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DRIVE-THROUGH EXPRESS MRI: TEN YEARS' EXPERIENCE AT BIRMINGHAM CHILDREN'S HOSPITAL, BIRMINGHAM, UK

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Context:

Anaesthetising children for MRI scans often present challenges to the anaesthetist. Principally these are due to a patient population with significant medical problems, presence of a powerful magnetic field, and remote area anaesthesia.

Problem:

Demand for GA-MRI scans in children is increasing, far exceeding resources to avoid waiting lists. This, combined with ever-increasing demand on hospital beds makes facilitating these scans with a hospital stay, even a day-case bed, unrealistic.

Strategy for change:

A lack of day-case beds over 10 years ago necessitated a change in approach. Even with increased day-case beds to match demand for surgical procedures, shortage of beds to match MRI demand continues. With admission directly to radiology, and discharge immediately from recovery we have found a way to overcome this shortfall and adapt to the increasing demand for GA-MRI.

In 2009 a 'MRI Express' service was established. Radiology requests are screened by an anaesthetist or the preadmission team to establish suitability for express. Whilst these can be ASA 1-3, patients with problems such as anticipated difficult airway, complex neuromuscular disease, premedication requirement due to anxiety or uncorrected complex congenital heart disease are excluded. On the day, they arrive in radiology at staggered times, are admitted to the department and seen by the anaesthetist. Shortly after they have induction of anaesthesia and the scan performed. They are recovered within the radiology recovery area and discharged home directly. This is usually within 30 minutes of scan completion once discharge criterion has been fulfilled.

Measure of improvement:

On average there are 50-70 outpatient GA scans done per week, of which 50% are 'Express'. A recent audit showed no unanticipated overnight stays or readmissions within 24 hours. Although difficult to quantify the cost of 'a bed', we anticipate this represents a significant saving to the trust. Given increasing demand for GA-MRI, the ability to avoid admission to a bed means we can continue to provide GA-MRI despite bed shortages in the wider hospital. A recent survey of the consultant body demonstrated unanimous support of this service.

Lessons learnt:

This service is safe. In an unpredictable era with increasing burden on healthcare services, an ability to do GA scans without pressure on inpatient resources is desirable. The impact on patients and

families is also reduced with a decreased length of stay and avoidance of busy wards with multiple service users. A recent service evaluation showed no inappropriately booked express patients, however, consultant review on the day highlighted some cases that could have been protocolled as 'express' therefore potential to further reduce bed requirement.

Message for others:

Patients do not always require a day-case bed for GA-MRI. This could represent monetary and social benefits.

Reference

1. Birmingham Children's Hospital, Standard Operating Procedure - Anaesthesia in MRI and CT. A Tatman, V. Ramanathan, L Bowes, R Marcus. June 2021.