Reducing Sedation in Paediatric Nuclear Medicine Scans

SaTH Improvement Hub

NHS The Shrewsbury and Telford Hospital NHS Trust

Theme | Outpatients

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REASON WHY?

Paediatric nuclear medicine scans were heavily reliant on sedation, placing pressure on limited beds, staffing and monitoring capacity, and contributing to long waiting times (average 258 days, with waits up to 652 days). Such prolonged waits risked delaying diagnosis and treatment planning, while causing significant anxiety and uncertainty for children and their families. A more sustainable, patient-friendly approach was needed to reduce delays, improve experience, and increase departmental capacity.

SMART AIM

S SPECIFIC M MEASUREABLE A ACHIEVABLE R RELEVANT T TIME-BOUND

To reduce the average wait time for paediatric nuclear medicine scans by 25% by June 2026.

PLAN

Historically, paediatric patients undergoing nuclear medicine scans relied heavily on sedation due to the need for children to remain still during imaging. The average wait time was 258 days with the longest wait reaching 652 days.

The team worked together to design a new approach centred on removing the need for sedation through alternative techniques and pathway redesign.

This includes:

- Non-sedation scanning model at RSH
- Suitability for non-sedation criteria created
- Improved patient prep using Emla cream to reduce pain from cannulation
- Child-friendly approaches and distraction techniques during scanning
- Immobilisation techniques to support children remaining still without sedation
- Dedicated Child friendly days with the aid of Paediatric speciality Doctor
- Remove the need for sedation-related monitoring and recovery beds

DO

The team implemented the new pathway from late January 2026, following the last sedated scan at Telford (28 January 2026).

Key actions included:

- Transitioning paediatric scanning activity to RSH.
- Removing the need for sedation in appropriate patients
- Embedding distraction and comfort techniques into standard practice.
- Testing the new model on increasing numbers of patients.

Results of implementation: of the 49 patients scanned across PRH and RSH, 26 paediatric scans were completed without sedation at RSH between January and June 2026.

Mix of scans completed:

- 38 DMSA scans (19 non-sedated post-change)
- 9 MAG3 scans (6 non-sedated post-change)
- 1 bone scan (completed within 8 days of request)

All scans referred on the non-sedation pathway were completed without sedation.

STUDY

The data demonstrated a clear improvement following the change.

- Average wait time reduced from 258 days to 138 (46% decrease)
- Scans are all now delivered within clinically expected timeframes
- Removal of sedation reduces dependency on beds and monitoring.
- Improved patient flow and throughput within a constrained department.
- Patient and parent feedback was extremely positive with families reporting positive experiences, expressing relief that their child did not require sedation and could complete the investigation more quickly and comfortably.

In addition:
The backlog was eliminated, with only a small number of newly referred patients awaiting planned appointments. The new approach released valuable paediatric bed and staff capacity, reduced the costs associated with sedation and recovery, and enabled more timely access to diagnostic imaging. Families also benefited from a less invasive pathway, avoiding the anxiety and disruption associated with sedation.

ACT

ADOPT
Non-sedation pathway as standard practice.

ADAPT
Continue to refine techniques to support children without sedation.

Overall
Reduced the waiting list to minimal levels, with only a small number of patients awaiting planned appointments. The change follows national guidance and has demonstrated that sedation is not always required for paediatric nuclear medicine scans. A patient-centred, creative approach can improve both experience and efficiency. Removing unnecessary steps (such as sedation and monitoring) can significantly increase capacity.

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