Integrating General Practice Into the Australian COVID-19 Response: A Description of the General Practitioner Respiratory Clinic Program in Australia

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Conflicts of interest: All authors are or were directly involved in developing this program and/or working in general practitioner respiratory clinics.

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ABSTRACT

Integrating primary care with the health response is key to managing pandemics and other health emergencies. In recognition of this, the Australian Government established a network of respiratory clinics led by general practitioners in response to the coronavirus disease 2019 (COVID-19) pandemic as part of broader measures aimed at supporting primary care. General practitioner (GP) respiratory clinics provide holistic face-to-face assessment and treatment to those with respiratory symptoms in an environment with strict protocols for infection prevention and control. This ensures that these patients are able to access high quality primary care while protecting the general practice workforce and other patients. The GP respiratory clinic model was developed and operationalized 10 days after the policy was announced, with the first 2 respiratory clinics opening on March 21, 2020. Subsequently a total of 150 respiratory clinics were opened and served over 800,000 patients within more than 99% of Australia's postcodes. These clinics used a standardized data collection tool that has provided the largest and most complete primary care surveillance database of respiratory illness in Australia. The success of the GP respiratory clinic model was made possible due to strong partnerships with Primary Health Networks and individual general practices that rapidly shifted operations to embrace this new approach. This article describes the development and early implementation of this model.

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INTRODUCTION

Primary care is the frontline of the health system and has a critical role in responding to pandemics and other health emergencies.[1,2] Experience in previous pandemics, however, has demonstrated that primary care is frequently not well integrated within overarching pandemic health planning, preparedness, and response.[3] The last pandemic to have a significant impact on the Australian health care system was 2009 influenza A (H1N1) pandemic. General practitioners (GPs), the main primary care providers in Australia, were integral to triage, diagnosis, and management of H1N1 influenza cases in the community, as they incorporated care of people with influenza symptoms into their mainstream workflow. At that time, however, GPs frequently felt unsupported in the role. GPs reported concerns about risk of infection (to staff and other patients), interruptions to regular health care delivery, lack of clear communication from public health authorities, and difficulty accessing personal protective equipment.[4-6]

The Australian Government review of the 2009 influenza A (H1N1) pandemic found that general practice had a larger role than had been identified in planning.[7] Subsequently, in the context of the coronavirus disease 2019 (COVID-19) pandemic, primary care was included as a major component of the Australian Government response.[8] In early March 2020, the National COVID-19 Primary Care Response action plan was released, which described 6 key activity areas.[9] The Australian Government Department of Health established specialized respiratory clinics led by GPs across Australia for dedicated assessment and treatment of patients with respiratory illness. In this article we describe the development and implementation of Australia's respiratory clinic program. At time of writing, the program is still in operation with ongoing collection of data intended for further research and evaluation.

General Practice in Australia

General practice is the first point of contact with the health system for the majority of Australians. General practices are mostly private businesses. Australian citizens and permanent residents are able to obtain a rebate (funded through Medicare, Australia's universal health insurance scheme) when seeing a GP although they may have to pay an out-of-pocket fee. Many Aboriginal and Torres Strait Islander people use an Aboriginal Community Controlled Health Organization (ACCHO). This model is a primary health care service initiated and operated by the local Aboriginal community to deliver holistic, comprehensive, and culturally appropriate health care. Each Australian geographic region is covered by a Primary Health Network (PHN), an administrative organization funded by the federal government and designed to improve access to primary care services through coordination between GPs and other health services.

GP Respiratory Clinic Model

Rationale

In both the context of COVID-19 and previous pandemics, GPs have sometimes not felt able to adequately assess those with respiratory symptoms due to concerns about risk to clinicians, staff, and other patients.[10] The respiratory clinics were designed as central points for patients with mild or moderate respiratory symptoms to obtain the high-quality primary care that they would typically receive from their regular GP. The respiratory clinics were intended to divert those with respiratory illness from mainstream general practice into an environment specifically designed to maximize infection prevention and control (IPC) in order to protect the general practice workforce and other patients, and preserve access to regular services. Initially funded to run until September 30, 2020, funding was subsequently extended to March 30, 2021 and then to December 31, 2021.

Clinic Selection, Set Up and Operation

A detailed description of this can be found in the Supplemental Appendices. In brief, physical criteria, based on standard IPC controls, were developed to guide site selection (Supplemental Table 1). Primary health networks, in consultation with Local Health Districts, identified suitable practices in their area that might be interested in participating in the program. Sites for respiratory clinics were selected by the Department of Health through an iterative process based on geographic location, local need, and estimated time needed for site readiness. There was a preference to place the clinics in regional and rural areas, where there is less access to health facilities, and within ACCHOs, reflecting the need for culturally appropriate and safe care for Aboriginal and Torres Strait Islander Australians. When sites were confirmed, the Department of Health entered into contracts with clinic owners, providing them with an upfront payment (including a payment for each patient assessment room to a maximum of 4 rooms) and subsequently a flat fee per patient consultation. A third-party contractor was engaged to perform site inspections, infrastructure adjustments (where required), and staff training. Clinics were required to adhere to strict IPC protocols (Supplemental Appendix 1, Supplemental Table 1, and Supplemental Figure 1) and were only able to open after a final onsite assessment by an independent IPC expert.

Data Management System and Communications With Usual Care Provider

A customized respiratory clinic data collection app was co-designed by the Department of Health and an external contractor. The app operated as a mini patient record and collected demographic data, clinical symptoms and findings, diagnosis management and plan, medication prescribed, whether a test was taken, referral to hospital, test results, and follow-up. To standardize data collection, relevant fields were designed as tick boxes and drop-down menus rather than free text. The respiratory clinic app could print a consultation record, patient encounter summaries, medical certificates, and pathology forms. It was not able to print prescriptions and some respiratory clinics (60% to 70%) used their usual patient management systems along with the app.

The respiratory clinics were intended as primary assessment sites and patients were encouraged to follow up with their usual care provider wherever possible. To optimize continuity of care, respiratory clinics were encouraged to send details of patient attendance and copies of test results to the patients' regular GP.

Surveillance

The respiratory clinics provided anonymized patient consultation and follow-up data to the Department of Health daily for patients who gave consent (obtained via a checkbox on an online data entry page or verbally by consulting clinicians). Data from respiratory clinics were used in a number of ways that included providing feedback to the clinics, weekly surveillance reports to state and Commonwealth public health authorities, and to report against indicators in the Australian National COVID-19 Disease Surveillance plan.

Activity

The first 2 respiratory clinics opened on March 21, 2020, in New South Wales and Queensland, 10 days after the program was announced. By April 29, 2020, another 50 clinics had opened, with 66 more clinics opening in May 2020. The full complement of 150 clinics were open by September 2020 (representing 2.3% of the 6,596 accredited general practice clinics in Australia in 2018). Supplemental Figure 2 shows geographic location of respiratory clinics around Australia demonstrating their representation of Australia's population density.[11,12,15]

From first clinic opening date to December 31, 2020, respiratory clinics conducted 890,273 assessments. Of these, 817,684 (91.8%) patients consented to share information on their consultation, and within this group, 789,894 (96.6%)

had samples for COVID-19 tests collected. COVID-19 samples collected at respiratory clinics represented about 8% of total samples collected in Australia (at the time of writing), with a positivity rate of about 0.08%. This was lower than the overall test positivity in Australia of 0.3%. The difference is likely explained by the fact that the population sampled at respiratory clinics is individuals in the community and did not include individuals living in residential aged care facilities or overseas travelers who were tested while in mandatory hotel quarantine. Both of these groups were overrepresented among Australian COVID-19 cases. The respiratory clinics served individuals living in 2,360 postcodes across Australia, representing 99.3% of postcodes. Eighty-three (57%) of the clinics were in non-urban areas and 23 (1.3%) were run by ACCHOs. By comparison, 16% of the Australian population live in non-urban areas and 2.8% of the Australian population identify as Aboriginal and/or Torres Strait Islander.

While adhering to the IPC principles outlined in Supplemental Figure 1, respiratory clinics used a variety of approaches to ensure appropriate infrastructure and infection control by repurposing individual rooms or wings of existing clinic buildings, modifying outdoor permanent structures (eg, carports), or erecting temporary structures adjacent to clinic buildings. Two clinics were entirely mobile (using a van or other vehicle to set up in different locations as needed) and 3 others had both a permanent structure and a mobile capacity. Several clinics made extensive use of telephone triage and video-conferencing facilities to minimize the amount of time patients and staff were in direct contact. The respiratory clinics were able to rapidly scale-up in response to increased cases in an area by opening for additional hours or adding rooms. They were responsive and flexible to meet local needs, and also integrated with other health and community services when possible (Supplemental Table 2).

DISCUSSION

Pandemic or fever clinics are a standard component of Australian pandemic plans but they are usually hospital affiliated.[12] Internationally, primary care clinic-based models have been used for COVID-19 case identification and testing in Singapore,[13] and in New Zealand during the 2009 influenza A (H1N1)[14] and during other health emergencies such as the 2011 Christchurch earthquake.[15] This was the first use of this type of model in Australia. It demonstrated that an effective program can be quickly established in partnership with GPs, even under the conditions of high fear and uncertainty that were prevalent at the beginning of the COVID-19 pandemic. This is consistent with previous evidence demonstrating that, with support and training, Australian GPs are willing to provide care in a pandemic.[16]

Diverting patients with respiratory symptoms to specialized clinics functioned to separate patients most likely to be infectious and ensured that general practices could continue to fulfill their usual core primary care functions and protect other patients from potential exposure. This was essential to minimize interruptions to regular health care delivery, and the resultant all-cause morbidity and mortality experienced in previous epidemics.[3] Importantly, the respiratory clinics addressed a specific service gap by providing holistic assessment and care to those with respiratory symptoms from any cause, contrasting with the majority of mass testing centers in Australia that were designed for high volume specimen collection with the primary purpose of detecting infections and to guide public health responses to COVID-19 cases.

Ideally, patients would be able to access their usual GP for assessment and treatment of respiratory illness. Not all practices, however, were able to adapt to provide the safe environment needed to provide care to potential COVID-19 patients. Lack of access to personal protective equipment (PPE),[10] the private, small-business nature of Australian general practice, and the fact that many are situated in physical premises that were not easily modified to provide the necessary infrastructure for adequate infection control were critical barriers. The respiratory clinic program offered federal government funding to support the reconfiguration of existing primary care clinics in specified locations, where organizations were willing to take on that activity.

An acknowledged challenge of the GP respiratory clinic model was the potential to fragment care. Despite offering a comprehensive primary care orientation, these clinics could not always offer the interpersonal continuity that characterizes high quality primary care.[17] Mitigation strategies were employed to balance risks to coordination and informational continuity. Australia is in the process of developing a personally controlled shared electronic health record—My Health Record. For patients who had already opted into this system, health information was available to clinicians at the respiratory clinics and the clinical interactions were added to their medical record. The clinics encouraged patients to follow-up directly with their usual GPs who were sent details of patient attendance and results. Balancing the risks of care fragmentation and the added community safety afforded by channeling symptomatic patients to a single location remains an ongoing challenge in optimizing facility operations in the primary care setting during COVID-19.[17] Additionally, as individuals with COVID-19 may transmit infection while presymptomatic or asymptomatic,[18] the GP respiratory clinic model did not remove the need for other clinics to remain vigilant about maintaining rigorous IPC measures. Such issues will be the subject of subsequent evaluations of the respiratory clinics and be published separately.

An unintended outcome of the model was the potential for improved integration of GPs within the broader public health response. Historically, in Australia, core functions of pandemic control such as risk communication, case detection, and transmission control have been solely the responsibility of government public health services, with little integration with primary care services who operate at the community frontline.[12] Participating GPs offered anecdotal reports that the

presence of designated respiratory clinics in local communities highlighted the systematic role of primary care in the public health response, generating legitimacy and a role in local processes for emergency planning and pandemic preparedness.

The respiratory clinics provided the largest and most complete source of national primary care surveillance data for COVID-19 in Australia. The wide geographical footprint of the clinics and the systematic collection of demographic and clinical information created a valuable data set and resource for ongoing surveillance and future research. As frontline clinicians with knowledge of what is occurring in their own communities, GPs are an important source of information in detection of infectious disease outbreaks.[1] Before this pandemic GPs have been sentinels for respiratory disease surveillance in Australia and other countries.[19,20] The standardized collection of near–real time data through the respiratory clinics codifies this role further, highlighting the shared functions of primary care and public health under the primary health care banner.[3,21] This partnership has been further reinforced by the recent involvement of primary care practices, especially respiratory clinics, operating as COVID-19 vaccination centers.

CONCLUSIONS

The respiratory clinic program recognizes and formalizes the key role of GPs in pandemic response, providing a level of integration that is long overdue for primary care. We have described how this program was implemented under intense time pressure to provide a valuable service to communities, including those with particular needs and vulnerabilities. In a world of increasingly frequent pandemics, this program offers ongoing infrastructure and workforce capability for management of infectious disease outbreaks and other health emergencies in primary care.

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Key words: primary care; general practitioners; pandemic; COVID-19

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Supplemental materials

References

1. Lee A, Chuh AA. Facing the threat of influenza pandemic - roles of and implications to general practitioners. *BMC Public Health*. 2010;10:661. 10.1186/1471-2458-10-661
2. Kunin M, Engelhard D, Thomas S, Ashworth M, Piterman L. Challenges of the pandemic response in primary care during pre-vaccination period: a qualitative study. *Isr J Health Policy Res*. 2015;4:32. 10.1186/s13584-015-0028-5
3. Desborough J, Dykgraaf SH, Phillips C, et al. Lessons for the global primary care response to COVID-19: a rapid review of evidence from past epidemics. *Fam Pract*. 2021;38(6):811-825.
4. Bocquet J, Winzenberg T, Shaw KA. Epicentre of influenza - the primary care experience in Melbourne, Victoria. *Aust Fam Physician*. 2010;39(5):313-316. 10.1093/fampra/cmaa142
5. Eizenberg P. The general practice experience of the swine flu epidemic in Victoria—lessons from the front line. *Med J Aust*. 2009;191(3):151-153. 10.5694/j.1326-5377.2009.tb02725.x
6. Masotti P, Green ME, Birtwhistle R, et al. pH1N1 - a comparative analysis of public health responses in Ontario to the influenza outbreak, public health and primary care: lessons learned and policy suggestions. *BMC Public Health*. 2013;13:687. 10.1186/1471-2458-13-687
7. Australian Government Department of Health and Ageing. *Review of Australia's Health Sector Response to Pandemic (H1N1) 2009; Lessons Identified.* Commonwealth of Australia; 2011. https://www1.health.gov.au/internet/publications/publishing.nsf/Content/review-2011-l
8. Desborough J, Hall Dykgraaf S, de Toca L, et al. Australia's national COVID-19 primary care response. *Med J Aust*. 2020;213(3):104-106.e1. 10.5694/mja2.50693
9. $2.4 billion heath plan to fight COVID-19. News release. Prime Minister of Australia. March 11, 2020. https://www.pm.gov.au/media/24-billion-health-plan-fight-covid-19
10. Tsirtsakis A. Criticism of GPs' refusal to treat some infant patients in-person a 'cheap shot'. News GP. Published Mar 15, 2021. https://www1.racgp.org.au/newsgp/clinical/criticism-of-gps-refusal-to-treat-some-infant-pati
11. Australian Bureau of Statistics. Regional population 2019-20: population change. Published 2021. https://absstats.maps.arcgis.com/apps/MapSeries/index.html?appid=c5ceb84b6e34459a8b2baa397f3624ea
12. Patel MS, Phillips CB, Pearce C, Kljakovic M, Dugdale P, Glasgow N. General practice and pandemic influenza: a framework for planning and comparison of plans in five countries. *PLoS One*. 2008;3(5):e2269. 10.1371/journal.pone.0002269
13. Lim WH, Wong WM. COVID-19: Notes from the front line, Singapore's primary health care perspective. *Ann Fam Med*. 2020;18(3):259-261. 10.1370/afm.2539
14. Williams D, Begg A, Burgess K, et al. Influenza H1N1 2009 in Canterbury: a case study in pandemic response co-ordination. *J Prim Health Care*. 2010;2(4):323-329.
15. Burns P, Douglas K, Hu W, Aitken P, Raphael B. General practitioners in the field: a qualitative study of general practitioners' experiences in disaster healthcare. *Aust J Gen Pract*. 2020;49(3):132-138. 10.31128/AJGP-08-19-5054
16. Shaw KA, Chilcott A, Hansen E, Winzenberg T. The GP's response to pandemic influenza: a qualitative study. *Fam Pract*. 2006;23(3):267-272. 10.1093/fampra/cml014
17. Primary Health Care Performance Initiative. The PHCPI conceptual framework. ImprovingPHC. https://improvingphc.org/phcpi-conceptual-framework
18. Bai Y, Yao L, Wei T, et al. Presumed asymptomatic carrier transmission of COVID-19. *JAMA*. 2020;323(14):1406-1407. 10.1001/jama.2020.2565
19. Buffington J, Chapman LE, Schmeltz LM, Kendal AP. Do family physicians make good sentinels for influenza? *Arch Fam Med*. 1993;2(8):859-864,discussion 865. 10.1001/archfami.2.8.859
20. Parrella A, Dalton CB, Pearce R, Litt JC, Stocks N. ASPREN surveillance system for influenza-like illness - a comparison with FluTracking and the National Notifiable Diseases Surveillance System. *Aust Fam Physician*. 2009;38(11):932-936.
21. Levesque J, Breton M, Senn N, Levesque P, Bergeron P, Roy DA. The interaction of public health and primary care: functional roles and organizational models that bridge individual and population perspectives. *Public Health Rev*. 2013;35(1). 10.1007/BF03391699