Can COVID-19 Help Us Deliver Whole-System Holistic Healthcare?

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The 7th Joint Symposium between the European Association for the Study of Diabetes (EASD) and the Asian Association for the Study of Diabetes (AASD) took place on the 2nd–6th October in Hamburg, Germany. In an engaging session examining the impact of COVID-19 on new healthcare models, experts provided insights into whole-system approaches for diabetes, and opportunities for improvement in patient outcomes via telemedicine.

A WHOLE-SYSTEM APPROACH FOR DIABETES CARE

Marc Evans, University Hospital Llandough, Cardiff, UK, opened the session by highlighting the growing costs and prevalence of diabetes worldwide. In the face of these increasing challenges, Evans drew attention to the way COVID-19 brought a new system-wide perspective to healthcare, in which all stakeholders were aligned to meet a single objective: save lives, and protect the integrity of the healthcare system. Evans explained that this holistic model is highly relevant, and valuable, for the management and treatment of diabetes. "Diabetes does not exist as a sole entity: it is a component of the entire healthcare system, in which there are many different stakeholders," he emphasised.

A single intervention can have an impact on all stakeholders and the entirety of a system, enabling solutions to many problems at once. For instance, optimising strategies for glycaemic control in people with diabetes reduces the burden of complications, which translates into an improved quality and length of life, lower personal and healthcare costs, and less pressure on the healthcare system. Evans quoted: "To reduce cost, the best approach is often to spend more on some services to reduce the need for others."[1] In addition to this system-based thinking, Evans highlighted the importance of addressing inertia, and implementing strategies at an early stage, as seen with early lockdowns during the COVID-19 pandemic to reduce transmission and healthcare pressures. "Inertia is something that is very present in diabetes [...] If we address inertia from a system-wide perspective, there are huge value gains," stated Evans. He added that a total-system approach to decision-making would also have profound social, economic, and environmental impacts.

THE RISE OF TELEMEDICINE FOR DIABETES

On behalf of Andrea Luk, Chinese University of Hong Kong, Hong Kong, Juliana Chan, from the same institution, spoke about the rise of digital health technologies during COVID-19, and the potential for telemedicine to reshape the future of diabetes care. Telemedicine is described by the World Health Organization (WHO) as the "delivery of healthcare services using information and communication technologies with the aim of diagnosing, treating, and preventing diseases and injuries." Chan explained that, before COVID-19, telemedicine was mainly applied in order to help overcome access barriers, so as to reach patients in remote areas through teleconsultations. For diabetes, telemonitoring was established early on for the real-time transmission of glucose data to healthcare professionals (including continuous glucose monitoring), to make recommendations on insulin dosage.

A 2016 meta-analysis across more than 9,000 participants with Type 1 or 2 diabetes examined the mean difference in attained HbA1c in patients exposed to telemedicine or conventional care.[2] Overall, the telemedicine group had a larger reduction in HbA1c levels than those undergoing conventional care. Furthermore, a 2020 meta-analysis of over 5,000 pregnant females with gestational diabetes found that telemedicine was associated with better maternal and fetal outcomes, including a lower incidence of Caesarean section, pre-eclampsia, premature rupture of membranes, and macrosomia.[3] Nevertheless, Chan emphasised that the heterogeneity of telemedicine studies, such as variation in approach, sample size, and follow-up duration, is a challenge for drawing conclusions on the effectiveness of this new care model. "No studies have yet examined how telemedicine may impact long-term diabetes complications," she stated.

Chan also spoke about the Hong Kong healthcare experience, where the Hospital Authority provides healthcare for 90% of the Hong Kong population, and a single electronic medical record system has provided clinical care for all patients since 2000. The Hospital Authority launched a one-stop mobile platform in 2019, 'HA Go', which provides teleconsultation services to improve the healthcare experience of patients. However, Chan explained that many barriers to teleconsultation still remain in Hong Kong, such as the absence of legislation for the regulation of virtual services, which raises concerns about potential medicolegal consequences for misdiagnosis. "Many healthcare systems, like in Hong Kong, are at a crossroads [...] We still don't know if telemedicine is here to stay," stated Chan. While some systems continue to expand their telemedicine platforms and services, others have reverted back to conventional modes of care.

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TELEMEDICINE POST-PANDEMIC: LESSONS AND CHALLENGES

COVID-19 not only prompted the global uptake of telemedicine, but also provided an opportunity to assess its effectiveness in a real-world setting, identifying areas of development to support the ongoing use of telemedicine post-pandemic. Chan emphasised that, ultimately, the goal for telemedicine is to ensure quality care. She cited the guidelines from the Institute of Medicine Committee on Quality of Health Care in the USA, which provides strategies for the redesign of healthcare systems.

Firstly, telemedicine should achieve comparable safety and effectiveness to conventional care, and may also require a different quality reporting system, which should evaluate impact at a system-wide level. "Evaluation of telemedicine services should keep pace with the rapid change of the technology landscape," explained Chan. Secondly, telemedicine should be efficient and timely, providing improved access to care for people living in remote areas, and using healthcare resources more efficiently than conventional care. Thirdly, telemedicine should be patient-centred and equitable. Chan highlighted the risk for telemedicine to increase, rather than decrease, health inequities: "We have to ensure that there is internet access in remote areas; develop tools to assist people with motor, visual, or audial impairments; and increase help for population segments with limited language proficiency, or low digital literacy," she advised. Chan spoke about the telemedicine experience in India, where 65% of the population has no internet access. To ensure equitable access to health, the government introduced 'eSanjeevani', a virtual appointment platform where patients living in remote villages are aided by a local healthcare worker with internet access to connect with physicians.

Chan went on to present valuable insights into the current strengths and limitations of telemedicine after COVID-19. A 2022 study including half a million patients with diabetes, found that conventional care performed slightly better in medication-based measures, while telemedicine performed better in testing-based measures (90.8% versus 85.6% of patients had HbA1c levels tested).[4] Chan explained that the

initiation of medication may require more in-depth discussion with patients, which may not be as readily achievable through teleconsultation. In parallel, the absence of physical examinations in teleconsultations may prompt healthcare professionals to order more extensive patient testing. In another study, 64% of people with diabetes in Italy stated they were willing to continue using telemedicine after lockdown, with females and elderly patients less likely to continue with it, and graduates and unemployed people more likely to.[5] People with greater perceived ability in self-management, mostly the younger population, generally had a higher willingness to continue using remote services, and perceived these services as of higher quality.

CONCLUSION

COVID-19 has presented the opportunity to apply and evaluate new systems and perspectives for healthcare. These are highly relevant for the treatment of diabetes, a complex disease with increasing prevalence and challenges. Ultimately, the integration of telemedicine to routine healthcare delivery will require system-level interventions, to ensure equitable access to care, and increase the quality, safety, and efficiency of virtual services.

References

1. Porter ME. What is value in health care? N Engl J Med. 2010;363(26):2477-81.
2. Su D et al. Does telemedicine improve treatment outcomes for diabetes? A meta-analysis of results from 55 randomized controlled trials. Diabetes Res Clin Pract. 2016;116:136-48.
3. Xie W et al. Effectiveness of telemedicine for pregnant women with gestational diabetes mellitus: an updated meta-analysis of 32 randomized controlled trials with trial sequential analysis. BMC Pregnancy Childbirth. 2020;20(1):198.
4. Baughman J et al. Comparison of quality performance measures for patients receiving in-person vs telemedicine primary care in a large integrated health system. JAMA Netw Open. 2022;5(9):e2233267.
5. Maietti E et al. The experience of patients with diabetes with the use of telemedicine and teleassistance services during the COVID-19 pandemic in Italy: factors associated with perceived quality and willingness to continue. Diabetes Res Clin Pract. 2021;180:109047.