

Emergency NP Model of Care in an Australian Emergency Department

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ABSTRACT

This study aimed to evaluate the effectiveness of nurse practitioner service on key emergency department indicators. A pragmatic randomized controlled trial was conducted. Patients were randomly assigned to standard emergency department care or nurse practitioner care. The outcome measures reported were comparisons on key service indicators. There were 260 patients enrolled in the study, 128 receiving standard emergency department medical care and 130 receiving nurse practitioner care. There were no significant differences between the 2 groups regarding waiting times, length of stay, numbers of patients who left, patient representations within 48 hours, and the use of evidence-based guidelines.

Keywords: emergency service, nurse practitioners, quality of health care, randomized controlled trial

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The quality of patient care is 1 of the most important service indicators in Australian health services today demanding inquiry. Specifically, 1 area facing increased demands on delivering quality of patient care is the emergency department. Emergency departments have seen more than 7% growth in patient presentations over the past 5 years, and this has contributed to an ever-growing burden on the delivery of quality patient care.¹ The capacity to deliver safe and efficient emergency services in Australia and New Zealand² is affected by this increased demand for services. The effect to patient care has been reported as significantly increasing waiting times, adverse events, mortality, and hospital length of stay.³

Emergency department service delivery is mandated by national clinical indicator measures. These indicators are designed to monitor, analyze, and evaluate a health service's performance.⁴ The Australian Council of Healthcare Standards compiles the clinical indicators to provide clinical perspectives on trends in service and measures to improve quality and safety of patient care. The widespread implementation of emergency nurse practitioner (NP) service models nationally has been slow to adequately evaluate this service model in terms of outcomes related to safety and quality of patient care.

The key service indicators of waiting times, length of stay, unplanned representations, and left without being seen rates are essential indicators to be measured to ascertain the effectiveness of the NPs at the services level. As emergency department demand continues to rise, it often outstrips enhancements in interventions to maintain or improve performance. The examination of the impact of the NP service model on emergency department services has implications for other key clinical indicators that can impact not only the emergency department service but also a whole of hospital service.¹ This research aimed to evaluate the effectiveness of NP service compared with standard emergency department medical care on clinical patient outcomes and key service indicators of waiting times, length of stay, unplanned representations, and left without being seen rates. This article describes the effectiveness results on the service indicators with the clinical patient care outcomes reported in a companion article.

METHODS

NP effectiveness on outcomes related to both key service and clinical patient care outcomes was undertaken in the pragmatic randomized controlled trial. The primary aim of this study was to evaluate NP effectiveness in delivering analgesia and has been

previously reported. This analysis aimed to evaluate the effectiveness of NP service compared with the standard emergency department medical care on key service indicators.

An adult tertiary level 4 emergency department with an annual census in 2014 of over 66,000 patients⁴ was used as the single study site. The NPs deliver a hybrid service model, holding both nursing and medical skills and geographically locate their service within the fast-track zone, which manages approximately 35% of patient presentations. Overall emergency department flow and patient access to care are enhanced by areas designated for timely assessment, treatment, and discharge of patients.⁵ The fast-track zone inclusion criteria detail primary care type services for less serious illnesses and injuries but also admit patients with conditions such as cellulitis, renal colic, wounds requiring surgical interventions, and orthopedic injuries. Seven days a week “fast track” is staffed by NPs between the hours of 0700 and 2330. The NP service model includes the assessment and management of patients within the Australasian Triage Scale categories 2-5.⁶ The NP’s scope of practice includes both independent and collaborative patient care within this established emergency department. The site has recently introduced the streaming nurse who directs patients assessed as suitable for fast-track care to the zone. The streaming nurse’s decision of where to allocate patients is protocol driven and based on patients’ presenting complaints. The study aims, methods, and protocol have been previously described.⁷ Enrollment of the first patient commenced in February 2014.

The National Statement on Ethical Conduct in Human Research⁸ was used as a guideline for conducting this research. Ethical permission was obtained from the hospital and university human research and ethics committees.

Selection of Participants

All patients presenting to the emergency department with a complaint of “pain” and allocated for their episode of care to the “fast-track” zone were eligible for inclusion in the trial. This cohort of patients must have presented to the emergency department between the hours of 0800 and 2030 when both the NP (intervention group) and standard care (control

group) were available. All patients were required to be over 16 years of age. “Pain” needed to be identified in their streaming description and recorded in the emergency department patient information system (Cerner Firstnet[®]). Patients were excluded if their verbal numeric pain scale was < 1 at the point of potential enrollment. Patients who were non-English speaking, had multiple injuries, or had altered conscious states were excluded from participation in the study. All patients were required to provide written informed consent to participate in the study.

Randomization

After collection of baseline data, consenting patients in series were randomly assigned to receive either standard care (control) or NP care (intervention). Randomization was performed with an allocation sequence of 4, generated by a computer random number generator, and then transcribed into opaque sequentially numbered sealed envelopes. Each envelope contained a card with the allocation group recorded and the treatment pack. Allocation adhered strictly to the generated sequence and was maintained. Both participants and treating staff were aware of treatment allocation. The primary investigator was blinded to the allocation groups for analysis of the results.

Interventions

A medical officer managed patients allocated to the control group with assistance from registered nurses if required. Medical officers assigned to the “fast-track” zone were emergency medicine registrars with a minimum of 3 years post basic training and were undertaking advanced training toward fellowship of the Australasian College for Emergency Medicine. Medical officers were dedicated to the “fast-track” zone and were required to stay in this zone. Standard emergency department care was practiced in accordance with usual emergency department policy with no changes to the model during the study period. The patient was allocated to the “fast-track” zone, and the next available clinician commenced the assessment and resultant emergency department management.

The intervention group was managed by the NP service. The emergency NP model of care includes

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