



# Rapid Response

## *Evidence synthesis: Models of urgent care service provision*

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<b>Topic</b>	Models of Urgent Care
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### HIS Evidence Conclusions

A number of different models of urgent care service provision designed to reduce demand on Emergency Departments are currently in use internationally.

Only limited evaluation of these models of urgent care provision has been undertaken and there is an absence of evidence of their impact.

A number of factors influence people's health seeking behaviour which should be considered in designing urgent care systems.

## What were we asked to look at?

To support a redesign of urgent care to reduce inappropriate attendance at Emergency Departments we conducted a rapid review of the literature on models of emergency care and their impact.

## Introduction

Attendance at NHSScotland Emergency Departments (EDs) has been characterized by an upwards increase in numbers over the last 10 year. The rolling monthly attendance in January 2020 was approximately 145,000 as compared with around 134,800 in January 2010. Compliance with the 4 hour waiting standards has fallen during this time. In January 2010, 97.4% of people attending ED were seen within 4 hours as compared with 88.9% in January 2020<sup>1</sup>. This deterioration in performance is probably multifactorial and not only a feature of increased attendances but is also likely to be as a result of the increased complexity of patient presentations and availability of resources across the health and care system. Increasing numbers of patients presenting at EDs has been a feature of healthcare systems in many countries across the world and as a result alternative models of care for those presenting with urgent, but not emergency (life-threatening) conditions have been put in place.

## Overview of the evidence

A literature search was carried out in the Medline and Embase databases. A Google search identified a few extra references. Concepts/search terms used included: urgent care, unscheduled care, health care reform, triage. The full search strategy is available on request. This search identified a number of published reports describing these models of care that have been implemented internationally and these have been described. Furthermore, identified studies of the impact of these new models of care and the response of patients to these models of urgent care have been provided in outline.

## Alternative models of urgent care

Baier et al <sup>2</sup> in 2017 published a description of emergency and urgent care systems in six countries – Australia, Denmark, England, France, Germany and the Netherlands. The authors acknowledge that the systems are very complex as result of variations in providers, locations, access and the healthcare funding structures. However the table reproduced below provides a summary of the main features of these established models.

**Table 3**  
Provider of urgent primary care.

Country	Urgent Primary Care	
	Centers	Home Visit
Australia	Establishment of <b>GP-type 24 hrs clinics</b> <i>How:</i> Walk-in <i>Where:</i> Linked to the hospital	<b>GP home visit</b> <i>How:</i> Call (various numbers of home-visit service providers) <i>Where:</i> Patients home, visits by chosen service provider
Denmark	Provider: <b>Service centers</b> providing out-of-hours care and home visits service 46 locations <i>How:</i> Call the primary care call center <i>Where:</i> Increasingly located at the hospital, increasingly regional organization of primary care out-of-hours service	
England	<b>Urgent care centers, Minor injuries centers, Walk-in center</b> <i>How:</i> Walk-in, Urgent care centers – by ambulance <i>Where:</i> Increasingly located at the hospital	<b>Home visits service</b> <i>How:</i> Call (GP or non-emergency telephone number(111)) <i>Where:</i> Patient's home
France	<b>Out of hours health centers (Maisons Médicales de Garde)</b> 369 locations <i>How:</i> Walk-in or referred by emergency call center <i>Where:</i> mostly in (peri-)urban areas, increasingly linked to the hospital	<b>Home visits (SOS Médecins and network of GPs)</b> <i>How:</i> Call (SOS medicine, local council number or emergency call center) <i>Where:</i> SOS medecins - mostly in urban and suburban areas, networks of GPs – mostly in rural areas
Germany	<b>Out-of-hours services</b> provided by regional association of statutory health insurance-accredited physicians (out-of-hour services and home visits) <i>How:</i> Walk-in or call center <i>Where:</i> depending on the region in the regular physician's office, or a service center that may be linked to the hospital Ongoing establishment of so called " <b>Portalpraxen</b> " <i>How:</i> Walk-in <i>Where:</i> exclusively located at or in the hospital	
Netherlands	<b>Primary care centers (PCC)</b> providing out-of-hours service and home visits 122 locations <i>How:</i> Walk-in or telephone call (strongly advised) <i>Where:</i> Increasingly nearby hospital (80% of PCCs), independently or within the hospital (in this case coordinated activities as triage)	

Reforms to urgent care are often implemented on a regional basis and the authors suggest that to achieve greater harmonization of provision of urgent and emergency care national planning is required.

France is the only country that has a single phone number for accessing emergency and urgent care centres in most regions with call handlers triaging callers to the most appropriate provider aided by a real time resource monitoring system. Depending on availability of resources and patient need, call handlers may provide advice to visit a GP the next day, transfer the call to the home visit service, send the patient to ED or send an ambulance. Out of hours services and home visit services are organised separately.

In Denmark, GPs or nurses at the out of hours call centre can book an appointment for patients at the ED and patients can wait at home until the time of their appointment. Some regions in Denmark also have an app to guide patients about out of hours services and provide information about waiting times in ED.

The Capital Region of Denmark has the Medical Helpline 1813 staffed by doctors and nurses who use a decision support tool to determine the appropriate route for the patient<sup>3</sup>.

In Denmark, Germany and the Netherlands, the same institution co-ordinates both centres for out of hours care and home visit services. The out of hours services in Denmark tend to be located at local hospitals but operate independently and although originally organised and staffed by local GPs the regions are increasingly taking over their organisation to improve co-ordination with emergency services. Similarly, in the early 2000s the Netherlands established the Primary Care Physician (PCP) cooperatives initially designed for out of hours care<sup>4</sup>. These PCP cooperatives are accessible by telephone between 5pm and 8am with nurses performing telephone triage under the supervision of PCPs. Patients receive telephone advice or can be referred for a consultation at a centre or be

scheduled a home visit. With an increasing proportion of PCCs being located within hospital EDs, greater co-ordination between urgent and emergency care is being achieved. PCPs in these shared sites are generally responsible for the triage and treatment of patients who self-present to the ED out of hours. Smits et al.<sup>4</sup> reported findings of reductions in overall ED use of around 13% and 22%.

Australia, in common with England and France, organises out of hours services separately from home visits. Australia has 24 GP clinics for patients seeking urgent care located adjacent to hospitals, but organised separately and independently. Baier et al.<sup>2</sup> note that there has only been evaluation of the reforms to urgent care in England and Netherlands and that more rigorous evaluation is required to assess the results of system changes.

In the Republic of Ireland the configuration emergency and urgent care service varied by region as reported by Foley et al. in 2017<sup>5</sup> in their study of patient experience of these systems of care. See table below reproduced from this publication. Despite variations in the service configuration, no differences were observed for patient experience of entry into the system, convenience of the system and progress through the system. There were a number of limitations to this study, acknowledged, by the authors which meant it could not be determined if the streamlining of services was successful or not in terms of patient experience.

**Table 1** Regional characteristics and service reconfiguration summary, 2006 to present

Region (constituent counties)	Population density (population per km <sup>2</sup> )	Service reconfiguration	Clinical governance	ED changes	GP out-of-hours care
North East (Meath, Louth, Cavan, Monaghan)	54.6	Region-specific plan partly implemented in 2006–2010 <sup>7</sup>	No unified region-level structure	Two EDs reconfigured to local injury units. Some centralisation of trauma, coronary and stroke care	One regional cooperative in place
Dublin North East (North Dublin City and County)	1093	No reconfiguration of services	No unified region-level structure	No changes	One regional cooperative in place, supplemented by doctor on-call service
Dublin South (South Dublin and Wicklow)	259.7	Region-specific plan implemented in 2013 <sup>8</sup>	No unified region-level structure	One ED reconfigured to local injury unit, reduced operating hours in another. Centralisation of trauma, coronary and stroke care to two hospitals but with limited differentiation and integration	Multiple cooperatives in place, supplemented by doctor on-call service
Dublin Midlands (South-West Dublin, Offaly, Laois, Kildare, Westmeath, Longford)	89.8	Limited reconfiguration of services	No unified region-level structure	Some centralisation of trauma, coronary and stroke care	Multiple cooperatives in place across the region
South East (Waterford, Wexford, Carlow, Kilkenny, South Tipperary)	52.6	Limited reconfiguration of services	No unified region-level structure	Some centralisation of trauma, coronary and stroke care	One regional cooperative in place
South (Cork, Kerry)	54.6	Region-specific plan largely implemented in 2012–2013 <sup>9</sup>	Region-wide structure established	Two EDs reconfigured to local injury units, with another closing. Single hub for acute coronary care, severe stroke and trauma cases, with support services provided at other centres	One regional cooperative in place
Mid-West (Clare, Limerick, North Tipperary)	46	Region-specific plan largely implemented in 2009–2013 <sup>10</sup>	Region-wide structure established	Three EDs reconfigured to local injury units. Centralisation of stroke, coronary and trauma at hub	One regional cooperative in place
West (Galway, Mayo, Roscommon, Leitrim, Sligo, Donegal)	31.1	Some regional reconfiguration of services	Region-wide structure established	One ED reconfigured to local injury unit in 2011. Single hub for acute coronary care, severe stroke and trauma cases, with support services provided at other centres	Multiple cooperatives in place across the region

ED, emergency department.

## CAV 24/7 - Cardiff and Vale University Health Board

In August 2020, Cardiff and Vale University Health Board launched their CAV 24/7 'Phone First' service<sup>6</sup>. People seeking urgent care are directed to a dedicated phone number where a call handler

will take details and escalate the call to 999 or if not life-threatening have a clinician ring the caller back within 20 minutes if classed as urgent or within an hour if not urgent. If further assessment is considered appropriate, a timed appointment will be made for them at the ED or the minor injuries unit.

## Experience from COVID-19 pandemic

Two reports from the US<sup>7,8</sup> describe the move from an in-person to a virtual model of care as a response to the risks presented by COVID-19. Spelman et al.<sup>7</sup> describe the VA Connecticut Health Care System use of a virtual platform across its primary care and community based outpatient clinics. A virtual respiratory urgent care clinic was also established to respond to increasing demand for care for patients with respiratory complaints or other symptoms concerning for COVID-19. The majority of virtual visits were by telephone which was more generally accessible to the patient group than video consultations. The authors reported that levels of care were sustained despite the shift to a telehealth model. The extension of this model of care in the US depends on the reimbursement structures which may disincentivize virtual care. Koziatek et al.<sup>8</sup> describe the rapid scaling up of an existing virtual urgent care (VUC) platform. Patients registered for a timeslot on the VUC website and interacted with a provider via an audio-video interface linked to an electronic health record. The overwhelming majority of patients had symptoms concerning potential for COVID-19 infection. The majority of patients were reported satisfied with the care they received and that they were likely to use this form of care again.

## Impact of alternative models

A Cochrane review of primary care professionals providing non-urgent care in hospital emergency departments authored by Goncalves-Bradley et al. was published in 2018<sup>9</sup>. This included 4 trials (only one randomised) conducted in the UK, Ireland and Australia involving GPs or emergency nurse practitioners working in EDs. Outcomes assessed were time from arrival to clinical assessment and treatment or total length of stay in the ED, admissions to hospital, diagnostic tests, treatments given, consultations or referrals to hospital-based specialists and costs. Variation in the method of triage, the experience of the treating clinicians and the type of hospital meant pooling of data was not possible and this, together with a high risk of bias, resulted in very low certainty of evidence of impact on any of the defined outcomes.

Turner et al.<sup>10</sup> identified from a synthesis of 10 systematic reviews and 44 primary studies that telephone triage and advice services provide appropriate and safe decision-making with generally high levels of patient satisfaction. However, the authors found little evidence of the efficiency of these services from a whole system perspective. The evidence gaps related to: the impact of telephone access to emergency and urgent care including costs and whole system efficiency; the optimum requirement for different skill levels in NHS 111; and, the accuracy and appropriateness of call assessment decisions.

van Gils-van Rooij et al.<sup>11</sup> compared models out of hours urgent care in regions in the Netherlands found that length of stay, waiting time and number of handovers were all greater where there were collaborations between GPs and ED (Urgent Care Collaboratives - UCC) than 'usual care' services

where patients would contact out of hours GPs or the ED separately. The authors concluded that UCCs do not enhance the efficient of patient flow.

## Other studies of potential interest

Chalk<sup>12</sup> modelled the expansion of the Ambulatory Emergency Care unit at Derriford Hospital, Plymouth, which treats patients referred from ED and acute general practitioners on an outpatient basis and found that expanding the unit would be effective but not as effective as extending the opening hours.

Sen B et al.<sup>13</sup> published a prospective study conducted between July 2016 and February 2017 to compare outcomes of calls where decision support software would have resulted in advice to the caller to attend ED. These calls were instead referred for clinical advice given by emergency physicians or a non-physician clinical advisors. There was a reduction of 75%-81% in cases advised to attend the ED for both these groups of advisors.

Chambers et al.<sup>14</sup> conducted a systematic review of digital and online symptom checkers/triage services for urgent health problems. Twenty-seven studies were identified with the majority reporting use of systems in the UK and USA but also one study from Norway and one from the Netherlands. Outcomes assessed were: safety; clinical effectiveness; costs/cost effectiveness; accuracy; impact on service use; compliance with advice received; patient/ carer satisfaction; and equity and inclusion. For most of these outcomes the evidence identified was limited, weak or inconsistent with only evidence relating to diagnostic accuracy being stronger. Symptom checkers were found to be less accurate and/or more cautious in their triage advice compared with doctors or other health professionals. There were inconsistent findings on impact on services use amongst the eight studies that examined this outcome.

Brunett et al.<sup>15</sup> in 2015 published the results of a study undertaken in the US, primarily in Oregon, of the use of Skype calls to replace in person visits at neighbourhood clinics for a limited list of conditions. -No visits resulted in an emergency department referral, hospitalisation or a 911 (emergency services) call. It was reported that there were significantly more prescriptions issued for those receiving online care than those referred to inpatient care though there were no differences in rates of antibiotic prescribing. The authors suggest online visits may reduce costs, provide services to those with limited access, for example those living in remote areas, and greater patient convenience. Conclusions regarding the effectiveness and impact of this model of care are limited by the study design.

Edwards et al.<sup>16</sup> reported on EDs with separate primary care services. Success was reported when having a distinct workforce of primary care clinicians, who improved waiting times and flow by seeing 'primary care-type' patients in a timely way, using fewer investigations, and enabling ED doctors to focus on more acutely unwell patients. Some challenges were: trying to align their service with the policy guidance; inconsistent demand for primary care; accessible community primary care services; difficulties in recruiting GPs; lack of funding; difficulties in agreeing governance protocols and establishing effective streaming pathways. Where GPs were integrated into an ED workforce success was reported as managing the demand for both emergency and primary care and reducing admissions.

Morton et al.<sup>17</sup> described the facilitators which supports team working between GPs and emergency nurse practitioners within an urgent care centre in the UK. Eight key facilitating factors for the team were identified: appointment of leaders; perception of fair workload; education on roles/skill sets and development of these; shared professional understanding; interdisciplinary working; ED collaboration; clinical guidelines and social interactions.

Booth et al.<sup>18</sup> reviewed interventions to address the needs of people from vulnerable groups who seek urgent and emergency care. The groups considered vulnerable included people who were socioeconomically deprived, those living in rural or isolated areas, new migrants, minority ethnic groups, homeless people and those at risk of homelessness and those with substance misuse problems. Services considered were limited to EDs and ambulance/paramedic departments. The review included research and grey literature and identified that initiatives tended to be targeted at the general population or those considered to be 'frequent attenders' at ED. Nine different interventions were identified ranging between the use of care navigators to front-door triaging and outreach services. Limitations in the published literature resulted in an inability to draw conclusions as to the effectiveness of the identified initiatives. However, the authors identified that use of the ED by vulnerable groups is a result of multiple factors including burden of disease, access to primary care and patient preference.

Coster et al.<sup>19</sup> reviewed 38 studies to assess why people with low acuity conditions present for urgent care. It identified six broad themes that summarised the reasons why people choose to access urgent or emergency – access to and confidence in primary care; perceived urgency, anxiety and value of reassurance; views of family, friends and healthcare professionals; convenience; individual patient factors; and, perceived need for medical help. The authors identified a need to further understand the sources and impact on emergency care within the demands on the wider healthcare system.

Pope et al.<sup>20</sup> reported a qualitative study, incorporating citizen panels and longitudinal semi-structured qualitative interviews. People struggled to make sense of urgent care provision making navigating "appropriate" use problematic.

Turnbull et al.<sup>21</sup> concluded from their mixed methods study of people's health seeking behaviours that there are clearly understood distinctions between emergency, urgent and routine care. Service users, in particular, struggle to distinguish urgent from emergency or routine care. The authors suggest that there needs to be a greater understanding the complex relationships between demand for and access to urgent care.

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