Options Development

Humber Acute Service Review

Executive Oversight Group

8 January 2020

Glossary of Abbreviations

ACU	Ambulatory Care Unit
CCG	Clinical Commissioning Group
CDSG	Clinical Design Sub Group
CFC	Case for Change
CHH	Castle Hill Hospital
DPoW	Diana, Princess of Wales Hospital
ED	Emergency Department
ENT	Ear, Nose and Throat
EOG	Executive Oversight Group
GDH	Goole and District Hospital
HASR	Humber Acute Services Review
HES	Hospital Episodes Statistics
HRI	Hull Royal Infirmary
HUTH	Hull University Teaching Hospitals NHS Trust
ICU	Intensive Care Unit
LoS	Length of Stay
NHS	National Health Service
NICU	Neonatal Intensive Care Unit
NLaG	Northern Lincolnshire and Goole NHS Foundation Trust
PCBC	Pre Consultation Business Case
RTT	Referral to treatment
SDEC	Same Day Emergency Care
SGH	Scunthorpe General Hospital
SSPAU	Short Stay Paediatric Assessment Unit
T&O	Trauma & Orthopaedics
UEC	Urgent and Emergency Care
UTC	Urgent Treatment Centre
WTE	Whole Time Equivalent

Service Model Development Contents

The Humber Acute Services Review

Part 1: Urgent and Emergency Care, Maternity and Paediatrics

1. Context for the Service Model Development

The Humber Acute Services Review

Approach to the Review

The HASR has been set up to address the challenges in healthcare in the Humber area. It will investigate possible scenarios for the provision of acute services for the population of the Humber area that are person-focussed, safe and sustainable. It will consider how to make best use of new models of care and new technology. It has had ongoing engagement and work for several years, and operates within **nine principles** which were developed in 2017:

1. A commitment to provide acute hospital services that are **patient-focussed, safe and sustainable, meeting the needs of our population both now and in the future**
2. The service review will be **clinically-led**
3. The review will be **evidence-based** and take into account best practice
4. The review will **focus on hospital services** rather than hospital buildings and organisations
5. The review will be **cognisant of local developments** in out-of-hospital care and work towards solutions that support **joined-up care** across the system
6. A transparent, collaborative and inclusive approach will be adopted at all stages of the review process, ensuring **engagement with key stakeholders** from the outset
7. Plans for the future provision of acute hospital services will be developed in accordance with the levels of **human, physical and financial resource** expected to be available
8. Plans for the future provision will include **Urgent and Emergency Care (UEC) and Maternity Care** at Hull Royal Infirmary (HRI), Diana, Princess of Wales (DPoW) in Grimsby and Scunthorpe General Hospitals (SGH)
9. The review will be undertaken in accordance with an agreed programme plan that sets out objectives, processes, timescales and resources.

Source: https://humbercoastandvale.org.uk/wp-content/uploads/2018/02/Humber-Acute-Services-Review-Project-Plan-FINAL.pdf

The Humber Acute Services Review

Objectives of the Review

In response to the challenges and changes to healthcare, the HASR was initiated with the following **objectives**:

- Meeting the needs of the population, providing the best possible care within the resources available
- Achieve improved levels of service quality and strengthen both operational and financial sustainability
- Determine the long term future of acute hospital provision across the Humber
- Encourage the formation of groups or networks of healthcare provision to overcome these challenges together
- Forge greater links to integrate services with primary care and the communities
- Ensure plans are fit for future by developing them in the knowledge of current and future digital technologies available
- Align with national ambitions to modernise outpatients (OP) and same-day emergency care (SDEC).

The Humber Acute Services Review

Work to date on the Review

The HASR has already been underway for several years

- The previous work of the HASR is still ongoing. This began by considering a number of individual secondary care specialties at NLaG and HUTH. The specialties initially considered included Cardiology, Complex Rehabilitation, Critical Care Services, Neurology, Oncology and Stroke. Patient and clinician engagement occurred at this stage, as well as data analyses.
- In 2017 temporary changes were made to some clinical services to ensure sustainability. This involved consolidating:
    - inpatient Ear, Nose and Throat (ENT) at DPoW
    - emergency inpatient Urology at SGH.
- More information on previous work can be found here:
    - https://humbercoastandvale.org.uk/wp-content/uploads/2019/06/HCV-Operating-Plan-MASTER.pdf
    - https://humbercoastandvale.org.uk/wp-content/uploads/2017/08/hcv-workforce-report.pdf
- This phase of the Humber Acute Services Review currently aims to build on the foundation of work which has already been achieved, while aligning with other ongoing projects in the area. It intends to bring together key clinical areas, looking for the best solutions for the population in the Humber region as a whole.

Source: https://humbercoastandvale.org.uk/wp-content/uploads/2019/06/HCV-Operating-Plan-MASTER.pdf | https://humbercoastandvale.org.uk/wp-content/uploads/2017/08/hcv-workforce-report.pdf

The Humber Acute Services Review

Current phase of the Review: scope

This current phase of HASR aims to build on the foundation of work which has already been achieved

The focus of the current work is on the key building blocks of acute hospital care.

Three service areas have been agreed by the Executive Oversight Group for inclusion are:

1. Urgent and Emergency Care
2. Maternity and Paediatrics
3. Planned Care as related to ENT, Gastroenterology, General Surgery, Ophthalmology, Orthopaedics, and Urology.

The remit of the work includes:

- The catchment area of four Clinical Commissioning Groups (CCGs) and the two acute Trusts involved in the review
- Patient care outside the NHS for this area and care provided locally to patients from further afield
- Secondary care and high-level primary care and community care elements where relevant. Tertiary services provided on a Humber footprint are not covered (though the impact of this work on tertiary services will be considered).

Part 1 of this document focusses on the development of Service Models to support Urgent & Emergency Care, Maternity and Paediatrics. Further work is taking place to develop elective care models for incorporation.

Key messages from the Case for Change

Research and analysis led to the HASR Case for Change, which has informed the development of Service Models

Significant challenges across multiple dimensions

- Both NLaG and HUTH are facing challenges across workforce, quality of care, operational issues, estates and facilities; ultimately leading to financial unsustainability.
- Significant work has been done by both organisations internally to address these challenges in recent years. Proactive international recruitment, operational and quality improvements, and financial measures have been put in place, resulting in multiple improvements.

Key national NHS standards are not met by both Trusts

- This includes standards for urgent care, cancer care and routine waiting times.
- Neither Trust is able to meet all four priority standards for providing consistent access to high quality emergency care.

Need for change

- We have reached a critical point which means that we can no longer operate services as they are.
- The scale and long-standing nature of the workforce, service sustainability, and estates challenges across the region suggest that it will take more than the efforts within each individual organisation to address threats to the Trusts.
- It requires the Trusts to work together in a range of ways to secure the future for key services. It is believed that joint working could help bridge the workforce gaps, address some of the financial and quality issues, and protect fragile services from failing, avoiding emergency reconfigurations.

Ideas for the service model review

- This review is intended to develop solutions that allow the region to embrace these challenges together, to further allow the local population to start well, live well, and age well.

Source: Humber Acute Services Review Case for Change November 2019

2. Part 1: Urgent & Emergency Care, Maternity and Paediatrics

Part 1 Overview

Humber Acute Services Review Service Model Development: Urgent & Emergency Care, Maternity and Paediatric Care

This document (Part 1) outlines how the Humber Acute Services Review has developed a proposed list of Service Models for reconfiguration of Urgent & Emergency Care, Maternity and Paediatric services in the Humber area, to be taken forward for further assessment and consideration.

- This Review has been clinically led, and has offered multiple opportunities for clinical and lay stakeholder engagement in an iterative process. (Details can be found in the Humber Acute Services Review Case for Change)
- Humber-wide and Trust-specific opportunities have both been articulated through this process.
- Initial clinical engagement clarified current challenges (summarised in a separate Case for Change document), and identified outline ideas that might address them.
- These ideas underwent further work to develop Service Models for consideration, starting with considering models for acute services and with the intention of incorporating further work in respect of Planned Care later.
- The interdependency of clinical specialties, specifically within the Humber area, were considered.
- Urgent & Emergency Care, Maternity and Paediatric potential service models were then integrated, forming a matrix, with 18 possible combinations. Each combination had up to eight theoretically possible site-specific variants.
- Checks of the extent to which Models were considered sufficient to address local challenges, and were compatible when configured on a site together, identified those service models that warranted further detailed consideration.
- This produced a preliminary list of 12 site specific variants, which was explored through a number of further stakeholder engagements.
- As a result, an additional six variants were added, making a final “longlist” of 18 for modelling and assessment.
- This “longlist” underwent its first evaluation on 16th December 2019.
- The future steps and current recommendations of the Review are outlined at the end of Part 1.
- Planned Care Service Model development will continue in 2020, and will be described in a further document.

3. Stakeholder Engagement

Engaging Stakeholders

The Humber Acute Services Review

The development of new Service Models for healthcare in Humber has been clinically led with input from multiple stakeholders throughout the Humber Acute Services Review.

- Engagements have taken the form of **Clinical Design Sub Group** (CDSG) workshops, which were divided in to specialty groups of:
    - **Urgent and Emergency Care**
    - **Maternity** and **Paediatrics**
    - **Planned Care** (Focussed on 6 specialties: Urology, General Surgery, Gastroenterology, ENT, Ophthalmology, Orthopaedics)

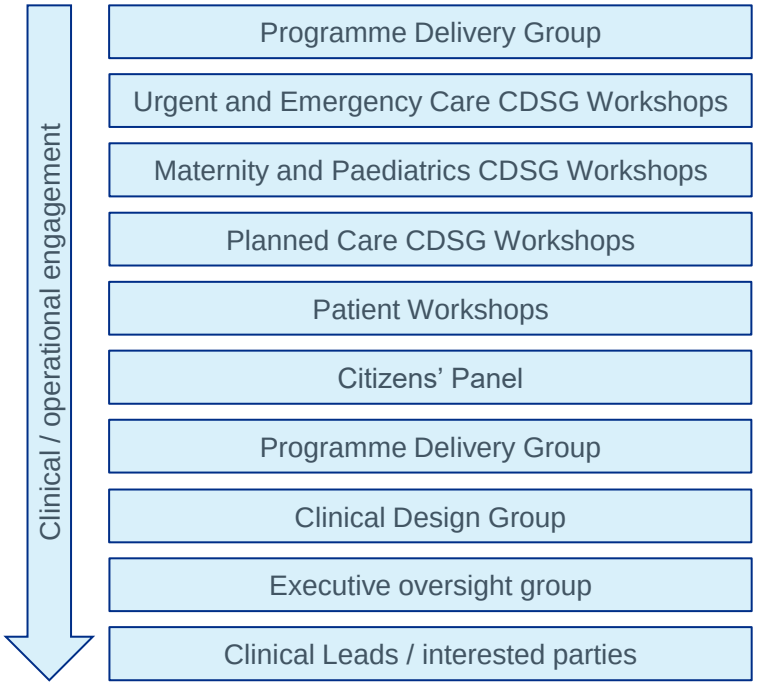
- Two rounds of these workshops occurred, and were well attended with wide clinical and operational representation across both Trusts as well as from other stakeholders (such as Clinical Commissioning Groups (CCGs) and Ambulance Trusts).

- There has been recurring meetings of the **Clinical Design Group** (CDG), **Executive Oversight Group** (EOG) and the **Programme Delivery Group** (PDG)

- **Seven patient engagement events** were held to gain public views, as well as **Citizens' Panel** events.

- There has also been extensive discussions with Trust senior clinical and operational leaders, in this iterative process of development.

Service model development engagement since August 2019



Clinical Design Sub Group 1

The concerns and solutions from staff in HUTH and NLaG, CCGs and ambulance services were gathered

Challenges and concerns

Suggested solutions

Joint contracts and recruitment across the Humber may improve flexibility of the workforce

Invest in **upskilling current staff in UEC** and develop alternative workforce e.g. paramedics in ED

Rural population and distances between hospital sites is a challenge for patients and staff travel

Improve **hospital transport links**

Joint digital solutions providing access to notes between the trusts

It is **difficult to recruit** staff

Insufficient doctors to run the services as we would like, with a high reliance on costly **locums**

Humber has high levels of **deprivation**, and higher rates of some illnesses

Limited digital maturity and difficulty accessing patient notes remotely exacerbates problems

Move to **Hot and Cold** site models to reduce duplication of out of hours staffing

Concentrate obstetric led care in NLaG to one site, the other with a midwife led unit

Develop Planned Care **Centres of Excellence**

Create clearer, **shared treatment pathways** across the Trusts

Develop **digital outpatient software** to reduce face to face appointments

Split site working can be inefficient by causing duplication of clinical and non clinical staff

Small service specialties are difficult to sustain

Meeting **national standards and guidelines** is currently challenging, and will be a key driver for reconfiguration of services

Improve fully functioning SAU **to bypass ED entirely**

Build a **new hospital**

Consolidate NLaG in-patient paediatric care to one site, but with a PAU at the other site

Use **Hub and Spoke** models to deliver care throughout the region

Invest in estates to make them fit for purpose

Both Trusts **have high backlog maintenance** lists, and some parts of the estate is in poor condition

Patient & Public Workshops

The concerns and solutions from patients and the public living in Hull, East Riding of Yorkshire, North Lincolnshire and North East Lincolnshire

Challenges and concerns

Suggested solutions

Continuity of care(r) is not available everywhere, it feels like a **postcode lottery** between the North and South Bank

Greater quality of care would be provided by centralising services

Not enough beds when you get to hospital **(e.g. Delivery ward)**

Having centres of excellence **would make the roles more appealing** and attract more staff

Appoint staff to the whole 'Humber Region' not just a particular hospital

Hospitals **need to work better** with Primary Care to share workloads. (E.g. pre-op diagnostics could be done at a GP practice)

Hospital **waiting times are too long**

The **current model** for emergency care is **not sustainable**

Upskilling staff and allowing them training & development opportunities would help retain them and address the lack of workforce

We are **willing to travel** further if we know we are getting **the highest quality care**

Build a **purpose built centre** on the Southbank somewhere near **Brigg or Barnetby Top** to provide an equitable service

Multiple sites wouldn't solve the staffing issue.

How will the **ambulance service cope** with the extra demand if services were centralised?

Invest in one IT system for GP's and Hospitals to use which talk to each other

Moving services would take away that **'local feel'** which communities really value.

Lengthy travel times is a huge issue for patients, especially with poor public transport links in this area. Being far away from a person's home could impact on their recovery

The **buildings we have wont last forever** and are already in a **poor state or repair**

Communication between hospital – patient and hospital – GP is poor and needs improving

Improve Information available to patients about what **services are available**

Technology could be used for **video consultations** to save patients travelling and consultants time

Invest in better patient transport to help patients get to appointments

Work better with the **Local Authority** to **improve transport infrastructure**

Better **investment in community services & clinics** to reduce hospital admissions

4. Humber Opportunities

Consideration of the wider impacts and opportunities across the Humber area

Context for focus of the service models

The Humber-wide impacts and opportunities

All five hospital sites across the Humber are within consideration for service model development.

- Hospitals on the north side of the Humber have already undergone changes to establish a “Hot – Cold” clinical service differentiation between the Hull Royal and Castle Hill sites. Thus there may be more scope for exploring the impact of site-related service differentiation in the hospital sites south of the Humber.
- Service changes made south of the Humber would have some impact on service demand or working practices of neighbouring hospitals particularly in Hull, due to the close working relationships and population travel choices of the region.
- However, multiple opportunities for operational changes to help address current challenges in local services have also been identified through this work.
- Many of these opportunities are being explored and implemented in parallel with the work described in detail in this report, alongside other elements of wider local service review (such as the work on cardiology services and on neuro-rehabilitation care)
- Some of these impacts and opportunities are referred to in this section, but are not described in detail here.

Humber wide opportunities

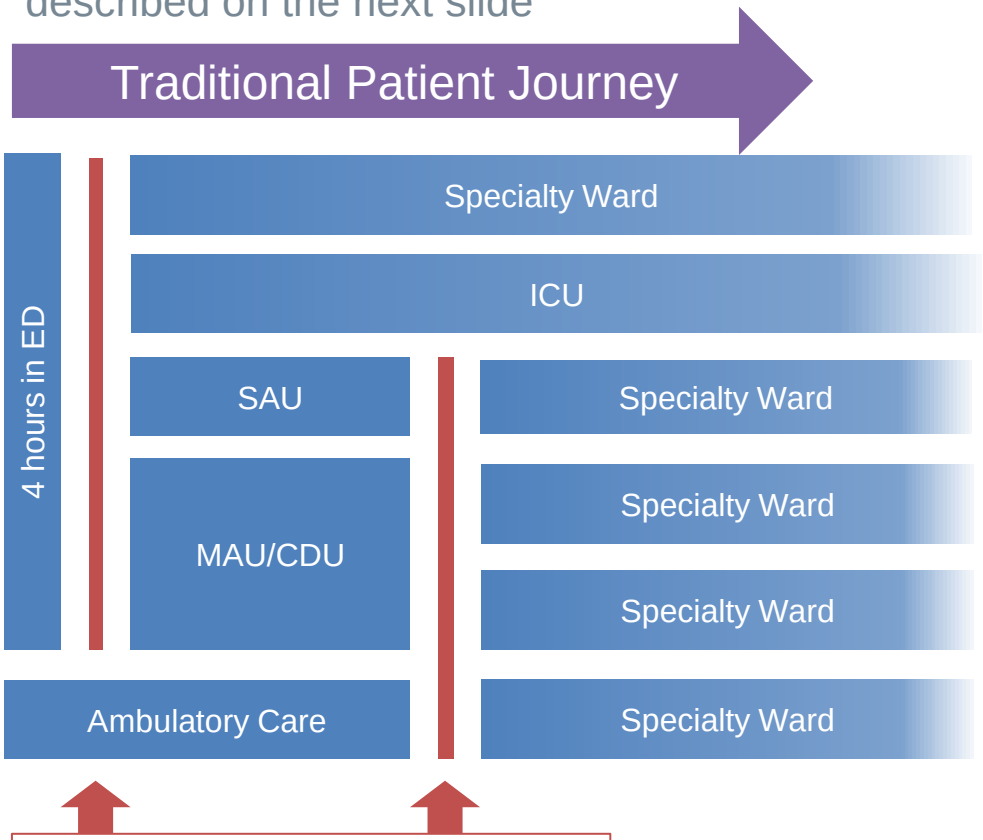
There are multiple opportunities to transform how care is delivered locally

Potential Humber-wide Operational changes

- Changes to staffing models reflecting aspects of the **Acute Care Hubs** (described by a recent Nuffield Trust report) or the care models developed by Northumbria Health Care Foundation Trust (relating to the specialist Emergency Care hospital at **Cramlington** and their other sites in Wansbeck, Hexham and North Tyneside) have been of interest at both Trusts, and key elements are described in the next slides.
- **Sharing of staff and rotas** across the Humber
    - If the total number of on call rotas reduced, more staff would be available within the Humber area to cover on call duties.
    - Some roles could become rotational around the Humber, so staff could train or work on both banks. This could include consultants, nurses, midwives and doctors in training
- **Job Planning on both banks more tactically** to reduce unnecessary travel times between sites
- HUTH **paediatric tertiary services** are fragile due to small numbers of patients, and without a larger catchment population they may not be sustainable. This could have knock-on impacts, such as the sustainability of level 3 NICU services, as well as leading to more tertiary patients having to receive care in Sheffield or Leeds. Any South Bank service reconfiguration associated with NICUs could lead to service sustainability on the North Bank should supporting pathways be developed
- **Planned Care reconfiguration** is still ongoing, and should deliver multiple opportunities for new ways of working across all five sites (see Part 2 document)
- Desire for **digital transformation** is a recurrent theme for both Trusts, and interoperability between the two Trusts would be key to getting maximum benefits from this.
- There are opportunities to reconfigure how **outpatient appointments** are delivered, with greater use of digital solutions, and better co-ordination with diagnostic services, including **straight to test** initiatives (work on this is being led by the STP).
- **Radiology** services could be shared by both trusts, reducing pressure on the existing workforce.
- New **clinical pathways** could streamline patient care and create closer working relationships between the North and South banks.

Urgent and Emergency Care

Regardless of service models identified, both Trusts are keen to transform their Urgent and Emergency Care from the traditional model shown here, to the Acute Care Hubs described on the next slide



Key challenges in the traditional model:

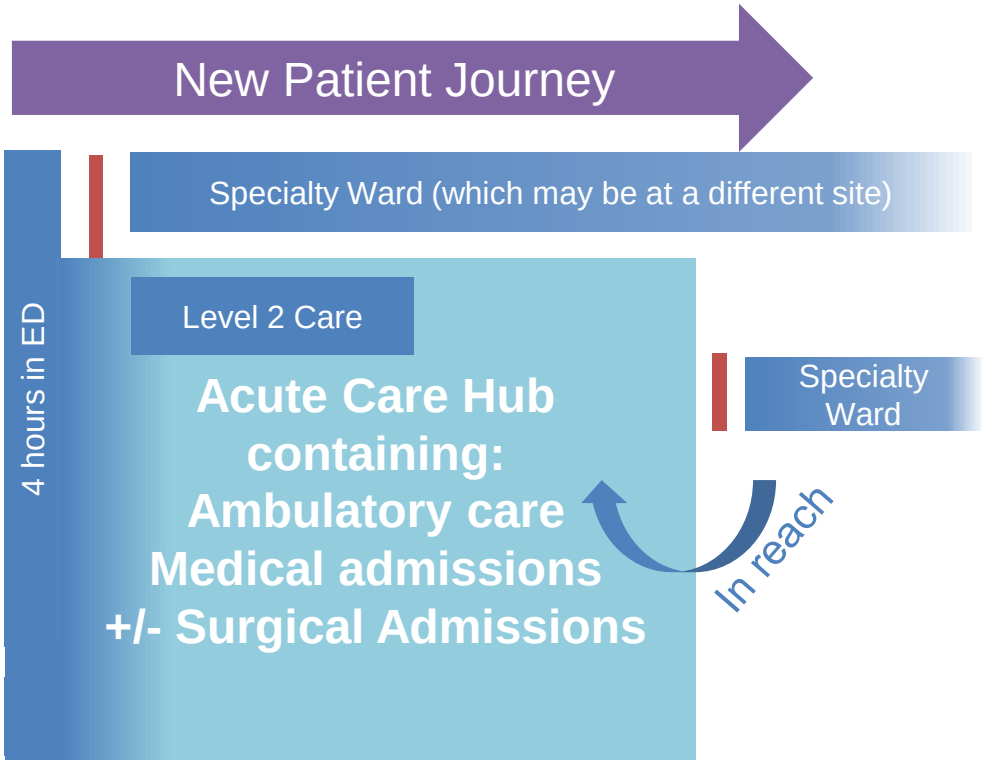
- On call teams are divided between multiple locations, exacerbating problems with low staffing levels
- Appropriate specialty review can be delayed until the patient arrives on the specialty ward
- Many patients have general medical presentations, plus common co-morbidities and frailty, which do not require specialty input

Commonest medical admissions by HRG (Reference cost data)	
HUTH	NLaG
Pneumonia	Pneumonia
Poisoning	Chest Pain
Non malignant GI	Renal infections
COPD	Sepsis

Source: https://www.nuffieldtrust.org.uk/files/2018-10/nuffield-trust-rethinking-acute-medical-care-in-smaller-hospitals-web.pdf

Urgent and Emergency Care transformation

Proposed model of care: the Nuffield Trust Acute Care Hub



Some elements of these Acute Care Hubs have been proposed to be developed and utilised throughout Urgent and Emergency Care services in both Trusts

Key features of Acute Care Hubs:

- Patients stay in the Acute Care Hub for 48-72 hours (current average LOS 3-4 days for ED admissions at HUTH and NLaG)
- Specialists "in reach" to the Hub
- The Acute Care Hub can blur into ED
- The Hub may include level 2 or 3 beds
- On call teams are co-located, sharing skills and resources
- Consultants released from specialty ward ward-rounds, freeing specialists for clinics/theatres/endoscopy
- Improves continuity of care
- Reduces waste in the system when the patient is waiting for review/re clerking
- In reaching specialty staff means patients get specialty care sooner
- Potential to cross cover at consultant level: eg Trauma rota covered by either ED or ICU or Orthopaedic consultant

Source: https://www.nuffieldtrust.org.uk/files/2018-10/nuffield-trust-rethinking-acute-medical-care-in-smaller-hospitals-web.pdf

The “Cramlington” Model (1/2)

This specialist Emergency Care hospital in Northumbria could provide ideas for new ways of working in the Humber area

Background:

- Acute services in Northumberland used to be provided by three small DGHs at Ashington (Wansbeck General), Hexham, and North Tyneside, with outpatients, diagnostics and cottage hospital beds also available at Alnwick, Berwick, Morpeth and Rothbury.
- The total population served is circa 500K over a large geographical area, with original population catchments of up to 150K at each District General Hospital site.

Cramlington:

- Cramlington is a purpose built emergency (medical & surgical), critical care, maternity & neonatal hospital opened in 2015 by the Northumbria Health Care Foundation Trust.
- It has consolidated emergency and maternity care in the area, replacing 3 sub-scale A&Es with a full service offer and one subscale maternity department with a much larger one (> 3000 births per annum).
- Some consultants are wholly based at Cramlington (eg ED consultants), however most will have specialist commitments at one or more other sites. For instance an orthopaedic consultant may perform elective joint replacements at Wansbeck and North Tyneside as well as trauma cases at Cramlington.
- This flexible approach means greater ability to recruit and retain staff, as people join the organisation rather than a “bricks & mortar” institution. For instance a consultant gastroenterologist could cover acute gastroenterology, community gastroenterology or a mix, and could be full or part time – with job requirements tailored to personal interests.
- Wansbeck still functions as a smaller DGH with 12 wards and a UTC (8am to 10 pm), as does North Tyneside with 12 wards and a 24/7 GP-led UTC, meaning patients staying more than 72 hours can receive care closer to home.

The “Cramlington” Model (2/2)

How this model relates to the Humber area

How the Staffing model might be relevant for the Humber area:

- Of key interest is the staffing model used at Cramlington and the other Northumbria hospitals.
- In Humber a similar model could work, where staff performed elective work at one or more sites (perhaps Castle Hill and/or Scunthorpe General Hospitals, but from time to time provided on-call care at another site (for instance HRI).
- Staff could be employed on a pan-Humber basis as a whole, rather than at specific sites, meaning greater flexibility in providing cover and reduced frequency of on-call
- This could allow greater flexibility of contracts, better deployment of staff around the region to best support services as a whole, and more attractive working opportunities for staff, with the potential to lead to greater recruitment success.

Points to note:

- The Northumberland population served for secondary care is smaller than that covered by HUTH & NLAG.
- Major roads in Northumberland are overall better (and better interconnected) than in Humberside and there are some better rail links.
- The longest hospital to hospital distance is around 60 miles, but distances between the three previous DGH sites are nearer to 20 miles, (slightly shorter than for the distances between Humber hospitals).
- Nearby Newcastle provides tertiary care for the area while Cramlington focuses on providing a first rate secondary care offer for the area.
- The Northumbria area currently has more integrated care than the Humber area (primary, community and social care).

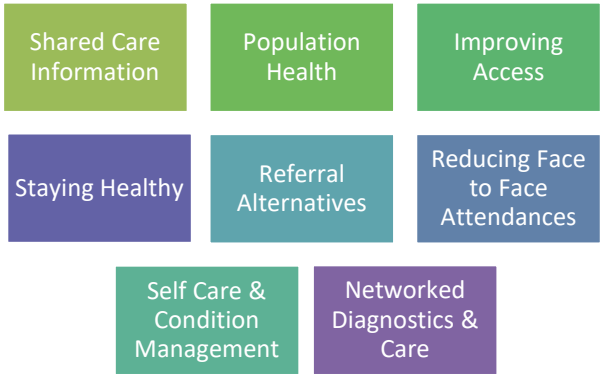
Digital Transformation

Both Trusts are keen to make use of digital innovations to improve care, and there are technological solutions and opportunities to transform how the future service models are delivered.

Some examples relating to Outpatient services:

	Digital Capabilities	Digital Partners / Solution
Pre-Referral	Referral management through advice and guidance capability AI referral triage	RITA, Consultant Connect, MEDEFER
Pre-Arrival	Booking confirmations and updates Appointment cancellation and rescheduling Appointment reminders	zesty, Netcall, MEDEFER, DrDoctor
Upon Arrival	Digital check in Digital flow management Digital observation recording e-PAQ Pre Op	InTouch Health, *E-PAQ*
In the Clinic	Virtual Clinics (e.g. Virtual Fracture Clinics – however virtual clinics can be implemented across multiple specialties and conditions) Voice Recognition for clinical note-taking	Dragon, skype, *Conversational AI follow ups*
Continuing Care	Patient Portal Patient Activation Apps	*Chronic health management products*, NEXTGEN Patient Portal

- A digitised approach to delivering outpatient services has the potential to improve the patient experience.
- Technology can empower patients to take control of their outpatient journey and improve the patient experience, whilst simultaneously delivering efficiency, productivity and financial opportunity to care.
- The HCV Strategic Digital Board is addressing the Long Term Plan in Digital First Ambitions:



Source: Elective Care – Digital Requirements: HCV Strategic Digital Board – Elective Digital Boards 2nd October v1

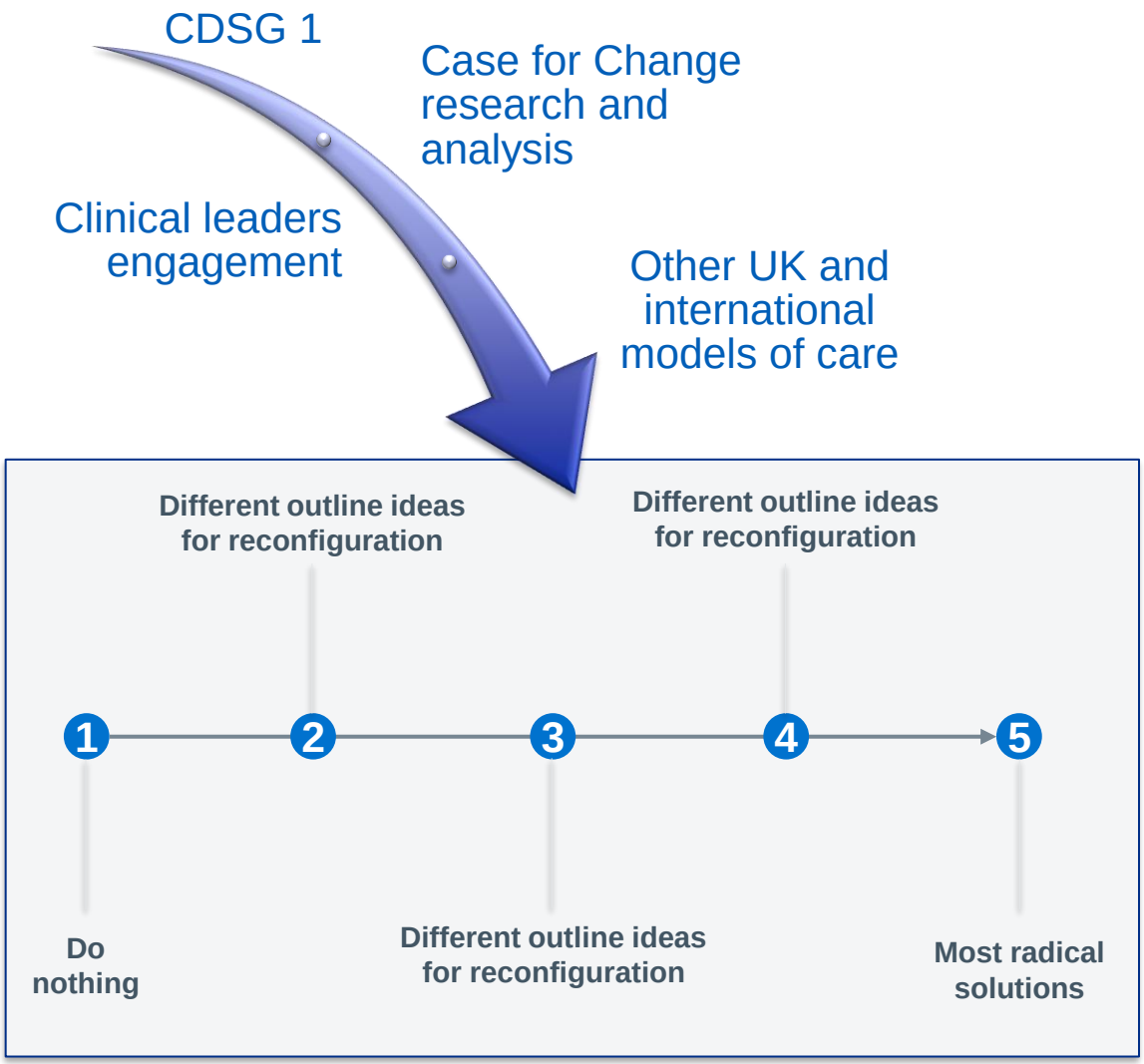
5. Developing Outline Ideas

Continuums

Articulating outline ideas along a continuum

Clinical input was used to develop outline ideas for each pf the three service areas

- Some early concepts came through stakeholder engagement including during the first round of CDSG workshops for each service area and the Case for Change research.
- Other models of care (from the UK and beyond) that could help address challenges identified in the Humber Area were reviewed and used to generate outline ideas for wider testing.
- In the next slides these have been presented for each service line on a continuum from Do Nothing to the most radical options.

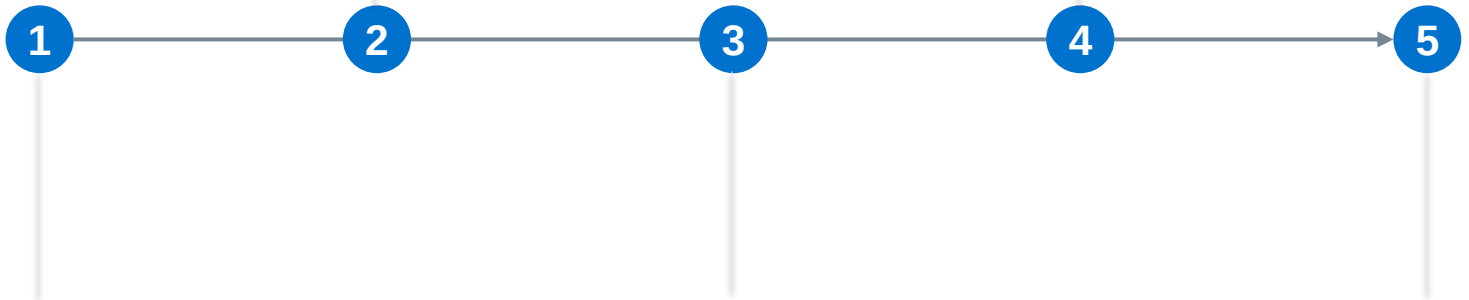


Outline Ideas: Urgent & Emergency Care

Ideas about "the art of the possible" based on suggestions from the first CDSG workshops and national and international examples

Maintain existing A&E locations (HRI, SGH, DPoW), but alter model of care to acute care hub* at any / all sites

Consolidate A&E locations on 1 site for each bank (replace A&E with UTC or similar)



Do nothing

Maintain A&E location at HRI (North bank) and develop **one of the South bank sites** into an **'Acute Care Hub*' (i.e. divert higher acuity patients to other South bank site)**

New emergency hospital Cross-Humber (e.g. Northumbria Specialist Emergency Care model at Cramlington)

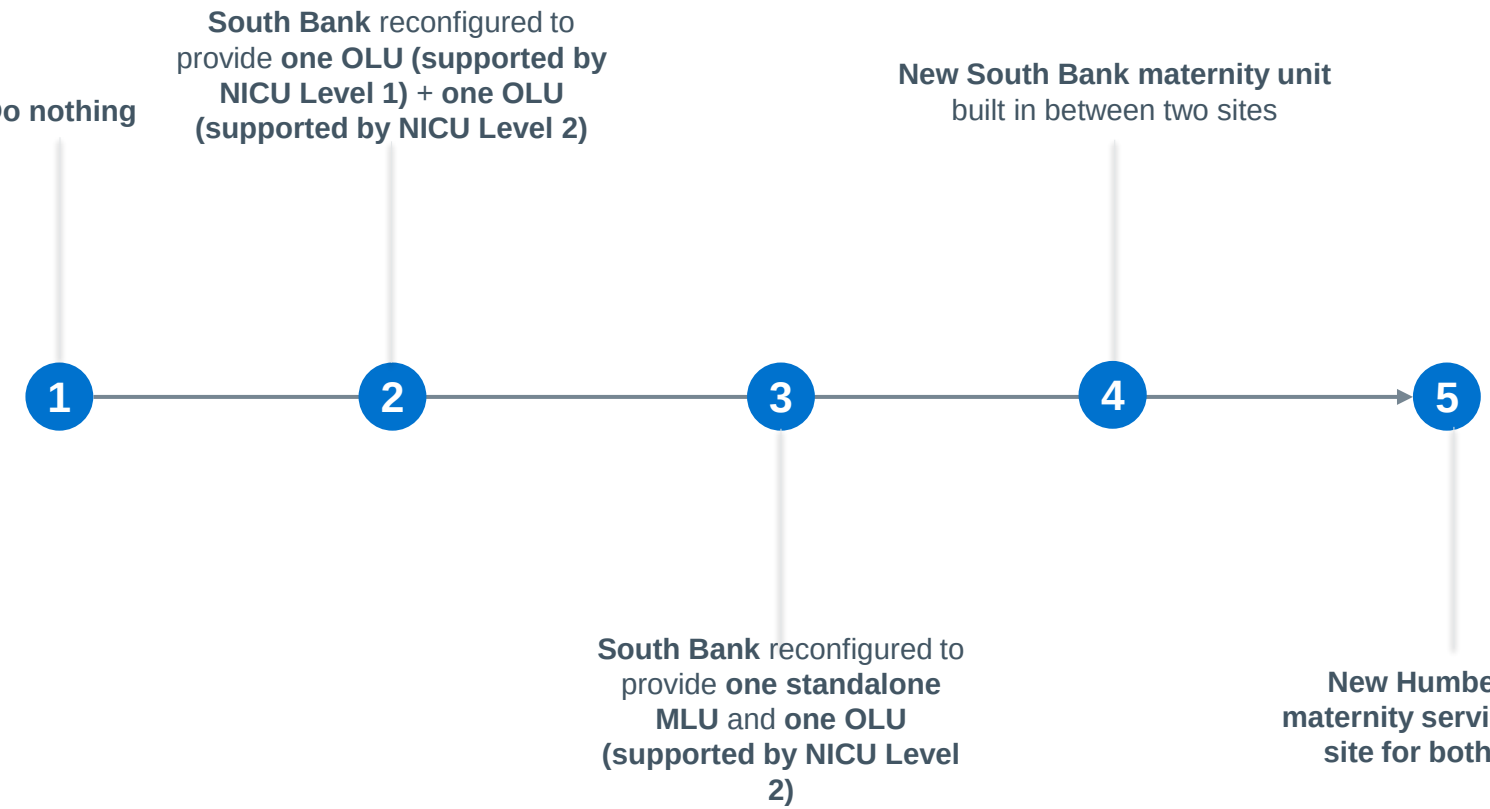
*An 'Acute Care Hub' may consolidate the acute assessment and medical, surgical & up to Level 2 critical care for most patients for 48/72 hours. The essence of the acute care hub is taken from the 'Future hospital: caring for medical patients' (Royal College of Physicians, 2014) and 'Rethinking acute medical care in smaller hospitals' (Nuffield Trust, 2018) reports.

UTC: Urgent Treatment Centre

N.B. These outline ideas were used as the basis of the discussion for CDSG1 and have been taken from the workshop presentation verbatim

Outline Ideas: Maternity

Ideas about “the art of the possible” based on suggestions from the first CDSG workshops and national and international examples



OLU: Obstetrician Led Unit
MLU: Midwife Led Unit
NICU: Neonatal Intensive Care Unit

N.B. These outline ideas were used as the basis of the discussion for CDSG1 and have been taken from the workshop presentation verbatim

Outline Ideas: Paediatrics

Ideas about "the art of the possible" based on suggestions from the first CDSG workshops and national and international examples

Do nothing

Concentrate opening hours at times of peak demand at one paediatric ED on the South Bank (NICU as status quo)

Differentiate service on South bank by offering Paeds ED, assessment unit and Level 1 NICU on one site with Paeds ED, assessment unit, inpatient beds and Level 2 NICU on the other site

Consolidate inpatient paediatric services (Paeds ED, PAU, inpatient beds, Level 2 NICU) on South Bank to one site

Acute paediatrics all to be delivered in one place across Humber / Acute paediatrics only delivered where there is an SSPAU

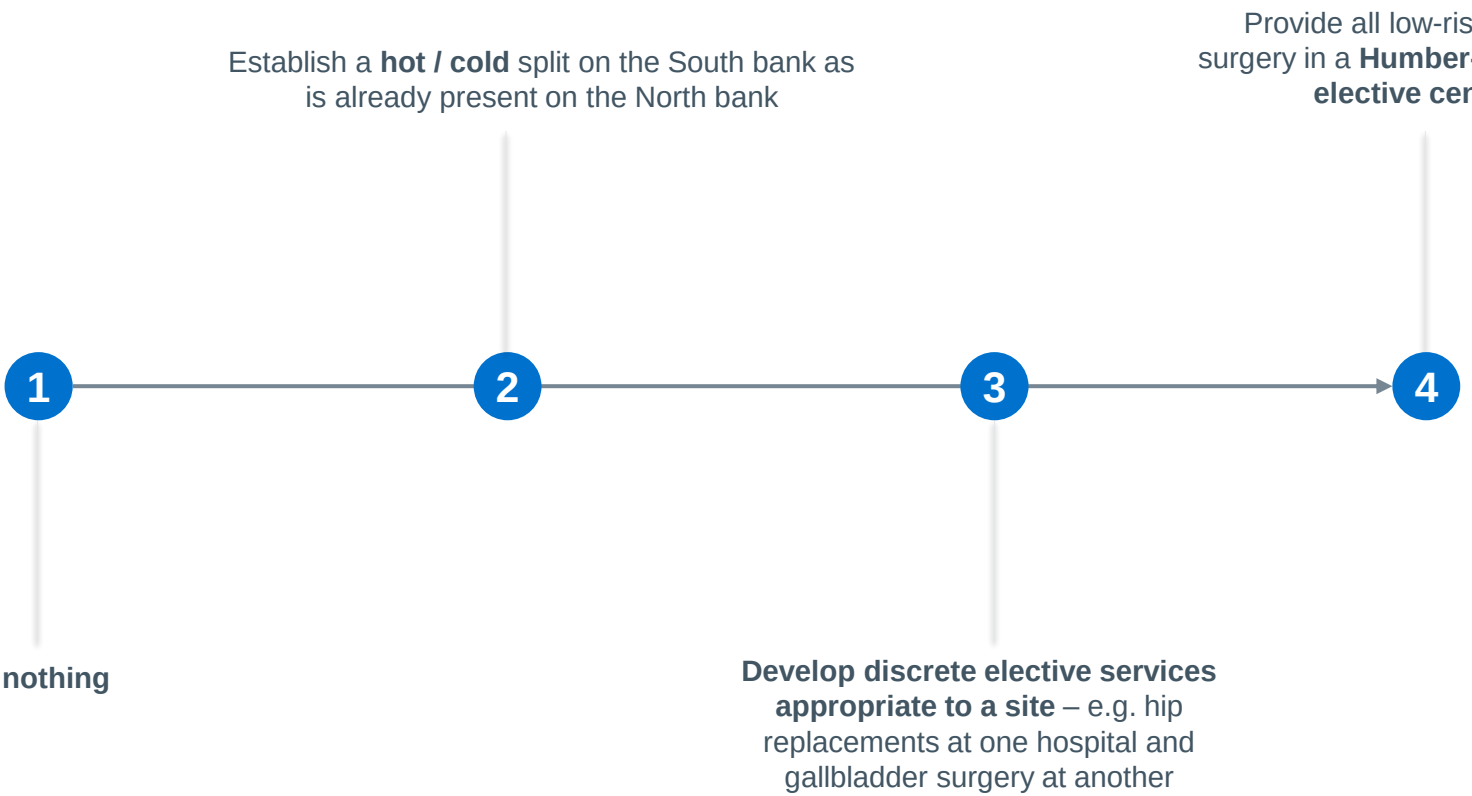
These options focus on the care of an acutely presenting child – NICU and Paeds ED. The overall impact on wider Paediatrics will also be considered.

NICU: Neonatal Intensive Care Unit
PAU: Paediatric Assessment Unit

N.B. These outline ideas were used as the basis of the discussion for CDSG1 and have been taken from the workshop presentation verbatim

Outline Ideas: Planned Care

Ideas about “the art of the possible” based on suggestions from the first CDSG workshops and national and international examples



N.B. These outline ideas were used as the basis of the discussion for CDSG1 and have been taken from the workshop presentation verbatim

6. Refining Service Models

Further stakeholder engagement

Refining Service Models: approach

Feedback was incorporated to refine Outline Ideas. Preferred options became the Service Models for each area

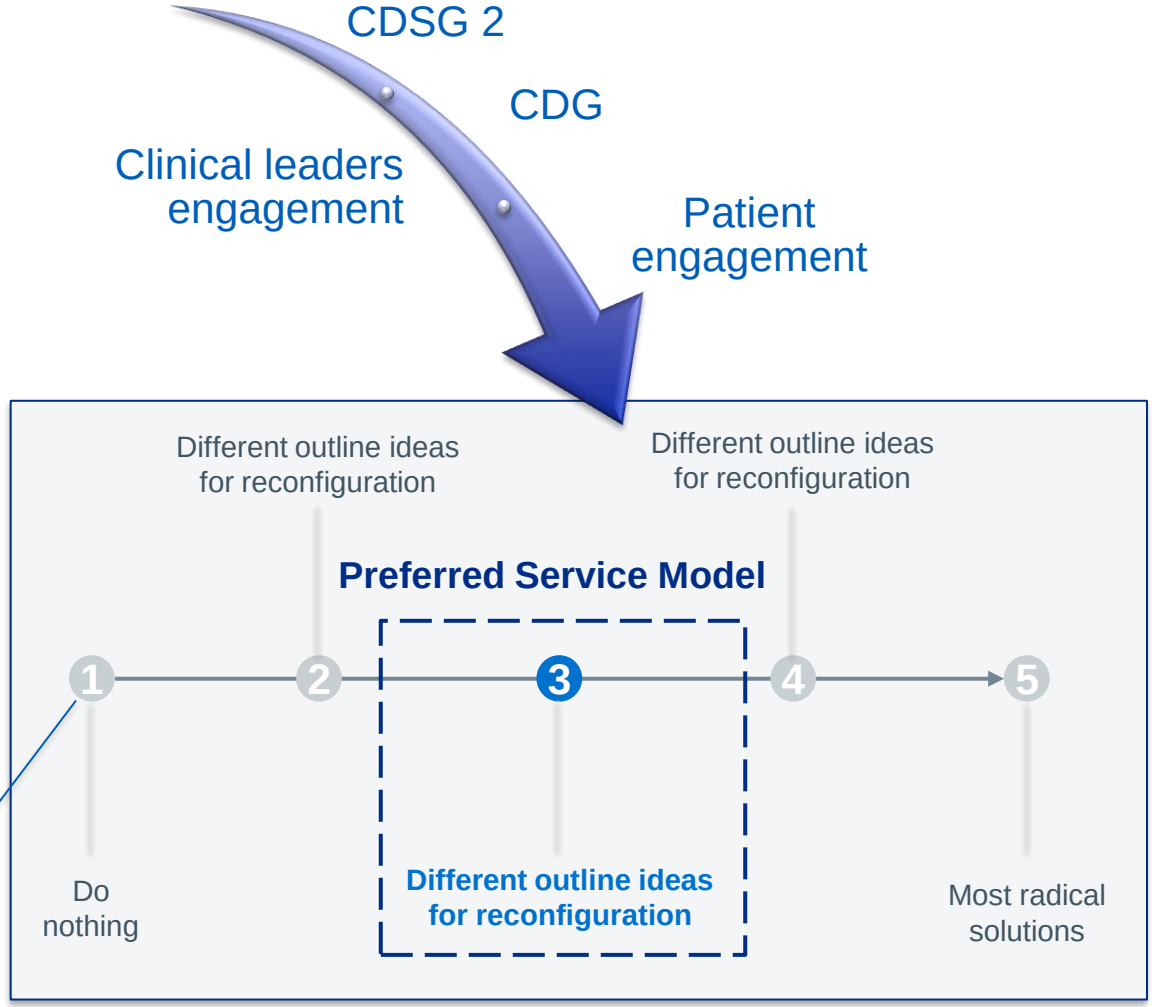
Key themes from the second round of CDSG workshops, Clinical Design Group (CDG) meetings, patient engagement workshops, and clinical engagements were used to develop initial outline ideas into service models and to start to explore clinical inter-dependencies.

The second set of CDSG workshops highlighted preferred options for each service area which are highlighted on the next few slides:

Preferred Service Models

Dialogue suggested some additional ideas were added, and flagged where there were concerns, which is described in the grey feedback boxes.

Feedback from stakeholders



Refining Service Models: UEC

Stakeholders were adamant that services need to change to improve patient care; case for change data corroborates this.

1 Do Nothing

Acute Care Hubs:

- At each or any of the current EDs

2

Supported as stakeholders:
- Felt this would alleviate some staffing shortages. (Aspects of the concept are already being developed, such as combining medical and surgical admissions.)

This model was thought likely to be helpful at any or all of the existing three UEC sites.

Hot-Warm:

- One NLaG site has a comparatively limited UEC offer (e.g. Acute Care Hub/ A&E Local)
- The other NLaG site has a broader UEC offer

3

Supported as:
- Continues to maintain access to acute care in the same locations as at present
- Consolidation of some services may help to reduce workforce pressures and also improve patient care.

Questions remained about:
- Whether this sufficiently addresses the duplication of some staffing
- The extent to which it might create additional transfers of some patients

Hot-Cold:

- One NLaG site has all in-patient UEC capacity for the Trust
- The other NLaG site has a UTC or similar

4

Supported as:
- Removed the need for duplication of acute services, so consolidating workforce

Questions remained about:
- The extent to which this met the stated review principle, to provide UEC at HRI, SGH and DPoW. However stakeholders felt that a UTC did fulfil this principle.

Stakeholders were concerned this might:
- Require greater capital expenditure than is available
- Lead time is too long; and solutions are required sooner

However, the principles of this model of care delivery were popular and could be applied to current sites

5 New single emergency hospital Cross-Humber (e.g. Northumbria Specialist Emergency Care hospital (Cramlington)

Refining Service Models: Maternity

Stakeholders were adamant that services need to change to improve patient care; case for change data corroborates this.

1 Do Nothing

NICU differentiation:

- One NLaG site with an OLU with a level 1 NICU (+/- alongside MLU)
- The other NLaG site with OLU with level 2 NICU (+/- alongside MLU)

2

Supported by stakeholders as:
- It would help meet new standards for care of low birthweight babies
- It would maintain greatest overall ease of access to this service across the local geography

Questions remained about:
- The extent to which this would address challenges about current trainee doctor / future consultant workforce

Supported by Paediatricians as it should address their main current workforce challenges.

Questions remain about:
- The numbers of women who would likely to need to be transferred during labour (at least 20% based on experience elsewhere)
- Impact on neighbouring services
- Some obstetricians voiced concerns about whether standalone units were safe.

3

Hot-Warm:

- One NLaG site with an OLU (+/- alongside MLU) with a level 2 NICU
- One NLaG site with a standalone MLU and no NICU

Hot-Cold:

- All NLaG maternity consolidated to one site with OLU and alongside MLU.
- No delivery facilities at the other site (antenatal and postnatal outpatients only)

3+

- Added at the suggestion of primary care clinicians who felt it was safest and best practice to consolidate staff and services

Questions remained about:
- The extent to which it reduces choice of type of birth unit, contradicting *Better Births*.
- The extent to which this met the stated review principle, to provide maternity care at HRI, SGH and DPoW. Stakeholders felt that as most care was before or after delivery, this did fulfil this principle

Stakeholders were concerned this could:
- Require greater capital expenditure than is available
- Lead time is too long; and solutions are required sooner

4 New South Bank maternity unit built in between two sites

5 New Humber wide maternity service on one site for both banks

Stakeholders were very concerned that this:
- Did not provide enough choice for women
- Was a poor use of current estates
- Meant long travel distances for staff and patients

Refining Service Models: Paediatrics

Stakeholders were adamant that services need to change to improve patient care; case for change data corroborates this.

1 Do Nothing

Paeds A&E Local

- Concentrate opening hours at times of peak demand at one paediatric ED (e.g. A&E local) on the South Bank
- NICUs stay as-is

2

Questions were raised about:
- Whether tailoring opening hours was sufficient to address workforce challenges
- How confusing this could be for patients and ambulance crews with potential for delays to care

Hot-Warm:

- One NLaG site with a comparatively limited paediatrics offer with Paeds ED, assessment unit and Level 1 NICU only.
- The other NLaG site runs a full acute paediatric service.

3

Stakeholders were positive:
- That this idea did not reduce sites for access to acute paediatrics across Humber
- The ability of this approach to support obstetric services

Questions remained about:
- The extent of continuing need for duplication of staff and services still occurs
- How robust transfer protocols would need to be

Hot-Cold:

- All NLaG acute paediatrics consolidated to one site;
- The other site has no acute paediatrics (Outpatients +/- elective work could occur here)

4

Stakeholders were positive about:
- The potential to address workforce challenges by reducing the need to spread staff

Questions remained about:
- Limiting locations for acute care
- Potential long ambulance transfers
- Implications for maternity care configurations

Acute paediatrics all to be delivered in one place across Humber

5

Stakeholders were very concerned that this:
- Meant long travel distances for staff and patients
- Was a poor use of current estates
- NICU staffing would still be required elsewhere, so this approach would not address current and future workforce concerns

Refining Service Models: Planned Care

Stakeholders were adamant that services need to change to improve patient care; case for change data corroborates this.

Hot-Warm

- Establish a Hot-Warm split on the South bank

Hot-Cold

- Establish a hot - cold split on the South bank as is already present on the North bank

Networked (Humber-wide)

- Develop discrete elective services appropriate to a site – e.g. hip replacements at one hospital and gallbladder surgery at another

Questioned as:

- too far for patients to travel
- Likely to increase capital requirements without sufficient benefit to offset this
- However patient groups felt willing to travel for one off treatments

1 — 2x — 2 — 3 — 4

Do Nothing

Added as: Stakeholders were keen for an option with less binary separation between the two NLaG sites.

Stakeholders were supportive as:

- Should improve care for patients and reduce cancellations
- Could allow consolidation of on call rotas
- Would work well for Orthopaedics and General Surgery
- GIRFT endorses this model with significant evidence and pilots

The outcomes from the planned care workshop were understandably less well defined than for the other care streams, as models of working which would work for one specialty, for instance, orthopaedics, may not work well for another specialty, such as ophthalmology. Further specialty specific planned care workshops are detailed in Part 2 of the Service Models Developed document

All stakeholders were keen for digital solutions to help network care, minimise patient and staff travel and reduce face to face appointments

Provide all low-risk routine surgery in a Humber-wide super elective centre

N.B. It was assumed that Outpatients would continue to be delivered locally at multiple sites

Further patient engagement

Patients' views were sought through seven workshops

Seven specialty themed workshops occurred in various locations on both banks of the Humber to engage with patients. Their concerns and considerations contributed to the development of the preferred Service Models, and their views on the future of healthcare in the Humber area were sought. A broad range of diverse feedback was provided by the participants at the events. Key themes patients raised are summarised below:

Improved access to services

- The negative impact of travelling further to access to services was raised.
- Many said they were willing to travel further, particularly to access specialist services, as they felt that greater quality of care could be provided by centralised services.

Use digital technology more

- Attendees were keen to harness digital technology in healthcare more.
- Digital technology was suggested as a solution to some challenges, such as demand for services and workforce shortages.
- It was also suggested as a way to overcome travel and communication challenges with better information sharing.

Develop and support the workforce

- The majority of attendees were full of praise for hospital staff.
- They recognised the well publicised workforce shortages and suggested solutions such as improving networking and cross-site working; up-skilling existing staff and developing specialised staff; offering 'one stop shops' and phone appointments to maximise use of clinician time.

Give patients more information and knowledge

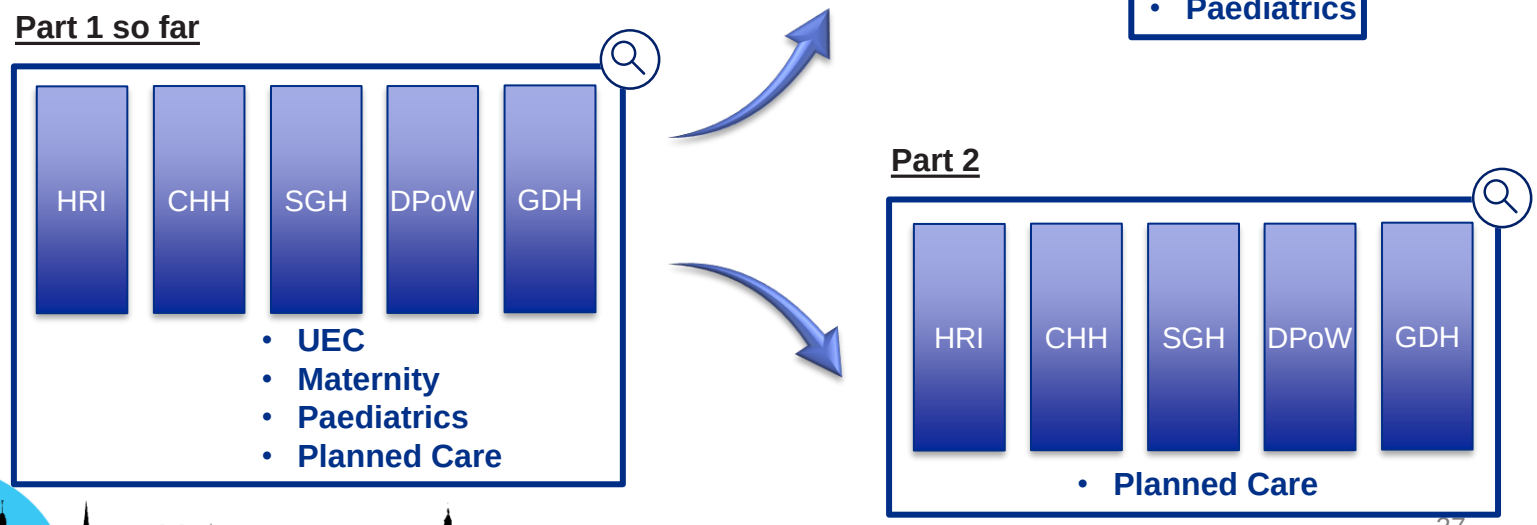
- Attendees were keen to have improved communication and receive more timely information about their care.
- They were keen to have their questions answered remotely.
- They wanted more information about what services were available and where, including waiting times.

Source: The Humber Coast and Vale Hospital Services for the future, Humber Acute Services Review. Patient Workshop Feedback Report November 2019

Planned Care

Planned Care will be incorporated in Part 2 of this Service Models Development document

- So far this document has considered service models changes for the whole of the Humber region in light of UEC, Maternity, Paediatrics and Planned Care.
- Clinical stakeholders felt that acute services models should be developed first, so that the opportunities for Planned care could be considered in relation to acute care.
- Planned Care will be revisited in more detail for the whole of the Humber in Part 2 of this document.
- Since acute services have already undergone differentiation in Hull, the following section focusses more on identifying opportunities within NLaG, and the extent to which cross-Humber approaches can support this.



7. Clinical Interdependencies

Consideration of the dependencies between hospital services in the Humber area

Service level dependencies

Viability of potential service models in part rests on key service level dependencies

There are multiple interdependencies between hospital services which need to be considered when thinking about change.

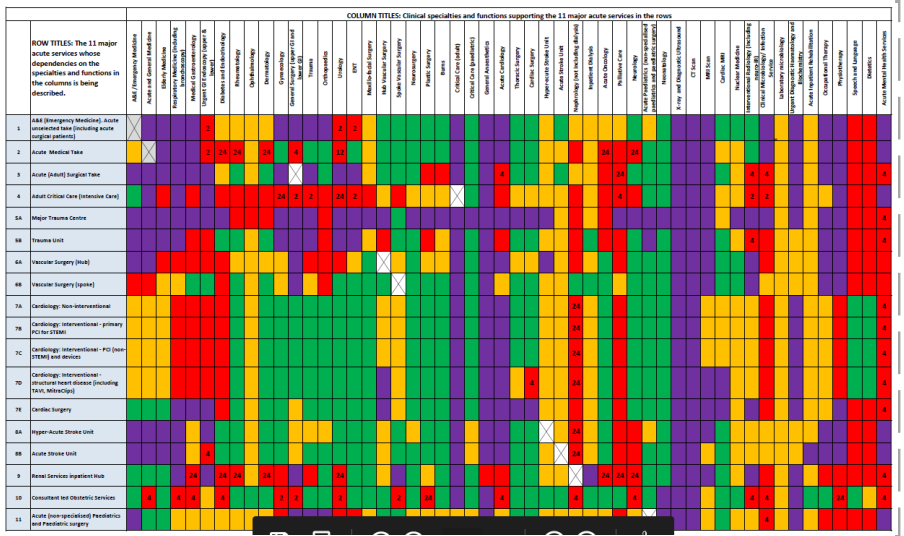
The **South East Clinical Senate** previously developed a Clinical Co- Dependencies Matrix to highlight dependencies between specialties.

During stakeholder engagements at the **Clinical Design Sub Groups** and **Clinical Design Group** on 13th November a Humber-specific set of interdependencies began to be identified.

These are outlined in more detail for each service area on the following slides.

This is not yet a definitive list, but can be thought of as a starting point in consideration of clinical dependencies.

Example dependencies in the South East Clinical Senate's Clinical Co-Dependencies Matrix



Source: http://www.secsenate.nhs.uk

UEC dependencies (1/2)

Dependencies relating to a "Hot" Urgent & Emergency Care offer

Service dependencies for a full "Hot" UEC provision		
Required co-located services	**In reach or rapidly available**	**Not required**
• Acute Medicine • Enhanced Frailty team • General Anaesthetics (and the ability to stabilise/ treat and transfer ie critical care skills) • X-ray • CT Scan (24/7 and ideally should be cardiac enabled to future proof services) • MRI Scan (24/7 needed to future proof services) • Urgent Diagnostic Haematology and Biochemistry • Cross matching • Critical Care Unit level 3 (adult) • Trauma (Obvious or significant trauma can be efficiently triaged to the correct site by ambulance crews) • Paediatric Short Stay unit	• Respiratory Medicine (Due to high volume of common acute respiratory presentations) • Medical Gastroenterology including bleeding endoscopy rota or the capability to treat and transfer. • General surgery (As most NCEPOD work could be managed in treat and transfer method if surgery is not on site) • Acute Cardiology • Blood transfusion • Acute Mental Health Services (This was debated. Currently works with an off site in reaching service at Grimsby, but there are very specific National response times which should be met. It was noted these are not always currently achieved) • Drug and alcohol liaison team (DALT) • Social Services for rapid assessment • Diagnostic Ultrasound	• Gynaecology • Orthopaedics • Clinical Microbiology / Infection Service (Need to have technology that facilitates access to this service) • Inpatient paediatrics • Vascular (Services are already centralised at HRI) • Obstetrics

UEC dependencies (2/2)

Dependencies relating to a “Warm” limited Urgent & Emergency Care offer

Service dependencies for a “Warm” UEC provision	
Required co-located services	**In reach or not required**
• Enhanced Frailty team • Trauma (Falls need to be able to be imaged – may need to then transfer out if significant trauma is diagnosed) • X-ray • Diagnostics (Further discussion needs to happen around how some services are delivered eg Point of Care testing versus full Haematology and biochemistry services, depending on the type of service model) • Blood for transfusion (Needs to be accessible, but it might be O-ve only as works in some hospitals)	• Trauma (“Walking wounded” Trauma could be managed here – including some non-displaced fractures) • Orthopaedics, Urology, Gynaecology, Cardiology, Gastroenterology, Vascular, Obstetrics • Overall this discussion recognised that operational flexibility could enable a wide range of versions of a “warm” front door, for example a hot service offered in peak hours with a reduced service overnight.

Further discussion points regarding UEC services:

- Experience from other places demonstrates that with clear communications, the public will know where to go. For example, in some places the Childrens’ ED is not co-located with general ED (e.g. Birmingham)
- Ambulance services are skilled about using appropriate triage pathways to take patients to the correct site.
- UEC transformation needs to also consider aspects which facilitate same day emergency care and prevent admission, for example social care within frailty services at the “front door”.
- Digitally connected notes would ensure that imaging and bloods do not need to be repeated where patients move between services or sites.
- Making the most of future technological developments

Maternity Services Dependencies

Dependencies relating to an OLU and a Standalone MLU

Service dependencies for an Obstetric Led Unit	
Required co-located Services	**In reach or locally available**
• Critical Care • Anaesthetics • Level 2 NICU • Diagnostics – bloods • Blood transfusion	• Interventional radiology • Gynaecology • Pathology • 24/7 Diagnostic USS (Urgent USS can be performed by obstetricians)

Service dependencies for a Standalone Midwifery Led Unit	
Required co-located Services	**In reach or locally available**
• This would be run as a “home from home” type service only, so nothing more than can be found at a patient’s home is required.	• No service dependencies

Paediatric Service Dependencies

Dependencies relating to inpatient acute paediatrics

Service dependencies for in-patient paediatric services	
Required co-located Services	**In reach or locally available**
• General (medical) paediatric service • General anaesthetists with the capability to stabilise and transfer • Outpatients • Quick access to theatres, but not necessarily on site. (See discussion below) • X-ray • Urgent biochemistry and haematology	• T&O • MRI • CT • Acute mental health • Paediatric HDU/ICU • General Surgery

Further discussion points relating to paediatric services:

- Surgery on children is often performed by non-paediatric surgeons e.g. appendicectomy
- In-patient paediatric surgery relies on (medical) paediatricians to care for the children on the ward peri-operatively.
- Medical paediatric patients do not require immediate access to surgery, as this can be managed on a “stabilise and transfer” basis if needed.
- The presence of Level 3 NICU facilities (in smaller volume specialist centres such as HRI) relies on the specialist paediatric surgery service to generate sufficient levels of activity to maintain staff skills
- Elective paediatrics can be performed on sites without ED/emergency paediatric medicine, so long as there are clear care protocols for the unusual patient needing emergency assessment, intervention or admission.

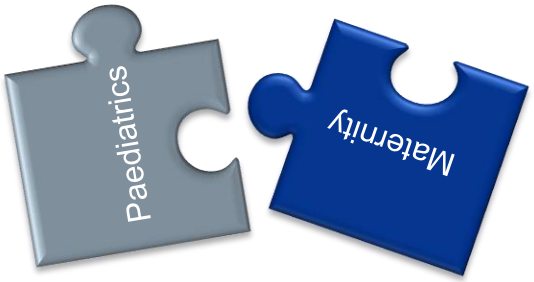
8. Combining Service Models

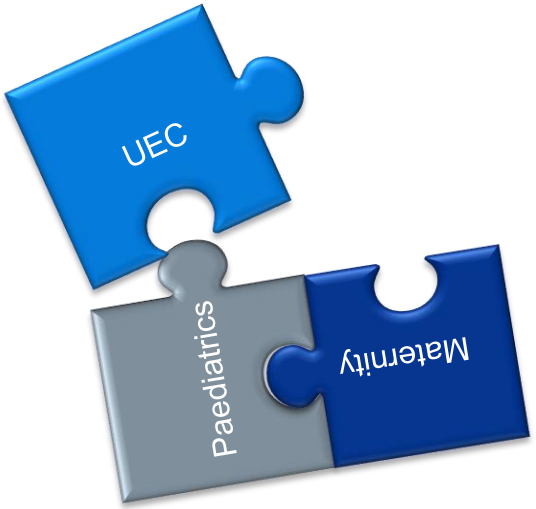
Combining UEC, Maternity and Paediatric Service Models

Combining Service Models

The preferred Service Models from each area of care were combined together.

- Exploring clinical inter-dependencies at the workshops demonstrated that the greatest number related to supporting Urgent & Emergency care. Workshop participants thought that this should be the basis for developing service models.
- As shown in a pervious slide, three service models for Urgent and Emergency Care had been identified.
- **Maternity and Paediatrics** services have a **clear interdependence in neonatal care**, and when combined this created 6 site agnostic combinations.





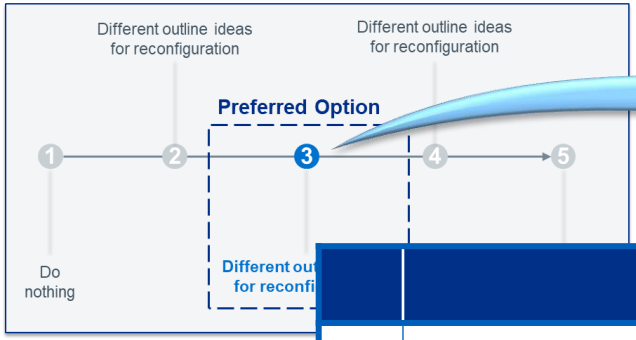
- These maternity and paediatric combinations can then be combined with the three **UEC** Service Models to make 18 site agnostic combinations.
- These combinations are illustrated on the next slides.

Stakeholders have repeatedly voiced that the configuration of these service lines need to be decided before Planned Care services are reconfigured, due to:

- The clinical importance of acute care for good patient outcomes
- The interdependency of Planned Care and Urgent and Emergency Care
- The elective nature of Planned Care meaning greater scope for flexibility for patient and staff travel, and less reliance on ambulance transfers
- The balance of utilising current estates capacity effectively, with the potential need for capital investment.

Service Model Codes

The preferred Service Models were given a code to identify them



The original number from the refined Service Models is used, combined with a letter to denote the specialty:

U = Urgent and Emergency Care

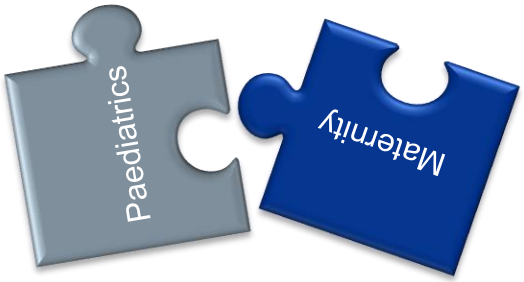
M = Maternity

P = Paediatrics

	Description	Code
UEC	**Acute Care Hubs** at each or any of the current EDs	U2
	Hot-Warm: One NLaG site has a comparatively limited UEC offer (e.g. Acute Care Hub/ A&E Local); The other NLaG site has a broader UEC offer	U3
	Hot-Cold: One NLaG site has all in-patient UEC capacity for the Trust; The other NLaG site has a UTC	U4
Maternity	**NICU differentiation:** One NLaG site with an OLU with a level 1 NICU (+/-alongside MLU); The other NLaG site with OLU with level 2 NICU (+/- alongside MLU)	M2
	Hot-Warm: One NLaG site with an OLU (+/- alongside MLU) with a level 2 NICU; One NLaG site with a standalone MLU and no NICU	M3
	Hot-Cold: All NLaG maternity consolidated to one site with OLU and alongside MLU; No delivery facilities at the other site (antenatal and postnatal outpatients only)	M3+
Paediatrics	**Hot-Warm:** One NLaG site with a comparatively limited paediatrics offer with Paeds ED, assessment unit and Level 1 NICU only; The other NLaG site runs a full acute paediatric service.	P3
	Hot-Cold: All NLaG acute paediatrics consolidated to one site; The other site has no acute paediatrics (Outpatients +/- elective work could occur here)	P4

Maternity and Paediatric combinations

Overview of 6 site-agnostic maternity and paediatric combinations



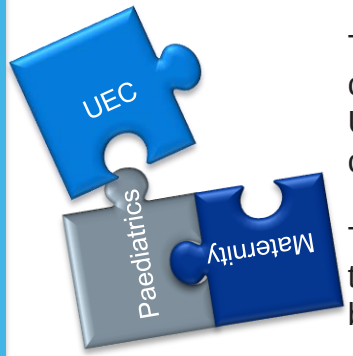
As described previously, Maternity and Paediatrics models could be combined to make 6 combinations

			Maternity Service Models		
			NICU differentiation: One NLaG site with an OLU with a level 1 NICU and one NLaG site with OLU with level 2 NICU	**Hot-Warm:** One NLaG site with an OLU with a level 2 NICU and one NLaG site with a standalone MLU	**Hot-Cold:** All NLaG maternity consolidated to one site with OLU and alongside MLU. No deliveries at the other site.
			M2	M3	M3+
Paediatrics Service Models	**Hot-Warm**: One NLaG site with limited paediatrics with Paeds ED, assessment unit and Level 1 NICU only; the other NLaG site runs a full paediatric service.	P3	M2P3	M3P3	M3+P3
	Hot-Cold: All NLaG acute paediatrics consolidated to one site; the other site has no acute paediatrics	P4	M2P4	M3P4	M3+P4

The Maternity and Paediatrics combinations

UEC, Maternity and Paediatrics Combinations

Overview of 18 site-agnostic combinations



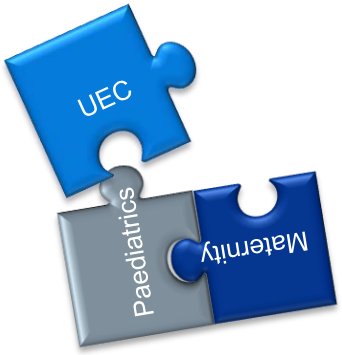
These 6 Maternity and Paediatric combinations were then combined with the 3 UEC combinations, to make a total of 18 combinations.

These are site-agnostic at this point, as there is no definition of which services might be located on either acute NLaG sites.

Maternity and Paediatrics combined Service Models				UEC Service Models		
				Acute Care Hubs at each or any of the current EDs	**Hot-Warm:** One site has a comparatively limited UEC offer; the other has a broader UEC offer	**Hot-Cold:** One site has all in-patient UEC capacity for the Trust; the other has a UTC
				U2	U3	U4
Maternity	**NICU differentiation:** One site with an OLU with a level 1 NICU and one site with OLU with level 2 NICU	Paeds	**Hot-Warm**: One site with comparatively limited acute paediatrics offer with Paeds ED, assessment unit and Level 1 NICU only; the other site runs a full acute paediatric service.	M2P3	U2M2P3	U3M2P3	U4M2P3
Maternity	**NICU differentiation:** One NLaG site with an OLU with a level 1 NICU and one NLaG site with OLU with level 2 NICU	Paeds	**Hot-Cold:** All NLaG paediatrics consolidated to one site; the other site has no paediatrics	M2P4	U2M2P4	U3M2P4	U4M2P4
Maternity	**Hot-Warm**: One NLaG site with an OLU with a level 2 NICU and one NLaG site with a standalone MLU	Paeds	**Hot-Warm:** One site with comparatively limited acute paediatrics offer with Paeds ED, assessment unit and Level 1 NICU only; the other site runs a full acute paediatric service.	M3P3	U2M3P3	U3M3P3	U4M3P3
Maternity	**Hot-Warm**: One NLaG site with an OLU with a level 2 NICU and one NLaG site with a standalone MLU	Paeds	**Hot-Cold:** All NLaG paediatrics consolidated to one site; the other site has no paediatrics	M3P4	U2M3P4	U3M3P4	U4M3P4
Maternity	**Hot-Cold:** All NLaG maternity consolidated to one site with OLU and alongside MLU. No delivery facilities at the other site	Paeds	**Hot-Warm:** One site with comparatively limited acute paediatrics offer with Paeds ED, assessment unit and Level 1 NICU only; the other site runs a full acute paediatric service.	M3+P3	U2M3+P3	U3M3+P3	U4M3+P3
Maternity	**Hot-Cold:** All NLaG maternity consolidated to one site with OLU and alongside MLU. No delivery facilities at the other site	Paeds	**Hot-Cold:** All NLaG paediatrics consolidated to one site; the other site has no paediatrics	M3+P4	U2M3+P4	U3M3+P4	U4M3+P4

UEC, Maternity & Paediatrics combinations

Simpler view of the 18 site-agnostic combinations



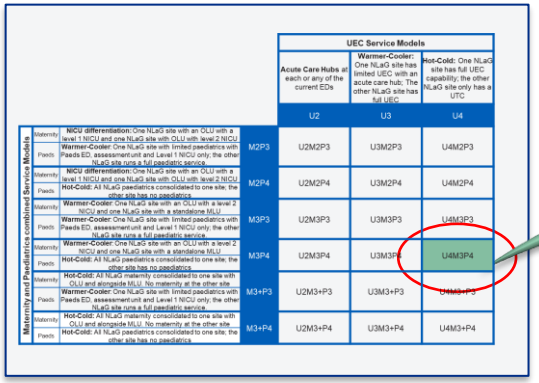
Here the site-agnostic service models descriptions have been simplified and assigned a letter

Maternity and Paediatrics combined Service Models				UEC Service Models		
				Acute Care Hubs	Hot-Warm	Hot-Cold
				U2	U3	U4
	Maternity	NICU differentiation	M2P3	A	B	C
	Paeds	Hot-Warm				
	Maternity	NICU differentiation	M2P4	D	E	F
	Paeds	Hot-Cold				
	Maternity	Hot-Warm	M3P3	G	H	I
	Paeds	Hot-Warm				
	Maternity	Hot-Warm	M3P4	J	K	L
	Paeds	Hot-Cold				
	Maternity	Hot-Cold	M3+P3	M	N	O
	Paeds	Hot-Warm				
	Maternity	Hot-Cold	M3+P4	P	Q	R
	Paeds	Hot-Cold				

Exploring Variants

Considering the detail within each combination

Within each of these site agnostic combinations are multiple variants.



Adding Site Variants

For example

- One consideration is **choice of site** as service differentiation in NLaG could be based at DPoW or at SGH.

Eight site specific variants

Maternity and Paediatrics M3P4	UEC Option U4: NLaG site 1 Hot, NLaG site 2 Cold	UEC Option U4: NLaG site 2 Hot, NLaG site 1 Cold
NLaG site 1 OLU with level 2 NICU and NLaG site 2 stand alone MLU Consolidate all acute paediatric services in NLaG to NLaG site 1	1	3
NLaG site 1 OLU with level 2 NICU and NLaG site 2 stand alone MLU Consolidate all acute paediatric services in NLaG to NLaG site 2	2	4
NLaG site 2 OLU with level 2 NICU and NLaG site 1 stand alone MLU Consolidate all acute paediatric services in NLaG to NLaG site 1	5	7
NLaG site 2 OLU with level 2 NICU and NLaG site 1 stand alone MLU Consolidate all acute paediatric services in NLaG to NLaG site 2	6	8

Mirror image of variants 1- 4

- This creates 8 site-specific variants of each combination (and just 4 for those involving Acute Care Hubs).
- There is therefore a total of 120 site specific Service Model variants at this point.
- Modelling will later explore the impact of different variants on activity levels.
- Service Models could also be implemented in different ways, such as changed opening hours.

9. Sufficiency and Compatibility Checks

Developing a preliminary longlist

Sufficiency and Compatibility Checks

Establishing principles against which to consider options and progress towards a preliminary longlist

- As described in earlier slides, at this point there were 18 high level service models A-R.
- These could then be considered in different site level configurations, meaning a total of 120 site specific variant configurations.
- In order to identify which of this large number of potential models should undergo more detailed development and assessment, initial evaluation was undertaken by the Clinical Design Group. They considered two sets of questions in relation to the service models.
    - **1: Sufficiency Checks:** The first set of questions asked the group to consider the extent to which the high level service models appeared sufficient to address the challenges facing healthcare across the Humber area (summarised in the Case for Change).
    - **2: Compatibility Checks:** The second set then looked at clinical compatibility of potential service configurations, to establish if there were any combinations which did not appear to be clinically desirable or operationally practical.
- Participants recorded their responses individually and anonymously using a tool (Mentimeter) that allowed results to be immediately fed back to the group.
- The following slides describe the questions and responses.
- The first set of responses were applied to the 18 high level service model combinations, and the second set to the remaining possible service configurations.
- Twelve specific Service Models remained of the original 120.
- This formed the preliminary “longlist”.

1: Confirming sufficiency of high level service models

The first set of questions asked CDG attendees to apply professional judgement to consider whether the high level Service Models were sufficient to address the healthcare challenges in the area

After consideration of the below questions, the Clinical Design Group answered as indicated:

UEC		Response
U2	1. Is the development of Acute Care Hubs (without further changes to maternity, paediatric or planned care) likely to be sufficient to address our challenges?	No
U3	2. Is the development of acute care hubs and development of a hot / warm differentiation of care between the main NLAG sites likely to be sufficient?	Yes
U4	3. Is the development of acute care hubs and development of a hot / cold differentiation of care between the main NLAG sites (with UEC provided by a UTC on the cold site) likely to be sufficient?	Yes
Maternity		
M2	4. Is the differentiation of NICU support to two Obstetric-led units (one level 2 and one level 1 unit, without further changes to maternity or paediatrics) likely to be sufficient to address our challenges?	No
M3	5. Is the establishment of a standalone MLU on one of the main NLAG sites (replacing one OLU) likely to be sufficient?	Yes
M3+	6. Is the establishment of a single NLAG OLU likely to be sufficient?	Yes
Paediatrics		
P3	7. Is the development of a hot / warm differentiation of acute paediatric care likely to be sufficient to address our challenges?	No
P4	8. Is the establishment of a single NLAG site that offers acute paediatric care likely to be sufficient?	Yes

1: Impact

The answers to the first set of questions highlighted four of the high level Service Models

Out of the 18 A-R UEC, maternity and paediatric ***site agnostic*** combinations, four models emerged for further consideration. These are highlighted on the matrix in green.

As previously noted, within each of the K, L, Q and R ***site agnostic*** combinations lies eight ***site specific*** variants. The compatibility of these variants was considered next.

Maternity and Paediatrics combined Service Models				UEC Service Models		
				Acute Care Hubs	Hot-Warm	Hot-Cold
				U2	U3	U4
	Maternity	NICU differentiation	M2P3	A	B	C
	Paeds	Hot-Warm				
	Maternity	NICU differentiation	M2P4	D	E	F
	Paeds	Hot-Cold				
	Maternity	Hot-Warm	M3P3	G	H	I
	Paeds	Hot-Warm				
	Maternity	Hot-Warm	M3P4	J	K	L
	Paeds	Hot-Cold				
	Maternity	Hot-Cold	M3+P3	M	N	O
	Paeds	Hot-Warm				
	Maternity	Hot-Cold	M3+P4	P	Q	R
	Paeds	Hot-Cold				

2: Checking compatibility (1/2)

Considering the compatibility of specialties in site specific combinations

- **Specialties are linked by key interdependencies, and reliance on other services.** The compatibility of these interdependencies is important when changes to services are being considered.

Eight site specific variants

Maternity and Paediatrics M3P4	UEC Option U4	
	NLaG site 1 Hot, NLaG site 2 Cold	NLaG site 2 Hot, NLaG site 1 Cold
NLaG site 1 OLU with level 2 NICU and NLaG site 2 stand alone MLU Consolidate all paediatric services in NLaG to NLaG site 1	1	2
NLaG site 1 OLU with level 2 NICU and NLaG site 2 stand alone MLU Consolidate all paediatric services in NLaG to NLaG site 2	3	4
NLaG site 2 OLU with level 2 NICU and NLaG site 1 stand alone MLU Consolidate all paediatric services in NLaG to NLaG site 1	5	6
NLaG site 2 OLU with level 2 NICU and NLaG site 1 stand alone MLU Consolidate all paediatric services in NLaG to NLaG site 2	7	8

Checking compatibility

For example

- **Some combinations will be more compatible than others.**
- **Looking at this example L1, grouping the specialties in this way can be seen to work well.**

In this example combination L1, the two NLaG sites would be configured in the below fashion:

NLaG Site 1		NLaG site 2
Hot	UEC	Cold
OLU + MLU + Level 2 NICU	Maternity	Standalone MLU
Full Paeds Service	Paediatrics	None

- **There are additional interdependent services benefitting from this site specific combination.**
- This example would, for instance, allow the out of hours obstetric cover and the gynaecology cover for ED to be co-located at NLaG site 1, allowing consolidation of rotas and reducing staffing requirements.
- 24 hour radiology would be available for both adult and paediatric acute care at NLaG site 1, and not required at site 2.

2: Checking compatibility (2/2)

Considering the compatibility of specialties in site specific combinations

Eight site specific variants

		UEC Option U4	
		NLaG site 1 Hot, NLaG site 2 Cold	NLaG site 2 Hot, NLaG site 1 Cold
Maternity and Paediatrics MSP4	NLaG site 1 OLU with level 2 NICU and NLaG site 2 stand alone MLU	1	2
	Consolidate all paediatric services in NLaG to NLaG site 1		
	NLaG site 1 OLU with level 2 NICU and NLaG site 2 stand alone MLU	3	4
	Consolidate all paediatric services in NLaG to NLaG site 2		
	NLaG site 2 OLU with level 2 NICU and NLaG site 1 stand alone MLU	5	6
	Consolidate all paediatric services in NLaG to NLaG site 1		
	NLaG site 2 OLU with level 2 NICU and NLaG site 1 stand alone MLU	7	8
	Consolidate all paediatric services in NLaG to NLaG site 2		

Checking compatibility

For example

- **Looking at this example L4, grouping the specialties in this way raises questions about their compatibility.**

- It is these apparent conflicts that the second set of questions assesses.
- For the second question set, nine compatibility statements were considered by CDG attendees
- Their focus was on availability of workforce as this is a major theme identified in the Case for Change
- The questions and their responses are recorded on the following slide.

In this example combination L4, the two NLaG sites would be configured in the below fashion:

NLaG Site 1		NLaG site 2
Cold	UEC	Hot
OLU + MLU + Level 2 NICU	Maternity	Standalone MLU
None	Paediatrics	Full Paeds Service

Is it safe or efficient to have an Obstetrician-led unit at a site without other acute UEC services?

If paediatrics is all located on NLaG Site 2, how would a level 2 NICU be staffed at NLaG Site 1?

2: Checking compatibility of site specific variant combinations

The second set of questions asked CDG attendees to use professional judgement to consider the compatibility of site specific variant combinations

After consideration of the below question in relation to the following nine statements, the Clinical Design Group answered as indicated:

"Does this statement describe a site compatible service model combination that would help to address local challenges, particularly availability of workforce?"

Compatibility statement	Response
1. Level 2 NICU on a site that has no acute paediatric services	No
2. Level 1 NICU on a site that has no acute paediatric services	Yes
3. Level 2 NICU together with a comparatively limited acute paediatric service model on the same site	No
4. Level 1 NICU together with a comparatively limited acute paediatric service model on the same site	Yes
5. Full acute paediatrics (including in-patients) together with a "cold" UEC model on the same site	No
6. Full acute paediatrics service (including in-patients) together with a "warm" UEC model on the same site	Yes
7. Comparatively limited acute paediatrics service model together with a "cold" UEC model on the same site	Yes
8. Obstetric led unit (OLU) together with a "cold" UEC model site on the same site	No
9. Obstetric Led Unit (OLU) together with a "warm" UEC model on the same site	Yes

2: Impact

The answers to the second set of questions identified 12 specific Service Models

- Clinical judgement was employed to arrive at the decisions for the second set of questions, reflecting considerations of workforce, service interdependencies, operational practicalities and safety in the combinations.
- The outcomes of this can be summarised as:

    - **Not endorsing the combination of an OLU and level 2 NICU on a site which has no paediatric services**
    - **Not endorsing the combination of an OLU and level 2 NICU on a site which has limited Paediatrics**
    - **Not endorsing having the combination of full paediatric inpatient services on a cold UEC site**
    - **Not endorsing the combination of an OLU on a cold UEC site**

- Those site specific service model variants which contained any of the above combinations were therefore not taken forward for further consideration.
- When both the sufficiency and compatibility checks were applied, there was a total of 12 specific Service Model variants remaining.
- These comprise six unique specific configurations, which could then be configured in two ways, (with either SGH as site 1 and DPoW as site 2, or the mirror image), thus making 12 in total.
- However, development of a “longlist” was an iterative process, and ongoing stakeholder engagement continued to inform and shape the available options from this point.

Hot/ Acute	Warm/ Limited	Minimal	Cold/ None

Impact of the sufficiency and compatibility checks

12 site specific Service Model variants were endorsed

Following the agreement and application of these sufficiency and compatibility checks, the below 12 site specific variant combinations for UEC, Maternity and Paediatric care were agreed to be taken forward for further evaluation.

K1

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Hot	UEC	Warm	Configured as is
		OLU + MLU + Level 2 NICU	Mat	Standalone MLU	
		Full Paeds Service	Paeds	SSPAU only	

K3

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Warm	UEC	Hot	Configured as is
		OLU + MLU + Level 2 NICU	Mat	Standalone MLU	
		Full Paeds Service	Paeds	SSPAU only	

L1

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Hot	UEC	Cold	Configured as is
		OLU + MLU + Level 2 NICU	Mat	Standalone MLU	
		Full Paeds Service	Paeds	None	

K8

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Warm	UEC	Hot	Configured as is
		Standalone MLU	Mat	OLU + MLU + Level 2 NICU	
		SSPAU only	Paeds	Full Paeds Service	

K6

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Hot	UEC	Warm	Configured as is
		Standalone MLU	Mat	OLU + MLU + Level 2 NICU	
		SSPAU only	Paeds	Full Paeds Service	

L8

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Cold	UEC	Hot	Configured as is
		Standalone MLU	Mat	OLU + MLU + Level 2 NICU	
		None	Paeds	Full Paeds Service	

Mirror images

Q1

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Hot	UEC	Warm	Configured as is
		OLU + MLU + Level 2 NICU	Mat	Ante & postnatal	
		Full Paeds Service	Paeds	SSPAU only	

Q3

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Warm	UEC	Hot	Configured as is
		OLU + MLU + Level 2 NICU	Mat	Ante & postnatal	
		Full Paeds Service	Paeds	SSPAU only	

R1

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Hot	UEC	Cold	Configured as is
		OLU + MLU + Level 2 NICU	Mat	Ante & postnatal	
		Full Paeds Service	Paeds	None	

Q8

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Warm	UEC	Hot	Configured as is
		Ante & postnatal	Mat	OLU + MLU + Level 2 NICU	
		SSPAU only	Paeds	Full Paeds Service	

Q6

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Hot	UEC	Warm	Configured as is
		Ante & postnatal	Mat	OLU + MLU + Level 2 NICU	
		SSPAU only	Paeds	Full Paeds Service	

R8

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Cold	UEC	Hot	Configured as is
		Ante & postnatal	Mat	OLU + MLU + Level 2 NICU	
		None	Paeds	Full Paeds Service	

Mirror images

For further details on the assumptions made when considering these variants, please refer to p69 & 70

10. Confirming the Longlist

Additional engagement contributed to the final Longlist

Additional engagement

Additional engagement raised interest in six more service models

- Further stakeholder engagement continued after the initial CDG review.
- This included the NLaG events on 13th and 14th November 2019, a Hull Urgent and Emergency Care engagement event on 25th November 2019, and a Citizens' Panel meeting on 21st November 2019.
- The three areas which stakeholders were keen not to lose for further consideration at this stage were:

    1. Continuing to consider the idea of a **new hospital for the South bank**, in principle at a yet to be determined location somewhere between Scunthorpe and Grimsby. (This corresponded on the original continuums to U4M4P4). This has now been named S1.
    2. Continuing to consider the idea of a **new hospital for Urgent and Emergency Care for the whole of Humber**. (This corresponded on the original continuum to U5). This has now been named S2.
    3. Continuing to consider the **Maternity Service Model M2,** which involves the differentiation of NICUs at two OLUs on the NLaG sites.

- The rationale raised for including these Service Models is explained on the following slides in more detail.

Citizens' Panel

Patients' and carers' views were sought at the Citizens' Panel

The November Citizens' Panel reviewed the process of the Service Model development, and considered all the Service Model options presented on the continuums.

Key themes involved:

- Concurring with the clinicians' sentiments that healthcare in the Humber area needs to change.
- Appreciating the challenges of developing solutions, and that sometimes difficult compromises would be required.
- Acknowledging the challenges of travelling around the Humber area, given large distances and poor transport infrastructure. Concerns were raised about the potential for service change to make this worse.
- The desire to have quick access to healthcare in emergencies, tempered with a recognition that limited staff and resources are available to provide care, and they may not be able to deliver the best care when split between multiple sites.
- The variable quality of current hospital estates and the need for investment.
- The concept of new hospitals sparked interest, and there was a desire for further information regarding potential costs and location. There was also a recognition that this would take a significant period of time to develop.
- Being able to see accurate medical records anywhere was felt to be critically important irrespective of the model adopted; putting in place shared care records need to be a priority, investment in improving digital should not be ignored.
- More needs to be done outside of hospital to stop people needing to come in at all, when care could be provided in alternative settings.
- The Review must continue to consider the impact on carers and families

Attendees also ranked their preferred Service Models for each Continuum.

Additional Model 1/3: New NLAG Hospital

This could be the base for UEC, Maternity and Paediatrics.

Stakeholders suggested that a new, purpose-built hospital, in a location in between the two existing acute sites south of the Humber should continue to be considered.

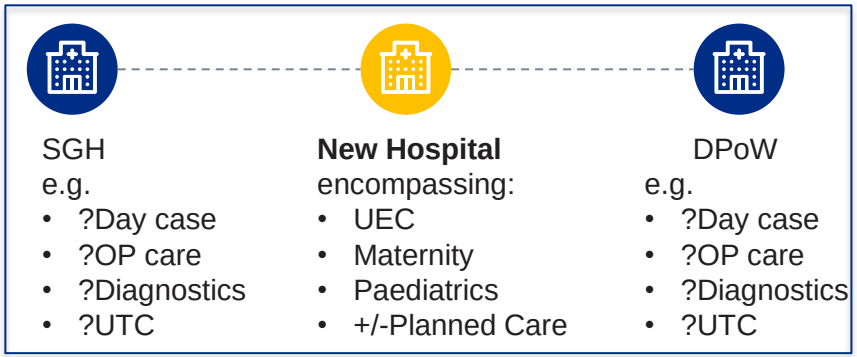
This could bring together all of NLaG's Urgent and Emergency Care (Service Model U4), with all Maternity services (Service Model M4), and all of the paediatrics services (Service Model P4) onto one site.

This option, as others, also has the potential to support Humber-wide options for providing Planned Care across the whole Humber area. SGH and DPoW might also continue to deliver a range of elective services.

There was interest in assessing the viability of this option, including analytical modelling, in comparison to the costs and benefits of other reconfigurations.

Reasons for wanting to continue to consider this included:

- Capital investment will be required at the current NLaG sites, and the relative merits of investing capital for refurbishment compared to wholly new facilities should be assessed.
- A location between Scunthorpe and Grimsby might address travel concerns for some patients, compared to consolidating some services on existing sites.
- A new hospital could be built without disrupting current hospital functions
- New estates & facilities may be more attractive to staff, enhancing recruitment and retention
- Better estates may help to facilitate excellent care for patient



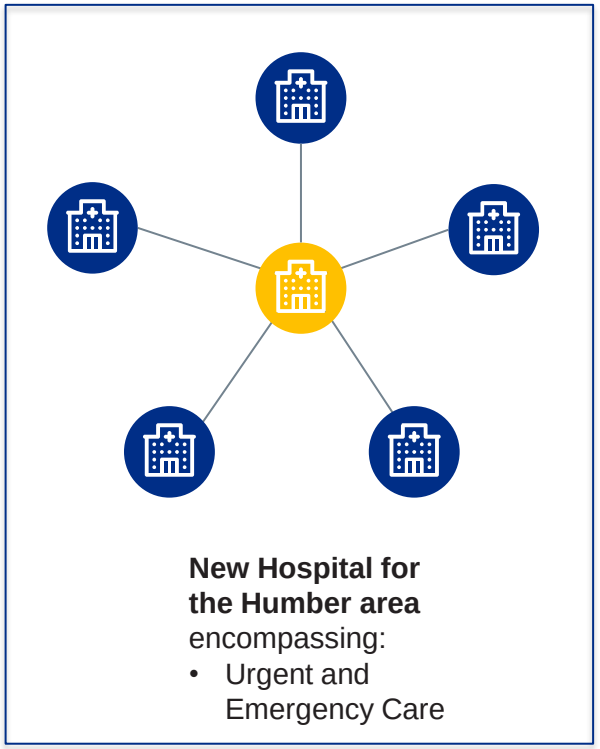
Additional Model 2/3: New UEC Hospital for Humber

A single new hospital for Urgent and Emergency care for the whole of the Humber area

A single new hospital providing Urgent and Emergency care for the whole Humber region was of interest to stakeholders.

This relates to option U5 on the original continuums.

- No particular location was proposed.
- Many of the principles of its functioning could be based on those seen at the Northumbria Specialist Emergency Care hospital.
- It could pool the emergency care resources in the area, and free more capacity for elective care in the current locations.
- Elective care, outpatients and diagnostics could all continue in the current sites.
- Stakeholders were interested in exploring the feasibility of this possible option.
- Would have to be the major trauma centre for the region (replacing HUTH as the current major trauma centre). The implications of this being that associated services required for a major trauma centre would also have to be located on site also.



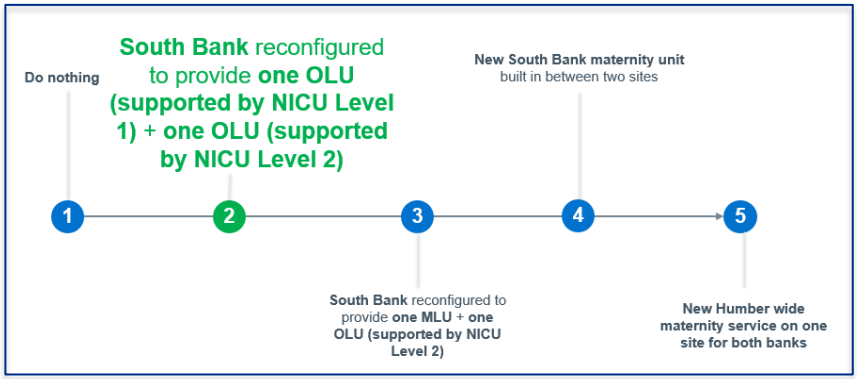
Additional Model 3/3: NLaG NICU Differentiation

Two OLUs in NLaG, one with a level 1 NICU, one with a level 2 NICU

There was interest in continuing to consider the Maternity Service Model 2. This would involve changing the Neonatal intensive care unit associated with one Obstetrician led unit in NLaG from level 2 to level 1, meaning it could only look after those babies who were less premature, underweight or unwell.

Rationale:

- It would maintain better access for obstetrician-led delivery south of the Humber, compared to possibly longer travel distances if the two OLUs in NLaG were consolidated to a single site (as in the other remaining Maternity Service Models M3 and M3+)
- Having the ability to support some special care babies on both sites would reduce the likely increase in activity and pressures for the obstetric team on the site with the level 2 NICU.
- Maintaining two OLUs would also address concerns raised about the viability and operational practicalities of maintaining a standalone Midwife Led Unit, which would likely have a much smaller number of deliveries on site.
- Level 1 NICU can be supported by a paediatric doctor who is also supervising care for children in other parts of the hospital (as opposed to Level 2 NICUs which require a dedicated doctor 24/7). This would therefore relieve some pressure on the paediatric rota, whilst also maintaining safety.
- The current level 2 NICUs in NLaG care for fewer than 25 babies each year weighing <1500g babies[1]. The British Association of Perinatal Medicine recommends that >25 per year are required to maintain skills appropriately.[2]
- Similar models of care are in use elsewhere, such as in North Cumbria which has even greater distances between two hospital sites



[1] Patient level and Trust data, as referenced in the HASR Case for Change [2] BAPM Optimal arrangements for Local Neonatal Units and Special Care Units in the UK including guidance on their staffing: A Framework for Practice November 2018

Additional Model 3/3: NLaG NICU Differentiation

The impact of including M2 and re-applying the compatibility checks

- K, L Q and R were already identified after the previous sufficiency checks.
- **E and F could now be considered too.**
- Within each of these lies 8 site specific Service Model variants which then need to be assessed using the compatibility check.
- The four site specific Service Model variants which remain after this process has been performed are shown on the next slide.

Maternity and Paediatrics combined Service Models				UEC Service Models		
				Acute Care Hubs	Hot-Warm	Hot-Cold
				U2	U3	U4
Maternity	NICU differentiation	M2P3		A	B	C
Paeds	Hot-Warm					
Maternity	NICU differentiation	M2P4		D	E	F
Paeds	Hot-Cold					
Maternity	Hot-Warm	M3P3		G	H	I
Paeds	Hot-Warm					
Maternity	Hot-Warm	M3P4		J	K	L
Paeds	Hot-Cold					
Maternity	Hot-Cold	M3+P3		M	N	O
Paeds	Hot-Warm					
Maternity	Hot-Cold	M3+P4		P	Q	R
Paeds	Hot-Cold					

Hot/ Acute	Warm/ Limited	Minimal	Cold/ None

Six additional models to consider

Below are the six variants for further consideration following the additional stakeholder engagement

The changes to the maternity service models includes four additional site specific Service Model variants, plus the two which describe new hospitals. This additional six variants are described below:

E1

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Hot	UEC	Warm	Configured as is
		OLU + MLU + Level 2 NICU	Mat	OLU + MLU + Level 1 NICU	
		Full Paeds Service	Paeds	SSPAU only	

E3

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Warm	UEC	Hot	Configured as is
		OLU + MLU + Level 2 NICU	Mat	OLU + MLU + Level 1 NICU	
		Full Paeds Service	Paeds	SSPAU only	

E8

CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Warm	UEC	Hot	Configured as is
		OLU + MLU + Level 1 NICU	Mat	OLU + MLU + Level 2 NICU	
		SSPAU only	Paeds	Full Paeds Service	

E6

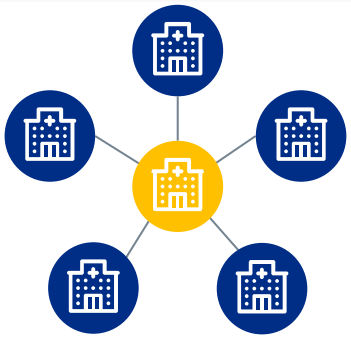
CCH	HRI	SGH		DPoW	GDH
Configured as is	Configured as is	Hot	UEC	Warm	Configured as is
		OLU + MLU + Level 1 NICU	Mat	OLU + MLU + Level 2 NICU	
		SSPAU only	Paeds	Full Paeds Service	

Mirror images

S1

New South bank Hospital
encompassing:
- UEC
- Maternity
- Paediatrics
- +/-Planned Care

S2



New Hospital for the Humber area
encompassing:
- Urgent and Emergency Care

DRAFT: For discussion only

The “longlist”

The final 18 specific Service Models are described below

Hot/ Acute	Warm/ Limited	Minimal	Cold/ None

	CCH	HRI	SGH			DPoW			Goole
			UEC	Maternity	Paeds	UEC	Maternity	Paeds	
			Indicated by CDG 13/11/2019						
K1	Configuration as is	UEC: Hot Maternity: OLU + MLU + Level 3 NICU Paediatrics: Full Paediatrics + Tertiary Services Operational and alternative working models to be employed at HUTH	Hot	OLU + MLU + Level 2 NICU	Full Paeds Service	Warm	Standalone MLU	SSPAU	Configuration as is
K8			Warm	Standalone MLU	SSPAU	Hot	OLU + MLU + Level 2 NICU	Full Paeds Service	
K3			Warm	OLU + MLU + Level 2 NICU	Full Paeds Service	Hot	Standalone MLU	SSPAU	
K6			Hot	Standalone MLU	SSPAU	Warm	OLU + MLU + Level 2 NICU	Full Paeds Service	
L1			Hot	OLU + MLU + Level 2 NICU	Full Paeds Service	Cold	Standalone MLU	None	
L8			Cold	Standalone MLU	None	Hot	OLU + MLU + Level 2 NICU	Full Paeds Service	
Q1			Hot	OLU + MLU + Level 2 NICU	Full Paeds Service	Warm	Ante + Postnatal	SSPAU	
Q8			Warm	Ante + Postnatal	SSPAU	Hot	OLU + MLU + Level 2 NICU	Full Paeds Service	
Q3			Warm	OLU + MLU + Level 2 NICU	Full Paeds Service	Hot	Ante + Postnatal	SSPAU	
Q6			Hot	Ante + Postnatal	SSPAU	Warm	OLU + MLU + Level 2 NICU	Full Paeds Service	
R1			Hot	OLU + MLU + Level 2 NICU	Full Paeds Service	Cold	Ante + Postnatal	None	
R8			Cold	Ante + Postnatal	None	Hot	OLU + MLU + Level 2 NICU	Full Paeds Service	
			Indicated by subsequent engagement						
E1			Hot	OLU + MLU + Level 2 NICU	Full Paeds Service	Warm	OLU + MLU + Level 1 NICU	SSPAU	
E8			Warm	OLU + MLU + Level 1 NICU	SSPAU	Hot	OLU + MLU + Level 2 NICU	Full Paeds Service	
E3			Warm	OLU + MLU + Level 2 NICU	Full Paeds Service	Hot	OLU + MLU + Level 1 NICU	SSPAU	
E6			Hot	OLU + MLU + Level 1 NICU	SSPAU	Warm	OLU + MLU + Level 2 NICU	Full Paeds Service	
S1			New South Bank Hospital encompassing UEC, Maternity, Paediatrics, +/-Planned Care						
S2	New Hospital providing Urgent and Emergency Care for the whole of the Humber area								

Explanatory notes on the site specific variants

Within these configurations there are operational decisions and further subtleties that will need to be considered, including:

For UEC:

"Cold" sites

- Continues to have a UTC.
- (For the purposes of modelling outputs for initial evaluation an assumption of retaining 20% of current UEC activity was used.)*

"Warm" sites

- The precise level of acuity and activity for this site is yet to be determined.
- There are operational ways that a reduced level of activity can be achieved, but these will need further discussion, such as reduced opening hours (local ED), or ambulance triage.
- (For the purposes of modelling outputs for initial evaluation an assumption of retaining 70% of current UEC activity has been used.)*

All sites:

- As mentioned earlier, Acute Care Hubs and the staffing arrangements at the acute care hospital at Cramlington are of interest to both Trusts and features of these may be operationally delivered, without building a single hospital.

For Maternity:

"Cold" sites

- No deliveries will be possible on this site.
- These will provide outpatient antenatal and postnatal outpatient care only.

For Paediatrics:

"Cold" sites

- Children can still be seen at the Urgent Treatment Centre (UTC) on this site.
- Paediatric outpatients would continue at the current locations.
- "Cold" paediatric sites on a "Warm" or "Hot" UEC site will provide a Short Stay Paediatric Unit (It is noted that this may create a Hot-Warm split, rather than a Hot-Cold split as agreed in the Sufficiency Checks, so this is subject to further review.)

For the purposes of initial modelling outputs and clinical evaluation these assumptions were agreed by the Clinical Chair of the Review and the PDG. However these are subject to change following user testing and sensitivities applied to future scenario modelling the Review may want to undertake.

*See the following slide for the rationale of these figures

Rationale for activity levels for initial modelling

These modelling choices can be altered at any time, and have been chosen for initial evaluation purposes only

Assumption	Rationale

UEC cold site – For retained activity an assumption of **20% has been used** for initial evaluation purposes	• This is based on sources from the King's Fund and NHS Digital which state that 11% of A&E attendances nationally leave without requiring treatment, and 39% receive advice and guidance only (total 50%). Therefore it is assumed that this quantum of activity is appropriate for treatment within a UTC setting.
	• However a number of factors would contribute to the retention of this 50% quantum of activity being unachievable. These being:
	  ○ Operational opening hours are yet to be determined for a warm model but are unlikely to be 24/7.
	  ○ Ambulance conveyances would reduce as ambulance services are likely to convey to a full service hot site, therefore existing activity that had been conveyed by blue light are unlikely to be sustained.
	  ○ Patient preference is likely to influence attendances towards a full hot service.

UEC warm site – For retained activity an assumption of **70% has been used** for initial evaluation purposes	• The acuity and activity levels of patients who will be retained at a "Warm" UEC site have not yet been determined, and will be considered at a later stage of the Review. • Operational considerations will influence these activity levels. • Based on the previous sources and professional judgements, an initial assumption of retaining 70% of the current site's UEC activity on a warm site has been used for the purposes of the initial evaluation and modelling. • Both assumptions have been ratified by the Clinical Chair of the Humber Acute Services Review and the Program Delivery Group.

Sources: https://www.kingsfund.org.uk/projects/urgent-emergency-care/urgent-and-emergency-care-mythbusters
https://digital.nhs.uk/data-and-information/publications/statistical/hospital-accident--emergency-activity/2016-17

Potential impact on HUTH of proposed NLaG changes

Any changes made to services on the South Bank are likely to affect use of services on the North Bank. Analytical modelling will help identify the likely impact of any changes, but some considerations are listed here.

Current configuration of services in the Humber area

HUTH			NLaG		
CCH	HRI		SGH	DPoW	GDH
Elective care/teriarity services	Hot	UEC	Hot	Hot	Elective Care
	OLU + MLU + Level 3 NICU	Maternity	OLU + MLU + Level 2 NICU	OLU + MLU + Level 2 NICU (LDRP)	
	Full Paeds Service + tertiary work	Paediatrics	Full Paeds Service	Full Paeds Service	

UEC:
NLaG Hot-Warm: This could lead to some increased Urgent & Emergency Care activity at HUTH.
NLaG Hot-Cold: The catchment areas for each ED would significantly change, with just one ED on each bank of the Humber, so HRI would be likely to see more patients for Urgent and Emergency Care in some Service Models.

Maternity:
NLaG NICU Differentiation: A reduction in level 2 NICU provision in NLaG may mean HRI has more higher risk women delivering there in order to access level 2 NICU care, increasing pressure on an already constrained unit.
NLaG single OLU: If NLaG only has one OLU, while some women will deliver on the South bank, some may choose to deliver on the North bank, again increasing the demand at HRI. This represents an opportunity to transform maternity provision at HRI.

Paediatrics:
NLaG Hot-Cold: The catchment areas for each paediatric centre would significantly change, so HRI may see more children presenting for emergency care, and referred to secondary care. This may help to transform tertiary referral pathways towards HRI.

Planned Care:
As the work on elective care services progresses, this will help identify further opportunities for change on both banks of the Humber that could better balance patient demand and service capacity. This could be both within Trust sites, as well as across the whole Humber area.

It should be noted that of the elements mentioned above, some may have a beneficial impact in terms of service sustainability and quality, whereas others may adversely impact performance

11. Analytical Modelling

How the analytical model has been developed

The model is continuing to be developed through the model owners group and the lead executives and clinical teams

- A data model is built to explore the relative impact of different service model options, with ongoing involvement from senior data / information colleagues (Humber Trusts and CCGs); and the “model owners group”.
- Data sources and assumptions have been developed in conversations with clinical, operational, strategy, and data/information leads.
- Models provide an indicative estimate of the result of a change in the service model, they can never be wholly relied upon and judgement should still be exercised.
- Where assumptions are needed, input has been sought from relevant clinicians and managers (and all assumptions can be changed if needed). Finalised assumptions are yet to be signed off.
- The model allows comparisons between the current state with a modelled status quo, i.e. what the bed, workforce, and finance requirements would need to be to make the current state sustainable. Future workforce numbers are compared to the current state to cover the sustainability gaps.
- It should be noted that at this stage no productivity assumptions are made within the model. However, this may be incorporated by users at a later stage by adjusting: length of stay; workforce; and cost assumptions.
- There may be some inaccuracies about bed numbers because they are modelled on length of stay on whole bed days, assuming people are in one location when in fact they move to different locations. It is therefore likely to overestimate the number of beds.
- A baseline assessment is work in progress and is required to prove the model works as a sense check across the system. This can only be done once the data and assumptions are signed off.
- Detailed workshops are to be held with the Trust’s and CCG’s teams to understand the detailed construction and output of the model.

Purpose of model and data sources

Purpose

- The purpose of this analytical model is to support the evaluation of service models that are being considered as part of the Humber Acute Services Review.
- The analytical model allows estimation of how activity, capacity (beds), workforce requirements, financial costs, and income might be affected by the service model in question. Outputs relate to the five hospital sites within HUTH and NLaG.
- The calculations are based on currently available data and clinical assumptions, these assumptions and/or revised data can be easily changed by the user if needed. For example, if the user wanted to update the average length of stay for a particular specialty they can change the figure in the assumptions sheet, which will automatically flow through to the outputs of the analysis.
- The model can be further developed to conduct detailed sensitivity analysis of different options; however, this has not yet been undertaken and is not included as part of this report or model deliverable.

Data Sources used

- **Activity** - Extracts from HES supplied by both Trusts for the financial year 2018/19 are used as the basis for all activity calculations.
- **Workforce** - A combination of extracts from the financial ledgers supplied by both Trusts for the financial year 2018/19 are used as the basis for all workforce calculations. Actual worked figures are used in the model and temporary staffing is included to accurately describe the current status.
- **Finance** - Extracts from the financial ledgers supplied by both Trusts for the financial year 2018/19 are used as the basis for all finance calculations, including both pay and non-pay costs.
- The model accounts for population growth expected in the Humber region over the next five years as per the Office for National Statistics data. It is assumed that the population growth for appropriate age/gender groups directly translates into activity increases.

Model overview

What the model does

- The model takes the aggregated patient level activity data and projects what that activity would be in the next five years assuming demographic and non-demographic growth.
- The model allows to testing of various service model configuration options via user control manipulation. This is achieved by moving activity from the site no longer providing the service to the closest site that would provide the service under the reconfiguration option selected by the user.
- Capacity, workforce, and financial requirements under each configuration scenario are derived from resulting activity shifts and corresponding assumptions. The diagram on slide 76 explains this in further detail.

Model structure

- The model is built around the three clinical subgroups areas of Urgent & Emergency Care, Maternity and Paediatrics.
- As Planned Care is undertaking further clinical engagement after Christmas, the data generated so far relates to Urgent & Emergency Care, Maternity and Paediatrics. There is a separate model which has been developed to look specifically at Planned Care.
- Both models have dedicated sheets for Assumptions and Data inputs that can be manipulated by the user, Calculation sheets that manipulate the Data and Assumptions in the way agreed in the Model Specification, and Output sheets that summarise the results of the modelling for the configuration scenario selected by the user in the User Control sheet.

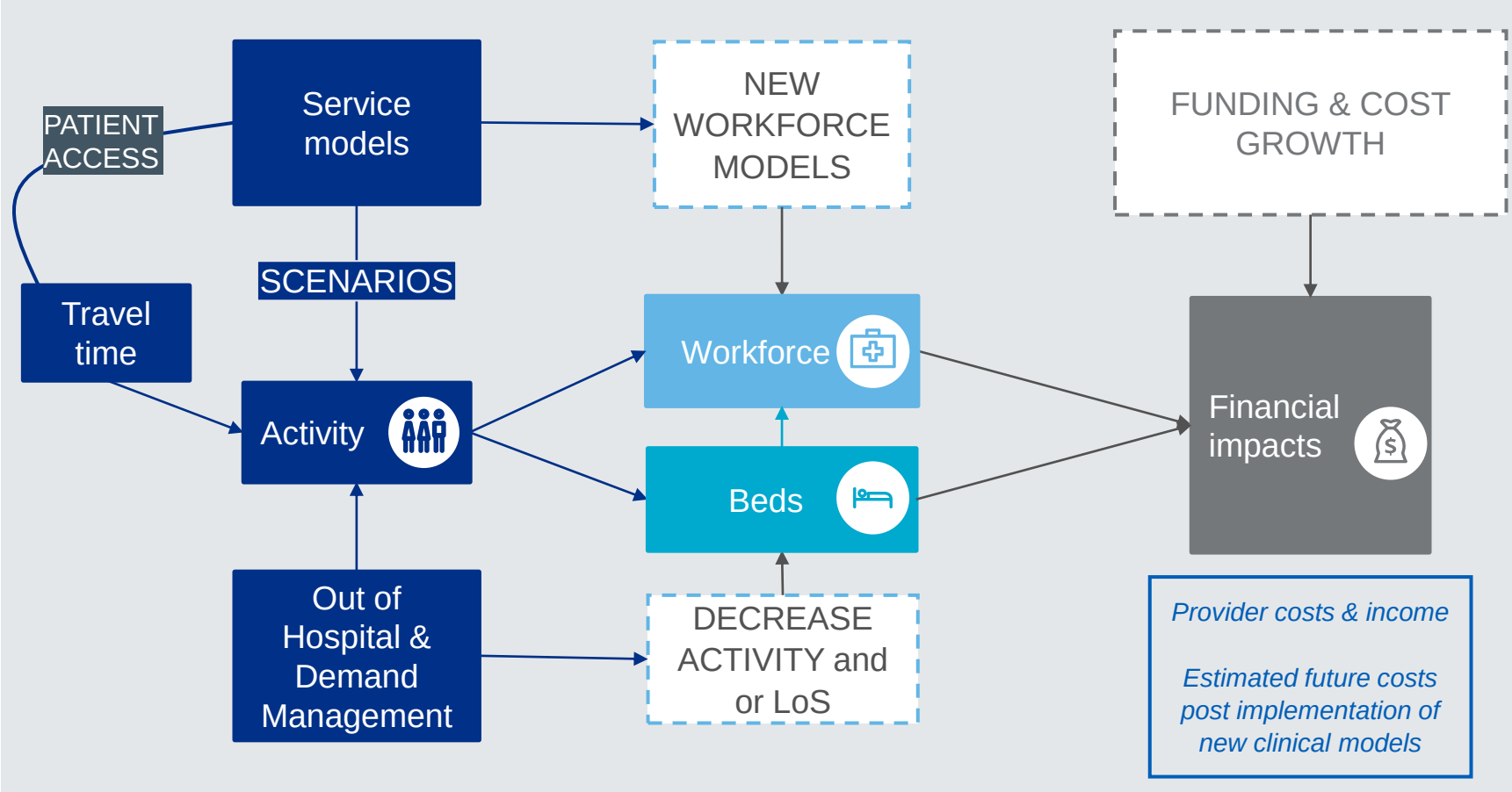
Model outputs

- The Main areas of output from the model relate to the likely activity per service and site, bed requirements, workforce requirements, and financial impact and are shown in the Output sheet.
- The Output sheet contains tables and charts (including waterfalls and trend lines) that help the user see the activity shifts that result from the selected configuration option, as well as corresponding capacity, workforce, and finance requirements.

Model structure overview

In the model , activity and clinical operating model drives workforce and bed capacity which in turn drives finance

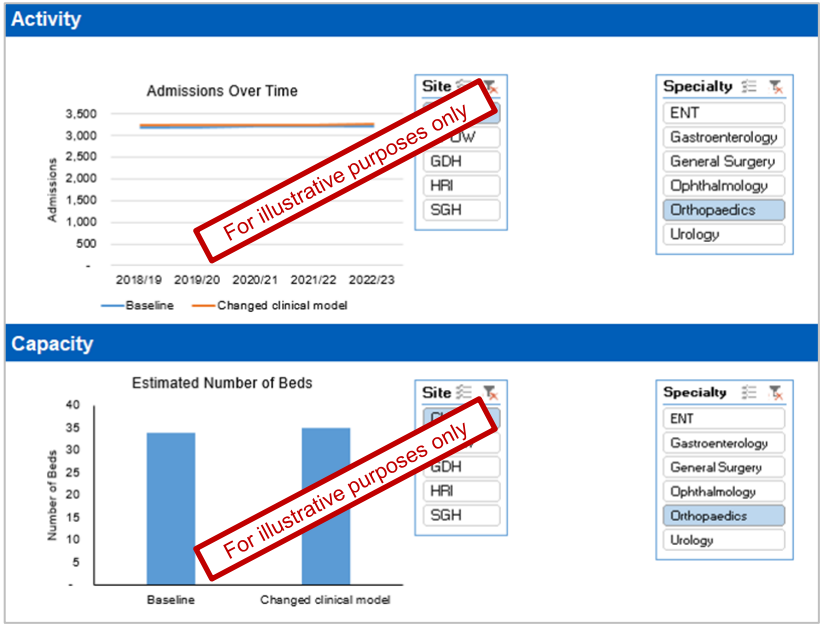
Further details on the structure is provided in this specification.



Modelling outputs

The model produces a number of data visualisation outputs that can be used to illustrate the impact of differing service models.

- A summary output sheet table provides data for the financial year 2018/19 to enable comparison between current status and modelled options. There is an individual table for each specialty and one table that takes data from all specialties together.
- Multiple bar graphs and waterfall charts are provided on the Outputs sheet. The user can choose which sites and specialties they would like to see on the chart using the menus to the right of the chart. Multiple sites and specialties can also be selected at once, by holding the CTRL key.
- Waterfall charts illustrating financial information show the incremental changes in cost by cost type.
- Waterfall charts illustrating workforce information show the incremental changes in workforce required to achieve a sustainable state for the current service model and for the selected Service Model.



12. Evaluation Criteria

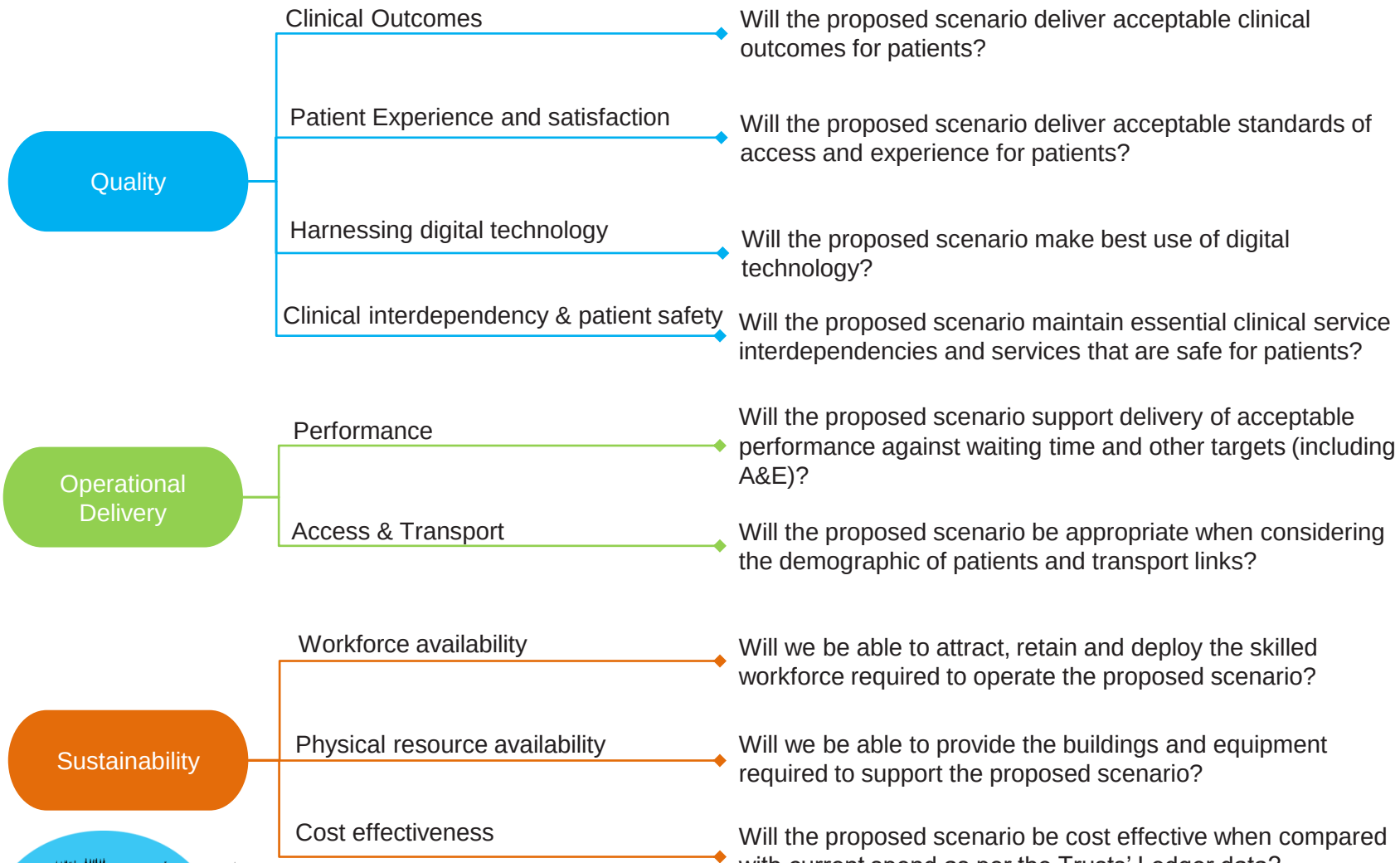
Evaluation

Preface

- When the initial work on this Review commenced in 2017, core principles were agreed that underpinned the development of nine evaluation criteria. Work to refine these criteria, including input from the Citizens' panel, has continued in parallel with the development of service models

Evaluation Criteria

These are the nine Evaluation Criteria, grouped into three themes



Evaluation Criteria development

Background to the development of the Evaluation Criteria

The criteria were formed at the beginning of the review process by the Review Steering Group in discussion with key stakeholders, which included clinicians, local NHS leaders and Local Authority representatives.

Patients and public were most recently asked to discuss the criteria in November 2019.

Feedback from patients/public is reflected in two ways.

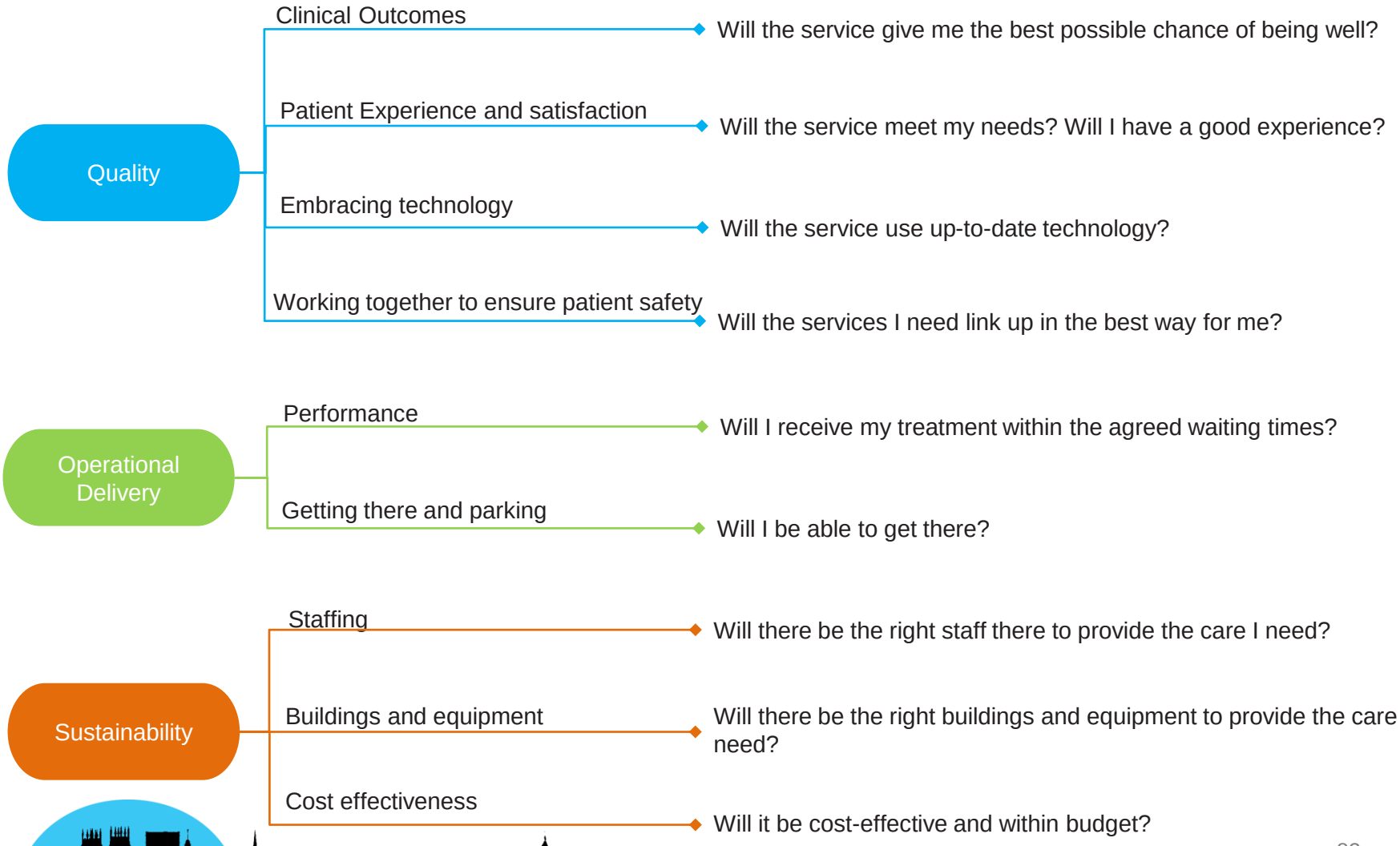
1. In the “key considerations” supplement to the criteria:
    - Include carers, families and those who provide the wider support network for patients in consideration regarding access, transport and experience of care.
    - All access issues should be considered when looking at transport and access and not just overall distances between sites e.g. finding a car parking space, bus shelters with comfortable seats and information about the wait times for the next service, somewhere to drop off poorly relatives whilst you park the car.
2. In the production of patient and public wording:
    - Striving for the “best possible” services where appropriate, rather than “acceptable”.
    - Making sure the criteria can be easily understood and have meaning from the perspective of patients and public.

These refreshed criteria will be used in conjunction with (not in place of) the questions developed by clinicians, local NHS leaders and local authority representatives.

The following slide shows the current patient and public version.

Patients and public's wording

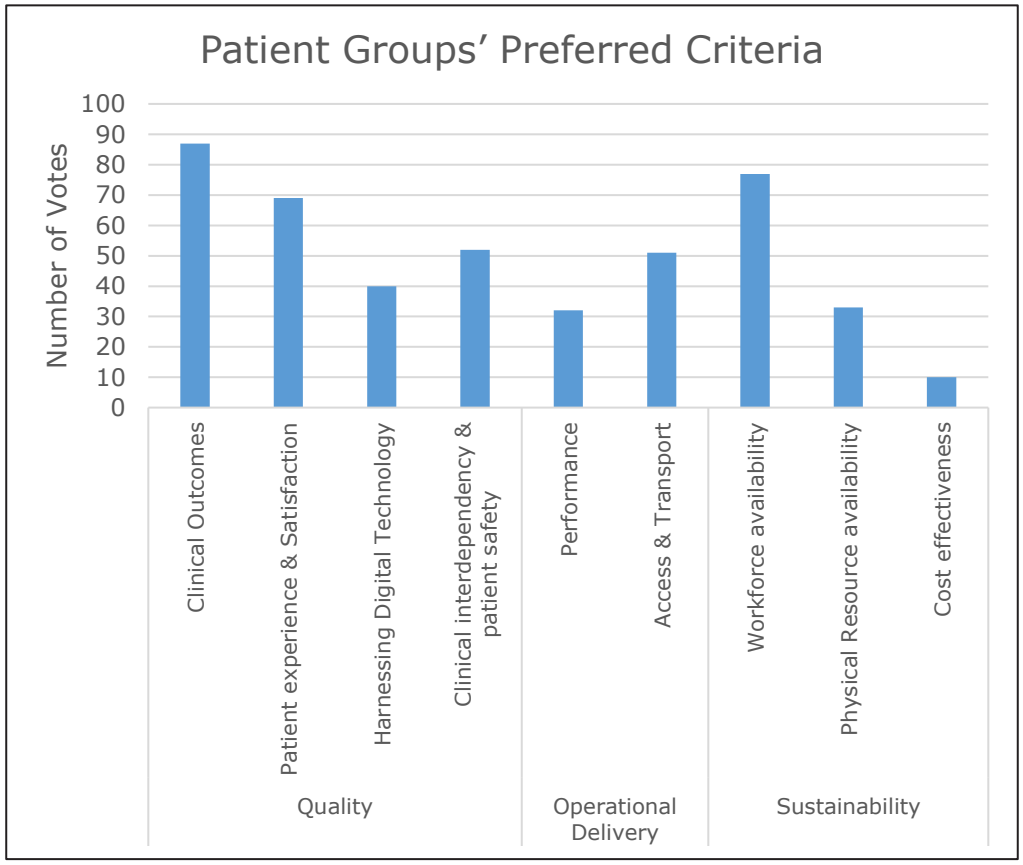
Following patient engagement on the criteria, the wording was updated to use "I" statements



Preferred Evaluation Criteria - Patients

Patient groups were asked which criteria were most important to them

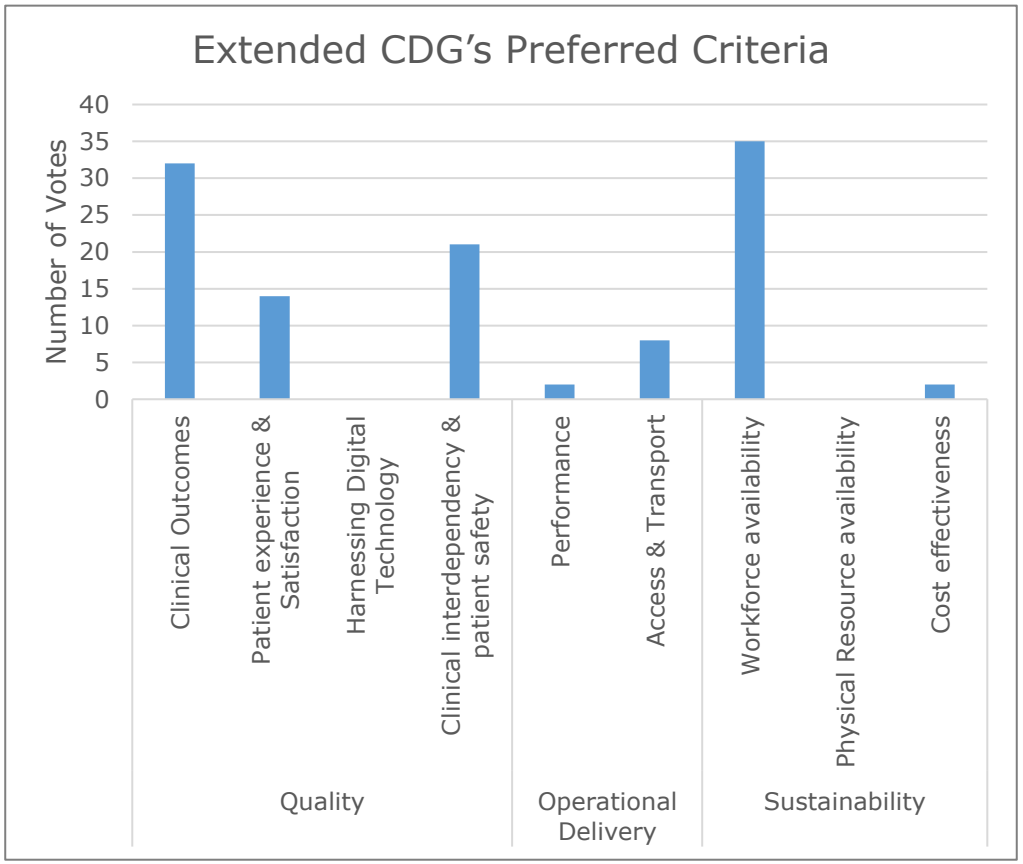
- At the seven patient engagement events in October 2019, the patient and public attending indicated their top five priorities were:
    1. Clinical Outcomes
    2. Workforce Availability
    3. Patient Experience and Satisfaction
    4. Clinical interdependency and patient safety
    5. Access & Transport
- The exercise was repeated with the extended CDG on 16th December, and the results are shown on the next slide.



Preferred Evaluation Criteria – Extended CDG

The extended CDG indicated similar areas of importance to the patient groups

- When delegates at the extended CDG on 16th December 2019 were asked, they indicated that the top four most important Evaluation Criteria to them were:
    1. Workforce availability
    2. Clinical Outcomes
    3. Clinical interdependency and patient safety
    4. Patient experience and satisfaction
    5. Access and transport
- These are the same top 5 criteria as those chosen by the patient groups, with only an alteration in the order of preference.



13. Evaluation Process

Evaluation

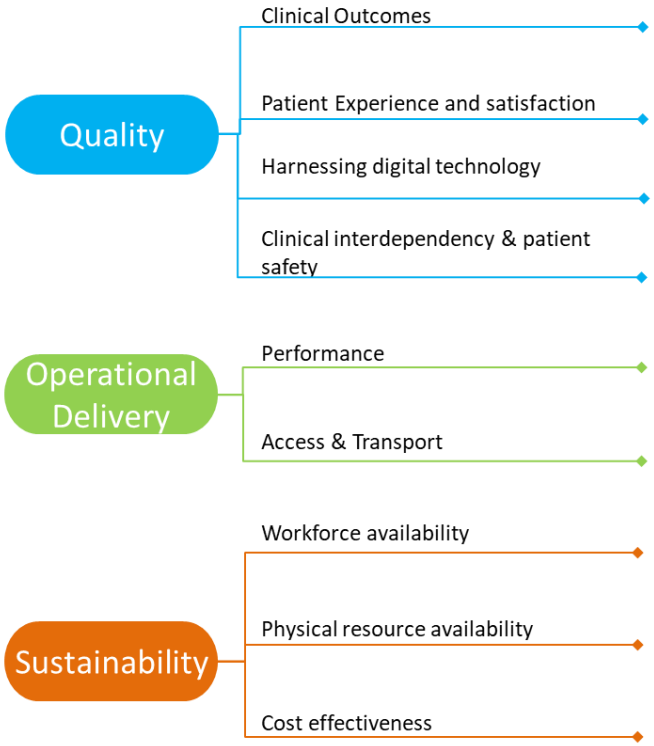
An overview of the evaluation process

- Evaluation is an iterative and continuing process, starting with formative evaluation.
- Not every criterion requires evaluation at the same time. Certain groups are better placed to contribute to some aspects than to others; for example, patients and service users may be more confident in contributing to assessing patient experience than cost effectiveness.
- During the evaluation process, the analytical model can start to generate data indicating the likely impacts of different Service Models. The model is a dynamic tool which will be used iteratively throughout the evaluation process, and can undergo further refinement as, and if required.
- As the “longlist” develops into a “shortlist” during evaluation, additional analysis (for example, of detailed travel times) may help to provide further insights for evaluation.
- As a shorter list is developed, the operational details and practicalities of each service model (for example, hours during which particular services may be operating) can be considered.
- On 16th December 2019 an extended Clinical Design Group met to begin evaluating the 18 Service Models, based on Urgent & Emergency Care, Maternity & Paediatrics.
- Further evaluation will continue in 2020, including the incorporation of Planned Care

Applying the Evaluation Criteria

Each of the Evaluation Criteria may be assessed using different methods

Methods 2 and 3 were used to evaluate the 18 Service Models on the 16th December 2019 with the extended Clinical Design Group. The following slide gives more detail about how this was performed.



1 Already applied

Such as during the sufficiency and compatibility checks.

2 Modelling/Objective score

- Harnessing Digital Technology
- Workforce Availability
- Cost Effectiveness

Analytical modelling outputs can help to inform the evaluation process as a proxy. Some of the evaluation criteria have a subjective as well as objective element, so combinations may need to be utilised.

3 Professional Judgement

- Clinical Outcomes
- Patient experience and satisfaction
- Performance

This is key to making subjective choices about the benefits and dis-benefits of different Service Models.

4 Apply later with future groups

Some evaluation criteria are better suited to be considered by specific groups, such as the Citizens' Panel or the Directors of Finance, or may require further data analysis.

16th December 2019: Overall Evaluation Approach

The extended CDG's evaluation of the 18 Longlist Service Models

The extended CDG considered the Longlist with several different techniques.

1st

Firstly, it was recognised that the S2 service model (a new Humber-wide UEC hospital) had not been considered against the same compatibility checks that the other service models had been. They were therefore asked to consider this service model in light of the compatibility checks (see chapter 9) and decide if it should continue to be evaluated.

2nd

Modelling/Objective score

- Harnessing digital technology
- Workforce availability
- Cost effectiveness

Secondly, they were presented with data generated by the analytical model to consider if this was suitable to use as proxies for cost effectiveness and workforce availability.

A distribution of absolute values from the analytical model were apportioned across a scale of 1-7, to create comparable scores to the Professional Judgement.

Caveats were given that this was preliminary data and the model was not finalised yet. The group was asked to judge if this technique was suitable to use for these evaluation criteria.

Harnessing digital technology was presented as an average score of 4 for all Service Models, as it was deemed that there would be no material difference in the technology solutions utilised in any of them as the need for modernisation of technology was similar in both Trusts.

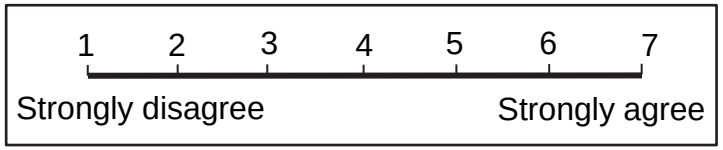
3rd

Professional Judgement

- Clinical Outcomes
- Patient Experience and satisfaction
- Performance

Thirdly, attendees were asked to apply their professional judgement against three specific evaluation criteria, for each of the 18 Service Models.

This was done using a 1-7 Likert scale, and comments were also sought from the group.



The following slides describe the scoring outcomes.

Consideration of S2 (New Humber-wide UEC hospital)

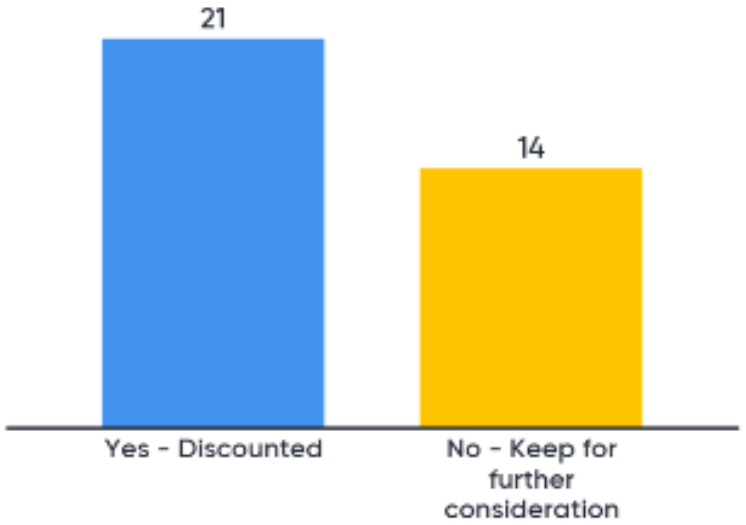
Attendees were asked to indicate whether option S2 should continue to be evaluated

- Using Mentimeter, attendees responded to the question shown to the right. The outcome was that 60% thought it did not meet all of the compatibility checks applied to other service models. Although there was a majority to exclude this, it was not a significant majority. However, this scoring has helped to inform the considerations made in section 13 of this document 'Future Steps'.

Comments made in the wider discussion at this point included:

- Given the inherently long lead time to build a new hospital, this option would not address core issues described in the Case for Change for a long time.
- This option would very likely increase travel times for almost all patients and staff. However in the absence of detailed travel time analysis it was not possible to exclude it on these grounds at this point.
- Patients would need to be advised about how to appropriately access new Urgent & Emergency Care services, which to date have proved difficult to achieve in other initiatives.
- The new hospital would have to replace HUTH as the major trauma centre, meaning that associated services such as neurosurgery may also have to be relocated.

Should Service Model S2 be discounted due to compatibility checks as already applied to other service models?



Clinical interdependency compatibility checks

S2 (new Humber-wide UEC hospital) contradicts 5 & 8 clinical interdependency compatibility checks applied during the session on 13th November. These were:

- That it was **NOT** endorsed that a full acute paediatrics (including in-patients) would be appropriate to be together with a "cold" UEC model on the same site
- That it was **NOT** endorsed that an Obstetric Led Unit (OLU) would be appropriate to be together with a "cold" UEC model on the same site

Summary outcome of model data-based scoring

Cost effectiveness and workforce availability

1= Strongly Disagree

7= Strongly Agree

These proxies were deemed to only give a partial measure of the evaluation criteria. Further work will be required to apply these evaluation criteria more fully.

Service Model	Cost effectiveness	Workforce availability	Average
K1	1	4	3
K8	3	4	4
K3	4	5	5
K6	1	2	2
L1	2	4	3
L8	7	7	7
Q1	1	4	3
Q8	3	4	4
Q3	4	5	5
Q6	1	2	2
R1	2	4	3
R8	7	7	7
E1	1	3	2
E8	3	5	4
E3	3	5	4
E6	1	3	2
S1	-	-	NA
S2	-	-	NA

For these two evaluation criteria, relevant model outputs were considered as a proxy, and a rating system was generated. In this, lower staffing and spending requirements were seen as “desirable”. However, this approach has some challenges:

- **Cost Effectiveness** – As the model bases this on predicted Trust expenditure (of which pay is a major element), lower staff requirements reduce spend. However, this reflects lower activity demands, meaning some fixed costs would remain and income would fall. Commissioners would still be paying for this activity elsewhere. In addition it would also be useful to include consideration of improved productivity & efficiency, perhaps at a later stage of this review process.

- **Workforce Availability** – Using WTEs requirements as a proxy for workforce was not deemed to fully capture the whole criterion which is: “Will we be able to attract, retain and deploy the skilled workforce required to operate the proposed scenario?” Therefore it was thought that there should be further evaluation of this aspect, to incorporate wider staff views and education and training considerations. At a later stage where more operational detail is known of a subset of service models rota information may be incorporated into this assessment, however this is not an element that has been built in to the current model specification.

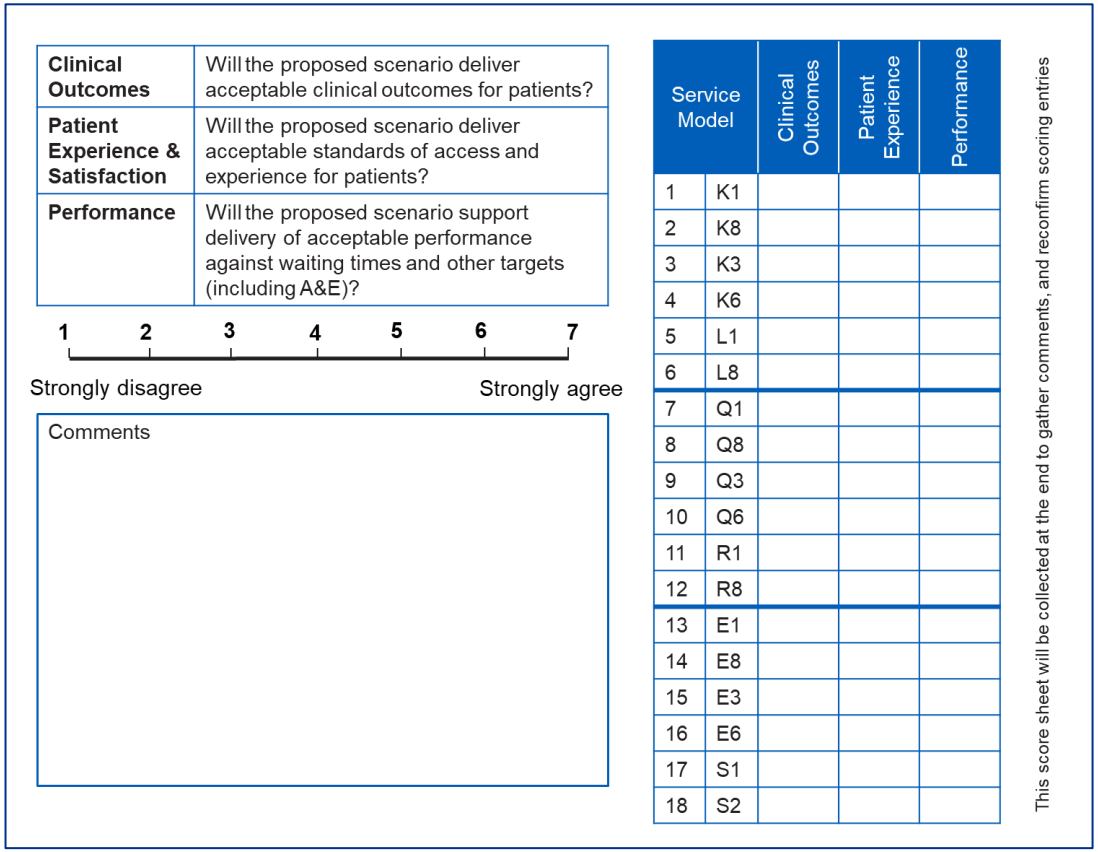
The analytical model on 16th December 2019 was also still under review and the outputs were subject to change.

For these reasons, overall it was felt that the application of these proxies in this manner was not sufficient and therefore further work against these criteria would be required. Subsequent consideration of the impact of these scores on the 18 service models is therefore not included in the conclusions drawn in the following pages.

Professional judgement scoring process

For the initial evaluation on 16th December 2019 attendees used the following method

- Each Service Model was considered by attendees in turn, with the assistance of a pack detailing each Service Model and containing initial modelling data outcomes.
- They applied their professional judgment to each of the three evaluation criteria being assessed.
- Scores were recorded on this score sheet using a 1 to 7 Likert scale.
- Attendees' comments were captured too, both during group discussion and from their individual score sheets.



Clinical Outcomes	Will the proposed scenario deliver acceptable clinical outcomes for patients?
Patient Experience & Satisfaction	Will the proposed scenario deliver acceptable standards of access and experience for patients?
Performance	Will the proposed scenario support delivery of acceptable performance against waiting times and other targets (including A&E)?

1 2 3 4 5 6 7

Strongly disagree — Strongly agree

Comments

Service Model		Clinical Outcomes	Patient Experience	Performance
1	K1			
2	K8			
3	K3			
4	K6			
5	L1			
6	L8			
7	Q1			
8	Q8			
9	Q3			
10	Q6			
11	R1			
12	R8			
13	E1			
14	E8			
15	E3			
16	E6			
17	S1			
18	S2			

This score sheet will be collected at the end to gather comments, and reconfirm scoring entries

Summary of professional judgement scoring

Clinical Outcomes, Patient Experience, Performance

1= Strongly Disagree

7= Strongly Agree

The following slides describe the outcomes of the professional judgment applied to three of the evaluation criteria. As noted on slide 90, due to lack of familiarity of all participants for the process of objective scoring, this will be evaluated more comprehensively at a later stage.

Attendees scored these criteria and overall outputs are shown in the table. However a number of limitations surfaced both during and following the scoring process. These were:

Risk of bias – Attendees included people currently based at both of the two sites for which the current service models indicate possible change, and may have found it hard to separate their personal concerns in this exercise.

Assessment of info provided – To support the application of professional judgement delegates were provided with summary outputs from the analytical model for each option. On the day, it was clear that some delegates found it difficult to fully assimilate this information given the number of options being reviewed.

Average scores - There was a recognition of the risk that aggregate scoring across different criteria may mask variation in the range of scores allocated. This is explored further overleaf.

Performance – Attendees found it more challenging to score performance, as this was an inferred consequence of activity shifting across the system.

Many attendees were keen that the Citizens' Panel was given the opportunity to contribute to discussing and evaluating the Patient Experience and Satisfaction Criterion in particular.

Service Model	Clinical Outcomes	Patient Experience	Performance	Average
K1	4	3	4	4
K8	4	3	4	4
K3	2	3	3	3
K6	3	2	3	3
L1	3	3	3	3
L8	3	2	3	3
Q1	4	3	4	4
Q8	4	3	4	4
Q3	2	2	2	2
Q6	2	2	2	2
R1	4	3	4	4
R8	4	3	4	4
E1	5	4	4	4
E8	5	4	4	4
E3	4	4	4	4
E6	4	4	3	4
S1	5	5	5	5
S2	4	3	4	4

Summary of professional judgement scoring

Clinical Outcomes, Patient Experience, Performance

1= Strongly Disagree

7= Strongly Agree

- The only service model with consistently high scores was S1, with an average of 5.
- Of the 11 models averaging 4, two (K1 and R8) had some very negative scores; two others had broadly evenly distributed scores (R1 and S2); and two had all scores in the middle range (E3 and E6).
- Six models had consistently very negative scores, all of which had an average 2 or 3.

Service Model	Clinical Outcomes	Patient Experience	Performance	Average	Scoring Range & comments
K1	4	3	4	4	>50% of P.E. scores were 1-2
K8	4	3	4	4	>50% of P.E. scores were 3-5
K3	2	3	3	3	>50% of all scores were 1-2
K6	3	2	3	3	>50% of all scores were 1-2
L1	3	3	3	3	>50% of all scores were 1-2
L8	3	2	3	3	>50% of all scores were 1-2
Q1	4	3	4	4	>50% of P.E. scores were 3-5
Q8	4	3	4	4	>50% of P.E. scores were 3-5
Q3	2	2	2	2	>50% of all scores were 1-2
Q6	2	2	2	2	>50% of all scores were 1-2
R1	4	3	4	4	Nil of note
R8	4	3	4	4	>50% of P.E. scores were 1-2
E1	5	4	4	4	>50% of P.E. scores were 3-5
E8	5	4	4	4	>50% of P.E. scores were 3-5
E3	4	4	4	4	>50% of all scores were 3-5
E6	4	4	3	4	>50% of all scores were 3-5
S1	5	5	5	5	>50% of all scores were 6-7
S2	4	3	4	4	Nil of note

1= Strongly Disagree

7= Strongly Agree

Selected Comments from 16th December

Service Model	Clinical Outcomes	Patient Experience	Performance	Average
K1	4	3	4	4
K8	4	3	4	4
K3	2	3	3	3
K6	3	2	3	3
L1	3	3	3	3
L8	3	2	3	3
Q1	4	3	4	4
Q8	4	3	4	4
Q3	2	2	2	2
Q6	2	2	2	2
R1	4	3	4	4
R8	4	3	4	4
E1	5	4	4	4
E8	5	4	4	4
E3	4	4	4	4
E6	4	4	3	4
S1	5	5	5	5
S2	4	3	4	4

"Discounted on basis of Midwifery led unit being unacceptable and more unacceptable at DPOW due to deprivation/risk factors"

"Confusing to patients on where to go, increasing transfers, putting strain on ambulance services."

"Not acceptable politically, from a travelling perspective or from an economic perspective due to shift of activity out of area"

"Do not like at all"

"Unacceptable outflow of patients from area"

"Preferred although potential that workforce issues still remain"

"S1 - Will take a long time so should be considered in parallel to addressing our issues now rather than an alternative"

"S2 – Not possible due to Geography"

P = Potential conflict with principle 8 “Plans for the future provision will include urgent and emergency care and maternity care at Hull Royal Infirmary, Diana Princess of Wales in Grimsby and Scunthorpe General Hospitals”

Service models with least support (1/2)

Based on professional judgement scoring the following service models appear to command least support

Service Models	Av. Score	Distribution of Score
Q3, Q6 Takes out counter-intuitive co-locations Keep 3 emergency front doors but manage admissions and paediatrics *behind the front door* differently between the 2 South Bank sites. Consolidate all births onto 1 South Bank site. The full admissions site is co-located with SSPAU and no births (Q3-DPoW is full site, Q6-SGH). P	2	Lowest scores on three assessed criteria - clinical outcomes, patient experience and performance criteria.
K3, K6 Takes out counter-intuitive co-locations Keep 3 emergency front doors but manage admissions, obstetrics and paediatrics differently between the 2 South Bank sites. The full admissions site is co-located with the cooler obstetrics and paediatrics site - SSPAU and MLU (K3-DPoW is full site, K6-SGH).	3	Low scores on above assessed criteria
L1, L8 Takes out consolidated A&E on SB SGH and DPOW but keeps UTC and MLU Consolidate all emergency care and paediatrics on 2 sites (one North and one South Bank). UTC, MLU, planned care services on the other South Bank site - (L1-DPoW is ‘cooler’ site / L8-SGH) P	3	Low scores on above assessed criteria.
R8 Takes out consolidated A&E at DPoW for SB (keeps UTC but no MLU) Consolidate emergency care for adults and children, and births on 2 sites (HRI and DPoW). Castle Hill – No Change. SGH - UTC, ante natal and post natal, planned care services. P	4	Scored better than L8 on above assessed criteria although service models similar (other than L8 has an MLU and R8 has no deliveries on site).
K1 Takes out the option of full A&E at SGH with cooler site at DPoW, SSPAU and MLU) Keep 3 emergency front doors but manage admissions, obstetrics and paediatrics differently between the 2 South Bank sites. SGH has full UEC, paediatric and obstetrics. DPoW is cooler - transfers out longer stays or specialist care and has MLU and SSPAU.	4	>50% of attendees scored the patient experience criterion as 1 or 2 (very low), implying strong negative concerns.

Rationale in not progressing these service models (2/2)

Based on scoring comments of attendees and related discussions on the day and related implications

Service Model	Rationale and Implications
Q3, Q6	• Counterintuitive clinical services co-location (e.g. in-patient paediatrics on a different site to the "hot" UEC service) raises questions about how well these options meet the clinical interdependency evaluation criterion. • Provision of out-patient maternity services only raises questions about whether these options fully meet the review principle about continuing to offer maternity care at the existing sites
K3, K6	• Counterintuitive clinical services co-location (e.g. in-patient paediatrics on a different site to the "hot" UEC service) raises questions about how well these options meet the clinical interdependency evaluation criterion.
L1, K1	• Although predicted outflows of emergency activity are lower than for L8 & R8, the likely increases travel times for North East Lincolnshire patients raise questions about how well these options meet the access & transport evaluation criterion. • Cold sites with only UTC care raises questions about whether these options fully meet the review principle about continuing to offer urgent and emergency care at the existing sites
L8, R8	• Largest predicted outflows of emergency activity raise questions about how well these options meet the access & transport evaluation criterion. • Implications of this for patient travel may be why patient experience was scored very poorly. • Lower local volumes of patient activity could mean some services would not retain sufficient activity to maintain specialist staff skills (e.g. acute stroke or neonatal care). • Predicted activity outflows could mean that fixed costs in the Humber system are more exposed by the associated loss of patient related income. • Any decisions about these two Service Models at this stage needs to recognise their status as outliers in the initial modelling outputs, which may have influenced attendees' scoring. These preliminary data points may change as the modelling assumptions are further refined and the Analytical Model becomes more sophisticated, but would still lead to greatest predicted outflows.

Should these service models not progress to further evaluation, 10 models would remain

Service models with moderate support (1/2)

Based on professional judgement scoring the following service models appear to command moderate support

Service Models	Av. score	Distribution of scores
R1 Consolidate emergency care for adults and children, and births on 2 sites (HRI and SGH). Castle Hill – No Change. DPoW - UTC, ante natal and post natal, planned care services. P	4	Quality and performance scoring was broadly even across the Likert scale for both, although the models differ from each other (R1 is the mirror image of R8, which was less highly scored). Citizens' panel views generally favoured "hot-warm" models above "hot – cold" (R1, S2).
S1 New South Bank hospital between the existing site locations Consolidated emergency, maternity and paediatrics onto one site +/- planned care. SGH and DPoW might also continue to deliver a range of elective services. P		
K8 Keep 3 emergency front doors but manage admissions, obstetrics and paediatrics differently between the 2 South Bank sites. DPoW has full UEC, paediatric and obstetrics. SGH transfers out longer stays or specialist care and has MLU and SSPAU.	4	This model is the mirror image of K1, which was less highly scored. Reasons for these differences were not clearly articulated.
Q1, Q8 Retain 3 emergency front doors, but manage admissions and paediatrics differently between the 2 South Bank sites and consolidate births onto 2 sites (one North and one South Bank) P	4	For these four service models, over 50% of attendees scored the patient experience criterion as 3-5 (middle range) which may indicate that these options were thought to require less change from the status quo. Note: Q1 & 8 only support out-patient ante and postnatal care; E1 & 8 also have a standalone midwife led unit.
E1, E8 Retain 3 OLUs and emergency front doors but manage admissions and paediatrics differently between the 2 South Bank sites (one full and one with a short stay paediatric unit)		

Service models with moderate support (2/2)

Based on professional judgement scoring the following service models appear to command moderate support

Service Models	Av. score	Distribution of scores
E3, E6 Retain 3 OLUs and emergency front doors but manage admissions and paediatrics differently between the 2 South Bank sites (one full and one with a short stay paediatric unit). The full adult admissions site is co-located with the cooler paediatrics site - SSPAU and NICU level 1 OLU (K3-DPoW is full site, K6-SGH).	4	For both these service models, over 50% of attendees scored all three criteria as 3 to 5 (middle range) which may indicate a lack of any particular concerns rather than an active preference for these models.
S2 New Emergency hospital for the Humber – location unknown Many of the principles of its functioning could be based on those seen at the Cramlington Specialist Emergency Care hospital Elective care, outpatients and diagnostics would all continue in the current sites	5	The concept of a new hospital at a neutral location scored most strongly, but further work would be needed to understand the likely impacts on travel for staff and patients as well as the likely costs and time to achieve this change. Citizens' panel feedback was that this was unrealistic and that a site in the middle of two population centres was the worst option, as it would be inconvenient for most people.

These issues should be explored in the next stages of evaluation. The impact of the upcoming work on planned care may bring further insight

Scoping for the next phase

Further development of Service Models, analysis and evaluation

The Executive Oversight Group's view on 8th January 2020 was that further work should take place, building on the 16th December 2019 extended CDG session, before a final shortlist is identified. This could possibly include further refinement of options (for example operational aspects), modelling and further evaluation. Suggestions for how this could be achieved include:

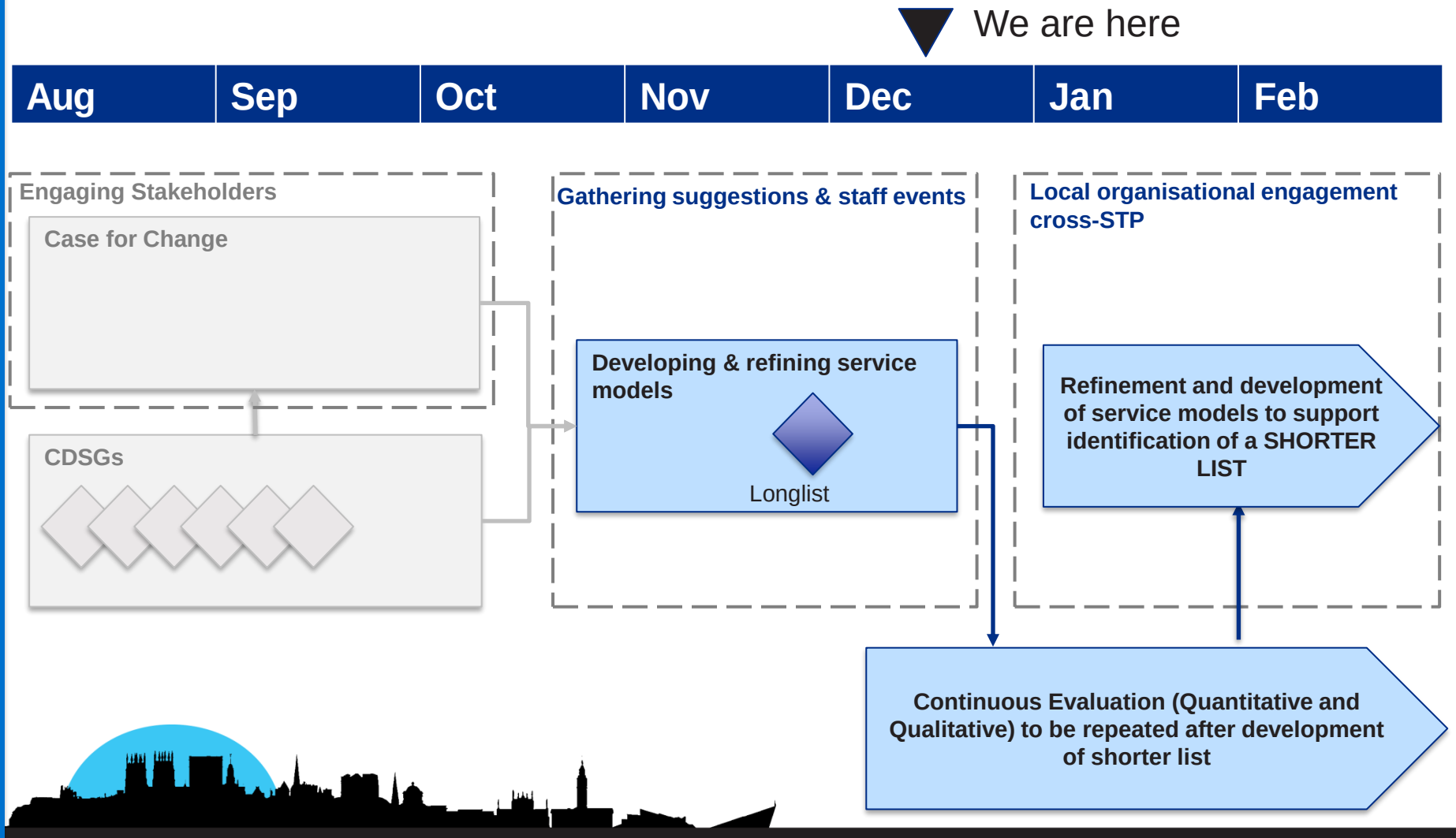
- Further engagement with clinical and operational teams to socialise the Service Models and generate discussion more widely
- Developing the operational nuances to refine the models further from high level to give a more detailed picture for stakeholders to evaluate more closely
- Refine the data model to provide further information (based on more operational detail), and consider how to make it easier for people to understand and use the data outputs*****
- Perform detailed travel time analysis*****
- Further consideration of how best to ensure the right mix of people evaluate particular criteria.
- Setting realistic expectations and aspirations for the EOG with regards the evaluation process and next phase
- Further evaluation of Service Models. Suggestions include:
    - Continuing to undertake evaluation
    - Considering whether site specific or site agnostic presentation of Service Models is best
    - Presenting data in different ways to aid interpretation
    - Longer time frames both within the evaluation session and in order to socialise more widely.

***typically this is undertaken on a shortlist of options rather than a longlist**

14. Future steps

Implementation Plan

A programme implementation plan has been developed to support the next phase of the Review. Currently staff and clinical engagement/ evaluation is taking place prior to feedback from the Clinical Senate in Jan 2020. A further period of refinement and engagement is likely to be required following this which may take several months



DRAFT: For discussion only

Plan for progressing the review

NB this will continue to be developed further by the PDG

Critical path →

2020 | 2021

Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct

Service Planning

- Activity modelling PCBC
- PCBC narrative
- Integrated outpatients imp.
- Phase 1 specialties*

PURDAH

*Cardiology, Complex Rehab, Oncology, Neurology, Stroke, Critical Care

Implementation – non-capital, non-consultation elements

- Service planning and implementation
- Contract planning and specification

PURDAH

Implementation planning– non-capital, consultation elements

- Contract planning and spec.

Assurance

Stage 1 Gate – Strategic Sense Check

Stage 2 Gate – Assurance Checkpoint

Clinical Senate

- Regulator relationship management
- Ongoing regulator briefings
- Monthly reporting cycle
- Independent advice

Business Case

- Iterate models
- Travel time analysis
- Further service model evaluation
- Mobilise Resource

Short list of viable service models for PCBC

PCBC

- PCBC writing and drafting
- QIA, EIA, SIA impact analysis
- Wider impact on health economy
- Transport analysis, insights & solutions
- Financial accounting & system finance, funding sources
- Capital planning, revenue impact
- Activity modelling

Detailed options appraisal

Articulate preferred option for Consultation

DMBC

Begin

SOCs

Begin

Comms & Engagement

Planning

Planning

- Agree approach for consultation
- Agree methodology for consultation

Cons. Institute

- QA Cons. Plans

Consultation documents and approach

- Consultation document (full & summary, easy read, video)
- Consultation website, Digital & social media content
- Reactive Q&A, clinician media training

Statutory Decisions

Consultation

- Independent analysis
- Interim/ Final reports

Post-Cons.

- Reflect on outcomes
- Update plans

Engagement

- Mobilise Resource
- Refine options with staff & citizens & LAs
- Ongoing broad engagement with stakeholders mapped
- Continued informal testing with Local Authorities (and key local MPs) on service models
- Options refinement in informed by PCBC content
- Statutory Bodies
- MPs HWBB, OSC reports
- Public events
- Telephone & social media survey
- Hard to reach outreach
- OSCs

NB this will continue to be developed further by the PDG

Recommendations & key actions (1/3)

The following recommendations and key actions underpin delivery of the forward Review plan

Theme	Key actions
Engagement	Engage with staff regarding the workforce criteria, taking into account travel and transport for staff and its impact on retention. This is likely to provide better information when there are a smaller number of options (to provide more meaningful engagement).
Engagement	Convene Citizens' Panel to evaluate Patient Experience & Satisfaction and Access & transport criteria on the current "longlist" of Service Models, and as part of development of the short list.
Engagement	Share emerging thinking with neighbouring health & care systems to assess concordance with their plans
Engagement	Engage with YAS and EMAS to assess concordance of service models with their plans
Governance	Confirm overall plans for the review (based on Roadmap in Part 1 chapter 14) and detailed plans for the next 6-12 months
Governance	Every effort should be made to mobilise resource with required skills and capacity to support the agreed forward plans at the earliest opportunity. This should be no later than the end of the financial year (FY 19/20)

Key actions (2/3)

Theme	Key actions
Governance	Establish new governance forums as required to support the next phase of the program delivery
Governance	Consider how to best integrate the various HASR work-streams (eg cardiology) and also relevant STP-wide work streams (eg OPs)
Governance	CDG to confirm the details of the Humber clinical services interdependency matrix outlined in earlier slides Feb 2020.
Operations	Begin to develop high level operational detail of options at shortlist stage to aid both the ability to engage with organisations about the models but also to better quantify and assess their merits. This could include: • Changes to staffing models reflecting aspects of the Acute Care Hubs such as Consultant job planning • Staffing skillmix planning alterations such as greater use of ACP, ANP, paramedic and ACCP for emergency, paediatric and ICU rotas • Pathway development building on aspects of care models such as specialist emergency care seen at Cramlington hospital • The ability to implement digital enablers such as interoperability arrangements between the two Trusts
HCV Digital Priorities	Start to identify digital solutions that could help address identified challenges, and ensure this work in linked into any similar STP-wide considerations including the development of the Y&H LHCRE
HCV Digital Priorities	Roll out Patient Knows Best patient portal at NLaG
HCV Digital Priorities	Identify opportunities to increase the use of health & care videos and video consultation software
HCV Digital Priorities	Undertake digital workshop in Jan 2020, Outpatient workshop in March 2020 to identify digital opportunities and feed in to how preferred service models are operationalised.
Workforce	Work with Health Education England and HR Directors to facilitate consideration of how future workforce needs may be met.
Finance	Undertake detailed financial evaluation when granular financial information available at shortlist stage (it would be infeasible to undertake this detailed assessment with the current longlist)

Key actions for further analysis (3/3)

Theme	Key actions
Analysis	Undertake further modelling if required, to quantify the impacts of the new hospitals described in Service Models S1, and possibly S2
Analysis	Once a short list is identified, plan and conduct more detailed modelling to consider the chosen service models in greater detail, as required
Analysis	Confirm if further information and/or analysis is required to evaluate 'cost effectiveness' linked to loss of income associated with shifts in activity and potential productivity information
Analysis	Consider modelling performance outcomes of shortlisted service models (which will also help determine capital requirements)
Analysis	Undertake detailed transport analysis of shortlisted service models which could be used for PCBC and engagement with Patient and Travel & Transport groups
Analysis	Undertake further modelling to quantify capital costs of shortlisted service models