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Letter: Impact of the COVID-19 pandemic on pharmacist-administered vaccination services

We write to echo the findings reported by Koster et al.,¹ and report that the COVID-19 pandemic has also adversely affected the ability of pharmacists in Australia to provide vaccination services.

Although pharmacist-administered vaccinations account for a small proportion of vaccinations given in Australia (2.9% in 2019), the demand for and scope of pharmacist-administered vaccinations has grown considerably in recent years.² While almost 95% of pharmacist-administered vaccinations are for influenza,² new legislation in recent years in each of the eight Australian states and territories has expanded the types of vaccines that can be administered by pharmacists.³ Pharmacist vaccination services can improve vaccine coverage, particularly in regional and remote areas.^{4,5} In the context of the COVID-19 pandemic, amid strained health systems even in well-resourced nations^{6,7} and reports of declining vaccination coverage,^{8,9} community pharmacists are well-placed to provide this essential primary health care service.

We conducted a national survey of pharmacists in June 2020 regarding their practices of recording and reporting vaccination encounters to the national Australian Immunisation Register, and asked pharmacists whether provision of vaccination services was affected by the pandemic. Almost all (96%) of the 227 pharmacists who responded to the survey reported higher than expected demand for influenza vaccination in their pharmacies this year, leading to extensive private market vaccine shortages reported both by our study respondents and more generally in mainstream media.

Challenges arising from the COVID-19 pandemic negatively affected more than a quarter of our survey respondents (61/228, 27%), more so in regional areas (32%) compared with major cities (21%). Issues similar to those reported by Koster et al. were reported. Almost half of those affected (28/61, 46%) had to implement new protocols that hindered their ability to administer services, such as additional cleaning protocols that required extra time per patient and distancing requirements limiting the number of staff and patients that could be on the premises. Four respondents (7%) noted that personal protective equipment was limited in supply, which was a problem affecting healthcare providers nationally.¹⁰ Ten percent (6/61) were unable to accept walk-in patients and needed to introduce new booking systems. Some (8/61, 13%) experienced staff shortages and rostering difficulties which meant not enough qualified staff were on site to meet the legislated requirements to safely administer vaccinations. Given these challenges, two pharmacies reported being unable to offer vaccination services this year.

The continuing COVID-19 pandemic will likely see the challenges in influenza vaccine administration faced by pharmacists continue next year. Pharmacists around the world may well have a role in administering an eventual COVID-19 vaccine, bringing new opportunities but also additional challenges. Rather than implementing ad hoc individual solutions, challenges for administering vaccinations in pharmacy are

better addressed by adopting a health systems lens and a patient-centred approach. Improved communication between pharmacists, government departments of health and peak bodies can facilitate responsive vaccine supply chains that meet patient demand, and relay information about new requirements on delivering vaccination programs in a fast-changing environment. Mechanisms to train pharmacists quickly and upskill those already trained in vaccine administration are essential if pharmacists are to have a role in administering a COVID-19 vaccine, and more broadly in their role as patient educators. Complete, accurate and timely data will be necessary to determine the uptake and effectiveness of a COVID-19 vaccine; increasing the use of integrated electronic platforms to record and report vaccinations and other patient data can automate many of these functions, reducing administrative burden on staff and inadvertent errors. Integrating these systems can make all pharmacist-delivered services more efficient and improve patients' experiences.

This unprecedented year has seen the role of community pharmacists evolve to include a wider range of health services.^{11,12} Some countries, in particular the United States, will no doubt have pharmacists play a large role in achieving high and rapid coverage of a COVID-19 vaccine.¹³ In Australia and other countries with universal healthcare systems where pharmacists administer a small proportion of all vaccines, the lessons learned and systems implemented during this pandemic can be leveraged to improve routine pharmacist vaccination services, strengthen the position of pharmacists as immunisers, and ensure surge capacity to deliver vaccination services in future public health emergencies.

Declaration of competing interest

We have no conflicts to declare.

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Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.sapharm.2020.08.021>.

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References

- Koster ES, Philbert D, Bouvy ML. Impact of the COVID-19 epidemic on the provision of pharmaceutical care in community pharmacies. *Res Soc Adm Pharm.* 2020. <https://doi.org/10.1016/j.sapharm.2020.07.001>.
- National Centre for Immunisation Research and Surveillance. *Review of Pharmacist Vaccination Reporting to the Australian Immunisation Register*. Sydney NSW: National Centre for Immunisation Research and Surveillance; 2020. Accessed http://ncirs.org.au/sites/default/files/2020-06/Review%20of%20pharmacist%20vaccination%20reporting%20to%20the%20AIR_Final%20report_May%202020.pdf. Accessed August 27, 2020.
- National Centre for Immunisation Research and Surveillance. Vaccines from community pharmacy - at a glance (updated 10 June 2020) Accessed http://ncirs.org.au/sites/default/files/2020-06/NCIRS%20Information%20Sheet-%20Vaccines%20from%20community%20pharmacy_updated%2010%20June%202020_final.pdf. Accessed August 27, 2020.
- Hattingh HL, Sim TF, Parsons R, Czarniak P, Vickery A, Ayadurai S. Evaluation of the first pharmacist-administered vaccinations in Western Australia: a mixed-methods study. *BMJ Open.* 2016;6, e011948.
- Poudel A, Lau ETL, Deldot M, Campbell C, Waite NM, Nissen LM. Pharmacist role in vaccination: evidence and challenges. *Vaccine.* 2019;37:5939–5945.
- Durski KN, Osterholm M, Majumdar SS, Nilles E, Bausch DG, Atun R. Shifting the paradigm: using disease outbreaks to build resilient health systems. *BMJ Glob Health.* 2020;5.
- MacIntyre CR, Heslop DJ. Public health, health systems and palliation planning for COVID-19 on an exponential timeline. *Med J Aust.* 2020;212:440–442. e441.
- Bramer CA, Kimmins LM, Swanson R, et al. Decline in child vaccination coverage during the COVID-19 pandemic - Michigan care improvement registry. *MMWR. Morbidity and Mortality Weekly Report.* 2020. May 2016-May 2020;69:630–631.
- Saxena S, Skirrow H, Bedford H. Routine vaccination during COVID-19 pandemic response. *BMJ.* 2020;369:m2392.
- Cowan University Edith. Lack of PPE Is Causing Australian Frontline Healthcare Workers to Question Their Willingness to Work. Published 24 April 2020. Accessed on <https://www.ecu.edu.au/news/latest-news/2020/04/lack-of-ppe-is-causing-australian-frontline-healthcare-workers-to-question-their-willingness-to-work>. Accessed August 27, 2020.
- Elbeddini A, Prabakaran T, Almasalkhi S, Tran C. Pharmacists and COVID-19. *J Pharm Policy Prac.* 2020;13:36.
- Cadogan CA, Hughes CM. On the frontline against COVID-19: community pharmacists' contribution during a public health crisis. *Res Soc Adm Pharm.* 2020; S1551–7411(20):30292–30298.
- Nadeem MF, Samanta S, Mustafa F. Is the paradigm of community pharmacy practice expected to shift due to COVID-19? *Res Soc Adm Pharm.* 2020;S1551–7441(20):30599–30604.

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