

BMJ Open Quality Right service, right place: optimising utilisation of a community nursing service to reduce planned re-presentations to the emergency department

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ABSTRACT

Background Congruent with international rising emergency department (ED) demand, a focus on strategies and services to reduce burden on EDs and improve patient outcomes is necessary. Planned re-presentations of non-urgent patients at a regional Australian hospital exceeded 1200 visits during the 2013–2014 financial year. Planned re-presentations perpetuate demand and signify a lack of alternative services for non-urgent patients.

The Community Nursing Enhanced Connections Service (CoNECS) collaboratively evolved between acute care and community services in 2014 to reduce planned ED re-presentations.

Objective This study aimed to investigate the evolution and impact of a community nursing service to reduce planned re-presentations to a regional Australian ED and identify enablers and barriers to interventionist effectiveness.

Methods A mixed-methods approach evaluated the impact of CoNECS. Data from hospital databases including measured numbers of planned ED re-presentations by month, time of day, age, gender and reason were used to calculate referral rates to CoNECS. These results informed two semistructured focus groups with ED and community nurses. The researchers used a theoretical lens, ‘diffusion of innovation’, to understand how this service could inform future interventions.

Results Analyses showed that annual ED planned re-presentations decreased by 43% (527 presentations) after implementation. Three themes emerged from the focus groups. These were right service at the right time, nursing uncertainty and system disconnect and medical disengagement.

Conclusions CoNECS reduced overall ED planned re-presentations and was sustained longer than many complex service-level interventions. Factors supporting the service were endorsement from senior administration and strong leadership to drive responsive quality improvement strategies. This study identified a promising alternative service outside the ED, highlighting possibilities for other hospital emergency services aiming to reduce planned re-presentations.

INTRODUCTION

Limited published research exists on planned re-presentations to emergency departments

(ED), yet they are routinely quantified in Australian hospital statistics. The Australian Institute of Health and Welfare reports annually on five types of ED visits. One type is ‘return visit, planned: presentation is planned and is a result of a previous emergency department presentation or returned visit’.¹ (Australian Institute of Health and Welfare, p24) During the 2015–2016 financial year, 1.9% of total presentations to Australian EDs were planned re-presentations equating to 144, 351 non-urgent presentations for scheduled care in the ED. (Australian Institute of Health and Welfare, p24)¹

EDs are purposed for unscheduled urgent care. However, over the last 20 years, they have continued to expand their services to accommodate the least urgent categories.² Fast-Track services have been consistently implemented in Australian EDs to provide ‘an ambulatory care area designed for the timely assessment, treatment and discharge of patients’ with non-complex or single system-conditions’. (Forero and Nugus, p7)³

The intensity of service demand is such that presentations outweigh population growth.^{1,4,5} Consequently, crowding is prevalent and is the most widely reported issue challenging EDs.² In Australia, ‘ED crowding occurs when ED function is impeded primarily because the number of patients waiting to be seen, undergoing assessment and treatment or waiting for departure exceeds either the physical bed and/or staffing capacity’. (ACEM, p1)⁶

While planned re-presentations are not the major cause of ED crowding, these patients constitute an unnecessary workload for overwhelmed departments, which may not be the right place for their scheduled appointment. Recently, through using a cross-sectional survey, local researchers contributed



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knowledge to this topic by exploring reasons why patients are choosing to attend the ED with non-urgent complaints.⁴ The findings demonstrate that crowding requires a whole-of-system approach, informed by an in-depth understanding of why people attend the ED with non-urgent complaints and how this can inform health service planning.

BACKGROUND

This study was conducted in conjunction with a 300-bed regional Australian hospital with a catchment population of 144 000 people.⁷ The ED treated approximately 45 000 presentations in the 2013–2014 financial year, including over 1200 planned ED re-presentations.⁸ While the workload associated with non-urgent re-presentations is comparatively low, this cohort of patients experienced waiting times of up to 5 hours.⁹ Extended waiting periods in a busy ED is inconvenient and poses unnecessary exposure risks.

In 2013, a collaboration between the acute and primary health services established the Better Access to Community Care (BACC) initiative. The model was designed to transitionally link acute and community care: ‘the right care is delivered in the right place at the right time by the right staff’. (BACC, p16)⁹ Established in August 2014, a new service, known as the Community Nursing Enhanced Connection Service (CoNECS), was implemented as an alternative for planned re-presentations to ED.⁹

CoNECS used flexible service delivery model, exclusively for patients who had attended the ED with a non-urgent complaint and had ongoing needs such as further treatment and follow-up.⁹ CoNECS was provided in a clinic close to the ED. Healthcare professionals in the ED referred patients who were followed-up by CoNECS within 24 hours.

Three nurse leadership roles were integral to the implementation and maintenance of CoNECS. The BACC project nurse role ensured appropriate clinical expertise among the community nurses and managed the project. An ED nurse practitioner (NP) was responsible for ‘test piloting’ and monitoring referrals to the CoNECS. The community nurse liaison (CNL) is responsible for finding appropriate patients for community nursing services, to facilitate timely access from acute to community care. The CNL used a ‘patient pull’ model incorporating both electronic database usage and a physical presence. The CNL initially did not exclusively work for CoNECS. In November 2015, the CNL role was redesigned to enhance relationships and facilitate timely discharge.¹⁰

CoNECS bore substantial similarities to a Canadian initiative for follow-up care for wounds, casts and intravenous antibiotics. This innovation reported reduced length of ED stay and improved access to care.¹¹

The purpose of this paper was to evaluate and investigate the impact of a community nursing service designed to respond to ED planned re-presentations to . The ‘diffusion of innovations’ theoretical framework¹² was used to

examine phenomena within the complex ED care context to understand service sustainability and to recommend strategies.

METHODS

This study aimed to investigate the evolution and impact of a community nursing service to reduce planned re-presentations to a regional Australian ED and identify enablers and barriers to its effectiveness. The objectives were to:

1. measure the impact of CoNECS on planned re-presentations to the ED;
2. engage the ED and CoNECS staff in the development of strategies to optimise CoNECS referral rates;
3. generate local understandings of the enabling and disabling conditions for achieving sustainable change in referral practice.

The study combined quantitative and qualitative approaches using routinely collected health service statistics and focus groups. The routinely collected health service statistics were used as a foundation for focus group discussions. As such, statistical correlations or relationships were not measured.

PHASE I: DATA COLLECTION FROM HEALTH SERVICE DATABASES

Local trends of planned re-presentations over 3 years, July 2013–June 2016, were captured from the ‘For Your Information’ database,¹³ and day of the week, month of the year, presenting problem, age and gender were captured from the Emergency Department Information System.¹⁴

These data were analysed using the Statistical Package for the Social Sciences (SPSS) V.23 software.¹⁵ Presenting problem groups included radiological imaging/review/diagnosis, pathological diagnostics, surgical/medical/review/consultancy, removal of nasal pack (epistaxis), abscess/bites/cellulitis, orthopaedic issues/review/plaster checks, wound care/dressings/review of wound healing, parenteral drug administration and sutures/staples. This same technique was used previously to identify trends in presentations and to forecast ED demand.^{16,17}

De-identified data for the same variables (day of the week, month of the year, presenting problem and patient age and gender) were collected for referrals to CoNECS and stored in SPSS. This enabled depiction of the trend in planned re-presentations to ED and the impact of CoNECS.

PHASE II: FOCUS GROUPS

Health professionals from ED and CoNECS were invited to participate in focus groups. Two focus groups were conducted (participants n=11). Participants were shown the phase I data and trends before entering discussions guided by semistructured questions. The participants were invited to explain patterns in planned re-presentations and to identify enablers of, and barriers to, referral

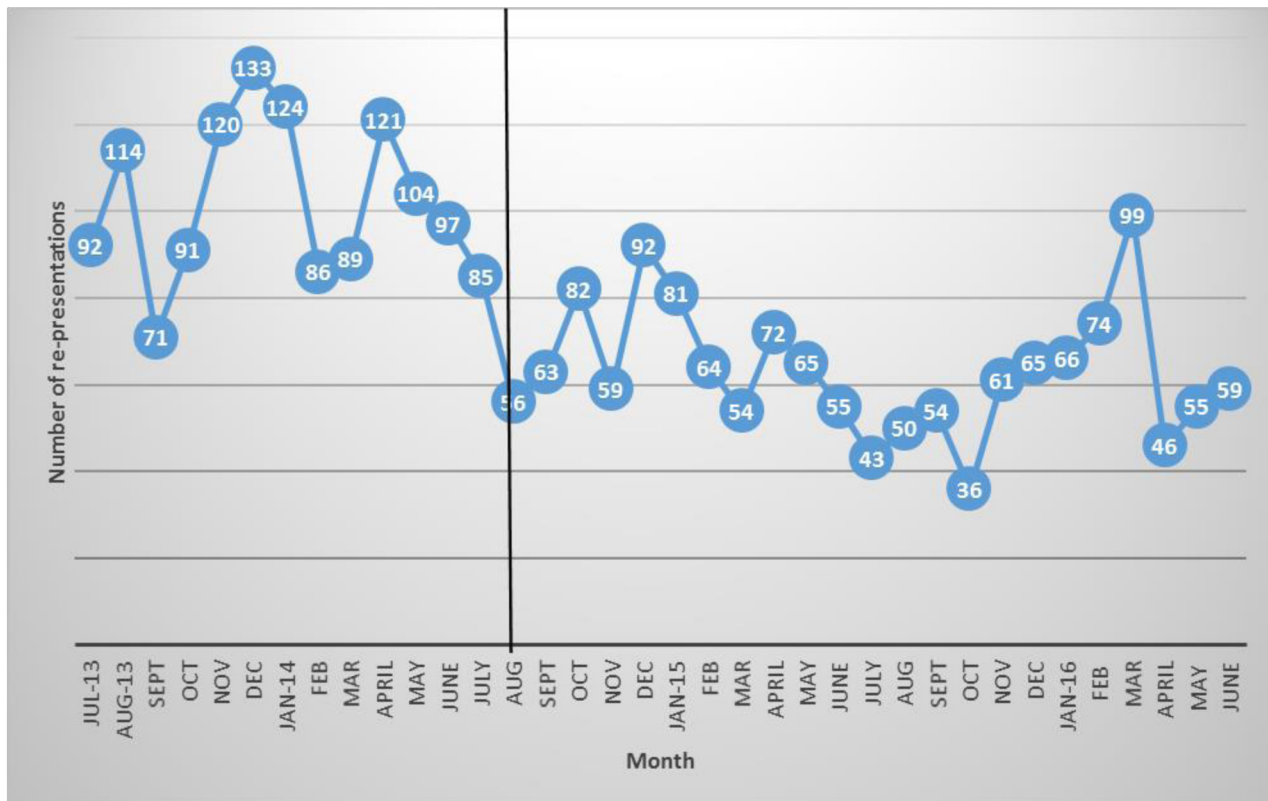


Figure 1 Planned re-presentations to the emergency department from July 2013 to June 2016.

from ED to CoNECS. Finally, participants recommended strategies that could optimise referral rates and enhance utilisation of CoNECS.

All participants were provided an information sheet and consented to participate. One researcher facilitated discussions, while a second member of the research team penned field notes and managed audio-recordings. Audio-recordings were transcribed and stored. Analyses were conducted based on the themes that emerged from the data, and patterns, barriers, enablers and recommendations were identified.

Ethics approval was obtained prior to commencement.

RESULTS

Phase I: data collection from health service databases

Following the implementation of CoNECS, annual planned re-presentations reduced by 43% from 1235 in 2013–2014 to 708 in 2015–2016 (figure 1).

The analyses describes the CoNECS activity and planned re-presentations to the ED after the implementation of CoNECS in August 2014 until June 2016.

Analysis of the data between August 2014 and November 2015 examined the profile of people who returned for ED planned re-presentations (see table 1). This assisted clinicians to understand demographical information about who was re-presenting to the ED, even after implementation of CoNECS.

The results show that the most frequent re-presenters to the ED are aged 20–39 years ($n=303$, 36.8%), male

($n=469$, 56.9%) and attend on Mondays ($n=18.8%$) between 08:00 and 16:00.

Further profiling of patients into clinical groupings was shared with focus group participants (table 2) and then the clinical reasons matched to the CoNECS criteria for referral.

Phase II: focus groups

The findings were presented at each focus group for participants to discuss and share their insights on what they believed were the reasons for the patterns. A total of six community nurses and five ED staff participated in two focus groups ($n=11$).

The semistructured focus groups discussed the service and referral patterns broadly and were asked what worked (enablers) and what did not work (barriers) in referral practice. Participants then recommended strategies that enhance utilisation of CoNECS.

Thematic analysis revealed three emergent themes. These were community-based nursing as an alternative service for planned re-presentations; nursing uncertainty and system disconnect; and medical disengagement.

Participants agreed that reviewing data in this way gave them an opportunity to understand the numbers, and the protected focus group time was agreed on as valuable. Participants appeared to respond positively to the data presented but were surprised by the trends.

It's a little bit surprising... It is good to see in black and white as anecdotally we are failing badly [in

Table 1 Planned re-presentations: profile of patients by age, sex, day and time

Item	Count	Per cent
Age (years)		
0–19	207	25.1
20–39	303	36.8
40–59	189	22.9
60–79	103	12.5
>80	22	2.7
Sex		
Male	469	56.9
Female	355	43.1
Day of presentation		
Monday	155	18.8
Tuesday	110	13.3
Wednesday	124	15
Thursday	110	13.3
Friday	110	13.3
Saturday	101	12.2
Sunday	114	13.8
Presentation arrival times		
00:00–07:59	37	4.4
00:00–15:59	675	81.9
16:00–23:59	112	13.5

numbers of planned re-presentations]... this is a pleasant surprise (ED participant).

The graphical data evoked conversations around the 'peaks and troughs', and participants drew on particular

Table 2 Clinical reasons people returned to emergency department against the CoNECS criteria

Clinical reasons people were returning	Appropriate for CoNECS (yes/no)
Radiological imaging/review and diagnosis	No
Pathological diagnostics	No
Surgical/medical/GP review/consultancy	No
Removal of nasal pack for epistaxis	No
Abscess/bites/cellulitis	Yes
Orthopaedic plaster checks if orthopaedic clinic unavailable	Yes
Wound care/dressings/review of wound healing	Yes
Parenteral drug administration	Yes
Sutures/staples	Yes

CoNECS, Community Nursing Enhanced Connection Service; GP, general practitioner.

months with anecdotal discussions from their experiences and point of view.

September [2015] is an interesting low point... historically a very busy time and with the Nurse Practitioner on holidays this would ordinarily mean referrals would not get done (ED participant).

The spike in planned re-presentations in December/January (2015) was attributed to the 'skeleton' staff in the general practitioner (GP)-led Fast-Track when the services close in the ED.

What worked? Enablers of service sustainability

The participants saw the CNL role as integral to enabling and sustaining CoNECS. Participants attributed the success of CoNECS to the CNL redesign.

May 2015 saw the redesign of the Community Nurse Liaison role and has had an impact [on referral rates] (community nurse participant).

The Liaison works (community nurse participant).

The role of the NP in the Fast-Track has been an enabler that the group attributed to the success of the service but highlighted unintended outcomes.

The NP is a good referrer (ED participant).

The NP is a key driver (community nurse participant).

One issue relating to this enabler was that the NP is not replaced for leave. This compromised continuity in referral practice. Participants mentioned that more NPs would soon be employed in the ED 24 hours a day, 7 days a week, which would enable more referrals.

Participants reported that the original referral system was too complicated and time consuming for the busy ED environment.

Referrals are now quick and easy to do (ED participant).

Referrals have been streamlined, to make it easier for the doctors. The initial referral was a 9-tab document for detailed patient information... so it was condensed to a one-page paper referral... access to a computer was no longer essential and they could be faxed as each machine was programmed accordingly (community nursing participant).

The participants agreed that planned re-presentations to CoNECS are more amenable to patients' needs. One reason is that the patient has the capacity to schedule their appointments. The ability to provide a more flexible service at the right time for patients is an important dimension of the patient-focussed approach offered by CoNECS.

Patients can be officially discharged from the ED... CoNECS will deal with any inappropriate referrals- there has not been one yet (community nurse participant).

CoNECS offers the right service at the right time (community nurse participant).

It is important to keep the client at the centre of the service (community nurse participant).

The participants agreed that CoNECS offered a more patient-focused approach for patients and was a valuable service.

While participants acknowledged that CoNECS reduced numbers of planned re-presentations to ED, they also voiced concerns about perceived barriers to accessing and adopting this service.

The data says that it [CoNECS] works but it depends on the people and if they are receptive (community nurse participant).

These system dimensions predominately related to nursing uncertainty, system disconnect and medical disengagement.

Barriers: nursing uncertainty, system disconnect and medical disengagement

Despite general agreement that CoNECS is appropriate for providing follow-up care to people who would have otherwise re-presented to the ED, participants were uncertain about some relevant factors obstructing utilisation. Despite a sustained period of reduced planned re-presentations to the ED since implementation, an increase in planned re-presentations occurred in March 2016 (figure 2). Participants discussed contextual circumstances that were occurring in the ED at this time. There

were significant issues that could have contributed to the decline in referrals.

Union called, ‘EMU’ thrust ED from the government, new services, new processes, Nurse Unit Manager on holidays, unrest among staff and chaos... resignations—real and threatened’ (ED participant).

The emergency medical unit (EMU) was implemented to assist with ongoing lack of access to inpatient beds. Staff observed this as a rapid change, still in its infancy and reported on issues in adapting to it. The participants discussed the impact of externally imposed initiatives that cause a high degree of pressure on the ED staff. This impact signified the burgeoning pressures placed on EDs to fix issues perceived to belong to EDs when a whole-of-system approach is required.

The introduction of another community nursing service was noted as bringing uncertainty. This new service was designed to provide a rapid response for both acutely unwell or injured patients and chronically ill patients with exacerbation of complex conditions. This important service contributes to the local ‘hospital avoidance’ strategy.

Could it be that the ED are confused about the new service? (ED participant).

Although CoNECS had been established since August 2014 and the rapid response service in May 2016, some participants agreed that this was a point of confusion and relevant issue.

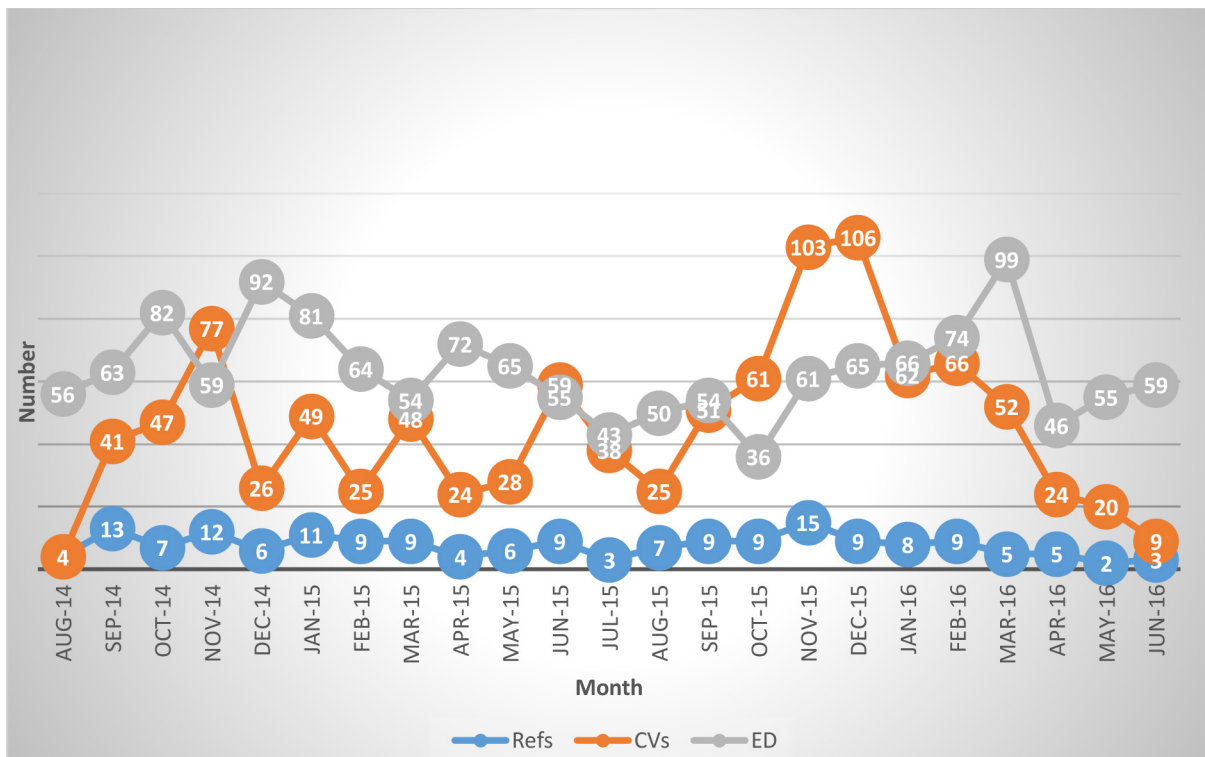


Figure 2 Planned ED re-presentations, total contact visits to Community Nursing Enhanced Connection Service and total new referrals by month. ED, emergency department.

The effect of various competing demands on ED staff was reported as making CoNECS a relatively low priority. During the first half of 2016, the ED experienced a high volume of staff turnover and general workplace dissatisfaction. The ED staff who participated agreed that recent challenges had brought about crisis and turmoil.

There was a sensational amount of unrest with the nursing staff. The whole feeling in the ED was awful and the ED staff here could testify to that (ED participant).

Rock bottom (ED participant).

Cultural aspects of the ED working environment described by participants, combined with the uncertainty of various service functions, meant there was work by the NP and the clinical nurse consultant in developing clearer pathways for referrals and access to both services. This, in turn, led to a discussion about uncertainty about the role of health professionals in referral to CoNECS. GPs employed in the ED for non-urgent cases were perceived as an influential barrier to referral practice.

GPs [in the fast track] need to be pushed to do referrals (ED participant).

Barriers with GPs... don't want to go there... it's too hard... bring them back (ED participant).

This may account for another factor leading to the reduction in referrals rates and increase in ED planned re-presentations in March 2016. Participants perceived the disengagement of medical staff a major barrier to the referrals and service adoption.

GPs find it easier to ask the patient to come back [to the ED] but they don't see the other side... the work that the nurse has to put in and the time that the patient has to wait (ED participant).

GPs see it as easier not to refer and can't be bothered (community nurse participant).

The challenge brought by the ever-growing use of locum doctors was also discussed as a barrier to referrals.

Familiarising the Doctors will always be a barrier... nurses are always educating doctors on CoNECS (community nurse participant).

Doctors need to be hounded (ED participant).

Participants were concerned about a lack of referrals for intravenous antibiotics.

IV antibiotics are continually going back to ED and not being referred to CoNECS (community nurse participant).

The opening of the EMU has potentially posed an issue. There are people in the EMU having IV antibiotics that could be suitable for CoNECS (community nurse participant).

Relating to patients meeting the CoNECS criteria was further discussion, around which patients should be referred.

Suture and staple removal should be coming to CoNECS (community nurse participant).

The following recommendations arose from focus group discussions.

Engagement of the medical staff

Engaging the medical staff with CoNECS featured high on the agenda and was a major barrier in regards to consistent referral practices. Participants felt that, while this might be challenging, it was necessary in terms of increasing referral practice and reducing planned re-presentations to the ED.

It would be good to broaden the relationships with GPs and Registrars (community nurse participant).

Senior nurse portfolio

Participants agreed that more ownership through the introduction of a senior nurse portfolio to monitor and influence planned re-presentation practice was recommended. Another layer of championship in addition to the ED NP could be beneficial in upskilling the current workforce.

This could present an opportunity for a [senior nurse] portfolio... to engage staff and get them to step up (ED participant).

Community nurse liaison

More face-to-face contact from the CNL could result in more referrals. A barrier to this approach is that there are currently no further resources to allocate to more face-to-face contact with the ED.

Ideally... more face-to-face contact in the ED... could encourage more referrals (community nurse participant).

It would be good to see the CNL role and communication broaden... bridge the gap between ED and CoNECS (community nurse participant).

DISCUSSION

The 'diffusion of innovations' model¹² provides a theoretical framework to understand barriers and enablers for adopting and sustaining CoNECS as a service-level innovation. Diffusion of an innovation is a complex process, requiring the organisation to adapt to the innovation, and likewise, the innovation can be adapted to the organisation.¹²

The implementation of CoNECS presented multiple complexities. In redesigning the management of planned re-presentations, the innovation first required accommodation within the existing community nursing service. The innovation then required implementation

within arguably one of the most complex clinical environments in the acute care services within the hospital: the ED.

Five recognised interlinking components in the diffusion, spread and sustainability of innovations based on the diffusion of innovations model have been highlighted as relevant.¹² These were adapted to discuss the results.

Innovation: compatibility and complexity

This aspect of the model refers to the innovation's attributes and what the end-user views as the 'pros and cons'. These views and attitudes influence whether individuals will adopt the innovation. 'Compatibility: the innovation must be compatible with the values, norms and perceived needs of the adopters'. (Greenhalgh *et al.*, p596)⁸ In this study, the GPs employed in the ED's Fast-Track may be incompatible with the innovation. It is within GPs' role norms to treat and recall patients as clinically necessary. While all doctors in the ED can refer to CoNECS, the GPs were recognised in this study as the major barrier to consistent referral practice.

'Complexity: innovations perceived by end-users as simple to use are more easily adopted'. (Greenhalgh *et al.*, p569)¹² Initially, the referral processes were complicated and time consuming. Community nursing referrals traditionally call for comprehensive patient details to facilitate safe transition from acute to community services. The initial referral process was identified as one of the major barriers to adopting the service. The response to this by the BACC initiative was the streamlining of the referral process.

By reducing the nine-tabbed computer-based email referral to a one-page document that was preprogrammed into the central copy-machine, access to a computer was not required and saved valuable time.

Intended adopters: a disparity between disciplines

The intended adopters are those meant to adopt and enact the innovation, and in this component of the model, motivation is key.¹² It appears that a disparity between the disciplines exists, with nurses leading and driving the referrals and encouraging the doctors to do so. There are some questions as to whether the doctors were motivated to adopt the innovation. In the Fast-Track, doctors provide a service to non-urgent patients, which they take ownership over. As was part of the ongoing discussion, motivating the doctors is key.

The focus groups participants felt that this level disengagement was not conducive to sustaining the service in the long term.

Communication and influence: change agents and champions

The communication and influence component of the model outlines a spectrum of diffusion and dissemination that spans from formal and planned (change agents and champions) communication and influence, to informal and unplanned (peer opinion).¹²

The focus groups identified the NP as the champion and change agent within the ED. This was recognised as having a two-pronged effect. A key driver and advocate is a prominent leader in the implementation phase and beyond for maintenance and sustainability.

Conversely, if staff assume that the leader is the person responsible for specific work, then if they are unable to carry out the work, others may not engage. This was further impacted because the NP position was not replaced for leave, seeing referrals markedly reduce when this role was not being undertaken.

Inner context: readiness for innovation

The 'inner context' refers to the extent of readiness that the organisation is for an innovation. Relatable components include formalisation and absorptive capacity.¹² This component is extensive, multifaceted and overarched by the ability to adapt to change. The rapidly changing ED environment provides a particular challenge for the implementation and sustainability of service-level innovations.

The formalisation component of the model applies to the extent to which the rules and protocols regarding organisational activities are upheld.¹² Formalisation may lead to an increased likelihood of the doctors referring more consistently to CoNECS. Formalisation may have additional implications for ascertaining which planned representations need to return to the ED, through the articulation of a care pathway for those patients.

Absorptive capacity refers to the ability of staff to take on new information and embed understanding into their practice.¹² This is relevant for the busy ED staff who endure constant structural changes, such as the EMU as discussed in the focus groups. If a service is not fully embedded into practice and another service is subsequently introduced and implemented, confusion may be caused. This lack of clarification may explain the confusion with the services of a similar name that emerged from the focus groups.

Outer context: sociopolitical and environmental instability in the ED

The outer context refers to external influences and the wider environment.¹² The work climate and environmental factors, as candidly depicted in the focus groups, created instability and unrest, with outgoing staff replaced with new and junior staff. During tumultuous times, staff and patients getting through a shift safely is the priority but not always achievable. Therefore, possessing the knowledge on or sustaining an innovation that is partially embedded becomes increasingly difficult within a chaotic working environment.

RESEARCH LIMITATIONS

This service, designed for context-specific resources and data, may not be relevant to other settings. Low recruitment numbers limited the study. While every effort was made to present data to facilitate the focus groups

objectively, respondent bias inherent with this type of study may have skewed the findings.

CONCLUSION

This study aimed to evaluate the impact of a community nursing service as an alternative to ED planned re-presentations at a regional Australian hospital and consider strategies for optimisation of referral rates.

CoNECS reduced overall ED planned re-presentations and was sustained longer more than many complex service-level interventions. Factors supporting the service were endorsement from senior administration and strong leadership to drive responsive quality improvement strategies.

Focus group participants indicated that engagement of medical staff and the incorporation of accountability of CoNECS into a nurse-led portfolio could support the optimisation of referrals, especially for wound care and intravenous antibiotics. Improving CoNECS could engage the organisation actively in addressing re-presentations that are better managed outside of emergency services.

This study identified a promising alternative service outside the ED, highlighting possibilities for other hospital emergency services aiming to reduce planned re-presentations. Service-level innovations similar to CoNECS may address ED demand and ensure that healthcare recipients receive the ‘right care in the right place at the right time’.

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Contributors JKL, LK, LD, FW, HB and SW were involved in the development of the research proposal. JKL and LK collected and analysed the data. JKL, LK, LD, FW, HB and SW contributed to the writing of the manuscript.

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Competing interests None declared.

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Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement There is no unpublished data available to share at this time.

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