

South East

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Clinical  
**senate**

**The Clinical Co-Dependencies  
of Acute Hospital Services**

**Summary of What to Find in the Main Report**

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## Introduction

This document presents a summary of what to find in the revised South East Clinical Senate report 'The Clinical Co-Dependencies of Acute Hospital Services' and should be read in conjunction with that report and the allied report 'Teaching, Training and Research: Workforce Considerations for Major Service Change'.

Health care systems and their commissioners, in partnership with providers and the public, have to consider the most appropriate configuration of their hospitals so that their clinical services are adequately supported by other specialties, and they are fit for purpose, sustainable, accessible and deliver the highest possible quality of care.

Whilst there are many factors that will need to be considered in hospital configurations, the clinical relationships, and dependencies of hospital-based services on each other is key, whatever their size. Within the updated report we have also included Respiratory Medicine together with the major acute services and the clinical dependencies of these services on hospital-based services were reviewed. The four-level system for describing the strength of the dependencies was then revised accordingly: Purple (needing to be based on the same site); Red (visiting or in-reach services sufficient); Amber (patient could transfer to another hospital or site for ongoing care through network arrangements); or Green (loose or no direct relationship).

Influencing the purely clinical considerations are a range of critical cross-cutting themes impacting on the location of hospital-based services or on planning new models of provision, which must be taken into account:

- The patient and public representatives participating in this clinical senate work made a number of strong and clear points. The driver for any service change should be an improvement in patient outcomes and experience; the importance of communication, both between professionals across patient pathways, and between the professionals and patients and their families and carers; making services as local and accessible as possible, including early repatriation to local care as soon as appropriate if the patient had required transfer to a specialist centre; ensuring early and meaningful dialogue with the public and patients about any proposed service change (recognising the wide demographic range of users of the NHS whose views should be taken into account); that changing the configuration of services cannot alone be relied on to fix underlying quality issues; and that for some patients, particularly the frail elderly, a more local service, which may not completely fit the aspirational ideal, may be preferable to one that requires the patient to be treated far from their own and their family's home.
- Two new cross-cutting themes which have assumed increasing importance for the delivery of acute care over the last decade, Perioperative Care of Older People Undergoing Surgery (POPS services) and Virtual Wards, are also included in the updated main report (see sections 3.6 and 3.7 of the full report).

- The improved IT infrastructure throughout the NHS has enabled improved communication between departments, between and outside of hospitals, and increasingly with patients. Allied to this is the potential impact of artificial intelligence / machine learning on the way services operate in the future.
- Ambulance and transport services are key enablers of greater networking of hospital services, including by extending the competencies and responsibilities of the paramedic profession. However, they are a finite resource, and the additional demands on these services, such as for secondary transfer of patients to specialist centres and repatriation, must be fully considered in any service change for their potential impact on frontline 999 ambulance services if an emergency ambulance is required for patient transport for primary conveyance from home to hospitals and back from hospital to the community.
- Staff wellbeing and retention are critical determinants of high-quality care and are a high priority for all NHS organisations.<sup>1,2</sup> There are major workforce challenges in delivering the 7 day and 24/7 services both in hospitals and in the community, which themselves are fundamental drivers for change. This relates not just to a pressure to centralise services, but also to rapidly align workforce planning with future NHS and social care needs and new models of care, and to increase the flexibility and adaptability of the workforce to mitigate against shortages in key areas, as well as recognising where shortages do and will exist, and addressing them urgently.
- Due importance should be given to the teaching, training, and research agendas whenever service change is considered. There are opportunities from greater integration of and coordination between providers for all these three areas, which will maximise the skills, recruitment and retention of the workforce, and research activity (and income), but there are also significant risks if pathways become fragmented through poorly planned reconfigurations or expansion in alternative providers.

Once the clinical dependencies grid was completed, it became possible to identify core groupings of services required to be based in the same hospital site. In particular, hospitals with emergency departments (EDs) receiving all acute adult patients (an 'unselected take') need on-site acute and general medicine, acute surgery, and intensive care units (ICUs). Therefore, such hospitals need to provide the supporting clinical services that are required by all or any one of these four core inter-related acute specialties, and these can be read off the grid. These amalgamated requirements delineate what an emergency hospital should provide on-site as a minimum. Implicit in the definition of acute services is that time is critical, the patient and the care giver must be in the right place at the right time for the right intervention.

The dependencies of the other more specialist services were also reviewed and are identified. Other than services such as Major Trauma Centres or Vascular Surgery Arterial Centres, where requirements are clearly specified, the 'spoke' services in these networks, such as Trauma Units, Vascular Surgery network hospitals, or non-interventional cardiology services, are likely to be more heterogeneous, and dependent on the nature of and distance from their network centre or hub, and the existing co-location of related services.

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<sup>1</sup> [The courage of compassion | The King's Fund \(kingsfund.org.uk\)](https://www.kingsfund.org.uk/publications/the-courage-of-compassion)

<sup>2</sup> [caring-for-doctors-caring-for-patients\\_pdf-80706341.pdf \(gmc-uk.org\)](https://www.gmc-uk.org/standards-and-guidance/caring-for-doctors-caring-for-patients_pdf-80706341.pdf)

Note should be made that rapidly available acute mental health services (liaison psychiatry) was considered a key requirement of all reviewed acute services. The physical health aspect of patients with mental ill health and the support provided in that direction also needs to be considered. Better access to outpatients for community mental health and better in-reach support for mental health units may prevent some acute physical health presentations in mental illness.

Telemedicine-assisted ways of working are identified as powerful enablers of more effective networking and leveraging of specialist services over a wider geographical area, thereby reducing unnecessary patient travel and inconvenience. The impact of development and wider roll out of such technologies will of course affect the grid ratings shown.

## The co-dependencies grids

The completed grids are shown on the following pages. It is vital to remember that the services in the columns along the top are for this exercise considered to be supporting services for those in the rows. What is being described therefore is the nature of the dependency of the row service on the column service.

At present neither Perioperative care of Older People undergoing Surgery (POPS) nor Virtual Wards are represented in the columns on the grids. From their narrative descriptions in sections 3.6 and 3.7 of the main report it should be apparent that Virtual Wards are an integral part of admission avoidance and / or step down from acute hospital inpatient care and that POPS enables greater flexibility in what may be required for on-site support for a number of surgical specialities.

### Grid colour rating scale

The same four-colour grading system, based on Purple, Red, Amber and Green were used as shown in figure 1 below. In a few cases the cell in the grid is a shaded mixture of red and amber denoting where services can support each other through alternative arrangements such as networks and patient transfer.<sup>3</sup> Note that throughout this document, when a colour rating of a dependency is referred to, it is capitalised.

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<sup>3</sup> Given the fine detail on these grids, they are best reviewed through magnification on screen, or by printing off on A3.

<b>RAG RATING DEFINITIONS</b>	
The colour describes the dependency of the service in the row, on the support service in the column. Note that both the Purple and Red dependencies describe column services that should not require the patient to move hospitals	
<b>PURPLE</b>	
<b>Service should be co-located (based) in same hospital</b>	
<b>RED</b>	
<b>Service should come to patient (patient transfer not appropriate), but could be provided by visiting / in-reach from another site (either physically, or via telemedicine links) if not based in the same hospital</b>	
<b>2</b>	<b>Within 2 hours</b>
<b>4</b>	<b>Within 4 hours</b>
<b>12</b>	<b>Within 12 hours</b>
<b>24</b>	<b>Within 24 hours</b>
	<b>Not specified</b>
<b>AMBER</b>	
<b>Ideally on same site but could alternatively be networked via robust emergency and elective referral and transfer protocols</b>	
<b>GREEN</b>	
<b>Does not need to be on same site. Appropriate arrangements are in place to obtain specialist opinion or care</b>	

Figure 1. Grid co-dependencies: colour rating scale.

Grid A shows all four of the colours / dependencies.

Grid B shows just the Purple dependencies from Grid A (with the Red, Amber and Green dependencies subtracted out). This therefore shows only those services (in the columns) which it was considered should be based on the same site as the acute services in the rows.

Grid C shows both the Purple and Red dependencies from Grid A (with the Amber and Green dependencies subtracted out). These two colours combined therefore show which services (in the columns) were considered should be provided on-site to the acute services in the rows, either by being based on the same site, or by providing an in-reach or visiting service to the patient (without transfer).









## Grid analysis: emerging requirements of acute hospitals

Whilst the dependencies of each of the twelve main acute services (in the rows) on other specialties (in the columns) were rated independently, there are indirect dependencies that require services to be together, on the basis that if service A requires co-location with service B, and B requires co-location with C, then C should be co-located with A.

By looking at services connected in this way, it is then possible to describe the core services that should be grouped in the same hospital. This is of particular importance in describing the core clinical services of a hospital providing ED services. In this section, the grid has been analysed for hospitals hosting the two main kinds of EDs. Firstly, those where the department has an unselected 'take', including acute adult surgical presenters. Secondly EDs that operate a 'selected' take for adult patients that is not set up to receive surgical patients, and where patients with presumed acute surgical problems are conveyed (by ambulance) or referred (by GPs) to a different hospital that does provide an acute surgical service. In the grid we have also suggested a minimum timeframe of availability for Red rated services shown as a number within the Red box denoting the hours i.e. within 2, 4, 12 or 24 hours. These numbers are intended to be a guide and will vary depending on which acute major services are provided from any given hospital site.

**Hospitals with Emergency Departments (EDs) receiving all acute adult patients (an unselected take) need on-site acute and general medicine, acute surgery, and critical care (ICU). Therefore, such hospitals need to provide the supporting clinical services which are required by all *or any one of* these four core inter-related acute specialties. These amalgamated requirements therefore delineate what for an 'emergency hospital' is recommended should be provided on the same site as a minimum. The top four rows of the grids should be considered in that light, and the lists of these inter-related specialties are shown below.**

The range of requirements, both direct and indirect, of the more specialist acute services listed in the other grid rows is described in further detail in section 6 of the main report. Users of the report would need to take account of all the indirect as well as direct dependencies when considering the needs of these other services.

## **On-site services recommended for hospitals with emergency departments: unselected take (including adult surgical patients)**

### **Services that should be based on-site (Purple-rated dependencies)**

- Acute and General Medicine
- Elderly Medicine
- Respiratory Medicine (including bronchoscopy and Non-Invasive Ventilation (NIV))
- Medical Gastroenterology
- Urgent GI endoscopy (Upper and Lower)
- Cardiology (non-invasive)
- General (Adult) Surgery
- Gynaecology
- Trauma
- Orthopaedics
- Urology\*
- ENT\*
- Critical Care (adult): Level 2 and 3
- General Anaesthetics
- X-ray and Diagnostic Ultrasound
- CT Scan
- MRI Scan
- Urgent Diagnostic Haematology and Biochemistry
- Clinical Microbiology/Infection Service
- Occupational Therapy
- Physiotherapy
- Acute Mental Health Services (Liaison Psychiatry)

### **Additional services that should in-reach if not based on-site (Red-rated dependencies)**

- Diabetes and Endocrinology
- Rheumatology
- Dermatology
- Urology\*
- ENT\*
- Acute Oncology
- Palliative Care
- Neurology
- Nephrology
- Maxillo-Facial Surgery
- Plastic Surgery
- Burns
- Interventional Radiology
- Speech and Language
- Dietetics

## **On-site services recommended for hospitals with emergency departments: selected take (ambulance bypass of acute adult surgical patients) or hospitals with urgent care centres who also provide major acute services.**

In a number of hospital trusts with more than one acute site, only one of those sites may be set up to receive acute surgical patients (i.e., where the acute surgical take is based) and certain sites may have front door urgent care centres yet still provide major acute services. These sites therefore do not require the co-location of services which are only required by acute adult surgery, and not by EDs, the acute medical take, or by critical care. For these hospitals the services that are required to be on-site and immediately available (Purple rated) and which can be in-reach (Red rated) will be determined by which major acute services are included in the selected take. This will also determine the timeframe within which Red rated services may be required but can be influenced by new innovations. For example, a hospital with a vascular surgery arterial centre and on-site POPS may not require the same Purple rated medical specialties as one without POPS.

## **Commentary**

Within the main report we have included a service-by-service description of the 12 major acute services and have described the complex inter-dependencies of a wide range of clinical services involved with acute inpatient care, and a range of factors that need to be considered in any reconfiguration of acute clinical services. In the last decade there has been a move towards better integration of services, for example within same day emergency care which is described in our updated report under section 6.1 Emergency Departments & Emergency Medicine. We accept improving care and integrating services may in turn enable an integrated workforce through single assessment and combined service assessment units enabling economies of scale and efficient use of resource. However, integration of services does not obviate the need for access to specialist skills and competencies and this is described in the main report and also in greater detail in a separate report entitled 'Teaching, Training and Research: Workforce Considerations for Major Service Change'.<sup>4</sup>

For acute hospitals with emergency departments, we have demonstrated the key relationships between the ED, acute medical services and surgical services, and critical care. On-site support specialties required by *any one* of these four services defines the clinically recommended minimum range of services required for any 'emergency centre' (as referred to in the Urgent and Emergency Care Review).<sup>5</sup> These findings are mirrored (though on a less detailed scale) by the previous London Health Programmes work.<sup>6</sup> The more specialist additional services whose dependencies we reviewed may have additional service requirements beyond those defined by the four core services, as are described within the main report. We have also touched on newer services such

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<sup>4</sup> [090124-Teaching-Training-and-Research\\_Workforce-Considerations-for-Major-Service-Change-Final.pdf \(secsenate.nhs.uk\)](#)

<sup>5</sup> NHS England. Transforming Urgent and Emergency Care Service in England. 2013. <http://www.nhs.uk/NHSEngland/keogh-review/Documents/UECR.Ph1Report.FV.pdf>

<sup>6</sup> Transforming London's Health and Care Together. March 2015. [Transforming-Londons-Health-and-Care-Together-Prospectus-March-2015.pdf \(healthyurbandevelopment.nhs.uk\)](#)

as POPS and virtual ward care, both of which should be part of any redesign of acute hospital services for the future.

We have indicated which services should be based in the same hospitals as each other (the Purple dependencies on the grid), those that could be provided by in-reach from another hospital (Red) and those that could be provided by transferring the patient to another centre (Amber). Red rated services in some cases are additionally defined by a minimum required availability ranging from 2, 4, 12 and 24 hours depending on clinical urgency. Both Red and Amber dependencies require clinical and organisational networks to agree and deliver appropriate care for such patients. In certain instances, they may merge also with each other depending on network arrangements and patient transfer. The appropriateness of patient transfer for ongoing care will vary in different geographical regions as this will depend at least in part on the distances involved between hospitals. Network arrangements (with in-reach to or outreach from specialist centres) help to deliver this goal, and to mitigate the risk from centralising services of 'distance decay' (the increasing lack of access to such care the further from the centre the patient is). This is likely to be much more of an issue in rural counties and regions, especially coastal regions, than in major conurbations.

An important component of the main report is the range of general issues and themes that need to be fully considered in any plans to reconfigure hospital-based services. The impact on populations could vary significantly from one region to another, and an assessment of that impact should be undertaken whenever there is a proposed re-location of a service, taking account of local factors such as patient flows, geography, travel times, unmet need, and inequalities.

Patient and public representatives provide a vital 'user' perspective and balance to the clinical discussions and need to be involved early in service change discussions and not wait to be brought in at the formal consultation stage.

Development of paramedic practice, with telemedicine support where required, can deliver enhanced assessment of patients, and avoid transfer to hospital, but if hospital assessment is required, may enable bypass of emergency departments and instead direct transfer to ambulatory emergency care facilities, inpatient wards, or centralised specialist facilities (such as already happens for major trauma, primary PCI, and acute stroke). The ambulance service is a finite resource, and increasing the scope of clinical networks across hospital sites will have a significant impact on its availability for urgent and emergency calls and patient transfer. The capacity of the ambulance service must therefore be considered for any planned relocation of services.

There are significant workforce challenges right across health and social care, which will impact on the provision of hospital-based services, and how they are configured. The workforce needs to be focused where it is needed, and not necessarily where it has historically been. The planning of this will require cultural, organisation and system change. It is essential that the skills of the future health and care workforce are clearly articulated, and professional barriers are broken down wherever appropriate, to ensure flexibility and adaptability of the workforce is aligned with the needs of patients, an ever-increasing number of whom have long term, chronic conditions, and mental health needs. It is essential therefore that workforce planning takes account of innovations in mode of care delivery when planning new service models. It is also vital that undergraduate and postgraduate teaching, postgraduate training, and research and development remain high and

explicit on the agendas of all stakeholder organisations (ICSs, ICBs, commissioners and providers) involved in planning changes in service delivery, and expert representatives from these three areas should be involved in any service change proposal.

Technology has the potential to leverage specialist skills and support for acutely ill patients across geographically distant hospitals. There is significant scope for trialling not just the use of telemedicine in acute care but also wearable technology and point of care testing, increasingly used to good effect in the virtual ward setting. Health informatics links between providers for sharing of clinical information is essential to enable effective networked clinical care.

Since the first Clinical Senate Co-dependencies report there has been a trend to centralisation in the reconfiguration of acute hospital services. Evaluating reconfiguration is complex. Some mechanisms, such as improved healthcare staffing and presence of senior decision-makers 24/7, may improve outcomes, whereas delay in care from longer travel is more likely to negatively affect outcomes. Interactions between rurality and deprivation also contribute to the complexity of understanding any variation in total mortality and other outcomes. Reconfigurations also cannot be relied on alone to deliver an improvement in the quality of care, and continual bottom-up quality and service improvement work to reduce variation, raise standards and improve safety can have a major cumulative impact, potentially avoiding the need for major organisational change altogether.

It is hoped that the updated Co-dependencies report will provide a helpful overview for both commissioners and providers of the clinical inter-dependencies of acute hospital services, as they consider the shape of their acute hospitals in the years ahead. The report should be seen as a reference point and springboard for detailed local discussions with providers and professions, taking account of all relevant factors.