

# Rigorous follow-up systems for abnormal results are essential to improve health outcomes for Aboriginal and Torres Strait Islander people

Jodie Bailie<sup>A,D</sup>, Veronica Matthews<sup>A</sup>, Alison Laycock<sup>B</sup>, Christine Connors<sup>C</sup> and Ross Bailie<sup>A</sup>

<sup>A</sup>The University of Sydney, University Centre for Rural Health, 61 Uralba Street, Lismore, NSW 2480, Australia.

<sup>B</sup>Charles Darwin University, Menzies School of Health Research, Level 1, 147 Wharf Street, Brisbane, Qld 4000, Australia.

<sup>C</sup>Northern Territory Department of Health, 87 Mitchell Street, Darwin, NT 0800, Australia.

<sup>D</sup>Corresponding author. Email: [jodie.bailie@sydney.edu.au](mailto:jodie.bailie@sydney.edu.au)

Received 3 August 2017, accepted 19 December 2017, published online 24 January 2018

There is emerging evidence that taking basic measurements and screening of patients are done relatively well (such as taking a patient's blood pressure or ordering tests), but the adequacy of follow up is less well-documented in patient records (Bailie *et al.* 2014, 2017). Failure to follow up abnormal test results is an important patient safety issue and requires urgent attention. Improving follow up of abnormal results has been identified as a top priority by healthcare practitioners, managers and policymakers working in Indigenous primary healthcare services (PHS) (Matthews *et al.* 2015; Bailie *et al.* 2016, 2017).

In a recent study, we presented aggregated continuous quality improvement data from 123 Indigenous PHS (6523 patient records) for chronic illness care and asked stakeholders in diverse roles and organisations to identify what they regarded as the priority evidence-practice gaps (Matthews *et al.* 2015).

Data showed that some aspects of chronic illness care were being provided and documented at high levels by health centres, such as measurement of weight, blood pressure, glycated haemoglobin (HbA1c) and ordering of tests (Matthews *et al.* 2015). However, PHS performance in many aspects of care is suboptimal, with wide variation between health centres. The highest ranked priority, as identified by over 200 stakeholders, was to improve the delivery and documentation of follow-up care when there is an abnormal test result (notably HbA1c, total cholesterol : high-density lipoprotein (HDL) ratio, and blood pressure) (Matthews *et al.* 2015). As a case-in-point, we present findings for follow up of abnormal blood pressure results below.

## Extent of failure to follow up abnormal blood pressure results

There was wide variation between PHS in the documented follow-up actions for patients diagnosed with coronary heart disease or type 2 diabetes with an abnormal blood pressure (range 0–100%) and some PHS showing no record of delivering follow up (Fig. 1). Records showed the most recent blood pressure

reading as abnormal for ~50% of patients with these conditions. Of these, only ~50% of patients had a documented follow-up plan (Fig. 1).

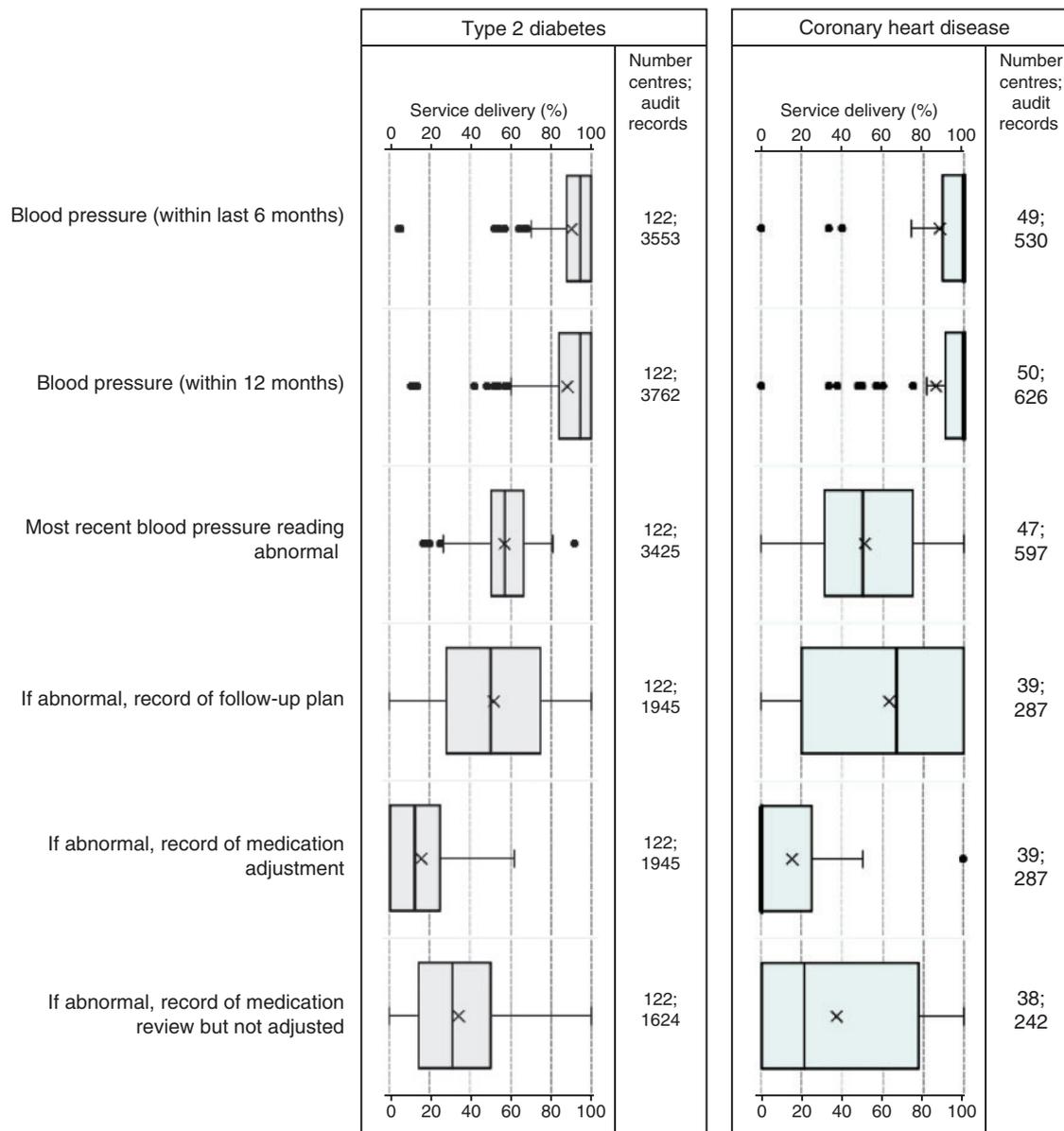
## What will it take to improve follow up?

Consistent gaps in the delivery of care across many PHS are due to failures and weaknesses at various levels of the health system (Ferlie and Shortell 2001). Factors associated with failure to follow up abnormal results are complex and interrelated. The process to ensure that a series of actions occur following identification of a problem requires a series of steps, with the patient understanding what they need to do, a staff member being able to communicate this effectively, the clinical information system being able to flag the follow up (without overwhelming the team with multiple recalls) and PHS staff able to recognise and respond appropriately through recall or at the next patient contact. In Indigenous PHS settings, high staff turnover and associated limited knowledge of patients' needs and circumstances can further complicate these steps.

Improving follow up of abnormal results requires action and strategies that are multifaceted and implemented at health centre, community, patient and policy levels. The design and implementation of Health Care Homes provides opportunities to improve processes for engaged and consistent care (Jackson and Hambleton 2017), including follow up of abnormal results for Indigenous people.

## Funding

The National Health and Medical Research Council funded the ABCD National Research Partnership Project (grant number 45267) and the Centre for Research Excellence in Integrated Quality Improvement (grant number 1078927). In-kind and financial support was provided by the Lowitja Institute and a range of community-controlled and government agencies.



**Fig. 1.** Record of scheduled services received by Aboriginal and Torres Strait Islander patients with type 2 diabetes or coronary heart disease, and follow up of abnormal findings within the last 12 months of audit (unless otherwise indicated) at health centres during 2012–13. For more information on how to interpret box plots, refer to Matthews *et al.* (2015, p. 17).

**Ethics approval**

Ethics approval was obtained from research ethics committees in each jurisdiction (Human Research Ethics Committee of the Northern Territory Department of Health and Menzies School of Health Research (HREC-EC00153); Central Australian Human Research Ethics Committee (HREC-12-53); New South Wales Greater Western Area Health Service Human Research Committee (HREC/11/GWAHS/23); Queensland Human Research Ethics Committee Darling Downs Health Services District (HREC/11/QTDD/47); South Australian Aboriginal Health Research Ethics Committee (04-10-319); Curtin University Human Research Ethics Committee (HR140/2008); Western Australian Country Health Services Research

Ethics Committee (2011/27); Western Australia Aboriginal Health Information and Ethics Committee (111-8/05); University of Western Australia Human Research Ethics Committee (RA/4/1/5051)). All participants in the ESP Project surveys provided individual informed consent.

**Conflicts of interest**

The authors have no conflicts of interest to declare.

**Acknowledgements**

The development of this Letter to the Editors would not have been possible without the active support, enthusiasm and commitment of staff in participating primary healthcare services, and members of the ABCD National

Research Partnership and the Centre for Research Excellence in Integrated Quality Improvement.

## References

- Bailie J, Schierhout G, Kelaher M, Laycock A, Percival N, O'Donoghue L, McNeair T, Chakraborty A, Beacham B, Bailie R (2014) Follow-up of Indigenous-specific health assessments—a socioecological analysis. *The Medical Journal of Australia* **200**(11), 653–657. doi:[10.5694/mja13.00256](https://doi.org/10.5694/mja13.00256)
- Bailie J, Laycock A, Matthews V, Bailie R (2016) System-level action required for wide-scale improvement in quality of primary health care: synthesis of feedback from an interactive process to promote dissemination and use of aggregated quality of care data. *Frontiers in Public Health* **4**, 86. doi:[10.3389/fpubh.2016.00086](https://doi.org/10.3389/fpubh.2016.00086)
- Bailie J, Matthews V, Laycock A, Schultz R, Burgess C, Peiris D, Larkins S, Bailie R (2017) Improving preventive health care in Aboriginal and Torres Strait Islander primary care settings. *Globalization and Health* **13**(1), 48. doi:[10.1186/s12992-017-0267-z](https://doi.org/10.1186/s12992-017-0267-z)
- Ferlie EB, Shortell S (2001) Improving the quality of health care in the United Kingdom and the United States: a framework for change. *The Milbank Quarterly* **79**(2), 281–315. doi:[10.1111/1468-0009.00206](https://doi.org/10.1111/1468-0009.00206)
- Jackson CL, Hambleton S (2017) Australia's health care homes: laying the right foundations. *The Medical Journal of Australia* **206**(9), 380–381. doi:[10.5694/mja16.01470](https://doi.org/10.5694/mja16.01470)
- Matthews V, Connors C, Laycock A, Bailie J, Bailie R (2015) Chronic illness care for Aboriginal and Torres Strait Islander people: final report. (Menzies School of Health Research: Brisbane, Qld, Australia) Available at <http://apo.org.au/node/54395> [Verified 15 December 2017]