

Improving colonoscopy prioritisation and promoting the National Bowel Cancer Screening Program: keys to reducing bowel cancer burden

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Key points

- Concerns about colonoscopy capacity and wait times have hampered the promotion of Australia's National Bowel Cancer Screening Program (NBCSP)
- New research suggests the program only contributes 10–14% of Medicare-funded colonoscopies
- We argue that to reduce wait times and promote the NBCSP, we need to promote clinical guidelines and reduce inappropriate use of colonoscopy for primary screening
- Programs such as the Direct Access Colonoscopy initiative for priority patients are also key to the success of the NBCSP

Abstract

Australia's National Bowel Cancer Screening Program (NBCSP) has the potential to prevent almost 84 000 bowel cancer deaths if 60% program participation rates could be reached and maintained over the next two decades. Immunochemical faecal occult blood test (iFOBT) is used as an initial screening tool. Participants who test positive are referred for colonoscopy for diagnostic assessment. Concerns about colonoscopy capacity and lengthy wait times between positive iFOBT and colonoscopy have hampered efforts to promote the program. However, a separate research paper published in this issue of PHRP shows that only an estimated 10–14% of Medicare-funded colonoscopies (almost 75% of all colonoscopies) in Australia are generated by the NBCSP. Inappropriate use of colonoscopy as a primary screening tool and failure to prioritise NBCSP participants may be the main reasons for long colonoscopy wait times associated with the program. Promoting clinical practice guidelines, and the Direct Access Colonoscopy initiative for priority patients, are key to reducing colonoscopy wait times and proactive promotion of the NBCSP.

Introduction

A new study by *Worthington et al.*, entitled “*Colonoscopies in Australia – how much does the National Bowel Cancer Screening Program contribute to colonoscopy use?*”, published in this issue of PHRP, is the first large-scale analysis of colonoscopy usage in relation to Australia's National Bowel Cancer Screening Program (NBCSP).

Colonoscopy is the usual diagnostic assessment tool for a NBCSP participant who returns a positive Immunochemical faecal occult blood test (iFOBT). Efficient and effective colonoscopy is essential to the success of the NBCSP, which could prevent up to 84 000 bowel cancer deaths if program

participation rates reached and were sustained at 60% over the next two decades.²

In 2018, the median national wait time for colonoscopy after a positive NBCSP-provided iFOBT was 51 days. This period is well over both the 44-day benchmark recommended by the NBCSP Quality Framework³ and the 30-day benchmark recommended by the NSW Agency for Clinical Innovation.⁴ Wait times in NSW (54 days) are higher than the national average and delays are longer for Indigenous people, people living in very remote areas, people with a disability, and program participants using public hospital services.⁵

Worthington et al. show that NBCSP participants generate only an estimated 10–14% of all Medicare-funded colonoscopies.¹ The study findings, when considered with other evidence such as the findings from the evaluation of a Direct Access Colonoscopy Service (DACS) in Newcastle, NSW⁶, suggest the problem of NBCSP participants' long wait times for colonoscopy is due to service prioritisation and referral pathways, rather than limited capacity.

Bowel cancer in Australia

Bowel cancer is the second leading cause of cancer death in Australia (after lung cancer), with an estimated 5326 deaths in 2022, and is the second most commonly diagnosed cancer in both men and women combined, with an estimated 15 713 new cases diagnosed in 2022.⁷

Age-standardised mortality has fallen significantly over the past two decades, much of it driven by ad hoc and then organised screening.⁸ As well as potentially preventing 84 000 bowel cancer deaths if participation rates increase to 60%, the NBCSP is one of Australia's most cost-effective public health programs. An analysis published in 2019 estimated a cost of \$3380 per life-year saved for the NBCSP – less than one-tenth of the benchmark for a cost-effective public health program.⁹

Despite its huge potential benefits, NBCSP participation rates languish at around 43.8%. Participants also have to wait unacceptably long periods to find out if they are the one in 95 with a positive screening test who is diagnosed with bowel cancer.⁵

Medicare data – a unique snapshot of colonoscopy use

Medicare claims data provide a snapshot of colonoscopy use and enable projection of future demand based on usage trends. Most colonoscopies conducted in Australia appear in the Medicare data, with more than 663 000 subsidised procedures in 2019, from an estimated total of around 900 000.¹⁰ *Worthington et al.* show that, based on current trends, Medicare-funded colonoscopies will increase to a projected 789 350 colonoscopies in 2030, from 284 676 in 2001.¹

Given the scale of the NBCSP (2.52 million people screened with iFOBT between January 2019 and December 2020)⁵, it might be assumed that the program is a key reason for increases in Medicare-funded colonoscopies. However, as *Worthington et al.* show, the program generates only 10–14% of colonoscopies. There are indications that underuse of the NBCSP is a driver of excessive colonoscopy usage, with colonoscopy being preferred when iFOBT screening may be more appropriate.

Prioritisation and efficiency are key

Of the estimated 700 000 Medicare-funded colonoscopies in Australia this year, only 95 000 were generated by the NBCSP, including diagnostic and surveillance colonoscopies. The remaining 60 000 Medicare-funded colonoscopies occurred outside the program. It is likely that a substantial proportion of these are for average-risk people aged 50 to 74 years, who instead should screen with iFOBT, as recommended in clinical practice guidelines.¹¹ Inappropriate use of colonoscopy leads to lower diagnostic yields, exposes individuals to an unnecessary risk of complications and wastes valuable health resources.

This highlights the need for health authorities to do more to promote the NBCSP through social marketing and engagement with general practitioners, who have an important role in recommending the program to eligible patients and reducing referrals to low-yield colonoscopies. If more average-risk Australians aged 50 to 74 years completed screening with the free iFOBT kit through the NBCSP, rather than undergoing colonoscopy as first-line screening, colonoscopy services would be freed up for category 1 patients (those referred for colonoscopy within 30 days, due to positive iFOBT or critical systems such as bleeding, pain, weight loss or iron deficiency) – who should be a priority.

However, diverting average-risk people in a cohort eligible for the NBCSP away from inappropriate colonoscopy to iFOBT is only part of the solution. Efficient referral pathways are also essential to the program's success, to ensure that participants who test positive for iFOBT do not face lengthy wait times for colonoscopy.

Learnings from Direct Access Colonoscopy initiative

While almost all NBCSP participants with an iFOBT-positive result are referred for colonoscopy, the pathway to diagnostic assessment varies. Australia has a complex health system, with a mix of federal and state/territory-funded programs, public and private services and care pathways varying between jurisdictions and health districts within jurisdictions. The analysis of Medicare

data, and the identified absence of integrated data, in *Worthington et al.*¹, reflects the variability of colonoscopy use in Australia within and external to the NBCSP. The NSW Government has recognised this problem with the introduction of the Direct Access Colonoscopy (DAC) initiative, which prioritises colonoscopy wait lists for patients with a positive iFOBT without requiring pre-colonoscopy specialist consultation, provided the triage meets the protocol.¹²

Evaluation of a pioneering service in Newcastle, NSW, highlighted the benefits of reduced wait times from a Direct Access Colonoscopy Service (DACS) pathway compared to the mix in normal services. The median wait time for colonoscopy in normal services derived from patient databases used in the trial was 79 days. Wait time for a comparable patient population managed by DACS was 49 days. More than 41% of normal service patients waited longer than 90 days, compared with only 16.3% in the DAC group.⁶ Moreover, a separate study showed that DACS delivered significant cost savings for both patients and the health system.¹³

Conclusion

Promoting clinical practice guidelines, and translating successful services, such as the Newcastle DACS model, into standard practice in health systems state-wide, are key to improved bowel cancer outcomes. The data in the study by *Worthington et al.* show that colonoscopy capacity is available if services are prioritised. Health authorities in NSW are well placed to step up their leadership in the DACS initiative and embed the protocol into health systems and pathways across the state.

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Competing interests

None declared.

Author contributions

PG developed the narrative text and policy review. PP and EH contributed expert medical and scientific perspectives to the policy analysis, additional data and clinical experience in bowel cancer diagnosis and direct access colonoscopy.

References

1. Worthington J, He E, Lew J-B, St John J, Horn C, Grogan P, Canfell K, Feletto E. Colonoscopies in Australia – how much does the National Bowel Cancer Screening Program contribute to colonoscopy use? *Public Health Res Pract.* 2023; 33(1):e32342216.
2. Lew JB, St John DJB, Xu XM, Greuter MJE, Caruana M, Cenin DR, He E, et al. Long-term evaluation of benefits, harms, and cost-effectiveness of the National Bowel Cancer Screening Program in Australia: a modelling study. *Lancet Public Health.* 2017;2(7):e331–40.
3. Australian Government Department of Health and Aged Care. National Bowel Cancer Screening Program – quality framework. Canberra: Australian Government; 2016 [cited 2023 Feb 27]. Available from: www.health.gov.au/resources/publications/national-bowel-cancer-screening-program-quality-framework
4. NSW Agency for Clinical Innovation. NSW colonoscopy categorisation. Sydney: ACI; 2020 [cited 2023 Feb 27]. Available from: aci.health.nsw.gov.au/resources/gastroenterology/nsw-colonoscopy-categorisation/nsw-colonoscopy-categorisation
5. Australian Institute of Health and Welfare (2022) National Bowel Cancer Screening Program monitoring report. Canberra; AIHW; 2022 [cited 2023 Feb 27]. Available from: www.aihw.gov.au/getmedia/3a53f195-5f73-4231-a0a7-c734fd2a0e98/aihw-can-148.pdf.aspx
6. Clarke L, Pockney P, Gillies D, Foster R, Gani J. Time to colonoscopy for patients accessing the direct access colonoscopy service compared to the normal service in Newcastle, Australia. *Intern Med J.* 2019;49(9):1132–7.
7. Australian Institute of Health and Welfare. Cancer. Web article. Canberra; AIHW; Jul 2022 [cited 2023 Feb 27]. Available from: www.aihw.gov.au/reports/australias-health/cancer
8. Luo Q, Steinberg J, O'Connell DL, Grogan PB, Canfell K, Feletto E. Changes in cancer incidence and mortality in Australia over the period 1996–2015. *BMC Res Notes.* 2020;13(1):561.
9. Lew J-B, Feletto E, Wade S, Caruana M, Kang Y-J, Nickson C, Simms KT, Procopio P, Taylor N, Worthington J, Smith DP, Canfell K. Benefits, harms and cost-effectiveness of cancer screening in Australia: an overview of modelling estimates. *Public Health Res Pract.* 2019;29(2):e2921913.
10. Australian Commission on Safety and Quality in Health Care. Colonoscopy clinical care standard. Sydney: ACSQHC; 2020 [cited 2023 Feb 27]. Available from: www.safetyandquality.gov.au/standards/clinical-care-standards/colonoscopy-clinical-care-standard

11. Cancer Council Australia Colorectal Cancer Guidelines Working Party. Clinical practice guidelines for the prevention, early detection and management of colorectal cancer. Sydney: Cancer Council Australia; 2017. [cited 2023 Feb 27]. Available from: www.cancer.org.au/health-professionals/clinical-practice-guidelines/colorectal-cancer
12. Cancer Institute NSW. Direct access colonoscopy model of care. Mandatory and recommended inclusions for the local implementation of direct access services in NSW. Sydney: CINSW; 2020 [cited 2023 Feb 27]. Available from: www.cancer.nsw.gov.au/getmedia/6f26a7d5-f94f-4727-834a-bae518a24f22/MR0010116-LBVC-DAC-ModelOfCare-09-20-FA.pdf
13. Clarke L, Pockney P, Gillies D, Foster R, Gani J. Direct access colonoscopy service for bowel cancer screening produces a positive financial benefit for patients and local health districts. *Intern Med J.* 2019;49(6):729–33.

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