WELCOME

THINK BEYOND SEPSIS

Thursday 23 January, 2025

Dr Louise Page
MNSI

Dr Charlotte Frise
Imperial College Healthcare NHS Trust

Clare Luby
MNSI

Dr Bethan Goulden
University College London Hospital

MNSI
Maternity & Newborn Safety Investigations

Webinar series: Exploring learnings from MNSI safety investigations

Housekeeping

- We welcome your questions, please put these in the Q&A box, not the chat
- Please use the chat box to engage in the webinar and with one another
- Your sound and video will not be visible during the webinar
- The session is being recorded and will be sent a short while after the session
- If you want to discuss anything further, please email enquires@mnsi.org.uk
- The chat is moderated, please use kind and respectful language
- We will share slides, resources and a recording after the session

MNSI
Maternity & Newborn Safety Investigations

MNSI overview

Purpose

- *To provide independent, standardised and family focused investigations of maternity patient safety events*
- *To provide learning to the healthcare system via reports at local, regional and national level*
- *To analyse data to identify key trends and provide system wide learning; be a system expert in standards for maternity safety investigations and to collaborate with system partners to escalate safety concerns*
- *MNSI focus on systems and processes that impacted on care, we do apportion blame or liability*

HSIB maternity investigation programme

Started 2018

Ended 30 Sept 2023

Maternity and Newborn Safety Investigations (MNSI) programme

Born 1 October 2023

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MNSI investigation criteria

- *Babies*
  - *Term, following labour*
  - *Intrapartum stillbirth*
  - *Early neonatal death*
  - *Severe brain injury*

- *Maternal deaths*
  - *During pregnancy or up to 42 days from the end of a pregnancy*
  - *Direct & indirect deaths*
  - *Excludes accidental, homicide and suicide*

The Care Quality Commission (Maternity and Newborn Safety Investigation Programme) Directions 2023 (publishing.service.gov.uk)

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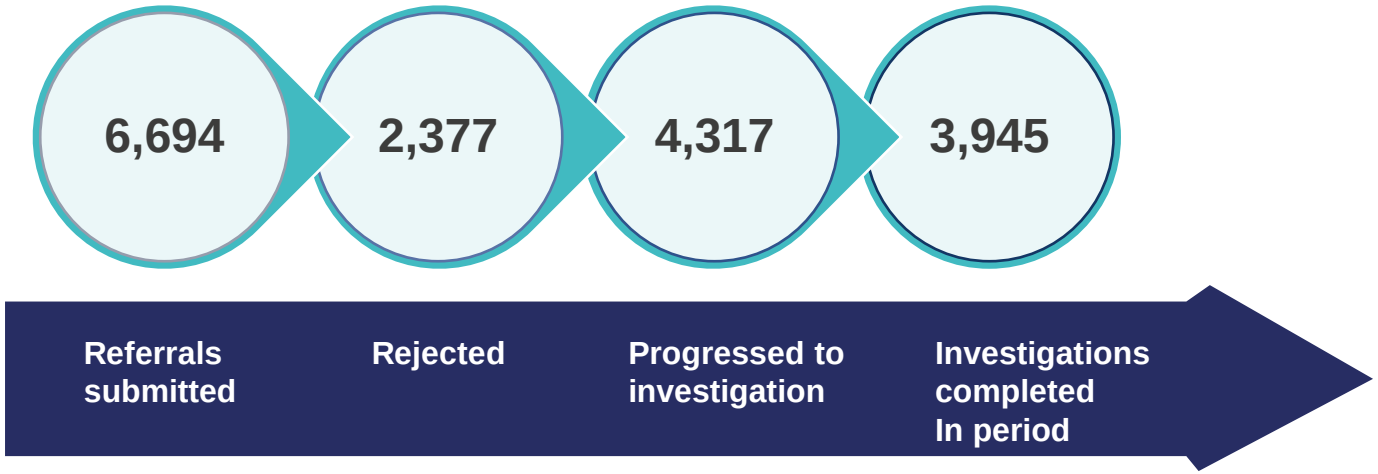
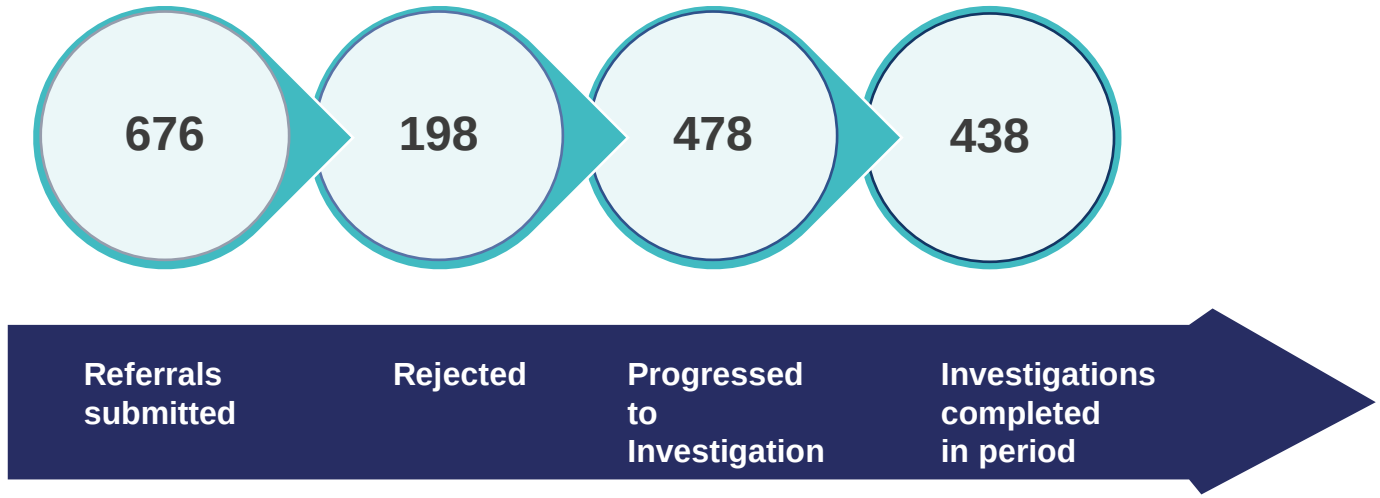
Maternity referrals: summary

01 April 2018 – 31 December 2024

Programme to date
01 Apr 2018 – 31 Dec 2024



Year to date
01 Apr 2024 – 31 Dec 2024



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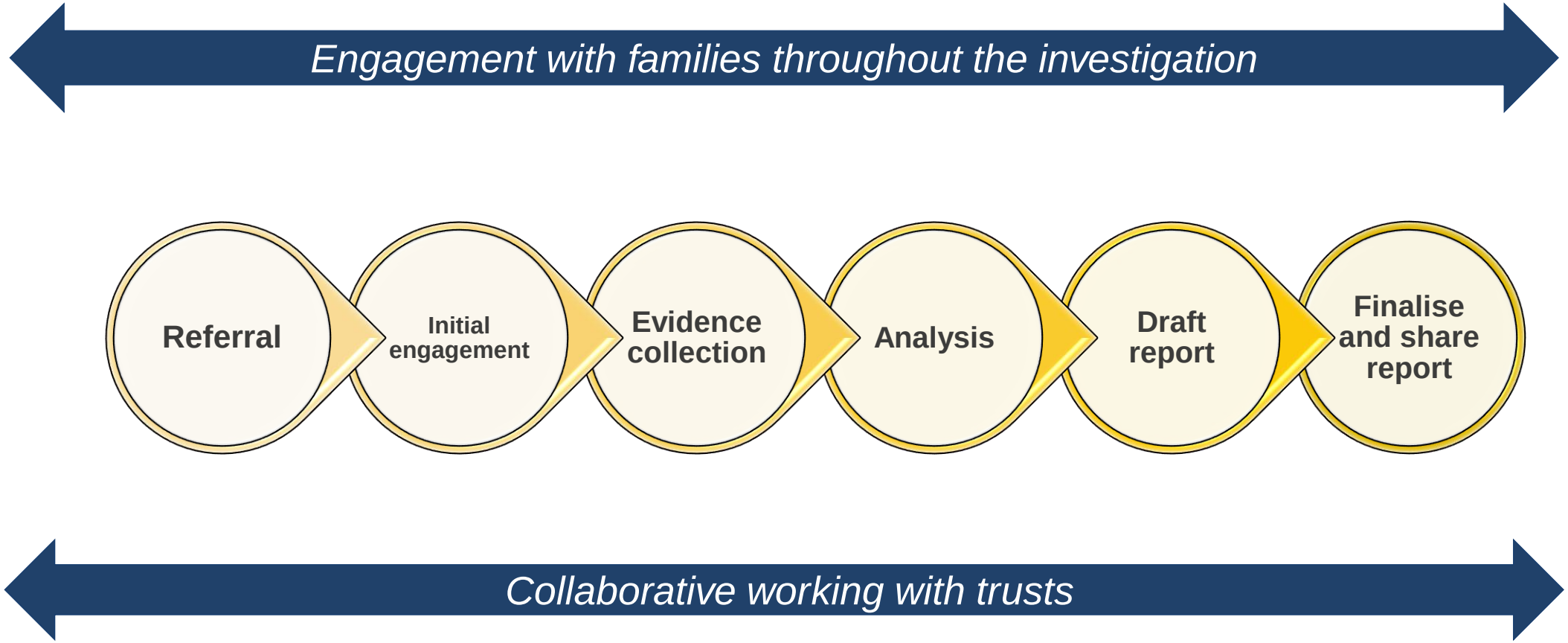
Maternity investigation approach



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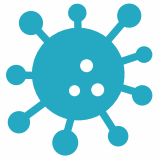
HLH – clinical aspects, MDT processes

Dr Bethan Goulden

Haemophagocytic Lymphohistiocytosis

Hyperinflammatory sepsis-like syndrome

Primary
Genetic



Infection
EBV, CMV, TB, HIV, HSV....

Malignancy
Lymphoma

Autoimmune Rheumatic
Stills, SLE

Buy time
Steroids, anakinra, IVIg

Source control
Find the trigger

Definitive treatment
Treat the driver

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Pregnancy-associated HLH

8 deaths reported to MBRRACE-UK & another 9 referred to the national HLH MDT

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Often postpartum
Within days/weeks of delivery

Autoimmunity common
Pre-existing or diagnosed at same time

Often a preceding infection
Urinary tract infection, c-section wound cellulitis

Sick but survived
8 of 9 cases survived despite critical illness

UKOSS

Very unwell with fever?

Not responding to antibiotics?

No infective source or a source that doesn't make sense?

RCOG GREEN-TOP GUIDELINE

Identification and Management of Maternal Sepsis During and Following Pregnancy

Green-top Guideline No. 64

David Lissauer | Marina Morgan | Anita Banerjee | Felicity Plaat | Dharmintra Pasupathy | the Royal College of Obstetrics and Gynaecology

Disease	Shared clinical features with sepsis
Blood transfusion reaction	Pyrexia, rash
Autoimmune disease	Pyrexia
Acute fatty liver of pregnancy	Pyrexia
Disseminated malignancy	Pyrexia
Thrombotic thombocytopenic purpura	Pyrexia, acute renal failure, altered consciousness, thrombocytopenia
Haemophagocytic lymphohistiocytosis	Pyrexia, pancytopenia, lymphadenopathy, rash
Occult bleeding	Hypothermia, raised lactate, shock
Epidural related maternal fever	Pyrexia
Misoprostol side-effect	Pyrexia

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Very unwell with fever?

Not responding to antibiotics?

No infective source or a source that doesn't make sense?

- **Fever**
- **Falling cell counts**
- **Raised ferritin**

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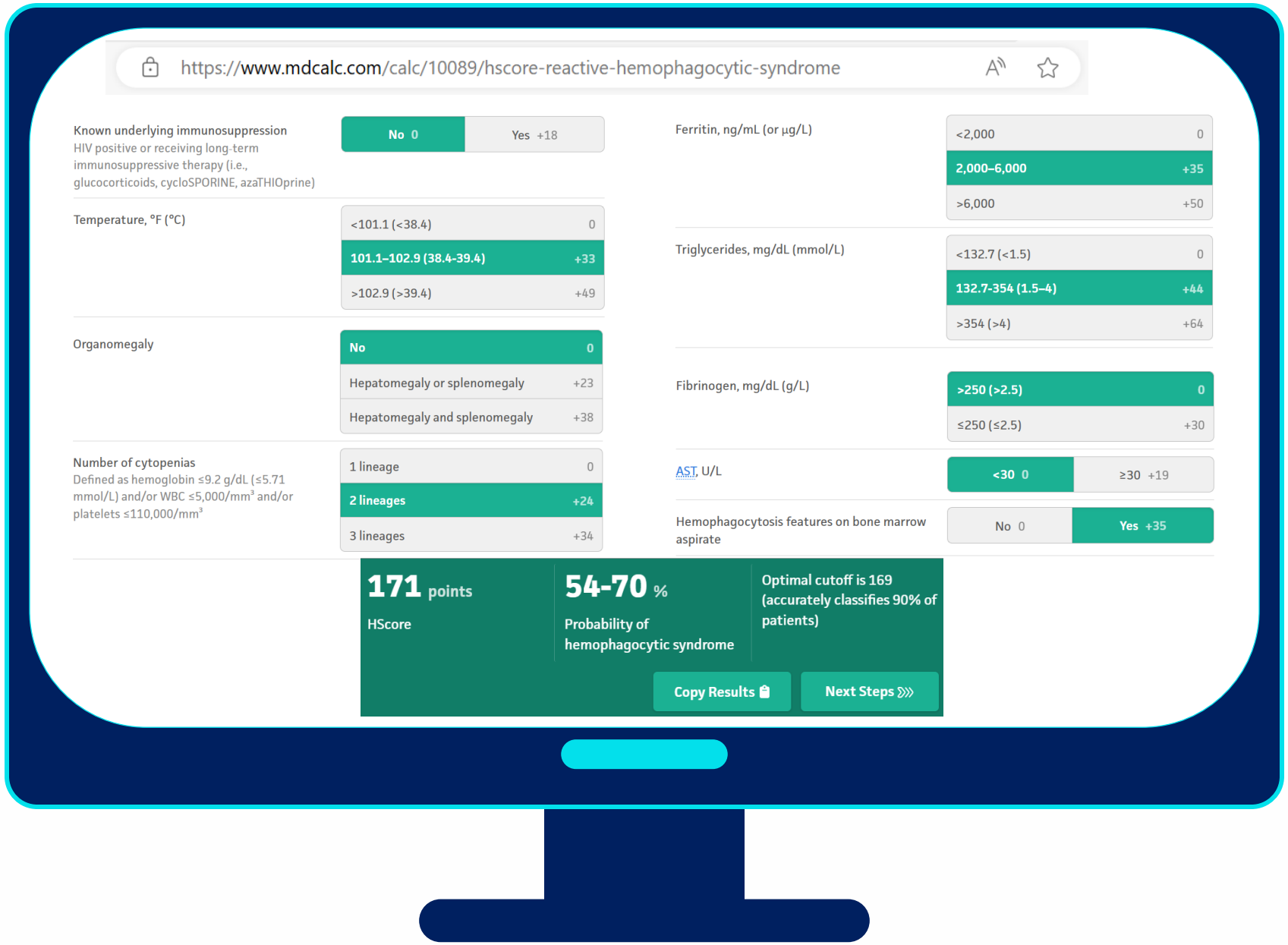

Next steps

Local review

Seek input from local Rheumatology, Haematology, Infectious Diseases etc

Investigate further

Aim to confirm/exclude the diagnosis & identify triggers alongside considering empirical treatment

MDT discussion

Local centres may not always have expertise – seek help from the national HLH MDT if required

Getting it Right First Time (GIRFT)

British Society for Rheumatology

NHS

GIRFT
GETTING IT RIGHT FIRST TIME

HISTIO UK
No-one should die of Histiocytosis

NHS IMPACT
Improving Patient Care Together

Haemophagocytic Lymphohistiocytosis (HLH)

Guidance on the diagnosis, treatment, management and governance.

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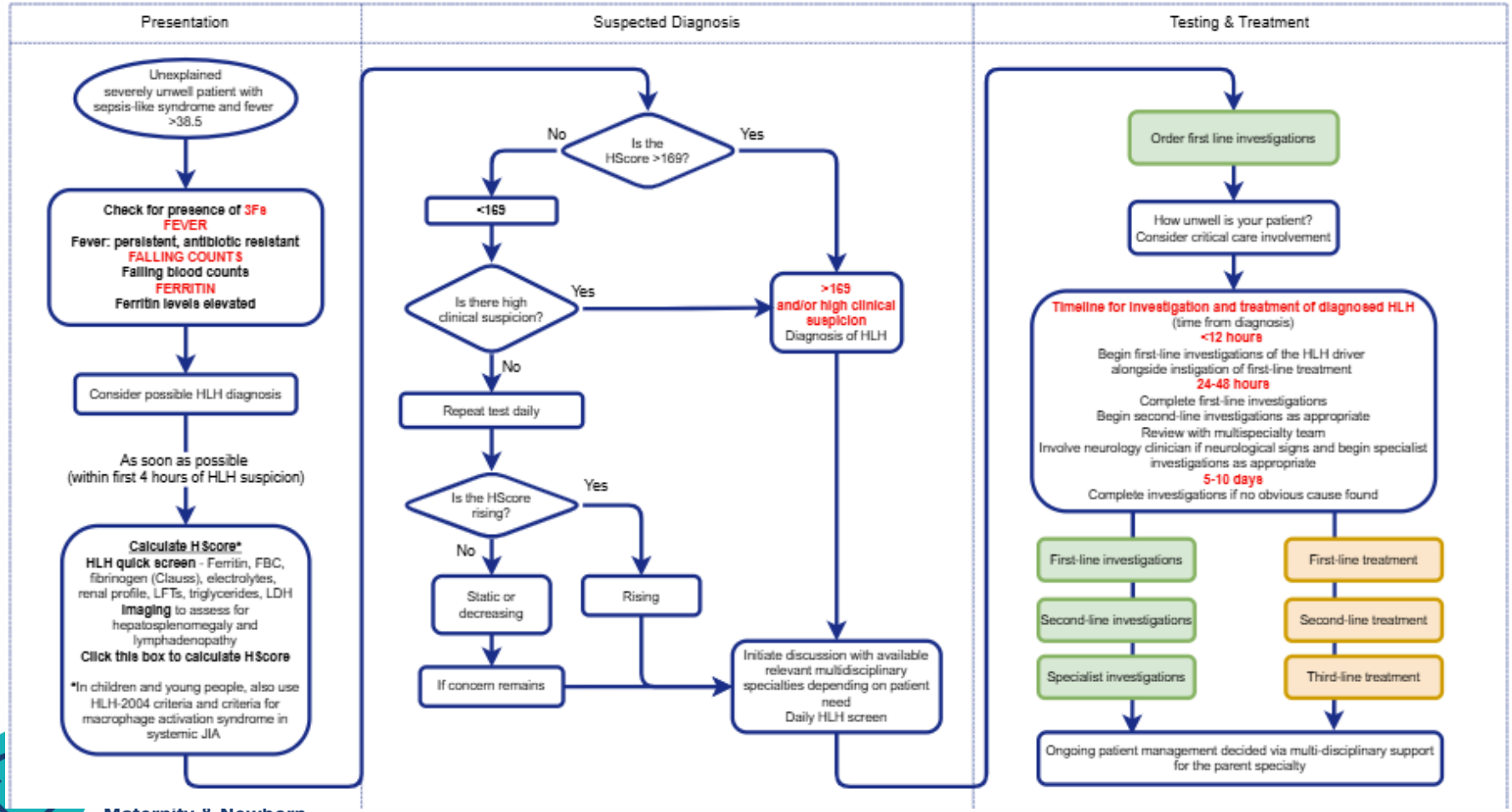
Getting it Right First Time (GIRFT)



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Getting it Right First Time (GIRFT)

1

First-line Investigations

Tests to consider for patient with suspected HLH of unknown driver

Haematology: coagulation screening including Clauss Fibrinogen, blood film, erythrocyte sedimentation rate, reticulocytes. Consider: D-dimer and bone marrow biopsy.

Biochemistry: renal profile, LFTs, LDH, triglycerides, CRP, iron profile, Troponin, NT-proBNP, urine protein-creatinine ratio

Rheumatology: Complement C3 and C4, antinuclear antibodies, antineutrophilic cytoplasmic antibodies, antibodies to extractable nuclear antigens, anti-double-stranded DNA antibodies.

Microbiology: three bacterial blood cultures (ideally before antibiotics)

Virology - Blood, Serum save (ideally before blood products), Serology for Epstein-Barr virus; cytomegalovirus; HIV; hepatitis viruses A, B, C, and E; parvovirus B19; and human T-lymphotropic virus 1 (ideally before blood products), Epstein-Barr virus and cytomegalovirus PCR, Respiratory viral throat swab PCR, Influenza A and B, enterovirus, and SARS-CoV-2

Imaging: Chest x-ray, Urgent CT of neck, chest, abdomen and pelvis with contrast, PET-CT (if available - cross sectional imaging should be sought within 48 hours, PET-CT as gold standard for adults), ultrasound* if delay for cross-sectional imaging, electrocardiogram and echocardiogram.
In children, consider whole body MRI or ultrasound depending on availability.

*often preferred in children

Getting it Right First Time (GIRFT)

1

First-line Treatments

Treatment	Adult	Child
Corticosteroids initial dosing	Methylprednisolone 1g IV OD or dexamethasone 10mg/m2 or IV OD Consider higher dose dexamethasone in cases with CNS involvement	Methylprednisolone 30mg/kg (maximum 1g) OD or equivalent in dexamethasone Consider higher dose dexamethasone in cases with CNS involvement
Corticosteroids step-down dosing	Step down to 1mg/kg prednisolone or equivalent after 3-5 days	Step down to 10mg/kg prednisolone or equivalent after 3-5 days

Start bone and gastrointestinal prophylaxis in line with local guidelines.

Document in handover and discharge summary that adrenal suppression is possible and steroid card should be given along with advice on sick day rules for 3 months after stopping steroids. Ensure this is discussed with patient at discharge, in line with local guidelines.

Try to limit dose and duration of steroids if driver unclear (may mask lymphoma diagnosis) but do not allow this concern to delay corticosteroid therapy

Getting it Right First Time (GIRFT)

2

Second Line Treatments

Anakinra
Dosing involves starting with at least 1-2 mg/kg/day, increasing to a maximum of 8mg/kg/day in both adults and children. If there is an inadequate therapeutic response, advice from specialist centres which regularly manage HLH.

In practice, starting dose is often 2-4mg/kg IV rounded up to nearest 100mg in 2-3 divided doses. This can be titrated to a maximum of 8mg/kg/day in divided doses (if >100kg, dose should not exceed 800mg daily).

In cases involving severe renal impairment (CrCl <30ml/min) consider administration every 48 hours.

Matern Safety

Need support?

Pick up the phone

National HLH centres for the UK
Sheffield & University College London Hospital

Referral & advice service
Call or email to discuss

HLH MDT via Teams
Multiple times per week – scheduled & ad hoc

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Learning from MNSI investigations with regards to rare conditions

Clare Luby

Learning from Maternity & Newborn Safety Investigations

- If things go wrong in health care, it is usually because of problems with the **system** itself, rather than individual mistakes.
- Our reports share what we have **learned** during our investigations and **identify factors that have led to harm** or may lead to harm in the future.
- As well as the findings from our investigations, our reports may include **safety recommendations** and **safety prompts**. This is to improve healthcare systems and process, reduce risk and **improve safety**.
- We **share learning** in other formats such as **thematic reviews** and **national learning reports**.

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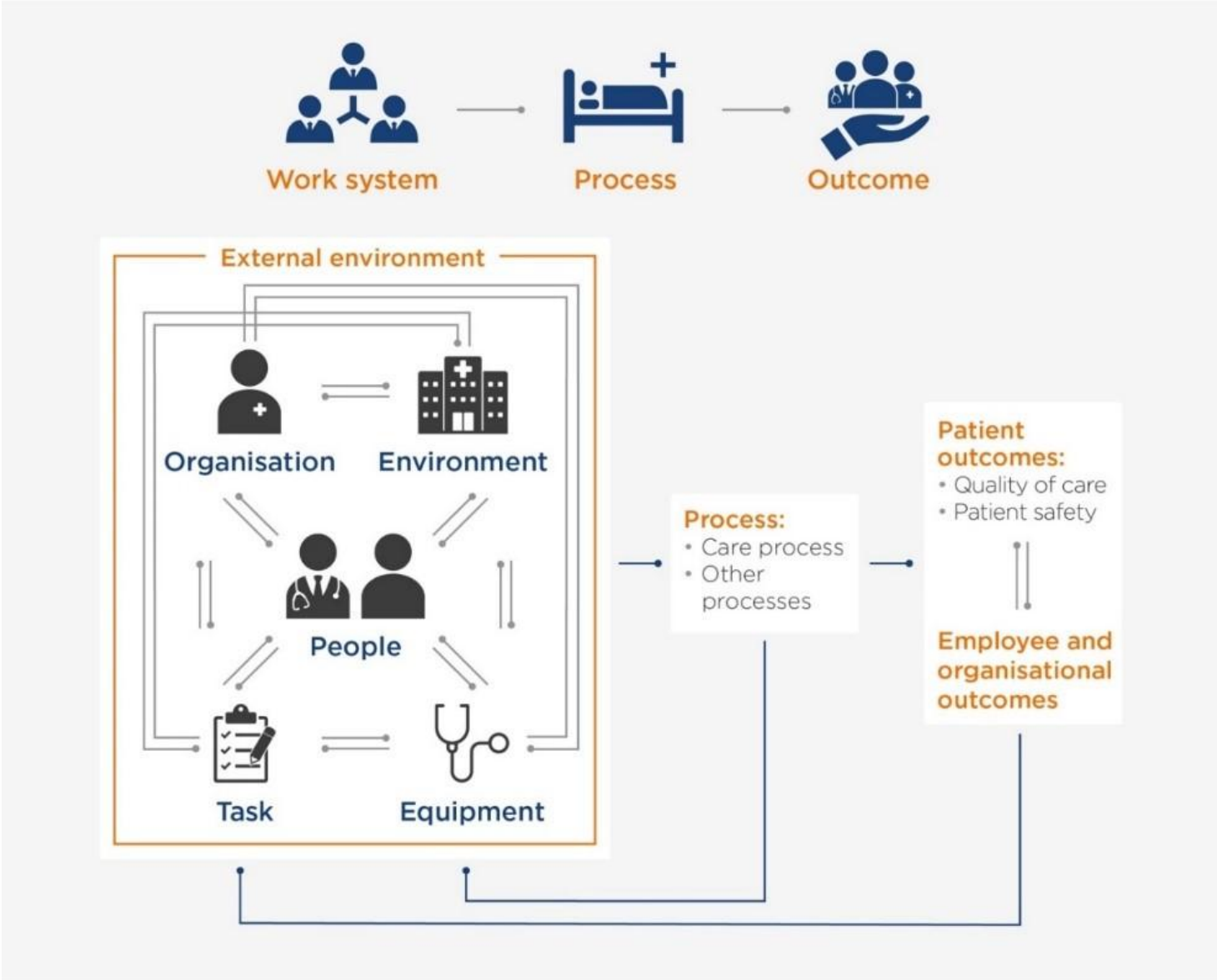

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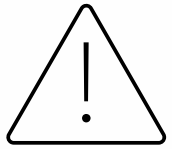
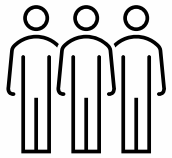
Learning from Maternity & Newborn Safety Investigations



Rare conditions
Significant impact

Organization
Clinical guidance
Psychological safety



People
Expertise / specialty
MDT / fresh eyes
'Expert patient'
Anchoring bias

External
Research / evidence
/ agenda

Environment
Ward / area of specialty
Links with specialist teams centers

Technology / tools
Assessment tools
Decision making
Laboratory tests

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Cognitive bias

- Anchoring bias
  - An anchoring bias occurs when you focus on one piece of information when making a decision or solving a problem.
  - The anchoring bias can be influenced by a variety of factors, including experience.

- Confirmation bias
  - Confirmation bias is the tendency to look for information that supports, rather than rejects, one's preconceptions, typically by interpreting evidence to confirm existing beliefs

Source: simplypsychology.org (2025)

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How a MMN can support care in complex women

Dr Charlotte Frise

How a maternal medicine network can support care in complex women

Charlotte Frise

Consultant Obstetric Physician, Queen Charlotte's and Chelsea Hospital

Lead Obstetric Physician for NW London Maternal Medicine Network

Senior College Lecturer in Clinical Medicine, Keble College, Oxford

Honorary Senior Clinical Lecturer, Imperial College London

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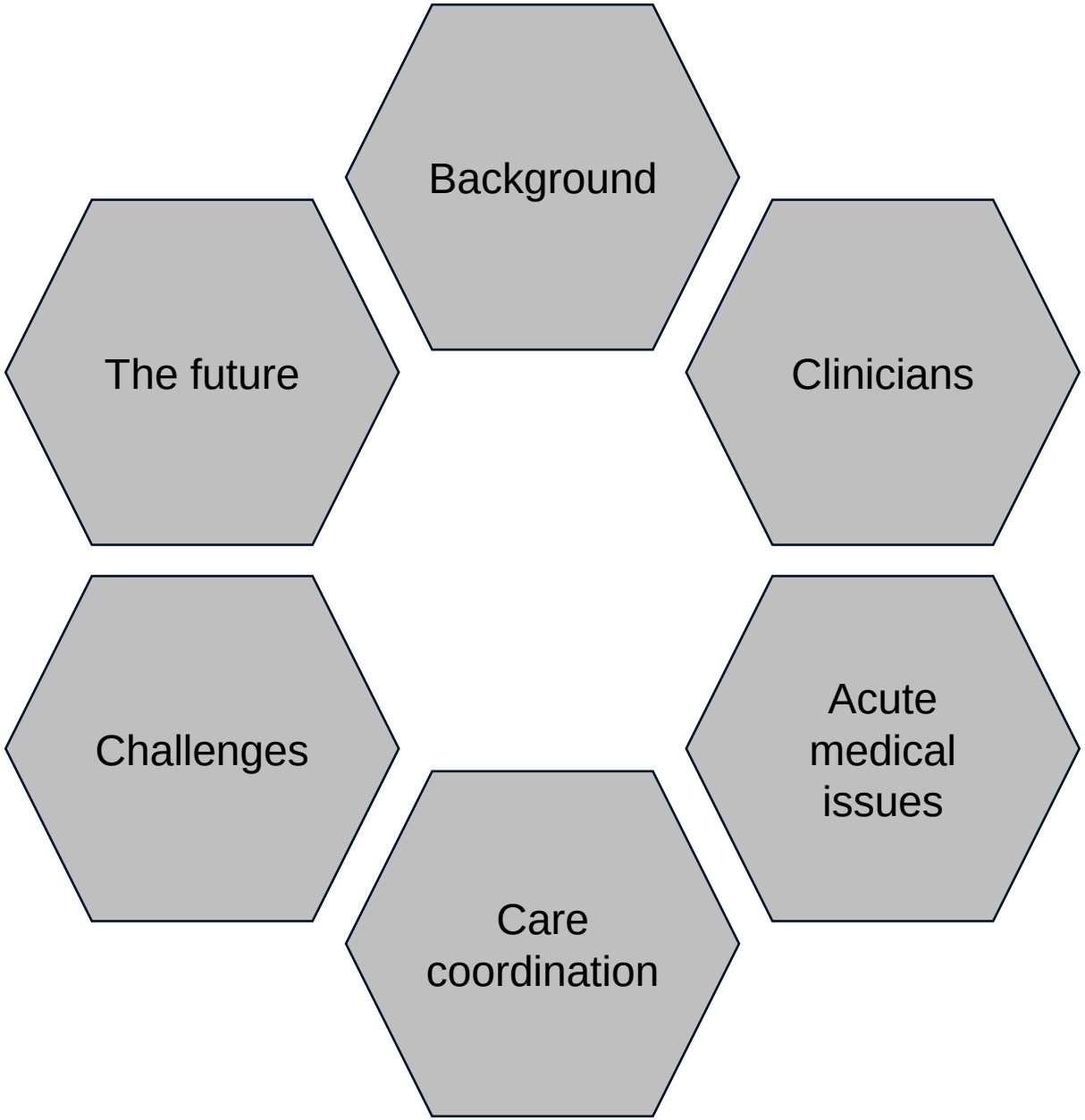
@obstetricmedic



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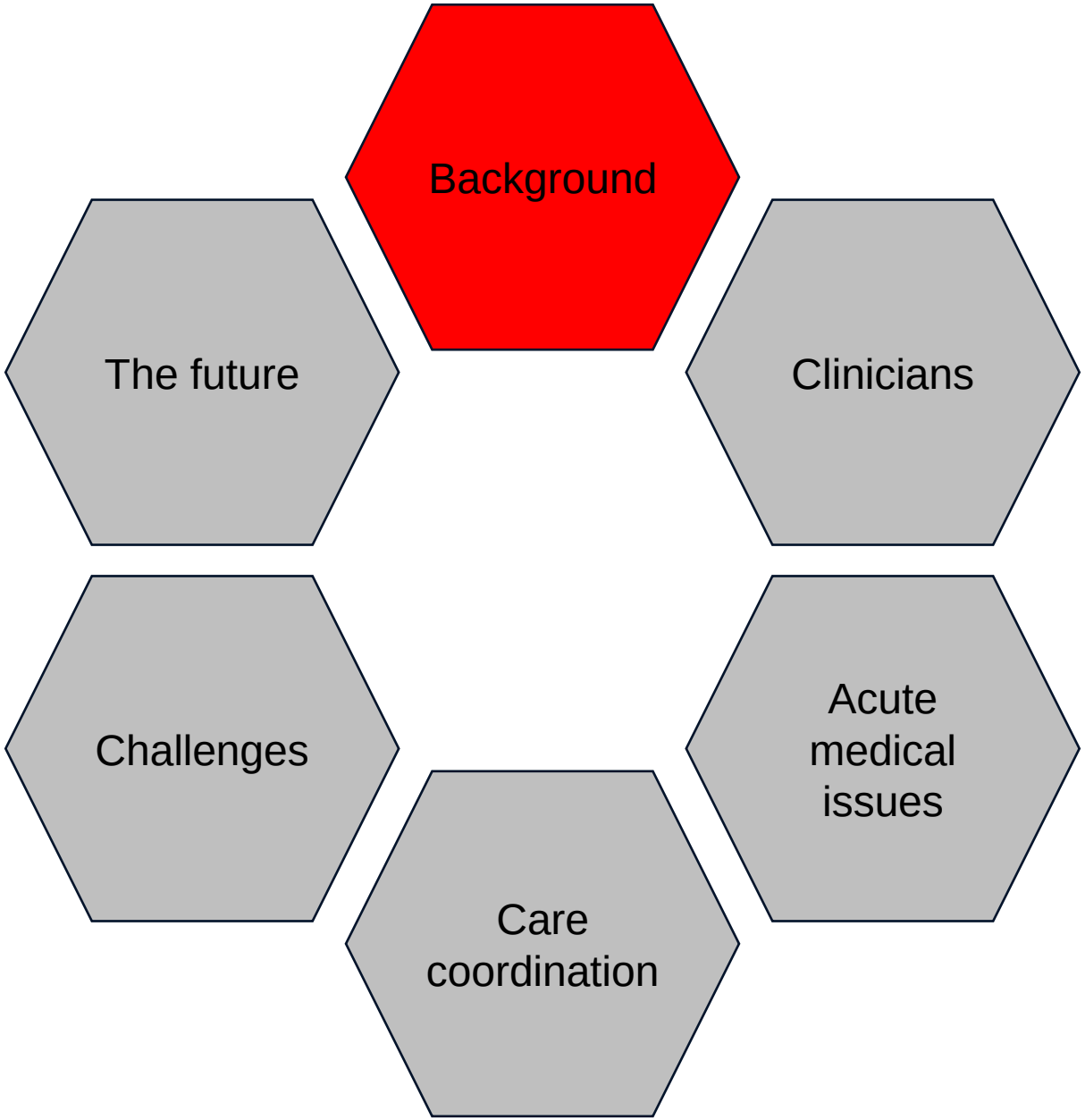

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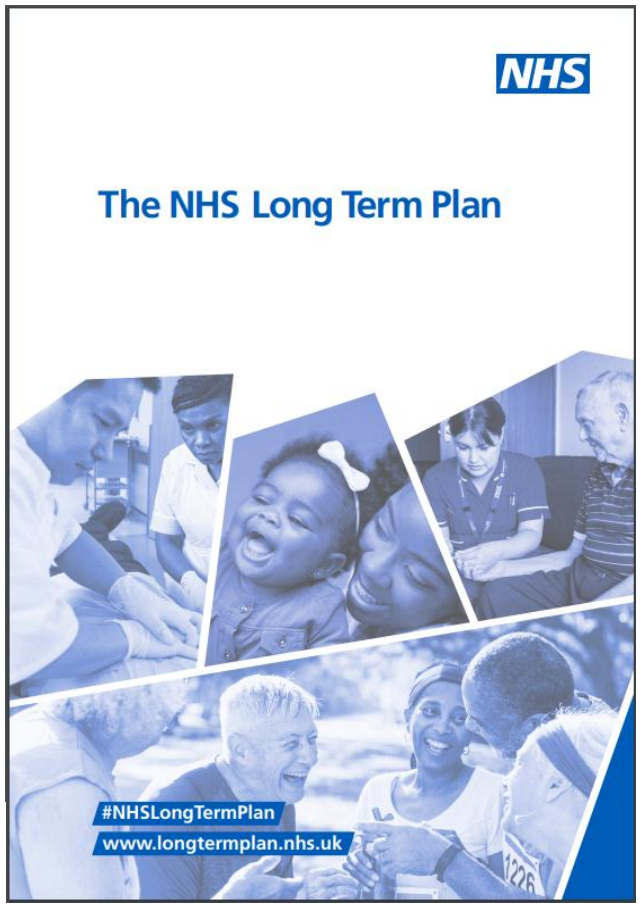
National commitment



"We will support the establishment of Maternal Medicine Networks, which will further ensure women with **acute** and **chronic** medical problems have timely access to specialist advice and care at all stages of pregnancy"

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https://www.england.nhs.uk/publication/maternal-medicine-networks-service-specification/

Maternal medicine networks

Nationally mandated and regionally commissioned

To improve maternal outcomes by ensuring all women with significant medical conditions receive the best

prepregnancy,

antenatal

postnatal care

for both **acute** and chronic problems

with an emphasis on **equality** of access and services for all

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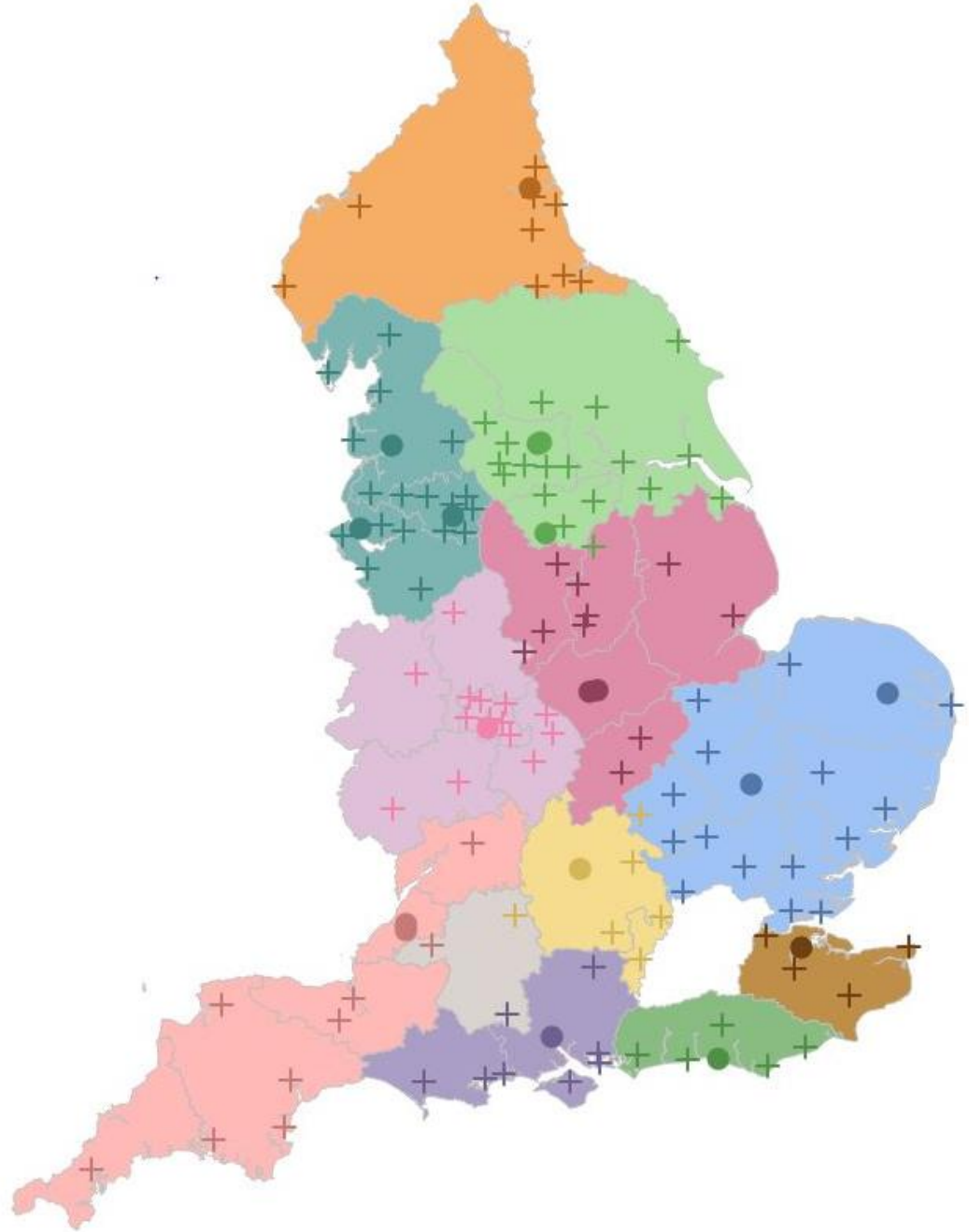
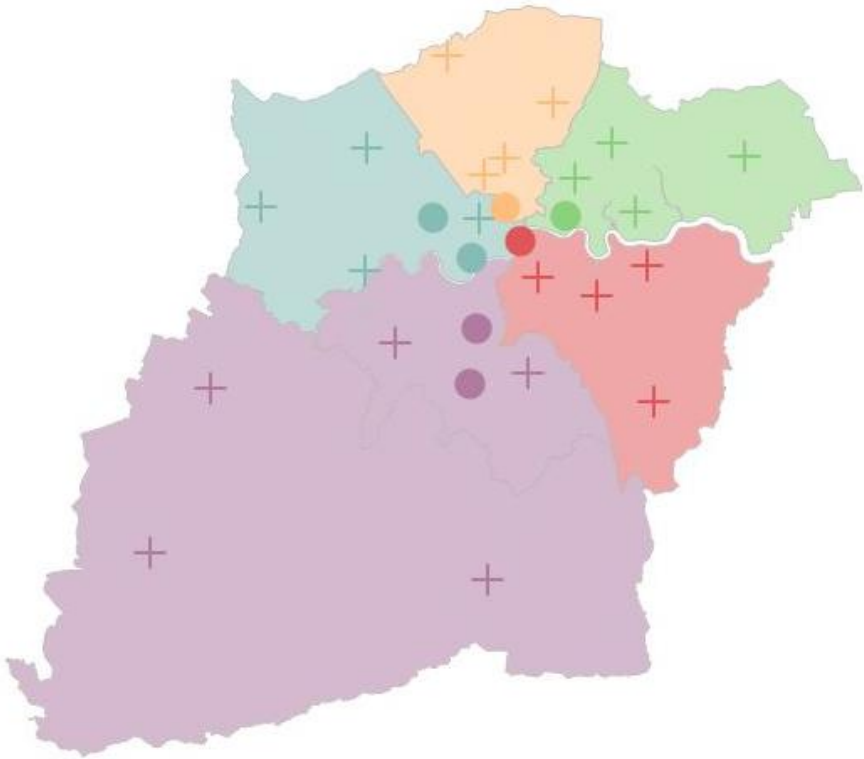
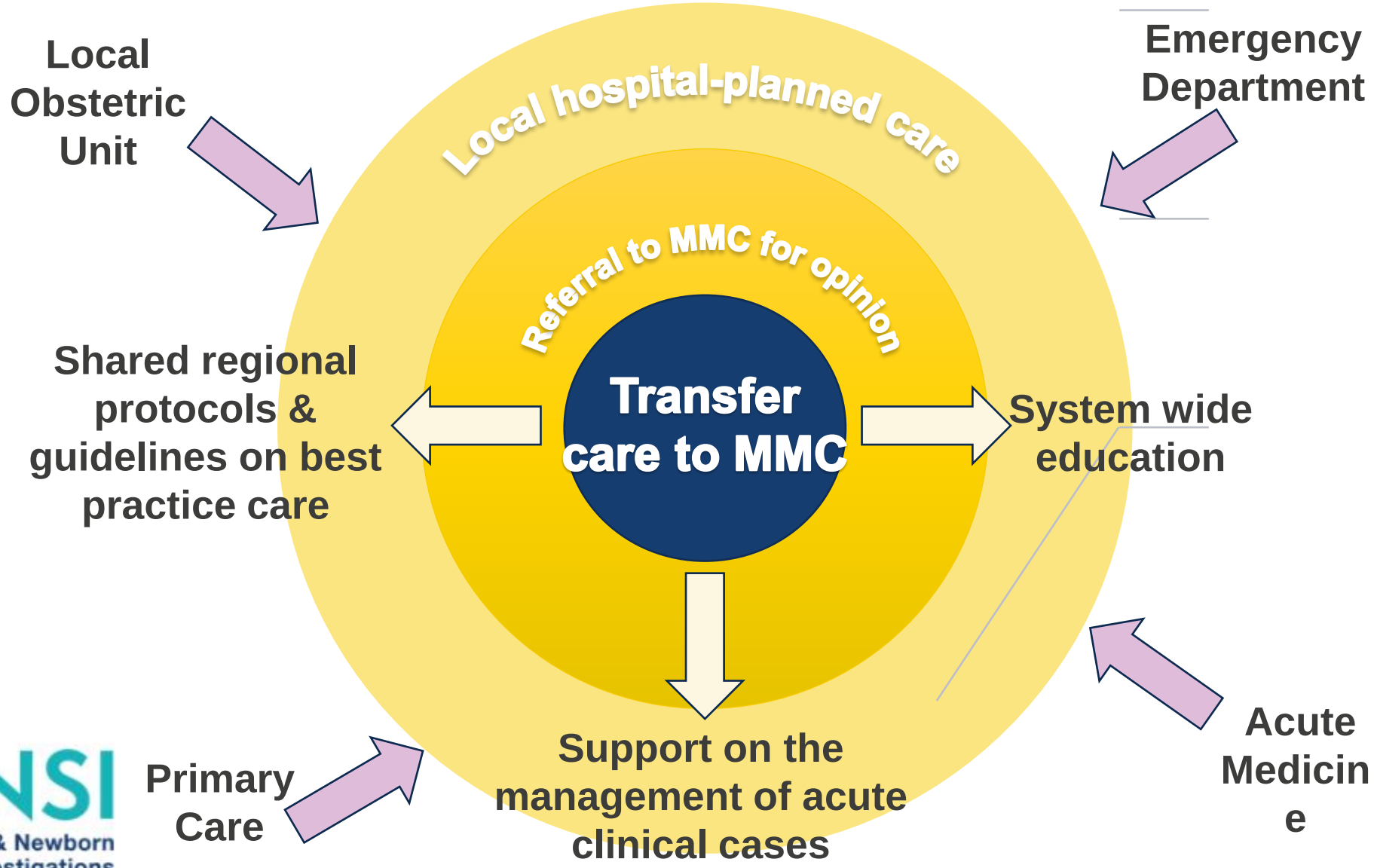
Right care, right time, right place



London view



Last updated: November 2024



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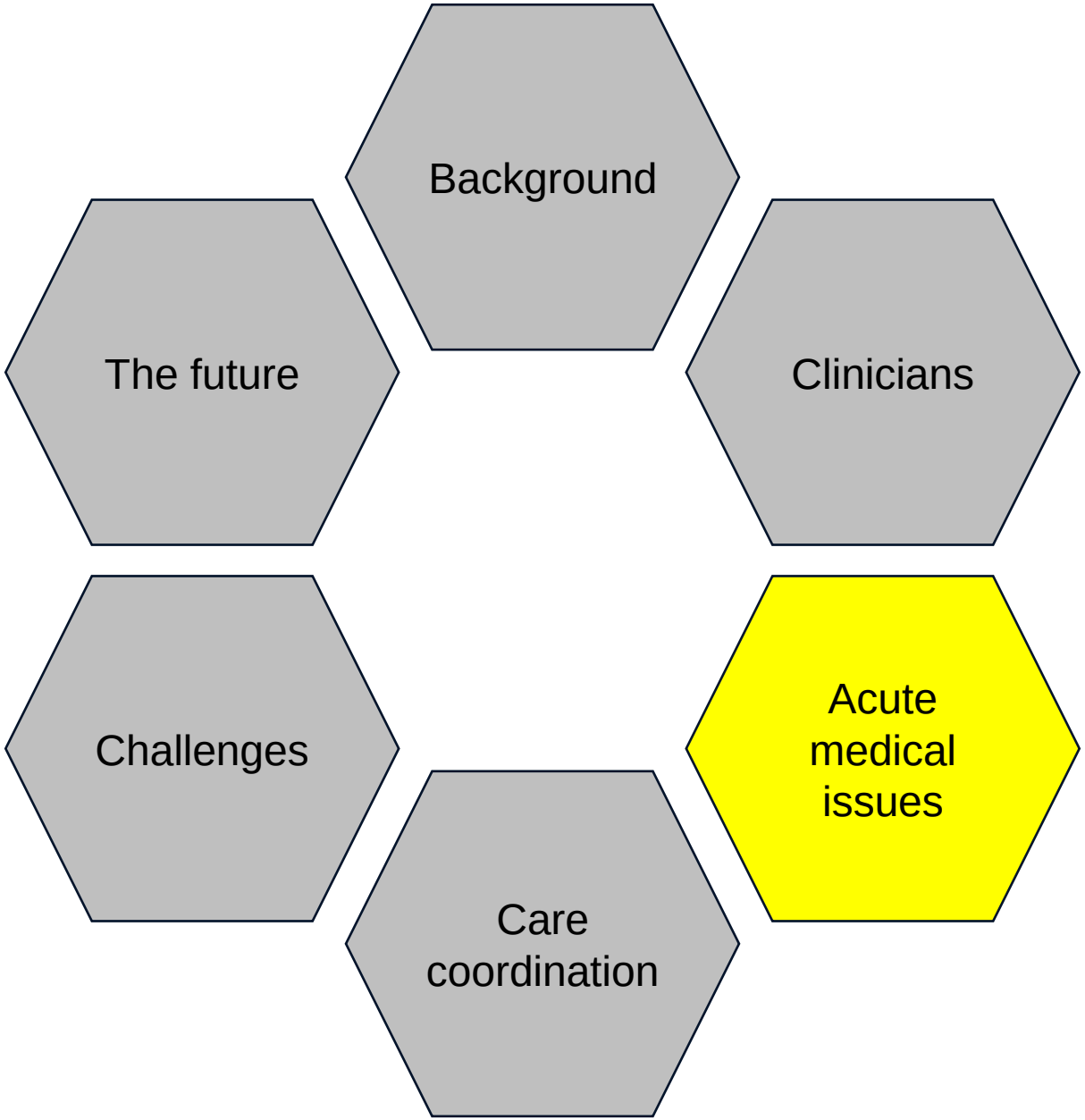
Lead Obstetrician

Project manager

Lead Midwife

Lead Obstetric Physician

Clinical Director



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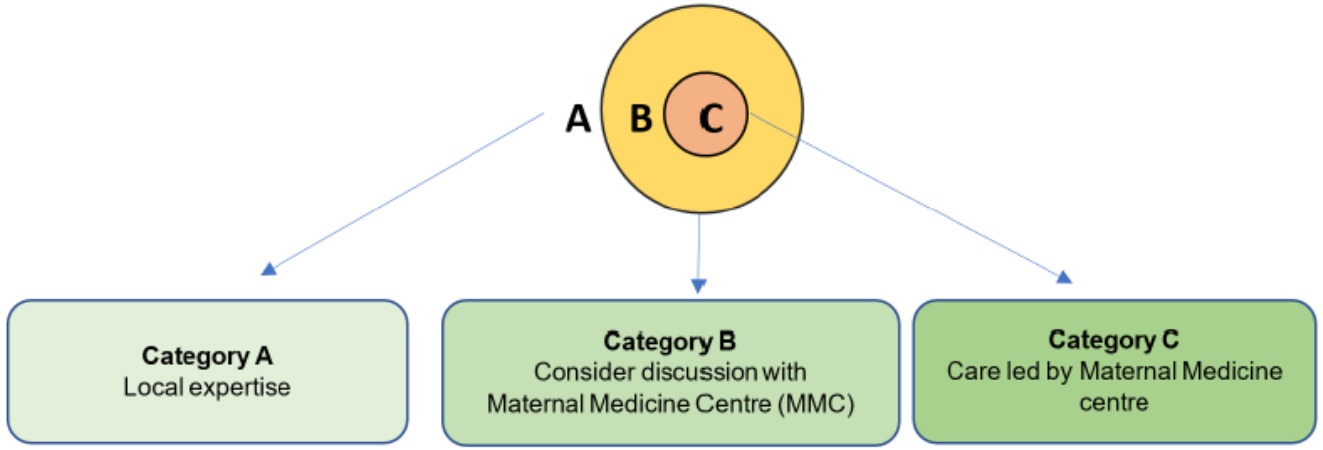

Epilepsy managed jointly with neurology and obstetrics		Epilepsy without local access to joint neurology and obstetrics input
Migraine	Migraine not responding to oral preventative agents Cluster headache	
Asymptomatic idiopathic intracranial hypertension	Symptomatic idiopathic intracranial hypertension	Symptomatic raised intracranial pressure
Stable, small cerebrovascular malformation (CVM), reviewed within 2 years of conception & plan for mode of delivery	• CVM, not reviewed within 2 years of conception +/- no mode of delivery plan • Untreated or partially treated CVM that has bled previously • Aneurysm ≥7 mm or an aneurysm with other high-risk features as defined by a neuroradiologist • Complex arteriovenous malformation • Cavernoma with high-risk features	Unstable CVM/ arteriovenous malformation/ cavernoma Intracerebral bleed within 2 years
Previous brain tumour	Current brain tumour	Progressive brain tumour
Previous cerebral vein thrombosis	New cerebral vein thrombosis	
	Previous stroke	Acute stroke (see pan-London pathway)
Meningitis	Previous Guillain-Barre Syndrome	New-onset Guillain-Barre syndrome
	Stable myasthenia gravis (MG)	New diagnosis or flare of MG
Stable multiple sclerosis (MS) managed without disease modifying drugs	Unstable MS or on disease modifying drugs • Secondary progressive MS • Highly active relapsing remitting MS	
Mononeuropathy including Bell's palsy	Progressive or persistent mononeuropathy	
Previous encephalitis	New encephalitis	Autoimmune encephalitis on treatment
Post-dural puncture headache	Reversible Cerebral Vasoconstriction Syndrome	
	Spinal cord pathology e.g. Inflammation (myelitis), tumour, Chiari malformation/Syrinx	
	Neurofibromatosis	
	Neuromuscular dystrophy	Myotonic dystrophy
	Spinal muscular atrophy	
	Motor neurone disease	

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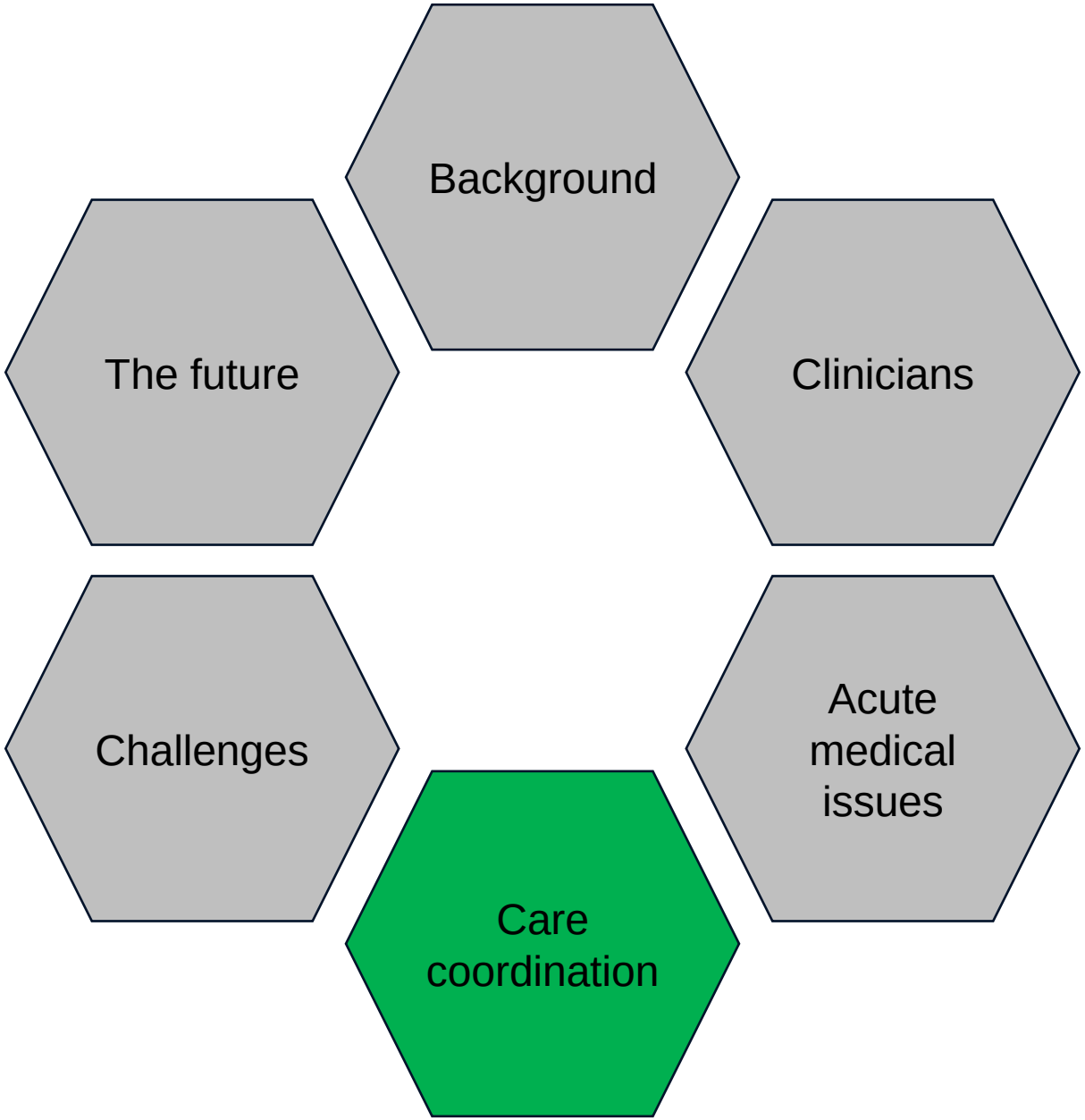

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NW LONDON
Maternal Medicine Network

NHS
Imperial College Healthcare
NHS Trust

Guidance for staff when a pregnant or recently pregnant* person presents to a non-Maternity setting in Hammersmith Hospital

Pregnant or recently pregnant* person:
- Presenting with acute medical or surgical problem
- In a non-maternity setting
- May or may not have their pregnancy booked in the local maternity unit

Under 20 weeks

After doctor assessment
In hours: QCCH Obstetric Medicine clinical fellow via bleep 9059 / Alertive (9am-5pm M-F)

Out of hours: QCCH on call team (senior registrar via bleep 9423)

20 weeks or over

After doctor assessment
In hours:
- QCCH Labour Ward consultant via switch* or registrar via Alertive or ext. 35167 *and*
- QCCH Obstetric Medicine clinical fellow via blp 9059 / Alertive (9am-5pm M-F)

***After 11pm weekdays, 8pm weekends**: on call team (senior reg via bleep 9423)

If admitted, all patients require:
- Location of care discussion with senior clinicians as MDT
- Appropriate maternity VTE risk assessment
- Review of any safeguarding concerns

Non-urgent queries for the Obstetric Medicine team can be emailed to imperial.obsmedQCCH@nhs.net.

* Up to 6 weeks after the end of pregnancy (including miscarriage, termination or other loss)

Safety Investigations

Cerner

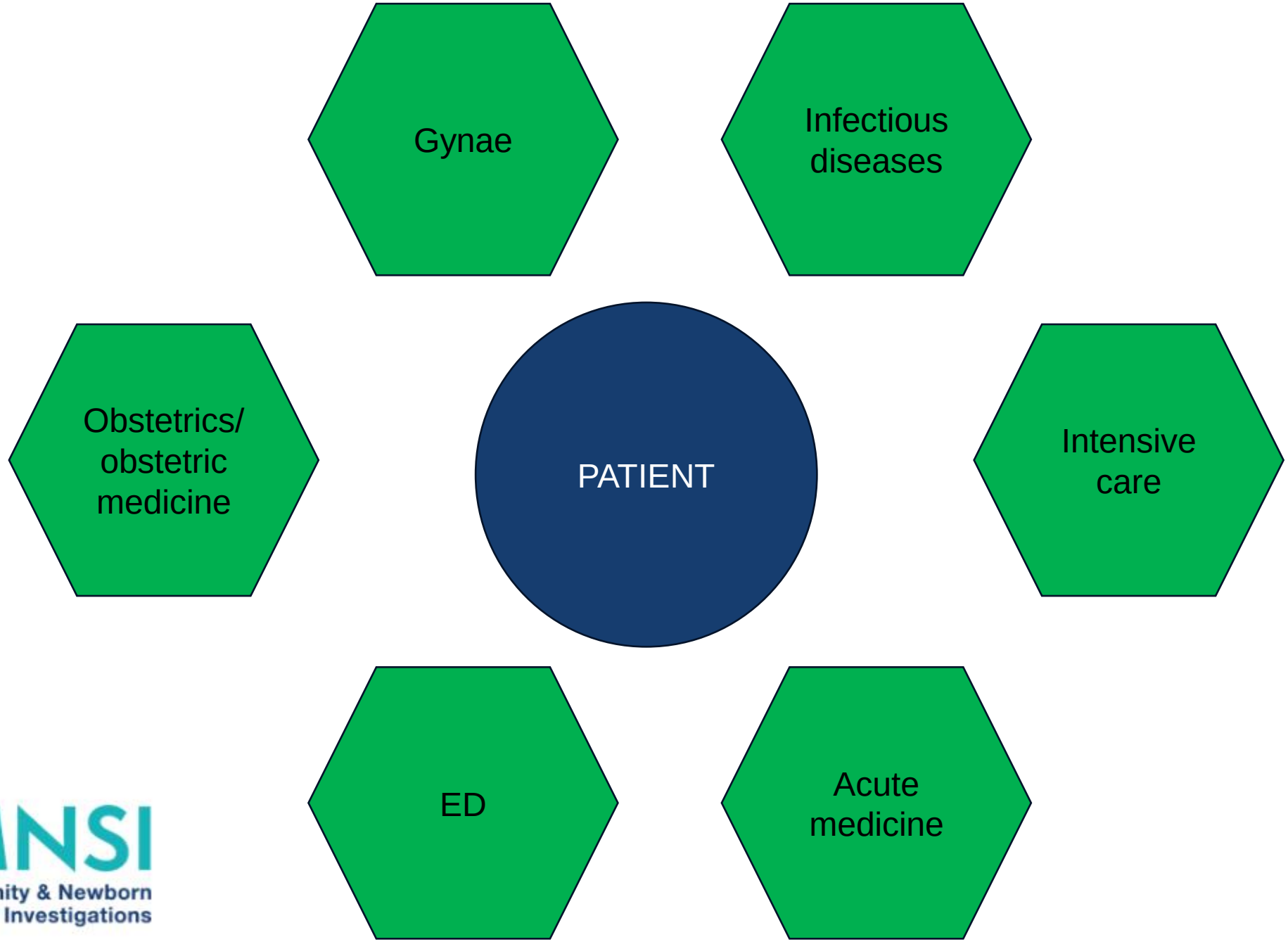
PREGNANCY LOCATION ALERT

ALT+ F6 to tab out of content

You have opened a patient who is pregnant but is not in a maternity location.

Please consider contacting your local obstetrics team. For pregnant patients booked at CWHFT please check for maternity notes under CWH:EDM.

OK



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MDT provision

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1. Clinicians
2. Timing
3. Communication

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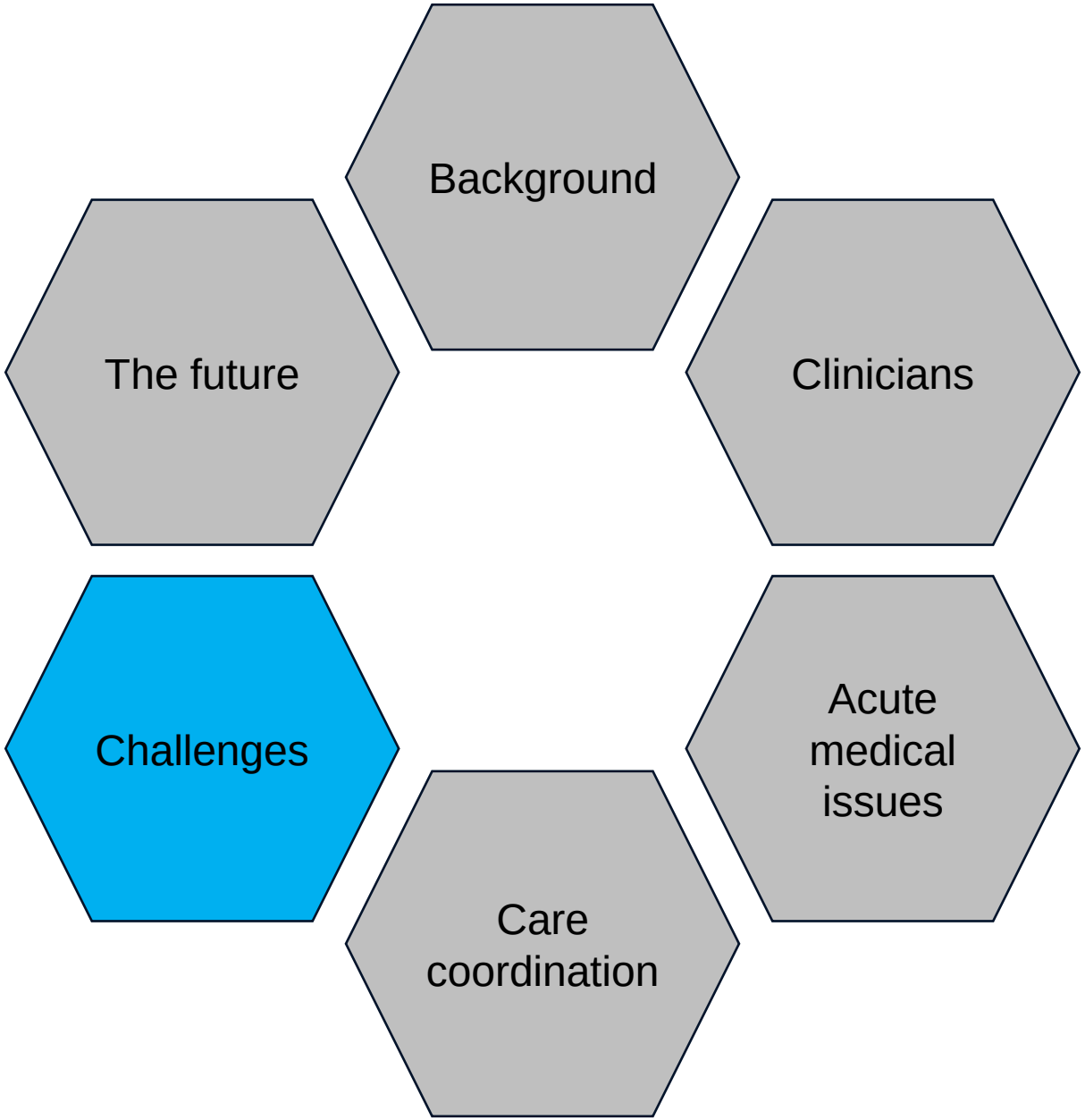

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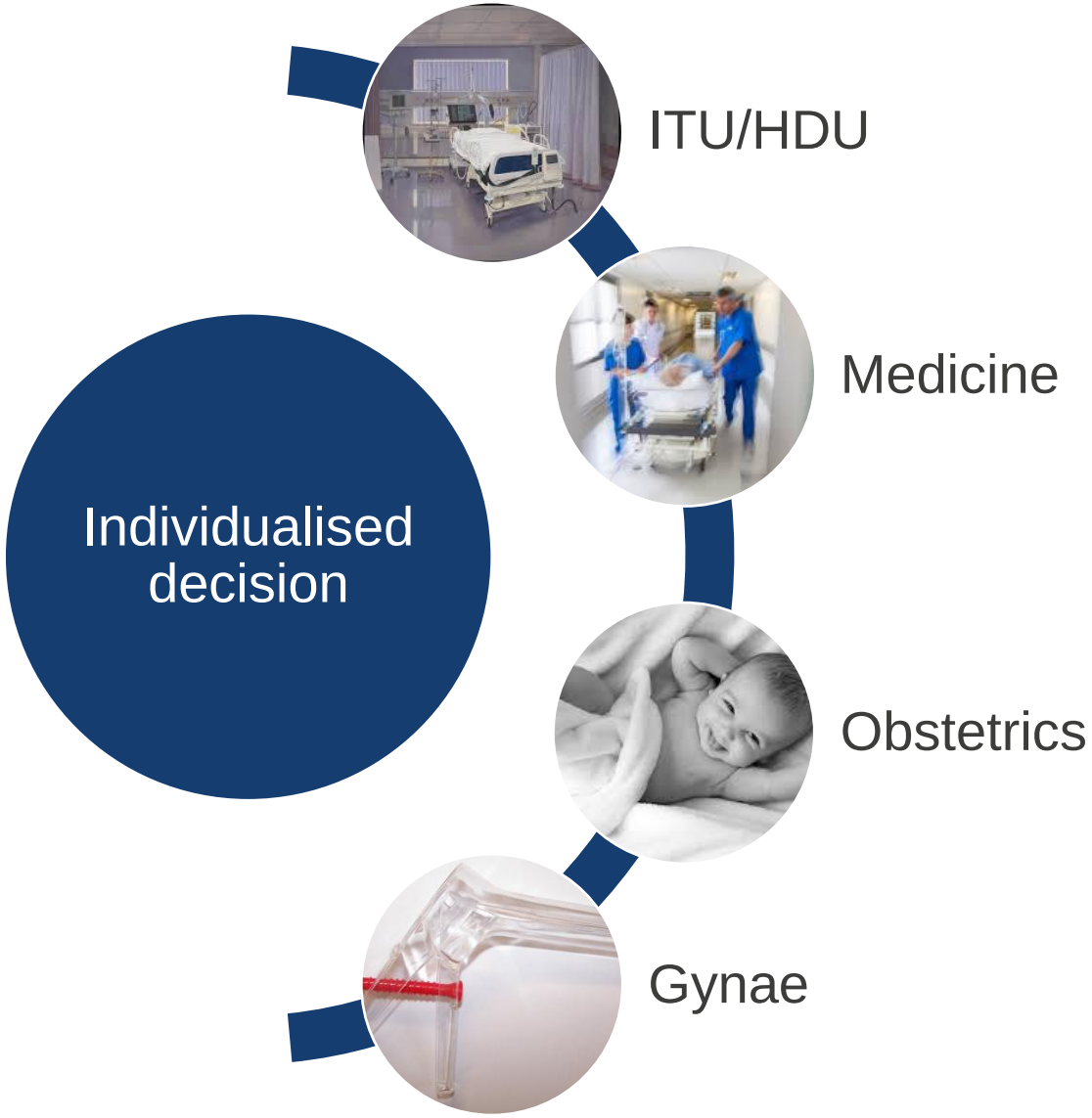
Location



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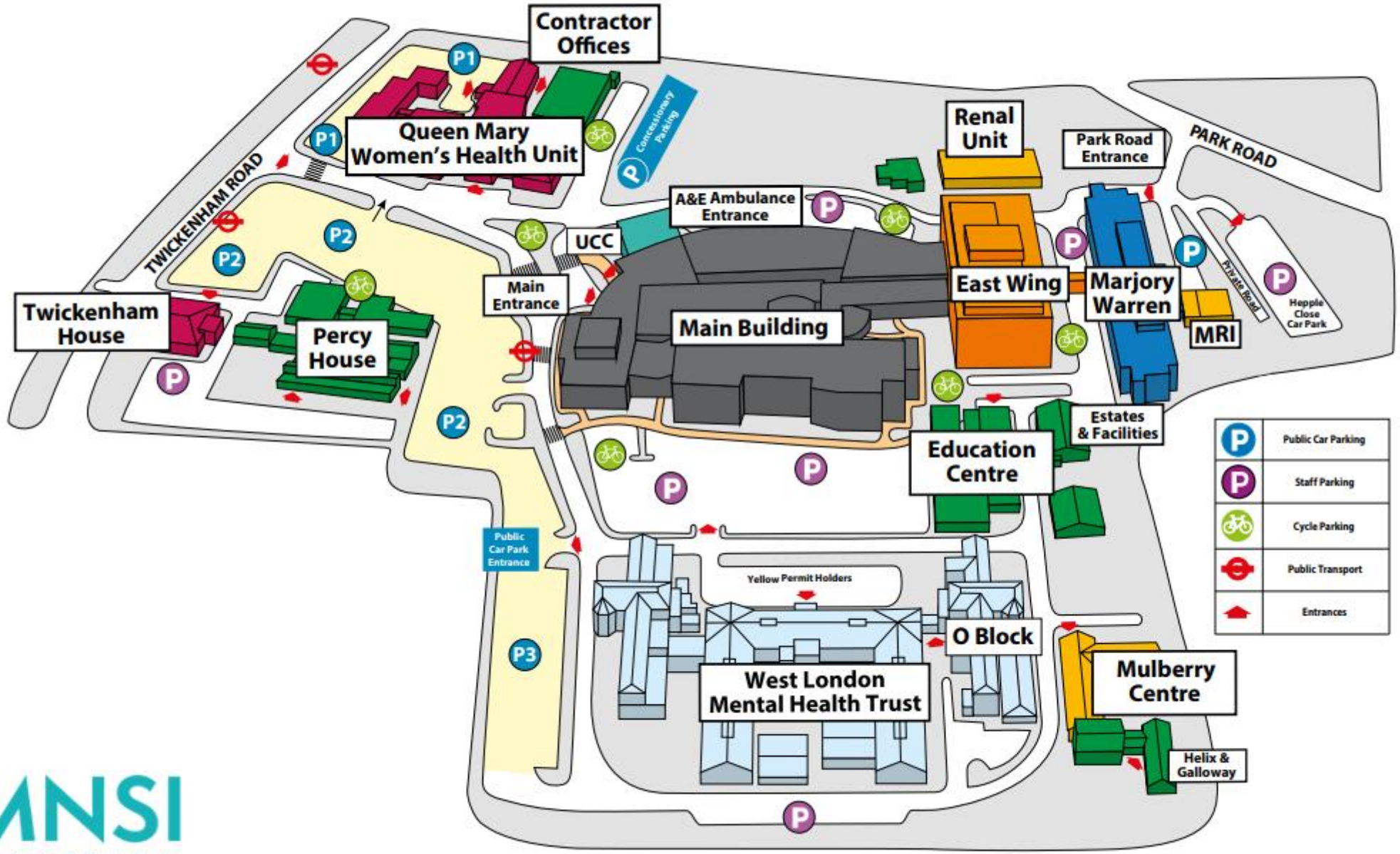

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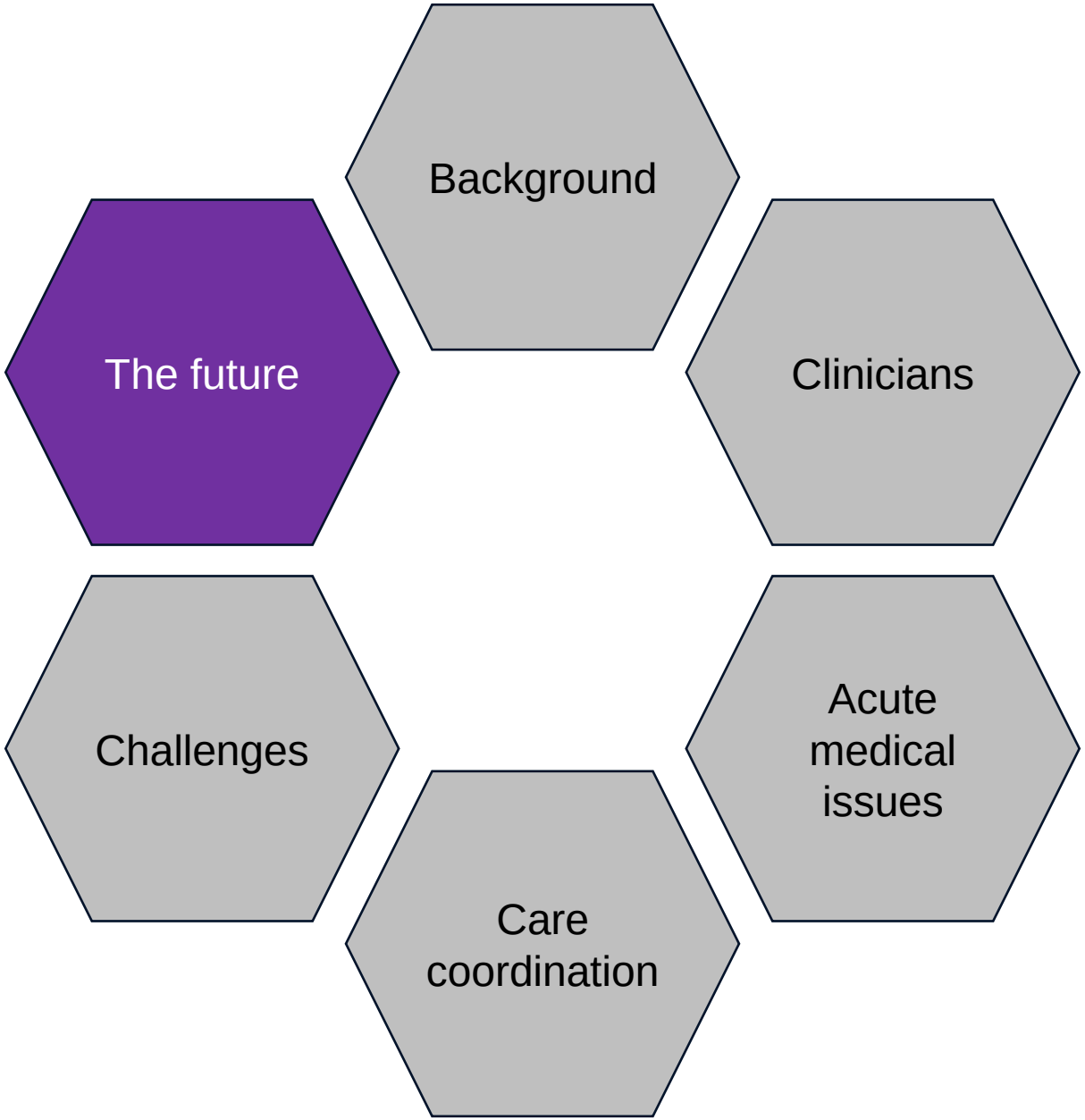

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Prepregnancy

- Counselling
- Contraception
- Long term risks

Antenatal

- Acute management
- MDT facilitation
- Clinician support

Intrapartum

- Delivery planning
- Practicalities
- MDT coordination

Postnatal

- Follow up
- Appropriate specialist review
- Continuity

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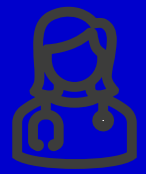

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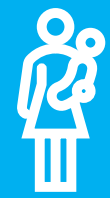

Postnatal

- Follow up
- Appropriate specialist review
- Continuity

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Conclusions

Obstetric physicians complement rather than replace the roles of others

Can help with the nuances of care in medically complex women with acute multisystem issues

Still room to improve in the care of acutely unwell women in a network capacity

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