



Supporting Information

Supplementary methods

**This appendix was part of the submitted manuscript and has been peer reviewed.
It is posted as supplied by the authors.**

Appendix to: Spinks J, Violette R, Boyle DIR, et al. Activating pharmacists to reduce the frequency of medication-related problems (ACTMed): a stepped wedge cluster randomised trial. *Med J Aust* 2023; doi: 10.5694/mja2.52073.

Components of digital health resources used in ACTMed

Future Health Today (FHT) is a decision-support software platform for general practice that streamlines the identification and management of at-risk consumers to support recall, follow-up and to provide decision support according to clinical best practice standards. While originally designed for recall of persons flagged as at risk of or able to benefit from optimised chronic disease prevention or management(1), the FHT platform is expanding through projects such as ACTMed, to encompass other reasons for recall. FHT interacts with the two most used clinical software programs, Medical Director and Best Practice. In ACTMed, FHT will run nightly queries in participating general practice databases by implementing algorithms developed specifically for ACTMed based on selected indicators to identify at-risk patient populations. Working entirely within the general practice, FHT does not export data but rather creates an internal dashboard that provides risk stratification and triage functions for the trial pharmacist. At the point of care, FHT also provides recommendations based on identified risk factors as well as evidence-based practitioner and patient guidelines/support.

Second, **GRHANITE** (<http://grhanite.unimelb.edu.au/technologies>) is a data acquisition tool that meets the most stringent requirements for ethical health-related research. Developed by the University of Melbourne, Department of General Practice, the tool has been in operation for more than 16 years, works with most database technologies, and has been successfully interfaced with over 50 different clinical systems across 1000s of organizations in Australia. The advanced data de-identification features manage patient consent using a variety of mechanisms and extract de-identified keys for record linkages without patient identifiers leaving the practice. These 'keys' have been used by several nationally Accredited Integrating Authorities (eg. Australian Institute of Health and Welfare, the Centre for Victorian Data Linkage, and SA-NT Datalink) and underpins data acquisition for The University of Melbourne Data for Decisions (Patron) practice-based research network, and the University of Queensland ATLAS Indigenous primary care surveillance network. In ACTMed, the tool will extract data from participating practices weekly to support the epidemiological analysis and to allow the study researchers to understand the data as the trial progresses.

Lastly, **Data for Decisions (Patron)** is a practice-based research network (PBRN) (www.gp.unimelb.edu.au/datafordecisions) and program of research with advanced data curation and governance(2) that includes data from 140 research contributing general practices in Victoria. Patron uses the GRHANITE tool to acquire its data. ACTMed has been granted approval from the independent Patron Data Governance Committee to use a tranche of Patron's real-world practice data to assist in trial power calculations, clinical indicator selection, and algorithm development. In addition, ACTMed trial data will be stored in a separate Patron data enclave and will take advantage of the same data cleansing and standardisation processes as regular Patron data. Trial data will be made available to researchers in a secure research environment.

References

1. Manski-Nankervis JA, Alexander K, Biezen R, et al. Towards optimising chronic kidney disease detection and management in primary care: underlying theory and protocol for technology development using an Integrated Knowledge Translation approach. *Health Informatics J* 2021; 27: 14604582211008227.
2. Melbourne Medical School, University of Melbourne . Patron data governance framework. Part of the Data for Decisions research initiative. 2019. www.medicine.unimelb.edu.au/data/assets/pdf_file/0016/3020272/Governance-Framework.pdf (viewed Mar 22)