# Title

# Improving Quality of Care Through Detection of Complexity Amongst Older People in a Community Setting: Pilot Randomised Controlled Trial Protocol.

## Short title

## Improving Detection of Patient Complexity in the Community (ImPaCt)

Jennifer Boak, RN, Researcher

Professor Irene Blackberry, Supervisor

Dr Tshepo Rasekaba, Supervisor

**Background:** Community-dwelling patients are becoming increasingly complex. Detecting this complexity in practice is limited. This is impacting the requirements of care and support to older patients to remain in their homes for longer.

**Objective:** The purpose of this study is to explore if using the Patient Complexity Instrument (PCI) in addition to usual assessment will enhance clinical judgement regarding detection of complexity, support the time allocated to patient care and referrals to other services.

**Methods:** A pilot parallel group blocked randomised controlled trial will be conducted within a regional Victorian community setting. Patient participants will be randomised into Control group receiving the usual assessment process and the Intervention group receiving usual assessment plus the PCI. Staff participants are those staff currently employed in the Community Nursing Service. Patient participants are those patients referred to the service who are eligible for Commonwealth Home Support Programme funding.

**Results:** It is anticipated that the study will explore if the PCI is a suitable tool to enhance the detection of complexity and support resource and time allocation for patient. This study has the potential to provide recommendations to the developer for modifications for Australian use and inform a larger multi-site trial.

Key words: Community nursing, older patients, patient complexity.

I am intending to submit this protocol for publication in the Collegian (The Australian Journal of Nursing Practice, Scholarship and Research). The details for authors are at this link: <https://www.collegianjournal.com/content/authorinfo>

# Background

It is predicted that by “2020, the number of people aged 60 years and over will outnumber children younger than 5 years” (WHO, 2018). As people age, they require more support to remain in their home environment. Their needs increase with varying degrees of complexity depending on their ailments, social situation, access to resources and safety of their environment (Thomas, 2017b). The increasing complexity of care needs in the community setting is well documented. Chapman et al recognised the need to acknowledge the varied complexity of patients and that the role of nurses in the community has changed with “more specialist and complex treatments for people and increasing levels of need and dependency” (Chapman et al., 2017). Safford et al demonstrated that complexity has “profound implications for the delivery of effective chronic health care” (Safford et al., 2007).

Changes in how chronic conditions are managed and earlier discharges from hospital were also highlighted in literature as impacting the increasing community-dwelling patient complexity. “Recent changes in the management of long-term conditions, earlier discharges from the acute sector have resulted in increasing pressure on the workload of the district nursing service” and therefore care delivery to maintain independence in the community (Baldwin, 2006). Patient demographic is changing “due to an ageing population, leading to a shift in health needs, with more people accessing a range of community services that support domiciliary care for patients with long-term conditions” (Kirby and Hurst, 2014).

Australia faces similar issues highlighted above. As a result, the Australian Government formulated policy initiatives aimed at keeping patients well at home and engaged in the community, whilst reducing the need for hospital admission and delaying transfer to residential aged care (Australia Government, 2019, Commonwealth of Australia, 2018). Earlier discharges from hospital and implementation of Aged Care Reform strategies have resulted in a noticeable increase in patient complexity (Commonwealth of Australia, 2018, Australia Government, 2019). Allocation of funding to support older people to remain active in the community for as long as they wish means more support and care are needed to achieve this. Anecdotally, staff in community nursing groups are reporting that patients are becoming more complex and consequently require more resources and time to deliver the appropriate care. Contributing to this complexity are factors affecting family structures and supports. For instance, family members no longer live in the same town as their parents or elderly family, they are working full time to support their own immediate family, the parents or elderly wish to continue to actively contribute to their community, and families want to help their elderly parents to remain at home as long as possible. Families and staff are reporting meal preparation/resource issues such as food not being available, difficulty using cooking devices (e.g. gas being left on), patient not accepting pre-prepared meals. Issues regarding medications are also frequently reported. These include medications not being taken, multiple doses missing from a Webster Pac, other medications found around the home. In addition, many older people have multiple chronic diseases require multiple services for their care, knowing who is involved is important for coordination of care and consistency in information provision to patients.

Older patients generally require psychosocial support, monitoring of nutrition intake, more education and information, and more frequent follow-up with family members and Doctors. These factors influence health status and require thorough assessment and monitoring (AIHW, 2018). With the added pressure of early discharge from hospital, these factors contribute to the older patient complexity and impact on the care needed to ensure safety at home. This dictates that new holistic models of care provision for older patients need to be considered including health behaviours, psychosocial factors and biomedical factors and moving away from a medical model of health care. Such an approach starts with being able to detect the level of patient complexity for appropriate care to be instituted.

In recent times there has been several publications relating to the increase in complexity of community patients and the need to consider models for determining or detecting complexity (Jackson et al., 2015). Thomas reported that there is an increasing reference to patient’s complexity but there is little documented about how complexity can be measured or what relationship exists between complexity and patient needs.

Where complexity in the community was explored there was always a direct link to caseload or workload. Jackson et al found that when nursing was “portrayed in terms of supply and demand, nursing work in inpatient, specialist or community setting is often represented as a linear series of tasks that are deterministic in nature” (Jackson et al., 2015). Portraying nursing work in this manner limits the ability to capture patient-related complexity and provide a holistic, more person-centred care. The ensuing missing aspects of care include, for example, psychosocial, engagement and case management components. The World Health Organisation (WHO) also identified that ageing changes are complex and are “neither linear nor consistent” (WHO, 2017a).

The World Report on Ageing in Health acknowledges that age is not an indicator of function or physical ability and that ageing is different for each person. “Functioning is determined not just by assessing the physical and mental capacities but also the interactions each of us has with the environment we inhabit across our lives” (WHO, 2015). An example is, some 80-year-old people will have the mental capacity of a 20-year-old and some 70-year-old will need help with activities of daily living whilst others won’t (WHO, 2015).

Ageing is the result of an accumulation of molecular and cellular damage over time which leads to gradually decreasing physical and mental capacity, increased risk of disease and eventually, death (WHO, 2015). WHO reported that “the loss of ability typically associated with ageing is only loosely related to a person’s chronological age” (WHO, 2015) however, some older people enjoy very good health and function independently while others require significant supports and are frail. WHO further identified that “by the age of 60 years, the major burden of disability and death arises from age-related losses in hearing, seeing and moving, and conditions such as dementia, heart disease, stroke, chronic respiratory disorder, diabetes and musculoskeletal conditions such as osteoarthritis and back pain” (WHO, 2017b). These factors contribute to patient complexity and the ability to continue to do what they value most. The presence of one or more of mobility loss, malnutrition, visual impairment and hearing loss, cognitive impairment or depressive symptoms can be identified as declining physical and/or mental capacity (WHO, 2017b). The effects of any of these can vary, with some people responding to medication or other management and others not.

Along with the biological effects of ageing there are also changes to role in the family, social position and the need to deal with loss. Life changes such as retirement, downsizing the family home and death of those close are also associated with ageing (WHO, 2017a). There are the social and economic impacts of living longer, social isolation, low income, reduced family support (WHO, 2017b). People may start to reduce activities such as social outings, as their friends move away or die. This can impact their mental health, physical wellbeing and ability to manage at home alone.

An assessment framework which considers all these factors when assessing patients, especially patient complexity, may enhance the detection of patient complexity and change the way individualised care is planned and managed.

## Definition of complexity

The concept of complexity in health is not new, however the need to consider complexity from a holistic patient perspective rather than a biomedical model is a focus in recent publications. Manning explored the concept of the “complex patient” finding a range of surrogate terms such as “comorbidity, multimorbidity, polypathology, dual diagnosis, and multiple chronic conditions” (Manning and Gagnon, 2017). McGeorge found that frailty is also often linked with complexity and at times the two are considered synonymous (McGeorge, 2011). McGeorge describes frailty as a physical state whereas complexity encompasses the physical and psychosocial and it is dynamic. “The dynamic nature of complexity means that older people can become more or less complex” and nurses describe it as a state from which there can be ‘recovery’ and movement back and forth” (McGeorge, 2011). The biological mechanisms that contribute to frailty are different to those that cause ageing, “Frailty occurs when multiple physiological systems are in a diminished state and repair mechanisms are unable to maintain system homeostasis” (Burgess and Hercus, 2017). These statements would support Manning’s suggestion that a better understanding of the complex patient, and their needs is required.

Burgess & Hercus explains that frailty increases with age and is a clinical syndrome, not multi-morbidity or disability (Burgess and Hercus, 2017). Frailty is usually linked to factors including level of fatigue, resistance and aerobic ability, co-existing illnesses, weight loss and the patient’s perception of their health. Whilst complexity is linked to comprehensive assessments that consider factors including level of engagement, clinical need, social contact, family/carers, resources and safety.

For this proposed study patient complexity is defined as “the interaction of factors in a patient’s life, including biological, psychological, social, environmental and support systems, which requires a shift in an expectation of predictable outcomes” (Thomas, 2016). This definition supports McGeorge’s idea of complexity as an encompassing concept (McGeorge, 2011). All the factors combined impact a patient’s ability to manage independently. A change in one or more of these factors would result in a change in the level of care required, thus a dynamic state. A change could be due to factors such as loss of a partner or a new diagnosis that impacts the patient’s life.

## The local context perspective

Bendigo Health Community Nursing Services is part of a regional health service situated in central Victoria. The community nursing service provides traditional district nursing care to patients residing within a radius of 30km from the service centre. At any one time there are over 500 patients using the service. One funding source for the service is through the Commonwealth Home Support Programme (CHSP) which enables services to be provided to eligible patients over 65 years of age. To be eligible for this funding patients must have physical and cognitive function limitations, require assistance to remain living independently at home and remain engaged in their community (Commonwealth of Australia, 2018). “Services are delivered on a short-term, episodic or ongoing basis, with a strong focus on activities that support independence and social connectedness and taking into account each person’s individual goals, preferences and choices” (Commonwealth of Australia, 2018). Approximately 75% of patients referred to the service are aged 65 or over. Twenty-seven registered nurses cover a roster or two shifts per day, seven days a week, including public holidays, with 12-14 nurses on daytime shift on weekdays, and five on daytime shift on weekend. Three nurses work every evening. A shift may include 12-18 patient visits. The catchment area is divided into four sectors and each is covered by 4-5 nurses. This ensures that each sector has a small group of nurses in proximity at any one time to offer/provide support to each other when needed.

A community-dwelling patient may access nursing services via referral from My Aged Care, hospitals, doctors, other health practitioners, family members or themselves. Common reasons for referral are personal care, medication management, wound care, dementia support, diabetes management or continence management. Some referrals include information that is used to support the initial assessment, such as the support plan and assessments through My Aged Care. Upon receiving the referral, the Clinical Coordinator triages the referral, collates all available information and assigns a nurse who will visit the patient for initial face-to-face assessment. A predetermined amount of time is allocated to completing this initial assessment and the associated clinical care. However, the nurse may adjust this time once the assessment has been completed, based on the nurse’s assessment of care needs and detected patient complexity.

The initial assessment includes various questions to gather a clinical history, current functional status, social status and psychological needs. Nurses currently use a comprehensive document (assessment) that has been developed based on the requirements of the service, Government guidelines, and best practice. Other documents as part of the referral such as a Support Plan are reviewed to minimise duplication. There is a wealth of information that is collected throughout the triage and assessment process with much of it standing alone and not linked, this information may or may not be used at later date as a reference. In a busy day the assessment can become a tick box task in order to get to the next patient. It is based on the first visit that nurses use clinical judgement of patient complexity. Even though the information collected in the assessment is comprehensive, interpretation of the information is inconsistent, unstandardized and largely subjective. The decision regarding patient complexity is reliant on the skill and clinical judgement by staff. There are times when this is seen in the detail entered in a nursing-care-plan or support-plan (goal-orientated), however this is not consistently comprehensive and may only represent the nursing or clinical tasks required based on the referral. This has resulted in visits to patients exceeding the allocated time, which has flow on effects on other patients needing to be re-allocated to other staff. There are times when the Clinical Coordinator, through investigating the referral, will use clinical judgement to add additional time onto an initial visit where they believe there is potential for the patient to be highly complex. However, referrals often have information limited to the clinical tasks required. The nurses rely on skill from years of nursing in the community and subjectivity to detect patient complexity. The varying level of skills, knowledge and experience on the staff potentially impact the accuracy and consistency of detection of complexity.

In recent times staff are saying the patients are becoming more complex and they require additional time to deliver appropriate care. The basis for this is widely varied. Some nurses consider patient complexity based on multi-morbidity, others as a function of the amount of time required to provide care. Overall our current service systems and processes are nurse task and time oriented and limited in the ability to more objectively detect patient complexity. Documentation of complexity (low, moderate or high) following assessment is often ad hoc.

Being able to more objectively detect complexity could enhance appropriate resource allocation to patient care. Safford et al concluded that “We urgently need to expand the evidence base to inform clinical trade-off decisions, and interdisciplinary teams need to develop methods to measure patient complexity and to integrate such measurement into guidelines and quality assessment” (Safford et al., 2007). Providing a method of using all the information staff collect in assessment to enhance detection of patient complexity could result in patients having the right amount of support in place at the right time, minimising the risk of premature entry to residential care or being admitted to hospital.

## Scoping literature review

A scoping literature review was conducted with searches in CINAHL and Medline. The review was aimed at identifying standardised measurement tools for patient complexity in older people. Search terms included words related to older people or patients/clients, community or nursing services, complexity measurement, complexity, community dwelling, workload and caseload tools.

## 233 publications were identified of which 222 did not involve the use of a measurement tool while 11 discussed the development and use of 10 tools. A Snowball method of checking references from the 11 publications was used to identify any other relevant tools, and none were identified. 8 of the 10 tools focussed on workload, caseload and complexity of nursing roles. Of the 2 remaining, The Community Client Need Classification System (CCNCS) considers the needs of clients however the focus is still on workload (Byrne et al., 2006). The remaining tool (Thomas, 2017b, Thomas, 2016, Thomas, 2017a), the Patient Complexity Instrument (PCI), directly focussed on patient complexity and is described below.

The PCI measures complexity across 6 items; engagement in care planning, clinical need (physical and psychological), social contact, family and carers, resources and safety. Items are scored on a Likert scale of 1 to 5 and are added to give a total score from 6 (low complexity) to 30 (high complexity)(Thomas, 2018b, Thomas, 2018a, Thomas, 2017a). The PCI is easy to use, and it is easily accessible. The PCI was validated using Rasch analysis to determine the probability of an item indicating complexity. All items were determined to be a good fit to measure complexity (Thomas, 2017b). Further work is required to covert the PCI score into interval scaling to categorise the level of detected patient complexity. Nonetheless, the PCI items are aligned with some of the factors identified by staff at Bendigo Health Community Nursing Service when discussing complex patients. Information like the factors in each of the PCI items is currently collected during referral processing or assessment. However, this information is currently not quantified as is done with the PCI.

ImPaCt is a study to trial the PCI within the community nursing service to enhance detection of the patient complexity in our service. The primary objective is to explore whether adding the PCI to usual assessment process could enhance detection of complexity of patients. The secondary objective is to explore whether using the PCI derived patient complexity could facilitate appropriate resource allocation; this resource being the time allocated to providing clinical care to the complex patient. The study will also explore issues around feasibility and acceptability of the PCI in the community nursing service.

Ethical approval has been provided, reference number LNR/19/BHCG/54227. The trial has been registered with the Australian and New Zealand Clinical Trials Registry. UTN: U1111-1236-2073

# Method

## Study Design

The ImPaCt study is a pilot parallel group blocked randomised controlled trial in which the PCI plus usual assessment of patient complexity will be compared to usual assessment method alone. While only exploratory and not intended to measure definitive effect, a pilot study has been chosen to explore the possibility of implementing a patient complexity measurement tool into a community nursing service (Leon et al., 2011). Blocked randomisation will ensure a balance in the number of participants between the study groups in the trial and the next participant group allocation is less predictable, reducing the risk of selection bias (Efird, 2010, Moher et al., 2010). The data will follow the CONSORT guideline including the CONSORT checklist (Moher et al., 2010).

## Setting and participants

The PCI will be piloted in a regional community nursing service, located at Bendigo Health. Approximately 60 newly referred complex patients aged 65 years and over are seen monthly in the service by a team of 27 nurses. As described in the local context subsection, patients referred to the service are those who are eligible for CHSP funding.

The first group of participants are the nurses who perform assessments on the referred patients, detect their level of complexity, required clinical care and the time required to deliver community nursing care. The second group is new patient referrals to the community nursing service. Subject to ethical approval timing recruitment and data collection are tentatively set to cover 1st July 2019 to 30th September 2019 (3 months).

## Inclusion

The inclusion criteria are new referrals of patients aged 65 and over and meet the criteria for CHSP funded services as explained above. Recently discharged patients falling under the episodic Post-Acute-Care (PAC) service will be included if they require continuing care which is eligible for CHSP funding.

All Registered Nurses employed as District Nurses in the community nursing service and are assigned to perform new patient assessment during the trial period will be included. Assessments will be those performed during weekdays as those occurring on weekends are invariably PAC episodic care that are not eligible for CHSP funded care.

## Exclusion

Exclusions will be patients referred for specific episodic care such as anti-coagulant therapy or eye drops post-eye surgery. Patients who are due for follow up and re-assessment during the trial period will also be excluded. Nurse participation is voluntary therefore, assessments completed by a nurse who declines to participate in the study will not be considered. The relationship with the nurse, other staff and the organisation will not be affected by their decision.

## Sample size

A convenience sample of up to n=180 patient assessments (90 per group) based on the service throughput of new CHSP referrals over a period of three months will be recruited and up to n=27 (all) nurses in the service will make up the participant nurses’ sample. Formal sample size calculation is not critical for a pilot study since pilot studies by their nature are not aimed at establishing a definitive effect, however a rationale such as described for the number of participants is advisable (Leon et al., 2011, Moore et al., 2011).

## Randomisation

The study randomisation schedule will be designed by an independent person who will not be implementing the study procedures. Randomisation will occur at the level of the type of assessment (PCI plus usual assessment vs usual assessment alone) using 45 blocks of n=4 block sizes.

The type of assessment will be concealed in sequentially numbered, sealed opaque envelopes prepared by an independent person. An envelope will be sequentially drawn from a closed box and opened to reveal the type of assessment; each time a new assessment needs to be performed. Once opened the allocation cannot be re-used if for whatever reason it is not used for that assessment.

## Study procedures

Prior to the commencement of the pilot, staff will be briefed about the project and provided with a brief education about using the PCI. This will ensure that each staff member receives the same information. No further instruction will be provided on the PCI which will minimise the risk of researcher influence. Implied consent will be obtained from nurses using the Staff Information and consent (appendix 1).

Each nurse will be allocated a code that will be used for each survey they complete. This code will not identify the nurse and will be provided by an independent person, it will be used for analysis purposes only. A list linking the code and the nurses name only will be kept separate from data collection documents to protect the nurses identify. This list could be accessed if a nurses requires the code retrieved. The code will be provided to each nurse involved using a sealed envelope system at the commencement of the project. The envelop will be selected by the staff member, the included number is to be used when completing pilot documents. All nursing staff are invited to participate in this pilot. Participation involves completion of a pre-pilot survey, a survey regarding complexity of patients and referrals completed on admission and a post-pilot survey. Staff assessing a client in the intervention group will also complete the PCI.

By providing each staff member with a code data related to learning effect can be analysed. It is anticipated that throughout the pilot staff will become familiar with and consider complexity differently. There may be a closer alignment of the level of complexity detect over time for individual staff.

As described earlier, the clinical coordinator is responsible for allocating new referrals for assessment through a daily list. The clinical coordinator will allocate the assessment to the nurses. She will in addition provide the sealed group allocation envelope to the nurse on return to the office. On return, the nurse will open the envelope to determine the group type. The nurse will then retrieve the appropriate group envelope containing the required study documents. The control group envelope will contain the staff information and consent (appendix 1) and the staff survey 1. The intervention group envelope will include, in addition to the above, the PCI and the staff survey 2.

**The control group:** an assessment will be completed following the current usual process. The nurse conducting the assessment will be asked to rate and justify the patient’s complexity using judgement as usual and will not be prompted in any way (see appendix 2).

**The intervention group:** an assessment, documentation and data collection will be carried out as for the control group with exception of inclusion of survey 2. Once patient assessment has been completed and away from patient interaction, the nurse then completes the PCI and staff survey 2 which comprises of questions pertaining to the PCI (appendix 2). The researcher will not lead or prompt the staff.

## Outcomes

The primary outcome of this study is detected patient complexity as measured using the PCI or usual assessment nurse judgment (low, moderate or high). However, complexity scores from the PCI are continuous data and there are currently no cut offs for levels of complexity. Hence for the purpose of the ImPaCT study scores will be categorised as 6-14=Low, 15-23=Moderate and 24-30=High.

The first secondary outcome is the nursing care allocated for the patient as a result of the detection of complexity. Nursing care will be categorised as medication support, wound care, referrals & Liaison, hygiene, other. The second secondary outcome is the time in minutes allocated to patient care based on the detection of complexity.

ImPaCt will also explore the feasibility and acceptability of using the PCI. This will be conducted through a pre and post-trial staff survey of surveys (appendix 4 and 5). The survey will be administered electronically or via paper form. It will be supplemented with field notes and observations recorded by the researcher throughout the study.

## The Analysis and results

Participant characteristics data will be analysed and presented using descriptive statistics such as mean and standard deviation for continuous data, median and interquartile range for ordinal data and percentage and 95% confidence interval for categorical data.

Chi-square independence test will be used for comparison of distribution of nurses detected patient complexity (categorised as low, moderate or high) between control and intervention groups. This method will also be used to look at comparison of nursing care medication support, wound care, referrals & Liaison, hygiene, other, allocated between control and intervention groups. The same comparison will also be conducted within the intervention group between level of complexity pre and post PCI.

Fisher’s Exact test will be used to analyse the pre and post survey data due to the low number of nurses in the study. This will allow for the Likert responses. The text responses analysis will be conducted using narrative descriptions.

Linear regression analysis will be performed for total time allocated to patients as the dependent variable with patient age, gender, reason or referral, staff years of experience, and level of complexity service as independent variables.

All data analysis will be carried in IBM SPSS Statistics Version 24 (IBM Corp, NY). Although the study may not be sufficiently powered to test for effect, nonetheless the level of statistical significance will be set at p>0.05.

A qualitative summary description of surveys and additional information regarding nursing interventions, rationale for complexity rating will be completed, barriers and enablers to detecting complexity. Content analysis will be used to report the findings of staff feedback, field notes and observations recorded by the researcher. This will be done using manifest analysis for feedback and latent analysis for field notes and observations. Themes will be coded, categorised and themed.

## Data storage and handling

Individual participant identifiers will be removed and replaced with a study participant ID prior to data entry into an electronic study database. The database will be kept separate from the assessments that form the patient hospital medical record. The electronic files will be stored on a central secure drive at Bendigo Health and backed up on a central secure drive at Latrobe University established for research purposes. Hardcopy data will be stored in a locked filing cabinet at Bendigo Health. All data will be retained for 7 years post completion as per the Public Record Act.

## Significance of the study

Increasing complexity of patients in the community is a well-documented phenomenon and will increase with Australian Government strategies to improve care to support people to remain at home for longer. The detection of complexity is important to enhancing nurses’ clinical judgment of complexity and facilitate the holistic delivery of appropriate care older patients in a timely manner. Being a pilot, ImPaCT may inform a future definitive trial aimed at evaluating the effect and impact of the PCI in assessing patient complexity.

# Conclusion

This study outlines the protocol for the first pilot to explore the PCI in detecting complexity in Australia and the regional Australian context. The pilot will explore if the PCI is a feasible instrument to enhance detection of complexity in patients aged 65 and over.

# Acknowledgements

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A very special thank you to Dr Susan Thomas for allowing access to her work and permission to use the PCI in Australia. Susan’s input this study is greatly appreciated. I look forward to working with Susan in the future.

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Appendix 1 Staff information and consent

# Improving Quality of Care Through Detection of Complexity Amongst Older People in a Community Setting: Pilot Randomised Controlled Trial Protocol.

**Participant Information Sheet**

Community patients are becoming increasingly complex. This is increasing the requirements of care and support to remain in their homes for longer. Currently complexity is detected using clinical judgment. There is no consistent method that is objective and links to time and resources allocated to patients.

The aim of this quality improvement activity is to explore the impact of the Patient Complexity Instrument (PCI) to detect patient complexity and the subsequent resource and time allocation for community dwelling patients aged 65 and over. It is anticipated that using the PCI will enhance the detection of patient complexity and appropriate resource and time allocation.

All nursing staff are invited to participate in this pilot. Participation involves completion of a pre-pilot survey, a survey regarding complexity of patients and referrals completed on admission and a post-pilot survey. Staff admitting a client in the intervention group will also complete the PCI. Staff will be allocated a code using a sealed envelope system provided by an independent person. The envelope will be provided to the staff member; the included code is to be used when completing pilot documents. A list linking the nurses name only and code will be kept separately from data collection documents to protect nurse’s identity. This list will only be accessed if a staff member needs to retrieve their ID code.

Aggregated data may be used in a publication or conference presentation. When the survey analysis is complete, a summary will be provided to all staff.

Completion of these surveys will take no more than 15 minutes of your time. Your participation is completely voluntary and any identifying information will be removed by an independent person prior to data analysis.

If, in the unlikely event that it may be possible for you to be identified because you belong to a small subgroup your data will be grouped with others to make the subgroup larger to avoid individuals being identified.

This survey has been approved by Community Services Quality Review Meeting and the Bendigo Health’s Human Research Ethics Committee.

Your consent to participate in this project is requested.  Should you decline, your relationship with other staff and the organisation will not be impacted. Should you wish withdraw at any point any data already collected will be retained as we will be unable to identify this data as yours.

Jenny Boak is conducting this project as part of a Master of Applied Science.

I \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ agree to participate in the ImPaCt project. I understand the project and the documentation requirements as outlined above.

Signature\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

If you would like to discuss this survey, please email Jennifer Boak at [jboak@bendigohealth.org.au](mailto:jboak@bendigohealth.org.au). If you have any concerns of an ethical nature in relation to this survey please contact Sally McCarthy, Research Manager at Bendigo Health on 5454 6412 or [samcarthy@bendigohealth.org.au](mailto:samcarthy@bendigohealth.org.au).

Appendix 2 Staff survey 1 Date of assessment:

Appendix 2 staff survey 1 Date of assessment:

|  |  |  |  |
| --- | --- | --- | --- |
| Staff code |  | Patient code |  |
| Patient age |  | Patient Gender (circle) | Male/female/other |

Staff years of experience in nursing and community nursing.

|  |  |  |  |
| --- | --- | --- | --- |
| Total No. years in Nursing |  | No. years in the Community |  |

Reason for referral: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What nursing interventions were allocated for this visit?

|  |  |
| --- | --- |
| Nursing intervention | Time |
|  |  |
|  |  |
|  |  |

Based on the information you have gathered about this patient please rate their level complexity

|  |  |  |
| --- | --- | --- |
| Low complexity | Moderate complexity | High complexity |

Please explain how you came to this rating

|  |
| --- |
|  |

Were any nursing interventions allocated after your assessment? If so, what were they?

|  |  |
| --- | --- |
| Nursing intervention | Time |
|  |  |
|  |  |
|  |  |

What referrals have been completed as a result of your admission, what is your rationale?

|  |  |
| --- | --- |
| Referral to? | Rationale for referral |
|  |  |
|  |  |

Appendix 3 Staff survey 2 Date of assessment:

|  |  |  |  |
| --- | --- | --- | --- |
| Staff code |  | Patient code |  |

After completing the PCI how would you rate this client’s level of complexity?

|  |  |  |
| --- | --- | --- |
| Low complexity | Moderate complexity | High complexity |

If this is different to your previous rating, if yes, please explain the change

|  |
| --- |
|  |

Were any nursing interventions allocated after your assessment? If so, what were they?

|  |  |
| --- | --- |
| Nursing intervention | Time |
|  |  |
|  |  |
|  |  |

What referrals have been completed as a result of your admission or review, what is your rationale?

|  |  |
| --- | --- |
| Referral to? | Rationale for referral |
|  |  |
|  |  |
|  |  |

Appendix 4 Staff pre pilot survey 3 staff code:

This survey will be completed at the start of the pilot in July and then again at the end in September. The intent is to gain additional information regarding the detection of complexity. Your response to these questions is appreciated.

On a scale of 1(not comfortable at all) to 5 (very comfortable)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Question | 1 | 2 | 3 | 4 | 5 |
| How comfortable do you feel in detecting patient complexity? |  |  |  |  |  |
| How comfortable do you feel in adjusting interventions according to complexity? |  |  |  |  |  |
| How comfortable do you feel in adjusting the time allocated according to complexity? |  |  |  |  |  |

You are currently using clinical judgement to detect complexity. What are the factors that you consider when thinking about patient complexity?

What are the barriers to detecting complexity?

|  |
| --- |
|  |

What are the enablers to detecting complexity?

|  |
| --- |
|  |

Appendix 5 Staff post pilot survey 4 staff code:

You have now been involved in assessing patient complexity with and/or without the PCI. The intent is to gain additional information regarding the detection of complexity. Your response to these questions is appreciated.

On a scale of 1(not comfortable at all) to 5 (very comfortable)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Question** | **1** | **2** | **3** | **4** | **5** |
| How comfortable do you feel in detecting patient complexity? |  |  |  |  |  |
| How comfortable do you feel in adjusting interventions according to complexity? |  |  |  |  |  |
| How comfortable do you feel in adjusting the time allocated according to complexity? |  |  |  |  |  |
| How comfortable do you feel using the PCI? |  |  |  |  |  |
| How comfortable do you feel that using the PCI can support your decision regarding patient complexity? |  |  |  |  |  |

You are currently using clinical judgement to detect complexity; you may also consider complexity differently now. What are the factors that you consider when thinking about patient complexity?

What are the barriers to detecting complexity using the PCI?

|  |
| --- |
|  |

What are the enablers to detecting complexity using the PCI?

|  |
| --- |
|  |

Appendix 6 Patient Complexity Instrument

