NHS Benchmarking Network & Royal College of Emergency Medicine

Emergency Department Workforce Benchmarking Research Report

This paper presents a thematic analysis of Emergency Care workforce data using intelligence from the NHS Benchmarking Network's annual Emergency Care Benchmarking project. The project has run annually since 2012, with active guidance and encouragement from the Royal College of Emergency Medicine (RCEM), and provides Trusts, CCGs and national stakeholders with definitive benchmarking comparisons for Emergency Department provision and performance.

Unless specified the comparisons shown in this paper relate to the 2017/18 financial year, with workforce figures as at 31/3/2018. Where previous years data and timeseries are shown, the time period is explicitly stated. The report uses the denominator of 100,000 ED attendances to provide like for like comparisons, given the large variation in size of emergency departments.

Contents:

The emergency care workforce remains under pressure, with increasing demand, rota gaps, high vacancy rates, trainee attrition and workforce burnout all contributing to the challenge of securing workforce stability. This report provides a helpful stocktake of current provision, providing evidence to support Trusts in their workforce planning. This report should be used with the RCEM recommendations which if applied well show that Trusts can create a better working environment, provide further incentives for staff to choose to work in emergency departments, and broaden the pool of staff used. A sufficient depth and breadth of senior decision makers is achievable, and with growth of a wider multiprofessional approach can provide a sustainable workforce for emergency departments. We have achieved a huge amount since the publication of 'The Way Ahead' in 2011, and '*Securing the future ED workforce in 2017*', We can continue the momentum to create a sustainable and successful EM workforce. **Dr Taj Hassan, President RCEM**

2018 Emergency Care Benchmarking Project

Key facts:

- 2017/18 time period

- 6th annual cycle of project

- 166 Type 1 EDs participated

- Data was collected directly from participating organisations

We are delighted to share the findings of the workforce component of the Emergency Care benchmarking project.
In 2018 almost all English and Welsh emergency departments participated in the project giving a unique insight into the operation of emergency departments.
Benchmarking supports organisations by providing structured comparisons to help define and implement best practice. This work provides a unique evidence base to help improve patient care and develop new models of service delivery.
Stephen Watkins, Director, NHSBN

Context
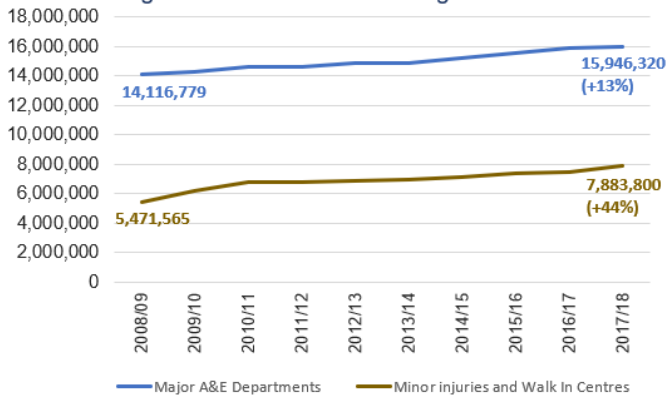
In 2017/18 there were 23.8 million Emergency Department (ED) attendances in England[1], an increase of 22% since 2008/09. Figure 1 shows that over this period attendances have risen more quickly in Minor Injuries Units and Walk In Centres (44%) than in Major Type I Emergency Departments (13%).

During this same period, the number of staff working in Emergency Departments has also grown, and there have been a number of policies and initiatives aimed at addressing the workforce challenges in emergency care, however EDs across the country continue to feel stretched in delivering safe, effective and timely care for patients.

This report looks at workforce data for Type 1 EDs from the NHS Benchmarking Network's Emergency Care benchmarking project. The project has collected data on ED performance over a six year period, with 166 type 1 EDs participating in the 2017/18 project.
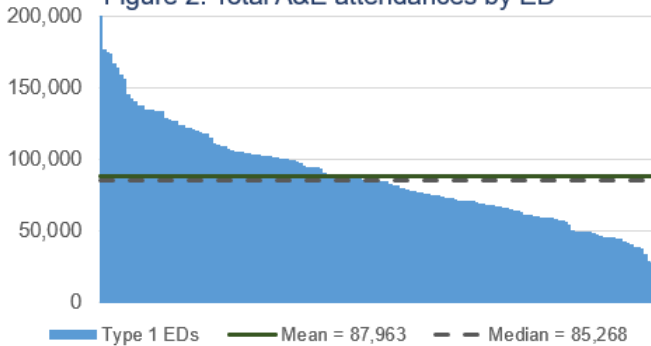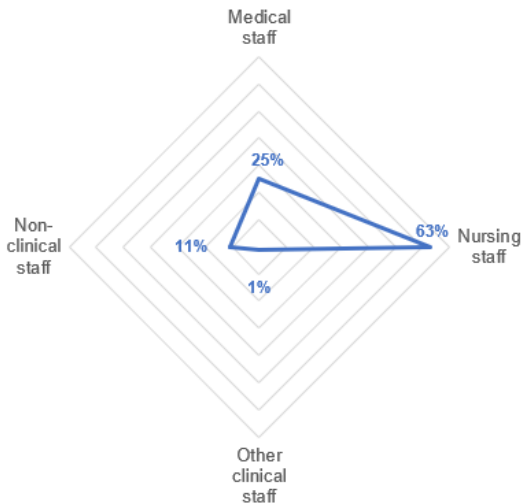
Figure 2 shows that the average number of attendances at a Type 1 ED was 87,963 in 2017/18. A wide range of attendances are seen across EDs, with large EDs having over 150,000 attendances per year, while small EDs, typically in smaller urban, remote or rural locations, have under 60,000.

Workforce overview

Emergency Departments employ an average of 178 whole time equivalent (WTE) staff per 100,000 ED attendances, with a median average of 173 (Figure 4).

Figure 3 shows the average composition:

- 25% Medical staff
- 63% Nursing staff
- 1% Other Clinical staff
- 11% Non-clinical staff.
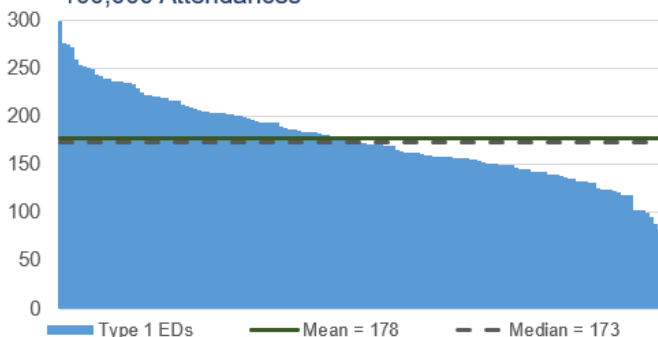
In this report we refer to the following staff groups[2]:

Senior Decision Maker: EM Consultants, SAS Doctors, CT 4-6 Grade Doctors, Other and Speciality Doctors.

Junior Doctors: CT 1-3, F1, and F2

Specialist Nurses: Advanced Nurse Practitioners, Emergency Nurse Practitioners, and Physician Assistants.

General Nurses: Other Registered Nurses.

Figure 1: ED attendances - England timeseries

14,116,779 — 15,946,320 (+13%)

5,471,565 — 7,883,800 (+44%)

Major A&E Departments — Minor injuries and Walk In Centres

Figure 2: Total A&E attendances by ED

Type 1 EDs — Mean = 87,963 — Median = 85,268

Figure 3: ED workforce: Discipline mix

Medical staff 25%
Nursing staff 63%
Other clinical staff 1%
Non-clinical staff 11%

Figure 4: Total ED staff (WTE) per 100,000 Attendances

Type 1 EDs — Mean = 178 — Median = 173

Staffing levels – timeseries

Figure 5: WTE per 100,000 ED attendances for major staff groups

Legend:
- Senior Decision Maker WTE per 100,000 A&E attendances
- Junior Doctor WTE per 100,000 A&E attendances
- Specialist Nursing WTE per 100,000 A&E attendances
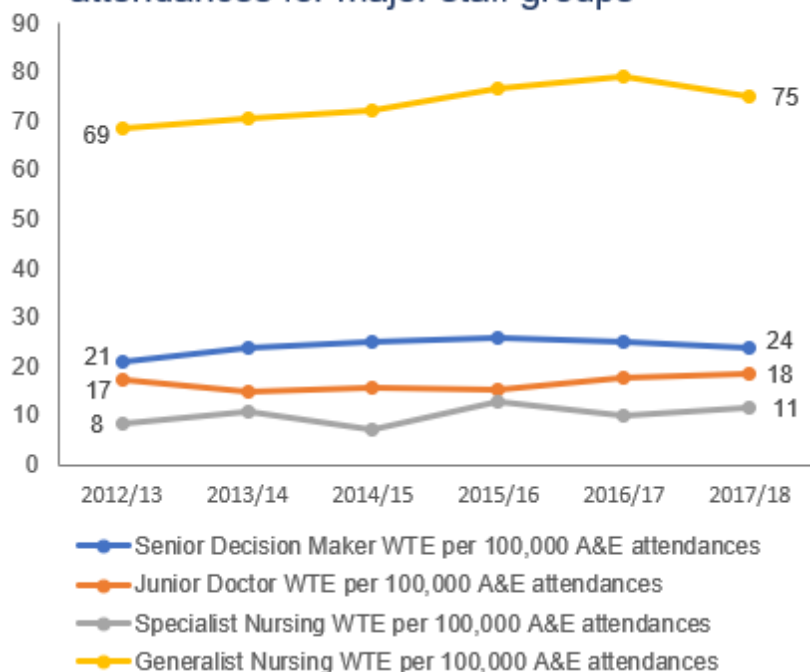- Generalist Nursing WTE per 100,000 A&E attendances

Figure 5 shows the timeseries for four major staff groups, showing the median WTE staff numbers per 100,000 ED attendances recorded in each of the six cycles of the Emergency Care project.

Over this period the project recorded an increase in staff levels for all these groups when compared to the number of attendances.

The greatest increase in absolute terms is for General Nursing staff, which rose 6 WTE per 100,000 ED attendances over the period, an increase of 9%.

The number of Senior Decision Makers rose by 3 WTE per 100,000 ED attendances, an increase of 14%. This category of staff along with Specialist Nurses demonstrated the largest proportionate growth over the period.

Staffing levels – regional variation

Table 1 examines staffing levels on a regional footprint, with variation in both staff numbers and composition evident.

The South West has the highest overall staffing levels, and has a rich skill-mix with the highest levels of Consultants and Specialist Nurses.

Wales has the second highest overall staffing levels, however in contrast is more dependent on General Nurses and Junior Doctors than other areas.

The use of unregistered Nursing staff shows little variation by region, with the exception of London, where there are on average only 17 WTE per 100,000 ED attendances, almost half the national average. London also the lowest levels of Specialist Nurses. Together these reflect the pressure on recruiting Nursing staff in London and the project figures show London as having the highest vacancy rate for Nursing staff (16% compared to a national average of 11%). Difficulties in recruiting a sustainable workforce in London link to issues in the wider UK labour and housing markets.

The North and the Midlands & East have similar profiles, with below average staffing levels and an overall skill mix similar to the national average.

The South East has low levels of Consultants, and slightly above average levels of General Nurses and Junior Doctors.

Table 1: Average WTE ED staff per 100,000 ED attendances, by staff type and region

	All ED Staff	Consultants	Senior Decision makers*	Junior Doctors	Specialist Nurses	General Nurses	Unreg. Nursing staff
North	**176**	12	23	18	14	72	27
Midlands & East	**178**	11	25	17	12	74	27
South East	**181**	10	25	20	14	79	26
South West	**200**	14	30	18	19	78	30
London	**170**	11	29	19	9	78	17
Wales	**195**	10	21	24	13	91	27

Includes Consultants

Consultant workforce

Figure 6: EM Consultants (WTE) per 100,000 Attendances

Type 1 EDs — Mean = 11.5 — Median = 11.4
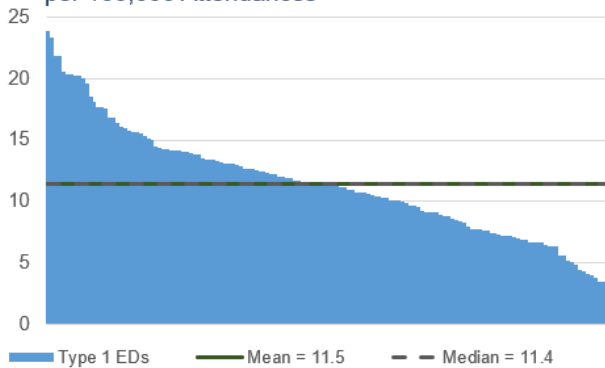
Figure 7: Hours per week a Consultant is present in the Emergency Department

Type 1 EDs — Mean = 107 — Median = 104
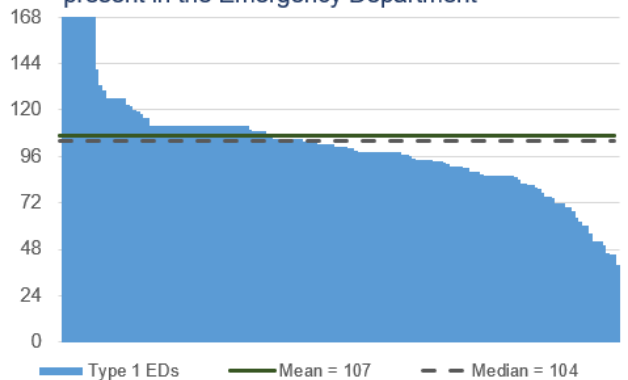
Between 2012 and 2017 the Emergency Medicine Consultant workforce grew at an average of 6.6% per year[3].

Participants reported an average of 11.5 WTE EM Consultants per 100,000 attendances (Figure 6), an increase of 2.6 WTE per 100,000 attendances from the 2012 project.

During this period there has been an increased focus on 24/7 care and weekend provision. The project examines the number of hours per week a Consultant is present in the ED, and this position has increased significantly over the course of the project, starting at **89 hours per week** in 2012/13 and **rising to 107** in the latest round of the project (Figure 7).

Further analysis shows around half of EDs have the same Consultant presence at weekends as on weekdays, while the rest show varying levels of drop off. On average EDs have 15 hours per day presence during the week and 12 hours per day presence at weekends.

Despite the increase in Consultant workforce recruitment remains a significant issue. The 2017/18 project found an average vacancy rate of 16.7% for Consultants. This challenge is then reflected in the spend seen on locum staff with an average of 20% of Consultant pay spend being spent on locum staff (Figure 8).

The 2018 RCEM Workforce Recommendations note that many studies have evidenced increase in patient morbidity and mortality where there is a delay in involvement of a Consultant in their care[4]. Consultants also make essential contributions to education and training, clinical governance and quality improvement work.

Dedicated time for clinical supervision in the ED is a vital component of the Consultant role, particularly given the increasingly multidisciplinary nature of the EM workforce.

RCEM recommends staffing levels based on the size banding of the ED[4]:

>150,000 attendances: 34 WTE Consultants (60 WTE Senior Decision Makers)

<150,000, >100,000 attendances: 24 WTE Consultants (42 WTE Senior Decision Makers)

<100,000, >60,000 attendances: 18 WTE Consultants (30 WTE Senior Decision Makers)

<60,000 attendances: 6 WTE Consultants (13 WTE Senior Decision Makers)

The 2017/18 project results showed that only 16% of Emergency Departments were able to meet these minimum levels. These EDs were typically small EDs with fewer than 60,000 attendances.

Figure 8: % of total Consultant pay spend that was spent on locum staff

Type 1 EDs — Mean = 20% — Median = 14%
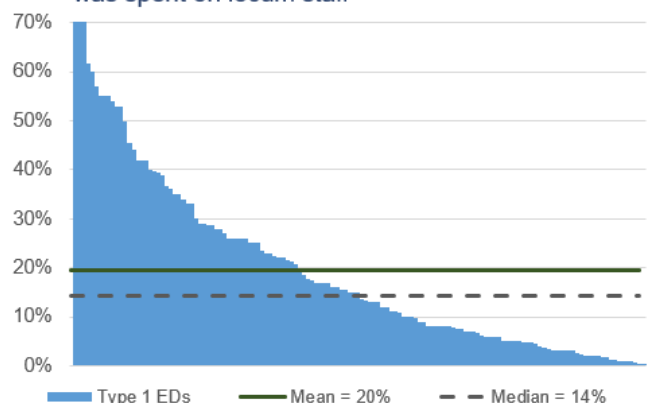
Medical workforce

Figure 9: WTE Medical workforce per 100,000 ED attendances

Legend: Type 1 EDs — Mean = 45 — Median = 43

Figure 10: Medical staff composition

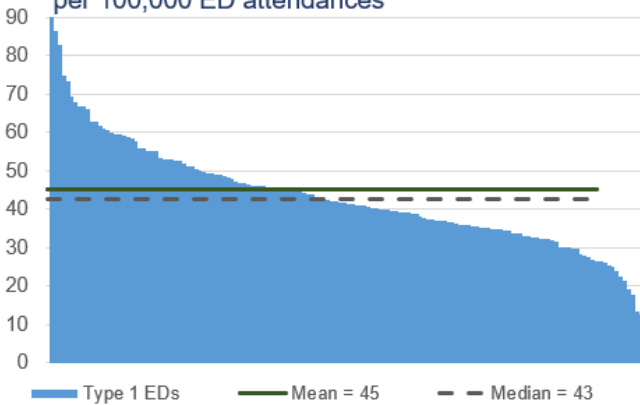Consultants 26%
Senior EM Trainees 13%
Career Grade EM Clinicians 18%
Junior Doctors 21%
F2 19%
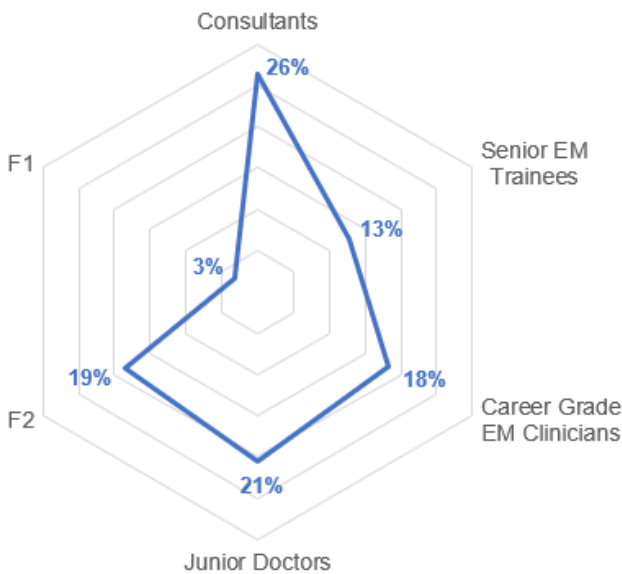F1 3%

On average there are 45 doctors per 100,000 ED attendances (Figure 9). Of these, 26% are Consultants, and 57% classify as 'Senior Decision Makers'.

Comparisons of the data for workforce composition shows a correlation between a higher proportion of Consultants on the workforce and lower patient length of stay in the ED (Figure 11) with better ED performance on the 4 hours Emergency Care Standard where Consultants make up a greater share of the workforce.

Similar, but less strong correlations, are found when comparing the proportion of the workforce that are 'Senior Decision Makers'. The greater the senior presence, the greater the better the performance on ED access and flow.

'Senior Decision Makers' oversee a range of emergency medicine functions, such as command and control, resuscitation room leader, supervision of junior staff, rapid assessment function, paediatric ED cover, ambulatory emergency care/clinical decision unit cover and review of new patients.[3]

Figure 11: % of workforce that are EM Consultants vs average patient LOS in ED

$R^2 = 0.15$
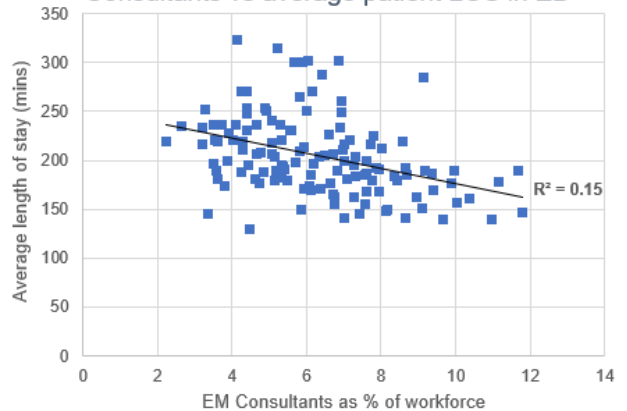
The data does not show any clear relationship between the Consultant/Senior Decision Maker levels and conversions rates (the proportion of ED attendances that are admitted to inpatient care). This may reflect the influence that other factors, such as the demographics of the area and relative acuity, have on conversion rates.

Junior Doctors (including F1 and F2 doctors) make up 43% of the medical workforce. The quality of life at work for Junior Doctors in emergency medicine, has been a specific priority of the Royal College of Emergency Medicine, and Health Education England since the 2016 introduction of the 'Enhancing Junior Doctors Working Lives programme'.[5]

Emergency medicine, as a speciality, continues to have Junior Doctors reporting "very heavy" and "heavy" workloads, at a higher rate than counterparts in other specialty areas. Emergency medicine has traditionally seen a lower conversion rate of Junior Doctors taking senior medical roles in that specialty.

Nursing workforce

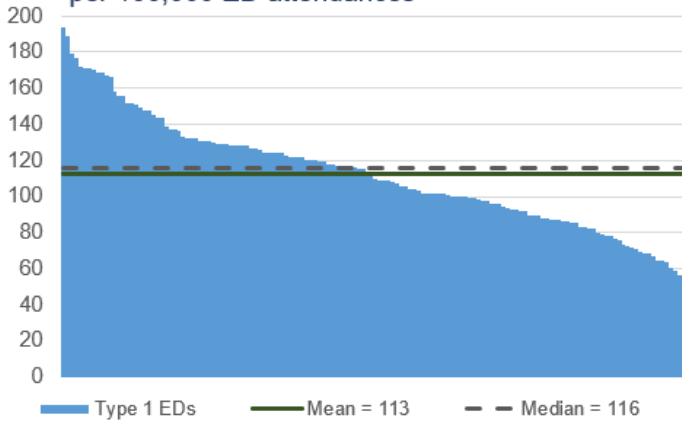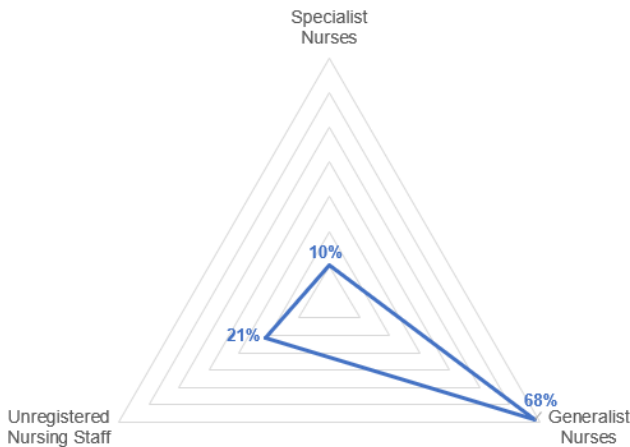**Figure 12: Nursing workforce (WTE) per 100,000 ED attendances**

Type 1 EDs · Mean = 113 · Median = 116

These roles both support the traditional nursing team, and can also help alleviate the staffing shortages seen in other professions.

Inappropriate staffing levels and skill mix in hospitals are linked to excess mortality and poor patient experience, however establishing appropriate safe nurse staffing levels in emergency departments is challenging, in part because patient demand is so variable and wider challenges with the UK labour market are also present.

The National Quality Board guidance does not set staffing ratios, instead recommending that staffing levels are set based on local data on dependency, throughput and the skills and experience of the wider multiprofessional team.

Figure 13: Nursing workforce composition

Figure 14: Percentage of nursing staff that are unregistered nursing staff

Type 1 EDs · Mean = 22% · Median = 21%

Nursing staff make up the majority of the ED workforce (63%). On average there are 113 WTE nursing staff per 100,000 attendances (Figure 12), with threefold variation evident in the staffing levels.

The average composition is shown in Figure 13:

- 10% Specialist Nurses
- 68% General Nurses
- 21% Unregistered Nursing staff

The National Quality Board / NHSI report "Safe, sustainable and productive staffing - An improvement resource for urgent and emergency care" notes the increasing opportunities for nursing staff in emergency and urgent care settings.[6]
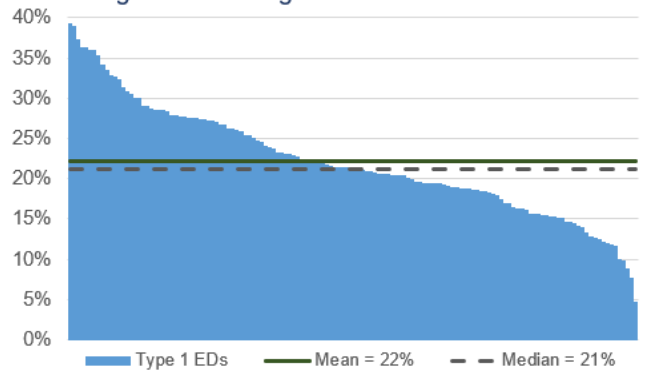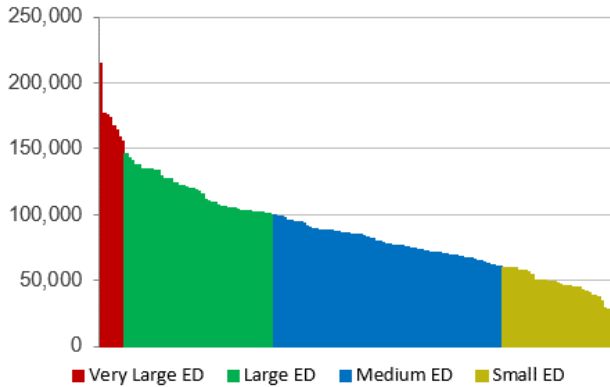
Registered nurses now include dedicated specialist roles such as Emergency Care Practitioners, ACPs, Matrons and Nurse Consultants.

The percentage of the nursing workforce that is made up of unregistered nursing staff (Figure 14), such as healthcare assistants varies considerably across Type 1 Emergency Departments ranging from 5% of the nursing staff to almost 40%. Unregistered nursing staffing levels are lowest within London.

Size of department

Figure 15: Total A&E attendances in 2017/18

Legend: Very Large ED, Large ED, Medium ED, Small ED

Figure 17: Vacancy rate - ED Consultants

Legend: Very Large ED, Large ED, Medium ED, Small ED

The size of the emergency department has an effect on patient flow and staffing implications. Chart 15 displays the banding used in the 2018 RCEM Workforce Recommendations.

- Very Large: 150,000+ attendances
- Large: 100,000 to 150,000 attendances
- Medium: 60,000 to 100,000 attendances
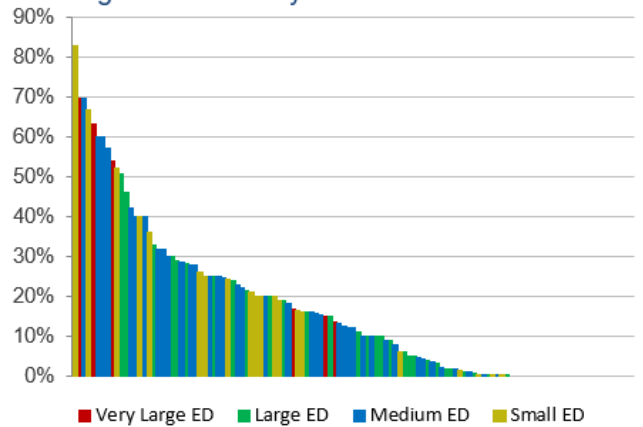- Small: <60,000 attendances

Table3 overleaf shows how these groups compare on a range of key metrics.

The overall mean length of stay (figure 16) is shortest in small emergency departments (188 minutes) and longest in very large departments (228 minutes).

The percentage of attendances converted to inpatient admissions is lowest at very large emergency departments (23%) and highest at medium sized departments (29%).

Very large departments have the greatest challenge in recruiting EM Consultants with 33% of posts vacant. Small departments

also face challenges with a 21% of EM Consultant posts vacant, compared to 16% at medium sized EDs and 12% at large EDs.

The vacancy rates for other medical staff show less variation when compared by size, however large emergency departments again have the lowest vacancy rates as a group.

The number of medical staff per attendance is similar for medium, large and very large emergency departments (42 or 43 WTE per 100,000 ED attendances), with slightly higher levels seen in small emergency departments (46 WTE per 100,000 ED attendances).

The composition of medical staff however does vary by across the peer groups, with larger hospitals having a greater proportion of junior doctors and fewer senior staff.

Figure 18, shows the number of Senior Decision Makers, when compared per 100,000 attendance, small departments have an average of 27 senior decision makers per 100,000 attendances compared to 20 at very large departments.

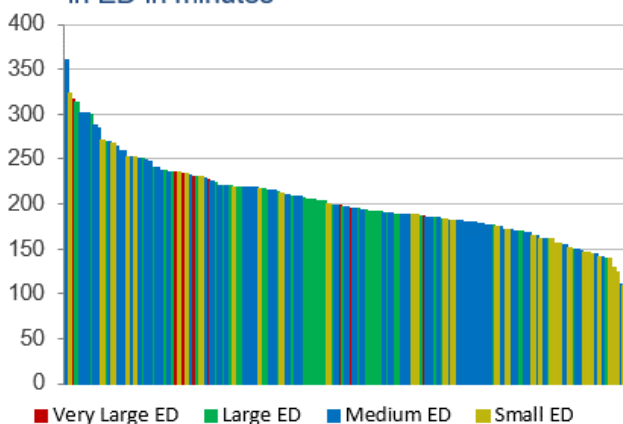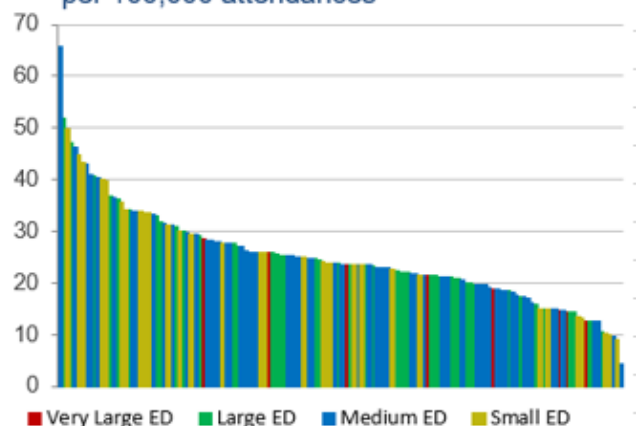### Figure 16: Overall mean length of stay in ED in minutes

Legend: Very Large ED, Large ED, Medium ED, Small ED

Figure 18: Senior Decision Makers WTE per 100,000 attendances

Legend: Very Large ED, Large ED, Medium ED, Small ED

Size of department continued

Table 3: Effect of size on patient flow and workforce

	Overall mean length of stay in ED	Conversion rate	Percentage of patients who waited more than 4 hours
Very Large ED	228 minutes	23%	19%
Large ED	207 minutes	26%	17%
Medium ED	207 minutes	29%	18%
Small ED	188 minutes	27%	14%

	Vacancy rate ED Consultants	Vacancy rate Other ED Medical staff	Vacancy rate Non-medical staff
Very Large ED	33%	16%	16%
Large ED	12%	13%	11%
Medium ED	16%	20%	11%
Small ED	21%	18%	8%

	Medical staff WTE per 100,000 attendances	Senior grades EM consultant WTE per 100,000 attendances	Senior Decision Maker WTE per 100,000 attendances
Very Large ED	43	10	20
Large ED	43	11	25
Medium ED	42	11	25
Small ED	46	12	27

Development of the Emergency Department workforce

In 2011 the RCEM Emergency Medicine Operational Handbook "The Way Ahead"[7], urged a paradigm shift with emergency care being provided by more senior clinicians throughout the 24 hour period.

Among its recommendations were a proposed a minimum of 10 WTE EM Consultants per ED, the development of ambulatory emergency care, and that each Acute Trust should appoint a Director of Emergency Care (preferably an EM clinician).

In the following years the EM Consultant workforce has grown, and over two fifths of EDs now have ten or more EM Consultants. 82% of Acute Trusts have appointed a Director of Emergency Care and ambulatory emergency care has grown considerably.

Securing the future workforce for emergency departments in England, RCEM 2017, presents a model for ensuring sustainable staffing in emergency departments and the next few years will present health systems with the opportunity to move these recommendations forward.

These include growing a multiprofessional workforce with a sufficient depth and breadth of senior decision makers, and expansion of the Advance Clinical Practitioner (ACP) and Physician Associate (PA) roles.

More work is needed to invest in development and training for emergency medicine trainees to reduce attrition and provide more support.

There is need to improve retention of EM staff. Departments must develop new approaches to support areas such as geriatric emergency medicine and ambulatory emergency care, which will broaden the workforce, support new models of care and improve staff retention.

The RCEM guides 'Creating successful, satisfying and sustainable careers in Emergency Medicine[8]' and 'EM-POWER: A Practical Guide for EM Clinical and Non Clinical Managers[9]' provide a wealth of practical tools to support the development of a sustainable workforce.

Further workforce metrics

Table 2: Average vacancy, sickness and turnover rates

	All ED Staff	Medical staff	All other ED staff
Vacancy rate	**12.2%**	17.2%	11.5%
Sickness rate	**4.0%**	1.8%	4.8%
Turnover rate	**13.1%**	19.0%	12.5%

The data showed an average vacancy rate for ED staff of 12.2%, three percent higher than the average rate across the NHS in 2018.

The rates were especially high for medical staff with an average vacancy rate of 17.2% (16.7% for EM Consultants and 17.6% for other medical staff).

Overall ED sickness rates were slightly lower than the NHS average of 4.2%, with medical staff reporting low rates of 1.8%. All other ED staff had a slightly above average rate of 4.8%.

The staff turnover rate for all ED staff was 13.1% with higher rates seen in medical staff (19.0%) than all other staff groups (12.5%).

Figure 19: Percentage of total ED pay budget spent on bank, agency and locum staff
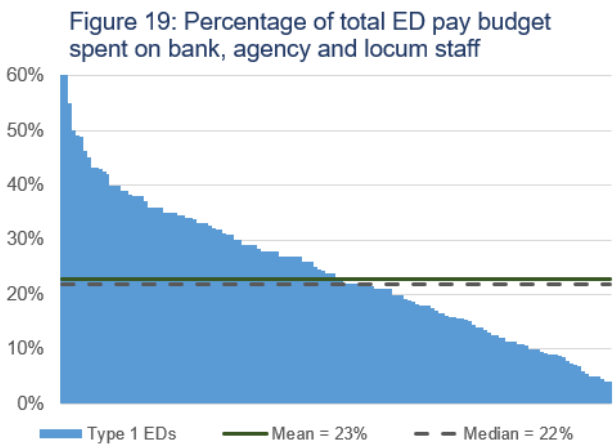
Given the challenges emergency departments face with recruitment and retention, it is unsurprising that many departments are reliant on bank, agency and locum staff to ensure service delivery.

Figure 19 shows that on average 23% of emergency department pay spend is spent on bank, agency and locum staff. 20% of Consultant pay spend was spent on locum staff.

Expenditure on agency staff is over twice that on bank staff, with spend on agency staff accounting for 14.4% of the overall pay spend.

Figure 20: Average length of stay in Emergency Department (mins)
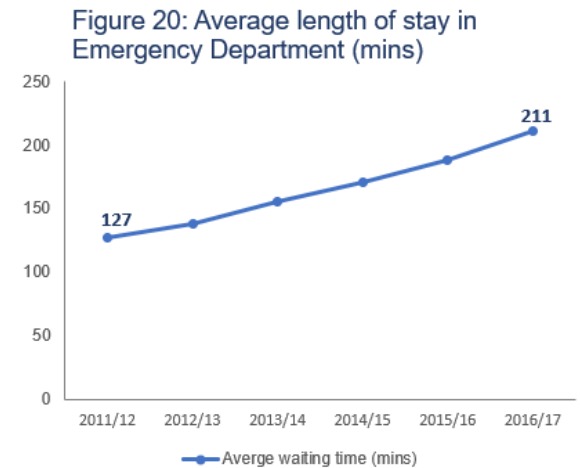
In addition to staffing metrics the project tracks a wide range of key metrics. Figure 20 displays the growth in the average length of stay for patients in Emergency Departments. This highlights the challenges for Emergency Department staff and for patient flow.

Figure 21: Friends and Family Test - Type 1 EDs
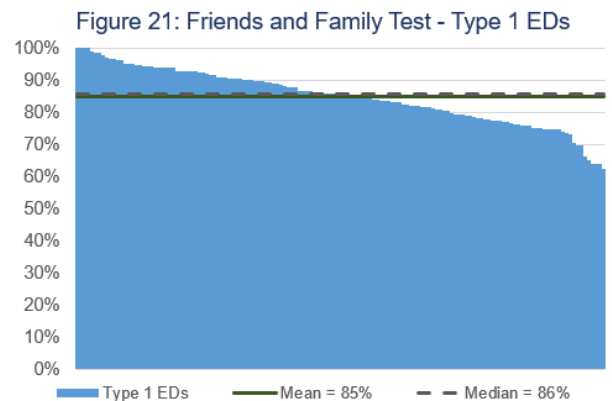
The Friends and Family Test is a useful feedback tool that enables services to measure and compare patient experience of the service. This provides a useful counterpoint when reviewing workforce information.

In 2018 Type 1 emergency departments had an average score of 85% (i.e. 85% of responding patients would recommend the service to friends or family – Figure 16).

Given the workforce challenges faced by emergency departments, and the growth of waiting times it is encouraging to see many emergency departments performing well, and reflects that patients appreciate the service provided by emergency departments.

Conclusions

- This paper summarises key workforce metrics from the sixth round of the NHS Benchmarking Network's Emergency Care benchmarking project. The data has been compared with previous years and examined on a regional basis in order to examine trends across the country.

- The findings from this review highlight that there remains wide variation in workforce demographics between departments of similar sizes.

- The project found an increase in staffing levels (per 100,000 attendances) for all major staff groups between 2012/13 and 2017/18.

- The vast majority of emergency departments do not meet the minimum staffing requirements for Consultants and Senior Decision Makers as set out by the Royal College of Emergency Medicine.

- Consultant presence in the emergency departments varies greatly, with a small minority reporting 24/7 Consultant presence in the department.

- Regional variation in the data is evident, with the South West having the highest staffing levels and more senior staff. The lowest staffing levels were found in London, which in particular showed shortages in the nursing workforce. Wales has a shortfall in Consultants and Senior Decision Makers, and has significantly greater numbers of nursing staff.

- Comparison with patient length of stay in the Emergency Department showed that higher levels of Senior Decision Makers, and in particular Consultants, correlate with lower patient length of stay.

- The figures show that emergency departments continue to have challenges in recruitment and retention, with high levels of vacancies among medical staff. This then leads to additional spend on locum and agency staff.

- The key to helping reduce attrition and attract senior staff is highlighted by the RCEM as being better recognition of the intensity of out of hours work within annualised rotas and a focus on sustainability and wellbeing.

- We would like to thank all participating departments for their involvement in the benchmarking project.

References and further reading

References:
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2 – Medical and Practitioner Staffing in Emergency Departments, Ian Higginson, College of Emergency Medicine, February 2015. Doctors titles explained, British Medical Association, 2017 National Curriculum and Competency Framework, Emergency Nursing (level 1), June 2017
3 – Securing the future workforce for emergency departments in England, Royal College of Emergency Medicine, NHSI/NHSE & HEE 2017
4 – RCEM Workforce Recommendations 2018, Royal College of Emergency Medicine, 2019
5 – Enhancing Junior Doctors' Working Lives, HEE, 2016
6 - Safe, sustainable and productive staffing - An improvement resource for urgent and emergency care" The National Quality Board / NHSI, 2018
7 – RCEM Emergency Care Operational Handbook "The Way Ahead", Royal College of Emergency Medicine, December 2011
8 – 'Creating successful, satisfying and sustainable careers in Emergency Medicine', Royal College of Emergency Medicine, 2014
9 – 'EM-POWER: A Practical Guide for EM Clinical and Non Clinical Managers', Royal College of Emergency Medicine, April 2019
Further reading:
Creating workforce stability in emergency care: Expected good practice, Royal College of Emergency Medicines, July 2018
RCEM Winter Flow project 2018/19 final report, Royal College of Emergency Medicine, July 2019