

Acute Medicine: How will we grow? - An analysis of organisational capabilities for quality improvement, research & education from SAMBA 2021

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Abstract

Background: Education, research, and Quality Improvement (QI) are key enablers for high quality care. We aimed to map the capability of Acute Medical Units (AMUs) to facilitate excellence in these areas.

Methods: AMUs were surveyed in an organisational questionnaire within the Society for Acute Medicine Benchmarking Audit 2021.

Results: 143 units participated. 80 units had a QI lead, 24 had a research lead and 99 had a medical education lead. 15 units had all three leadership roles. Most QI work considered service structure rather than changes in processes or care outcomes.

Conclusion: The organisational capability of AMUs in the strategic areas considered is variable. Improving leadership and disseminating learning could help build a strategic foundation for acute medicine to grow.

Keywords

Quality improvement, acute medicine, leadership, service development

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Key Points

1. Despite a prevailing culture within the NHS to support and promote leadership, there is inadequate provision in key roles to support the enablers of high quality care, including quality improvement and research, within acute medicine services.
2. Reasons underlying the under provision in leadership roles should be sought, so that appropriate strategies to address this problem can be implemented.
3. There is wide variation in the content of QI projects undertaken across AMUs, although there are common themes, including improvements in service structure.
4. Further work is needed to identify the underlying reasons for the QI topics chosen, including whether projects are driven by local or national need.

Background

Acute medicine is concerned with providing care to unwell adult patients presenting to hospital with acute medical conditions.¹ This includes services delivered within acute medicine departments, such as Acute Medical Units (AMUs), and Same Day Emergency Care (SDEC), as well as input within the Emergency Department (ED).²

Many acute hospital services underwent significant restructuring during the Covid-19 pandemic, with ongoing service pressures and rising demand for urgent and emergency care services subsequently prompting hospitals to further changes, such as virtual ward pathways and enhanced care areas.³⁻⁵ Improvements in structures and processes can deliver better outcomes for patients, however they require capacity and capability to develop, deliver, educate, lead and evaluate through Quality

Improvement (QI) initiatives, which in turn require appropriate infrastructure.⁶

Incorporation of QI into NHS services is increasingly recognised as a vital element in the delivery of safe, effective, and efficient services, as well as a component of good medical practice. Evidence has shown that a commitment to improvement initiatives from members of the leadership team can have a positive impact on the quality of care delivered.⁷ QI leadership roles are therefore important to help improve the effectiveness of QI work.

As QI adds to knowledge and understanding alongside improving care, it may be considered alongside research and medical education. Increasing the delivery of impactful QI work, together with ongoing research and high quality medical education, can support the growth and improvement of acute medicine as a specialty.

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Box 1. Questions asked in SAMBA21 to assess capabilities in the delivery of education, research and QI.

Quality Improvement			
- Does your Acute Medical Unit (AMU) have a formal Quality Improvement (QI) lead? - Do any permanent members of your AMU team have a formal qualification in QI? - If yes; please specify qualification(s) - Do any doctors in training or middle grade (non-permanent) doctors have a formal qualification in QI? - If yes; please specify qualification(s) - Is your unit reporting an AMU specific quality metrics that other wards would not record? 4 hour waits - If yes; how often are these reported? - Compliance with quality indicators - If yes; how often are these reported? - Other - Please give examples of topics where QI projects have been undertaken in your department in the last 2 years - What is the biggest improvement your unit has made in the last 12 months?			
Research			
- Does your AMU have a formal Research lead? - Do any permanent members of your AMU team have a formal qualification in Research? - If yes; please specify qualification(s) - Do any doctors in training or middle grade (non-permanent) doctors have a formal qualification in Research? - If yes; please specify qualification(s)			
Education			
- Does your AMU have a formal Education lead? - Do any permanent members of your AMU team have a formal qualification in Education? - Do any doctors in training or middle grade (non-permanent) doctors have a formal qualification in Education? - If yes; please specify qualification(s)			
Meetings			
Does your acute medicine department have regular meetings (including virtual) for:			
	Quality Improvement	Research (including journal club)	Education (other than QI/research)
Consultant only			
Junior doctors			
All grades of doctor			
Doctors and other members of the team			
None			

Currently, there is a lack of evidence regarding the provision of QI in acute services, in the level of involvement at each centre and in the core themes of ongoing QI work.

We aimed to describe the existing structures supporting research, medical education and QI within acute medicine services, as well as current QI topics, using data collected from the Society for Acute Medicine Benchmarking Audit (SAMBA).

Method

SAMBA 2021 (SAMBA21) took place on 17th June 2021. Registration was open to all hospitals accepting unplanned medical admissions; community and non-acute hospitals were excluded. SAMBA is registered with the Healthcare Quality Improvement Partnership (HQIP <https://www.hqip.org.uk>). The full protocol for SAMBA21 is publicly available⁸. Individual units register and obtain audit approvals locally at each site, including Caldicott Guardian approval.

SAMBA21 included an organisational survey describing service structure and processes. Questions were included regarding capability in the delivery of education, research, and QI within each acute medicine service (Box 1). This included presence of departmental leadership and team communication and dissemination in these areas. Information was also gathered on QI projects delivered in the preceding 24 months as well as the biggest improvement reported by units in the previous 12 months.

QI project classification was undertaken by two independent reviewers (CS, MH). Projects declared as the biggest achievement in the previous 12 months were broadly categorised by whether the focus was on structure, process, or outcomes. All projects declared by unit within the last two years were also grouped into common themes. Projects undertaken within SDEC settings or concerning virtual ward were also included.

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Table 1. Quality Improvement (QI), research and education meetings across all units. N = 143 units.

	QI	Research	Education
Any meetings involving a consultant	24	3	12
Consultant meetings only	12	2	4
Any meetings involving a junior doctor	9	2	16
Junior doctor meetings only	1	1	7
Any meetings involving all grades of doctor	37	31	73
All grades of doctor meeting only	19	26	49
Any meetings with doctor and other team members	75	29	71
Doctors and other members of the team meeting only	54	24	49
Consultant OR junior doctor OR all grades meeting	39	30	68
Consultant AND junior doctor AND all grades meetings	5	1	7
All four types of meetings	5	1	6
No meetings	32	83	6

Survey responses were collected via online database (Netsolving Ltd), with data analysis conducted in Microsoft Excel and Software Package for Social Science (SPSS Statistics 27). Summary descriptive findings are presented.

Results

The organisational survey questionnaire was completed by 143 units.

Leadership & dissemination

Quality improvement

80 units (56%) had a QI lead. 39 units (27%) had one or more permanent team member with a relevant qualification; 22 units (15%) reported one team member and 17 units (12%) had more than one. Relevant experience reported included local, regional, and national training programmes in addition to modules within postgraduate and Masters study. A Masters level qualification in QI was reported by one

individual. The most commonly QI specific training reported were QI fellowships and courses from Quality, Service Improvement and Redesign (QSIR) (5 units) and the NHS Improvement Academy Bronze QI scheme (4 units). 78 units declared no relevant qualifications amongst permanent team members. 24 units did not know and 2 units did not respond to the question.

Regarding team involvement, 24 units ran meeting that involved consultants, with 12 units conducting only consultant meetings. 54 units (38%) have meetings involving doctors and other members of the team being brought together. 5 units conduct all four meeting types. 32 units (22%) have no regular meetings (Table 1).

Research

A formal research lead was reported by 24 units (17%). 48 units (34%) had one or more than one permanent member of the team with a relevant qualification. 73 units declared no relevant qualifications among their permanent staff members. 20 units did not know and 2 units did not respond to the question. These included Masters, MDs, and PhDs. The most declared relevant qualification was a PhD (Table 2).

Three units reported regular research meeting with consultants, with two units conducting only these meetings. 24 units (17%) had regular meetings involving doctors with other members of the multidisciplinary team and one unit had all four meeting types on a regular basis. 83 units (58%) held no regular research meetings.

Medical education

99 units (69%) had a formal education lead. 79 units (55%) had one or more team member with a formal

Table 2. Total number of qualifications declared relevant to research and education across all units.

Qualification Declared	Research	Education
Postgraduate Certificate	0	45
Postgraduate Diploma	0	24
Masters	11	22
MD	17	1
PhD	27	0
Other	9	10
Unknown	2	2
Total	66	104

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teaching qualification including postgraduate certificate (PgCert), diploma, and Masters. In total 45 units (31%) reported having at least one staff member with a PgCert, making it the most common qualification. 38 units declared no relevant qualifications among permanent team members. 24 units did not know and 2 units did not respond to the question.

12 units have regular education meetings with consultants, with 4 units conducting only these meetings. 49 units (34%) have regular meetings with doctors and other members of the team. 6 units have all four meeting types regularly. 6 units (4%) had no regular education meetings.

Considering all three leadership areas, 40 of the participating units (28%) had one appointed leadership role, 59 units (41%) reported two and 15 units (10%) had leadership in all three areas. Of the 143 participating units, 29 (20%) had no leadership roles in any of research, medical education, or QI. One unit declared conducting no meetings in any of the three areas.

Quality improvement topics

Acute pathway metrics

66 centres (46%) measure compliance with AMU-specific quality indicators, with 30 units measuring this monthly.

21 units (15%) reported that 4-hour waits were recorded; this measure is reported monthly in 9 units, and daily in 5 units, with 4 units using live or continuous updates. The remaining centres monitored 4-hour waits at other time intervals.

19 units reported collection of other specific quality metrics, outside of the standard acute medicine clinical quality indicators. The most common additional metric considered was varying measures of length of stay (5 units), with time to clinical observations (3 units), and proportion of patients transferred to SDEC services from ED (2 units) also reported. Other metrics reported by single units included route of presentation, admission presentations, referral to admission time, percentage of patients admitted, patient feedback, falls, infection control and complaints.

QI topics

Units were asked to declare the biggest improvement made in the preceding 12 months. Where possible, an independent reviewer classified each piece of work as relating to structure, process, or outcome. Of the participating units, 116 units provided enough information to allow classification of project type. 77 projects (54% of participating units) focused on changes to the physical structure, 27 (19%) changes to process and 12 (8%) focussed on outcomes.

Table 3. Projects undertaken in units by theme.

Theme	Number of units undertaking at least one project in theme	Total number of projects undertaken across all units
Pharmacy	27	41
Practical procedure	10	11
Flow	17	18
Staffing/training	48	68
Acute real-estate	15	15
Hospital reconfiguration	3	3
Pathways and redesign	117	312
Documentation	22	25
IT	17	21
Patient experience	7	8

Units were asked to detail projects undertaken in the last two years. The topic of each project was considered to determine common themes. Using pre-specified themes, 55 units conducted projects within SDEC settings and 7 in Virtual Wards (VW). The most commonly undertaken QI projects focussed on creation and redesign of pathways, with 117 units reporting work in this area. 48 units reported projects related to staffing or training. Some units undertook multiple projects. For example, two units conducted 8 projects related to pathways, one unit described 5 projects related to medication and one unit reported 5 projects on staffing or training. In total 522 projects were reported, of which the majority (60%) were pathway related initiatives. Complete results can be seen in Table 3.

Units were asked for the biggest improvement in the previous 12 months. 129 units responded to the question. 25 units declared more than one improvement. The summary of successes from all units can be seen in Figure 1. The most common areas where successes were noted were managing COVID-19 and the changes required due to the pandemic. Increased staffing, expansion, and reconfiguration of SDEC as well as recruitment of new members of staff were all common areas of positive progress. Overall, a wide range of improvements were reported.

Discussion

The results demonstrate the variation in degree of leadership in key strategic areas of research, education and QI. Only 10% of participating units reported leadership roles in all three areas. 20% of units had no leadership role in either QI, research, or medical education. The impact this has on performance is hard to determine and further research is required.

With regards to relevant training, over half of the units had a member with a qualification in medical

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Figure 1. Word cloud demonstrating common areas of success within units.

education. However, only 34% of units had a permanent team member with formal qualifications in research and only 27% in QI. Whilst two thirds of medical education qualifications were postgraduate certificates or diplomas and two thirds of research qualifications MDs or PhDs, there was less standardisation of qualification for QI. Standardisation of QI training within acute medicine may make it easier to appreciate the knowledge base within the specialty and ensure training is consistent.

The review of QI projects and the theme of work undertaken has demonstrated most of the focus has related to pathway/audit and redesign. Most projects reported a focus on change of unit structure rather than process or indeed improved clinical outcomes. Whilst structure and process measures are important, outcome measures are needed to link improvements to the changes that have been made.⁶ An improvement in structure or process does not necessarily mean an improvement in outcome, and so it is important all three aspects are considered if we are to reliably measure improvement in quality of care.

Priorities for QI work within acute medicine have previously been explored by the Society for Acute Medicine Quality Improvement Committee (SAM-QI) in 2022.⁹ A modified Delphi process determined SDEC as a priority topic for QI within acute medicine. A thematic analysis of audit and QI submissions to SAM conferences showed 'Flow/Performance' to be the most commonly occurring topic, with 'AEC' (ambulatory emergency care) included within this

area as a sub-topic.¹⁰ However, it is hard to know if this result from analysis of conference abstracts reflects all ongoing work within the specialty. Measures in all three areas are needed to link changes made to improvements and those improvements to subsequent clinical impact.

Comparing common themes of QI projects reported in this analysis against other research is challenging. Differences in approach and identified QI topics makes directly comparing the leading topic difficult. Standardising topics for acute medicine QI work could aid this work in future. Consideration could also be made to review the body of work presented at acute medicine conferences, such as the review in 2020.¹⁰

This would help establish whether the core QI topics that were highlighted as impactful within this project are represented in relevant peer events and conversely identify if the body of work at shared events is reflective of the work being undertaken as a wider specialty. In general, there is scope to increase sharing of improvement practice as an acute medicine network. Sharing successes, such as those summarised in Figure 1, is important for development within a team, but also to share the important work being undertaken as a specialty. That topics could be grouped into common themes and successes suggests that units are facing similar challenges, and so centres may benefit from shared learning, and understanding how these challenges have been addressed in other units. Disseminating learning through QI initiatives is vital if the positive impact is to be sustained and spread.

Strengths and limitations

This study provides a comprehensive overview of the preparedness for research, QI and education in acute medicine in the UK, which has not previously been reported. However, as this survey was undertaken towards the end of the Covid-19 pandemic, it may not reflect practice under normal circumstances. The questions we posed regarding QI topics were open, making the interpretation and especially the categorisation of the responses difficult. This current study will allow us to determine predefined categories that could be used within a structured framework for data collection, however the methodology used within SAMBA does not allow full exploration of the underlying reasons for QI topic choice, and this requires further evaluation within an appropriate research framework.

Recommendations for future enquiry

This review provides a snapshot of current practice but does not provide answers for the trends identified. To identify the positive levers and perceived barriers to

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developing a comprehensive research, education and QI structure within AMUs, we suggest that further in-depth exploration is necessary, comparing and contrasting units with well-established leadership and those in an earlier stage of development,

Conclusion

There is variation in the organisation of QI, research and education within acute medicine services, with only 10% of units having leadership roles in all three of the strategic areas reviewed. To improve the quality of care delivered, then recognising the importance of these roles is vital. Improving the commitment to QI initiatives from a leadership level could have a positive impact on the effectiveness of care provided by teams in acute medicine.

A wide variety of successful QI work has been reported by acute medicine teams. Going forwards, it

is important for us to share the learning from such work. By considering QI together with medical education and research, teams will have the strategic foundation can be maintained to promote growth and development within acute medicine as a specialty.

Author contributions

CS, MH and CA were involved in the design of the project; all authors were involved in data analysis and interpretation, and have approved the final manuscript.

Declaration of competing interests

Nothing to declare.

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Supplementary Material

Biggest Improvement in Last 12 months by key word			
COVID-19	16	Widened SDEC criteria	1
Staffing	15	Deteriorating patient bleep	1
SDEC expansion	13	Senior reviews	1
Recruitment	10	Annual audit meeting	1
Reconfiguration of SDEC	9	Triage	1
Increased footprint	8	Simulation	1
Flow	8	Nurse led DVT pathway	1
SDEC flow	8	Metastatic cord compression pathway	1
POCUS	5	Reduced complaints	1
Electronic records	5	CQC	1
Extended opening hours	5	Infection control	1
Virtual Ward	4	Grand rounds	1
Electronic prescribing	3	Assessment bays	1
Increased consultant presence	3	Specialty frailty take	1
Board round	3	Respiratory receiving unit	1
Monitored beds	2	Ensure adequate staffing	1
VTE	2	Teamworking	1
Pathways	2	AMU remodelling	1
Escalation plans	2	Zoned ward rounds	1
Pharmacy	2	Teaching	1
Enhancement of acute medical model	1	Smoking cessation	1
Negative pressure side rooms	1	Triage	1
Leadership	1	Teamworking	1
Earlier specialist input	1	Single front door	1
Electronic take list	1		