



Implementation of the *Integrated Care for People with Chronic Conditions (ICPCC)* program in SESLHD

Integrating chronic care management and reducing risk in practice

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KEY POINTS



Chronic patient centred care management outside the hospital

The *Integrated Care for People with Chronic Conditions* (ICPCC) program provided overall care management for patients with multiple complex chronic conditions. Program managers, implementers and referrers had clear understandings of the ICPCC program purpose in assisting patients at risk of potentially preventable hospitalisation (PPH) to effectively self-manage their health at home. The program provided patients with health coaching to reduce barriers to self-management and connect with their motivation to change behaviour.



Integrated care coordination of chronic conditions

The ICPCC program is an important program that provides patient centred coordinated care for patients with chronic multi-morbidities and complex needs. It aims to reduce fragmentation and duplication of services by assessing the suitability of patients for enrolment into the program and whether there are existing multi-disciplinary teams already involved. It then works in partnership with other health and social services to meet the patient's identified goals and enables patients to be discharged from the ICPCC program once connected with the care they need.



Selecting suitable patients for self-management at home

Patients most likely to benefit from the program are those that can self-manage at home. The Chronic Conditions Patient Identification Algorithm (CCPIA) was used to identify patients suitable for the ICPCC program at risk of future unplanned hospital admissions. Referrals from health professionals were also an important way to identify patients suitable for the program who have not been identified via the algorithm.



Awareness of the program model of care

With the changes to the structure to the ICPCC program now in place, there are opportunities for greater ongoing supportive communications and messaging about the program's model of care to health partners and service managers.

CONSIDERATIONS AND RECOMMENDATIONS

PATIENT

This report highlights the importance of the ICPC program in providing integrated person-centred care for patients with multiple complex chronic conditions. The program integrates and coordinates a range of services rather than providing direct clinical care. Care provided was unique in that it:

- involved intake staff assessing whether the patient already had a multi-disciplinary team assisting them and what contribution the ICPC program could make to their care;
- examined the patient's physical and social needs in context; Care Coordinators set goals with the patient to overcome specific barriers and enhance their capacity to self-manage at home and in the community;
- integrated and partnered with a range of existing health and social services at a very practical level for the benefit of the patient in relation to care planning, care navigation and health coaching. It also ensured it did not duplicate what other services were doing.

INTEGRATED CARE UNIT

It is recommended that the SESLHD ICPC program outcomes are shared with NSW Ministry of Health including the type of patient to benefit. Hospital-based clinicians and chronic disease management staff may also want to be informed about the enrolment of their patients in the ICPC program (or its current iteration the Planned Care for Better Health (PCBH) program).

With the changes in the structure of the ICPC program now in place, it is recommended there is development of an ongoing strategic communication plan to engage the various stakeholders. Continuing to have a flexible approach to program design and purpose, based on ongoing program monitoring and feedback from program implementors and partners, has been useful in managing program change.

SOUTH EASTERN SYDNEY LOCAL HEALTH DISTRICT (SESLHD)

It is recommended that SESLHD should highlight opportunities for integration between services. This would ensure less fragmentation and avoid duplication of services. More opportunities to enable and sustain partnerships could be explored between chronic disease management programs to streamline patient pathways. It is recommended that the District should continue to support self-care models and person-centred care as an effective way to reduce hospitalisation (Nichols et al 2020).

NSW HEALTH

It is recommended that NSW Ministry of Health increase communication and dialogue with the District about ICPC program changes to increase program coherence and understanding. NSW Health should also acknowledge the important role that health professionals in the District play in selecting suitable patients that would benefit from the program that were not selected through the algorithm. They have a role to play in endorsing and facilitating self-management as part of the standard care provided to people with early-stage chronic conditions.

EXECUTIVE SUMMARY

This report examines the implementation of the ICPC program into practice within SESLHD when the CCPIA was first introduced in May 2019. The Integrated Care Unit of SESLHD administering the ICPC program enlisted CPHCE at UNSW to conduct this evaluation in order to understand:

- a) how the ICPC program has been implemented at Ministry of Health, Local Health District, program, and clinician/ patient levels;
- b) the characteristics of patients included to the program through the risk stratification algorithm versus other referral processes; and
- c) the key features of the program as exemplified through case studies of patients.

The data collected included qualitative research using interviews, a focus group and case studies, and descriptive statistical analysis of patient characteristics.

KEY FINDINGS

a) Program implementation

The analysis used Normalization Process Theory (NPT) to consider the factors that promote or inhibit embedding the ICPC program into practice. Important components in integrating interventions identified by NPT include: coherence of program purpose; cognitive participation of participants; collection action; and reflexive monitoring. The following themes, which have been mapped to the components of the NPT framework, emerged in relation to the implementation of the ICPC program.

Coherent program purpose in an area of increasing health change

All participants who were interviewed, including those who manage, implement, and refer to the ICPC program, understood its purpose in integrating and coordinating care for patients with complex chronic conditions at risk of PPH. It focused on assisting patients to self-manage their conditions at home based on their health goals. Participant roles differed slightly in achieving this goal: while managers focused on efficiency, flexibility and reducing duplication; implementation staff focused on assessing patient needs, reducing barriers, enhancing patient health literacy, meeting patient centred goals and forming partnerships with other services.

Cognitive need for the ICPC program by participants

Essential to having a clear program purpose, is for all involved to understand the need for the program. Program implementers proactively formed relationships with other chronic disease management programs in the District to increase their understanding of the ICPC program and to identify the right patient cohort who would benefit from it.

Risk stratification algorithm and referrals are both important

Patients were selected for the program through the CCPIA and through health professional referrals. Program managers and staff found the algorithm was an effective systematic way to identify potential patients who could benefit from the program who were at risk of future PPH. Referrals from other health professionals in the District were also important in selecting suitable patients that were not selected through the algorithm.

Dissemination of program design and outcomes

While those who directly implemented the program recognised its effectiveness, there could be greater promotion of program benefits to middle management and understanding of the importance of health professional referrals to the NSW Ministry of Health. Some chronic disease management staff in the

District were confused about recent changes in the model of care that could have been clarified through better communication processes.

b) Characteristics of patients included in the program

The demographics of patients in the SESLHD ICPCC program were reviewed from when the CCPIA tool was introduced on 9 May 2019 until 13 Feb 2020. In this eight-month period, 83% of patients entering the program came via the algorithm and 17% via health professional referrals. While patients sourced via the algorithm and the referrals were somewhat similar in demographics, those sourced via the algorithm were slightly older and less culturally diverse than those who were referred through health professionals. This could indicate that the additional care needs of patients (beyond those apparent in the data used by the algorithm) were being identified by those referring them. The selection of a slightly younger cohort could also benefit from self-management at home. There was also a higher proportion of women identified for the program through health professional referral. On further analysis, however, there was not a major difference in gender allocation according to the health departments from which they were referred.

c) Key features of the program highlighted through case studies

Case studies of patients in the ICPCC program, based on staff interviews and service data, are presented to demonstrate key features of program implementation and outcomes. While the algorithm was able to identify patients at risk of hospitalisation, patients identified through health professional referral were still relevant to the program but were not identified through the algorithm. They were assessed as at risk of unplanned hospital admission and in need of: (i) overall care coordination to manage multiple chronic conditions; (ii) navigation and improved access to care programs; and (iii) health coaching to better manage their conditions at home. These case studies show how patient centred goals were able to be met with the more systemic goals of reduced hospital admission.

Conclusion

The NPT framework assessed the implementation of the ICPCC program in practice demonstrating the importance of understanding the purpose, impact of local context and the type of work needed to achieve benefits. Overall, research participants recognised the purpose and benefits of the program. However, following recent design and process changes, messaging to stakeholders could be enhanced. The chronic care algorithms proved useful in predicting patient hospitalisation but did not identify all suitable patients especially those in the community with rising risk who have not been admitted to hospital. NSW Ministry of Health participants in the research stated that, in the future, the algorithm will better identify patients at risk of future PPH and include more of the types of patients assessed as needing assistance through health care professional referral. While the algorithm is still being refined and modified, health care referrals are still integral to capturing more patients who may benefit from enrolment in the ICPCC program.

BACKGROUND

- As people are living longer with chronic health conditions, they are at increasing risk of unplanned hospitalisation. The ICPC program sought to provide coordinated person centred care and enhance patient self-management at home and in the community.
- Various statewide health programs have been designed to enhance integrated care of patients with chronic diseases who would benefit from care coordination and thereby reduce potentially preventable hospitalisation (PPH).
- While the ICPC program was NSW Ministry of Health funded and led, the way that the program was provided by location was different due to differing governing structures and reliance on local services.

INTEGRATED CARE AND CARE COORDINATION

As the life expectancy of the population increases, so does the proportion of people living with multi-morbidities and chronic conditions. This has placed increased pressure on publicly funded acute health services to provide complex care and improve health outcomes. The focus on treating one disease type is no longer the norm in health care. With multi-morbidities, there is an increased need to effectively manage information between different providers, coordinate and manage care, and reduce care fragmentation. Integrated Care is defined as “an approach that aims to deliver seamless care within the health system and its interface with social care. It places people at the centre of care, providing comprehensive wrap around support for individuals with complex needs and enabling individuals to access care when and where they need it” (NSW Ministry of Health 2018; 2). Person centred care in this process is defined as “an approach to the planning, delivery, and evaluation of health care that is grounded in mutually beneficial partnerships among healthcare providers, patients and families” (ACSQHC 2011; 13).

The population at risk of potentially preventable hospitalisation (PPH) and emergency department (ED) presentations could be assisted through a model of integrated care that assists them to successfully manage their health at home to achieve better health outcomes. Care coordination is one of the ways to assist this population. There are a range of definitions of care coordination which focus on systemic, provider and/or patient goals (Shultz and McDonald 2014). A more recent definition states it is the "deliberate person-centred organisation of patient care activities between providers to facilitate self-management, appropriate care, health outcomes and greater efficiency" (Rapid Review, CPHCE, 2017).

There is overall positive evidence on the effectiveness of care coordination in health care. Internationally, studies report a range of benefits including that: it reduces care fragmentation for people with complex chronic conditions and improves health outcomes (Goodwin et al 2013; Davies et al 2008); it reduces ED presentations and length of stay (Mallitt et al 2017); and it increases the efficiency of health care delivery between services (Peterson et al 2019). However, critics of the approach state that it does not adequately examine the social needs of patients; one size approach does not fit all; a coordinated program does not fix systemic fragmentation in the health system; and consideration should be given to prevention of complex patient needs not just their management (Vrijhoef 2020).

The assessment of care coordination efficiency and evidence has been hampered by a lack of consistent definitions, interventions and evaluation measures (Shultz and McDonald 2014). This highlights the need for programs to measure, evaluate, compare, and reflect on performance and evidence (Goodwin et al 2013). In integrated care, there are a plethora of complex interventions which have been scaled up or applied in different contexts. This highlights the need for theoretical frameworks that understand the context in which care is provided (Peterson et al 2019). How care coordination has been implemented is strongly defined by localised services and needs of patients (Goodwin et al 2013). With ongoing change

and health reform occurring in integrated care, there is a need for strong conceptual understandings of current approaches to ensure effective management, design, delivery and evaluation of care (Valentijn et al 2013). An understanding of how integrated care for people with chronic conditions is conceptualised and occurs in practice, helps to build this evidence base.

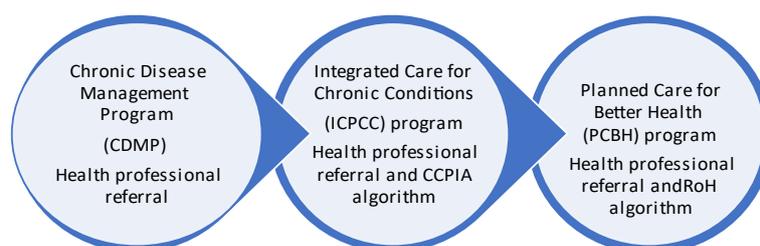
CARE COORDINATION IN NSW

There have been previous statewide moves in NSW to provide integrated patient centred care to assist populations with complex conditions at risk of PPH. Encouraging patients to take a more active role in managing their own health has proven successful in this regard. In 2009/10, the NSW Chronic Disease Management Program (CDMP) provided care coordination and self-management support for patients with the five most common chronic diseases at the time. The program targeted patients with chronic illnesses who had potentially avoidable acute service use. In 2014, a review of this program revealed that patients were satisfied, but the program did not reduce hospital admissions (NSW Health 2014). In fact, there was an increase in unplanned admissions as the person's illness progressed (Billot et al 2016). Entry into this program was mainly by health professional referral and there was no risk stratification algorithm involved.

Soon after the CDMP review, the NSW Ministry of Health developed an Integrated Care Strategy to 'transform the delivery of care, improve health outcomes for patients, and reduce costs due to inappropriate and fragmented care, across hospital and primary care services' (NSW Health 2017). In line with these policy objectives, the CDMP was redesigned into the Integrated Care for People for Chronic Conditions (ICPCC) program which aimed to integrate care while reducing fragmentation and duplication of services.

Since commencement, the implementation of the ICPCC program across the state has been varied (NSW Health 2014) indicating the need for consistency in the program components of care coordination, care navigation and/or health coaching (CPHCE 2017). At the same time, NSW Health developed complexity and vulnerability indicators of a patient's increased risk of unplanned hospital admissions. The Chronic Conditions Patient Identification Algorithm (CCPIA) was introduced to assess the suitability of patients for inclusion in the program (NSW Health 2017) (see Appendix 1). This algorithm was based on a simplified identification measure of people at risk of hospitalization developed in Canada (Health Quality Ontario 2013) and was later adopted by NSW Ministry of Health (NSW Health 2017). The algorithm assigns a patient a score between 0-14 based on their risk of hospitalisation in the next 15 months. The higher the score, the higher the risk. The algorithm was based on four variables or risk factors that give patients points based on: being over 65; having acute care admissions; ED visits 6 months prior; and having the top chronic conditions in the Case Mix Groups (CMGs) of Chronic Obstructive Pulmonary Disease (COPD), heart failure, bowel disease, diabetes and gastrointestinal obstruction (SESLHD 2017). In 2019, the CCPIA algorithm started to be run automatically through the Patient Flow Portal (PFP) across the state as a means of identifying the most appropriate patients for inclusion to the ICPCC program. In July 2020, the ICPCC program changed its name to Planned Care for Better Health (PCBH) program and an updated Risk of Hospitalisation (ROH) algorithm was introduced.

Iterations of care coordination programs in NSW



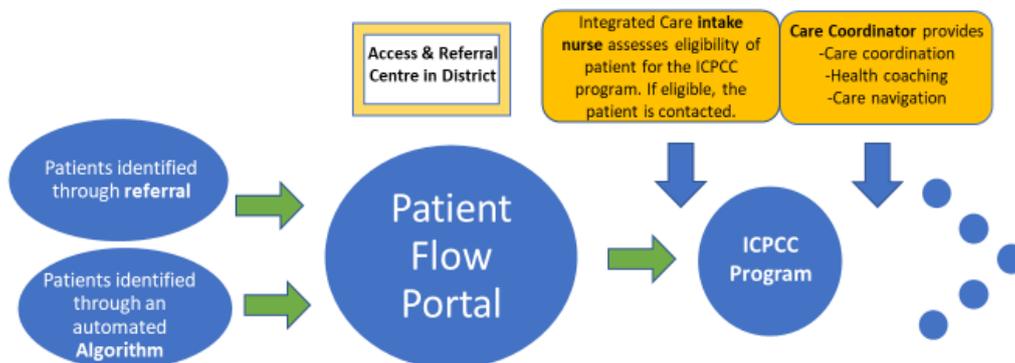
ICPCC PROGRAM IN SESLHD

SESLHD, the urban setting for the evaluation, is one of the largest Local Health Districts by population in NSW public health system and is managed by NSW Ministry of Health. It covers a geographical area of 468 square kilometres from Sydney's central business district in the north to the Royal National Park in the south. It delivers health care to around 930,000 residents across seven local government areas and manages nine hospitals. In the District population, 40% are overseas born, 30% are from non-English speaking backgrounds, 35% speak a language other than English, 37% have long-term health conditions and 8720 (approximately 1%) identify as being Aboriginal (SESLHD 2020).

In SESLHD, the primary health care sector first managed the 'Connecting Care in the Community' CDMP program through Medicare Locals in 2009 (who were in direct service provider roles). It was then managed through Primary Health Networks in 2015 (who were then in commissioning roles). After a review in 2015 (Jacq Hackett Consulting 2015), the program changed to being fully managed by SESLHD and changed its name to the ICPCC program in line with integrated care policy changes at the state level.

After May 9, 2019, patients were identified for potential inclusion in the ICPCC program at SESLHD via both the NSW CCPIA and referrals from health professionals. For a patient to be included, Integrated Care Unit registered nurses located at Access and Referral Centres (ARCs) in SESLHD assessed the suitability of patients identified via the algorithm in the PFP and through referrals from health professionals. If a patient was suitable for the program, they were contacted and asked if they would like to give consent to be part of the program. A Care Coordinator would then follow up and use the Chronic Conditions Patient Selection (CCoPS) tool to assess their health goals and the type of interventions that could be provided.

Patient inclusion into the ICPCC program in SESLHD



Preliminary reports from ICPCC program implementation staff in the District inferred that patients selected via the new CCPIA algorithm were more advanced with their chronic conditions and thus would be less likely to benefit from health coaching. In comparison to this, some ICPCC staff felt that the patients referred from health professionals were better able to self-manage their conditions at home and change their behaviour to ensure better health outcomes.

As part of an Evaluation Framework of the Integrated Care Strategy in SESLHD (SESLHD & CESPHE 2018), the Integrated Care Unit at SESLHD and CPHCE at UNSW then developed a plan to assess how different stakeholders viewed the program, understood its goals and conceptualised the type of patient who would benefit most from participation in the program.

PROJECT METHODOLOGY

- This project sought to understand how the ICPC program had been implemented into practice in SESLHD from May 2019 when the CCPIA algorithm was first introduced.
- Qualitative methods were used to explore the perspectives of staff at different levels within the health system of how the program was being implemented and describe the characteristics of patients referred to the program through various sources. Normalisation Process Theory was used to describe how the ICPC program was realised in practice including the factors enhancing or inhibiting implementation.
- Integrated Care Outcomes Data (ICOD) from the program was analysed to assess the characteristics of patients included in the program through the algorithm versus health professional referral.

AIM

To understand how the ICPC program was conceptualised and implemented into practice.

RESEARCH QUESTIONS

- How has the program been understood and implemented at the patient/clinician, program, Local Health District and NSW Health levels?
- What are the characteristics of patients identified for referral to the Program through the CCPIA risk algorithm versus other referral processes?
- What are some case studies of patients included in the program based on service data and clinician interviews to understand the type of care provided?

DATA SOURCES

- **15 semi-structured interviews** with NSW Ministry of Health staff, Care Coordinators, Integrated Care Unit managers and referrers to the program within SESLHD (see Appendix 2).
- **Focus group** with ICPC program staff (see Appendix 3).
- **Case studies** including de-identified vignettes of patients in the ICPC program, based on staff interviews and service data, to demonstrate key features of program implementation and outcomes.
- **Integrated Care Outcomes Data (ICOD)** from the program were analysed to assess the characteristics of patients included in the program since the CCPIA algorithm was first introduced into the District.

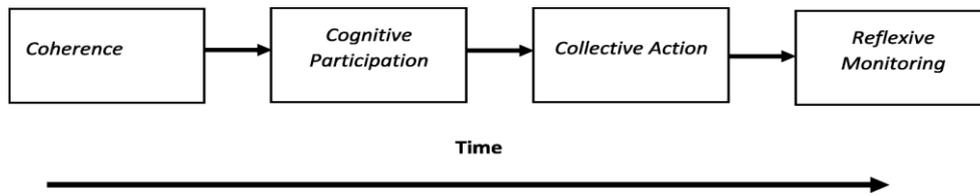
ANALYSIS

Qualitative

Interview, focus group and cases study data were analysed to identify common themes (Ezzy 2002; Saks & Allsop, 2013). The transcripts of the data were coded into categories according to patterns in the research. An inductive approach was taken so that themes emerged directly from the data (Liamputtong Rice, Pranee & Ezzy 1999; Thorne 2016). The computer software package NVivo 12 (qualitative research software) assisted with data management and analysis (QSR 2019).

The NPT framework guided the analysis and coding framework. NPT examines how interventions are implemented including the gap between research and practice (May et al 2018). Four constructs represent the types of work needed to implement a new intervention including its coherence, cognitive participation, collective action and reflexive monitoring (May 2015). These components can be used to understand the factors that inhibit or promote incorporation (Alharbi et al 2014). The following diagram outlines how the

intervention components can occur in sequential way over time to ensure successful implementation (Alharbi et al 2014 in May et al 2018).



Quantitative

A review of PFP ICOD data was conducted to describe the demographic characteristics of patients identified for participation in the program using the risk stratification algorithm and other referral processes. The ICOD data were analysed in the statistical software package SAS and charted. Frequencies of major diagnostic categories and patient demographic characteristics were displayed (using line graph, bar chart or histogram) and the outcomes of the quantitative data analysis were summarised in the text.

Rigor and validity enhancement

To ensure data reliability and validity of the qualitative data, the coding framework of the interviews and focus groups were reviewed by project members so that variations in understandings could be discussed and refined. Being reflective of the reliability and validity of methods is an accepted approach to reduce bias in qualitative research (Tong et al, 2007).

Quantitative data were reviewed by the research team and ICPC program staff. This was an opportunity to seek clarifications to questions and amend the analysis accordingly.

Ethics

Both qualitative and quantitative components of the data have been approved by the SESLHD's Human Research Ethics Committee [2019/ETH12918].

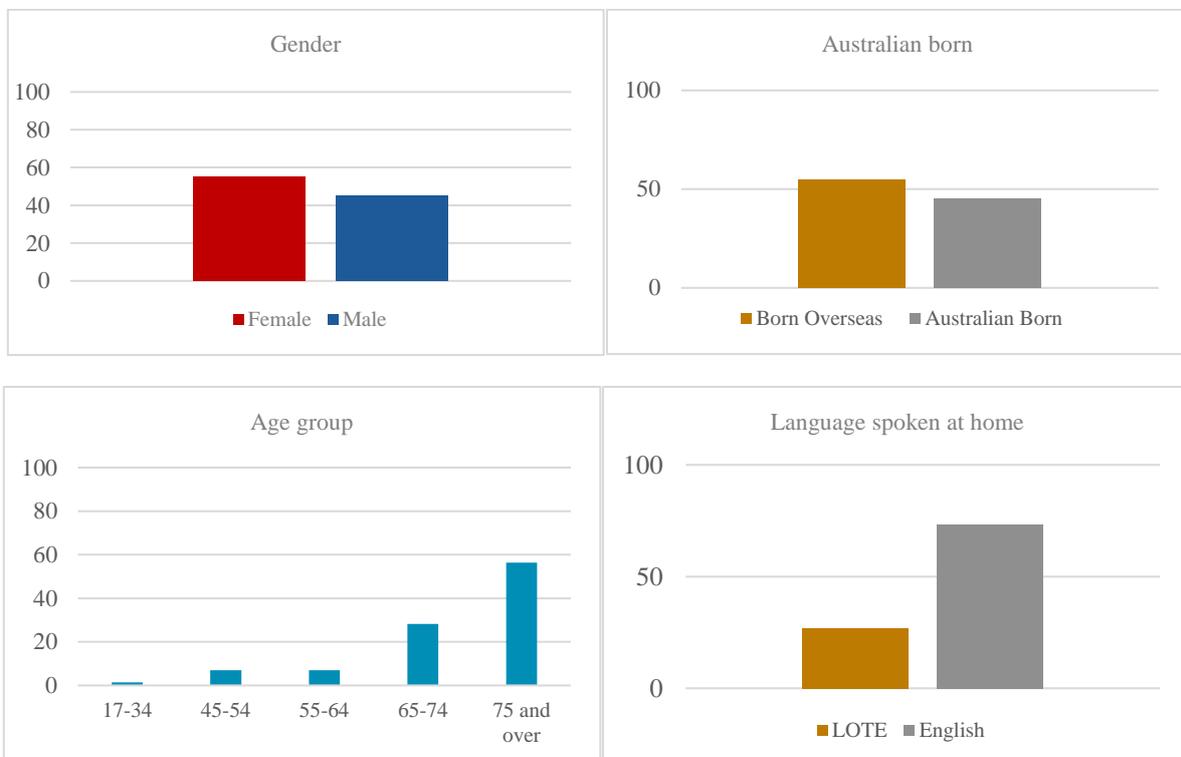
QUANTITATIVE FINDINGS: CHARACTERISTICS OF PATIENTS

- This review assesses the characteristics of patients included in the ICPCP program since the CCPIA algorithm was first introduced into the District from 9 May 2019 to 13 Feb 2020.
- Demographic characteristics of ‘ICPCP’ enrolled patients from ICOD are consistent with an older cohort with multiple chronic conditions.
- Of the patients who were ‘registered’ in the ICPCP program from 9 May 2019 to 13 February 2020, 83% were identified from the algorithm and 17% from referral. Those who were referred tended to be slightly younger, female and more culturally diverse than those identified through the algorithm.

We undertook a brief review of patients in the ICPCP program in SESLHD using ICOD and the District’s Access and Referral Centre data. This review assesses the characteristics of patients included in the program since the CCPIA algorithm was first introduced into the District from 9 May 2019 to 13 Feb 2020 including comparing characteristics of patients sourced through the risk stratification algorithm versus other referral processes.

DEMOGRAPHICS

The demographic characteristics of ‘ICPCP enrolled’ patients from ICOD (n=71) were analysed to show gender, age, status of Australian born, and languages spoken at home. There were slightly more women than men and the proportion of the overseas born population reflected SESLHD demographic data. The higher number of patients in older age groups (predominantly over 65 years old) was consistent with an identified older population at risk of unplanned hospital admissions with multiple chronic conditions. The proportion of people who speak a language other than English was similar to the demographics in SESLHD and the rest of the state.

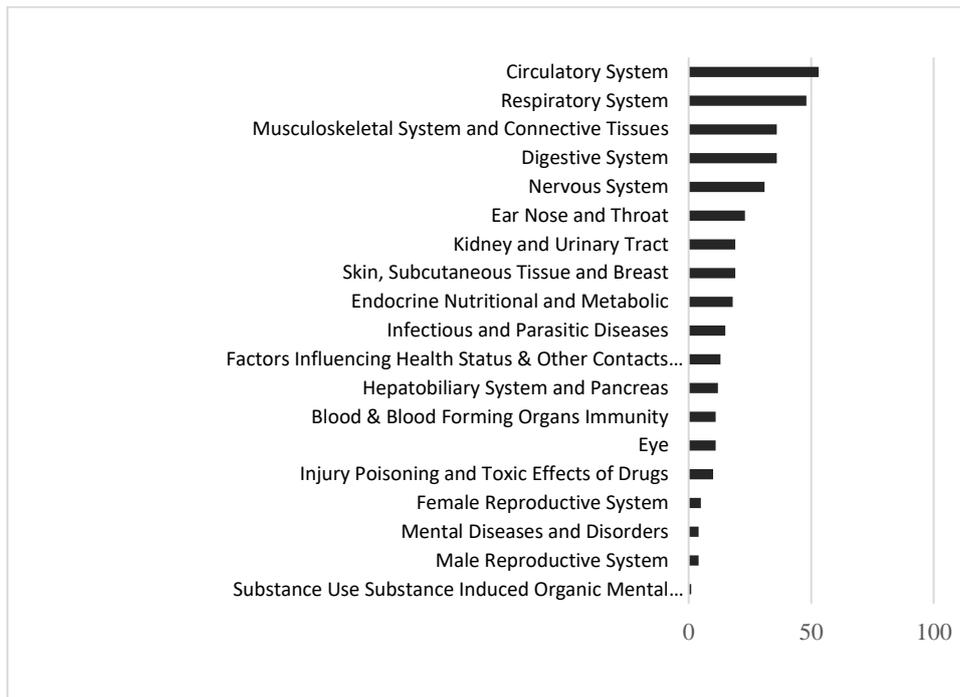


MAJOR CONDITIONS

Patient 'ICPPC enrolled' data from ICD were analysed to assess the number and type of chronic conditions.

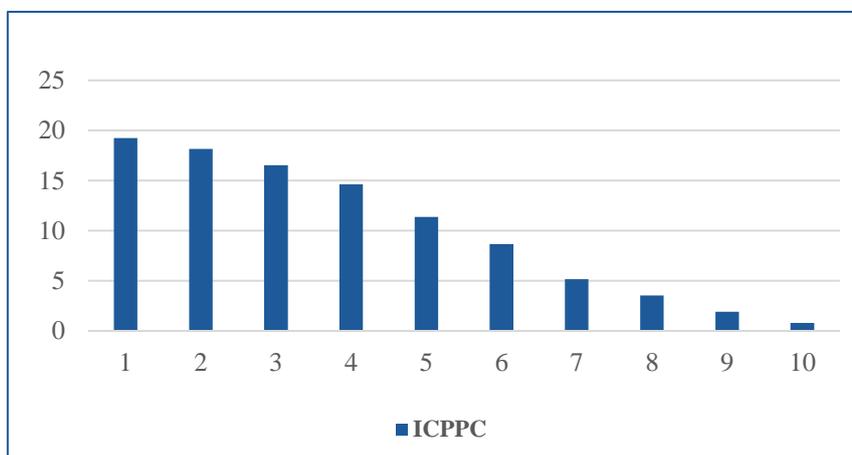
The Major Diagnostic Categories (MDCs) identified in patients were in the circulatory system and respiratory system, followed by the musculoskeletal system and digestive system. This is consistent with the priority areas identified in the CCPIA algorithm of COPD, heart failure and bowel disease, diabetes and gastrointestinal obstruction as influencing the risk of future hospitalisation along with ED attendances and age.

Major Diagnostic Categories: ICPPC enrolled records n=369 (persons n=71)



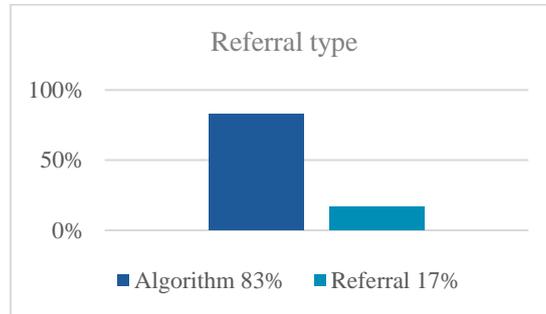
The data for MDCs per patient were analysed to show the percent of their frequency. The data showed that there were 19% of people with one condition, 18% with two conditions, 17% with three conditions and so on. The chart below shows the percent frequency of conditions (using MDCs) per patient identified in the 'ICPPC enrolled' ICD data extract.

Percentage of patients by number of conditions (using MDCs) in the 'ICPPC enrolled' data extract



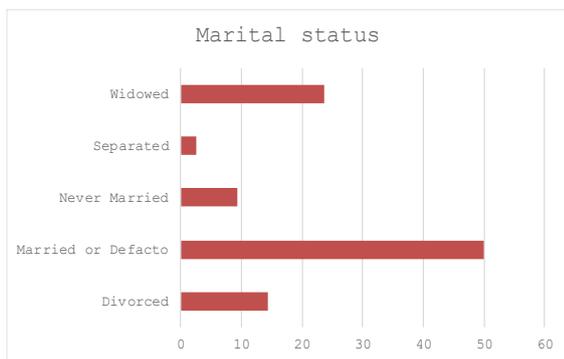
COMPARISON OF PATIENT SOURCES - ALGORITHM AND REFERRAL

A review of the District’s ARC data revealed information on source of referral. Of the 505 patients who were ‘registered’ in the ICPCC program from 9 May 2019 to 13 February 2020, 83% were sourced through the algorithm and 17% from referral.



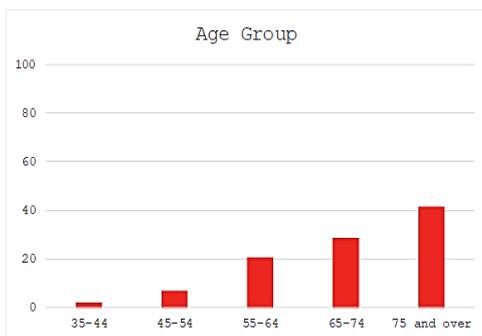
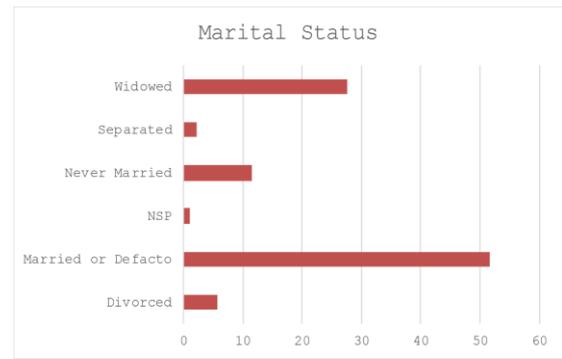
While patients sourced from the algorithm and the referral were mainly similar in demographics (including their marital status), those from the algorithm were slightly older than those who were referred from health professionals.

Referral (n=87)

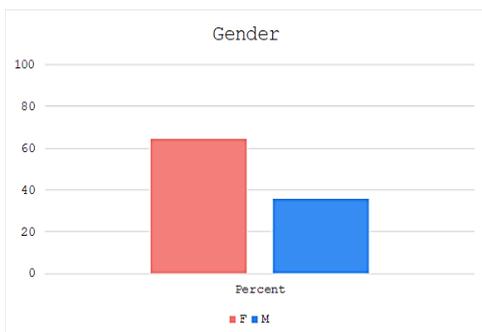
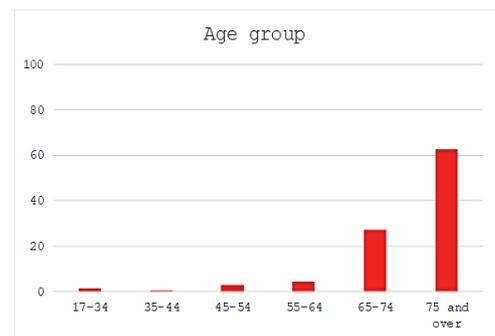


Marital status

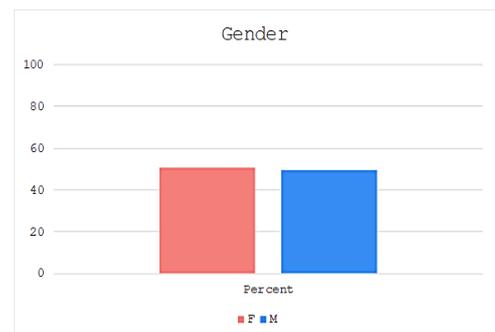
Algorithm (n=418)



Age

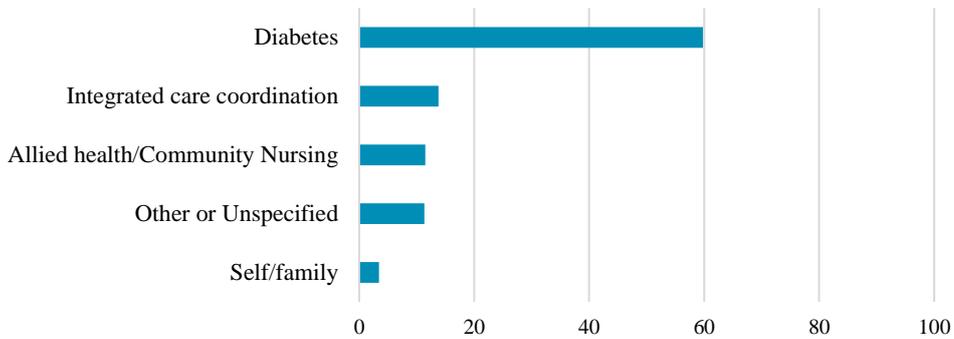


Gender

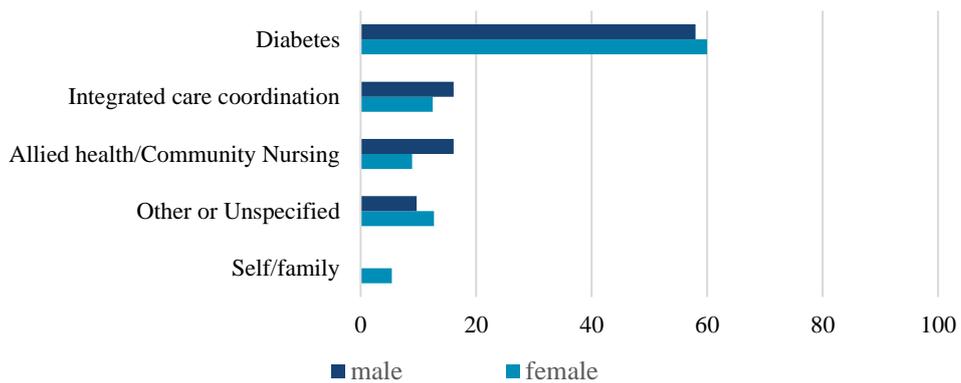


There was a higher proportion of women identified for the program through health professional referral than through the algorithm. On further analysis of reason for referral, there was not a major difference in gender allocation between the health departments from which the patients were referred. Most of the referrals were from a short-term diabetes management program. The youngest cohort of patients were referred from allied health professionals.

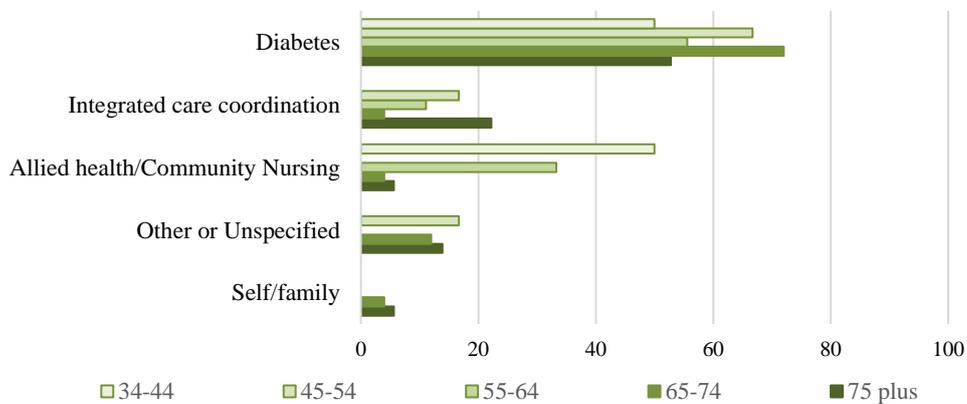
Reason for referral



Referral by gender

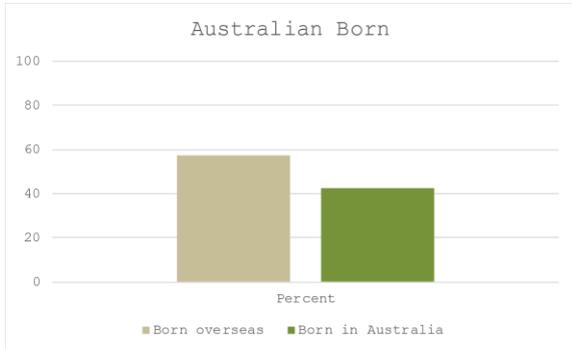


Referral by age group

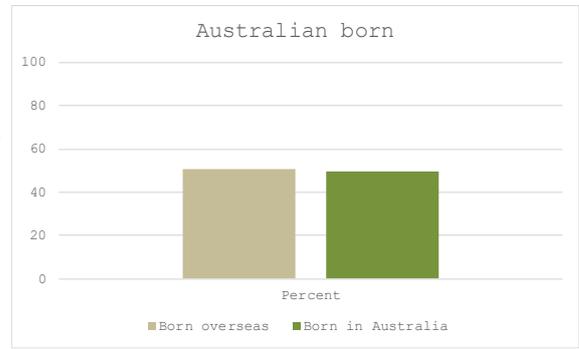


Patients identified through referral showed a higher level of cultural diversity through the indicators of being born outside Australia and speaking a language other than English. This could indicate that health professional referral allowed identification of patient's additional care needs.

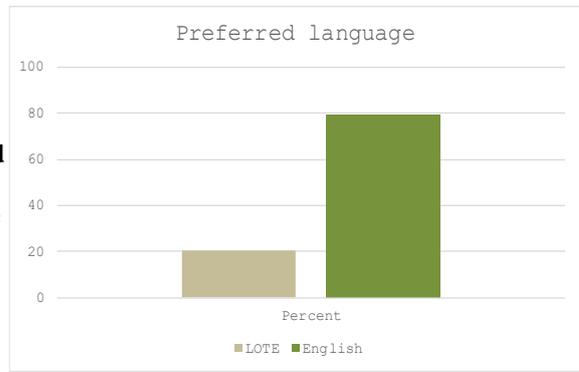
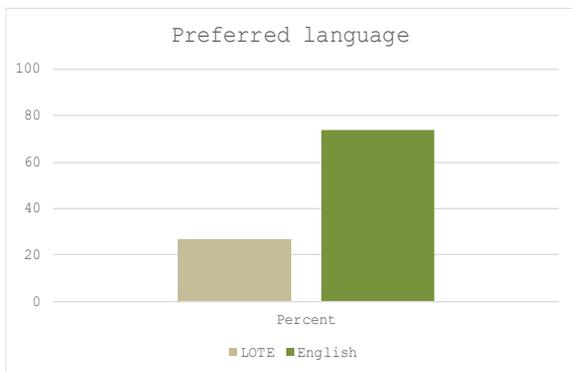
Referral (n=87)



Algorithm (n=418)



**Country
of Birth**



**Preferred
language**

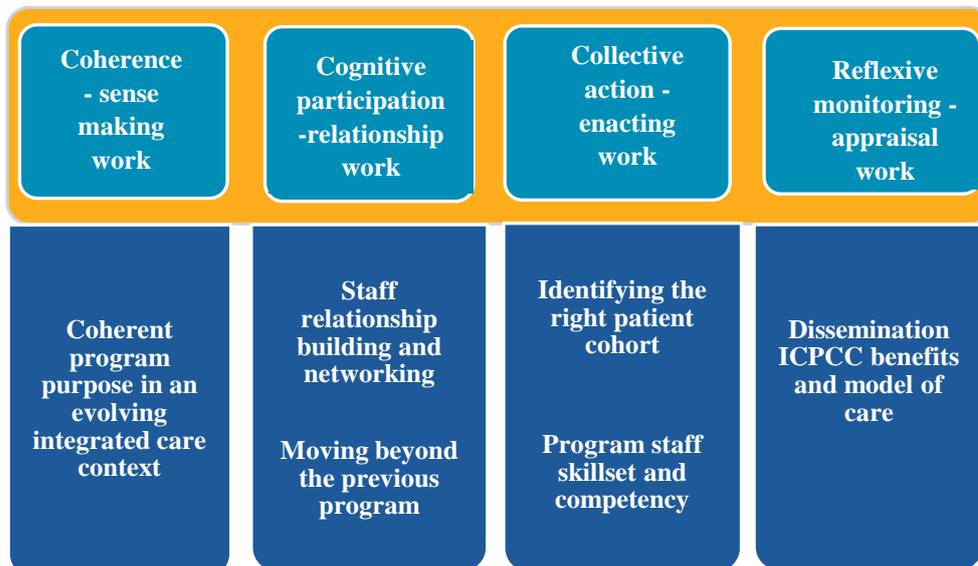
QUALITATIVE FINDINGS: PROGRAM IMPLEMENTATION

- NPT was used to assess the factors affecting implementation of the ICPCC program into practice.
- All participants, from NSW Ministry of Health to ICPCC implementation staff, had a coherent understanding of program purpose. The program focused on care management for patients with multiple complex chronic conditions at risk of PPH to effectively self-manage their health at home.
- ICPCC implementers viewed the risk algorithm as a comprehensive way to identify patients, but health professional referral was an important additional source of patients to the program which could lead to positive outcomes.
- Changes in the running of the program directed from NSW Ministry of Health to the District has disrupted the internal communications processes. In the future there could be greater formal and informal communication within the District and to clinical service managers about the model of care and program benefits.

Analysis based on normalisation process theory

NPT was used to understand and assess the process of implementing the ICPCC program into practice. Four constructs represent factors affecting implementation of an intervention including program coherence, cognitive participation, collective action and reflexive monitoring (May 2015). These constructs were analysed in relation to how the ICPCC program was implemented in practice.

Implementation of ICPCC program using Normalisation Process Theory



There was a strong sense of program **coherence** by all participants in this research who viewed the ICPCC program as being an effective model of coordinating and integrating care for patients at risk of PPH through self-management at home. Program staff (including managers and implementers) enhanced the **cognitive participation** of relevant stakeholders in understanding the distinctiveness and benefits of the ICPCC program. Various forms of **collective action** have been used to capture the right patient cohort. Program staff felt the algorithm was a systemic way to identify patients that would benefit from care coordination. Referral to the program through health professionals was also supported by program implementers as an effective way to identify patients that may not be identified through the algorithm. While those directly implementing the program recognised its benefits, the recent change in the program has meant that program communication processes have been affected in the District. This process could be enhanced through more internal communication and **reflective monitoring** of program messaging.

PROGRAM COHERENCE AND UNDERSTANDING

Coherence is the sense making that people do individually and collectively, so practices occur in a normal way. Components of program coherence include how it is different to other interventions; the shared understanding of its aims, objectives and benefits; understanding individual tasks and responsibilities; and understanding its inherent value (May 2015).

Table 1: Coherence NPT core construct applied to the ICPC program

| NPT component | Questions to consider | Coherence of the ICPC program |
|---------------|---|---|
| Coherence | <p>Is the intervention easy to describe?</p> <p>Is it clearly distinct from other interventions?</p> <p>Does it have a clear purpose for all relevant participants?</p> <p>Do participants have a shared sense of its purpose?</p> <p>What benefits will the intervention bring and to whom?</p> <p>Are these benefits likely to be valued by potential participants?</p> <p>Will it fit with the overall goals and activity of the organisation?</p> | <p>-There was a clear understanding of the program purpose by all participants. How the program was distinct from other chronic disease programs was considered including how other programs were disease specific.</p> <p>-The systemic goals of reducing patient readmissions and meeting patients centred goals were acknowledged by all participants.</p> <p>-There were slightly different understandings of the program benefits and tasks based on individual participant roles.</p> |

Adapted from Murray et al (2010)

Coherent program purpose in an evolving integrated care context

Having a strong understanding of the purpose of the program enhanced the actual way that work was done. It also affects how the other processes of cognitive participation, collective action and reflective processes impacted on the whole cycle of program implementation. How the program is perceived by others also determined how renewed understandings are formed by those within the program.

What I've noticed is understanding about the team's role (and as that enhances, which it has) our whole scope, our whole way of doing business has changed for the better. (Care Coordinator)

All participants who were interviewed had a strong understanding of the overall program purpose. At the systemic level, there was a shared understanding of integrating and coordinating care for patients with complex chronic conditions to reduce unplanned hospital admissions. At the clinician-patient level, staff thought the program was unique in encompassing the physical and social determinants of health not on a specific disease process. In establishing a collaborative goal with the person's GP and existing supports, clinicians aimed to improve the patient's self-management and health literacy. While there were similar understandings of program purpose by all participants, there were slightly different understandings of specific tasks and responsibilities in relation to participants' roles which reflected the client centred focus of the program.

Management focus on flexible delivery and reducing duplication

NSW Ministry of Health staff stated the program would be implemented somewhat differently at the District level depending on the context, and the existence of local services. This understanding was also reflected in the views of program middle management who discussed the need for flexible delivery in relation to the changing nature of programs and resources in the District, to reduce duplication. Less duplication and flexibility would enhance service efficiency.

It probably has a different purpose in different Districts, because we need that level of flexibility to be able to implement the program. Looking at what other resources are already

available in the District... we were pretty aware of not duplicating what's already out there, and of course what's out there keeps changing. (Middle Management)

Implementers enabling and meeting patient centred goals

ICPCC implementation staff were more focused on meeting patient goals and enablement through coaching, linking to services and coordination of chronic disease management. They spoke in detail about how the program addressed patient's health needs in context. Going to the person's home was important to the Care Coordinator gaining an understanding of their social situation. This focus is highlighted in the Case Studies where meeting patient needs has benefits for meeting the other health needs of reducing unplanned hospitalisation.

Program management and implementation staff were united in the need for the program to meet patient's centred goals through identifying barriers in relation to their health and wellbeing. Care Coordinators provided patient centred care, assisted with care navigation to other services and self-management of chronic conditions. They also assessed the patient's current level of motivation and readiness to engage in health behaviour change.

It's that really reflexive work of trying to meet them where they're at and move them to the next step. So if they're 'contemplative', how do I get them to 'action'? Can I get them to 'action'? Can I reduce the barriers that are in place in getting them to the 'action' phase? And that might be it for my intervention at that point in time. And then maybe the diabetes CNC picks it up from there. Maybe the GP picks it up from there. (Care Coordinator)

There were a range of other programs in the District aimed at preventing PPH and keeping people healthy at home. The ICPCC program provided care coordination for multiple conditions, promoted behaviour change and assessed barriers to self-management.

There are a lot of chronic care teams to deal with specific chronic illnesses, like the respiratory team or the heart failure team, which these [patients] may already be involved with. But for some people, they have a range of co-morbidities or they have some other issues or social issues that actually might make it more difficult for them to manage their chronic condition. (Care Coordinator)

Referrer focus on the program provision of overall holistic care

To the health professionals who referred to the ICPCC program, it fulfilled the need to provide a coordinated care management approach for patients with complex needs which could not be met in the scope of the disease specific care they provided. The program could address the underlying reasons for re-admission and provide an overall assessment of their complex chronic conditions, health coaching and coordination between care providers. Other program staff needed to understand the purpose of the program to work in partnership with ICPCC staff and to avoid duplication.

For the patients that we see that are re-presenters ... it is great to have these guys on board for someone like that, so that there's a plan in place, so that there's ongoing care management for that patient. (Referrer)

COGNITIVE PARTICIPATION AND PROGRAM ENGAGEMENT

Cognitive participation is the work done to 'build and sustain' practices. Components include practices to initiate and drive procedures; engagement and 'buy in' by others; ensuring that others believe the intervention is right and legitimate; and activation of procedures to ensure sustainability (May et al 2015).

Table 2: Cognitive Participation NPT core construct applied to the ICPC program

| NPT component | Questions to consider | Cognitive participant of ICPC program |
|--------------------------------|--|---|
| Cognitive participation | Are target user groups likely to think the intervention is a good idea? Will they see the point easily? Will they be prepared to invest time, energy and work in it? | -Program staff believed in the benefits of the program. -Referrers to the program were prepared to invest their time in the program and could see the point of it as providing integrated care that they struggled to provide in their own disease specific program. -Other program staff saw the benefit of including their patients in the ICPC program -Management and program implementers saw the benefits and usefulness of the program in comparison to the previous program. |

Adapted from Murray et al (2010)

Staff relationship building and networking

ICPC staff formed strong relationships with other integrated care and chronic disease services in the process of navigating and coordinating care for patients in the District. This included knowing the range of other chronic disease programs, eligibility criteria and having the flexibility to adapt to a changing integrated care policy context. Networking and promotion were important for future referrals and linking patients to services.

Participants outside the ICPC program felt it offered a coordinated integrated care service. Other chronic disease teams were limited in being able to provide a thorough assessment of the patient’s health goals in the context of also managing their other conditions and their social situation. Care Coordinators could assess the barriers for patients in self-managing and understanding their conditions.

A gentleman who is 76... has poor health literacy, multiple conditions ... and he is not getting it at all ... He keeps forgetting appointments... and he needs to understand the changes in his medications. ...He speaks English, but he does not speak very well ... I referred him to integrative care to do a cognitive screen, with an interpreter, and to assist with diabetes education and referral ... to assist him with his multiple medical appointments ... every time I see him, it is extremely time consuming, and I haven't addressed all of the issues that need addressing. (Referrer)

Other chronic disease community and specialist services needed to have general awareness of the ICPC program as they may refer their patients there or one of their patients may have been included in the program. The Care Coordinator could provide links between different chronic disease programs to ensure better care navigation for patients.

A lot of [the implementation] was around the networking that we started to pursue quite actively with the Clinical Nurse Consultants and particularly around the chronic disease committee and then also linkages with our practice nurses ... Most of the programs that are out there are usually aligned to specific disease processes ... we tried to market ourselves as ‘the linkers’. Looking at the whole picture of filling those gaps around the edges [for patients] ... a lot of it is about relationship building and being available when they need it. (Care Coordinator)

Referrals to the ICPC program were mainly occurring in the District’s southern sector not the northern sector where they were solely using the algorithm to source patients.

Building relationships with chronic disease, existing chronic disease teams has been more of an ad hoc, grounded approach just with the way that the [northern sector] culture has been very different to the southern sector. (ICPC staff)

Moving beyond the previous program

ICPCC implementation staff reported that the previous Connecting Care CDMP program in the District had a negative reputation with some staff. It was perceived as duplicating existing care, and patients were confused which health professional to contact. Senior management and NSW Ministry of Health staff identified that the main differences between the current and previous programs were that the previous CDMP program included patients who had the main five chronic diseases and patients were later in their chronic disease trajectory. Unlike this, the ICPCC program had a range of chronic disease criteria for entry and considers those at risk of unplanned hospitalisation.

What we found when we started, there was a lot of preconceived antagonism particularly in the southern sector, where Connecting Care had been, [which] required a lot of networking. (Care Coordinator, Focus Group)

Some implementation staff felt there was the legacy and reputation of the last program which had to be clarified with staff. While ICPCC staff had concerns about this past program, some newer referrers to the program did not distinguish the difference between the current and previous programs; the ICPCC program still provided a coordinated care management approach that they could not provide in their role.

COLLECTIVE ACTION AND WORK IMPLEMENTATION

Collective action is the work done to enable interventions to happen. This includes the interactional work that people do; the workforce having the right skills; and the allocation of appropriate resources (May et al 2015). For the successful implementation of the ICPCC program, work processes need to ensure correct identification of the patient cohort and referral pathways need to be clear.

Table 7: NPT Collective Action core construct applied to the ICPCC program

| | Questions asked | Collective action applied to the ICPCC program |
|--------------------------|---|--|
| Collective action | <p>How will the intervention affect the work of user groups?</p> <p>Will it promote or impede their work?</p> <p>What effect will it have on consultations?</p> <p>Will staff require extensive training before they can use it?</p> <p>How compatible is it with existing work practices?</p> <p>What impact will it have on division of labour, resources, power, and responsibility between different professional groups?</p> <p>Will it fit with the overall goals and activity of the organisation?</p> | <p>-The ICPCC program assists other chronic disease programs in coordinating a care management plan for patients.</p> <p>-Care Coordinators must be multi-skilled in their work to meet all the identified needs of patients and work with a range of multi-disciplinary health and community teams.</p> |

Adapted from Murray et al (2010)

Identifying the right patient cohort

Having clear work processes and program selection criteria was essential to ensuring the right care, at the right time, in the right place. It was essential for staff to think about the type of patient that would benefit from the program. The program focused on enabling self-management of chronic conditions, linking them to services and coordinating these services so they could stay at home.

Who can benefit? It's people who can really respond to those interventions that the Care Coordinators [provide] ... and [who can] take some steps to change their behaviors ... or improve their health behaviors to keep them out of hospital. (Middle Management)

District intake staff in the District's ARCs filtered patients referred to the ICPCP program into two sources:

- **Risk stratification CCPIA algorithm in the PFP** generated a list of patients who had been identified as being of risk of potentially preventable hospitalisation
- **Health professionals referred** patients who would potentially benefit from care coordination, health coaching and care navigation and who needed assistance in managing their conditions at home.

The ARC in the southern sector of the District has developed some criteria for prioritising patients to see first from the eligibility list. Prioritisation occurred around those who were socially vulnerable and living alone.

Predictive algorithm an effective sorter of potential risk

While the algorithm for identifying patients was still being refined, ICPCP program staff stated it was a comprehensive way to identify patients. This was especially useful for the northern part of the District where patients were coming from the algorithm not health professional referrals.

I like the patient portal. ... It's algorithm driven. It's a sifter and a sorter ... to identify a patient. It's certainly more comprehensive. It's like a drift net, catches everything. (Care Coordinator)

The CCPIA algorithm was a way for staff to assert a renewed efficiency in the program compared to the previous Connecting Care program. Patients were included in the program based on external criteria from NSW Ministry of Health which was being constantly reviewed to ensure greater efficiency, effectiveness and equity.

We had that history base [of the Connecting Care program in the southern sector]... [Use of] the algorithm through the portal ... has an efficacy around the actual program because ... [they've] come through in a really valid way based on an algorithm. So that's been a very positive outcome so far. (Care Coordinator, Focus Group)

Suitability of patient based on source

There was some frustration from ICPCP program managers and implementers about the algorithm selecting patients at a later stage of their disease trajectory who they felt were less able to benefit from the interventions. An analysis of the ICOD data revealed that the demographics of the patients in the program from the CCPIA algorithm did show a slightly older population than those who were referred.

People at the upper end of the algorithm are less able to respond. They are more advanced in their disease ... [but] should we be targeting people who aren't as advanced? If one scores lower in the algorithm, because they still have more functional capacity to respond to the interventions, we actually might get essentially a bigger bang for our buck by intervening early, in that chronic disease process. The characteristics [of suitable patients] ... are those ones who may not be so far down their chronic disease pathway. (Middle Management)

In the southern sector, implementation staff found health professional referral of patients was appropriate as referrers knew the nature of the patient's condition and their social circumstances. Program implementers and managers also felt referrals to the program were more responsive to the purpose of the ICPCP program and to people who can self-manage. Case study 2 highlights how a referred patient had positive health outcomes but would not have been identified through the algorithm.

Contrary to ICPCP implementation staff, NSW Ministry of Health staff felt patients referred by health

professionals to the program by health professionals were less likely to benefit compared to those identified through the algorithm.

There is a higher risk of not benefiting based purely on clinical judgment [in referral] than if they were also identified through the model. (NSW Ministry of Health)

NSW Ministry of Health staff explained the next installment of the algorithm would better identify the right patient earlier in their disease trajectory who would be likely to benefit. It would also consider those patients with higher needs that are socially vulnerable, isolated, culturally diverse, and at the lower end of the socio-economic gradient. The algorithm would take into consideration the local mechanisms taken at the District level to prioritise the needs of patients including health professional referrals.

There is more of a convergence between what the algorithm would predict and what the clinician would. (NSW Ministry of Health)

ICPCC staff skillset and competency

The skill set of Care Coordinators must be diverse as they focus on meeting patient centred goals including providing clinical assessment, understanding patient’s knowledge, beliefs, social situation and improving health outcomes. They also need to navigate, form and sustain partnerships with other services in order to integrate care. The Care Coordinators were healthcare professionals from nursing and social work backgrounds working with a range of other health professionals in the care of the patient. While the ICPCC program coordinates and integrates care across the sectors, each sector has their own referral and intake systems and cultures. The implementers and middle management of the ICPCC program needed to know the nature of other programs and their governance structures to successfully perform their roles.

I think the added value of having a variety of staff members with their experience, and gaining from that, has been a really positive thing. (Care Coordinator)

The Care Coordinators are helping ... people to navigate the system, which we've made complicated through our structures. (Middle Management)

REFLEXIVE MONITORING AND ASSESSMENT

Reflexive monitoring is the appraisal work done by people to assess the intervention impact on themselves and others. This component includes the collection of formal and informal information about the intervention including its effectiveness; the communal and individual appraisal of it; and how its procedures can be refined based on feedback (May et al 2015).

Table 4 Reflexive Monitoring NPT core construct applied to ICPCC

| | Questions asked | Reflexive monitoring applied to the ICPCC program |
|-----------------------------|--|---|
| Reflexive monitoring | <p>How are users likely to perceive the intervention once it has been in use for a while?</p> <p>Is it likely to be perceived as advantageous for patients or staff?</p> <p>Will it be clear what effects the intervention had?</p> <p>Can users/staff contribute feedback about the intervention once it is in use?</p> <p>Can the intervention be adapted/ improved based on experience?</p> | <p>- District managers were not completely clear about the program outcomes. However, the program had only changed processes recently.</p> <p>-Feedback about the program was mainly internal as part of informal networking as the governance structure had recently changed.</p> <p>-As the program evolved, there was some confusion over specific staffing and the model of care.</p> |

Adapted from Murray et al (2010)

Dissemination of ICPCP benefits and model of care

Appraisal of the benefits of the ICPCP program would normally be based on regular feedback, but recent design and process changes in the program meant that there was not the usual level of reporting to stakeholders at this time. More communication about the program outcomes would add to the cognitive participation and engagement of staff and managers about the program efficiency and benefits.

I would expect that there's a clearly articulated model of care with inclusion criteria that we have adequately promoted ... that people who need to know, do know about what the service is and how to access that service, and for what purpose.” (SESLHD Manager)

There had also been changes to the governance and executive of the program which affected general workforce promotion and targeted communication.

The change at the moment identifies these many patients. The next [algorithm] is still going to identify a lot of patients but it's going to be more of the right patients. ... The messaging is really important because that's not just about messaging to the integrated care team, but also the broader hospital community around what this means for the whole District. ... And how do you make sure that you're able to know your resources are spread across the system and that you're able to do that efficiently. (Middle Management)

For some referrers in the District, there was confusion about the messaging of the program structure and staffing. They were confused about the extent of resources provided to the program in comparison to the staffing in other programs.

I don't understand how the service is structured ... The integrative care service sent me this email... I don't quite understand why there were three people working in this service, with nine people [patients] on their books, and we have one and a half [staff] for 90 [patients]. (Referrer)

Another referrer to the ICPCP program felt that it could be improved through resources and education about the eligibility and background of patients to the program. This would then mean the full benefit of referral could then be utilised.

[If the patients in the ICPCP program] have already been seen by someone in the community, it's a good idea ... to get the handover from us. ... what our opinion is... our take on everything. (Referrer)

CASE STUDY ONE

John* was identified through the risk of hospitalisation algorithm: his case illustrates the benefits of health coaching and predictive algorithm in reducing unplanned hospitalisation

PRESENTING CONDITION/S

John is a 78-year-old male who lives with his wife and has no children. John was identified through the patient flow portal as having a CCPIA score of 10. He was screened through the intake process and consented to support from the ICPC Care Coordinator.

Medical background - long term insulin dependent diabetic, Macular Degeneration with severe 80 % vision impairment, Hypertension, Malignant Melanoma and Atrial Valve Replacement (on Warfarin).

John had had multiple hospital admissions (7 in 12 months) with Diabetic Keto Acidosis and had identified difficulty with managing his diabetes in the community. His discharge planning included a reliance on his carer, his wife Mary, due to his poor vision.

John reported he was drinking 4 glasses of wine at night. He was advised while an inpatient regarding the impact of drinking on his diabetes but declined community Alcohol and Other Drugs follow up.

PROGRAM INTERVENTION

The Care Coordinator utilised John's electronic medical record and My Health Record to identify that he had received significant input and education while he was an inpatient. He had also received crisis assistance from a Geriatric outreach service with involvement from Occupational Therapy, Physiotherapy and Nursing. He had also been visiting his GP regularly. The Care Coordinator liaised with the Geriatric outreach service for hand over and to discuss if there was a role for the ICPC program; to understand the risks that they had highlighted and recommend a longer follow up than their program parameters allowed.

The Care Coordinator arranged a home visit for an initial assessment to establish John's goals. His focus was to stay out of hospital and to be healthy enough to go on a cruise to New Zealand. Using the CCoPS assessment, the Care Coordinator identified significant barriers to self-management. In addition, Mary had multiple social and health barriers that had impacted on her ability to prioritise her own needs along with supporting John to self-manage.

Mary consented to enrolling into the ICPC program. Her own goals were to be able to contact services as well as go on the cruise. Mary had been essentially housebound for 12 months with no contact with her GP during that time, and was at risk of falls and frailty.

Care coordination and navigation

The Care Coordinator discussed current services and how they might support John's goals. John was approved for My Aged Care which enabled him to receive commonwealth home support program for meals, transport and shopping. He had previously connected with Vision Australia and Endocrinology, but the couple reported difficulty utilising these services.

The Coordinator supported Mary to call My Aged Care and enroll for services in her own name enabling her to receive particular meals, a continence advisor, dietician, and transport.

The Care Coordinator regularly informed the GP about the couple's goals, progress and advocated for John's GP to do home visits for Mary.

Health coaching

Mary and John were supported to identify the steps they would take to work towards meeting their goals with a collaboratively negotiated timeframe for review with the ICPCC Care Coordinator.

Self-management plan

John had developed a good understanding of his diabetes through the support of his GP and education in the inpatient and outpatient setting. He collaborated with his GP on the goal of reducing his wine consumption and monitoring the impact on his diabetes.

John and Mary were coached by the ICPCC Care Coordinator to contact the diabetes educator twice a week. The ICPCC Care Coordinator built rapport with the couple and supported them to contextualise the role of services in achieving their goals of staying out of hospital and being well enough to go on the cruise.

CLIENT OUTCOMES

John and Mary used the ICPCC program for a 12-week period. During that time John's hospital presentations reduced to a single 3-day admission following their street Christmas party and the impact that had on the diabetes management plan. John was able to use his improved health literacy to describe what happened to ED staff and establish how he would implement strategies around celebrations in the future.

Mary reported she was confident in calling transport and the endocrinology service. They were both using Meals on Wheels and having regular contact with their GP input in the home and at the medical centre. Mary's confidence in leaving the home improved with implementing suggestions from the continence advisor.

John reduced his alcohol consumption and fed back to the Coordinator that his blood sugars were more stable and his GP was really happy.

Nine Months post discharge from ICPCC, John had another presentation to ED for a skin tear and the Aged Care Services Emergency Team (ASET) staff fed back to the Care Coordinator it was the best they had ever seen the couple.

Yes they made it on their cruise.

* Alias names have been used the case studies.

CASE STUDY TWO

Bruce was referred through an aged care worker: his case illustrates the importance of referral to the program and partnerships with health and community services

PRESENTING CONDITIONS

Bruce is a 53-year-old man who is morbidly obese with COPD, Diabetes and Depression. His oxygen supply was poorly managed, and he had not seen a Respiratory Specialist nor a GP for 18 months. He was unable to attend medical appointments because he could not navigate the stairs to exit his top floor unit. He had poor personal hygiene and had not showered in eight months. His 22-year-old daughter cared for him but had her own health concerns including Obesity and Agoraphobia.

PROGRAM INTERVENTIONS

Bruce had been referred to the SESLHD community social worker following concern from his ex-wife whom lived in another state. The social worker identified he had multiple medical and social issues and referred him to the ICPCC program to collaborate on the client's goals.

An initial home visit by the Care Coordinator was gratefully received by this client and a list of patient centred health and social goals were developed. He was added to the Patient Flow Portal and a CCPIA score of 4 was calculated for him. This was under the threshold of 8 for predicting hospitalisation in the next 15 months and referral to the ICPCC program. Bruce's goals included wanting to drive his new car, loose weight, source a GP, shower, and get help for his daughter. Health Coaching, Care Coordination and Care Navigation was initiated and sustained over a nine-week period and ongoing referrals made.

Care coordination and navigation

New referrals were made to the following services to work collaboratively on Bruce's goals and improve access

- SESLHD Respiratory Chronic Care Program
- New and local GP with a telehealth consult option
- SESLHD Social Work continued to support access to appropriate ground floor social housing
- SESLHD Occupational Therapist for pressure care, education and personal care equipment and home modification recommendations to support the housing application.
- Dietician for recommendations on healthy lifestyle and safe weight loss.

CLIENT OUTCOMES

He was a good partnership ... that's the kind of patient we share. (Care Coordinator)

Bruce drove his car for the first time 3 weeks after enrollment in the program due to improved mobility on stairs and access to portable oxygen. He was also able to shower independently with the new equipment. He self-reported improved self-esteem and reduced levels of depression. Bruce's daughter was linked to a Headspace mental health case manager. She reported less fear of leaving her father on his own and was focusing on her own social and life goals.

On discharge from the ICPCC program, Bruce's goals and relevant contact numbers were printed, laminated, and left for his reference. Bruce continued to pursue his goals and self-manage in collaboration with his GP to develop a GP management plan for exercise physiology and podiatry, and engagement in the SESLHD respiratory chronic care program. Bruce also independently applied for NDIS and was awaiting the outcome of his housing application.

DISCUSSION

- NPT is an effective way to assess the implementation of the ICPCC program in practice. It demonstrates the importance of understanding the purpose, context, other people's understandings and work to be done to ensure care is integrated.
- All participants coherently conceptualised the purpose of the program in reducing PPH and the importance of person centred care and self-management at home for better health outcomes. Participant roles differed in achieving this goal: while managers focused on efficiency, flexibility and reducing duplication; implementation staff focused on assessing needs, reducing barriers, patient health literacy, patient centred goals and forming partnerships with other services.
- Key work practices need to be implemented to ensure the right patient cohort for the ICPCC program intervention. While the CCPIA risk algorithm was an effective way to assess risk, health professional referrals are also important in addressing the risk of future PPH for patients.

The project aimed to understand how the ICPCC program was conceptualised and implemented in practice. There are various theoretical frameworks that can be used to understand how IC interventions are implemented including the impact of context and environmental factors on effectiveness and integration (Peterson et al 2019; McDonald et al 2007; Busetto 2016; Goodwin 2013). Understanding implementation is important for program designers and managers working with various environmental conditions out of their control (Peterson et al 2019). The NPT framework used in this evaluation allows analysis of the different components of work needed for successful implementation of a complex intervention like the ICPCC program. Like other integrated care programs, there are challenges in defining, measuring and evaluating care coordination (Schultz et al 2014). The NPT framework demonstrates the importance of understanding and refining the program purpose and work processes to ensure better evaluation and measurement. There are an increasing range of programs aimed at integrating and coordinating care in NSW. Understanding how the program is unique and it can complement other programs is important in an environment of cost efficiency and reduced duplication.

UNDERSTANDING OF PROGRAM GOALS BY LEVEL

The project examined how the ICPCC program has been implemented at the patient/clinician, program, District and NSW Ministry of Health levels. All participants coherently conceptualised the purpose of the program in reducing PPH and enhancing person centred care and self-management at home. This was unique as international research has indicated differing understandings of care coordination which focus either on systemic or patient perspectives (Schultz and McDonald 2014). Meeting both patient and systematic goals moves towards achieving the integrating care quadruple aims of 'improved experiences for individuals, families and carers; improved experiences for service providers and clinicians, improved health outcomes for the population; and improved cost efficiency of the health system' (NSW Health 2017; 5).

While there was participant consensus in program purpose, there were slightly different responsibilities in relation to participants' roles in implementation. NSW Ministry of Health and ICPCC program managers focused on having flexibility, efficiency, and reduced duplication in implementation. The importance of having flexible understandings of program design and delivery is useful in times of change (McDonald et al 2007). This approach assists services to align and meet patient needs as well as reduce service duplication. Program managers and staff discussed assessing whether the patient already had a multi-disciplinary team assisting them and what contribution the ICPCC program could provide.

In achieving the program purpose, program implementation staff discussed meeting and evaluating patient goals through coaching, referral, linking of services and care coordination. Peart et al (2020a, 2020b,

2020c) have discussed how Care Coordinators negotiate patient's goals first in the context of their lives, then as a trusting relationship is established, more systematic issues of chronic disease management outside the hospital can be suggested and addressed. Focusing on more person centred goals means the health professional works with the person's values, beliefs and incorporates shared decision-making processes (McCormack and McCance 2006 in Peart et al 2020c). Building partnerships and linking services was an effective way to integrate service delivery. Care Coordinators built strong relationships with local community health services which has been stated in other care coordination literature as assisting in the long-term commitment and integration of services (Goodwin 2013; McDonald et al 2007).

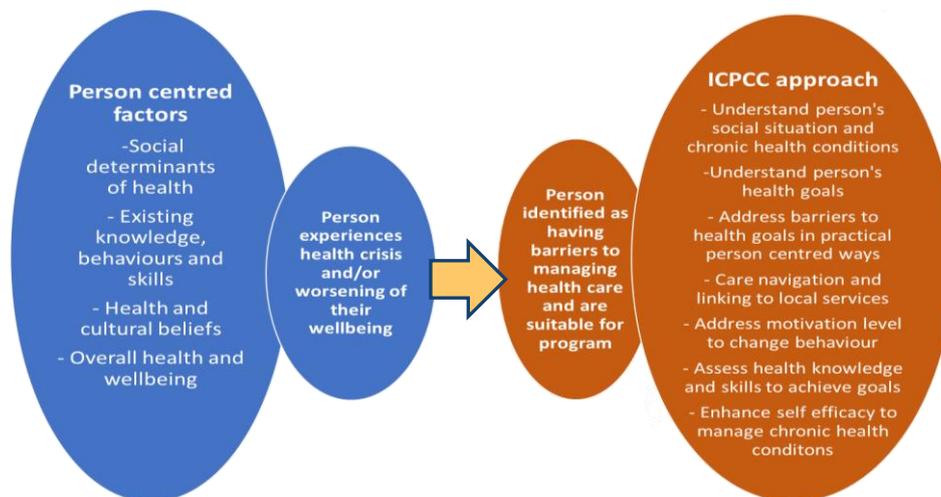
Reviews of care coordination in practice highlight the need for strong work processes and capacity at systemic and local levels to support the program (McDonald 2007). Care coordination is by nature resource intensive but has benefits in consolidating care and reducing duplication. As stated by McDonald et al (2007; 114), 'coordinating care better is only beneficial if other aspects of care delivery are optimized as well'. Work processes must be set up at systemic and local levels to ensure stability and long-term strategies. This is difficult as most integrated care programs are focused on the organisational level of providing services (Valentijn 2013). The importance of program cost efficiency was also felt by program managers in the District, and it is therefore important to inform others about the benefits and outcomes of the ICPCC program.

ENHANCING PATIENT SELF-MANAGEMENT AND REDUCING RISK

Unique to the program's purpose at the level of program implementers was focusing on patient centred goals to assist self-efficacy. This incorporates the international understandings of the Chronic Care Model (Wagner et al 1996) and NHS House of Care model (Coulter et al 2013), and as outlined in statewide integrated care goals (NSW Health 2017; SESLHD 2018), of patients being involved in the self-management of their chronic conditions for better health outcomes.

Providing health coaching in the program was more than just improving a person's education and understanding, but facilitating the persons' use and application of knowledge in person centred ways. Such an approach enacts the process of enhancing people's health literacy in relation to "competencies to access, understand, appraise and apply information to make health decisions in everyday life throughout the life course" (Sorensen et al 2012 in Batterham et al 2017). The results and case studies demonstrated that the program did not just focus on assisting people to manage their complex chronic conditions per se, but also assist them to overcome barriers to achieving optimal health. Having a health crisis may mean patients may not have skills in relation to the changes required in their lives or they may have a reduced ability to self-manage. Focusing on patient centred care and addressing equitable access delivery acknowledges the vulnerabilities of certain populations groups; that people have different capabilities and may not respond in the same way to standard approaches to improve their health. It recognises the impact of wider social determinants of health as impacting on their situation. The impact of improved health literacy for patients' outcomes with chronic conditions has been shown to reduce hospitalisation (Trezona et al 2017).

Identifying the correct patient cohort is important for program efficiency; for a patient to be a right fit for the program, they need to have the capacity to self-manage. Despite the move to promote self-management for those with chronic conditions, there is currently no widely accepted approaches to measure 'self-care' (ISCF 2020). Yet the costs of treating self-manageable conditions are high for the health system (Dineen-Griffin et al 2019). The need for government to expand and implement self-care initiatives has been promoted in Australian policies (Nichols et al 2020) and in the international literature (Goodwin 2013). Implementing self-management strategies can assist patients who are at the stage of willing to change their behaviour and who could self-manage themselves (Marengoni et al 2011). The following diagram highlights how ICPCC program Care Coordinators were able to assist patients to reach person centred goals.



Program addresses barriers to reaching person centred health goals and self-efficacy

EFFECTIVE WAYS TO IDENTIFY PROGRAM PARTICIPANTS

The process of identifying the right patient for the ICPCC program determined its successful implementation. This project sought to identify the characteristics of patients identified for inclusion to the Program through the CCPIA algorithm compared to other referral processes. The major differences in characteristics of patients were that those referred by the algorithm were older, more likely to be male and less culturally diverse than those referred by health professionals. Program managers and implementors found that health referrals to the program were an effective way to identify potential patients that could benefit (see Case Study 2). At the same time, the algorithm was an effective systematic way to assess potential patients. Predictive algorithms have proved useful elsewhere in Australia in analysing routinely collected patient data and identifying those at risk of avoidable patient hospital admissions as suitable for a health management program (Yeomanson et al 2019a). However, such algorithms do not identify all suitable patients especially those in the community with rising risk who have not been admitted to hospital. The need to integrate hospital and community data in identifying patients at risk of hospitalisation has been highlighted in other research (Yeomanson 2019b). These considerations could be an option for this program. NSW Ministry of Health participants stated that in the future the algorithm will better predict patients at risk of future PPH and include more of the types of patients included through health care professional referral. It will also consider the socio-demographic risk factors that were considered at a District level including people who are isolated, from lower socio-economic backgrounds and from culturally diverse backgrounds. While the algorithm is still being refined and modified, health care referrals are still integral to capturing more patients who may benefit from enrolment in the ICPCC program.

CONCLUSION

The NPT framework was an effective way to assess the implementation of the ICPCC program in practice. It demonstrated the importance of understanding the purpose, impact of local context and understanding the type of work needed to achieve benefits. The ICPCC program played an important role in assisting patients with integrated care coordination of their range of chronic conditions who have the capacity to self-manage at home. All levels of participants understood the program purpose and necessity including the importance of achieving patient and systemic goals. Networking, linking services and promotion were important, as were reporting on benefits. Processes of identifying patients for inclusion in the program differed slightly between program staff and NSW Ministry of Health staff which may need to be rectified. Program messaging should consider what is important to know for both service managers and referrers.

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APPENDICES

APPENDIX 1: NSW CHRONIC CONDITIONS PATIENT IDENTIFICATION ALGORITHM¹ (CCPIA)

| Variable | Parameters | Assigned score | Max score for variable |
|-------------------------------------|--|----------------|---|
| Patient age group | <65 | 0 | 2 |
| | ≥ 65 | 2 | |
| Acute care admission 6 months prior | 0 | 0 | 4 |
| | 1 | 1 | |
| | 2 | 2 | |
| | 3+ | 4 | |
| ED visits 6 months prior | 0 | 0 | 4 |
| | 1 | 2 | |
| | 2 | 3 | |
| | 3 | 3 | |
| | 4+ | 4 | |
| | If data is unavailable | 3 | |
| Select CMG (vs all other CMG) | Cirrhosis/alcoholic hepatitis 285 | 4 | 4 (Note: comorbidities are not included in the simple model. CMG points should only be assigned <u>once</u> per patient, based on the highest scoring diagnosis) |
| | Chronic obstructive pulmonary disease 139 | 2 | |
| | Heart failure without coronary angiogram 196 | 2 | |
| | Inflammatory bowel disease 253 | 2 | |
| | Diabetes 437 | 2 | |
| | Gastrointestinal obstruction 255 | 1 | |
| | Other | 0 | |
| Maximum patient score: 14 | | | |

¹ Taken from *SESLHD Integrated Care (2018)*

APPENDIX 2: PARTICIPANT INTERVIEW SCHEDULE

1. Could you describe your role in *[implementing/managing/being involved with/referring to]* the Integrated Care for People with Chronic Conditions (ICPCC) program?

2. What do you see as the overall purpose of this Program?

3. What kind of patient would benefit from inclusion to the ICPCC? Characteristics? Why? What care would you expect the person to receive from this inclusion?

4. What are the ways that patients can be included to the ICPCC program?

What is the purpose of the NSW Chronic Conditions Patient Identification Algorithm (CCPIA) tool which is used in the Program?

What are the other ways that patients can be referred? What are the sources of referral?

5. What has been the most significant change in transition from the Chronic Disease Management Program to the Integrated Care for People with Chronic Conditions (ICPCC) program? What has been the impact of this?

General questions - all

6. How would you/health professionals decide which patients are suitable for the Program? Under what conditions?

Local program staff and referrers

7. What types of patients have been included in the Program?

8. What types of interventions have been provided as part of the ICPCC program? *[How has this been determined?]*

9. Could you give an example of patient that has been included in the ICPCC program? What type of care was provided?

All

10. Any other comments

APPENDIX 3: PROGRAM STAFF FOCUS GROUP SCHEDULE

1. What has been your overall experience with the Integrated Care for People with Chronic Conditions program?
2. What do you see as the overall purpose of the program?
3. What do you think are the benefits of the program? [In terms of patients, providers, costs and overall health system functioning?]
4. What has been some of the challenges with the program? [Both locally and as a system?]
5. Could you describe the process of deciding which patients are included into the program? How is assessment of need determined? Under what conditions?
6. What type of patient would you see identified through the NSW Chronic Conditions Patient Identification Algorithm? What would happen then? Could you give an example?
7. What type of patient would you see through other referrals? Who would refer? What would happen then? Could you give an example?
8. Could you give any examples of maybe two types of patients you have assisted, and the types of interventions provided as part of the ICPCC? How are these determined? [involve the providers of the different services in the room]
9. How do you think the Program could be enhanced?
10. Anything else you would like to add?

APPENDIX 4: INTEGRATED CARE TERMINOLOGY

| Components | Definitions from the literature |
|--------------------------|---|
| Care navigation | “Facilitating access to services for the care of a patient, their carers and family for a defined episode of care. The aims are to improve the timeliness and appropriateness of care and reduce barriers of access to care and loss to follow up.” (CPHCE 2017; 9) |
| Health coaching | “A patient-centred approach to goal-setting, active learning and self-management that guides, empowers and motivates an individual to change their behaviour.” (CPHCE 2017; 6) |
| Care coordination | “Deliberate person-centred organisation of patient care activities between providers to facilitate self-management, appropriate care, health outcomes and greater efficiency.” (CPHCE 2017; 11) |