



The enablers and barriers for the uptake, use and spread of Primary Care Collaboratives in Australia

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ACKNOWLEDGEMENTS

This research is a project of the Australian Primary Health Care Research Institute, which is supported by a grant from the Australian Government Department of Health. The information and opinions contained in it do not necessarily reflect the views or policy of the Australian Primary Health Care Research Institute or the Australian Government Department of Health.

Eleanor Jackson Bowers and Joanna Brooks were involved in the initial stages of this study. Mia Dhillon from the Improvement Foundation of Australia organised the recruitment mail-outs. We would like to thank the general practitioners, practice managers, practice nurses, collaborative program managers and key informants who took time to speak with us about the APCC program.

CITATION

Brown V, Fuller J, Ford D, Dunbar JA. *The enablers and barriers for the uptake, use and spread of primary health care Collaboratives in Australia,* APHCRI Centre of Research Excellence in Primary Health Care Microsystems, The University of Queensland, 2014.

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Background

Improving safety and quality in primary healthcare in Australia is of critical importance ^{1,2}. There is a limited understanding of the organisational development for quality and safety taking place in Australian general practice, and the contribution of quality improvement Collaboratives to these developments. To improve system performance more knowledge is required on the ways in which Australian general practice innovates and the individual, organisational and systemic characteristics associated with quality and safety.

This report uses the clinical microsystems framework to examine the uptake, use and spread of the Australian Primary Care Collaboratives (APCC) program as the Australian Government's quality improvement program for general practice.

QUALITY IMPROVEMENT COLLABORATIVES

Collaboratives were first conceptualised in 1994 by one of the founders and the CEO of the Institute for Healthcare Improvement (IHI), Prof Paul Batalden and Dr Don Berwick³. The aim of the IHI was to engage US health care organisations in making system-level changes that would lead to significant improvements in quality of care and patient safety.

Prof Batalden had been profoundly influenced by the work of W.E. Deming in improving the postwar quality of manufacturing in Japan. Deming's contributions to QI are significant, including the Plan Do Study Act (PDSA) cycle⁴, 14 Points for Management⁵ and the System of Profound Knowledge, which emphasises the appreciation of systems for better organisational development⁶. The IHI incorporated many of these seminal QI principles and learnings with expert advice on subject matter and implementation in health care to form the Breakthrough Series Collaboratives.

The Breakthrough Series Collaboratives consists of teams from health care organisations attending Learning Sessions on specifically chosen topics relevant to US health reform. Over a period of 6 to 15 months participants work together as they alternate between Learning Sessions and Action Periods to plan, implement and evaluate changes in clinical settings. The first Breakthrough Collaboratives commenced in late 1996 with 28 organisations working to reduce caesarean rates, 12 improving asthma care and 23 organisations aiming to reduce delays and wait times.

Collaboratives have also been widely used in health care organisations across the United Kingdom, Canada and parts of Europe⁷. In January 2000 the National Primary Care Development Team (later known as the UK Improvement Foundation) instituted the UK model of primary health care Collaboratives, with some changes in scale, focus and infrastructure from the Breakthrough Collaboratives.

The evidence underlying the Collaborative methodology is positive although limited⁷, with known differences in terms of success between Collaboratives and teams⁸. Reported successes include reductions in waiting times to see GPs, reduction in intensive care costs and improvements in patient outcomes^{3,9}. Limited evidence exists as to how organisational learning and change capacities can be better enhanced through Collaboratives and more research is required into how Collaboratives can be designed to maximise uptake, use and spread^{10-13,22}.

THE AUSTRALIAN PRIMARY CARE COLLABORATIVES (APCC)

Quality improvement in Australian general practice has been an ongoing concern for at least the last twenty years ^{14,15}. In 2004 the Federal Government announced funding for the Breakthrough Collaboratives Trial in Australia. The first Australian Primary Care Collaboratives (APCC) waves in March 2005 engaged approximately 500 practices in 42 Divisions of General Practice in addressing diabetes, coronary heart disease and access to general practice ¹⁶. There have since been a further three waves covering access and care redesign, chronic obstructive pulmonary disease, and chronic disease prevention and self-management, e Health and a Medicare Local Quality Improvement Partnerships ¹⁷.

The Improvement Foundation of Australia (IFA) runs the APCC program, which the first and largest quality improvement program of its type in Australia¹⁸. It involves experts in the field (i.e. senior General Practitioners, academics, policy makers), Collaborative Program Managers (CPMs) from primary care support organisations (Divisions of General Practice, Medicare Locals, or Primary Care Networks) and staff of primary care services including general practitioners (GPs), Practice Managers (PMs) and Practice Nurses (PNs) sharing quality and safety improvement ideas and experiences in multiple settings such as workshops, webinars and teleconferences.

Primary care services that join the APCC participate in a "wave". A wave is made up of an orientation session followed by a series of learning workshops. The APCC uses the Model for Improvement¹⁹ as the framework for developing, testing and implementing small changes using PDSA cycles. Participants in all wave types are supported to introduce small manageable changes in their practices during activity periods between workshops.

There are currently four types of waves in the APCC program:

- National/state waves, where participants meet over one or two consecutive days in a central location across Australia for workshops. Workshops are held three times during the 12-18 months of a Collaborative;
- Virtual waves, where workshops are delivered via interactive media (webinar, teleconference) and are designed to provide greater flexibility to practices which may not be able to attend national waves;
- Hybrid waves, a combination of national and virtual waves. Face-to-face workshops are alternated with virtual workshops, introducing more flexibility whilst also maintaining the benefits of face-to-face delivery of the program;
- Local waves, run by Medicare Locals (formerly Divisions of General Practice) and consisting of a series of workshops in the local area of practices.

Approximately 1800 general practices and 151 support organisations (Divisions of General Practice and Medicare Locals) have participated in the APCC program¹. This equates to approximately 3600 general practice staff (GP, PM and PN) participants and approximately 400 CPM participants across Australia. To date, the APCC program has consisted of 8 national/state, 5 virtual, 20 local and 5 hybrid waves. In addition, 2 Medicare Local waves and 2 Medicare Local Quality Improvement Partnership has been undertaken to further educate CPMs in QI.

Impressive improvements in Australian general practices participating in the Collaboratives include a 50% increase in the mean percentage of patients at target for glycaemic control and similar improvements in blood pressure and cholesterol targets^{20,21}. Despite this success only 20% of general practices in Australia have currently taken part in a Collaborative.

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¹ Figures provided by the Improvement Foundation Australia.

Methods

AIM OF THE STUDY

The aim of this qualitative study was to improve our understanding of primary health care Collaboratives in terms of:

- > How Collaboratives are accessed (uptake)
- > How Collaboratives are implemented and employed (use)
- How we can promote the uptake of Collaboratives to other general practices (spread).

SETTING & SAMPLE

General Practitioners (GPs), Practice Managers (PMs) and Practice Nurses (PNs) from general practices that had participated in the APCC program were identified as potential study participants due to their first hand experience and knowledge of the program and the enablers and barriers.

Collaborative Program Managers (CPMs) from Medicare Locals were also identified as potential study participants because of the role they performed as recruiters and facilitators of the Collaboratives. The study team also identified two key informants from the IFA because of their clinical and administrative knowledge of the APCC program.

Due to privacy requirements the IFA was asked to identify practices and participants to recruit from their databases based on the following criteria:

- > Participation in at least one Collaborative wave;
- > Geographical distribution across Australia (by state/territory, rural/urban);
- > Variation in the size of the practice (smaller/larger practices);
- > Variation in the type of wave participated in (national, virtual, hybrid, local).

Study information sheets and expression of interest (EOI) forms were sent by the IFA to 56 CPMs and 140 general practices around Australia and two reminders were sent. Table 1 lists the number of EOIs returned, the number of study drop-outs and the number of study participants by role (key informant, CPM, GP, PM or PN).

Table 1 – Study participants by role

PARTICIPANT ROLE	EOI RETURNED	DROP OUTS	INTERVIEWED
Collaborative Program Managers (CPMs)	16	4	12
General Practitioners (GPs)	11	1	10
Practice Managers (PMs)	11	0	11
Practice Nurses (PNs)	5	0	5
Key informants from the IFA	2	0	2
TOTAL	45	5	40

Figure 1 shows the geographical spread of those participating in the study. Practices of different sizes were also interviewed, ranging from solo GP practices to practices with up to 14 part-time or full-time doctors. Participants from a range of waves were also interviewed, although many were unable to recall which wave they had participated in (only topic and year).

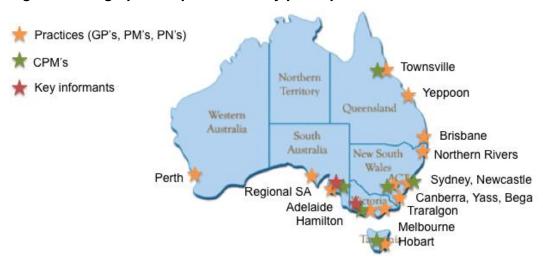


Figure 1- Geographical spread of study participants

SAMPLING LIMITATIONS

Including only those who participated in the APCC program may have presented a biased positive view and so limited the evidence on the barriers to Collaborative participation. Furthermore, those practices that had success or a positive experience with the APCC program may have been more likely to volunteer to participate in this study. It may be assumed that such participants are "innovators or early adopters" and as such their views may not be representative of the entire general practice population. Although engaging with practices that had declined to participate in the Collaboratives would also provide valuable insight into the enablers and barriers of the APCC program it was considered unlikely that such practices would consent to participate.

The lack of recruitment information about waves that practices participated in has limited some contextual detailed analysis.

DATA COLLECTION & ANALYSIS

The interview questions were designed to elicit responses on the different themes of uptake, use and spread. The interview schedule was semi-structured and presented common questions to be asked of all participants, with time afforded in the interview to explore relevant themes and discussions specific to each participant. Face validity of the interview schedules was determined by a panel of experts. Excerpts from the interview schedules are given in Appendix A.

Interviews were transcribed *verbatim* and all study participants were given the option of reviewing and editing their transcripts. Open coding was undertaken to generate a list of key themes identified from the data. Initial codes were organised into a framework guided by the research question and consisting of major themes and sub-themes. Themes were discussed with research team members and a subsequent coding framework was finalised

to inform the analysis. Coding and analysis was cross-checked by study team members to ensure trustworthiness of the analytic interpretation.

Analysis was conducted using the frameworks on clinical microsystems and the diffusion of innovations²³⁻²⁷.

Clinical Microsystems

The levels of analysis of a system are the micro-system, the meso-system and the macro-system. The levels of analysis relevant to this study include:

The individual

General practices are made up of a number of individual doctors, nurses, managerial and administrative staff with individual intrinsic motivations. The factors that enabled or discouraged QI at the individual level according to our study participants' response is are discussed as the building blocks for QI at the general practice (clinical microsystem) level.

The clinical microsystem

Clinical microsystems are the small organisational groups of people working together within general practices to deliver care to patients (i.e. the GPs, PMs, PNs and other general practice staff). I.e. the frontline of care for patients and their families meet the health system, and safety and quality is built. The clinical microsystem approach provides a framework to evaluate the structure, process and outcomes of care and can assist in understanding the use of QI innovation in an organisation²⁸.

The clinical microsystems approach provides a conceptual framework for organisational learning and improving the delivery of high quality care. Research from the Dartmouth Institute (US)²⁹ identified ten elements of high performing clinical microsystems as:

- > Leadership of the microsystem
- > Macro system support of the microsystem
- > Patient focused
- > Staff focused
- > Education and training
- > Interdependence of the health care team
- > Community and market focus
- > Information and information technology
- > Process improvement
- > Performance results

The clinical microsystem level factors that acted as enablers or barriers according to our study participants' responses are discussed.

• The meso-system

Meso-level organisations (currently Medicare Locals, formerly the Divisions of General Practice) play an important role in supporting Australian general practice. A discussion on the importance of the meso level in the implementation and sustainability of QI programs in Australian general practice is presented.

• The macro-system

The macro-system is the Department of Health and other government agencies involved in the funding and delivery of primary health care in Australia. The role of the macro system in the successful delivery of Collaboratives in Australian general practice then follows.

Diffusion of Innovations

Diffusion of innovation theory explains social change, one of the most fundamental of human processes and is an important work when examining why innovations are adopted or fail. Rogers²³ defines diffusion as the process by which an *innovation* is *communicated* through certain *channels* over *time* among the members of a *social system*. The four main elements of diffusion of innovation theory are:

- > The innovation, defined as the idea, practice or object that is perceived as new by an individual or other unit of adoption (in this case, the APCC program).
 - The perceived characteristics of innovations, such as the degree of relative advantage, compatibility, complexity, trialability and observability explain the rate of adoption of an innovation.
- > Communication channels, defined as the means by which messages pass between individuals.
- > *Time*, as it relates to communication and making decisions about adoption or rejection of the innovation.
- > The social system, defined as a set of interrelated units that are engaged in joint problem solving to accomplish a common goal²³.

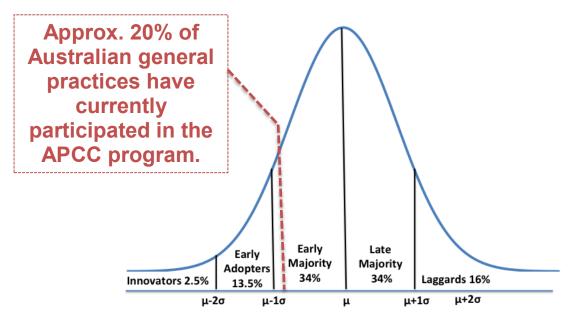
The decision as to whether to innovate can be made by either an individual or an organisation, although innovation decisions made by organisations are more complicated due to multiple actors being involved. The adopters of innovation can be classified according to their relative earliness in adopting new ideas as compared to their peers. The categories of adopters of innovation are:

- > innovators, those who are the first to seek out an innovation and who have a high risk tolerance;
- early adopters, those who seek out innovation with a slightly lower risk tolerance than innovators;
- > early majority, those who adopt innovation after a period of time for testing;
- > late majority, those who adopt innovation after the average member of society: and
- laggards, those who are the last to adopt an innovation and who are typically change adverse.

It is likely that the majority of the 20% of Australian general practices that have currently participated in the APCC program fall into either the innovator, or early adopter categories because selection processes in 2004 were designed to selectively recruit them. (Figure 2).

Using Rogers'²³ principles of the diffusion of innovations Berwick³¹ examined the following three "clusters of influence" required to make and sustain change within a health care organization: (1) the perceptions of the innovation; (2) the characteristics of the individuals who may adopt the change; and (3) contextual and managerial factors.

Figure 2 – Innovation adopter categories and APCC participation



Adapted from Rogers 2003.

Result & Discussion

Adoption of QI innovation by individuals

Many health professionals value taking part in a Collaborative and that it provides for both professional and organisational development³². Individual characteristics such as motivation, values, experience, beliefs and learning styles impact on the adoption of an innovation³⁰. Therefore in order to better understand the enablers and barriers for the uptake, use and spread of the APCC program it is necessary to have an understanding of the characteristics and attributes of individuals who adopt innovations (or fail to adopt them).

A BELIEF IN AND UNDERSTANDING OF QI

Compatibility with individual and social norms, attitudes and values are well regarded in the literature as key enablers of success of innovations^{8,23}.

Many study participants cited their belief in QI practices as a key motivation for their participation in the program as the following practice manager explained.

PM004: "I believe in the initiatives so for me I made it a priority."

A basic understanding of what QI is and of its perceived benefits enables individuals to weigh up the relative advantage of participation and to consider compatibility with their own individual values and beliefs. Conversely, a lack of understanding of what QI is and how it can benefit practices was cited as a barrier to participation, which was described by two participants as a fundamental issue:

CPM003: "...there's just a lot of practices who just didn't know exactly what that (quality improvement) means, what that actually means for them and what they could do with that."

GP007: "So, I think you don't understand what you don't know."

Hence, a lack of understanding may affect the uptake of the APCC program. Increasing the profile of what QI is and how it can benefit practices may assist those individuals to make a more informed choice on whether to participate or not.

While an understanding of the process and benefits of QI may improve the receptiveness of some to participate, a further more entrenched barrier was described as the resistance of practices that did not see that a problem existed or that continuous improvement was needed, as two practice managers stated:

PM004: "I know I could hear doctors say, I manage my patients quite well, I don't need to be involved in the Collaboratives, I know how to manage my patients."

PM008:" I also think that it's got to be a fair percentage of practices out there that think that 'well, if it ain't broken, why fix it?"

These responses supports other findings that some GPs still have an ambivalent attitude to assessing and improving quality of care³³.

BELIEF AND UNDERSTANDING OF QI			
UPTAKE	USE	SPREAD	
ENABLER	ENABLER	ENABLER	

MOTIVATION TO IMPROVE HEALTH OUTCOMES

The desire to improve the system of care and patient health outcomes was described as a motivation for participants to take part in the APCC program.

GP009: "the driving force for us, was the clinical autonomy and the clinical improvement that we might get out of being involved with the Collaboratives, aside from the management, and systems, and quality assurance."

PN003:" ...it is a really proactive, preventative practice. We really want to do the best for the patients."

GP003: "It was about improving the standard of care."

If health professionals believe that patient care can and should be better, and that they have it within their power to make improvements, then it has been found that they will give the time and effort that is required to undertake QI within their practice. Promotion of the positive outcomes to GPs, PMs and PNs may encourage more uptake and spread of the program, particularly in the early to late majority categories.

MOTIVATION TO IMPROVE HEALTH OUTCOMES			
UPTAKE	USE	SPREAD	
ENABLER	ENABLER	ENABLER	

TIME AND PERSONAL COMMITMENTS

The time away at workshops was a barrier for some participants.

GP009: "...there were some staff that might have participated in it, but didn't because they weren't prepared to lose family time, or they had family issues, and so to take them out of their families and ask them to do that for a whole weekend, you know, is a big ask."

Other participants saw the travel to workshops as a benefit, allowing them time away from their practices to immerse themselves in their learnings and giving them time to focus on making improvements within their busy practice.

GP012: "There were the big national workshops that were held in (city). And that got you away from the practice; gave you a chance to sit down and talk about all this together."

Whether the time commitment is a significant barrier on an individual level seems to be context specific to that individual. It may also be dependent on the adopter category of the individual, with those towards the later end of the adoption spectrum typically more time and resource constrained.

CPM014: "I think it depends on the person, their personal circumstances."

Continued introduction of other waves types (e.g. virtual, hybrid) may assist those individuals less able to commit to time away from their personal and work commitments. Emphasising the degree of flexibility in terms of delivery, whilst maintaining the rigor of the improvement methodology, may enable participation for more individuals, particularly from the early to late majority and laggard categories.

PERCEIVED LACK OF TIME & PERSONAL COMMITMENTS			
UPTAKE USE SPREAD			
BARRIER	BARRIER	BARRIER	

Why do some clinical microsystems become involved in QI?

This section examines the specific factors that enabled uptake, use and spread of the APCC program at the clinical microsystem level and this was the main focus of the study. We have grouped these under Berwick's three clusters of influence: (1) the perceptions of the innovation; (2) the characteristics of the individuals and practices who may adopt the change; and (3) contextual and managerial factors.

PERCEPTION OF THE INNOVATION

Perceived benefits of QI programs

Benefits as determined by study participants included networking, critical comparison, system improvements and professional development.

Networking

The social dynamics of the Collaboratives have been recognised as contributing to their success³⁴. Participants cite the chance to meet and network with other practices as a key motivator for their participation.

GP007: "It's more about sharing ideas and talking to people. So, that was the stand out."

The hypothesis that a certain type of practice (e.g. urban, rural, small, large) may be more likely to benefit from the networking opportunities offered by the APCC program was not supported by the data in this study. The opportunity to network was seen as an important benefit of participation regardless of where the practice was located (i.e. urban vs rural) or practice size (i.e. small vs large).

The chance to network may however appeal to the different adopter categories of an innovation in different ways. Innovators are typically cosmopolite personalities, with large and varied social networks²³. Participation in the APCC program may be seen by innovators as necessary to "stay ahead of the field" or as a way to expand upon these social networks with like-minded individuals.

The early adopter typically has a more localised social and professional network and is held in very high esteem by others in the system. Early adopters obtain their ideas for change from innovators and thus frequent meetings and interactions with innovators should be encouraged and promoted³¹. Early adopters are also opinion leaders²³ and thus the opportunity to network with them may be appealing to both the early and late majority of adopters.

The early to late majority watch the early adopters and thus the opportunity to network provides a crucial interface between these adopter categories³¹. The early and late majority may also see networking as particularly reassuring when undertaking QI, as they typically require more convincing that a change may be beneficial before undertaking one²³.

OPPORTUNITY FOR NETWORKING			
UPTAKE	USE	SPREAD	
ENABLER		ENABLER	

Critical comparison

A recurring theme in the interviews was that the APCC provided feedback of clinical data to practices to show how they compared with other practices.

GP004: "well it made me want to improve, cause it's like a competition ... we're just competitive type-a doctors, that if we know we're being measured we want to do well, so it instilled a bit of competitive drive at the practice."

Although there are already mechanisms in place to gauge the quality of individual general practices (e.g. accreditation) it appears that many participants appreciated the opportunity in the APCC to critically compare their business against others. By their very nature, doctors are known to be highly competitive and responsive to peer group comparison and so this can be used as a cultural lever to motivate behavioural change³⁵.

CRITICAL COMPARISON		
UPTAKE	USE	SPREAD
ENABLER		ENABLER

Improvement in systems

Participants cited improvement in systems within their practice as a major benefit to participation. Better data management by practices leads to financial gains, because patients are better managed and additional Medicare item numbers can be claimed. Improvements in staff and resource management have allowed for better patient access and improved financial performance.

PM006: "I would have said that as a consequence overall of collaborative activity the doctors and therefore the practice was able to bill more, and the growth in billings has exceeded the growth in costs."

A benefit of participating was training in systems thinking which practices regarded as valuable in sustaining changes.

GP009: "You know, when you go through medicine, you don't get taught how you look at your systems and how you might do things better... for us, our participation in the Collaboratives has helped our systems."

IMPROVEMENTS IN SYSTEMS			
UPTAKE	USE	SPREAD	
	ENABLER		

Continuing professional development

The Australian Health Practitioner Regulation Agency (AHPRA) requires continuing professional development (CPD) as a condition of medical registration³⁶. Participation in the APCC program enables PNs and GPs to accrue CPD points. Only one study participant (an IFA key informant) cited the accrual of CPD points as a specific benefit of the APCC program.

This is most likely due to the fact that the majority of participants in this study have come from high-performing practices. Most high-performing health professionals do not find it difficult to accrue CPD points²³. Further promotion of the accrual of CPD points may be seen as an additional benefit to participation for some of the "middle" (i.e. the early to late majority) or laggard adopters, who may not as easily accrue CPD points. This will need to be tested as the APCC reaches the later adopter categories.

PROMOTION OF CPD POINTS			
UPTAKE	USE	SPREAD	
		ENABLER	

Understanding of and flexibility in the PDSA

The Plan, Do, Study, Act (PDSA) is a method for trialing and evaluating change. A recent systematic review²⁶ highlighted the complexity of the PDSA method, and noted the room for improvement in its application and use in healthcare systems. Responses to this study reinforced the finding that the application of the PDSA method in many instances lacked the rigour and adherence for which it was designed. Our study findings suggest that the application of the PDSA method needs to take account of the way that general practice operates in order to be integrated and used successfully.

Participants indicated that familiarity with the PDSA method was first needed so that it was not intimidating and that while the formality of the processes was "off putting" this was also a benefit.

GP005: "it's a method ... you have to start somewhere. Sometimes it's a bit artificial, but like a lot of these contrived plans with respect to how you actually develop change within an organisation, they have their pluses and minuses. "

For some, the sense that the PDSA was something different to what they were doing as a part of routine good practice appeared to be a barrier to its use and sustainability.

GP011: "It makes sense, but to constantly to come up with change for the sake of change, because you've got an obligation to come up with another PDSA ...eventually we dropped out of the Collaboratives because you're going 'OK let's consolidate what change we already have and get that running rather than continue to make change for change's sake'.

That the PDSA was "too academic", or "contrived" was also found in general practice in the UK where its perception as "management speak" acted as a barrier to its adoption³³.

Innovations that are perceived to be simple to use will be more easily adopted³⁰. Rogers²³ defines complexity of an innovation as the degree to which an innovation is perceived as relatively difficult to understand and use and states that complexity is negatively related to rate of adoption. Therefore it is important that the perceived difficulty in using the PDSA cycle be further investigated if this is to become part of routine QI practice, particularly in the later category of adopters.

In most cases participants did not continue to use formal PDSA cycles to make changes within their practices after their participation in the 18-month APCC program. Instead, many practices cited an ongoing "informal" use that consisted of PDSA style thinking without writing a formal PDSA plan.

PN002: "I mean we, we're not doing any, we don't formalise it now, because we don't have to you know send any in, but we're still always planning, doing, studying it to see whether it's worked and then acting on it."

While this more informal use of PDSA cycles demonstrates that an approach to QI and learning was ongoing, it is not clear what impact a less formalised approach may have on long term outcomes. It is quite possible that with time and practice, teams have been through the Collaboratives and can carry out PDSA in larger steps and with less ritual.

UNDERSTANDING OF AND FLEXIBILITY IN THE USE OF THE PDSA METHOD		
UPTAKE	USE	SPREAD
BARRIER	BARRIER	

Concern over external oversight

The concern about external oversight was discussed by several participants as a barrier to involvement in the context of what is a relatively autonomous work environment.

GP002: "Maybe some practices might feel threatened as to, you know, like what their data will be used for."

CPM005: "I think sometimes they think big brother's watching them, is another issue. That OK we provide you with this information, where's it going to go. You know, they all have this fear factor of big brother all the time. I think that's another stumbling block."

The tendency for doctors to hold individualist mindsets as a result of their medical training and socialisation was also found as a potential barrier to QI innovation by GPs in the UK[36]. An individualistic mindset and concern that data sharing may be a threat to autonomy is at odds with systems-based QI methods involving collaborative learning. Reassurance of confidentiality and privacy may go some way to overcoming this concern. In order to encourage a more collective orientation amongst GPs the promotion of systems thinking in health care and education on the importance of collaborative learning is required early in medical training and socialisation.

CONCERN OVER EXTERNAL OVERSIGHT			
UPTAKE	USE	SPREAD	
BARRIER			

CHARACTERISTICS OF THE INDIVIDUALS AND PRACTICES

Practice culture

The culture within individual practices of determination, persistence and a desire to continuously improve and strive for personal and organisational success, has been found to influence participation in QI initiatives³⁷. The culture of the practices that participated in this study reinforced this finding, predominantly self-identifying as high-performing practices that are engaged, committed, enthusiastic and motivated.

PM007: "It all comes down to a practice's drive or want to continue on with an improvement. We want to be the best at everything that we do, around here anyway."

A team approach to providing quality health care was also cited as a common enabler for uptake and success in the program.

GP009: "I mean, perhaps that's a big part of the success of this practice, is that team-based approach."

The importance of a team-based approach was recognised by the IFA in the interviews conducted with key informants. Commitment and support from the majority, if not the entirety, of the practice team is optimal. Those participants with limited support from their

practice found the program more difficult and less productive than other practices with more of a team-based approach.

CPM013: "You need to have the commitment of the entire practice. When the entire practice isn't committed it just doesn't work. They don't achieve anything... The big push on it being a practice team..... it can be something that encourages them to participate, then also it can discourage them because a lot of practices really struggle to have that practice team and the communication within the team"

Effective communication within practices was considered an essential factor for success. The program invites GPs, PMs and PNs to participate on behalf of their practices, and requires participants to disseminate their QI learnings to their colleagues in order to effect practice level change. Most practices participating in the study cited well-established, regular and inclusive communication channels as key enablers for the uptake and use of improvements within their practices.

GP006: "We all have regular meetings which is interesting talking to other clinics; they still don't do that. You know, you hardly get the message round if you're not meeting each other."

Some practices cited more effective communication channels within their practices, incorporating regular team meetings, as a positive outcome of the APCC program.

GP007: "Previously, we had one, between one and four (meetings) a year, after Collaboratives we had more. Since last year we have them fortnightly."

The most common reason for a lack of team meetings was the difficulties of convening all staff (particularly part-timers) at regular intervals. In their summary of the factors associated with success of health care quality collaboratives Ovretveit et al⁸ cited the need for effective teamwork, noting teambuilding initiatives as a necessary precursor to participation and our findings support this.

PRACTICE CULTURE: engaged, communicative, team based approach			
UPTAKE USE SPREAD			
ENABLER ENABLER			

The need for a champion

Individuals who dedicate themselves to supporting, marketing and 'driving through' an innovation are collectively known as champions³⁰. Champions are committed to the ideals and processes of QI and act as leaders within their practices, motivating, monitoring and directing staff in their QI endeavours³⁸.

Almost all participants cited the need for a key driver within the practice to champion involvement in the program and to monitor the sustainability of any improvements made.

PM006: "That's the thing here: if you want to get the practices changing the way they do things, you really need to go in and find a key person, a champion in that practice who is prepared to try something new."

In most cases participants cited that the key driver within the practice needed to be a GP, as the positional power of the GP made the diffusion of innovation throughout a practice easier.

PM011: "I think we're committed from the top. So, if there's no top level commitment to something, there's not going to be engagement at the other level."

Some practices reported success with the program with a PM or PN champion. In this case however, a strong team approach and explicit support from the GP/s was also required.

PM005: "... a key person in leadership can have an enormous effect and they don't have to be the top person. A person in the middle can do an upward leadership. So a nurse, a receptionist that has a particular skill-base can give upward leadership ... if it's a pivotal point in whatever it is and they're willing to have a go and the culture is to listen, one person can make an enormous influence""

THE NEED FOR A CHAMPION		
UPTAKE	USE	SPREAD
ENABLER	ENABLER	

Technological capacity

Collaboratives require technological capabilites in recording and evaluating data[36]

CPM014: "Some practices, I know, are keen to commit and would love to participate, but they don't have the clinical software that allows them to submit the data."

PN002: "We had a lot of computer problems to start with, with compatibility with best practice and getting the current you know updates and everything."

Many practices are also poorly equipped to analyse and evaluate the data that they collect as part of their QI initiatives. Participants cited problems with effectively accessing and using the information that they had collected to assist with practice improvements.

GP007: "..we would like to know what our outcomes were.... we upload the stuff (data), we don't know what happens to it, we don't know what information is there".

For these practices, support from Division/Medicare Locals was needed in order to make use of information technology and in a few cases participants reported that they had best received this support under the previous arrangements with Divisions of General Practice. It is clear that with the change to Medicare Locals in the last few years, meso-level technological support capacity had been not been re-established.

One of the functions of the APCC program is to build capacity in general practice in the areas of data quality, recording and extraction^{20,21}. It was clear from study participants however, that ongoing work is required to build capacity in these areas. Technological capacity is required to support practices in collecting and storing data, as well as in analysing and using data to make improvements – effectively the "what's next" after initial technical skills are achieved.

Some of this capacity building will occur over time, as the general practice workforce ages and new, more technology savvy cohorts of GPs, PMs and PNs come through. Most of this capacity and capability will however need fostering, through improved training and support from meso and macro levels of the system (i.e. from Medicare Locals or Primary Care Networks and the Department of Health).

LACK TECHNOLOGICAL CAPACITY		
UPTAKE	USE	SPREAD
BARRIER	BARRIER	

Staff turnover

Workforce stability appeared to play a key role in the sustainability and spread of the Collaboratives program. It was reported that staff changes affected the sustainability of improvements made within practices.

CPM003: "You do have one or two practices who haven't sustained it and I think that's mainly to do with internal changes within the practice itself. Whether you lose the people involved in the Collaboratives, whether you've changed location, whether the demographics of your clientele changes."

This impact of staff attrition is consistent with the literature on organisational memory, where performance can be lost if organisational knowledge is not yet embedded in systems and artefacts (e.g. structures, transformations)⁴⁰. Staff changes can however be a positive mechanism for spread, as one participant reported that changing jobs meant bringing the Collaboratives method to the new practice.

PM004: "I was involved with an earlier wave at a difference practice.... the Collaboratives came up a month after I started, and I presented it to the doctors saying that this is something that we needed that would help us and and they took that on board."

STAFF TURNOVER		
UPTAKE	USE	SPREAD
	BARRIER	ENABLER

CONTEXTUAL AND MANAGERIAL FACTORS

Synergies with the internal and external environment

The fit of an innovation to suit both the internal and external needs of a practice was cited as a reason for participation in the Collaboratives.

GP010: "The reason I got onto the Collaboratives was because it was exactly what we were trying to do anyway, but chronic disease was just like a dog's breakfast......So, signing up for the Collaboratives for us was just like riding my bicycle, because it was exactly like what we were trying to do by ourselves without any infrastructure, or any support, or any help."

Collaboratives that are strategically important to participating organisations and compatible with institutional norms and practices are more likely to be successful within general practice[33 35]. Therefore it is important that:

- > the APCC program remain responsive to both the internal and external environment of general practice in Australia; and
- > possible synergies with the internal and external environments of a practice are capitalised upon.

Interviews with key informants from the IFA highlighted the intent of the APCC to remain relevant to the general practice environment and the introduction of new topics, such as e-health and cardiovascular and chronic kidney disease reflect this.

SYNERGIES WITH INTERNAL AND EXTERNAL ENVIRONMENT		
UPTAKE	USE	SPREAD
ENABLER	ENABLER	ENABLER

Financial incentive

Participants found the while financial incentive offered by IFA to take part in the APCC program was helpful, it was not a critical deciding factor.

GP009: "It (financial assistance) helps support it ... that from a financial point of view we weren't penalised because ... the programme was only available in Sydney or Melbourne ,,, but it never came down to a financial decision; like 'yes we go, because they're gonna pay for us."

For many the financial incentive was not so much an enabler for participation but rather the removal of a financial barrier. Whilst the relatively small sum offered for participation did not incentivise participation for these practices, it did act as a form of recognition that time away from patient consultation has an immediate short-term financial effect.

GP005: "We are in private practice, and if we stop seeing patients, then we stop earning an income."

The financial incentive was recognised as an effective recruitment tool by CPMs, as a way of "opening doors" in practices that may need convincing to participate.

CPM005: "I think often the money is something that they'll listen to. So if we didn't have that carrot to dangle they wouldn't be interested. But I think saying yes, look there is an incentive payment, OK their ears prick up and then you've got their attention."

By offering a financial incentive to participate the short-term opportunity cost to the practice is reduced and the relative advantage of the innovation is increased²³. This may allow practices to make longer term assessments of the costs vs the benefits of the program in their innovation-decision making process. Some participants had recognised that participation in the APCC program had resulted in long term financial benefits to their practices.

PM007: "we've got to find a way to show those practices that it's actually, in the long term, the benefits far outweigh the little losses that you'll make during the wave.... there's got to be a way to show the directors and the owners of the practice that it can actually be financially lucrative, it's not actually a drain on resources to do this."

Hence, the opportunity exists here for the longer term financial benefits to practices to be made more explicit to potential APCC participants (e.g. better access leading to more consultations, ability to claim for more practice incentive payments due to better data quality etc).

FINANCIAL INCENTIVE		
UPTAKE	USE	SPREAD
ENABLER	ENABLER	ENABLER

Time pressures

The most common barrier that participants mentioned in taking part in the APCC program was the time pressure caused by the high workload of general practitioners.

GP007: "Time. That's the real barrier. You know, you gotta invest a fair amount of time to get the benefit."

PM008: "So, they're just so busy doing what needs to be done that some of them I don't think have got the scope or the capacity to actually think about adding extra services as well." Lack of time is also well supported in the literature. Schattner and Coman³⁹ found that the most frequent and relatively severe stressful events in general practice involved time pressures and Dawda et al³³ found that time pressures had a negative effect on the uptake and sustainability of QI in general practice in the United Kingdom.

The perception of a lack of time may be compounded by the current arrangements for remuneration in general practice that is based on the number of patients seen and the time spent in consultations (i.e. fee for service). Therefore a financial incentive exists for doctors to spend the highest possible proportion of their time in "consultation mode". Participants commented that practices are busy enough undertaking their core paid work (i.e. attending to patients) to participate in programs like the APCC that require a time commitment and where the financial benefits are not immediate or obvious.

PM005: "Most business owners work too much in the business and not enough on the business. I suspect doctors owning their own practice have the same issue: too much time in the practice and not enough on the practice, or they're not in the position like this place is where they employ me to work on the practice. "

Berwick[34] recognised this problem when discussing the diffusion of innovation in health care and called for the creation of "slack for change". If innovation is to spread it is important that people have the time to invest in it.

The APCC program advocates for protected time for participants to undertake their improvement activities and this was cited as an essential component in the use and sustainability of the program.

PN002: "When we were fully into the COPD wave and the first start of the e-health wave, and that's when they first designated me that time. It just probably wouldn't have got done, because you know, we're such a busy area out there that you just don't find the time. So to have that actually designated time away from the factual clinic work was definitely beneficial.

The challenge for spread of the APCC will be to provide "slack for change" in practices that are already feeling time poor and funded for patient throughput. Protected time does not earn immediate direct income (i.e. from billings), but "slack for change" does enable attention to the long term financial and patient health benefits.

TIME PRESSURES		
UPTAKE	USE	SPREAD
BARRIER	BARRIER	BARRIER

The importance of the meso level (Primary Health Networks)

From the beginning of the Collaboratives program until 2011 the APCC funded CPMs through Divisions of General Practice to recruit and support participation in the Collaboratives. With the change to Medicare Locals, CPMs were no longer funded through the APCC program and Medicare Locals could choose to incorporate Collaborative work as part of their core organisational responsibilities. Participants of all types (GPs, PMs, PNs, CPMs and IF key informants) recognised that the loss of these dedicated positions often resulted in less direct engagement in supporting general practices in Collaboratives. Three PMs reflected on how these changes have had an impact on the level of support received by general practice.

PM005: "[It was] easier under the older Divisions of General Practice, because from my perspective I felt they had a greater engagement with general practice, where I think the Medicare Locals are now broader, and just what I've seen over the last twelve months, they've actually moved backwards in my perception of engaging."

With the future change from Medicare Locals to Primary Health Networks it is crucial that the role of the CPM in enabling and sustaining QI in Australian primary care be recognised. The nature, type and strength of external networks has shown to be crucial to the diffusion of innovation in health care environments^{33,41}. Participants articulated the need for a strong, supportive local working relationship between practices and meso-level support organisations.

GP005: "I mean, local is local ... that's what the Divisions were about......That program couldn't have been rolled out without the involvement of the Divisions. It would have been perceived as a being too remote."

Leveraging relationships is an important enabler for introducing and embedding QI innovation in general practice. General practices are generally time-poor organisations that must operate in an environment of competing demands and the existing relationship between the CPM and the practice appears to have been a critical enabler in helping these practices to use the APCC program in this environment

CPM013: "Having a relationship with the key staff member who is going to be leading it (enables participation). Because when you say, OK so you're going to have to do Plan, Do, Study, Act cycles and submit data, they're like aagghh. But saying you can call me, you can call me anytime and I can help you with it. I'll come out each time and I'll sit down with you and help you with it just reassures them."

It was also suggested that the change from Divisions of General Practice to Medicare Locals has resulted in the loss of organisational QI memory. With the removal of explicit funding of CPMs through Medicare Locals, some staff left and others were re-positioned within their Medicare Local with a broader scope of work, impacting on the time and resources available to dedicate to the APCC program.

CPM08: "when the Collaboratives began, you were pretty much looking at a dedicated program officer and the huge success in this program was that you were able to pay repeated dedicated attention, which is built on relationships and reinforcements ..., but [now] if I'm doing my regular work plus supporting seven practices, the reality of getting there once a month or more, that's really difficult for me, but our organisation's not funded to give me the amount of time that would maximise the benefits."

While the format and delivery of the APCC program has been responsive to technological change with the introduction of hybrid and virtual waves, it is clear from study participants that face-to-face contact still plays an important role in the level of engagement of practice staff with the program. Most participants still wanted some face-to-face meetings with program facilitators and with their local points of contact (i.e. CPMs).

CPM09: "...talking to program officers [that] have been involved, one said, 'virtual waves are good, but it's still not the same as sitting around the table and talking."

Flexibility in delivery of the APCC program seems to be important to practices, with a combination of face-to-face workshops where learnings can be maximised and time can be spent networking with like-minded individuals, interspersed with online delivery, which may be more convenient in an environment of time and resource pressure.

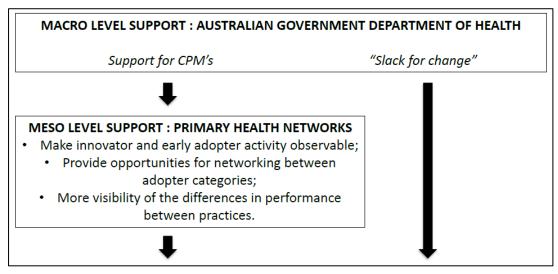
MESO-LEVEL CHANGE: loss of dedicated funding of CPMs		
UPTAKE	USE	SPREAD
BARRIER	BARRIER	BARRIER

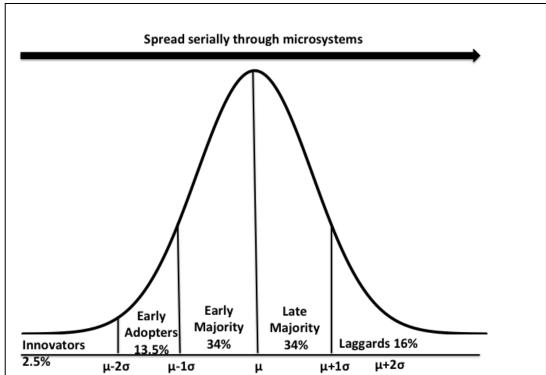
FLEXIBLE PROGRAM DELIVERY		
UPTAKE	USE	SPREAD
ENABLER	ENABLER	ENABLER

The way forward

Using the findings from this study we can identify the roles of the macro and meso levels in further promoting the spread of the APCC in Australian primary care (Figure 3).

Figure 3 – The role of the macro and meso levels in spreading QI innovation through Australian primary care microsystems





Adapted from Rogers 2003.

To date we may conclude that those who have participated in the APCC program are the "innovators" and "early adopters" and that future strategies need to consider the type of support that would increase spread to others.

Future strategies need to consider that general practice operates under significant time and resource constraints that can make it difficult to adopt new innovation. Hence one aspect of strategy is the need to create, as Berwick stated, the "slack for change"³¹. At the macro level the role for the Australian Government is to create an environment for improving quality and safety for patients.

Walshe⁴² suggests that implementation is the key success factor of any QI initiative. Successful implementation relies on the availability of local "vehicles for spread and support". CPMs with the time and resources to dedicate to practices undertaking QI are a crucial component in the uptake, use and spread of the APCC program. Explicit CPM funding should be made available in return for reportable and achievable QI objectives and goals.

The IFA informants indicated that they have recognised the importance of the CPMs located at the meso-level and so they have introduced Medicare Local waves and Medicare Local Quality Improvement Partnerships. How these initiatives will evolve with the transition to Primary Health Networks is uncertain. It would be wasted effort if the gains in QI made thus far are once again threatened because of meso-level structural change.

Our recommendation is that funding be re-introduced for dedicated CPM positions within meso-level support organisations. This could be achieved by:

- contractual agreement between the Australian Government and Primary Health Networks to provide direct funding for CPMs; or
- reinstating funding arrangements of CPMs through IFA.

Explicit funding of localised support positions could be used to connect innovator and early adopter participants to "show and tell" their Collaboratives experiences with other practices. By harnessing innovation diffusion theory, the scope for CPMs to coordinate and encourage localised spread of the program is large. Innovation theory states that the success factors for introducing and sustaining innovation include that it is compatible, observable and appropriately diffused through social systems over time²³.

The key to influencing the middle and late adopter groups is by making the innovation visible to them locally. They need to be able to see, enquire and test the innovation, which has already been adopted by trusted local colleagues. The strategies needed to make the APCC program observable and understood by the remaining 80% of Australian general practices will require CPMs to capitalise on their local relationships so that spread occurs through greater local efforts. CPMs require the time and resources to be able to undertake the necessary work and the present funding arrangements do not allow CPMs to engage in this way.

The APCC program currently invites former participants to speak at workshops. The key will be to find and promote a varied mix of aspirational figures (innovators and early adopters) from different practice types, dealing with different patient demographics and introducing the APCC within their practices. CPMs are needed to network between practices, making early adopter activity more observable so that the differences that exist between practices can be more easily seen and used as motivators for change.

Dedicated funding may also provide the time and resources to CPMs to ensure the "QI readiness" of practices prior to their participation in the APCC program. In their discussion paper on QI in the UK, Dawda et al³³ advocated the use of a tool for assessing the organisational culture and readiness of general practices for making and sustaining improvements. "QI readiness" was demonstrated to result in more productive and more sustainable QI processes. A similar tool could be endorsed for use as one CPM stated in assessing the "QI readiness" of practices and in preparing them for managing change.

CPM08: "You actually need to have that lead up time, where you're preparing them and informing them, and actually doing a bit of a readiness

assessment to see how they're going to work with the program and what's going to work best for them, because you do have to tailor around specific general practice needs as much as you can."

Our findings indicate that even among the innovators and early adopters in this study QI readiness" of practices varied prior to their involvement with the Collaboratives. The funding of dedicated CPM positions at a local level would mean that approaches could be tailored to the needs of individual practices.

RECOMMENDATIONS

To the Improvement Foundation of Australia

Encourage and promote uptake in the APCC program by:

- Increasing the profile of what Collaboratives are and how it can benefit practices.
 Make information on Collaboratives principles and processes available to practices with a focus on the practicalities in the Australian general practice. Clear benefits of QI to practices could be demonstrated through case studies and examples of real-life situations in which the APCC program has assisted in making quality improvements.
- 2. Providing a solid business case to potential participants. A cost-benefit analysis could be undertaken and given to potential participants which focuses on both financial and patient outcomes. The business case for participation in the program should be clearly spelt out using real-world examples from previous participants who have improved their systems and thus their practice bottom line as a result of improvements made.
- 3. Emphasising the positive patient outcomes achieved by the program. Provide information on the positive health outcome for patients of QI involvement. Although attribution of patient outcomes may at times be difficult (and care should be taken not to "claim" outcomes that may be partly attributable or due to other factors) positive case anecdotes such as improved access and care redesign could be used.
- 4. Improving the flexibility of the program, so that those with time or other commitments can benefit.
 Further exploration of the mixed methods of delivery currently being offered (i.e. virtual waves, hybrid waves) may increase uptake of the program, particularly for those with significant family or other commitments.
- 5. Further promoting the CPD points on offer through participation, particularly to those from the later innovation adoption categories who may not accrue CPD points as easily as the innovators and early adopters.
- 6. Increased emphasis on privacy and confidentiality on the use of practice data to deal with concern about external oversight.
- 7. Improving the technological capacity and capability of general practice staff through continuing education and support.
- 8. Advising longer lead times to CPMs.
 CPMs function in organisations that plan their strategic foci and resources well in advance. Therefore IFA could work closely with meso-level support organisations to ensure that upcoming waves are notified with sufficient time to support recruitment amongst their competing priorities. Towards the end of each year, or business year, prospective timeframes and schedules could be notified to CPMs. This will provide the scope for more focus on the "QI readiness" of practices prior to APCC involvement.

Improve use of the APCC program by:

- 9. Assessing the "QI readiness" of practices prior to wave commencement. More focus on the "QI readiness" of practices should be undertaken prior to their involvement in the APCC program. A structured and formalised approach to QI readiness assessment would ensure consistency across CPMs and give practices the best chance at QI success.
- 10. Encouraging and supporting capacity building initiatives.

 Particularly surrounding the use of technology in data capture, recording and extraction.
- 11. Further investigating the unpopularity of the PDSA cycle.

 Perceptions of the PDSA cycle as "too academic", "difficult" and "confusing" should be explored and balanced against the need for program fidelity to improve utilisation and sustainability of QI within practices.
- 12. Improving the technological capacity and capability of general practice staff through continuing education and support.

Encourage spread of the APCC program through:

13. A strong working relationship with meso-level organisations (Medicare Locals or Primary Health Networks).

The role of local relationships in the uptake, use and spread of the APCC program was a main finding of this study, therefore a working partnership between IFA and meso-level support organisations is required to ensure that external support is provided to practices to participate in the APCC program .

14. Further promotion of APCC successes.

The use of local "show and tell" events that bring the innovator and early adopter together could make the benefits of the APCC program more observable.

To the Australian Government Department of Health

- 15. Provide dedicated funding for CPMs.
- 16. Examine models for funding of general practice so that there is capacity for participation in QI such as the APCC (slack for change).

Conclusion

Using a framework of clinical microsystems and the diffusion of innovations we have shown the enablers and barriers to the uptake, use and spread of the primary health care Collaboratives in Australia. The enablers and barriers have been described across the three clusters of influence, being the perception of the APCC by general practice, the nature of Practices and staff and the contextual factors in the environment.

To address the influences at the first two levels we recommend the use of the innovator and early adopter practices to show the other adopter categories the benefits of participation in the Collaboratives and how it can be done. To address the contextual influences in the environment we recommend dedicated funding for the CPM positions so that local diffusion can be facilitated and so that the later adopter practices are supported when they do decide to participate in the APCC program.

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Appendix A: Examples from the interview schedules

KEY INFORMANTS	
Category	Question
Uptake	What factors do you think encourage/enable participation in the APCC program?
	What factors do you think discourage/prevent participation in the APCC program?
	What is the best way to foster participation in the APCC program?
Use	What challenges do participants face in utilising the Collaboratives program within their practices?
	Of the practices that you have observed, what are the things that differ between those practices that take up the program and do really well, those who take it up and struggle a bit, and those who don't take it up at all?
	What are they key challenges in the sustainability of the program, and what could be done to encourage sustainability?
Spread	Do you think the APCC program is well known across Australia?
	What further steps could be taken to improve the spread of the program?

GENERAL PRACTICE	– GPs, PMs, PNs
Category	Question
Uptake	Why did your practice decide to take part in the APCC?
	What factors enabled your participation in the APCC?
	Why do you think other practices might not want to participate in a QI program like the APCC?
Use	What was the easiest/most difficult part of running the improvement program?
	What clear improvements in quality and safety, if any, were observed?
	When reflecting on your results from the program do you feel that the effort put into participation was worthwhile?
Spread	Would you recommend participation in the APCC program to others? Why/why not?
	Is there anything you would change about the APCC program?

COLLABORATIVE	PROGRAM MANAGERS
Category	Question
Uptake	How are general practices recruited into the APCC program?
	What factors do you think enable participation in the program?
	What factors do you think discourage participation in the program?
Use	What challenges do participants face in utilising the Collaboratives program within their practices?
	Of the practices that you have observed, what are the things that differ between those practices that take up the program and do really well, those who take it up and struggle a bit, and those who don't take it up at all?
	What are some of the main reasons a practice may discontinue their involvement in the APCC program?
Spread	What factors encourage/discourage the spread of Collaboratives?
	Do you think the Collaborative program is well known across Australia?