

Opportunities and Development of Telemedicine in Response to COVID-19: Experience from Public Sector Medical University

Khola Noreen¹, Muhammad Umar², Arshad Ali Sabir³

ABSTRACT

Over the past six months, the world has undergone drastic changes related to unprecedented emergence of deadly virus namely novel Coronavirus, COVID-19. Telemedicine service provides excellent platform for technology based remote patient care in the time of current pandemic crisis. It is emerging as an effective and sustainable solution if current pandemic continues for long time. Telemedicine is revolutionising patient care and help to support the health system of country by reducing the impact of pandemic. There is a need to create the multidisciplinary team of health professionals striving to serve the patients by provision of quality health care service delivery.

KEYWORDS: Telemedicine, COVID-19, Medical, University.

How to Cite This:

Noreen K, Umar M, Sabir AA. Opportunities and development of telemedicine in response to COVID-19: experience from public sector medical university. Biomedica. 2020; 36 (COVID19-S2): 73-7.

Over the past six months, the world has undergone drastic changes related to unprecedented emergence of deadly virus namely novel Coronavirus, COVID-19. As pandemic escalated quickly without any prior warning there was little reaction time available for preparedness and other mitigation measures. This situation has choked health care delivery system and brought the already overburdened health system of the country on its knee.¹

Novelty of virus and lack of evidence-based guidelines regarding its mode of transmission,

prevention and management have resulted in spread of fake and unauthentic news leading to chaos and uncertainty. Social and electronic media become real time indispensable source of information. *The WHO Director-General even stated: "We're not just fighting an epidemic; we're fighting an infodemic."* Every day social media networking sites, blogs, different forums are abuzz with news about increase in disease mortality and morbidity, human sufferings, miseries and pain, broadcast of economic collapse and atrocious stories about deserted streets in busiest and crowded areas of the world.²

In this time of commotion and anarchy, availability of authentic evidence-based source of information is the biggest challenge and need of an hour.³ This pandemic has not only brought challenges and treats but also opportunities and newer perspectives to cope up with perplexing situation effectively. Corona crisis act as catalyst to look for alternate solution and serve as stimulus for adoption of new technology for better provision of health care delivery in resource constraint country like ours.⁴

-
1. Khola Noreen
Department of Community Medicine
Rawalpindi Medical University, Rawalpindi – Pakistan.
 2. Muhammad Umar, Vice Chancellor
Rawalpindi Medical University, Rawalpindi– Pakistan.
 3. Arshad Ali Sabir
Rawalpindi Medical University, Rawalpindi– Pakistan.

Correspondence to:
Dr. Khola Noreen
Assistant Professor Community Medicine
Rawalpindi Medical University, Rawalpindi– Pakistan.
Email: khauladr@gmail.com

While this crisis presented unprecedented threat to insubstantial health care system of our country, it has also stimulated the adoption of new modalities in the form of telehealth to provide ready, easily accessible, first hand, unmediated and around the clock access to healthcare facility.⁵

Telehealth comes under umbrella of eHealth. eHealth is defined as – “the cost-effective and secure use of information and communication technology (ICT) in support of health and health-related fields, including healthcare services, health surveillance, health literature, and health education, knowledge and research”.⁶ Telemedicine can be defined, according to the European Commission, as “*the provision of healthcare services, through the use of ICT, in situations where the health professional and the patient (or two health professionals) are not in the same location. It involves secure transmission of medical data and information, through text, sound, images or other forms needed for the prevention, diagnosis, treatment and follow-up of patients*”.⁷

Adoption of telemedicine service is need of hour because current situation COVID-19 threatens to overwhelm already weak healthcare system of the country. Telemedicine aims at providing quality health care delivery without direct physical encounter. Telemedicine service offers following benefits in current pandemic crisis.⁸

- Provide protection against direct exposure to infection by avoiding direct encounter with patient thus minimizing the spread of virus.
- Novelty of virus and lack of evidence based authentic scientific information has accelerated the rumour mongering and myth buster which is source of distress and panic, telemedicine can serve as effective modality to cater for these issues by providing them with opportunity to discuss their problems directly with qualified health care professional in personnel.
- Provides support service to alleviate stress and anxiety among general public.
- Patient has no stigma or feeling of guilt of suffering from deadly disease as patients can discuss their problems in privacy without fear that others will know about the condition.
- Patient privacy is preserved by maintaining the confidentiality and anonymity of obtained information.

- Health education can be done more effectively as active involvement of patient brings autonomy and better compliance.
- Increase patient engagement, empowerment and confidence.
- Can provide online consultation to elderly population for treatment of chronic ailment with comorbid health conditions.
- Provide easy access to outreach and remote areas of the country from where it is difficult to commute in time of pandemic condition.
- Since the pandemic ensues all healthcare facilities are diverted toward the management of COVID 19, which has significantly overburdened the health system of the country, this service serves to support the healthcare system by provision of first hand health care service delivery.

History of Telemedicine at Rawalpindi Medical University¹⁰

Concept of telemedicine is not new for Rawalpindi Medical University. Successful launching of *e-health initiative* in Pakistan dates back to implementation of telemedicine project by Electronic Government Directorate (E.G.D) Ministry of Information and Technology Islamabad, Pakistan in 2007. At that time Rawalpindi Medical College and its affiliated Holy family hospital was among one of the three hospitals where this project was launched. This project at launched under National Rural Support Program (NRSP). This initiative leads to successful accomplishment of different pilot project in field of telemedicine and provided teleconsultation services in field of Cardiology, Surgery, Gynecology, Paediatrics, Neurology and Urology.

Telemedicine Services at RMU during CORONA Pandemic

• Corona Helpline Call Centre through Universal Access Number

In response to Telemedicine initiative of Government of the Punjab, Rawalpindi Medical University (RMU) Campus at Holy Family

Hospital launched a telemedicine service on 27th March, 2020. Establishment of CORONA Helpline service at RMU provides around the clock tele-consultation service through Universal access number (UAN) 0304-1112101. This toll free UAN is easily accessible through both landline and cell phones. University has designed special Corona Screening Proforma for baseline assessment of presenting complaints. As per this proforma scoring is done out of score 0-10 on the basis of presenting complaints. If score is less than 3 then patients is categorized as less likely having Corona infection, if scoring is between 3 to 5 then patient is labelled as Suspected case, and if more than 5 then patient falls into category of confirmed case of Corona. After initial scrutiny and categorization into respective group, patients are further guided according to category. If patient is categorized as not having Corona (scoring < 3) they are counselled and health educated regarding preventive strategies, social distancing, home isolation and to observe safety precautions during this pandemic crisis. If patient is suspected case (scoring 3-5) then he/she is guided for Corona testing services provided by Government or they are informed to contact 1166 for further treatment. For Emergency ambulance service patients are guide to call 1122. Large chunk of calls are received every day were also for financial assistance and provision of ration. Such calls are guided to contact Prime Minister EHSAAAS Program for further assistance. Calls received for medical ailments other than Corona are dealt according to complaints. To date telemedicine has catered to need of more than 1200 patients, not only from Pakistan but also from other countries.

- **Video Conferencing Portals for Union Councils of Rawalpindi**

Dedicated video conferencing portals are launched at RMU in arrangements with the district government that are connected to the Basic Health Units of four of the most densely populated union councils of Rawalpindi including Rehmat Abad, Kotha Kalan, Dhok Mustaqeem and Dhok Mungtal. Separate

landline numbers are allotted to contact each union council. Teleconsultation provided through video conferencing portal covers COVID-19 related concerns, identification, prevention and care of suspected patients; management of other health related problems as well as in facilitating in all daily life matters where the public is facing difficulties due to the current lock down.

- **Doctor 247**<https://doctors247.online/>

Rawalpindi Medical University has launch web-based video consultation service at telemedicine center. This service is currently offering round the clock teleconsultation through the connectivity provided via the mobile phone and live video consultation to the patients. The center is a part of the chain of telemedicine centers being established by the Government of the Punjab consisting of around 150 mobile phone lines and web based video consultation solution that the Government is offering in conjunction with the telemedicine solution provider “Medical City Online”, forming the largest of its kind 24/7 online health consultation provision network in the country. The telemedicine center can be accessed through the free UAN Calling Number 0304-1112101 while the video consultation can be arranged through visiting the web portal “doctors247.online”. It is worthwhile to mention that both the mobile based and video consultation services are free for the public. “doctor247.online” is one of the largest 24/7 online health consultation service provision not only inside the Pakistan but people around the globe can consult their doctor directly through this network.

Telemedicine portal provides facility of two-way video communication between doctor and patient. It has inbuilt proforma for CRONA screening. This proforma categorize patient as not suffering from Corona, suspected case, confirmed Corona case. Patient history is documented on web based proforma, information can be stored and retrieve for future correspondence. This portal also provides facility online prescription. Prescription proforma can be downloaded and

saved by the patient for future reference. It has system of online record maintenance of every consultation and doctor can access previous history of patient as well. Dosage, indication of different commonly prescribed medication is available. Doctor can suggest range of medications, medical tests or investigations from the preloaded database. The patient health education facility is also available through brochures and pictorial presentation to enhance the understanding about preventive strategies.

Our experience from Rawalpindi Medical University suggest that telemedicine service provides excellent platform for technology based remote patient care in the time of current pandemic crisis. It is emerging as an effective and sustainable solution if current pandemic continues for long time. Telemedicine is revolutionising patient care and help to support the health system of country by reducing the impact of pandemic. However, this service can be further strengthened by expanding the access of patient to clinical specialities to create the multidisciplinary team of health professionals striving to serve the patients by provision of quality health care service delivery under one platform.

CONFLICT OF INTEREST

None to declare.

FINANCIAL DISCLOSURE

None to disclose.

REFERENCES

1. Novel Coronavirus (COVID-19): leveraging telemedicine to optimize care while minimizing exposures and viral transmission. Available online at: https://www.researchgate.net/publication/339916159_Novel_Coronavirus_COVID-19_Leveraging_Telemedicine_to_Optimize_Care_While_Minimizing_Exposures_and_Viral_Transmission [Last accessed on May 16, 2020].
2. John Z. How to fight an infodemic. *The Lancet*. 2020; 395 (10225): 666-76.
3. Chen W, Wang Q, Li YQ, Yu HL, Xia YY, Zhang ML, et al. Early containment strategies and core measures for prevention and control of novel Coronavirus pneumonia in China. *Zhonghua Yu Fang Yi Xue Za Zhi*. 2020; 54 (3): 239-44.
4. Augenstein J. Opportunities to expand telehealth use amid the Coronavirus pandemic. *Health Affairs*. March 16, 2020. Available online at: <https://www.healthaffairs.org/doi/10.1377/hblog20200315.319008/full/>. [Last accessed on May 3, 2020].
5. Vural OZ. Special issue: digital health in times of COVID-19. *Int J Integr Biol*. 2020; 24 (5): 431-9.
6. World Health Organization. A health telematics policy in support of WHO's Health-For-All strategy for global health development: report of the WHO group consultation on health telematics, 11-16 December, Geneva, 1997. Geneva, World Health Organization, 1998.
7. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on telemedicine for the benefit of patients, healthcare systems and society. Available online at: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52008DC0689>. [Last accessed on May 12, 2020].
8. Omboni S. Telemedicine during the COVID-19 in Italy: a missed opportunity? *Telem J E Health*. 2020; [Epub ahead of print].
9. Malik AZ. Telemedicine country report-Pakistan. In 2007 9th International Conference on e-Health Networking, Application and Services (pp. 90-94). IEEE. Available online at: <https://doi.org/10.1109/health.2007.381611>. [Last accessed on May 15, 2020].

Author's Contribution

KN: Conception and design of study, Acquisition and analysis of data.

MU: Intellectual input and approval of the final version to be published.

AAS: Critical review and intellectual input, Acquisition of data.

Prof. Dr. Muhammad Umer (Sitara-e-Imtiaz) [MBBS, FCPS, FACC, AGAF, FRCP (London), FRCP (Glasg)] is the Vice Chancellor of Rawalpindi Medical University along with holding the designation of Professor of Medicine,

Gastroenterology & Hepatology and Head of Department of Centre of Liver & Digestive Diseases (CLD), Holy Family Hospital, Rawalpindi. Prof. Umer has more than 150 publications in peer reviewed national and international journals. Being Vice Chancellor of RMU, he has been instrumental in flourishing Telemedicine project and his keen insight into COVID-19 based modifications in this system has led him to contribute to this manuscript.