



## The impact of nurse practitioner services on cost, quality of care, satisfaction and waiting times in the emergency department: A systematic review



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### ABSTRACT

**Aims:** To provide the best available evidence to determine the impact of nurse practitioner services on cost, quality of care, satisfaction and waiting times in the emergency department for adult patients.

**Background:** The delivery of quality care in the emergency department is emerging as one of the most important service indicators in health delivery. Increasing service pressures in the emergency department have resulted in the adoption of service innovation models: the most common and rapidly expanding of these is emergency nurse practitioner services. The rapid uptake of emergency nurse practitioner service in Australia has outpaced the capacity to evaluate this service model in terms of outcomes related to safety and quality of patient care. Previous research is now outdated and not commensurate with the changing domain of delivering emergency care with nurse practitioner services.

**Data sources:** A comprehensive search of four electronic databases from 2006 to 2013 was conducted to identify research evaluating nurse practitioner service impact in the emergency department. English language articles were sought using MEDLINE, CINAHL, Embase and Cochrane and included two previous systematic reviews completed five and seven years ago.

**Review methods:** A three step approach was used. Following a comprehensive search, two reviewers assessed all identified studies against the inclusion criteria. From the original 1013 studies, 14 papers were retained for critical appraisal on methodological quality by two independent reviewers and data were extracted using standardised tools.

**Results:** Narrative synthesis was conducted to summarise and report the findings as insufficient data was available for meta-analysis of results. This systematic review has shown that emergency nurse practitioner service has a positive impact on quality of care, patient satisfaction and waiting times. There was insufficient evidence to draw conclusions regarding outcomes of a cost benefit analysis.

**Conclusion:** Synthesis of the available research attempts to provide an evidence base for emergency nurse practitioner service to guide healthcare leaders, policy makers and clinicians in reform of emergency service provision. The findings suggest that further high quality research is required for comparative measures of clinical and service effectiveness

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of emergency nurse practitioner service. In the context of increased health service demand and the need to provide timely and effective care to patients, such measures will assist in evidence based health service planning.

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### What is already known about the topic?

- There is limited evidence evaluating the effectiveness of the emergency nurse practitioner role in the current emergency department context.
- Previous reviews are now out-dated and it is essential for the evaluation of the evidence regarding emergency nurse practitioner service effectiveness and quality.
- The nurse practitioner role has evolved from a need to fill medical shortages, to an alternative model of care that can positively impact patient quality of care

### What this paper adds

- The delivery of quality of care in the emergency department is one of the most important service indicators to be measured in health services today.
- This review has shown that emergency nurse practitioner service has a positive impact on quality of care, patient satisfaction and waiting times. There is insufficient evidence to draw conclusions regarding outcomes of a cost benefit analysis.

## 1. Introduction

Overcrowding, access block, the growing burden of chronic diseases in the community and reduced access to primary healthcare have all contributed to increased demand for emergency department services (Health Workforce Australia, 2012; Sprivulis et al., 2006; Lowthian et al., 2011). Increasing service pressures have resulted in the adoption of innovative service models; the most common and rapidly expanding of these is emergency nurse practitioner service. Evidence evaluating the effectiveness of the emergency nurse practitioner role has previously been found to be, ill-defined and the methodologically quality is considered to be fair to poor (Wilson et al., 2009). Clinical relevancy to the current emergency department context is essential for evaluation of emergency nurse practitioner service effectiveness and quality.

## 2. Background

Promoting the concept of healthcare reform and active consumer involvement, advanced nurse practice roles were developed to improve the quality of clinical care (Comiskey et al., 2014). The nurse practitioner is one such role providing a service model that claims to offer flexibility and adaptation to the changing needs of the consumer population, but there are scant robust evaluations to date on the effectiveness of these roles. The nature of the nurse

practitioner role involves a hybrid advanced nursing model of care which includes a combination of nursing care, diagnostic activities, intervention-based treatments and the use of medicines; some of these activities have traditionally been limited to the scope of medical practitioners (Gardner et al., 2010).

The nurse practitioner role was first established globally in the USA and Canada over 40 years ago, to augment a shortage of primary care physicians (Kleinpell and Goolsby, 2012; Silver et al., 1967) in under-served areas. As a result of lack of primary care access for patients, nurses expanded their scope of practice through education and credentialing to meet population needs (Ridgway, 2012). Nurse practitioners now work in a myriad of settings providing care across primary, secondary and tertiary contexts (American Association of Nurse Practitioners, 2011). As nurse practitioner services have developed, sub speciality areas such as emergency, cardiovascular, endocrinology and oncology have adopted the nurse practitioner role for the delivery of high quality patient care (American Academy of Nurse Practitioners, 2010). The nurse practitioner role in Australia was first developed in 1994 with a pilot project to address feasibility within the health context (Currie et al., 2007). Since this inception, there are now over 1000 endorsed nurse practitioners, protected by title legislation and working to generic competency standards that govern practice across a variety of clinical settings (Nursing and Midwifery Board Australia, 2014).

Measuring the quality of patient care in the emergency department is emerging as one of the most important service indicators in Australian health services today. Emergency departments have seen more than 7% growth in patient presentations over the last 5 years and this has contributed to an ever-growing burden on the delivery of quality patient care (Lowthian and Cameron, 2012). The capacity of emergency departments to deliver timely, high quality and consistent patient care is impacted by the increase in the number and complexity of presentations (Lowthian and Cameron, 2012). Emergency department overcrowding is seen as the greatest single impediment to safe and efficient emergency services in Australia and New Zealand (Cameron et al., 2009) significantly resulting in increasing waiting times, adverse events, mortality and hospital length of stay (Forero et al., 2010). National clinical indicators for emergency department service delivery are government mandated and designed to monitor, analyse and evaluate a health service's performance (Department of Health Victoria, 2012). There are defined clinical indicators compiled by the Australian Council of Healthcare Standards (ACHS) to provide clinical perspectives on trends in service and measures to improve quality and safety of patient care.

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