

Greater Manchester Cardiac Surgery and Arterial Vascular Surgery Services

GM Joint Health Scrutiny Committee

Introduction and Overview

- This presentation provides an overview of the clinical case for change and the preferred way forward for public engagement on:

Greater Manchester Cardiac Surgery
Services

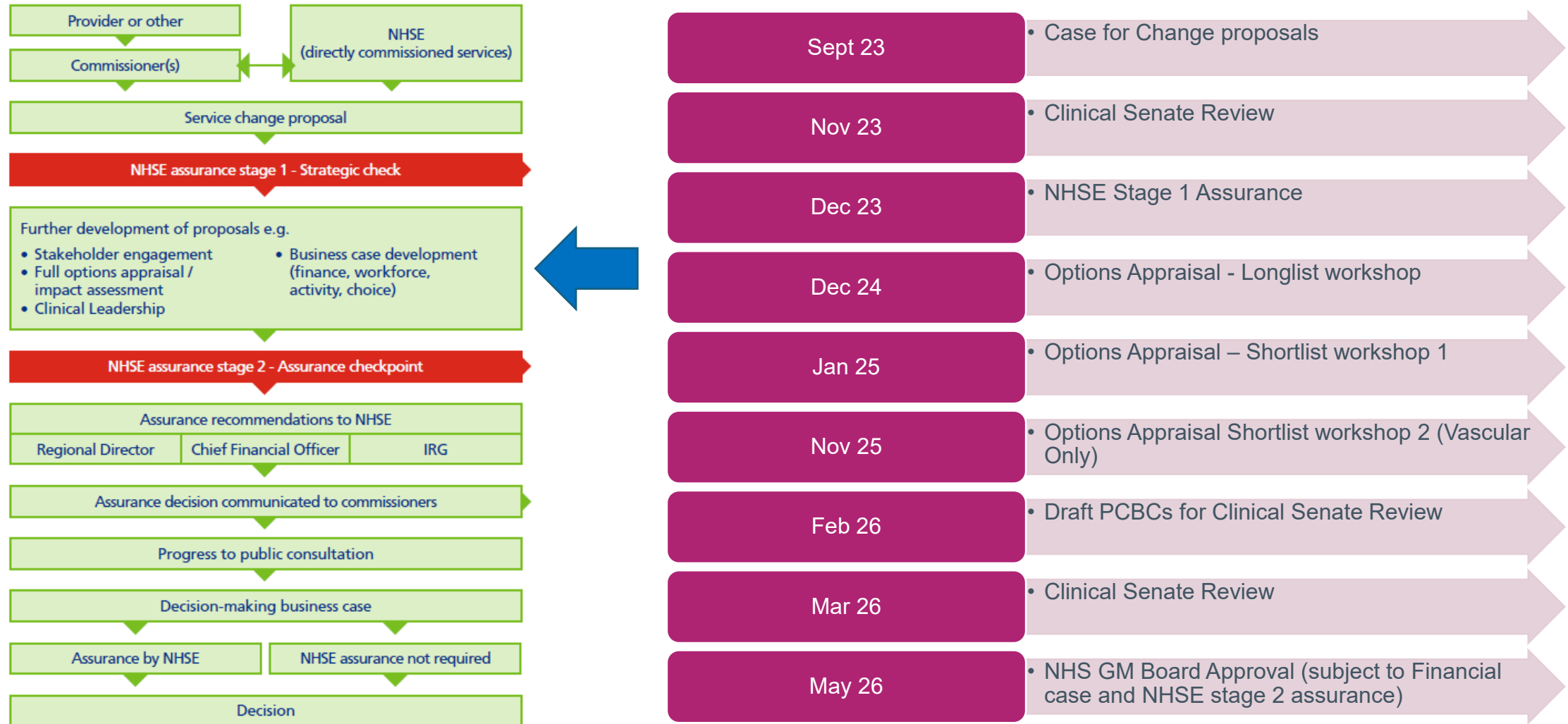
Greater Manchester Arterial Vascular Surgery
Services

Who we are and how we are presenting

- **Commissioner-led system view**
- GM Integrated Care Board as sponsoring organisation
- Supported by provider clinical and strategy leadership
- Presenting a **system position**, not individual organisational cases

“This is about what is best for patients and the Greater Manchester and East Cheshire systems.”

Where we are – service change process and timeline



Programme Overview and Scheme Dependencies

Two PCBCs developed in parallel for **Cardiac Surgery** and **Arterial Vascular Surgery** because they have material clinical and operational dependencies:

- Both services face **shared drivers**, including workforce fragility, sustainability, clinical standards and resilience
- The services are **clinically interdependent**, with dependencies across critical care, diagnostics and emergency pathways
- Interim service changes during COVID required **shared use of theatres (including specialist hybrid theatres) and bed capacity** at MRI and Wythenshawe
- Decisions on the **long-term configuration of services have combined implications for NHS infrastructure**, particularly at MRI
- Reviewing the services together supports a **system-wide clinical view** and avoids siloed decision-making

Cardiac – Summary of the PCBC

Scope of the PCBC for Cardiac Services

*This PCBC focuses on **where cardiac surgery is delivered**, not on **who can access care or how patients are referred**.*

In Scope

- Configuration and location of **adult cardiac surgery**
- Clinical safety, quality and sustainability of the proposed model
- Management of **key clinical interdependencies**, including:
 - Vascular surgery
 - Thoracic surgery
 - Major trauma
 - Maternity cardiology
 - Renal services
- Patient, population and equality considerations **arising from the surgical configuration**

Out of Scope

- Wider cardiology pathway redesign
- Referral routes or access to local cardiology services
- Operational delivery detail beyond clinical safety and assurance

Cardiac Services – System context

- MFT provides secondary and tertiary care cardiology and cardiac surgery services; the combined activity makes MFT one of the largest providers of specialist cardiac care in the country.
- These services are commissioned across MFT, Wythenshawe and MRI sites. In the pandemic, elective activity moved to Wythenshawe, in July 2020, all non-elective surgery was centralised in August 2024.
- The GM Cardiac Network also covers East Cheshire, so Macclesfield area patients and East Cheshire Hospitals Trust patients are served by MFT cardiac services.
- MFT is also one of five national heart and lung transplant units in the UK, also providing ventricular assist devices (artificial hearts) for NW England and beyond which is provided on the Wythenshawe site.
- Clinical co-dependencies with Maternity, Thoracic, and Major Trauma services.



Population Need

The size, age profile and cardiovascular risk of the GMEC population require a cardiac surgery service that is resilient, specialist-led and able to operate safely at scale.

Key Figures

- Adult population served (18+) across Greater Manchester and East Cheshire: ~2.6 million
- One of the largest cardiac surgery catchments in England
- Greater Manchester: high cardiovascular disease burden, strongly associated with deprivation
- East Cheshire: older population profile, with around one-third aged 60+

Clinical Implications

- Sustained and growing demand for specialist cardiac surgery
- Increasing case complexity and peri-operative risk
- Higher proportion of urgent and emergency presentations
- Requirement for resilient rotas, specialist MDTs and critical care capacity

Why Change is Required - Summary of Drivers

1. Changes in the volume, nature, complexity and urgency of Demand

- Increasing age of the population combined with major health inequalities
- long waiting times for these treatments resulting in delays in access to effective treatments and patient outcomes.



2. Variation in Services

- Historically, two services working in competition rather than collaboration, resulted in variation, MRI had the longest waits pre-pandemic.
- Variation in access to TAVI site-dependent clinical pathways.



3. Clear, well supported national service specification and clinical standards

- Unmet GIRFT requirements
- 7-day consultant care and a Consultant of the Week cannot be delivered at two sites
- EP and TAVI need to be co-located with surgery.



4. Challenges in recruiting, developing and maintaining the necessary MDT workforce

- Cardiac anaesthesia, perfusion, cardiac theatre nurses and cardiac physiologist's shortages.
- GM's medium scale services have led to recruitment and retention problems.
- Risk and fragility to cardiac anaesthesia at the MRI led to urgent change.

5. Education, clinical development and research

- Two-site tertiary service provision across MFT for EP, TAVI and Cardiac surgery did not provide the ability to deliver strong educational programmes.
- Opportunities to harness innovation and research in a larger scale department.



Taken together, these factors mean that the previous two-site model created growing risks to patient safety, service resilience and long-term sustainability.

Current service configuration – context for clinical assurance

What has already changed

- Adult cardiac surgery is currently delivered as a **single-site service**
- Elective, non-elective and emergency surgery have been **consolidated at Wythenshawe**
- EP and TAVI activity has been consolidated since 2021
- These changes were implemented in response to **clinical safety and workforce sustainability pressures**, including during COVID

Why this matters for assurance

- The proposed model is **not theoretical**
- The service has been operating in this configuration for a sustained period
- The PCBC is testing whether this configuration is **clinically safe, appropriate and sustainable as a permanent model**
- The Clinical Senate is being asked to advise on the **robustness of an existing configuration**, rather than a speculative future reconfiguration

Proposed Model Of Care

Clinical Principles

Care delivered in line with **national standards and GIRFT recommendations**

Focus on **patient safety, quality and consistency of outcomes**

Multidisciplinary, consultant-led decision-making

Care delivered at the **appropriate scale** for complexity and risk

Core Features

Adult cardiac surgery delivered as a **single, consolidated surgical service**

Integrated delivery of:

- Elective, urgent and emergency cardiac surgery
- TAVI and complex electrophysiology

Supported by:

- Specialist cardiac theatres
- Cardiothoracic critical care
- Stable, sustainable specialist rotas

Networked Delivery

Diagnostics, outpatient care and follow-up continue across **network hospitals**

Standardised pathways and MDTs operating across GM & East Cheshire

Patients receive specialist surgery centrally, with **local access maintained where clinically appropriate**

Clinical Intent

To deliver safe, resilient and sustainable cardiac surgery for a large, high-risk population, while maintaining local access to non-surgical elements of care

Options Development



- A wide range of potential service configurations was identified and tested
- Options were narrowed from a **long list to a short list** using clinically led criteria and stakeholder engagement
- Appraisal focused on:
 - Clinical safety and quality
 - Workforce sustainability
 - Alignment with national standards and GIRFT
 - Deliverability within the GM system

Option	Description	Outcome	Rationale
4a	Single cardiac surgery Centre: Wythenshawe	Included in PCBC	High positive response rate (98.9%) ranked 1st. Strong agreement it met requirements and standards. Group agreed this was the preferred way forward.
4d	Single cardiac surgery Centre: New build	Excluded at Shortlisting	Positive response rate was just over 50%, but highest variance in scoring. Requires capital investment with no identified funding stream; discounted in line with NHSE guidance.
1	Two centers delivering elective and non-elective: MRI and Wythenshawe	Excluded at Shortlisting	Very low positive response rate (7.8%), ranked 3rd. Majority scored as 'does not meet' or 'meets some' criteria.
3a	Hot/cold split: Wythenshawe elective, MRI non-elective + TAVI/EP	Excluded at Shortlisting	Lowest positive response rate (4.4%), ranked 4th.

Preferred Option – Clinical Rationale

Single adult cardiac surgery service delivered at Wythenshawe Hospital, supported by a networked model of diagnostics, outpatient care and follow-up across GM & East Cheshire

Clinical rationale:

- Provides the **safest and most resilient configuration** for a large, high-risk population
- Enables **stable specialist rotas** in cardiac surgery, anaesthesia and perfusion
- Supports delivery of **elective, urgent and emergency surgery** within a single, coherent service
- Aligns most strongly with **national standards and GIRFT recommendations**
- Reduces unwarranted variation through **standardised MDT working and governance**

Interdependencies, Risks and Mitigations

Key clinical interdependencies

- **Vascular surgery** – shared aortic pathology, endovascular support and workforce interfaces
- **Thoracic surgery** – shared cardiothoracic workforce interfaces and access to specialist thoracic support for complex cases
- **Major trauma** – low-frequency, high-risk cardiothoracic trauma support
- **Maternity cardiology** – specialist input for high-risk pregnancy
- **Renal services** – peri-operative support for complex cardiac patients

Principal clinical risks identified

- Reliance on **cross-site working** for low-frequency specialist support
- Potential impact on **time-critical escalation** for rare emergency scenarios
- Workforce dependency in highly specialised roles
- Travel and access considerations for specific patient groups

Mitigations and learning to date

- Risks assessed based on the **current operating configuration**, not a theoretical model
- Defined **clinical escalation and in-reach arrangements** in place for key dependencies
- Service has been operating safely in this configuration for a sustained period
- No identified evidence of compromised patient safety to date
- Ongoing monitoring through clinical governance and network arrangements

Engagement and Impact – Clinical Considerations

Engagement to date

- Ongoing engagement with **clinicians, patients, Healthwatch and system partners**
- Engagement has informed:
 - The case for change
 - The development and appraisal of options
 - Identification of key risks and mitigations
- Feedback has consistently emphasised **safety, quality and service sustainability** as priorities

Impact assessment

- **Quality Impact Assessment** undertaken to test safety, effectiveness and experience
- **Equality and Health Inequalities Impact Assessments** completed
- **Access and travel impacts** assessed, with mitigations identified for groups most likely to be affected

Clinical framing

Engagement and impact have been considered insofar as they affect clinical safety, equity of access and quality of care. Clinical Senate advice is sought on whether these impacts are appropriately understood and addressed.

Vascular – Summary of the PCBC

Scope of the PCBC for Vascular Surgery

This PCBC focuses on where inpatient arterial vascular surgery is delivered, not on who can access care or how patients are referred, which remain unchanged within the GMEC Vascular Network.

In Scope

- **Configuration and location of inpatient arterial vascular surgery**
- **Clinical safety, quality and sustainability** of the proposed model
- **Management of key clinical interdependencies**, including:
 - Cardiac surgery
 - Major trauma
 - Interventional radiology
 - Renal services (including dialysis)
 - Diabetes and diabetic foot services
 - Stroke services
- **Patient, population and equality considerations arising from the surgical configuration**

Out of Scope

- **Wider vascular pathway redesign**, including prevention, community and long-term condition management
- **Referral routes or access to local vascular services**, including outpatient clinics, diagnostics, day-case procedures and diabetic foot services
- **Operational delivery detail beyond clinical safety and assurance**

Vascular – System Context



- **MFT provides secondary and tertiary arterial vascular surgery services** through the **Greater Manchester & East Cheshire (GMEC) Vascular Network**, making it one of the largest vascular services in the UK.
- Inpatient arterial vascular surgery is currently delivered across **Manchester Royal Infirmary (MRI)** and **Royal Oldham Hospital (ROH)**, supported by a wider network of local hospitals providing outpatient, diagnostic and day-case care.
- Vascular services are delivered through a **networked hub-and-spoke model**, with complex and time-critical inpatient arterial surgery provided at arterial centres and most care delivered locally.
- The **GMEC Vascular Network includes East Cheshire**, with patients from the **Macclesfield area and East Cheshire Hospitals Trust** accessing specialist arterial surgery through GM services. It excludes Wigan which is served by Preston Arterial Centre.
- Operates as a **networked service with a single vascular clinical team**, supported by unified MDT working and clinical governance across GMEC.
- Arterial vascular surgery has **key clinical co-dependencies**, including **cardiac services, interventional radiology, major trauma, renal services, diabetes and stroke services**.

Population Need

Meeting the vascular health needs of the GMEC population requires a service configuration that responds to **high disease burden, inequality and increasing clinical complexity**.

Key Figures

- **Cardiovascular disease is a leading cause of premature death** across Greater Manchester
- Residents in the **most deprived communities are up to 4× more likely** to die from CVD than those in the least deprived
- GM has 3rd highest proportion of **most deprived** areas of ICBs
- Around **29% of the GM population** is from minoritised ethnic groups, many with higher vascular risk
- The population aged **65+** is **projected to increase by ~30%**, increasing vascular disease burden
- C.3,500 inpatient and day case vascular admissions

Clinical Implications

- Vascular patients increasingly present with **complex disease, frailty and multi-morbidity** (including diabetes and renal disease)
- While some procedure volumes are stable or declining, there is a **shift towards more urgent and emergency presentation**
- Outcomes for arterial vascular surgery are strongly linked to **specialist volume, workforce resilience and access to critical co-dependencies**
- Population need is best met through **local network care for most patients**, supported by a **resilient specialist arterial hub** for complex inpatient surgery

Why change is required - Summary of Drivers

1. Changes in the volume, nature, complexity and urgency of demand for vascular care

- Downward trend in demand
- Increased complexity and urgency
- More out of hours operating and intensive on-call
- Harder to maintain minimum volumes, maintain skills, train registrars

2. Variation in services across GMEC

- In provision and pathways across network hospitals and localities
- In access to interventional cardiology and renal support at arterial centres
- Scope for improvement against NVR quality and outcome metrics
- Health inequalities

3. Challenges in recruiting, developing and maintaining the necessary MDT workforce

- Shortage of vascular specialists, especially interventional radiology
- Ability to recruit and retain other professions in the MDT

4. Service specification and clinical standards

- Network model of provision
- Population served
- Consultant numbers
- Minimum activity volumes

5. Education, clinical development and research

- Aim to offer high quality training programmes
- Developing subspecialisation
- Clinically research active hospitals have better patient care outcomes



Urgency Update (recent development at ROH)

- **Clinical facilities risk at ROH:** the hybrid theatre used for vascular surgery is at “end of life” and requires replacement, creating a material and increasing clinical risk to service resilience and patient safety.
- **Interventional radiology fragility:** reliance on a locum-delivered IR rota (with gaps) undermines sustainability and 24/7 resilience.
- **Research / Innovation / Education:** the current two-site arterial centre configuration constrains **vascular-specific research, innovation and higher-level training**, due to limited scale, case-mix and critical mass of specialist arterial activity.
- These issues **reinforce the need to progress to a sustainable single-hub configuration** (set out next), rather than relying on the current two-site arrangement.

Proposed Model Of Care

Clinical principles

Care delivered in line with **national service specifications and clinical standards**

Patient safety, outcomes and equity prioritised over site-based provision

Specialist care provided where **volume, workforce and co-dependencies** can be sustained

Core features

Single arterial hub delivering all emergency and elective *inpatient* arterial vascular surgery

24/7 specialist service, with sustainable vascular surgery and interventional radiology rotas

Access to **critical co-dependencies**, including critical care, renal, cardiac and trauma services

Networked delivery

Hub-and-spoke vascular network across GMEC

Network hospitals continue to provide Outpatient clinics, Diagnostics and surveillance, Day-case procedures, local vascular services which can include diabetic foot

Clear pathways for referral, transfer and repatriation across the network

Clinical intent

The clinical intent is to deliver consistently safe, high-quality specialist arterial surgery by centralising complex inpatient care within a resilient arterial hub, while maintaining local vascular care across the GMEC network.

Options Development



- A **clinically led options appraisal** was undertaken to identify service configurations that could **safely meet population need** and **national standards**.
- Options were developed across **three, two and single arterial centre models**, reflecting realistic configurations within GMEC.
- Each option was assessed against **agreed spending objectives and critical success factors**, including
 - Clinical quality and safety
 - Workforce sustainability
 - Access to critical co-dependencies
 - Deliverability within existing estate and resources
- A **proportionate financial assessment** was included to test feasibility, without driving clinical decision-making.
- This process resulted in a **clear emerging preferred option**, supported by strong clinical consensus.

Emerging Preferred Option resulting from Scoring

Option	Description	Outcome	Rationale
3a	Single centre option: MRI	Included in PCBC	Ranked 1st with 98.4% positive response rate and low entropy, indicating strong consensus. Stakeholders supported taking this forward to public consultation; noted that assumptions (e.g., demand/capacity) must be worked up in the PCBC, and a thorough Equality Impact Assessment is required.
2c	Two centre option: MRI and Alternative GMEC location (Salford Royal)	Excluded	Ranked 2 nd although the positive response rate improved (from 32.4% to 42.1%) and scorer agreement increased, the scores remain insufficiently positive to justify taking this option forward to the PCBC. Key concerns include persistent negative or neutral scoring across several critical success factors and spending objectives, ongoing uncertainty regarding financial impact, and a lack of clear consensus among stakeholders. As a result, the recommendation is to exclude this option from further consideration.
2b	Two centre option: MRI and Oldham (rebalanced caseload)	Excluded	Ranked 3 rd with 22.7% positive responses; majority scores “does not meet” or “meets some.” Considered as a potential “do minimum” comparator but not taken forward to consultation.
2a	Two centre option: MRI and Oldham (current state)	Excluded	Ranked 4 th with 17.0% positive responses; most criteria scored “does not meet” or “meets some.” Recognised as the baseline for PCBC economic modelling but not taken forward to consultation.

Preferred Option

A single arterial centre at Manchester Royal Infirmary (MRI) delivering all emergency and elective inpatient arterial vascular surgery, supported by a GMEC-wide vascular network.

Clinical rationale

- **Delivers the safest clinical model**, concentrating complex and time-critical arterial surgery where procedural volumes, senior decision-making and co-dependencies can be sustained.
- **Meets national service specifications and clinical standards**, including minimum activity volumes, consultant numbers and 24/7 vascular surgery and interventional radiology cover.
- **Provides the most sustainable workforce model**, reducing rota fragility and supporting training, subspecialisation and recruitment.
- **Improves consistency and equity of care**, reducing unwarranted variation in access and outcomes across GMEC.
- **Maintains local vascular services** for the majority of patients, with outpatient, diagnostic, day-case and diabetic foot care continuing across the network.

Interdependencies, Risks and Mitigations

Key clinical interdependencies

- Critical care (Level 3)
- Vascular interventional radiology (VIR)
- Renal services (including dialysis)
- Interventional cardiology and cardiac surgery
- Diabetes and diabetic foot services
- Major trauma services
- Rehabilitation and prosthetics

Principal clinical risks identified

- Reliance on a single arterial centre
- Workforce transition and rota disruption
- Pressure on critical care and theatre capacity
- Risks to patient flow and repatriation
- Increased travel for a minority of patients

Mitigations

- Co-location of critical co-dependencies at the arterial hub
- Sustainable consultant and VIR rotas
- Network-wide referral, transfer and repatriation pathways
- Retention of local vascular services across GMEC
- Business continuity and mutual aid arrangements
- Ongoing Equality Impact Assessment and monitoring

Engagement and Impact

Engagement to date:

- **Clinically led engagement** across GMEC vascular surgeons, interventional radiologists and MDTs
- **Patient and public involvement**, including surveys and representation in options appraisal
- **System partner engagement**, including NHS England, GM ICB and Healthwatch
- **Clinical Senate input** has informed development of the case for change, model of care and appraisal approach
- Engagement has **directly influenced the shortlist**, including refinement and exclusion of options

Key impacts identified:

- **Clinical quality and safety**: improved through consolidation of complex arterial surgery and access to full co-dependencies
- **Patient outcomes and equity**: reduced unwarranted variation across GMEC, with most care remaining local
- **Workforce sustainability**: more resilient rotas and improved training and recruitment environment
- **Patient experience**: majority of pathways unchanged; travel impacts limited to a small cohort and mitigated
- **System resilience**: clearer network pathways for referral, transfer and repatriation

Engagement has shaped both the preferred option and the mitigations, and impacts are considered manageable and proportionate within a networked model of care.

Process and next steps

