AGED CARE COHORT IN CENTRAL AND EASTERN SYDNEY:

DEMONSTRATION PROJECT SUMMARIES

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Background

It is anticipated that, by 2030, there will be a significant increase in the ageing of the population and in the number of people living with long term conditions (including cancer) in Central and Eastern Sydney (CES). At the same time it is expected that there will be a shift to health care provision in the community driven by the costs of hospital care and need to prevent unplanned and potentially preventable hospitalisation. Understanding the health service needs of these populations will depend on robust information systems that link not only primary, secondary and tertiary service data but will also allow for population based performance indicators to be developed.

During 2015 researchers at the centre for Primary Health Care and Equity worked with staff from Sydney (SLHD) and South East Sydney Local Health Districts (SESLHD) to explore the feasibility of using the Sax Institute's 45 and Up Study to identify a community-dwelling population of older residents. This work:

1. Identified interested staff within the LHDs, and potential partner organisations, including the Central and Eastern Sydney Primary Health Networks (CESPHN) which came into existence on 1 July 2015,
2. Discussed the potential value of such as population sample for planning, evaluation and development of services within the LHDs, and
3. Identified and undertook a number of demonstration projects.

To date a feasibility study and a feasibility data reports have been prepared. These may be accessed at www.cphce.unsw.edu.au.

These reports identified a number of potential benefits for partners:

- Information on health service use (including claims for health care provided under the Department of Human Services Medicare (MBS/PBS), admission to hospital and Emergency Department use) by over 30,000 people over 45 years of age at recruitment (2006-2008) in a community dwelling population in the local area;
- Capacity to passively monitor the impact of integration programs on health service use and patterns of hospitalisation;
- Identify predictors of health service use and develop interventions to address them;
- Strengthen the link between research and practice;
- Facilitate planning across three key health organisations;
- Strengthen working relationships between 2 LHDs and the PHN (SLHD and SESLHD together share a common catchment area with the CESPHN)
- Establish leadership in use of cohort data to inform planning and performance.
- Once the cohort is established the costs of data will fall
- Both Sax Institute and Bureau of Health Information have expressed interest in supporting the cohort.

Three demonstration projects were undertaken. The full reports of these projects are available at www.cphce.unsw.edu.au. The summaries of these projects are included in the following pages of this document.

As a result of this report a partnership between SLHD, SESLHD, and CESPHN has been formed to support this work and funding secured for 1st January 2016 to 30th June 2017. The major activities that this funding will support are:

1. Development of new governance procedures including a project management committee and project advisory group,
2. Preparation of applications to update the existing cohort to include ongoing linkage of available administrative data until 2020,
3. Establishment of a 45 and Up Primary and Community Health Cohort and use of these data to undertake work in relation to primary and community health and the transer of care between health sectors,
4. Further development of the demonstration projects reported here and identification of new demonstration projects,
5. Identification of opportunities with this work.

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45 AND UP AGED CARE COHORT IN CENTRAL AND EASTERN SYDNEY:

FACTORS ASSOCIATED WITH REPORT OF A FALL IN THE LAST 12 MONTHS

DEMONSTRATION PROJECT 1

Executive Summary

Rationale: Falls are a significant cause of unplanned hospital admissions. There are currently a number of falls prevention activities occurring in the health region. However the population reach of these programs is generally low and there is insufficient capacity to increases resources on them. Hence there is a need to improve targeting of falls prevention to those most in need; both in terms of their risk and their vulnerability to missing out on interventions.

Project aims: The aim of this project was to determine the rate of self-reported falls in the previous 12 months using baseline data of the '45 and Up' Study and to investigate the risk factors that are associated with increased risk of reported falls.

Methods: A cross sectional analysis using the '45 and Up' baseline study data linked to the administrative datasets was performed. These administrative datasets included Medicare data, NSW Admitted Patient Data Collection and the Registry of Births, Deaths, and Marriages. The participants were 31,173 '45 and Up' Study participants who resided within the common catchments of Sydney and South Eastern Sydney Local Health Districts (LHDs). These LHDs combined formed the catchment for Central and Eastern Sydney Primary Health Network (CESPHN).

The primary outcome measure was self-report of falls during the last 12 months. The association of self-reported falls and demographic, socioeconomic, lifestyle, wellbeing, and health services factors were explored.

Results: 22.5% of participants reported a fall in the last 12 months in the catchment area. Of these just under 50% reported one fall only. 12.8% reported a fracture in the last 5 years, usually associated with an upper or lower limb. The rate of falls reported was more frequent for females and increased with age. The report of fractures increased with age for females but not males.

Low household income was strongly associated with an increased risk of a reported fall after adjusting for age. Participants who reported a fall in the last 12 months were 2.45 times more likely to also report multiple chronic health conditions. Participants with low bone density, osteoporosis or osteoarthritis were about 60% more likely to report a fall. Those who reported having a knee or hip replacement were 60% more likely to report a fall in the last 12 months. There was a strong association with report of a fracture in the last 5 years (OR: 2.9).

Participants who self-reported a fall were also more likely to report anxiety, depression and insufficient physical activity. They were also more likely to frequently use health services like regular visits to GP and have had a general practice management plan /team care arrangement.

Implications for health services: Falls are a significant issue for older people and increase with age. Risk of falling is associated with decreasing mobility, health and wellbeing. Participants who self-

reported a fall were more likely to have attended a general practice. Hence general practice presents an opportunity to identify patients that are at an increased risk of a fall and implement preventive care. Patients with multiple chronic health conditions, or fractures in the past with a low household income may also be suitable for targeting of LHD falls prevention programs. The use of the chronic disease management items to improve access to prevention health programs may assist.

Further research opportunities: Further analyses of these data will include up to date data (to 2014) and could be used to evaluate falls prevention activities in the area. It would also be useful to explore risk among participants who were admitted to hospital with a falls related issue. The potential access to longitudinal data will enable more detailed exploration of the longer term consequences and health service use of participants at different health risks as reported during completion of the baseline questionnaire.

SNAPSHOT OF INTEGRATED CARE IN CENTRAL AND EASTERN SYDNEY:

GENERAL PRACTICE ATTENDANCE FOLLOWING HOSPITAL ADMISSION

DEMONSTRATION PROJECT 2

Executive Summary

Rationale: Integration and co-ordination of health care are key performance indicators for Local Health Districts and for Primary Health Care Networks. Ensuring seamless care at the transition from hospital to community care and vice versa are integral to improving co-ordination and sharing of information. One measure of transition is return to general practice for follow-up of care after a hospital admission.

Project aims: The aim of this project was to understand the occurrence of and the factors associated with the rate of and time to return to general practitioners (GPs) for follow-up by a community dwelling population of residents who participated in the '45 and Up Study' and were admitted to hospital in the year following recruitment.

Methods: A cross sectional analysis using the '45 and Up' survey data linked to the administrative datasets was performed. These administrative datasets included Medicare data, NSW Admitted Patient Data Collection and the Registry of Births, Deaths, and Marriages. The participants were 31,173 '45 and Up' Study participants who resided within the common catchments of Sydney (SLHD) and South East Sydney (SESLHD) Local Health Districts and Central and Eastern Sydney Primary Health Network (CESPHN). Participants with at least one hospital admission in the twelve months following recruitment were included.

The primary outcome measure was return to GP following admission. The association of return to GP and demographic, socioeconomic, lifestyle, wellbeing, and health services factors were explored.

Results: 84.1% of the 7,235 participants residing in Central and Eastern Sydney catchment area with a hospital admission within 12 months of recruitment to the 45 and Up Study returned to general practice within 12 months of discharge. The mean time to follow-up was 34.6 days (SD: 46.1 days).

39.2% of participants had a record of a claim for GP consultation within 2 weeks of discharge. There was no difference in follow-up for males or females. Participants aged 75 years or more were significantly more likely to have a claim for GP consultation than younger participants. Participants with low socioeconomic status as indicated by low education attainment or household income were nearly twice as likely to have a GP claim within two weeks of discharge as participants with a university education or higher income. Participants who reported poorer health were significantly more likely to have a GP claim than participants who did not report any health conditions. This trend was also observed for participants who reported severe level of physical limitation according to SF36 or severe anxiety according to K10 score.

Participants were admitted for a wide range of principal reasons coded using ICD10AM. The percent who returned to GP follow-up within 2 weeks varied by ICD 10 chapter from 31% to 62%. Return was

low for patients who were admitted for neoplastic conditions and highest for patients who were admitted for respiratory conditions and circulatory conditions. Participants who were admitted with an ambulatory care sensitive condition was more likely to return to general practice within 2 weeks that their counterparts. Further exploration of the variability in rates of return is required.

Relatively high rates of re-admission were observed; 34.8% (n=2,516) were readmitted within 4 weeks. GP follow-up was associated with readmission; of participants who were readmitted, 44.4% had a claim for GP care within 2 weeks compared to 36.5% who were not readmitted.

Implications for health services: Generally, there are low rates of return to general practice following a hospital admission. This said, participants who may be at risk of poorer outcomes including those with low socioeconomic status, poor overall health status, and physical limitations or high levels of psychological distress were more likely to attend the GP within 2 weeks of discharge. Further investigation of the reasons for variability by diagnostic codes is required. These results have implications for discharge communication and handover during transition from hospital to community care, particularly for those with complex care needs.

Further research opportunities: The analysis based on the primary reason for admission (ICD10) used only the chapter headings. These may have been broad groups that missed potential information. Further we did not distinguish those admissions that were day only admissions, procedural, or avoidable/unplanned. Further analysis of these factors is warranted.

SNAPSHOT OF INTEGRATED CARE IN CENTRAL AND EASTERN SYDNEY:

ACCESS TO MEASURES OF INTEGRATED CARE FOR PARTICIPANTS ATTENDING GENERAL PRACTICE

DEMONSTRATION PROJECT 3

Executive Summary

Rationale: The number of people living with chronic and complex health conditions is increasing rapidly. Ageing of the population, the prevalence of particular behavioural and physiological risk factors and a variety of social and economic determinants are associated with chronic health care problems. Chronic conditions are associated with increasing complex health care needs and increasing health expenditure; 40% of which is spent in hospital setting. Reducing the associated cost of chronic health care has provoked interest in better integrating primary, secondary and tertiary health care in order to better co-ordinate care provision, improve the quality of care and reduce inappropriate use of health services especially hospital inpatient and emergency services.

Project aims: The aim of this project was to explore the uptake of measures of integrated care among participants in the 45 and Up Study resident within the common catchment areas of Sydney Local Health District (SLHD), South Eastern Sydney Local Health District (SESLHD), and Central and Eastern Sydney Primary Health Network (CESPHN) in the 12 months following recruitment and to examine the factors that are associated with uptake and the impact on subsequent care such as hospitalisation.

Methods: This was a record linkage project. There were 31,115 45 and Up participants who resided in Sydney (SLHD), South East Sydney (SESLHD) Local Health Districts and Central and Eastern Sydney Primary Health Network (CESPHN). Their data were linked to the NSW Admitted Patient Data Collection (APDC), NSW Registry of Births Deaths and Marriages, and Australian Department of Human Services Medicare (MBS) data. The final linked data collection comprised 26,429 participants.

Measures of integrated care for this study were extracted from the MBS data for the 8 months prior to and 7months following recruitment date and included:

- Preparation of a general practice management plan (GPMP) and/or implementation of team care arrangements (TCA); for the purpose of this work these were combined.
- Review of GPMP/TCA;
- Continuity of primary care provider – the percent of participants with more than 80% of their consultation with the same provider and at least four consultations;
- Nursing and allied health care – Medicare claims for allied health or nursing care.

Hospitalisation was defined as any hospitalisation in the 12 months following recruitment. The study factors included demographic characteristics, socioeconomic status, lifestyle and health and wellbeing.

Results: A claim for preparation of a GPMP/TCA arrangement was noted for 4,292 (16.2%) and a review of GPMP/TCA by 1,656 (6.3%) of participants. Older age, number of health conditions, physical impairment, psychological distress and frailty were associated with increased likelihood of preparation or review of a GPMP/TCA. Higher educational attainment and household income were associated with a decreased likelihood of a claim for GPMP/TCA preparation or review.

A third of participants (36.1%) had continuity of care. Continuity increased with age, being born overseas and physical limitation and psychological distress or frailty, and decreased with higher educational attainment and household income. Eleven percent (11.3%) of participants had a claim for a Health Assessment. Claims for health assessment were less frequent with higher educational attainment and household income but more frequent with increasing age, number of conditions and physical limitation. Seven percent of participants (7.3%) had claims for nursing and allied health and these were more frequent in females, older participants, and those who reported more health conditions, physical limitation, psychological distress or frailty and were less frequent in those participants with higher educational attainment or income.

One quarter of participants (27.4%) had one or more hospitalisations in the 12 months following recruitment. Having a GPMP/TCA or review, continuity of care, or claim for Health Assessment, or nursing or allied health care were associated with an increased risk of hospitalisation.

Using a multivariate logistic regression model, females were less likely to be admitted than male; hospital admission increased with age and with Australian country of birth; and the probability of hospitalisation was not associated with income or education. The probability of hospitalisation increased with increased poor health as measured by number of health conditions reported, frailty, physical limitations, and psychological distress. When these variables were included in the full model (model 3) not having continuity of care, not having a GPMP/TCA prepared and not having a claim for access to allied health or a nurse were all significantly associated with increased risk hospitalisation. The associations between hospital admission and review of GPMP/TCA and with health assessments were not statistically significant in the fully adjusted model.

In univariate analysis, the GP processes of care (GPMP/TCA, review of GPMP/TCA, continuity of care, health assessments and nurse/allied health services) were all provided more frequently to participants on the basis of need as defined by their age, country of birth, education, income, number of conditions, physical limitation, mental distress and frailty. However the review of care plans, health assessments and nurse/allied health services were less frequent than was their intent especially in participants with or at risk of chronic conditions.

The association between processes of care and hospitalisation in the 12 months following recruitment was consistent with participants who received these services being at greater risk of hospitalisation and readmission. In the multivariate analysis having continuity of care, a care plan and a claim for nursing/allied health decreased the likelihood of admission. This is consistent with

other research in which demonstrated that review of a care plan, continuity of care and multidisciplinary care for participants with diabetes were associated with a decreased likelihood of admission.

Implications for health services

These preliminary findings suggest that there are positive benefits from the implementation of proactive primary care as encouraged by the general practice payments for care planning and multidisciplinary care for older patients with chronic health conditions. These findings also suggest that GPs and primary care practitioners are able to identify participants at risk and are implementing care planning and multidisciplinary care. There are opportunities to enhance the implementation of these among at risk hospitalised patients to ensure that they are referred back to general practice following an admission for care planning.

Further research opportunities

These preliminary findings demonstrate that there are benefits in implementing the elements of proactive and multidisciplinary care. Further research is needed to explore associations between general practice care and hospitalisation and to examine the factors that are associated with care planning and multidisciplinary care following hospitalisation. The establishment of an ongoing linkage cohort in the region will support this work.