MEETING THE CHALLENGES IN UNSCHEDULED CARE DELIVERY

Unscheduled Care (UC) services provide substantial health benefits, but increasing demand is leading to unsustainable pressure on these services and the need for increased funding or new models of care. In the English National Health Service (NHS) in 2012-13 there were 18.3 million attendances at major Emergency Departments (ED), single specialty EDs, walk-in centres and minor injury units, at a cost of £2.1 billion. There were 5.3 million emergency hospital admissions, at a cost of £12.5 billion. And there were 7 million ambulance service journeys and approximately 24 million calls to NHS urgent and emergency care telephone services. Failure of the urgent and emergency care system to manage increasing demand causes substantial public concern and political impact [1]. Delays in ambulance response or Emergency Department (ED) assessment leads to worse patient outcomes [2]. ED crowding is internationally recognised and is shown to be associated with avoidable mortality [3].

Of particular interest are the most vulnerable groups within the population who typically tend to be more frequent users of unscheduled care due to living with multiple long term conditions and the consequences of ageing. These patients often have healthcare needs which have not been met resulting in them tipping into unscheduled care for their routine as well as urgent healthcare needs, or entering the revolving door of hospital admission – readmission. Many patients are extremely complex and not only have physical health, but mental health needs and social care requirements. They are often the hardest to reach patient groups for participation in clinical trials, and as such developing cutting edge solutions to their healthcare needs is not prioritised.

Establishing a linked dataset (fig 1)

The CUREd (urgent and emergency care) dataset covers a population of 5.5 million (Yorkshire & Humber region, UK) from 2011, and links all patient episode data from 999/111 call to emergency department attendance and acute hospital admission and readmission (14 acute trusts) for adults and children. There are over 15 million episodes of care in the dataset. Approvals for the dataset were obtained through NHS HRA and section 251 CAG approval, such that data is fully identifiable for linkage purposes and subsequently de-identified for research. Patient inclusion is on an opt-out basis. Approval for the dataset by the HRA as a research database means the data is research-ready and available for multiple use purposes and wider linkage with related datasets. Examples of further linkage currently being undertaken include linking mental health trust data and also hospice data (for end of life care patients).

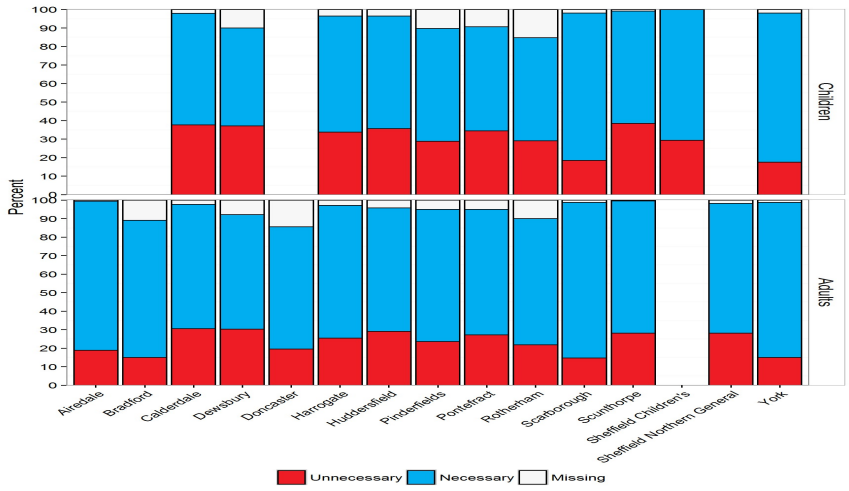
Figure 1: Linked dataset

- Population of 5.5 million
- Mixed rural and urban
- 1 Ambulance Service (999 and NHS 111 services)
- 13 acute hospital trusts
- 19 EDs (≈10% of England)

Understanding patient pathways and outcomes

1. Linkage between NHS111 call data and ED attendance. The first ever study to link these datasets demonstrated the proportion of patients being advised to attend ED *vs*. those who actually attended ED and their subsequent outcomes. This demonstrated that 23% of NHS111 calls go to ED as well. 50% of which are advised not to attend. Accuracy of triaging calls is poor and need for 'smart' strategies for supporting decision for call handlers
2. Algorithmic approaches to identifying patients with an avoidable ED attendance. The dataset identified 23% adults and 30% children attend ED with an avoidable problem, which could be managed in lower level of care (eg GP, pharmacy, self-care). Demonstrates where 'smart' triage could be used to reduce demand within the system and interventions could be developed to facilitate patient-decision making (Figure 2)
3. Algorithms applied to ambulance service data demonstrated 1:6 ambulance journeys transport patients to ED avoidably. Interventions could develop 'smart' tools for early identification and disposition decisions to be made. Work commencing in 2019 on this.
4. Understanding geographical variation between hospitals in acute hospital admission for older patients (rates vary 43-70%), especially with short stays (rates vary 23-48%) who would benefit from interventions to keep them at home, or access same day emergency care.
5. The estimated impact of the investment goes far beyond the financial return and savings that can be made through reducing the proportion of acute hospital admissions by 1:5 which is equivalent to a cost saving of £700m pa, reduced ambulance transfers (1 in 6) at a saving of £8m pa and ED attendances (1 in 5) at £35m pa for the Yorkshire and Humber region only.

Figure 2: Rates of Avoidable Attendance (AA) at EDs across Y&H



AA overall 30.7%
*Range 13.6% to 37.7%

AA overall 23.0%
*Range 14.9% to 30.6%

1. House of Commons Health Committee. *Winter Pressure in Accident and Emergency Departments Third Report of Session 2016-17 Report, Together with Formal Minutes Relating to the Report*.; 2016. www.parliament.uk.
2. Crilly J, Keijzers G, Tippett V, et al. Improved outcomes for emergency department patients whose ambulance off-stretcher time is not delayed. *Emerg Med Australas*. 2015;27(3):216-224. doi:10.1111/1742-6723.12399
3. Guttmann A, Schull MJ, Vermeulen MJ, Stukel TA. Association between waiting times and short term mortality and hospital admission after departure from emergency department: population based cohort study from Ontario, Canada. *BMJ*. 2011;342:d2983.