

# The rise of direct-to-consumer telemedicine services in Australia: implications for primary care and future research

The advent of the coronavirus disease 2019 (COVID-19) pandemic has heralded a new era of telehealth for the provision of primary health care in Australia. The pandemic has acted as a catalyst for policy makers and providers to embrace telehealth as an accepted form of primary care service delivery on a broad scale. In parallel, the private sector has seen a rapid growth of telehealth companies, with the global telehealth market estimated to be worth USD\$500 billion by 2030.<sup>1</sup>

Telemedicine is considered a subset of telehealth and is defined as the practice of medicine using technology to deliver care at a distance, over a telecommunications infrastructure, between a patient at an originating site and a medical practitioner at a distant site.<sup>2</sup> The Australian telehealth market has seen the exponential rise of private telemedicine services, providing virtual clinical services that are offered directly to, initiated, and paid for, by the patient.<sup>3</sup> These services often operate completely in the virtual space, using telephone-, video-, email- or text messaging-based telecommunications to conduct synchronous (delivered in real time) or asynchronous (not delivered in real time) consultations. They also often feature strong marketing campaigns for services ranging from obtaining a traditional video consultation with a general practitioner (outside of the Medicare system) to streamlining pathways for specific issues, such as weight loss, erectile dysfunction, medicinal cannabis, acne, or sexual health concerns. Several different terms have been used to describe this heterogeneous group of services; for the purposes of this article, they will be termed “direct-to-consumer (DTC) telemedicine” services.

The concept of DTC telemedicine is not entirely new in Australia. Flying under the radar before the change caused by the COVID-19 pandemic, such services appeared to be of little interest to journalists, regulators and investors. This paradigm shift of telehealth becoming a universally accepted way of clinical service delivery has seen a substantial increase in the rate that such services are sprouting up and the level of investment that is flowing into the sector. Notable examples include the acquisition of InstantScripts by Wesfarmers for \$135 million;<sup>4</sup> Woolworths Group launching HealthyLife;<sup>5</sup> Eucalyptus raising \$50 million in its latest funding round, which brought the company's valuation to \$560 million;<sup>6</sup> and NIB's latest \$24 million investment into Midnight Health after acquiring the majority stake in the company for \$12 million in 2022.<sup>7</sup>

Such services can generally be split into three categories: those offering a virtual consultation with a doctor with no restriction to the presenting issue or condition, those offering medicinal cannabis

treatments, and those offering targeted treatment pathways for a specific issue or condition. A sample of current DTC telemedicine services in Australia sourced from an online health technology services directory, healthtech scout ([www.healthtechscout.com.au](http://www.healthtechscout.com.au)), is listed in the Box. The variety of services on offer and the differences in their operating models reflect the heterogeneity across this industry. Although some of these services may have historically operated solely with asynchronous consults, the revision of the telehealth guidelines of the Medical Board of Australia has meant that all such services will now have to incorporate synchronous consults as part of their service delivery model from September 2023.<sup>8</sup>

Criticisms of DTC telemedicine services have centred on quality and safety, risk, fragmentation of care, cost-effectiveness, and equity of access.<sup>9,10</sup> These are legitimate concerns, which are amplified by the lack of transparency as to how the services operate. Patients often do not have an existing relationship with these providers, and whether their care episodes are communicated to their regular GP or integrated into their health record are issues commonly raised.<sup>11</sup> The fact that such services are commercially driven, and that some are owned by large corporations, also brings into question the extent to which patients are prioritised over profits, and how they contribute to the commercial determinants of health.<sup>12</sup>

Responses from industry have been swift, aiming to change the narrative, with many companies submitting a response to public consultation by the Medical Board of Australia on the draft revised guidelines for telehealth consultations with patients. Many of these services describe how they have achieved positive patient outcomes, the extent to which they are providing continuity of care, what safeguards and limitations are incorporated into their operating models and ways they contribute to improved access to health care for patients in rural and remote areas.<sup>13</sup>

The reality is that arguments on both sides are mostly based on anecdotes, case reports or selective retrospective data. For example, the position statement from the Royal Australian College of General Practitioners about on-demand telehealth services describes the benefits and risks of such services without providing any supporting data sources.<sup>14</sup> Eucalyptus has published data on how patients on their weight loss program experienced better outcomes compared with a clinical trial population without a clear methodology to describe how they have accounted for potential confounders and selection bias.<sup>15</sup>

Arguments that such services must prioritise profits over patients assume that being a profitable business and providing high quality patient care

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### A sample of direct-to-consumer telemedicine services operating in Australia

Services offering general virtual consults	Virtual medicinal cannabis services	Services offering targeted treatment pathways for specific conditions
<ul style="list-style-type: none"> <li>• Simple Online Doctor</li> <li>• 13 Doctor</li> <li>• 1300 Health</li> <li>• 24-7MedCare</li> <li>• Burst Health</li> <li>• Concierge Doctors</li> <li>• Doctor in my Pocket (Atticus Health)</li> <li>• Doctorai</li> <li>• Doctors on Demand</li> <li>• GP2U</li> <li>• Healthylife</li> <li>• Hola Health</li> <li>• Hub Health</li> <li>• Instant Consult</li> <li>• Instant Scripts</li> <li>• Online Doctor Consult</li> <li>• Phenix Health</li> <li>• Prime Medic</li> <li>• Private Medical Telehealth</li> <li>• Qoctor</li> <li>• Swiftdoc</li> <li>• Teledoc Australia</li> <li>• Telehealth Doctor</li> <li>• Thalamus</li> <li>• UpDoc</li> <li>• Web Doctor</li> <li>• Medmate</li> </ul>	<ul style="list-style-type: none"> <li>• Alternaleaf</li> <li>• AnodyneCann</li> <li>• Atlas</li> <li>• Australian Access Clinics</li> <li>• CA Clinics</li> <li>• Candor Medical</li> <li>• Cannabate</li> <li>• Canndoc</li> <li>• CannaMed Clinics</li> <li>• Canwell Australia</li> <li>• Chronic Doctors</li> <li>• Chronic Therapy</li> <li>• CuratD Health</li> <li>• Dispensed</li> <li>• DJW</li> <li>• Greencare</li> <li>• GreenDocs Australia</li> <li>• Healing Leaves Clinic</li> <li>• Heyday</li> <li>• JoyLeaf</li> <li>• Lyphe Clinic</li> <li>• Mágú Health</li> <li>• Medicanna Health</li> <li>• MyEden</li> <li>• MyScript</li> <li>• Polln (Nectar Brands)</li> <li>• TeleGreen Medical</li> <li>• Tetra Health</li> </ul>	<ul style="list-style-type: none"> <li>• Alcohol dependence: Clean Slate Clinic</li> <li>• Fibromyalgia: Robyn Health</li> <li>• Hair loss: The Hairy Pill</li> <li>• Medical certificates only: Sickly</li> <li>• Menopause: <ul style="list-style-type: none"> <li>▶ Juniper (Eucalyptus)</li> <li>▶ WellFemme</li> <li>▶ viv health</li> </ul> </li> <li>• Men's health: <ul style="list-style-type: none"> <li>▶ His Clinic</li> <li>▶ Mosh</li> <li>▶ Pilot (Eucalyptus)</li> <li>▶ Stagger (Midnight Health)</li> <li>▶ VitylMan (Vityl Medical)</li> </ul> </li> <li>• Smoking cessation: QuitClinics</li> <li>• Paediatric urgent care: <ul style="list-style-type: none"> <li>▶ Cub Care</li> <li>▶ KidsDocOnCall</li> </ul> </li> <li>• Skin conditions: Software (Eucalyptus)</li> <li>• Sleep disorders: VitylSleep (Vityl Medical)</li> <li>• Urgent care: My Emergency Doctor</li> <li>• Weight management: <ul style="list-style-type: none"> <li>▶ Healthy</li> <li>▶ Juniper (Eucalyptus)</li> <li>▶ Skinni-Me</li> </ul> </li> <li>• Women's fertility: Kin (Eucalyptus)</li> <li>• Women's health: <ul style="list-style-type: none"> <li>▶ Youly (Midnight Health)</li> <li>▶ Hazel Health</li> </ul> </li> </ul>

Sourced from the healthtech scout directory (<https://www.healthtechscout.com.au/>). Filtered by “telehealth/online clinic” (viewed Aug 2023). Inclusion criteria: i) service is operational at the time of access; ii) offers a telemedicine consultation with a medical practitioner in a primary care setting; iii) main fee structure does not involve Medicare rebates; and iv) wholly virtual service with no brick-and-mortar clinic. Exclusion criteria: platforms offering consultations with health professionals that are not medical practitioners. ♦

are mutually exclusive. This argument is thwarted when considering the many for-profit general practice businesses that are providing high quality primary care across the country, whether operated by corporate entities or as GP-owned practices. However, as DTC telemedicine services operate outside of the Medicare system, there is limited visibility as to the volume and type of care encounters provided other than the data that are made available by the companies themselves.

Discussions on fragmentation of care are also largely subjective, likely because we lack an accurate measure of fragmentation or, its converse, integration.<sup>16,17</sup> The shifting demography of illness with predominating issues of chronic health conditions mean that multidisciplinary care is now the norm. It is also not uncommon for patients to attend multiple general practice clinics. An Australian study estimated that over 25% of participants attended more than one practice in the previous year, with the proportion increasing to 40% in those under 30 years old.<sup>18</sup> The involvement of multiple health care providers in a patient's care is now an expectation and does not necessarily equate to fragmentation; rather, the failure to effectively communicate across providers is the key locus of fragmentation. This is an issue that affects all areas of the health care system and is not unique to DTC telemedicine services.

It is clear that this is a complex issue that will not benefit from a binary and adversarial approach to

discourse. The “move fast, break things” mentality of start-ups is clearly not entirely transferrable to primary care. Perhaps we need to shift the perspective and look at the opportunities to leverage the funding and to closely examine the strategic manoeuvring that is being applied in this space to improve our current primary care system through synergistic collaborations and partnerships. To do this, robust research into this emerging Australian industry is required to objectively inform the debate.

Most DTC telemedicine literature to date has been published internationally and has mainly considered antibiotic use in acute respiratory infections,<sup>19</sup> contraception,<sup>20</sup> hair loss<sup>21</sup> and erectile dysfunction.<sup>22</sup> Only a handful of studies have examined issues of accessibility,<sup>23</sup> health care utilisation,<sup>24</sup> clinician efficiency, and patient empowerment, satisfaction and preferences.<sup>25,26</sup> And there are certainly lessons to be learnt from the international experience such as the rise and fall of the digital-first medical practice, Babylon Health, in the United Kingdom.<sup>27</sup> However, the structure and funding of the health systems in these studies is vastly different to that of Australia, and thus the transferability of their findings to the Australian context is poor.

There is a clear need for research in this area to better inform our policy and regulatory decisions for this industry. Broadly, we want the answers to questions about the emerging role of DTC telemedicine, the outcomes delivered, and how its services can best

contribute to more joined-up care for patients. Specific areas to investigate include:

- Patients' perspectives on why they are accessing such services despite their local GPs being able to provide all such services in the traditional setting, and how they interact across DTC telemedicine services and traditional GP services — can it all be reduced to good marketing or is there something broken within our traditional primary care system?
- GPs' perspectives on such services, how they affect their workflows and workloads, and how they navigate conversations with their patients about using such services — are GPs' workflows and patients' care indeed becoming more fragmented with the rise of such services, or is the difference barely noticeable in an already fragmented system?
- The development of tools and frameworks to assess the quality and safety of DTC telemedicine services — are the patients accessing these services gaining from better health outcomes or are they being exposed to unnecessary risk without compensating benefits?
- The health economic issues surrounding this industry including upstream and downstream health care utilisation and their cost-effectiveness given that they operate outside of the publicly funded system — are these services saving public money or just costing the public health system more, either now or in the long run?
- The examination of these services from the commercial determinants of health perspective using a commercial entities and public health framework,<sup>28</sup> especially with the increasing level of investment from large corporations, such as Wesfarmers, Amazon and Google, into the virtual primary care space — do these services engage in health-harming or health-promoting commercial practices, and how can state and federal governments establish policy and regulatory environments to foster the latter and not the former?

Comprehensive research into these five areas in reference to each other is imperative to objectively inform future discussions on this topic. This will facilitate the creation of services, policies and regulatory environments that foster synergistic collaborations between DTC telemedicine services and traditional primary care to build an effective, future-ready and fit-for-purpose primary health care system in Australia.

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- 1 Fortune Business Insights. Telehealth market size, share and COVID-19 impact analysis. Maharashtra, India: Fortune Business Insights, 2023. <https://www.fortunebusinessinsights.com/industry-reports/telehealth-market-101065> (viewed July 2023).
- 2 American Academy of Family Physicians. Telehealth and telemedicine. Kansas: AAFP, 2021. <https://www.aafp.org/about/policies/all/telehealth-telemedicine.html> (viewed July 2023).
- 3 Robinson N. Millions turn online because their doctor's too busy. *The Australian* 2023; 31 Mar. <https://www.theaustralian.com.au/nation/politics/millions-turn-online-because-their-doctors-too-busy/news-story/cc677a16f42e427ff53d3a542b79bc0a> (viewed July 2023).
- 4 Thompson S, Sood K, Rapaport E. Wesfarmers signs on dotted line for InstantScripts, \$135m sale price. *Australian Financial Review* 12 Jun 2023. <https://www.afr.com/street-talk/wesfarmers-ready-to-sign-on-the-dotted-line-for-instantscripts-price-at-135m-20230612-p5dfst> (viewed July 2023).
- 5 Koehn E. "No-brainer": Woolies muscles into telehealth. *The Sydney Morning Herald* 2023; 21 Mar. <https://www.smh.com.au/business/companies/no-brainer-woolies-muscles-into-telehealth-20230320-p5ctno.html> (viewed July 2023).
- 6 Thompson S, Sood K, Rapaport E. Eucalyptus stitches up \$50m on the quiet, \$560m post-money val. *Australian Financial Review* 2023; 27 Apr. <https://www.afr.com/street-talk/eucalyptus-stitch-hes-up-50m-on-the-quiet-560m-post-money-val-20230427-p5d3ur> (viewed July 2023).
- 7 Bonyhady N. NIB doubles down on online script bet with \$24m investment. *Australian Financial Review* 2023; 20 June. <https://www.afr.com/technology/nib-doubles-down-on-online-script-bet-with-24-million-investment-20230619-p5dhmf> (viewed July 2023).
- 8 Medical Board of Australia. Revised telehealth guidelines raise standards, protect patients. Melbourne: MBA, 2023. <https://www.medicalboard.gov.au/News/2023-05-31-Revised-telehealth-guide-lines.aspx> (viewed July 2023).
- 9 A quiz, an email and a delivery: why online sales of weight-loss drugs could be reined in. *SBS News* 2023; 28 Mar. <https://www.sbs.com.au/news/article/a-quiz-an-email-and-a-delivery-why-online-sales-of-weight-loss-drugs-could-be-reined-in/xmkn1eau1> (viewed July 2023).
- 10 Tsirtsakis A. Concerns over online contraceptive pill subscription service. *NewsGP* 2020; 20 Aug. <https://www1.racgp.org.au/newsgp/clinical/concerns-over-online-contraceptive-pill-subscription> (viewed July 2023).
- 11 Tsirtsakis A. Debate over "doctor-approved" weight loss drugs obtained online. *NewsGP* 2023; 30 Mar. <https://www1.racgp.org.au/newsgp/clinical/debate-over-doctor-approved-weight-loss-drugs-obta> (viewed July 2023).
- 12 Unravelling the commercial determinants of health [editorial]. *Lancet* 2023; 401: 1131.
- 13 Medical Board of Australia. Public consultation — guidelines: telehealth consultations with patients. Melbourne: MBA, 2023. <https://www.medicalboard.gov.au/News/Past-Consultations/2023.aspx#:~:text=Telehealth%20consultations%20with%20patients> (viewed July 2023).
- 14 Royal Australian College of General Practitioners. On demand telehealth services — position statement. Melbourne: RACGP, 2017. <https://www.racgp.org.au/advocacy/position-statements/view-all-position-statements/health-systems-and-environment/on-demand-telehealth-services> (viewed July 2023).
- 15 Eucalyptus. Submission to public consultation — draft revised guidelines: telehealth consultations with patients. Sydney: EUC Services, 2023. <https://www.ahpra.gov.au/documents/default.aspx?record=WD23%2f32847&dbid=AP&checksum=%2fOoCYO22x8XUke%2fQ%2bZ1Aow%3d%3d> (viewed July 2023).
- 16 Angus L, Valentijn PP. From micro to macro: assessing implementation of integrated care in Australia. *Aust J Prim Health* 2018; 24: 59-65.
- 17 McRae I, Dawda P, Banfield M, Parkinson A. Can we measure integration of healthcare from administrative and clinical records? *Aust J Gen Pract* 2016; 45: 672-675.
- 18 Wright M, Hall J, van Gool K, Haas M. How common is multiple general practice attendance in Australia? *Aust J Gen Pract* 2018; 47: 289-296.

- 19 Ray KN, Shi Z, Gidengil CA, et al. Antibiotic prescribing during pediatric direct-to-consumer telemedicine visits. *Pediatrics* 2018; 143: e20182491.
- 20 Zuniga C, Grossman D, Harrell S, et al. Breaking down barriers to birth control access: An assessment of online platforms prescribing birth control in the USA. *J Telemed Telecare* 2020; 26: 322-331.
- 21 Young PC, Mahajan C, Shapiro J, Tosti A. Digital health platforms expand access and improve care for male androgenetic alopecia. *Int J Dermatol* 2023; 62: 217-220.
- 22 Broffman L, Barnes M, Stern K, Westergren A. evaluating the quality of asynchronous versus synchronous virtual care in patients with erectile dysfunction: retrospective cohort study. *JMIR Form Res* 2022; 6: e32126.
- 23 Uscher-Pines L, Mulcahy A, Cowling D, et al. Access and quality of care in direct-to-consumer telemedicine. *Telemed J E Health* 2016; 22: 282-287.
- 24 Dahlgren C, Spånberg E, Sveréus S, et al. Short- and intermediate-term impact of DTC telemedicine consultations on subsequent healthcare consumption. *Eur J Health Econ* 2023; <https://doi.org/10.1007/s10198-023-01572-z> [Epub ahead of print].
- 25 Jain T, Lu RJ, Mehrotra A. Prescriptions on demand: the growth of direct-to-consumer telemedicine companies. *JAMA* 2019; 322: 925-926.
- 26 Welch B, Harvey J, O'Connell N, McElligott J. Patient preferences for direct-to-consumer telemedicine services: a nationwide survey. *BMC Health Serv Res* 2017; 17: 784.
- 27 Kobie N. Babylon disrupted the UK's health system. Then it left. *WIRED* 2022; 23 Aug. <https://www.wired.co.uk/article/babylon-disrupted-uk-health-system-then-left> (viewed Aug 2023).
- 28 Lacy-Nichols J, Nandi S, Mialon M, et al. Conceptualising commercial entities in public health: beyond unhealthy commodities and transnational corporations. *Lancet* 2023; 401: 1214-1228. ■