

Skill mix and new roles in Emergency and Urgent care: what is the evidence?

Economic constraints and increasing demand for health care have led to the development of a range of new health care practitioner roles in both emergency and urgent care settings. A core aim of many of these new roles is cost reduction by labour substitution, but they are also introduced to improve care quality.

This briefing report summarises the evidence about the impact of introducing new roles and changing skill mix on patient, staff and cost outcomes.

What is the problem?

NHS urgent and emergency care services face increasing demand, sometimes leading to long waiting times and increased pressure on emergency departments (ED) in the form of more admissions and overcrowding [1-3].

Establishing the most efficient approach to matching limited resources to increased demands in this setting is a priority for the NHS. Getting the right skill mix in the workforce is vital, and attempts have been made to alter skill mix, transfer work between professions and introduce new roles to enhance performance while continuing to deliver effective and safe care.

However, the safety and cost effectiveness of these changes, which often involve nurses or other health professionals taking on roles and responsibilities of doctors, or support staff being added to nursing teams, needs to be properly assessed.

This review aims to give an overview of the evidence relating to how patient and staff outcomes and organisational costs are affected by the introduction of new roles and changes in skill mix in urgent and emergency care.

Data sources

We built on evidence searches developed for a comprehensive systematic review of evidence about staffing in emergency departments [4]. We searched MEDLINE, CINAHL and the Cochrane Library using terms such as "substitute/nurse specialist/physician assistant/advanced practice nurse", "skill mix", linked with terms such as "emergency nursing", "Accident and emergency or emergency department", "urgent care", "Ambulatory care". Because of the large and diverse evidence base, we selected relevant systematic reviews as core sources.

Skill mix

There is little evidence concerning changes in skill mix in emergency care. A systematic review of the effect of changes in staffing levels and skill mix in the ED [4] found only a single observational study in 107 Canadian

EDs, which showed that departments with a higher proportion of registered nurses in the care workforce (nurses and assistants) reported higher levels of patient satisfaction.

In urgent care, evidence from a US observational study suggests that medical practices with more nurse practitioners or physician assistants per physician had higher rates of patients presenting to EDs with emergent conditions that could have been treated in primary care [5]. In contrast to these findings, in an observational study of 7456 UK general practices, non-elective admissions for people with asthma and diabetes were lower in practices employing more practice nurses per GP [6] - although the results differed for people with diabetes and the role of nurses in providing emergent care was unclear.

A Cochrane systematic review of nurse for doctor substitution found five relevant trials. These demonstrated that outcomes for doctors and nurses were equivalent for first contact care for patients wanting urgent consultations with some evidence of improved satisfaction associated with nurse-consultations. Findings on cost savings were equivocal, largely because savings on wages were offset by longer consultations [7]. A more recent review found that nurse-led urgent care, especially from nurse practitioners, was associated with a positive effect on patient satisfaction (4 trials) with no significant effect on hospital admission (2 trials) or mortality rates (1 trial) [8].

New roles

A number of roles are reported in the literature including

- Emergency Nurse Practitioner (ENP)
- Emergency Care Practitioner (ECP)
- Advanced Nurse Practitioner (ANP)
- Advanced Clinical Practitioner (ACP)
- Physician's Assistant (PA)

These are often poorly defined in terms of role, training and scope of practice, making interpretation of the literature problematic. There is a blurring of role definitions between ENPs, NP, ANPs and ACPs and overlap with research into skill mix as 'new' roles become better established.

Skill mix and new roles in Emergency Departments and Urgent care

Emergency departments

A recent systematic review identified 12 primary studies since 2007 and 2 reviews. [9] The quality of the evidence was variable but generally low. Authors concluded that the evidence showed that introducing an ENP service had a positive impact on quality of care, patient satisfaction and waiting times in the ED. The review did not find robust evidence about the cost-effectiveness of this role. A further systematic review concluded that employing nurse practitioners in EDs was associated with reductions in overcrowding [10]. A randomised controlled trial conducted in a single ED reported higher levels of patient satisfaction and clinical documentation quality with ENP-led than junior doctor (Senior House Officer) led care [11]. A further RCT showed that trained ED nurse practitioners could provide care for patients with minor injuries that was equal or in some ways better than that provided by junior doctors [12].

A systematic review of 66 studies investigating the impact of physician assistants in the ED concluded that PAs are reliable in assessing certain medical complaints and performing procedures although the quality of evidence was generally low. Limited evidence on improvement of patient flow and cost effectiveness was found [13].

Urgent Care

A systematic review of 21 studies of mixed methods concluded that high quality studies establish that care processes (e.g. diagnosis, investigations and treatment initiated) provided by ECPs in NHS settings to be equivalent to or better to that provided by practitioners with traditional roles, although the basis of quality judgements was unclear. In some cases roles were implemented within EDs, but ECPs in urgent care settings were less likely to discharge patients than physicians and were more likely to refer them to hospitals or ED [14].

A systematic review aiming to evaluate the impact of walk-in centres, generally staffed by non-medical practitioners, reviewed 244 sources of evidence and concluded that these provide care of acceptable quality, but their impact and costs on other healthcare services was still unknown [15]. The quality of the evidence was unclear.

Conclusions

Evidence about new roles and changes in skill mix in these settings is very complex and diverse. This is compounded by the lack of role definition, scope of practice and standardisation of new and advanced roles. Evidence about skill mix within nursing teams is extremely limited. Some studies indicate that specialist nurses can substitute for doctors and can deliver better quality or equivalent care at similar or lower cost. However, the clearest evidence relates to patient satisfaction indicators rather than health outcomes and there is some indication of increased use of other urgent and emergency services associated with nurse-led care.

Much of the available evidence relates to the effect of adding new roles within EDs or ambulatory care, but does not explore the wider workforce implications, such as substitution of doctors and impact on the nursing team. This makes it difficult to tease out impact and potential cost savings.

We recommend a more detailed and formal review of reviews and, where relevant, meta-analysis of trials to answer focussed questions of effectiveness. However, it seems clear that high-quality studies that treat the introduction of new roles as a complex intervention using multiple methods and ideally across multiple sites are required.

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