

Standardisation of Emergency MRI Provision for the Purposes of Suspected Cauda Equina Syndrome

West of England Imaging Network



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Background

Cauda Equina Syndrome (CES) is a rare and serious spinal emergency which can lead to lower limb paralysis and loss of bowel, bladder and sexual function if not assessed and treated urgently. The condition affects 1-3 people per 100,000 population in England and there are around 8,000 suspected cases every year.

This is a topic that has generated much discussion nationally following the GIRFT Speciality report for Spinal Services in 2019, the HSIB review in 2021 and publication of GIRFT National CES guidelines in 2023 which set the gold standard of providing 24 hour access to MRI for emergency patients with potential CES.

The provision and accessibility to MRI across a 24-hour timeframe is dependent on local service specification and speciality.

If a patient requires transfer to a specialist centre the turnaround time for a blue light ambulance service can often lead to the recommended four-hour window for imaging being exceeded, impacting on the timely diagnosis and decision to treat surgically.

Aims

- To increase the provision of 24/7 Emergency MRI imaging for suspected CES from 20% to 70% by June 2025
- Increase access to MRI safety Education for all referrers to 50% by June 2025

Project Participants

4 x MRI Radiographers & 2 x Consultant Radiologists who had a working knowledge of the process on a daily basis.

2 x MSK Physiotherapists, 2 x Spinal Surgeons, 1 x GP and two Quality Improvement Facilitators (including myself), to assist in embedding QI methodology within the process.

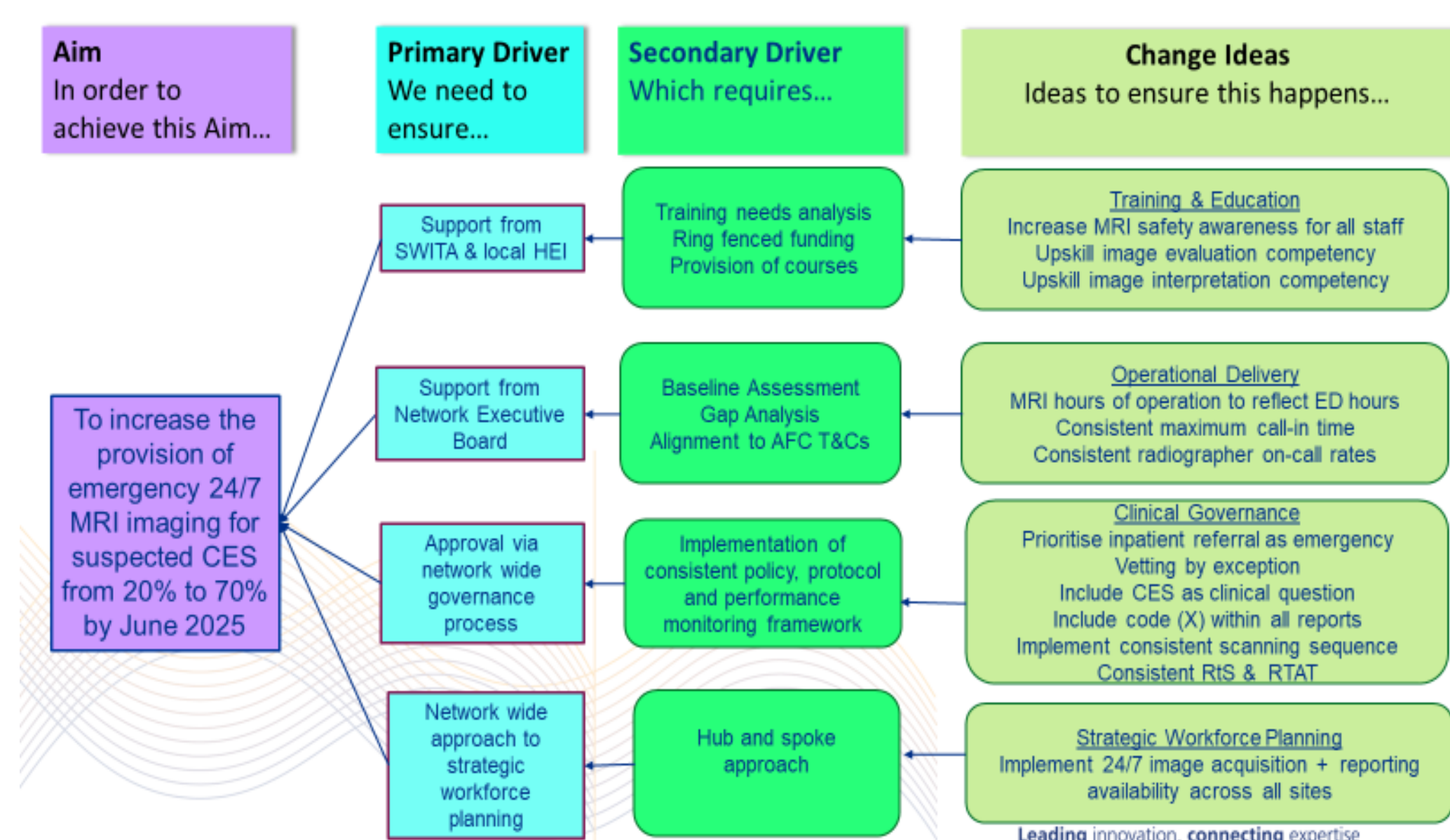
Participant Distribution

Gloucestershire Hospitals NHS Foundation Trust	Great Western Hospital, Swindon
North Bristol NHS Trust, Southmead Hospital	The Royal United Hospital Bath
Somerset NHS Foundation Trust, Yeovil & Taunton	Salisbury NHS Foundation Trust
University Hospitals NHS Foundation Trust in Bristol	Weston Super Mare Hospital

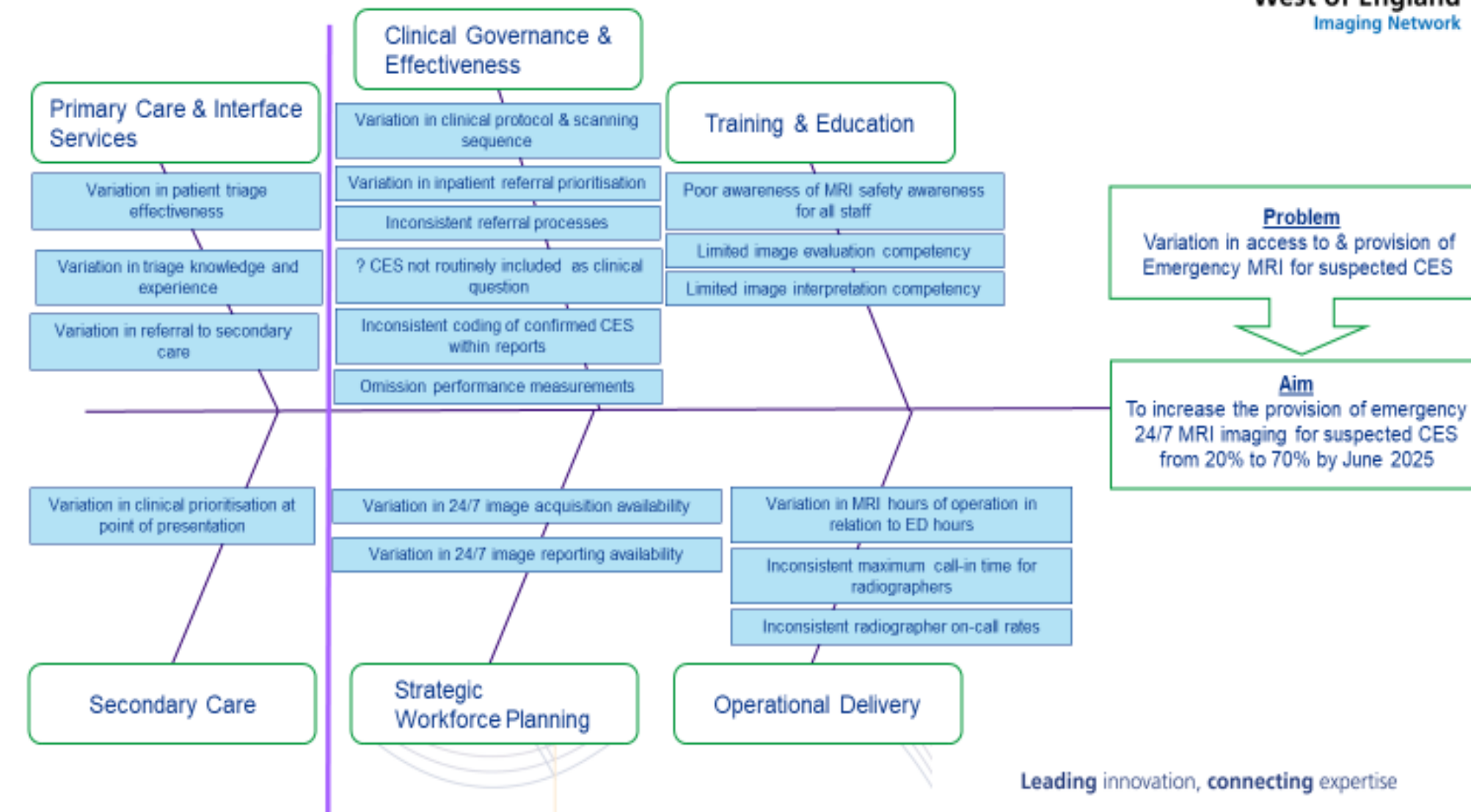
Objectives

- To provide evidence of the current state of provision of MRI for emergency CES.
- Identify obstacles to improvement and look at opportunities for workflow redesign.
- Develop and implement a consistent quality improvement framework across the Network

Driver Diagram



Fishbone diagram



Outcome Measure

- Provision of 24/7 Emergency MRI imaging for suspected CES across the network.
- Access to MRI safety Education for all referrers

Process Measures

- Number of Hospital Trusts who agree to match MRI and ED opening times.
- Number of Hospital Trusts who agree to provision of MRI safety training.

Balancing Measures

- Radiographer on-call hours and call in times.
- Variation in patients presenting with CES cannot be easily predicted

PDSA Cycles

PDSA Cycle 1



- Questionnaire to assess the provision of 24/7 Emergency MRI imaging for suspected CES.
- Questionnaire to assess the provision of MRI safety for all referrers

PDSA Cycle 2



- Development / recommendation of learning platform to improve awareness of MRI safety for all referrers.
- Development / recommendation of extended MRI opening times.

Results

- Work is continuing on the workstreams that resulted from the CES project. (Therefore data is still being collected).
- It was found that there was a huge discrepancy between waiting times across the WOIN area, directly related to MRI opening hours and referral times.
- A Quality Improvement Network has been established across the region and Radiographers are now being utilised on other quality projects within Radiology departments.
- An overall feeling amongst participants of greater confidence and empowerment, along with a greater understanding of Quality Improvement techniques.
- Extended opening hours at Great Western Hospital MRI for CES patients during the week.
- MRI Safety Education has been added to the eLearning platforms at Gloucester Hospitals NHSFT and Somerset NHSFT.
- The seven Trusts which make up the WoEIN network each use a different IT systems. As a direct result of the project, they have now jointly procured a new software that facilitates image and information sharing across the entire Network.

Next steps

- Extended opening hours still need to be agreed, particularly at Weston General Hospital where patients have to be transferred to the Bristol Royal Infirmary during the OOH period.
- A standardised MRI Safety Education module is being developed for the Network.