Digital health to support primary care provision during a global pandemic

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ABSTRACT

The urgency of the COVID-19 pandemic in Australia has seen the implementation of digital health technologies to support continuity of high-quality primary care provision. Digital health innovation has been used to operationalise the nation's pandemic preparedness principles by reducing risk of infection to both healthcare workers and at-risk patients, sustaining care for chronic and acute health conditions, and supporting the mental health of the population. In this perspective piece, we document the Australian Federal government's digital health response to ensure the ongoing delivery of high-quality primary care. This includes the implementation of telehealth, point-of-care testing, electronic records and e-prescriptions, national primary care data collection and analysis, and digital communication. Digital health has been a critical element of the pandemic response and paves the way for future primary care provision during disasters and emergencies. Further research is needed to capture the effectiveness, feasibility and acceptability of these innovations for both patients and primary care practitioners.

Keywords: communication, COVID-19, digital health, disaster response, pandemic, prevention, primary care, telehealth.

Introduction

Australia's response to the COVID-19 pandemic has involved the rapid implementation of digital health to support primary care. The principles of pandemic preparedness for primary care[1] emphasise protection of both vulnerable patients and healthcare workers, sustainability of health care and the maintenance of high-quality routine primary care (Box 1). Digital applications have been used to overcome some of the operational challenges presented by each principle. Here, we outline the digital health response of the Australian Government to the COVID-19 pandemic to ensure the ongoing provision of high-quality primary care.

Box 1.   Principles of primary care pandemic preparedness[1]

1. Protection of vulnerable people – via telehealth and point-of-care testing.
2. Provision of treatment and support services to affected people – supported by telehealth and digital communication. Documented via electronic records and national primary care data.
3. Continuity of regular healthcare services for the whole population – via telehealth and e-prescriptions.
4. Protection and support of primary healthcare workers and primary care services – via telehealth, which reduces healthcare worker exposure and digital communication.
5. Provision of mental health services to the community and the primary healthcare workforce – via telehealth.

Telehealth

Telehealth allows for the protection of patients while maintaining high-quality primary care. Elderly people and people with chronic disease and disability are more susceptible to poor outcomes from COVID-19 infection.[2] Federal funding was introduced to enable priority groups to access their general practice via telehealth, which was later expanded to facilitate telehealth access by the whole population.[3] In the past, funded telehealth consultations were limited to specific programs, such as mental health or rural services. The COVID-19 pandemic was the first time routine general practitioner (GP) consultations via telehealth have been funded by the Medicare Benefits Schedule.

During a pandemic, excess morbidity and mortality can occur due to health system collapse, untreated acute and chronic health issues, and the potential reduction of preventive health services.[4] Introduction of 'whole-of-population' telehealth recognised this,[5] with the proviso that face-to-face consultations should be available whenever necessary.

Digital inclusion was considered in the telehealth roll-out, with funding provided for consultations by telephone or video. There are many reasons why patients have difficulty accessing video-conferencing including lack of hardware, poor Wi-Fi, and limited technological literacy;[6] however, > 99% of Australia's population is now covered by the 4G network,[7] ensuring telephone access for most people. To date, > 90% of telehealth consultations have used telephone,[8] with telephone offering greater convenience, less time wastage and reduced complexity. There is ongoing work needed to ascertain the potential additional benefits of video-conferencing, while also weighing up any risks of exclusionary policies, particularly for at-risk populations.[9]

Digital health has also contributed to protecting the mental health of patients and healthcare workers with funding provided to telehealth consultations with general practitioners, psychologists and psychiatrists, and the provision of online digital mental health resources for healthcare workers and the wider community.[10]

Electronic records and e-prescriptions

The swift telehealth roll-out was only possible as a number of digital health innovations were already in place, or could be rapidly implemented. For example:

- electronic medical records are near universal in general practice, which allowed clinicians to provide consultations from home during periods of lockdown;
- e-prescriptions were fast-tracked, made possible by careful groundwork over many years to ensure IT systems were in place;[11]
- linkages between systems such as the national myHealthRecord and the Australian Immunisation

Register have enabled people to have access to their own healthdata.[12]

Point-of-care testing

Point-of-care testing (PoCT) involves a clinician taking a specimen and analysing it close to when and where the consultation occurs.[13] PoCT testing has been on the policy agenda for many years,[14] but implementation has been delayed, often based on questions of quality.[15] Existing capability for polymerase chain reaction (PCR) PoCT platforms was rapidly expanded and pivoted into a world-first use of COVID-19 PCR PoCT in remote areas of Australia.[16] This reduces testing turnaround time and provides a real-time feed of testing data to communities and decision-makers. In addition to this, flexible funding was channelled directly to Aboriginal and Torres Strait Islander communities and organisations to design and implement local initiatives considered most beneficial to their members.[3,17]

National data collection and reporting

National data have been used to support policy development and implementation at a time of rapidly changing evidence. The segregation of treatment facilities for potentially infected patients was critical as infections can pass rapidly in waiting rooms. Federally funded, GP-led respiratory clinics have been established in 150 sites.[18] The innovation of real-time capture of attendance levels at GP-led respiratory clinics, symptoms, testing and results channelled centrally to the Department of Health is an historical first for primary care data collection in Australia and has generated a dataset of COVID-19-positive cases and negative controls of more than 1 million records.[18,19] The Department of Health generates weekly reports that are shared with jurisdictional public health authorities through the Communicable Diseases Network Australia.

The protection and support of primary healthcare workers and primary care services involved the provision of personal protective equipment (PPE) from the National Medical Stockpile, which was delivered via Primary Health Networks. The early pandemic saw shortages, highlighting the perils of reliance on offshore supplies for essential goods.[20] Careful monitoring enabled documentation of PPE distribution to community-based healthcare workers across the nation. This live data was sent to the Department of Health, which enabled informed decision-making on further PPE allocation and utilisation of the national stockpile of PPE resources.

Digital communication

Having a 'single source of truth' can reduce miscommunication and the federal Department of Health website

has been used to convey the latest COVID-19 information, with jurisdictional websites releasing local data and public health directions. As another example, the federal online vaccine eligibility checker informs people on their personal eligibility and where to make a booking to get vaccinated. Digital technology has been used to support communications with more than 100 interactive webinars to primary care professionals since the pandemic began, with more than 27 500 attendees at the 40 GP primary care webinars in 2021, and the unprecedented use of videoconferencing to support consultation between government and stakeholders.[3]

Conclusion

Further waves of COVID-19 are expected, especially when Australia re-opens its international borders. In past emergencies, such as floods and bushfires, health care provision and continuity of care has been interrupted.[21] Digital health innovations like telehealth, e-prescriptions and data capture mean that continuity will also be possible during future emergencies. Research is needed to capture patients' and practitioners' perspectives of the feasibility and impact of digital innovations on the delivery of primary care to shape future policies and practice.

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