www.semanticscholar.org/paper/E-Governance-Policy-for-Modernizing-Government-in-Prasad/a8b3ca2e893db594649d507872923cc37d79e1b0

[8] Emerging mHealth: Paths for growth, Pricewaterhouse-Coopers (PwC), Retrieved from: https://www.pwc.com/gx/en/healthcare/mhealth/assets/pwc-emerging-mhealth-full.pdf

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[10] Prinja, S., Bahuguna, P., Gupta, A., Nimesh, R., Gupta, M., Thakur, T.S. (2018), Cost effectiveness of mHealth intervention by community health workers for reducing maternal and newborn mortality in rural Uttar Pradesh, India, Cost Effectiveness and Resource Allocation, Retrieved from : https://resource-allocation.biomedcentral.com/articles/10.1186/s12962-018-0110-2

[11] Bassi, A., John,O., Praveen, D., Maulik, P.K., Panda,R., Jha,V. (Oct, 2018), Current Status and Future Directions of mHealth Interventions for Health System Strengthening in India: Systematic Review, Journal of Medical Internet Research, Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6229512/

[12] Bassi, A., John,O., Praveen, D., Maulik, P.K., Panda,R., Jha,V. (Oct, 2018), Current Status and Future Directions of mHealth Interventions for Health System Strengthening in India: Systematic Review, Journal of Medical Internet Research, Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6229512/

[13] Bassi, A., John,O., Praveen, D., Maulik, P.K., Panda,R., Jha,V. (Oct, 2018), Current Status and Future Directions of mHealth Interventions for Health System Strengthening in India: Systematic Review, Journal of Medical Internet Research, Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6229512/

The legislators have a responsibility towards the citizens, to protect their fundamental right to privacy while making use of their personal information for a generous cause

3. M-health facilities have given a great opportunity to researchers for collecting data. But while it can help in conducting rigorous research works, it might also step on the privacy of vulnerable and marginalized population of India[14]. India does not have a data protection law in place and the bill that is tabled in the parliament doesn't include the right to be informed of one's existence or the right to opt out of an application (through this recommendation one is also hinting towards client education in terms of privacy and security), quiet unlike the European Union's General Data Protection Regulation (GDPR)[15]. So the legislators have a responsibility towards the citizens, to protect their fundamental right to privacy while making use of their personal information for a generous cause. The personal details should be acquired with patient consent after informing them about the terms and conditions and their implications because, patient's safety and security is of utmost importance.

4. Though m-health poses a danger to privacy of people through its data collection requirements, it also offers a unique opportunity to track and monitor client/patient's health status and services that are being offered to them[16]. This digital tracking helps in assessing the degree of intervention which has been made in specific cases and the resulting benefits of it[17]. M-health has tried to bring transparency to the health care system and promoted accountability in its way of functioning[18]. So, in this case the tracking system should also create an arrangement for tracing the availability of commodities and equipment, of human resources and of geographically accessible health facilities with qualified health workers so that the patient/client can access healthcare services physically as and when they need them[19]. This might also help the service providers in keeping a check on the demand and supply of resources and resource persons and manage accordingly.

[14] Nandi, A. (2019), Artificial Intelligence in Education in India: Questioning Justice and Inclusion, Global Information Society Watch, Artificial intelligence: Human rights, social justice and development. Retrieved from: https://defindia.org/wp-content/uploads/2019/12/gisw2019_web_india_anu.pdf

[15] Nandi, A. (2019), Artificial Intelligence in Education in India: Questioning Justice and Inclusion, Global Information Society Watch, Artificial intelligence: Human rights, social justice and development. Retrieved from: https://defindia.org/wp-content/uploads/2019/12/gisw2019_web_india_anu.pdf

[16] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

[17] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

[18] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

[19] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

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M-health has to a larger extent succeeded in extending primary and preventive healthcare benefits to people through its mobile based applications and SMS services

5. Increasing access and thereby driving demand of healthcare can ensure that gaps in contact coverage (the gap between total offering of services and the actual reception of services in terms of facilities, health workers and other services) do not further erode the performance of health system[20]. Clients often need multiple interactions or follow ups with the physicians/health workers, an access to which confirms the effectiveness of health interventions. Continuous coverage therefore guarantees that full course of interventions are being achieved[21].

6. Access to healthcare cannot be brought about solely with the introduction of mobile health provisions, when we know that the low literacy rates reflect on people's understanding of ICT enabled devices and its applications[22]. Majority of India suffers disadvantage of preexisting parameters for discrimination in terms of gender, caste, geographical location (urban rural divide) etc. which affect literacy rates and in turn their participation in mobile health initiatives[23]. Therefore to increase accessibility to healthcare in real terms we must deploy community health workers/trainers/interns to teach people the standard operations of the concerned mobile applications so that they can avail maximum benefits of m-health schemes and facilities that are being offered.

7. M-health has to a larger extent succeeded in extending primary and preventive healthcare benefits to people through its mobile based applications and SMS services. They have covered maternal and child health related information through KILKARI[24], monitored and intervened in treatment of communicable diseases like Tuberculosis through NIKSHAY[25] and more recently COVID-19 through Aarogya Setu[26], provided assistance in quitting tobacco through M-cessation[27] and more importantly tried to help people struggling with stigma ridden illnesses like HIV[28]. A stronger primary healthcare system would help in reducing burden on tertiary healthcare[29], a department where our country has been struggling for long, if looked at from a broader geographical perspective. Besides, the stigma ridden illnesses need a wider coverage to address issues of mental health, Sexually Transmitted Diseases (STDs) etc. with special attention towards menstrual health of cisgender[30] and transgender women.

[20] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

[21] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

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[27] Ahamed, F., Palepu, S., Dubey, M., Nongkynrih, B.(2017), Scope of mobile health in Indian health care system – the way forward, International Journal of Community Medicine and Public Health, 4(4):875-881, Retrieved from: https://www.researchgate.net/publication/315676882_Scope_of_mobile_health_in_Indian_health_care_system_-_the_way_forward

[28] Ahamed, F., Palepu, S., Dubey, M., Nongkynrih, B.(2017), Scope of mobile health in Indian health care system – the way forward, International Journal of Community Medicine and Public Health, 4(4):875-881, Retrieved from: https://www.researchgate.net/publication/315676882_Scope_of_mobile_health_in_Indian_health_care_system_-_the_way_forward

[29] Tertiary care is usually for inpatients, who upon getting a referral from a primary or secondary health professional seek advanced medical investigation and treatment.

[30] Cisgender denotes a person whose personal identity and gender corresponds with their sex assigned at birth.

M-health and telemedicine should be more versatile and branch out in newer areas of health sector

8. It is important to address how mobile health services have eased communication between health workers working in different parts of the country, and between health workers and their clients/patients[31]. While consultation for case management between health workers, especially case specialists significantly help in follow-ups with the client/patient, consultation between remote client/patient and health worker help in case monitoring and updating their health status[32]. M-health has also supported health workers through online clinical and non-clinical trainings, by providing health assessment tools and by alerting them through notifications for appointments, follow-up services, recent health events or crisis in a particular community etc.[33]. These processes have made evaluation of m-health interventions more comprehensive and efficient and tried to overcome the infrastructural barriers. However, the areas where m-health have seemingly done good need to maintain high standards consistently, reduce the response time and be prompt in reverting back.

9. Lastly, m-health service delivery in India by far has concentrated its energy in strengthening human resources in healthcare[35]. But m-health or telemedicine doesn't have interventions in the field of health governance, medical supplies or improving the financial sphere of healthcare[36]. M-health and telemedicine should be more versatile and branch out in newer areas of health sector.

These recommendations were made on the basis of a critical evaluation of m-health sector, with the help of various academic works on emerging digital interventions contributing to improve healthcare in India. It is in no way presenting a comparison with offline/ non-digital mode of healthcare. Digital health interventions have rather been created to complement the offline services and enhance the functioning of health systems. These recommendations should help in expanding the horizon of digital health interventions and strengthen it in areas where it is doing a commendable job.

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[32] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

[33] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

[34] WHO Guideline: Recommendations on Digital Interventions for Health System Strengthening(2019), Retrieved from: https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1

[35] Bassi, A., John,O., Praveen, D., Maulik, P.K., Jha,V.(2016), Mhealth Interventions for Health System Strengthening in India, A Scoping Study Report; The George Institute for Global Health India. Retrieved from: https://www.georgeinstitute.org.in/sites/default/files/scoping_health_report_final_uploaded.pdf.

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