The SAMBA highlights increasing complexity of acute medical systems

Acute medicine is the specialty in the UK that deals with urgent and emergency presentations to internal medicine. Acute medicine sees more than half of all UK hospital admissions. More than a quarter of these admissions are seen and discharged exclusively by acute medicine (Society for Acute Medicine, 2017). The Acute Medicine taskforce of the Royal College of Physicians (London) first recommended the creation of acute medical units in 2007 (Acute Medicine Taskforce, 2007). Acute medicine as a specialty has since spread to countries such as the Netherlands, Australia, Singapore, Malaysia and the Republic of Ireland.

The Society for Acute Medicine's Benchmarking Audit (SAMBA) has been undertaken annually since 2012. The audit is performed over a single 24-hour period and collects data from all admissions to participating hospitals over that time. Acute medicine is central to the organization of British hospitals, so data from SAMBA are relevant to clinicians, managers and policy makers throughout the NHS.

The first SAMBA was completed in 2012 and involved 30 acute medical units. It aimed to provide each hospital with a data set that could be used for local and national benchmarking. Results have been published in peer-reviewed articles (Subbe et al, 2013, 2015a,b; Le Jeune et al, 2013; Pradhan et al, 2015) and two national reports (Society for Acute Medicine, 2016, 2017).

On 15 June 2017, the 6th national audit was completed. Unit data were collected from 132 acute medical units. Patient level data included information from 4918 patients admitted to 110 hospitals. This editorial discusses key findings from this audit.

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The structure of acute medical services: a continuous evolution

As the speciality has evolved, so has the structure of the acute medical units within which much of its work is based. A wide heterogeneity is seen in the SAMBA data. In participating hospitals a median of 7% of all hospitals beds are found within the acute medical unit; 8% of hospitals provide high dependency unit beds, with critical care functions, within their acute medical unit, and 43% of hospitals provide an acute frailty unit, alongside or within the acute medical unit. An acute frailty unit is a space where geriatricians and related members of the multidisciplinary team are based to manage acute geriatric problems, expedite discharge and limit deconditioning. Hospitals without separate frailty units may have geriatric 'in-reach' teams serving similar purposes.

A striking observation from the SAMBA data is the increasing use of ambulatory emergency care throughout the UK. Ambulatory emergency care is broadly defined as clinical care that is not provided within the hospital bed base or outpatient services, and which may include diagnosis, observation, treatment and rehabilitation. It exemplifies a new trend in the way that medical admissions are processed in the UK: ensuring good patient care while avoiding a 'traditional' hospital admission. Ambulatory emergency care units are now present in 91% of hospitals and 16% of patients in the 2017 SAMBA findings were admitted directly to ambulatory emergency care from the community, compared to 11% of patients in 2016. The vast majority of these patients (89.9% in 2017) had all of their medical care completed within the remits of the ambulatory emergency care units, and were discharged on the same day without occupying an inpatient bed.

Benchmarking

SAMBA was initially designed to collect data about three key clinical quality indicators around time to first vital signs, first medical review and first consultant review. Initially, these times were only reported from admission to the acute medical unit, but from a patient's perspective, care begins on arrival at hospital. The first point of presentation can occur in the emergency department, the acute medical unit or the ambulatory emergency care unit. The clinical quality indicators have therefore been amended to reflect this, and are now different depending on the patient's route of entry to acute medicine (*Table 1*).

As well as the timing of the patient journey, information is collected to adjust for case mix. Acuity of illness at presentation is assessed using the National Early Warning Score (NEWS). Frailty data are collected using the Clinical Frailty Scale (Rockwood et al, 2005). In 2017 the vast majority of patients (73.7%) presented with a low acuity of illness, i.e. a NEWS of 0–2. Of patients admitted to acute medicine, 28% were classified as frail. Frailty was associated with a significant reduction in discharge rates at 72 hours: 34.6% compared to 66.7% of patients who were not frail.

Patient journey

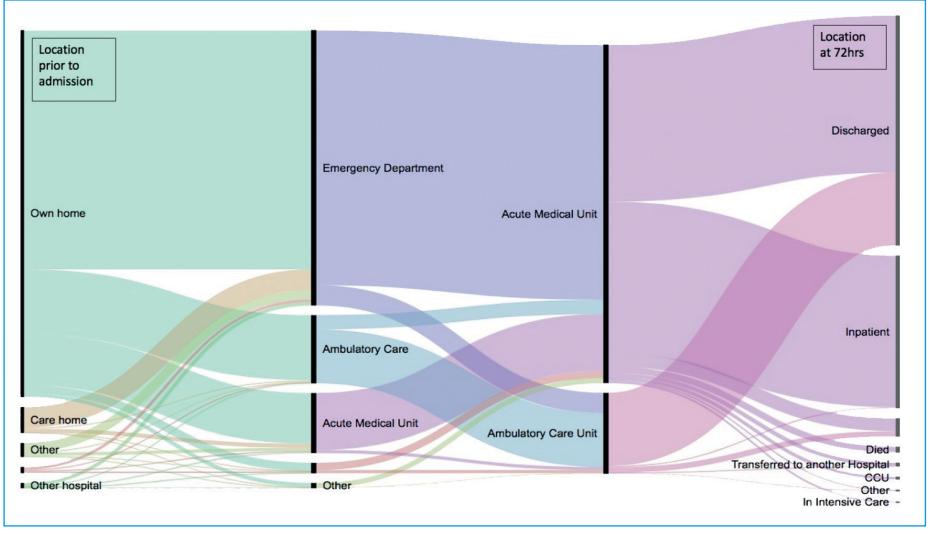
Good patient flow is central to patient experience and clinical safety. As part of SAMBA 2017, for the first time on a national level, the flow of patients through acute care was graphically illustrated using a Sankey diagram. Going from left to right, *Figure 1* shows the flow of patients from their initial location through to their location 72 hours after admission to hospital. The widths of the lines are proportional to the number of patients within each category. The diagram illustrates that acute medical units and ambulatory emergency care units directly receive a third of admissions and discharge a significant proportion of patients within 72 hours.

Table 1. Clinical quality indicators and results

Quality indicator	Result
All patients admitted to acute medical unit should have an early warning score measured within 30 minutes of arrival to hospital	83% of patients
All patients should be seen by a competent decision maker within 4 hours of arrival	65% of all medical hospital admissions (93% of patients directly admitted to acute medical unit or ambulatory emergency care)
All patients should be reviewed by a consultant physician within 14 hours of arrival (within 8 hours if the patient arrived between 08.00 and 18.00)	73% of all medical hospital admissions (92% of patients directly admitted to acute medical unit or ambulatory emergency care)

From Society for Acute Medicine (2017)

Figure 1. Sankey diagram summarizing the flow of patients through the acute medical pathway. From Society for Acute Medicine (2017). CCU = coronary care unit.



Learning for the future

The data from SAMBA give an accurate overall picture of acute admissions to internal medicine in the UK. As explained, they highlight wide variation between acute medical units in terms of their resources and structures. For this reason, caution is advised when interpreting data for individual hospitals, particularly in smaller units because of the limited sample size. The emergence of ambulatory emergency care points towards the ongoing development of acute medicine and the ways it can benefit patient care. By being an additional point of entry to secondary care, ambulatory emergency care has reduced the bottleneck in the emergency department. In doing so, it has supported one of the aims of acute medicine: to ensure the patient sees the right person in the right setting, first time (Acute Medicine Taskforce, 2007).

Going forward, there are several developments at local, national and international levels. The success of the SAMBA model has raised interest from neighbouring countries, such as Ireland and the Netherlands, as acute medicine continues to spread. SAMBA provides a well-tested template for the auditing of acute hospital admissions. Its implementation elsewhere can only improve research and collaboration between different health-care systems. At a local level, software providers for electronic medical records operating in the UK have taken notice and developed dashboards capable of live reporting of SAMBA data. Finally, since 2016 SAMBA data has been entered into a dedicated web portal by participating centres. From 2018, this web portal will provide instant reports for data entered from individual units. This change will support the reporting of trends to measure data for quality improvement. **BJHM**

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KEY POINTS

- Acute medicine sees more than 50% of admission to UK hospitals, with 25% of hospital admissions now being seen exclusively by this growing speciality.
- The Society of Acute Medicine Benchmarking Audit (SAMBA) collects data from 110 acute medical units for all acute medicine admissions in a 24-hour period across the UK. It provides a snapshot of these admissions and their flow through acute medicine.
- In 2017 16% of medical admissions were sent directly to an ambulatory emergency care unit. Nine out of ten of these admissions were discharged on the same day thanks to input from a senior acute medicine specialist and rapid access to diagnostic and treatment pathways.
- The success of the SAMBA model in the UK has led to interest in other countries who have adopted acute medicine.

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