

What should primary care look like after the COVID-19 pandemic?

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Abstract. The response to COVID-19 transformed primary care: new telehealth items were added to the Medicare Benefits Schedule, and their use quickly escalated, general practices and community health centres developed new ways of working and patients embraced the changes. As new coronavirus infections plummet and governments contemplate lifting spatial distancing restrictions, attention should turn to the transition out of pandemic mode. Some good things happened during the pandemic, including the rapid introduction of the new telehealth items. The post-pandemic health system should learn from the COVID-19 changes and create a new normal.

Additional keywords: delivery of health care, models, organisation.

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Introduction

The coronavirus pandemic has led to marked changes in policy across a range of fronts as governments scramble to protect the economy and public health and ensure access to care. Policies deemed unthinkable the day before the first case in Wuhan were introduced with nary a blink of an eye (albeit a somewhat slower blink of an eye than many front-line health professionals would have liked), as spatial distancing forced the health system into a new way of working. Some of these policies – such as tele-health – have been advocated for years, and even hesitantly implemented in some settings, and are welcome developments for the health system. After the crisis, the genie should not be squeezed back into the bottle. Rather, the health system, including primary care, should embrace the innovations required of providers and funders during the pandemic, learn from them and incorporate many of the changes into routine practices and funding arrangements. The transition into the new normal should include an assessment of what worked for whom and why, what changes improved the consumer experience (and whether they did so for all consumers or just the privileged) and what improved system efficiency.

Primary care played a crucial role in the early fight against coronavirus, stepping up without adequate supplies of personal protective equipment, facing changing guidance on who to test, as well as where and when to test, and with adverse effects on practice revenue. Unfortunately though, existing funding models, poorly coordinated Commonwealth and state messaging and the primary care industry structure hindered a quick and efficient response.

Telehealth, eHealth and online advice

On 11 March 2020, the Commonwealth Government announced an AU\$2.4 billion national pandemic health plan. As part of this, on 13 March 2020 the government started the drip feeding of a series of changes to facilitate telehealth in primary care (Table 1). Two clusters of items were introduced: one set for video conference consultations and one for telephone consultations if video conferencing was not available. New medication services were introduced on 31 March 2020, including the electronic delivery of prescriptions from the practice to the pharmacy and expanded home delivery of medications.

Telehealth, originally telemedicine, has been advocated for decades as a response to problems of access to care for people living in rural and remote Australia (Wells 1976; Bradford *et al.* 2016). However, implementation of telehealth has faced numerous barriers (Jang-Jaccard *et al.* 2014), not least of which has been equivocal Commonwealth government support (Yellowlees 2001), and take-up was low (Wade *et al.* 2014). Telehealth is prone to a ‘woodwork effect’, whereby demand comes out of the woodwork when a new benefit is available (Sprague 2014). Policy has previously been hesitant and risk averse, weighting the risks of fraud and over-servicing more highly than the benefits to patients (Viney and Haas 1998; van Gool *et al.* 2002).

But the benefits of telehealth in fields as diverse as cardiac rehabilitation (Rawstorn *et al.* 2016), management of chronic conditions (Totten *et al.* 2016; Jin *et al.* 2019; McFarland *et al.* 2019), obstetrics and gynaecology (DeNicola *et al.* 2020) and autism spectrum disorders (Ferguson *et al.* 2019)

Table 1. Major COVID-19 telehealth changes

Source: Grattan Institute Coronavirus announcements tracker. The full list of telehealth services can be found at <http://www.mbsonline.gov.au/internet/mbsonline/publishing.nsf/Content/news-2020-03-29-latest-news-March> (accessed 30 April 2020). GP, general practitioner; MBS, Medicare Benefits Schedule

	Date	COVID-19 MBS telehealth services (in place until 30 September 2020)
Stage 1	13 March 2020	COVID MBS telehealth services commenced Access to MBS telehealth item numbers was made available to GPs, mental health providers and medical specialists where patients or GPs were required to self-isolate or patients were considered vulnerable
Stage 2	16 March 2020	COVID MBS telehealth items expanded for midwives and obstetricians (for certain services) Expanded to recognise a general practice for continuity of care (rather than an individual GP)
Stage 3	23 March 2020	Announcement that telehealth items would expand to some specialist services, such as psychiatrists and geriatricians COVID MBS telehealth expanded to vulnerable GPs and other vulnerable health professionals who were authorised to use telehealth item numbers and to use telehealth for all consultations with all their patients; this included healthcare providers who: • are at least 70 years of age • are Indigenous and at least 50 years of age • are pregnant • are a parent of a child <12 months of age • are immune compromised • have a chronic medical condition that results in increased risk from coronavirus infection
Stage 4	30 March 2020	Telehealth items expanded to all Australians; the items have become general in nature and have no relation to diagnosing, treating or suspecting COVID-19 This applies to GP services and some consultation services provided by other medical specialists, nurse practitioners, mental health treatment, chronic disease management, Aboriginal and Torres Strait Islander health assessments, services to people with eating disorders, pregnancy support counselling, services to patients in aged care facilities, children with autism and after-hours consultations
Further changes	6 April 2020	Health providers could apply their usual billing practices to telehealth consultations, but the new telehealth services must be bulk billed for Commonwealth concession card holders, children <16 years of age and patients who are more vulnerable to COVID-19 New MBS telehealth and telephone services were also made available for consultant physicians, geriatricians and consultant psychiatrists
Further changes	20 April 2020	Specialist and allied health service providers were no longer required to bulk bill these new telehealth items New telehealth items were also made available for specialists and for services provided by a practice nurse or Aboriginal and Torres Strait Islander health practitioner on behalf of a medical practitioner

are undeniable, so the issue becomes how to ensure it is not abused. For that reason, the COVID-19 items may not be suitable to be maintained unchanged. New telehealth items ought to be introduced to facilitate a much-expanded use of this important 21st century medium, and it is a tragedy that it took a pandemic to get the policy ball rolling. The issue becomes how to define and regulate the new items without adding too much to the labyrinthine complexity of the existing Medicare schedule (Faux *et al.* 2019). Under a post-pandemic regime, for example, the new telehealth items may be limited to patients with an established relationship with a practice and subject to appropriate verification and monitoring (RACGP 2017).

The pandemic has also curtailed specialist attendances, but the telehealth item innovations during the pandemic did not initially apply to specialists. As part of post-pandemic planning, funding should be introduced for enhanced access to secondary consultations, between a specialist and a general practitioner (GP) about a patient, whether or not the patient is present (Keely *et al.* 2017). This should also be part of a wider rethink of the relationship between public hospital outpatient clinics and primary care services.

Similarly, support is essential for getting the My Health Record to be a trusted source, available on a contemporary platform, with real-time availability of information. Many

health professionals have worked from home during the shut-down, but they need to maintain access to their records, which, in some cases, are not cloud based or are not otherwise easily available remotely.

A coronavirus hotline (National Coronavirus Helpline, <https://www.health.gov.au/contacts/national-coronavirus-helpline>, accessed 30 April 2020) was quickly mobilised in early February 2020 to provide standardised information directly to Australians. By mid-March the hotline, staffed by qualified health professionals, was made available 24/7 and expanded to help triage people with respiratory symptoms and those who were concerned about contact with a possible COVID-19 case.

Australia does not have a single, national health hotline. Healthdirect delivers a range of services supported by the Commonwealth and most states and territories, including a national nurse triage telephone service. However, there are different arrangements, including different telephone numbers in Victoria (Nurse-On-Call, <https://www2.health.vic.gov.au/primary-and-community-health/primary-care/nurse-on-call>, accessed 30 April 2020) and Queensland (13HEALTH, <https://www.qld.gov.au/health/contacts/advice/13health>, accessed 30 April 2020); together, those states account for approximately 45% of the population. In 2017–18, there were approximately 500 000 calls to healthdirect, mostly from New South Wales, so

extensive use of a national consumer health hotline was not part of routine business in Australia before the pandemic. Therefore, the utility of the National Coronavirus Helpline was probably undermined by its novelty. Both the UK and Canada were able to build on existing hotlines (Nataraj *et al.* 2019; Razai *et al.* 2020). For example, the National Health Service's (NHS) 111 service was quickly marketed to patients and GPs as part of the pandemic response in the UK (Razai *et al.* 2020). Australia should put greater emphasis on an appropriately staffed national telephone support line, possibly involving artificial intelligence and certainly ensuring it can be integrated with the whole primary care system. The support line should be supported by up-to-date reliable and functional services directories that could facilitate referrals and improve access to services. Such directories would also facilitate the use of secure messaging.

The pandemic was also the first extensive use of population-wide government messaging via text, exhorting the population to abide by spatial distancing restrictions and providing app-based information. This should be built on in the post-pandemic world to include targeted, localised messaging, especially where new outbreaks occur.

Practice networking, colocation and consolidation

Unfortunately, states were able to mobilise faster than the Commonwealth and so hospital-based testing and treatment clinics were opened well before the national primary care response was organised or any of the Commonwealth-initiated respiratory clinics saw their first patient (Grattan 2019). However, large primary care practices, including some community health centres, were able to mobilise to work differently during the pandemic. Some established drive-in clinics in car parks; others established specialist testing or treatment clinics in their existing infrastructure (Tanne *et al.* 2020). Smaller practices, of a variety of disciplines, may not have been able to respond as quickly because of a lack of technology or practice management capability, and this may have led to staff being stood down, even at a time when there were staff shortages in other parts of the system.

Tighter networking, colocation or even consolidation should be on the post-COVID-19 agenda. This would facilitate multidisciplinary working and increase the capabilities of primary care. It would address some of the pre-COVID-19 chronic care issues by making care paths and referrals easier.

Consolidation involves practice mergers, including mergers to create multidisciplinary practices. This type of consolidation is different from the corporatisation that has swept general practice in recent years and retained the monodisciplinary medical practice orientation (Emy-Albrecht and Bywood 2016). Consolidation could either be structured as a private for-profit or a not-for-profit entity, such as the Victorian community health centres that have practised multidisciplinary care for decades (Auditor General of Victoria 2018; Community Health Taskforce 2019).

Colocation would also enable the development of multidisciplinary 'one-stop shops', to the benefit of both patients and professionals (Sinsky *et al.* 2013; Rumball-Smith *et al.* 2014; Memon and Kinder 2017; Bonciani *et al.* 2018), but could retain separate practice ownership for the general practice and other health professionals. As the Super Clinic experience showed, colocation by itself does not necessarily lead to interdisciplinary

practice (Lane *et al.* 2017); trust among professionals also needs to be built (Lawn *et al.* 2014). Colocated services would need to agree to written protocols for referrals and joint working that could, perhaps, evolve over time.

Pharmacy location and ownership rules should be changed to facilitate incorporating pharmacies into these one-stop shops (Jesson and Wilson 2003; Duckett 2017). These larger practices may also incorporate some speciality services, such as cardiology and endocrinology. Grants (or loans) to encourage colocation or consolidation should be part of a post-pandemic economic stimulus package.

Enhanced networking, involving looser federations of practices, should be another option. This will be especially important in rural and regional Australia, where practices were often already vulnerable in terms of their financial and workforce sustainability in the pre-pandemic world. In metropolitan areas, networks could help medium-sized clinics through better access to trusted care pathways, in turn helping their patients.

New funding arrangements

New funding models for general practice should be explored to facilitate the introduction of the telehealth items, especially if limited to patients who have a regular practice, and for practice colocation and consolidation. The pandemic has made it clear that more emphasis needs to be placed on blended funding that combines fee for service, capitation and commissioning for primary care (Oliver-Baxter 2015).

Australia has commenced the first hesitant steps towards new primary medical care funding arrangements, with an enrolment fee for people aged ≥ 70 years announced in the 2019 Budget (Durham 2019). This should be expanded to encourage stronger incentives for patient continuity. The Alberta primary care networks (Suchowersky *et al.* 2012) and the nascent English primary care networks (Iacobucci 2020) provide models for this. Under this approach, networks of practices (medical and other) would be eligible for additional funding to employ pharmacists, physiotherapists, nurses and other health professionals. In Australia, larger high-quality practices, with quality perhaps measured locally and coordinated by Primary Health Networks (PHNs), could be eligible for extra funding, perhaps allocated on the basis of weighted practice population factors such as age, socioeconomic status and Indigenous status, among others, to employ additional health professionals to provide care and support for people with chronic illnesses. A prerequisite for a change of this kind is better data on primary care, including linked data between primary care and hospitals, another long-overdue reform (Swerissen *et al.* 2018).

During the pandemic, staff in some Victorian community health centres have changed their orientation from reactive face-to-face visits to outreach telephone calls to vulnerable clients to motivate and encourage them, and to provide advice to patients on available care options and how to manage their condition. This type of practice should be encouraged and facilitated with a new funding model.

Australia's GP fee-for-service funding approach inhibits new practice models, including workforce substitution (Duckett *et al.* 2013). Because of the limitations of the Medicare rules, GPs took swabs for coronavirus testing and were accordingly able to charge a Medicare fee. But taking swabs could equally be done

by a nurse or technician. The Medicare fee-for-service funding approach inhibited the quick and efficient expansion of testing. Pathology laboratories did not step up either, with most pathology collection centres not involved in collecting specimens until mid-April 2020 well into the pandemic, and so more efficient systems (e.g. GP telehealth assessment and collection centre swabbing) were not implemented. A funding system with a greater proportion of revenue based on practice characteristics, rather than fee for service, would facilitate a more responsive and more efficient primary care system.

Of course changes to funding arrangements are notoriously difficult to achieve (after all, every dollar of health expenditure is a dollar of income; Reinhardt 2012) and have been the subject of bitter policy fights (Gillespie 1991; Boxall and Gillespie 2013). However, the widespread public support for some of the changes during the pandemic may give governments the spine and cover to push ahead with change.

Regional coordination

Disparate and fragmented services cannot respond to challenges like the COVID-19 pandemic. The pandemic has made clear the isolation and vulnerability of smaller primary care services. With the drop in face-to-face consultations, and an apparent drop in preventive visits (Outcome Health 2020), many general practices and pharmacies are struggling to survive financially (Knaus and McGowan 2020). They are also still finding it difficult to get reliable information, and many are desperate for supplies of personal protective equipment (Woodley 2020), testing kits and influenza vaccines. The current challenges have highlighted the importance of regional planning, coordination and communication. PHNs have played a central role in delivering the Commonwealth's pandemic measures at the local level, but until now their importance has not been recognised. In future they will need to be strengthened, more closely integrated with state public health and acute services and freed from some of the bureaucratic shackles that applied to them before the pandemic.

Public health and primary care

The pandemic has demonstrated that public health matters. Individual and community action affects health outcomes. Enormous effort has been put into local measures to protect patients and staff in primary care clinics during this pandemic. Regional public health and health promotion plans will be much more important in the future as we recognise an increased need to plan for infectious disease outbreaks.

The way forward

The COVID-19 experience provides an opportunity to think through what worked during the pandemic, and especially what new ways of working should become part of a new 'business as usual'. This will require government, health professionals and practice owners to commit to learn from the experience, something that has proven hard in the past (Eizenberg 2009). However, patients (aka voters) should expect that the health system will embrace what they experienced and appreciated during the pandemic. They should demand implementation of new ways of providing care.

The pandemic has required massive changes to primary care in Australia, partly because of spatial distancing rules and partly to respond to the need for an increase in testing. This has led to marked changes in funding and practice arrangements. Patients and health professionals have often welcomed and embraced these changes. Innovation has been unleashed. These positive experiences of the pandemic should not be lost; they should be used to build new approaches for primary care in the post-pandemic future.

Conflicts of interest

Stephen Duckett is Chair of the Board of Eastern Melbourne Primary Health Network (PHN). The views expressed in this article are not necessarily the views of Eastern Melbourne PHN.

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References

- Auditor General of Victoria (2018) Community health program. Independent assurance report to Parliament 2017–18. (Victorian Auditor-General's Office: Melbourne, Vic., Australia) Available at https://www.audit.vic.gov.au/sites/default/files/2018-06/20180606-Community-Health_0.pdf [Verified 30 April 2020]
- Bonciani M, Schäfer W, Barsanti S, Heinemann S, Groenewegen PP (2018) The benefits of co-location in primary care practices: the perspectives of general practitioners and patients in 34 countries. *BMC Health Services Research* **18**, 132. doi:10.1186/s12913-018-2913-4
- Boxall A-M, Gillespie JA (2013) 'Making Medicare: the politics of universal health care in Australia.' (NewSouth Publishing: Sydney, NSW, Australia)
- Bradford NK, Caffery LJ, Smith AC (2016) Telehealth services in rural and remote Australia: a systematic review of models of care and factors influencing success and sustainability. *Rural and Remote Health* **16**, 3808.
- Community Health Taskforce (2019) Community health taskforce report to government. (Department of Health and Human Services: Melbourne, Vic., Australia) Available at <https://www2.health.vic.gov.au/about/publications/researchandreports/community-health-taskforce-report> [Verified 30 April 2020]
- DeNicola N, Grossman D, Marko K, Sonalkar S, Butler Tobah YS, Ganju N, Witkop CT, Henderson JT, Butler JL, Lowery C (2020) Telehealth interventions to improve obstetric and gynecologic health outcomes: a systematic review. *Obstetrics and Gynecology* **135**, 371–382.
- Duckett S (2017) The effect of red tape on pharmacy rules. Grattan Institute submission to the Senate Select Committee on Red Tape. Grattan Institute, Melbourne, Vic., Australia.
- Duckett S, Breadon P, Ginnivan L (2013) Access all areas: new solutions for GP shortages in rural Australia. Grattan Institute, Melbourne, Vic., Australia.
- Durham P (2019) Enrolment scheme extended to Indigenous patients over 50. *Medical Republic*. 20 December. Available at <http://medicalrepublic.com.au/enrolment-scheme-extended-to-indigenous-patients-over-50/24606> [Verified 30 April 2020]
- Eizenberg P (2009) The general practice experience of the swine flu epidemic in Victoria – lessons from the front line. *The Medical Journal of Australia* **191**, 151–153. doi:10.5694/j.1326-5377.2009.tb02725.x
- Erny-Albrecht K, Bywood PT (2016) Corporatisation of general practice – impact and implications. No. 0995391602. (Primary Health Care Research & Information Service: Adelaide, SA, Australia) Available at <https://dspace.flinders.edu.au/xmlui/handle/2328/38389> [Verified 30 April 2020]

- Faux M, Wardle J, Adams J (2019) Medicare billing, law and practice: complex, incomprehensible and beginning to unravel. *Journal of Law and Medicine* **27**, 66–93.
- Ferguson J, Craig EA, Dounavi K (2019) Telehealth as a model for providing behaviour analytic interventions to individuals with autism spectrum disorder: a systematic review. *Journal of Autism and Developmental Disorders* **49**, 582–616. doi:10.1007/s10803-018-3724-5
- Gillespie JA (1991) 'The price of health: Australian governments and medical politics 1910–1960.' (Cambridge University Press: Cambridge, UK)
- Grattan M (2019) Morrison government funds 'pop up' testing clinics and tele-consultations in \$2.4 billion COVID-19 health package. *The Conversation* 10 March. Available at <https://theconversation.com/morrison-government-funds-pop-up-testing-clinics-and-tele-consultations-in-2-4-billion-covid-19-health-package-133368> [Verified 30 April 2020]
- Iacobucci G (2020) Primary care networks: NHS England under pressure to rein in its ambitions. *BMJ (Clinical Research Ed.)* **368**, m230. doi:10.1136/bmj.m230
- Jang-Jaccard J, Nepal S, Alem L, Li J (2014) Barriers for delivering telehealth in rural Australia: a review based on Australian trials and studies. *Telemedicine Journal and e-Health* **20**, 496–504. doi:10.1089/tmj.2013.0189
- Jesson JK, Wilson KA (2003) One-stop health centres: what co-location means for pharmacy. *Health & Place* **9**, 253–261. doi:10.1016/S1353-8292(02)00057-6
- Jin K, Khonsari S, Gallagher R, Gallagher P, Clark AM, Freedman B, Briffa T, Bauman A, Redfern J, Neubeck L (2019) Telehealth interventions for the secondary prevention of coronary heart disease: a systematic review and meta-analysis. *European Journal of Cardiovascular Nursing* **18**, 260–271. doi:10.1177/1474515119826510
- Keely EJ, Archibald D, Tuot DS, Lochnan H, Liddy C (2017) Unique educational opportunities for PCPs and specialists arising from electronic consultation services. *Academic Medicine* **92**, 45–51. doi:10.1097/ACM.0000000000001472
- Knaus C, McGowan M (2020) Australia's small medical practices on brink of collapse amid coronavirus. *The Guardian* 9 April. Available at <https://www.theguardian.com/world/2020/apr/09/australias-small-medical-practices-on-brink-of-collapse-amid-coronavirus> [Verified 30 April 2020]
- Lane R, Russell G, Bardoel EA, Advocat J, Zwar N, Davies PGP, Harris MF (2017) When colocation is not enough: a case study of general practitioner super clinics in Australia. *Australian Journal of Primary Health* **23**, 107–113. doi:10.1071/PY16039
- Lawn S, Lloyd A, King A, Sweet L, Gum L (2014) Integration of primary health services: being put together does not mean they will work together. *BMC Research Notes* **7**, 66. doi:10.1186/1756-0500-7-66
- McFarland S, Coufopolous A, Lycett D (2019) The effect of telehealth versus usual care for home-care patients with long-term conditions: a systematic review, meta-analysis and qualitative synthesis. *Journal of Telemedicine and Telecare*. doi:10.1177/1357633X19862956
- Memon AR, Kinder T (2017) Co-location as a catalyst for service innovation: a study of Scottish health and social care. *Public Management Review* **19**, 381–405. doi:10.1080/14719037.2016.1177107
- Nataraj J, Stempien J, Netherton S, Wahba MY, Oyedokun TO (2019) Emergency department referrals from a provincial medical call centre: is it more than just 1-800-go-to-emerg? *CJEM* **22**, 241–244.
- Oliver-Baxter J (2015) Blended funding models in primary health care. *PHCRIS Research Roundup* **43**, 1–2.
- Outcome Health (2020) COVID-19 – a predictive impact model for the healthcare sector. Outcome Health, Melbourne, Vic., Australia.
- Rawstorn JC, Gant N, Direito A, Beckmann C, Maddison R (2016) Telehealth exercise-based cardiac rehabilitation: a systematic review and meta-analysis. *Heart (British Cardiac Society)* **102**, 1183–1192. doi:10.1136/heartjnl-2015-308966
- Razai MS, Doerholt K, Ladhani S, Oakeshott P (2020) Coronavirus disease 2019 (COVID-19): a guide for UK GPs. *BMJ* **368**, m800. doi:10.1136/bmj.m800
- Reinhardt U (2012) Divide et impera: protecting the growth of health care incomes (costs). *Health Economics* **21**, 41–54. doi:10.1002/hec.1813
- Royal Australian College of General Practitioners (RACGP) (2017) On demand telehealth services. RACGP, Melbourne, Vic., Australia. Available at <https://www.racgp.org.au/FSDEDEV/media/documents/RACGP/Position%20statements/On-demand-telehealth-services.pdf> [Verified 30 April 2020]
- Rumball-Smith J, Wodchis WP, Koné A, Kenealy T, Barnsley J, Ashton T (2014) Under the same roof: co-location of practitioners within primary care is associated with specialized chronic care management. *BMC Family Practice* **15**, 149. doi:10.1186/1471-2296-15-149
- Sinsky CA, Willard-Grace R, Schutzbank AM, Sinsky TA, Margolius D, Bodenheimer T (2013) In search of joy in practice: a report of 23 high-functioning primary care practices. *Annals of Family Medicine* **11**, 272–278. doi:10.1370/afm.1531
- Sprague L (2014) Telehealth: into the mainstream? National Health Policy Forum, Washington DC, USA.
- Suchowersky A, Suchowersky O, Duckett S (2012) Can Alberta's primary care networks provide any lessons for Medicare Locals? *The Medical Journal of Australia* **196**, 27–28. doi:10.5694/mja11.11109
- Swerissen H, Duckett S, Moran G (2018) 'Mapping primary care in Australia.' (Grattan Institute: Melbourne, Vic., Australia)
- Tanne JH, Hayasaki E, Zastrow M, Pulla P, Smith P, Rada AG (2020) COVID-19: how doctors and healthcare systems are tackling coronavirus worldwide. *BMJ (Clinical Research Ed.)* **368**, m1090. doi:10.1136/bmj.m1090
- Totten AM, Womack DM, Eden KB, McDonagh MS, Griffin JC, Grusing S, Hersh WR (2016) 'Telehealth: mapping the evidence for patient outcomes from systematic reviews.' (Agency for Healthcare Research and Quality: Rockville, MD, USA)
- van Gool K, Haas M, Viney R (2002) From flying doctor to virtual doctor: an economic perspective on Australia's telemedicine experience. *Journal of Telemedicine and Telecare* **8**, 249–254. doi:10.1177/1357633X0200800501
- Viney R, Haas M (1998) Funding arrangements for telehealth: encouraging efficiency rather than proliferation. *Australian Health Review* **21**, 34–48. doi:10.1071/AH980034
- Wade V, Soar J, Gray L (2014) Uptake of telehealth services funded by Medicare in Australia. *Australian Health Review* **38**, 528–532. doi:10.1071/AH14090
- Wells R (1976) Telemedicine: explorations in the use of telecommunications in health care. *The Medical Journal of Australia* **1**, 128. doi:10.5694/j.1326-5377.1976.tb109284.x
- Woodley M (2020) Dire PPE shortage affecting morale: study. *newsGP* 24 April. Available at <https://www1.racgp.org.au/newsgp/clinical/dire-ppe-shortage-affecting-morale-study> [Verified 30 April 2020]
- Yellowlees P (2001) An analysis of why telehealth systems in Australia have not always succeeded. *Journal of Telemedicine and Telecare* **7**, 29–31. doi:10.1258/1357633011937056