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Clinicians' opinions on recommending aspirin to prevent colorectal cancer to Australians aged 50–70 years: a qualitative study

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ABSTRACT

Objectives Australian guidelines recommend all adults aged 50–70 years old without existing contraindications consider taking low-dose aspirin (100–300 mg per day) for at least 2.5 years to reduce their risk of developing colorectal cancer. We aimed to explore clinicians' practices, knowledge, opinions, and barriers and facilitators to the implementation of these new guidelines.

Methods Semistructured interviews were conducted with clinicians to whom the new guidelines may be applicable (Familial Cancer Clinic staff (geneticists, oncologists and genetic counsellors), gastroenterologists, pharmacists and general practitioners (GPs)). The Consolidated Framework for Implementation Research (CFIR) underpinned the development of the interview guide. Coding was inductive and themes were developed through consensus between the authors. Emerging themes were mapped onto the CFIR domains: characteristics of the intervention, outer setting, inner setting, individual characteristics and process.

Results Sixty-four interviews were completed between March and October 2019. Aspirin was viewed as a safe and cheap option for cancer prevention. GPs were considered by all clinicians as the most important health professionals for implementation of the guidelines. Cancer Council Australia, as a trusted organisation, was an important facilitator to guideline adoption. Uncertainty about aspirin dosage and perceived strength of the evidence, precise wording of the recommendation, previous changes to guidelines about aspirin and conflicting findings from trials in older populations were barriers to implementation.

Conclusion Widespread adoption of these new guidelines could be an important strategy to reduce the incidence of bowel cancer, but this will require more active implementation strategies focused on primary care and the wider community.

Trial registration number Australian New Zealand Clinical Trials Registry (ACTRN12620001003965).

Strengths and limitations of this study

- We recruited a large and diverse group of participants representing different clinical disciplines, varied length of experience and work settings.
- We applied an established theoretical framework to study guideline implementation.
- We recruited participants only from one state, Victoria, but we believe our findings are likely to be transferable to other Australian clinicians.
- We acknowledge that there may be other barriers and facilitators experienced by clinicians from remote locations.

INTRODUCTION

In 2019, colorectal cancer (CRC) was the second most commonly diagnosed cancer in Australia in men and women (9069 cases and 7329 cases, respectively).[1] In November 2017, Cancer Council Australia (CCA) updated their guidelines for the prevention of CRC to recommend that all people aged 50–70 years who are at average risk of CRC actively consider taking low-dose aspirin to reduce their risk of CRC.[2] Despite the publication of these national guidelines recommending a significant change in CRC prevention strategy, it has not been accompanied by an implementation strategy, rather relying on passive diffusion of the guidelines into clinical practice.

The new guidelines were endorsed by the National Health and Medical Research Council and adopted by the Royal Australian College of General Practitioners. Meta-analyses of randomised controlled trials of low-dose aspirin have demonstrated reduced incidence and mortality from CRC by 25% and 33%, respectively, as well as a 33% reduction in all-cause cancer mortality, when taken for at least 2.5 years.[3] In addition to reducing the risk of CRC, aspirin also reduces the risk of cardiovascular disease (CVD) including myocardial infarctions, ischaemic strokes and transient ischaemic attacks by 6% per annum in primary prevention trials.[4] However,

aspirin can cause side effects including gastrointestinal haemorrhage, peptic ulcer and haemorrhagic stroke.

This project aimed to explore clinicians' practices, knowledge, opinions, and barriers and facilitators to the implementation of these guidelines, with the intention of developing implementation methods to increase the uptake of aspirin for CVD and CRC prevention and reduce development of CRC in the Australian population.

METHODS

Approach

A qualitative case study using semistructured interviews was conducted with a range of health professionals whom the new guidelines were most likely to directly impact, including gastroenterologists, geneticists, oncologists, genetic counsellors and general practitioners (GPs). A constructivist paradigm was used to generate new ideas from participants, using interviews to explore current practice, knowledge and opinions toward recommending aspirin to people at average risk of CRC and potential barriers and facilitators to implementing the guidelines.

Setting and sampling strategy

Recruitment was done through personal networks of the authors, as well as through social media posts, emailing through the Familial Cancer Centre (FCC) staff email list in the Parkville Precinct and cold calling general practices through the University of Melbourne's Department of General Practice Victorian Research and Education Network database. From these different sources of participants, we purposively sampled to achieve maximum variation in profession type, age, gender, years of experience and those working in both rural and urban Victoria, and public and private practice settings. As we sent out recruitment messages through different sources, all participants opted in on their own. All participants provided written consent. GPs, as private practitioners, were reimbursed $100 for their time as this group was the most difficult to recruit. Recruitment of all participants occurred between February and September 2019.

Data collection techniques

A semistructured interview guide was developed based on the Consolidated Framework for Implementation Research (CFIR)[5] (table 1). CFIR is a conceptual framework developed to guide the assessment of implementation contexts. It consists of 5 domains and 39 constructs representing all areas of a healthcare setting that impact on the successful implementation of a new intervention.[6] The five overarching CFIR domains cover aspects of the design and cost or the intervention characteristics; aspects of organisations and how they operate in the inner setting; individuals within the organisations or characteristics of individuals like the culture and leadership, how outside organisations or outer settings and beliefs, and implementation processes impact on successful implementation of an intervention.

The interview questions were adapted from the online CFIR guide, which provides a list of potentially relevant interview questions for each of the constructs.[5] In this study, the 'intervention' was defined as the national guideline recommending consideration of aspirin for CRC prevention (online supplemental material 1).

The interviews were conducted by three researchers, authors SM, PA and TY, who had no existing relationships with the participants. The interviewing researchers disclosed their position in the research to the participants and they were aware why the research was being conducted. Researcher SM who interviewed the GPs, geneticists, oncologists and genetic counsellors is a highly experienced female qualitative researcher. Researchers PA, who interviewed pharmacists, and TY, who interviewed gastroenterologists, both were male students who were trained in qualitative methods and supervised by experienced qualitative researchers (SM, JM, JE). Interviews were audio recorded and transcribed verbatim. Field notes on the time and location were recorded in researchers'

Table 1 Overview of the Consolidated Framework for Implementation Research (CFIR); the CFIR provides constructs that have been associated with effective implementation[6]

Characteristics of intervention	Inner setting	Outer setting	Individuals involved	Implementation process
► Intervention source ► Evidence strength and quality ► Relative advantage ► Adaptability ► Trialability ► Complexity ► Design quality ► Cost	► Structural characteristics ► Networks and communications ► Culture ► Implementation climate	► Patient needs and resources ► Cosmopolitanism ► Peer pressure ► External policies and incentives	► Knowledge and beliefs about the intervention ► Self-efficacy ► Individual stage of change ► Individual identification with organisation ► Other personal attributes	► Planning ► Engaging ► Executing ► Reflecting and evaluating

notebook following the interviews. Researchers met regularly to review the interview transcripts and discuss data and the emerging themes. Interview transcripts were not returned to participants.

Analysis

Qualitative transcript data were managed using NVivo V.12.[7] The interviews for each type of participant, FCC staff, GPs, gastroenterologists and pharmacists, were initially analysed separately. Complete coding of each interview was conducted by the author who interviewed the participant where everything that was spoken by the participants was organised into specific topics. At the first level of coding, codes were produced inductively for each of the participant professional groups on completion. For enhanced interpretive rigour, several interviews in each participant group were co-coded by another researcher and progressively checked in regular researcher meetings. The coding for several interviews per participant type was checked by a second researcher.

After first-level coding, codes were grouped into themes. Thematic analysis was employed at this level where themes emerged from the first-level coding through discussions between the researchers. About 20 themes per professional group type were defined. Themes from each professional group type were discussed between the researchers and brought together if they could be. Themes were then mapped onto the domain and constructs from the CFIR[6]: characteristics of intervention, outer setting, inner setting, characteristics of individuals and process (table 1).

Patient and public involvement

No patient involvement.

RESULTS

Sixty-four participants were interviewed (table 2). Interviews ranged from 20 to 50 min and were face-to-face in the participants' place of work (clinic, pharmacy or hospital consulting or meeting room), except for four GPs who were interviewed over the phone. The researcher and participants were the only ones present during the interviews, except for with pharmacists if there were shopkeepers or pharmacy assistants present. The results are presented according to the domains of CFIR (table 3).

Table 2 Characteristics of participants (N=64)

Characteristics	
Mean age (years)	41
Sex, female (n)	35
Profession (n)	
Gastroenterologist	17
Pharmacist	14
General practitioner	16
Familial cancer centre (FCC) staff	
Genetic counsellor	10
Geneticists	4
Oncologist	3
Years in profession (n)	
<10	23
10–19	22
20–29	8
30+	11
Work setting	
General practice (%)	
Bulk-billing clinic	31
Private	69
Hospital (gastroenterologists and FCC staff) (%)	
Public	77
Private	23
Pharmacy (%)	
Hospital	36
Community	64

FCC, Familial Cancer Centre.

Characteristics of the intervention

Aspirin

Many participants expressed confusion regarding the dose of aspirin recommended for CRC prevention. While some participants were comfortable deciding on a dose within the 100–300 mg range specified in the guidelines, others felt that this dose range indicated uncertainty in the guidelines (quotations 1a and 1b).

> 1a Well I think the range is ambiguous there. The numbers are not ambiguous at all there I suppose but it's just - it's out with normal practice I guess. (GP, 30 years old)

> 1b And I think the risk in data coming out is how much is useful, like the dosage. We used to think that a low dose used to be good for other cardiovascular events, but in fact maybe it isn't depending on gender, age and weight. (Gastroenterologist, 47 years old)

Aspirin was perceived as cheap, safe and readily available by many participants, who stated this would facilitate their prescribing and patient uptake. With the rising costs of healthcare, participants thought the cheap nature of aspirin facilitated the implementation of the guidelines (quotation 1c). Barriers to implementation included concerns about possible side effects of aspirin such as gastrointestinal bleeding and contraindications in people with multiple comorbidities (quotation 1d).

> 1c It's cheap, which is the other thing; and, again, in the Australian healthcare system, where there are costs associated with a lot of treatments, to be able to recommend something that is - we're saying safe, the exception being the gastric irritation, and effective, and it's not going to break the bank for them to use it. (GP, 62 years old)

Table 3 Results of themes from interviews with general practitioners (GPs), gastroenterologists, Familial Cancer Clinic staff (FCC staff) and pharmacists mapped onto the Consolidated Framework for Implementation Research

Characteristics of intervention	Inner setting	Outer setting	Individuals involved	Implementation process
► The participants expressed confusion around the aspirin dosing (100–300 mg) ► Some facilitators to aspirin implementation included the low cost, availability and safety ► The 'actively considered' wording of the guidelines implied some uncertainty about the strength of the evidence ► The aspirin guidelines have changed over time which presents as a barrier to implementation	► Participants agreed that having limited time would be a barrier to implementation as they are usually very busy ► Pharmacists specifically saw their role to support what the GPs advise, and thought they should reiterate this to patients	► As the guidelines were first published by the Cancer Council Australia, they were more trustworthy ► The ASPREE trial although it was a study done in the elderly (70–80 years old) population, it introduced some hesitancy even for the population aged 50–70 years old ► The guidelines have changed a lot over time for CVD	► Geneticists, pharmacists and gastroenterologists saw their role as advocates of the guidelines ► All clinicians agreed that it is GPs' role to implement the guidelines into general practice, GPs agreed it was their role ► FCC staff were aware of the guidelines, but other clinicians had limited knowledge	► Participants thought of themselves as early adopters but agreed that it takes time for most clinicians to implement new interventions ► Participants agreed that patients would be receptive to the recommendations ► A decision aid would be helpful in facilitating a discussion with patients

ASPREE, Aspirin in Reducing Events in the Elderly; CVD, cardiovascular disease.

1d And in terms of weighing up the side effects from aspirin, we've got the issue of the potential for those individuals who have got other comorbidities whether it's renal or allergies to aspirin or risk of stroke etc etc. You've got to weigh all those factors up before you consider putting someone on aspirin. (Gastroenterologist, 59 years old)

CCA guideline

Many participants mentioned the specific phrasing of the guidelines, namely that aspirin should be 'actively considered'. This language did not sufficiently encourage them to prioritise the recommendation, and implied uncertainty about the strength of evidence (quotation 1e).

1e Because it's not strong, also, perhaps that's something that will be its - not its downfall, but will be negative because we already have a lot of strong guidelines. (Geneticist, 32 years old)

Inner setting

Despite the variety of specialties and workplace types, a common theme emerged of competing demands on clinicians' time-limiting capacity to discuss aspirin for the prevention of CRC (quotations 2a and 2b). Pharmacists suggested they could support GPs in counselling patients, given GPs have relatively short consultation times with their patients. Pharmacists commented on the closeness of their location to GP clinics and their potential to reiterate advice about aspirin given by the GP (quotation 2c).

2a I think time's our major challenge. There's just not enough time to… especially that the pace that endoscopy list goes is fast and I think in private it's much faster. Public, even then; even if it's not pace, the patients had an anaesthetic - it's not really an appropriate time to be talking to them about long-term stuff. (Gastroenterologist, 50 years old)

2b So we only actually see people when we can offer genetic testing and the rest of our work is done over the phone or we send letters. We are absolutely flat out at the moment. This is probably the only time today I will be sitting and not running around. (Genetic counsellor, 35 years old)

2c I think, we should, way of promoting it, and probably we should be more proactive with it, GPs tend to not… especially, one of the pharmacies I work at is next to a bulk billing clinic doctors are very much get them in, get them out, and don't spend much time with them. so that's where we can often come in to be that extra person that can either reinforce what the doctor's told them or suggest other things. So, we should be there in the front line, yeah, promoting health. (Pharmacist, 50 years old)

Outer setting

CCA was perceived as a trustworthy organisation and this gave greater weight to and trust in the guidelines (quotation 3a).

3a Look as long as this is done by the Cancer Council of Victoria, I'm trusting them so it depends who is it behind, but this is a credible source of information I would have hoped. (GP, 58 years old)

The initial results of the Aspirin in Reducing Events in the Elderly (ASPREE) trial were published after the CCA national clinical guidelines were released, and shortly before interviews for this study were conducted.[8] The ASPREE trial showed low-dose aspirin provided no benefit in participants aged 70–80 years over a short-term follow-up of 4.7 years.[9] Some participants in our study, despite varying degrees of knowledge of the ASPREE trial results, were hesitant to recommend aspirin for people even in the group age 50–70 years covered by the guidelines, due to the findings of the ASPREE trial despite being conducted in a different age cohort (quotations 3b and 3c).

3b So that negative study for aspirin in older patients; kind of makes me think- should I be giving it to someone with average risk of colorectal cancer? (Gastroenterologist, 32 years old)

3c So there was a big study here in Australia, and then a little bit of input from the US done over the last few years, came out last year, the ASPREE study, so I did a talk on it, so I looked at the primary prevention of aspirin in the cardiovascular disease, and it showed that low-dose aspirin for healthy older adults had no impact on primary prevention and cardiovascular risk. (Pharmacist, 26 years old)

Guidelines on the use of aspirin for disease prevention have changed over time, generating confusion among participants. Historically, aspirin was recommended for primary prevention of CVD in certain at-risk patients, but guidelines were later altered, recommending it only for secondary prevention.[10 11] Participants stated that it is hard to keep up with the latest recommendations, and that this ongoing change in advice caused reluctance to recommend them (quotation 3d).

3d With aspirin, it was always for stroke prevention, and now they're turning around and saying no, we shouldn't be doing it for that! And you sort of wonder, well, is this going to be the same sort of thing? The, one of the issues with medications and guidelines as such is that they keep changing. (Pharmacist, 50 years old)

Characteristics of individuals

Whose role is it to recommend aspirin?

Hospital-based clinicians generally supported the guidelines and saw their role as advocates rather than implementers of the guidelines (quotations 4a and 4b). All participants, including GPs, saw that the primary responsibility to implement the aspirin guidelines rested in primary care (quotations 4c and 4d).

4a So, you know I'm a Geneticist. I think talking to GPs and Gastroenterologists would be a much better group [laughs] than Geneticists. (Geneticist, 34 years old)

4b People are still very GP centred, so a lot of, even if we suggest things like this, a lot of people would still then go and talk to their GP before they decided to start something. (Pharmacist, 50 years old)

4c If you understand what I mean, it's absolutely…I agree with those specialists, I do think it is part of the role of the GP to talk about these preventative health issues specifically prescribing aspirin. (GP, 28 years old)

4d It's interesting when new guidelines come out, because guidelines come out all the time, and this is a really - this is our bread and butter as a GP. (GP, 48 years old)

Knowledge/awareness of the CCA guidelines

Knowledge and awareness of the guidelines were mixed. The FCC staff were more knowledgeable of the guidelines, specifically as they work with populations at increased risk of CRC, and awareness of recommendations about aspirin use in people with Lynch syndrome. Whereas GPs, pharmacists and gastroenterologists were either unaware or had limited knowledge of the guidelines (quotations 4e and 4f).

4e All I know about low-dose aspirin in bowel cancer is that it can be used, but in certain populations, but beyond that, I actually really don't know. (Geneticist, 32 years old)

4f I would say that going across, we have three different clinicians at work, and I don't think I've ever heard them recommend aspirin for someone who actually doesn't have something like Lynch syndrome. (Genetic counsellor, 57 years old)

Process

Implementation of the CCA guidelines

While most participants considered themselves as early adopters, they admitted that clinicians in general would wait before adopting new clinical guidelines (quotation 5a). Most health professionals agreed that patients would be receptive to taking extra medication such as aspirin for CRC prevention (quotation 5b). Nevertheless, a decision aid was thought to be potentially useful to facilitate discussion about the risks and benefits of taking aspirin (quotation 5c). Several participants could see how they could discuss aspirin as part of their usual consultation (quotation 5d).

5a Other doctors like to be on the tail end because they've been burnt a few times when things have kind of flipped back the other way. (GP, 38 years old)

5b You know, I think the people who already take tablets for something find it quite easy to beguile an extra tablet. So, someone's already on a cholesterol tablet, they're on a high blood pressure tablet, it's easy for

them to add aspirin to that. (Gastroenterologist, 60 years old)

5c Well that (a decision aid) might have been useful for the patient to show them what could happen and how effective it is if they ask. (GP, 58 years old)

5d You know, I appreciate they're guidelines and they're not mandatory, and if it fits in with the way I would practice, I'm happy to sort of incorporate them into what I do. (Gastroenterologist, 65 years old)

DISCUSSION

This is the first study to our knowledge to examine the perspectives of a wide range of Australian clinicians about recommending aspirin to reduce bowel cancer risk. Aspirin was considered as readily available, affordable and safe. However, the ambiguity about the recommended dose and perceived strength of the evidence was a concern for several clinicians. The media attention about the ASPREE trial[12] added to the perceived uncertainty about the evidence. Busy work environments meant limited time to spend on prevention. The endorsement from CCA, a nationwide not-for-profit organisation, meant the guidelines were perceived as trustworthy and therefore more likely to be implemented.

FCC staff and gastroenterologists are generally aware of aspirin recommendations for patients at increased CRC risk and suggested that GPs are better placed to discuss aspirin in those at average risk. These hospital specialists felt they could advocate the use of aspirin but the ultimate responsibility for initiation rested in general practice. Pharmacists similarly felt they could facilitate the process but would not initiate discussions about aspirin. GPs agreed that this was part of their role, for example when discussing bowel cancer screening, but had limited awareness of the guidelines.

There is often a large investment of time, resources and clinical expertise involved in producing national clinical guidelines, however, there is typically no accompanying strategy to implement them.[13 14] Between 2003 and 2007, 313 clinical practice guidelines were produced in Australia by over 80 guideline producers,[15] but with limited clinical uptake.[16 17]

The uptake of guidelines into clinical practice is influenced by several factors including the guideline characteristics, ease of implementation, clarity of the guidelines and individual clinicians' familiarity with the intervention and evidence.[18] Our study highlights several of these factors which could act as barriers to widespread implementation of the aspirin guidelines. Superficially, one might expect recommending a familiar, low-cost, over-the-counter drug would be easily implemented. But lack of clarity, partly due to the specific wording of the recommendation, could alter perceptions of the evidence and jeopardise uptake of the guideline.

Uncertainties among clinicians about the evidence for aspirin in disease prevention is exacerbated by changes in recommendations about its use in CVD. The CCA guideline specifically considered the evidence as it relates to preventing CRC. It did not discuss related evidence of reduced incidence and mortality from other cancers[3] or for the primary prevention of CVD.[4] The US Preventative Services Taskforce recommends aspirin for CRC prevention only in people who are also at moderately increased risk of CVD.[19] In addition, their recommendations about its use are stronger for people aged 50–59 years, compared with those aged 60–69 years because the risk of serious side effects from aspirin increases with age.

There was little awareness among many participants of the additional effects of aspirin on all-cancer incidence and mortality, but this is an important additional consideration for patients when making informed decisions about taking aspirin. Clinicians in our study recognised the potential benefit of a decision aid to support discussions about taking aspirin. There is strong evidence to show that decision aids can support informed decision-making, particularly when decisions require weighing up benefits and risks which are preference sensitive.[20] Patients need to understand the potential benefits of aspirin in terms of reduced incidence and death from cancer and CVD, and harms from gastrointestinal and intracranial haemorrhage. In a vignette study testing graphical approaches to communicating these harms and benefits from aspirin, over 70% of Australian patients aged 50–70 years were willing to take aspirin for disease prevention.[21] The use of a decision aid has the potential to inform the clinicians which addresses a major barrier to implementation, as GPs have limited awareness of the guidelines. A decision aid would enhance the clarity of the recommendation and facilitate a discussion about the aspirin guidelines with patients.

Implications and limitations

In this in-depth qualitative study, we recruited a large sample of diverse participants representing different clinical disciplines, varied length of experience and work settings. Although we recruited participants only from Victoria, we believe our findings are likely to be transferable to other Australian clinicians although we acknowledge that there may be other barriers and facilitators experienced by clinicians from remote locations.

The national guidelines on aspirin represent an important new approach to reducing the incidence and mortality of bowel cancer in Australia. But the absence of a strategic and more active implementation plan means these guidelines are less likely to be translated into clinical practice.[22] Specific implementation strategies for general practice are necessary to increase the awareness and uptake of these guidelines. Our findings suggest that a stronger statement of recommendation and clarity about dosage are required. Engagement with pharmacists is also necessary to ensure they are aware of the guidelines and are prepared to endorse any advice from someone's

GP about using aspirin. These implementation strategies could be supplemented by approaches to raise awareness in the community about the role of aspirin and decision aids to facilitate discussions between GPs and patients and support informed choices about CRC prevention.

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Competing interests JE and FM were members of the Cancer Council Australia guideline development group which recommends the use of low-dose aspirin for the prevention of colorectal cancer.

Patient consent for publication Not required.

Ethics approval Ethical approval was provided by the Human Ethics Sub-Committee of the University of Melbourne (Ethics ID:1853266) and all participants provided informed written consent before taking part in this project.

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