The primary health care nurse of the future: Preliminary evaluation of the Nurse Navigator role in integrated care

Summary of Relevance

Issue: The nurse navigator role has recently been introduced in Australia with few studies articulating the role, scope of practice, educational preparation, impact on care coordination, patient or health professional satisfaction.

What is already known: Nurse navigators are positioned to assist patients and their carers manage their health and illness along the care continuum.

What this paper adds: Evaluation of the nurse navigator role in integrating care for chronic disease patients across primary and secondary services in one Queensland setting. Findings include nurses' role satisfaction albeit with the need for role clarity; and satisfaction with care from patients and other health professionals, primarily because of communication and care coordination.

Abstract

Problem/Background

Nurse navigators in the Gold Coast Integrated Care program are co-located in general practices and a community coordination centre providing enhanced access to care for chronic disease patients through a multidisciplinary, multiservice, multilevel primary health care model, which has yet to be evaluated.

Aim

To evaluate the context, mechanisms and processes of nurse navigators' practice after one year.

Methods

The theoretical framework of realist synthesis framed the evaluation examining the relationships between context (the program), mechanisms and processes of enhancing patient access to care. Focus groups were conducted with seven of eight nurse navigators and 33 randomly selected patients. Surveys were completed by 55 general practitioners and 19 practice nurses, analysed using descriptive

statistics and content analysis of free text. Patient and nurses' focus group data were thematically analysed.

Findings

All patients reported high satisfaction with the nurse navigators. Themes from the nurse navigator group included enthusiasm and engagement; constraints related to workload, variability and time; desire for a professional 'voice', and issues with the technological environment. General practitioners and practice nurses identified the importance of information, communication, coordination, advocacy, liaison and patients' positive health outcomes, with 73% of GPs and 84% of PNs reporting being satisfied with the NN role.

Discussion

The role is effective in enhancing access to care for chronic disease patients by bridging the gap between primary and secondary care. Their expertise and collaborative liaison with multidisciplinary health professionals has been well accepted by General Practitioners, Practice Nurses, patients and the nurse navigators themselves. Further development of the role over is expected to show an impact on patient outcomes and value to the health system in the ongoing evaluation.

Conclusion

The role and scope of practice needs to be articulated across different contexts, and to advance evidence for practice and education for primary health care.

Keywords: Nursing, Nurse Navigator, Primary Health Care, Primary Care, Nursing Roles, Integrated Care

1. Introduction

This paper reports on an evaluation of the nurse navigator (NN) role in the context of an integrated care program in Queensland, one year after its introduction. The Australian NN role has been developed as a response to the need to improve access, equity, efficiency and effectiveness of health services (Bennett, 2013; Australian Government Department of Health and Ageing (DoHA), 2010; National Health, Hospitals Reform Commission, 2009). As primary health care (PHC) goals these are also the goals of practice nurses (PNs) committed to enhancing coordination and continuity of care (Carrier, Halcomb & Davidson, 2015; McMurray & Cooper, 2017). Since their introduction into Queensland Health (QH) in 2015, nurse navigators have been practising throughout the state. Most are linked with specific hospital services such as maternal and infant care, paediatrics, or disease specific care such as cancer services, with some being community based. All share a commitment to assist individuals and families 'navigate' the health system and receive the services they require in the right place at the right time. However, the QH role has yet to be defined in relation to the nurses' scope of practice, interventions or educational preparation for the role. We have begun to address this gap in nursing knowledge by outlining the distinctive dimensions of NN practice in the Gold Coast Integrated Care (GCIC) program. NNs in the GCIC program are unique in being situated in general practice and the wider community to help bridge the gap between primary and secondary services. This paper reports on an initial evaluation of their role in helping chronic disease patients and their care providers manage their health and social care in the community.

2. Integrated Care

Over the past decades IC programs have been developed and refined primarily throughout the United Kingdom (UK) and the United States (US). Although there are some differences, most revolve around patient centred care (PCC) strategies to link appropriate, acceptable and effective services to help people remain adequately cared for in the community and avoid unnecessary hospitalisation. Like those in the US and the UK (Curry & Ham, 2010; Faber et al., 2014; Maueng et al., 2013) the GCIC

program was developed on the basis of Wagner et al.'s (2001) chronic care model (CCM). The CCM focuses on holistic assessment of individual risks, stratified to inform person-centred partnerships in developing coordinated care pathways for those the highest risk of illness episodes and fragmented care (Faber et al., 2014). As in other IC programs the GCIC model is multilevel, operating on the macro (shared governance between care organisations), meso (chronic disease status) and micro levels (care organised around individual patient needs) (Curry & Ham, 2010; Valentijn et al., 2013). IC models encompass six interrelated elements: health care organisation, delivery system design, clinical information systems, systematic decision support, patient self-management support and links to community resources. They are designed to reflect Faber et al.'s (2014) three levels of involvement: communication strategies to foster health literacy; consultation to gather direct patient input such as satisfaction and quality of life measures; and participation, including ongoing discussion of service and information needs.

People with complex, chronic conditions are among the most vulnerable to system barriers that obstruct smooth transitions through the system. The impact of these barriers occurs on two levels. First, without ease of access to the care they need when they need it individuals and populations cannot achieve better health, and second, the health care system cannot provide value for money. IC programs respond to these needs by bringing together inputs, delivery, management and organisation of services related to diagnosis, treatment, care, rehabilitation and health promotion (WHO, 2008). Importantly, overcoming discontinuities in both information and services helps maintain person-centred care (PCC). PCC is based on the premise that shared understanding between patients and health professionals will lead to safer, better quality care transitions, continuity of care and effective, sustainable outcomes (ACSQHC, 2014; Clinch & Benson, 2013; Truog, 2012). This partnership approach to care embodies the PHC principles of access, equity, empowerment, health education and promotion, intersectoral collaboration and cultural sensitivity. Together these principles are intended to guide nursing practice and models of IC (McMurray & Cooper, 2017; Valentijn, Schepman, Opheif & Bruijnzeels, 2013).

3. The Gold Coast Integrated Care Model

The GCIC model of care was developed to respond to a rapidly growing older population of Gold Coast residents with disproportionately higher rates of chronic and comorbid conditions than the Australian national average (ABS, 2011; Cooper et al., 2016). Feedback from the local hospitalised population indicated a lack of coordination between the hospital and their general practitioner (GP) and confusion about how to access appropriate information and services. This situation is typical in multilayered health care systems such as ours, plagued by fragmented, disconnected services related to a complex interplay of funding arrangements and division of responsibilities (OECD, 2015; Osborn et al., 2015; Schoen et al., 2011).

The GCIC program and its evaluation strategy began with invitations to all local general practices for volunteers to be part of a four year 'proof of concept' clinical trial in partnership with Griffith University, Queensland Health, the Gold Coast Hospital and Health Service (HHS), and the Gold Coast Primary Health Network (Scuffham et al., 2017). Once an initial group of network practices (N = 14) was recruited and funding secured, a purpose built Coordination Centre (CC) was established to house a multidisciplinary team (MDT) of clinicians, including medical, allied health, nurses/nurse practitioners/and non-clinical service navigators. Patients were enrolled on the recommendation of the GPs, then contacted by a service navigator (located at the CC), who explained the program and gained verbal consent to continue the enrolment process. Each patient was then given a comprehensive, holistic assessment by members of the MDT. The assessment culminated in a care plan and clinical pathway jointly agreed to by the patient, a GCIC clinician and the patient's GP, at which time a formal signed agreement from all three parties was obtained. All information was then stored in a Shared Care Record (SCR), an electronically enhanced system housing clinical informatics. Information included the patient's risk assessments, longitudinal clinical history, existing referral networks and all clinically relevant data. The SCR is a dynamic document that continues to be updated for access by the CC team, GPs, PNs, NNs and patients themselves. The SCR provides not only specific

proactive and reactive health care information, but a database of diagnostic information. This information has subsequently been used to create chronic disease registers with practice-based population indicators of prevalence according to specific conditions. Together with the SCR the disease registers provide precise, timely information that is expected to lead to better health outcomes and improved management of patients (Connor, Day & Meston, 2016).

4. The role of the GCIC nurse navigator

One year after the program began eight Registered Nurses (RN's) were appointed to the GCIC program as NNs. QH also appointed a number of NN positions as a quality improvement strategy to enhance patient transitions and continuity of care; however most are hospital based developing their roles to assist hospitalised patients and their families. The GCIC role is distinguished from these NN roles because it is a PHC role, with the nurses positioned as a bridge between general practices and the broader health service. They practise under a unique, legally constituted joint appointment between the GPs, the HHS and the GCIC Coordination Centre. Signed legal agreements allow them access to GCIC and GP data, although their employment is through QH. Each of the GCIC NNs is co-located with a base in one or several general practices depending on the practice size, and the CC, which enables them to focus on multidisciplinary, coordinated care for the practice population with chronic conditions who have agreed to be part of the program. In this dual context the NNs provide chronic disease patients with enhanced access to care through the multidisciplinary, multiservice, multilevel PHC model, which incorporates, but is broader than primary care.

Most NNs in the program have experience in community health or practice nursing. These experiences equip them with the knowledge and expertise to promote patient and family health literacy goals and to mobilise social and cultural capital to support them in making health decisions (Connor et al., 2016; Cooper et al., 2016). The NNs have also been appointed on the basis of their superior communication skills, and they are provided with a range of additional professional development opportunities. To date these have included advanced training in the purpose-built

Information and Communications Technology (ICT) systems, with particular emphasis on the SCR and the practice-based disease registers. Their continuing education sessions have also included health promotion topics such as motivational interviewing.

The NNs' health promotion strategies typically progress from assessment of patient and family health literacy, activation for health education, to goal-setting, problem-solving, and identifying patient needs for service coordination and referrals to community services. This information provides a foundation for discussions with the patient to help tailor their health guidance to individual needs and patient and family inclusive decisions for self-management. These are the hallmarks of patient-centred health promotion (Kitson et al., 2012; McCormack & McCance, 2010; Picker Institute, 1987). Access to the GP medical record system and other service information in the SCR, combined with comprehensive, dynamic assessment of risk and need, reinforces PCC (Cooper et al., 2016). The risk assessment data and information linkages between the hospital and GP services distinguishes the NN role from that of the PNs. The PN role is typically focused on practice services and referral pathways. The NNs collaborate with PNs by providing information they may not have previously accessed in the practice, adding depth and breadth to decision-making. Additional information is accessed through the discharge phone calls made by the NNs after hospitalisation. The NNs are also able to leave the practice to conduct home visits, which adds another dimension to the patient information, particularly in identifying social needs. Together, the GPs, NNs and PNs are able to articulate evidence-based proactive and reactive pathways for care.

The evidence base begins by gathering a baseline of each patient's information on entry to the program using a combination of open-ended questions and survey instruments. This clinical and demographic information forms the initial diagnostic profile for case management. Assessments are inclusive of patient defined needs, preferences and values as well as the research evidence the nurses bring to decision-making. The NNs and other members of the MDT participate in monthly 'journal club' discussions of current research evidence pertaining to chronic conditions and health education, and weekly huddles to discuss patient progress. These further entrench their commitment to

evidence-based practice (EBP). NNs and other team members also have access to the IC database of published research studies, which is continually updated by the research team attached to the program. Below we report the preliminary evaluation findings of the NN role within the GCIC program.

5. Methods

5.1 Data Collection and Analysis

Data for this research was collected during 2016 as part of the overall GCIC program evaluation. The evaluation, conducted by the Centre for Applied Health Economics, Griffith University, is a quasi-experimental controlled trial. Its aim is to determine the effectiveness and costs of the new model of care, with impact, outcome and process indicators to be reported on completion of the trial in 2018. The research reported here is an important process component, as the NN role is integral to the new model of care. The theoretical framework for evaluation is Pawson & Tilley's (1997) realist synthesis, which evaluates a broad range of evidence to examine the relationships between context, mechanisms and outcomes. This framework has been used in a number of IC programs as part of the formative evaluation to help evolving programs understand how and under what conditions certain causal mechanisms work in practice. The evaluation is aimed at informing decision-making for subsequent stages of development, and ultimately, to demonstrate the impact and outcomes of major changes to service organisation (Bardsley et al., 2013; Greaves et al., 2013). The final synthesis is intended to reflect a realistic integration of patients' perceptions and satisfaction in their journey through care, with the analysis of health professionals' experiences. Tracking the patient experience over time can demonstrate how occurrences and events in the continuum of care can inform PCC and steps that should be taken to tailor care to individual needs (Wolf, Niederhauser, Marshburn & LaVela, 2014). In this respect, examining the patient experience rather than satisfaction alone can provide broader insights into service barriers and facilitating factors. The dual perspectives of patients and providers is expected to reveal what shaped, enabled or constrained the context of the program and the mechanisms of change (Greenhalgh et al., 2009). The sub-study

reported here provides a first year analysis of the relationships between context (the IC program), and the structural mechanisms and processes used by the NNs in general practice to enhance patient care. Data collection included focus groups with the GCIC NNs and patients enrolled in the program and surveys administered to network GPs and PNs to examine stakeholder experiences and perceptions of the program and the NN role.

5.1.1. Focus groups

Separate focus groups were conducted with the NNs and patients, given the slightly different objectives of each. The NN focus groups were aimed at discussions of both patient care and interactions with the MDT, GPs and PNs in the practice, whereas the patient groups were focused on their illnesses and care trajectories as well as their NNs. Having separate and therefore shorter focus groups also reduced the burden of response on patients, who were chronically ill. All focus groups were moderated by the first author (AM) and were recorded and professionally transcribed. Data were thematically analysed separately by the first and second author (AM, LW) using Braun and Clarke's (2006) analytic method and Nvivo (version 11) software. The research assistant (LY) recorded field notes that were then compared with the transcriptions.

An email invitation was extended to all GCIC NNs to attend a one hour focus group at the end of 2016. Written consent to participate in the session was obtained from all participants on the day. The transcript of the NN focus group was provided to all participants for comment. No corrections were required.

Patient participants from the GCIC program were randomly selected and invited to attend one of four 45 minute sessions held at a local venue during March 2017. Patients with dementia or a severe cognitive impairment were excluded. Patients and their carers were invited by phone to attend one of four focus groups with a confirmation letter including venue details and interview protocol sent to those who agreed to attend. Written consent to participate in the focus group session was obtained from all participants on the day. See Table 1 for the NN and patient interview guides. A summary of the focus group findings was sent to all participants.

Table 1 here

5.1.2. Surveys

Because IC programs re relatively new in many countries, no valid standardised instruments are available to measure patient or provider satisfaction with the NN role or other IC structures (Braun, Kreimeier & Greiner 2010). Therefore a purposely designed survey was developed collaboratively by members of the research team. It was designed to gather feedback from all network GPs and Practice Nurses (PN) on how well the program was working in terms of their satisfaction with communication, the ICT, other service providers, and specifically the NN role. This instrument was not pilot tested as it was expected to be modified annually as different aspects of the program were introduced. The GPs and PNs were asked to “please rate your overall satisfaction with the Nurse Navigator role” on a 5 point Likert scale from “very dissatisfied” to “very satisfied”. A parallel question prompted similar responses in relation to satisfaction with the GCIC program in general, other health services and the ICT. Each of these questions then sought open ended comments. The program impact and outcomes to be reported in 2018 will include responses to all items to reflect the acceptability of the program by GPs and PNs over time. This report is confined to responses related to the NN role.

Surveys were administered between November 2016 and February 2017. Staff on leave during this period were excluded. Individuals were emailed the survey and a link to complete online (through Survey Monkey). The NNs also provided GPs and PNs with a paper-based survey, and those who had not yet completed the survey were mailed a copy with a reply paid return envelope. Reminder emails were also sent to GPs and practice managers were contacted by phone in December 2016 and January 2017 to increase the response rate. Surveys assessed staff characteristics, referral processes, communication with the HHS, GCIC and community services, as well as staff satisfaction with elements of the GCIC program. For this research, survey data were analysed using Microsoft Excel (2010) as descriptive data only is presented.

5.2 Ethics

Ethics approval was granted by the Human Research Ethics Committee (HREC) of GCHHS on the 16th March 2015 and Griffith University on the 16th April 2015 (HREC/15/QGC/22).

6. Findings

Survey results were analysed from 55 of the 106 GPs in the program (52%) and 19 of the 35 PNs (54%). Table 2 shows the characteristics of survey responders. Over half of respondents (55.4%) were aged between 40-59 years. All PNs were female with more than half of the GPs (54.5%) being male. Across all groups, 62.2% of staff were employed full time and 54.5% had been in the current position for ≥ 15 years. Findings revealed that 73% of GPs and 84% of PNs reported satisfaction with the NN role. Their comments on the program included: *“The nurse navigator makes the GCIC program work, and has changed care in the practices”*. *“The nurse navigator assists in arranging outpatient department appointments”*. Respondents mentioned the availability, support and enthusiasm of staff, highlighting the NN, who *“improved communication, organised social support networks, advocated for patients, liaised with GPs and PNs, and contributed to patients’ positive health outcomes”*. The NN role was explained as *“integrating hospital care, expediting patient review, providing excellent quality services (e.g. palliative care and 24 hours phone contact for nursing advice), and supporting both GPs and patients (e.g. integration of the community health resources)”*.

Table 2 here

6.1. Findings From the NN Focus Group

Seven of the eight GCIC NNs attended the focus group, with one unavailable. All attendees were female and had been working in the program since the role implementation in April 2016. Analysis identified four overarching themes: enthusiasm and engagement in undertaking the NN role; constraints linked to workload, variability and time; their desire for a professional ‘voice’ in the team, and issues related to dealing with the ICT environment.

Enthusiasm and engagement

The most frequently identified factor in enacting the role was the strong relationship with the GPs and PNs: *"They really appreciate it"*, and the professional satisfaction they gained from the role. The NNs also reported some ambiguity in forging a new and innovative role, yet explained that they valued being able to combine their new skills and knowledge with their previous experience, which was helping them provide better patient care and work in a coherent, clinical team. *"The majority of my time is clinical. You have the fortune of having had your practice and knowing them [patients] really well"*. Teamwork was an important element of communication networks, including the MDT at the CC. *"If you personally don't have it there's someone you can go to. We'll ring each other and say, can you help me with this or do you know the person to talk to about that?"* *"At GCIC we're working closely together"*.

Workload, variability and time

The unexpected heavy workload of the NNs was due to a substantial amount of travel back and forth between practices and the CC. They moved between one or more practices and had not anticipated the extent of variability. However, their familiarity with practice nursing helped them adapt their role to variable practice strategies. *"Every nurse in every clinic works differently...some do care plans but they're limited with the amount of time or what they can document in the patient file"*. The NNs did encounter a few challenges in filling service gaps without pre-empting existing plans. Their approach was diplomatic, especially in working with previously established care planning strategies for different GPs. *"In one of my practices, the doctor that owns it does not want to do cardiac, renal or COPD action plans... They've got their own asthma [plan]."* *"I find [named] practice good to work with but there was a lack of knowledge around things. You're caught between 'business as usual' and 'hospital avoidance' but the community programs at [named community]"*

particularly in wellness programs and diabetes...are underutilised. I've referred a lot of patients there and a lot have taken advantage of them...the [practice] nurses become more aware."

They recounted examples of where they were able to take the pressure off PN workloads.

"My best story is the easiest thing I've ever done. A woman in her 60s, still working full time was diagnosed with cervical cancer at 29 and had surgery, radiotherapy and chemotherapy which left her faecally incontinent and with urinary retention. She's self-catheterised but would have accidents 2 or 3 times a day at work, had no social life, single. You can imagine. I got the spinal outreach team in [city] and we have achieved social continence and she hasn't been faecally incontinent for months." Another NN explained her interventions with an elderly man. *"When I first assessed him he was at home age 89 with lots of cancer, deaf. He only had a level 2 package in the house with a son who is 40 working full time. He was left for hours by himself, having falls. He now has a level 4 package at home and when he got out of hospital we've kept him out of hospital for weeks because we brokered (outsourced) extra services. He's got wounds, falls, no pressure area equipment. As a whole team we've transformed his quality of life, but not extended it... he's nearly 90 and [the family] have decided that he's going to have quality of life, not so much quantity of life."*

Desire for a voice

Leadership in the NN group had been interrupted by the sudden illness of the nurse lead, and, despite the fact that they were all confident in their role, all participants commented on her absence. "We can't wait till [nurse lead] comes back because we haven't got a nurse lead."

Issues with the ICT

Because of their additional ICT expertise and training the NNs were cognisant of the importance of data linkage to patient assessment and case management. *"I spend a lot of time and record it in [program] as admin but actually what you're doing is trawling through EMR [electronic medical record] or other records to...collect clinical information". "It's building a picture of your*

patient” ... “computer work is clinical”.. “Coding – whether we phone someone, document something, reviewing a file – need to get that coding really defined”.

The value of previous clinical experience was evident in some of their reflections on working with new systems, especially the risk stratification tool. *“I think a lot of these tools were developed without nursing input...without nursing understanding.” “I’ve got a patient who’s 50 something and is really well linked...to the hospital. We’ve all got one of these stories. He’s a Type 11 diabetic, on dialysis, had part of his foot amputated. Now he hasn’t got there on his own has he? He has just ignored everything he’s ever been told. He sees a podiatrist...somebody said this man is a red risk here, red and I went yeah...by the time someone walks in and sits down on that lounge we... can tell...we’ve already made our mobility assessment.” “A lot of them have everything mitigated. They’ve seen a physio. They’ve got rails. They’ve got all the equipment. Some don’t and we put stuff in place”.* These comments acknowledge the PNs’ previous patient interventions and demonstrated how nursing clinical judgements were used in conjunction with patient risk assessment tools to help inform the broader picture of patient risks.

6.2. Findings from the Patient Focus Groups

Focus group invitations were sent to 139 randomly selected GCIC patient participants, of which 58 individuals agreed to attend one of the four sessions (41% acceptance rate). However only 33 attended the sessions, with the remainder having to cancel due to conflicting medical appointments illness, or other unspecified reasons. All participants had at least one chronic condition, with the majority (42%) aged 75 years or over. At the time of the focus groups, the average period participants had been enrolled in the program was 13.87 months (see Table 3).

Table 3 here

Analysis showed that patients who participated in the focus groups were overwhelming in their expressions of satisfaction with the NNs. All reported that they valued both the PNs and NNs.

“[NN]...she is brilliant...she said anytime that I need to ring, just ring up”. “I’m very lucky. My GP has a room there for her. She knows exactly what’s happening to me and all these other patients”. “The [NN] filled out all our forms and did everything for us. She was lovely”. “I’ve had nothing but good experiences and I’ve had good rapport with her [NN]”.

7. Discussion

This first year analysis shows that the PHC role of the GCIC NN is well accepted by patients, GPs and PNs and the nurses themselves. As other international researchers have found the focus of chronic disease management strategies should be providing person-centred, continuity of care and patient empowerment (Burton et al., 2010; Fillion et al., 2012). The navigator role is central to IC models of care, and in the American context, has been shown to be cost-effective as well as helping optimise patient flow and reducing presentations to hospital (Maeng et al., 2013). This is also anticipated as an outcome of the GCIC study. The preliminary findings have indicated some aspects of the program that are working well and what could be strengthened in respect to the NN role. For example, the nurse lead position has been reinstated and program leaders are examining the burden of travel on NNs’ workloads because of the requirement to cover more than one practice. Feedback from the NNs on working with the ICT have also led to some refinements. The high satisfaction ratings by GPs and PNs confirmed that the new role was achieving both implementation fidelity in being enacted as planned, and was helping staff improve care coordination with the help of the disease register and other data. Further analysis of the NNs’ focus on communication with both staff and patients in the general practice context and the mechanisms being implemented to shape and enable change will provide important insights into the overall program evaluation. They have also proved an important adjunct to general practice by providing GPs and PNs with an unprecedented amount of information for population health.

The NN role is ‘on trend’ with nursing role development, where one in eight Australian nurses are now practising as PHC practitioners, many in general practice helping manage the burden of chronic

disease (Halcomb et al., 2017). We found a number of similarities and distinctive features of the PN and NN roles. Like PNs the NNs have had a positive impact on patients' experiences and satisfaction with care (Halcomb et al., 2015). Both roles have a considerable health education element to help people self-manage their condition. One difference between the two roles is that PNs are somewhat constrained by their position within the business model of general practice. This requires them to work with GPs to see patients within the time limitations of appointment schedules and within the guidelines of the Medical Benefits Scheme (MBS) and the Chronic Disease Management Plans. The NNs in the GCIC program have no such constraints, as their practice revolves around a program-funded model of care with a broader scope of practice than the PNs. This model of care provides them with tools for ongoing holistic risk assessment of practice patients and dynamic care plan reviews aimed at hospital avoidance. The risk assessment tools help screen patients for such events as falls, conditions such as dysphagia, and co-morbidities such as depression that may accompany heart disease. These assessments inform patient education strategies and timely (usually same day) referrals to allied health resources available through the GCIC program at no charge to the patient. The liaison role of the NN means that they also attend case conferences at the CC, which can reframe initial assessments of patient for discussion with the GPs and PNs for consideration and joint decisions about referrals. The NNs also have the time and capacity to undertake home visits where necessary, which is well received by the GPs and PNs as well as the patients.

Information technology is also a distinguishing element of NN practice. The information architecture of the GCIC program provides 'real-time' data on patient hospitalisations. The NNs are informed of all discharges, which then allows them to conduct follow-up phone calls to patients who have had an acute episode of care. This type of follow-up assists the PNs and GPs anticipate post-discharge needs. The ICT also ensures that GPs and PNs are also better informed of the overall practice profile, with disease registers providing prevalence data on the practice and a record of the requisite test schedules for each chronic conditions (eg Hb1Ac tests on their diabetic patients). Having timely and accurate data available in the practices explains the high satisfaction rate among PNs and GPs for

the NNs attached to their practice. It also shows the importance of data linkage in providing continuity of care (Connor et al., 2016). Successful IC programs internationally have capitalised on the ability to link data between GPs and other health services to improve the quality and cost of health care provision (Cronin, Murphy & Savage, 2017).

The NNs' presence in the GP practices clearly saves practice staff time that can be better spent on patient care, a challenge reported by others working with chronic disease patients in a fee-for-service model (Boult & Wieland, 2010). The GCIC program itself has also achieved a good policy fit with the recommendation to the Commonwealth by the Primary Health Care Advisory Group to trial the concept of a Health Care Home (HCH). This initiative is focused on holistic support and coordinated care enhanced by MDTs using shared information and new models of funding (PHCAG, 2015). In our experience, GPs and nurses practising in PHC are motivated to deliver the best possible patient care. It is therefore likely that, given appropriate acknowledgement and support the HCHs can be a stable consistent health environment in which IC principles can operate effectively and efficiently. This, in turn, will help achieve the 'Triple Aim' of better care for individuals, better health for populations and lower per capita health costs (Berwick, Nolan & Whittington, 2008).

The evaluation continues to map NN activities to generate empirical evidence linking NN input to patients' experiences and outcomes, which will be reported on completion of the trial. As a collegial, rather than replacement role for PNs it will be interesting to identify specific outcomes linked to the NNs in general practice. These data will help fill a gap in the PHC nursing research literature that has tended to examine access, continuity and coordination of care and health promotion by identifying the *presence* rather than the *input* of nurses to the health care team outcomes (Annis et al., 2016). The next steps will reveal whether the program is cost effective in preventing unnecessary hospitalisations; promoting better self-management of chronic conditions, and coordinated care across the acute to community continuum.

We recognise that there are limitations in what can be achieved in this role and there remains a need for role clarity as the different versions of NNs are studied in context. Funding may also place

limitations on future research. The clinical trial being undertaken by GCIC is substantially funded by both the Commonwealth and State governments, and expected to provide important insights into the role of all members of the MDT, including the NNs. In future, as recommended by Kelly et al. (2015), a longitudinal cluster randomised controlled trial (RCT) of navigator outcomes would provide definitive evidence for the viability and sustainability of the role. Funding may not be the only barrier to sustaining the NN role in the future. Kelly et al.'s (2015) systematic review and meta-analysis of navigator programs revealed a number of patient, provider and system level barriers to implementing effective navigator programs for those with chronic conditions. They identified the need for support systems, which will require a major change in the way we see general practice. Integrated Care programs of the future will depend on the close collaboration between GPs and acute care services, including specialist services. Awareness of community resources, financial constraints, competing priorities and patient and provider personal circumstances will be instrumental in establishing and supporting the NN role in the context of new health innovations (Kelly et al. 2015).

The inherent complexity of the Australian health care system may also prove a barrier to ascertaining role clarity across different states and territories. A recent scoping review of the literature on navigation programs linking primary care with community health and social services identified a number of factors influencing implementation and maintenance of navigation programs (Valaitis et al., 2017). These included effective and clear operational processes, and adequate human, financial and tangible resources, including technological resources and community services. Interpersonal and intra organisational relationships/partnerships, were also major influences on successful navigation programs, including effective communication between providers, and program uptake and buy in by the end users of the program (Valaitis et al., 2017). This review also found that recruitment, role clarification, education and training are critical factors in successful implementation of the NN role (Valaitis et al., 2017). The lesson in this analysis applies to both nursing curriculum planners and those managing continuing education. With the proliferation of new knowledge some curricula have minimised the importance of PHC content in favour of increasing acute care components, which can

be a potential barrier to adequate preparation for nurses to address the future needs of the population.

8. Conclusion

IC models have been developed to address system fragmentation and help people move smoothly and safely through the services they require. The GCIC model bridges the divide between GP and hospital (primary and secondary) care to improve effectiveness, efficiency and patient acceptability of health services. Embedding new roles such as the NN can help harness clinical and technological solutions that will help overcome existing barriers to PHC and costly service duplication for those with chronic and complex conditions. The role of the NN is an exciting entry point into meeting this challenge and a symbol of the future of nursing.

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