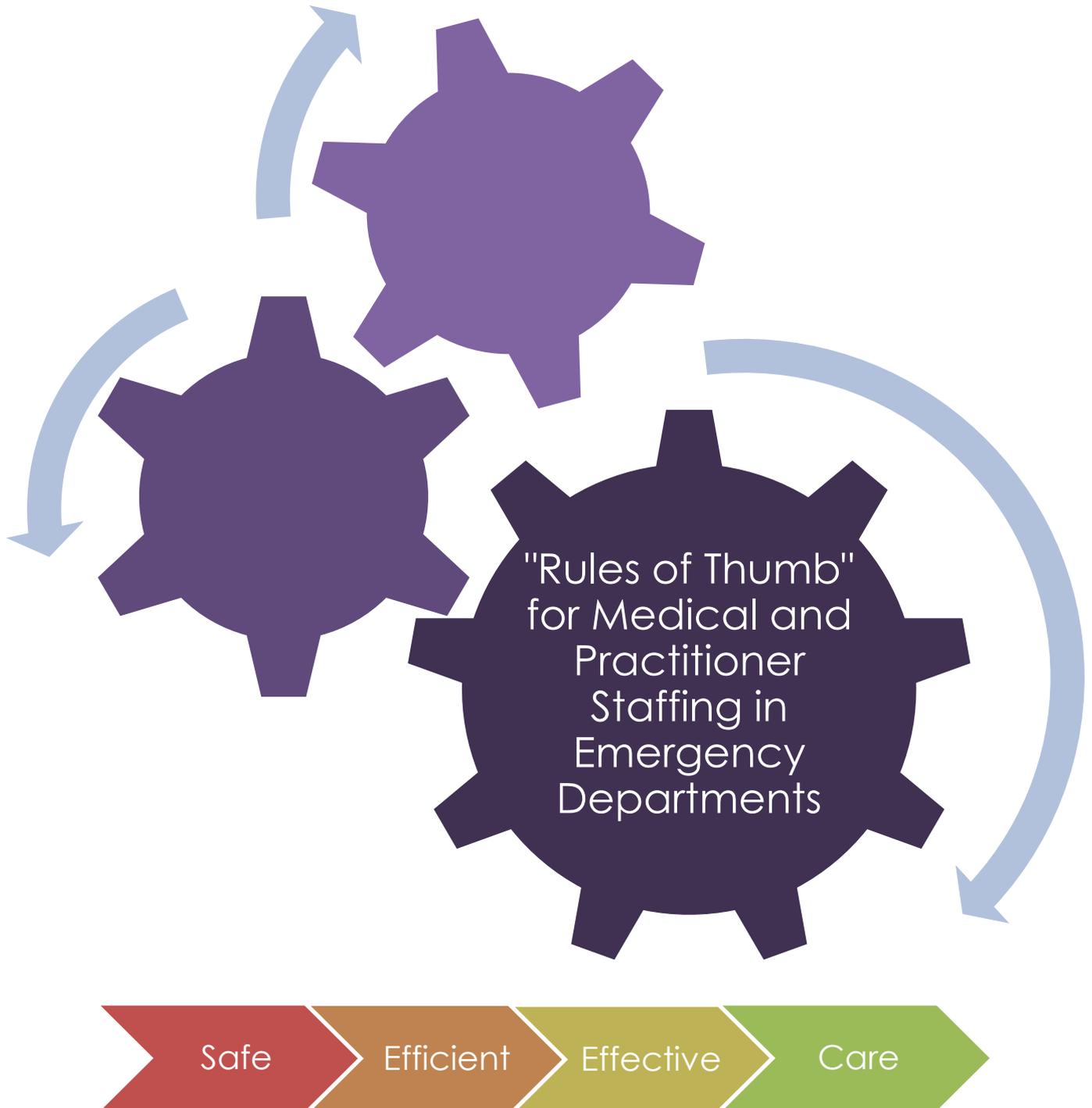




The College of Emergency Medicine



Service Design and Delivery

“Rules of thumb” for medical and practitioner staffing Emergency Departments

This document is designed to supplement the full CEM workforce guidance

The CEM workforce guidance describes the complexity of staffing Emergency Departments. However there is a need for some rules of thumb to support basic discussions around staffing.

Disclaimer: The risk with these rules is that will be taken as indicative of adequate staffing level, whereas they actually reflect bare minimums before other factors are taken into account. The best way to calculate staffing is to calculate demand, and map staffing requirements to that demand, allowing for variation, carve-out, and case-mix. Sustainable rotas are then built around the capacity requirement. The methodology is available in the full guidance and the additional resources.

There is limited benchmarking available. Given that most EDs in the UK would regard themselves as understaffed such benchmarking would probably be more useful in establishing the state of play, rather than defining standards. This document is therefore based on experience / expertise.

For the “rules of thumb” a number of assumptions have been made:

- Single site ED operating 24/7
- Adequate supporting nursing and ancillary staff
- The case-mix is that of a “normal” DGH
- One person = one WTE and one equal contribution to out-of-hours work
- Sustainability is important
- No allowance has been made for time required for training

Be aware of the disruptive effect of dedicated areas, streams and roles on staffing requirements. These rules of thumb do not take them into account. For instance CDUs, clinics, rapid assessment systems, dedicated trauma consultants, or separate paediatric areas will strongly influence calculations, particularly in departments with smaller numbers.

Finally the concept of sustainability is important. Whilst a rota may have basic requirements to be sustainable, sustainable rotas are frequently based on reducing evening, night and weekend frequencies. Sustainable rotas within typical current staffing models will leave these periods relatively light on staffing. Rotas with high frequency of out of hours and weekend working improve cover but are not sustainable

Use the rules of thumb with caution, bearing the limitations in mind!

The following table summarised the staffing tiers proposed in the full workforce guidance:

1	Require complete supervision. All patients must be signed off before admission or discharge	F1 doctors, trainee practitioners
2	Require access to advice or direct supervision, or practice independently but with limited scope (L)	ENPs, ANPs / ACPs, PAs, ESPs, F2 doctors, CT1-2 doctors, some primary care clinicians
3	More senior / experienced clinicians, requiring less direct supervision. Generally fewer limitations in scope of practice	CT3 in EM, junior Speciality Doctors, some ANPs / ACPs and PAs, some primary care clinicians
4	Senior clinicians able to supervise a department alone with remote support, possess some extended skills. Full scope of practice	CT4 and above, senior Speciality Doctors
5	Senior clinicians with accredited advanced qualifications in EM/ full set of extended skills	Consultants in EM

Rule of thumb 1: How many consultants are needed to provide basic cover?

- The current CEM recommendation is for a minimum of ten consultants per ED, with more for larger EDs or EDs undertaking specialised functions (e.g. MTC)
 - With fewer than ten consultants it is difficult to sustainably provide extended cover during weekdays and weekends. Something will have to give: usually extended hours, or the health of the consultants
- Ten consultants can sustainably deliver one consultant on the shop floor 0800-2200, 7 days per week, with some doubling up in the afternoons and occasionally in the evenings. Weekend frequency is high
- Twelve consultants can sustainably deliver one consultant on the shop floor 0800-0000, 7 days per week, with more doubling up during the day and evenings. Bank holiday cover is improved. Weekend frequency is moderately high.
- Sixteen consultants can sustainably deliver 0800-0000 shop floor cover with doubling up on more evening / late shifts / weekends. Bank holiday cover is excellent. Weekend frequency is acceptable, although remains light (often single consultant only)
- A single consultant on the shop floor cannot be allocated to more than one role at once. Running the shop floor, CDU rounds, involvement in resuscitation or complex procedures, rapid assessment, and training, all require dedicated personnel

Rule of thumb 2: How many consultants are needed to deliver required clinical activity and shift patterns?

- A standard 10 PA consultant working a sustainable job plan will deliver between 230-270 shop floor PA per year (assuming 0.5-1.0 PA on call work, 0.5-1.0 PA clinical admin, and 2.5 SPA)
- Providing 0800-2200 cover 7 days per week under standard PA rates requires c1500 PA per year. Providing 0800-0000 cover requires c1750
- Dedicated CDU activity during the week will consume up to 260 PA per annum (At weekends the morning consultant will usually do the ward round: the price is that the shop floor is denuded of that consultant)
- The marginal gains of employing additional consultants above the bare minimum are considerable in terms of the extended cover provided, and the ability to double up cover at key times. Doubling cover / providing defence-in-depth allows one consultant to run the shop floor, and another to provide expert and dedicated clinical input where it matters. Experience from multiple centres is that this results in improved quality of clinical care

Rule of thumb 3: How many tier 3 and 4 doctors are needed?

- A middle grade rota with eight or nine tier 4 doctors can just about provide 24-hour cover but it will not be sustainable, and cover during other key times (such as evenings, into the small hours, and weekends) will be light. There will be a high locum requirement
- A middle grade rota with twelve tier 4 doctors can sustainably provide 24-hour cover with three on duty each weekend. Extended cover will remain light
- A middle grade rota with twelve tier 4, and four tier 3 doctors, will provide sustainable 24-hour cover, good cover during the weekday daytimes and into the early evenings, and four on each weekend. May still be light into the small hours
- It should be noted that having three or four tier 3 or 4 doctors on at the weekend is inadequate in larger departments, since consultant cover will also be lighter and the burden of tasks requiring senior decision makers may exceed capacity. In addition, the common solution to try to maximise defence in depth is to lengthen the shifts worked, which can impact upon sustainability.
- Middle Grade doctors are frequently not involved in CDU or clinic activity due to demands on the shop floor. This results in loss of variety, and of training opportunities. This should be considered when constructing the workforce, and factored into calculations

Rule of thumb 4: How many 24-hour tier 2 doctors/ANPs are needed?

- A tier 2 rota with eight participants working 24/7 can provide 24-hour cover but cover will be generally weak. It will be unsustainable for permanent employees
- A tier 2 rota with twelve tier 2 participants is more sustainable in terms of single night cover. Double night cover will be challenging and will likely mean long shift patterns, with poor sustainability for permanent employees
- A tier 3 rota with sixteen participants can provide good late evening and overnight cover, with two on overnight
- Once again consider the importance of defence in depth, and sustainable shift lengths and working patterns

Rule of thumb 5: What about using the old Way Ahead guidance basing staffing on how many patients each doctor will see?

- The number of patients seen by supervising consultants and MG will vary depending on the level of supervision required
- A standard tier 2 doctor seeing between 1 and 2 patients per hour will see approximately 2500 patients per year
- An ENP working exclusively in minors will see more than 3000 patients per year

There is a catch. It might be tempting to assume that if 25000 patients attend: you need 10 SHOs to see them. This won't work because things don't happen in a predictable fashion, carve-out will apply somewhere, the arrival rate varies, and the processing rate varies. This rule of thumb is the most risky one to apply in practice because it doesn't take variation into account.

Rule of thumb 6: Economies of scale

There is a baseline requirement for each department (e.g. there should always be a supervising senior), and each rota should be sustainable. CDU, clinic, and training activity is also constant at a basic level. Once the baseline is reached cover can be improved with greater cost-effectiveness, although it must be recognised that the supervisory requirements and organisational complexity will also increase. Within each rota line there are clear points at which night and evening cover can be sustainably improved.

For example:

One estimate of the staffing requirement for a 60K ED might be

Consultants	10
Tier 3/4	12
Tier 2 doctors / ANPs	12
ENPs	4-6

A 100K – 120K ED might look something like this.

Consultants	12-16
Tier 3/4	14 -16
Tier 2 doctors / ANPS	16 -24
ENPs	8-12

Bear in mind that these figures are estimates and don't take case mix, specialised function, local demand patterns, and departmental configuration into account. They may also result in mismatched demand and capacity at the weekends and into the early hours. Training requirements are likely to increase and are not factored in. Additional cover may be required so support capacity, and sustainable working, for permanent staff.

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Useful additional resources

- 1) Full workforce guidance: available on the website
- 2) Demand –capacity planning: How to do it. Available at <http://emj.bmj.com/content/28/2/128.abstract?sid=841090c7-fd96-4cf7-bbe9-73e99a0ce1a9>
- 3) Handy sustainability calculator for EDs. See website
- 4) Handy PA requirement calculator for EDs. See website.

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