GETTING IT RIGHT FIRST TIME

Paediatric Trauma and Orthopaedics Programme in Northern Ireland

October 2024

This report has been produced by the Getting It Right First Time (GIRFT) Project Team at the Royal National Orthopaedic Hospital (RNOH/GIRFT). It aims to identify areas of improvement to the Northern Ireland paediatric trauma and orthopaedic service to address long waiting times and ensure best outcomes for patients, by reducing unwarranted variation and maximising the use of existing resources and assets.

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Executive Summary

This report follows a review of paediatric Trauma and Orthopaedic (T&O) services in Northern Ireland in April 2024. All staff, both clinical and operational, were very open and honest in providing views on where they felt there were challenges and recognising that there is a real need to improve services and improve communication.

During our visit we were struck by the limited space and resources available for the treatment of children at the Royal Belfast Hospital for Sick Children (RBHSC). This applied to all specialties and waiting times reflected the shortage of theatres, beds and medical staff resources. Paediatric trauma and orthopaedics was particularly affected due to the restricted use of the facility at Musgrave Park Hospital (MPH).

Post pandemic, elective services for children in all specialties have not recovered. Data show long waiting times with many patients waiting over 18 months and indeed 2 to 3 years during which time harm occurs. We have identified opportunities to maximise the use of the resources available at RBHSC. Some of these could be implemented at pace, making an immediate impact on the excessive waiting times that children and young people have been experiencing. In particular, the changes recommended for theatres should have a significant impact.

During our visit, we found that the lack of resource had resulted in some difficulties manifesting themselves as inefficiency, poor communication and lack of pursuit of the common goal of treating children expeditiously. This is unfortunate as we recognised that everyone we met had the interests and needs of children as their main objective. We do believe that some work is required to restore communication and productive relationships.

The use of the paediatric beds at Musgrave Park Hospital has clearly been contentious. These were closed to in-patients following a report from the Royal College of Anaesthetists (RCOA) published in June 2016. Since then waiting lists have steadily grown to unacceptable levels with none of the alternative bed provision which the RCOA had anticipated. We believe that, at this stage, the use of these beds should be maximised by fully and safely reopening the ward, particularly to healthy children, releasing the more specialised facilities of the Children's Hospital for those with significant comorbidities.

We have made a **total of 26 recommendations** in this report. We believe that the prompt implementation of these recommendations is essential if Northern Ireland is to deliver a high quality and sustainable paediatric T&O service effectively and safely for patients in the short, medium, and long term.

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1. Introduction

Getting It Right First Time (GIRFT) is a national programme in England developed by the GIRFT national team under the chairmanship of Professor Tim Briggs. GIRFT has been designed to improve patient care, by reducing unwarranted variations in clinical practice. GIRFT helps identify clinical outliers and best practice amongst providers, highlights changes that will improve patient care and outcomes and delivers efficiencies (such as the reduction of unnecessary procedures) and cost savings.

Working to the principle that a patient should expect to receive equally timely and effective investigations, treatment and outcomes wherever care is delivered, irrespective of who delivers that care, GIRFT aims to identify approaches from across the NHS that improve outcomes and patient experience.

The High Volume Low Complexity (HVLC) programme is a priority data-led transformation programme supporting the recovery of elective care services post COVID-19 pandemic. It aims to reduce the backlog of patients waiting for planned operations, improve clinical outcomes and access to services through standardised clinical pathways (HVLC programme - Getting It Right First Time - GIRFT).

The GIRFT Projects Directorate at the Royal National Orthopaedic Hospital (RNOH/GIRFT), also under the chairmanship of Professor Tim Briggs, was commissioned by the Northern Ireland Department of Health (NI DoH) to undertake a review of their Paediatric T&O service, which is located in just one Trust area, Belfast Health and Social Care Trust (BHSCT). We were informed that this service is experiencing significant issues that are preventing the scaling of capacity and the reduction of long waiting times.

The aim of this review was to:

- Identify areas of improvement to the paediatric T&O service to address long waiting times and reduce harm;
- Advise on the prioritisation of demands within the service;
- Advise on what can be delivered with the current resource; and
- Assess the paediatric T&O service, where possible, against the standards in England.

The programme followed a standard GIRFT review approach in the following phases:

- Data gathering from questionnaires and meetings with clinical and ancillary staff;
- A visit to BHSCT on 29th and 30th April 2024 to review paediatric T&O services. The visit included a walk round of the units and discussions with various teams and senior management.

RNOH/GIRFT will provide BHSCT with support to implement our recommendations. We will convene monthly paediatric T&O meetings with key stakeholders in the region for three months, with the first meeting planned for 14th October 2024.

This report details the methodology, findings and recommendations arising from the data analysis, deep dive engagement and on-site evidence gathering on paediatric T&O services.

We have made 26 recommendations in the report, which we strongly encourage the NI DoH to implement via a permanent, cross-specialty children's task force.

2. Table of Recommendations

No	Recommendations
1	NI DoH should establish a children's cross-specialty task force to take responsibility for the issues in children's care that have been highlighted in the media, by the Royal College of Paediatrics and Child Health (RCPCH) in their recent report and by this and other reports. The task force group should meet regularly to provide an update on the progress made against each recommendation.
2	The DoH should ensure that all NI Trusts work together to alleviate the pressure on the RBHSC. This should include prevention of the flow of straightforward cases to the Children's Hospital and early return of suitable cases to district general hospitals with paediatrics. Whilst the scope of this report is the paediatric orthopaedic service, this recommendation should be considered for all paediatric specialties.
3	The DoH and the Belfast Trust should reverse the age range admitted to the Children's Hospital back to the limit of 14 years old. Whilst the scope of this report is the paediatric orthopaedic service, this recommendation should be considered for all paediatric specialties.
4	Given the shortage of beds and theatres at the RBHSC, the Trust should make full use of the facilities in place at MPH.
5	BHSCT to prioritise the recovery of the paediatric services and to encourage teams to work together more cohesively and deliver a sustainable, efficient service.
6	A children's multi-disciplinary forum which oversees surgery should be established to oversee service provision, pathways and policies with a focus on safety and quality improvement. Please refer to the Royal College of Anaesthetists - Guidelines for the Provision of Anaesthetic Services Report 2024. Membership should include representation from surgical, anaesthetic, nursing and management teams. For T&O services, this should provide the forum to establish standard pathways for activity at RBHSC and MPH, and remove the daily variation based on individuals' preferences.
7	BHSCT should ensure all patients are pre-assessed through an agreed system and this should be the same system wherever they have their operation.
8	BHSCT/RBHSC should ensure that there are ring-fenced beds for surgical admissions to ensure that there are no delays to commencing lists. The number of beds required would need to be between three and six.
9	BHSCT/RBHSC should ensure that theatre lists are appropriately booked with efficient start times and agreement to finish on time. Theatre utilisation should be monitored and optimised (target 85%).
10	BHSCT/RBHSC should reorganise the theatre timetable so that the majority of lists are all day lists to increase efficiency, for T&O and surgery in general.
11	BHSCT/RBHSC should initiate and develop a theatre scheduling meeting and embed the GIRFT Theatre Scheduling guide, progressing to the 6-4-2 recommended scheduling. BHSCT should review trend data to inform the meetings to provide greater insight and intelligence to drive decision-making.
12	BHSCT/RBHSC should urgently institute theatre usage of three session days to decrease the number of cancellations due to lack of theatre time.
13	BHSCT/RBHSC should maximise utilisation of the beds and theatre suite of the Children's Hospital.
14	BHSCT/RBHSC should make provision for orthopaedic trauma lists to be scheduled regularly, including at the weekend.
15	BHSCT/RBHSC should ensure that day case beds are protected for day case activity.

16	Children undergoing operations at MPH should be done in a cohorted fashion, ideally on children only lists or in the morning as part of mixed lists. Paediatric operating should be concentrated on days early in the week.
17	A designated lead for paediatric anaesthesia and perioperative care should be appointed at MPH and this lead should have assigned time in their job plan. This role should ensure the safe selection of children for surgery on the MPH site through standardised pre-assessment and the delivery of safe quality care for children on the MPH site in the perioperative pathway. They should work in close partnership with the specialist anaesthetists from RBHSC who also work at MPH.
18	MPH should increase number of paediatric and adolescent operations performed. In order to achieve this the children's ward should be opened to allow transfer of appropriate cases from RBHSC both pre-and post-operatively. This will require careful liaison between orthopaedics, paediatrics and anaesthesia; our observation is that some team-building and improvement in communication will be required to achieve this.
19	Surgical activity in Children and Young People needs to be clearly identified which is appropriate for delivery at an alternative site (MPH) in accordance with agreed criteria. This needs to be agreed collaboratively at service level (orthopaedics, anaesthetics and paediatricians).
20	Additional bed capacity at RBHSC could be generated by considering other cohorts of children who could receive their care at MPH if a fully established paediatric ward was available on this site. This should include trauma inpatients with little co-morbidity and predictable discharges which would result in a significant decrease in demand on the orthopaedic and emergency theatre sessions.
21	BHSCT and WHSCT should work together and undertake a review of the developmental dysplasia of the hip screening service workforce and develop a strategy to improve the resilience of this service.
22	The expansion of the paediatric T&O team should include the appointment of a consultant with appropriate training and experience in the assessment and treatment of ambulant cerebral palsy.
23	The paediatric T&O consultant team should be expanded to allow a consultant of the week model covering all fracture clinics and trauma lists and fully staffing the rota.
24	The DoH and the Trust should immediately invest in paediatric anaesthesia such that the rota is resilient for specialised paediatric anaesthesia. The principle should be that theatre lists at the Children's Hospital are never cancelled due to anaesthetic shortages.
25	The Trust should expand the specialised paediatric anaesthesia group to establish the pre-assessment service and the duty anaesthetist service, whilst supporting the currently nurse-led acute pain service.
26	BHSCT should ensure that all children undergoing surgery at the RBHSC and MPH sites should have a standardised pre-operative assessment completed in accordance with national best practice guidelines: • Anaesthetic and nursing teams should have structured protected time to deliver a pre-operative assessment service, and nursing teams supported in accessing established training courses in paediatric pre-assessment in England. Pre-operative assessment services at RBHSC and MPH should work together to develop shared policies to ensure standardisation of the combined service. This should ensure a standardised approach to triage, preparation and discharge of children at each site.

3. Findings and Recommendations for Paediatric T&O Services in Northern Ireland

3.1 Royal Belfast Hospital for Sick Children

Royal Belfast Hospital for Sick Children (RBHSC) is an 83 bed hospital located on the same campus as the Royal Victoria Hospital (RVH) and the maternity hospital. It serves as the tertiary paediatric hospital for the whole of Northern Ireland and as the secondary care hospital for the Belfast Health and Social Care Trust (BHSCT) and for the Northern Health and Social Care Trust (NHSCT) which has no paediatric facilities. The hospital is managed by BHSCT.

As in other parts of the UK, there has been a creep of secondary care to the tertiary centre even from Trusts that are equipped and commissioned to provide it. Misuse of this function often leads to the flow of standard orthopaedic trauma to the specialist centre, at the inconvenience of families and staff.

In 2018/19 there was a policy change that increased the age limit of patients from 14 years old up to the age of 16 years old. This has increased the demand for all operations by at least 10%, and more for paediatric T&O. It was brought in when planned elective care was not taking place and thus resources were less stretched and emergency care could be accommodated. There is disagreement as to whether there was adequate planning or resource allocation ahead of this significant change in service delivery for the short, medium or long term. Although we recognise that many children's hospitals receive patients up to age 16 and that this was an objective in the Strategy for Paediatric Healthcare Services, published in November 2016, this requires an adequately sized and appropriately resourced facility, which is not the current situation.

In our time in the hospital, we visited all the departments that interact with paediatric T&O. Our overall impression was that every department was cramped for space, with little room for equipment storage and no obvious possibility for expansion. In particular, the theatre suite and surgical wards are insufficient to cope effectively with the workload presented.

We are aware of plans to build a new children's hospital in Belfast. We did not see these but were shown the space identified for the development. It should be noted that all the senior clinicians we met were extremely sceptical about the timescale for the development as most of them had been promised this new hospital throughout their professional careers.

The RBHSC has insufficient resources to manage its dual roles as the tertiary paediatric hospital for Northern Ireland and the secondary care facility for BHSCT. The lack of resources has been exacerbated by the extension of the age range treated for both emergency (and elective care) occasioned by the pandemic. These resource shortages include:

- A lack of theatre time: both in terms of number of theatres and ability to use the available time;
- A lack of beds; and
- A lack of anaesthesia provision including the essential aspect of pre-operative assessment.

It should be noted that these resource issues affect all specialties at the RBHSC, not just T&O. The problems in T&O are exacerbated by the historic displacement of activity from Musgrave Park Hospital (MPH) which has never been replaced and the increase in trauma patients

caused by the changes to the age range admitted to the Children's Hospital. Unfortunately, the re-provision of activity at MPH has become a divisive issue between the orthopaedic surgeons and anaesthetists.

RBHSC have a good, dedicated nursing team. We were told that BHSCT have little difficulty in recruiting and retaining paediatric nursing staff. This is in sharp contrast to much of the UK and a bonus for which the Trust should be grateful. This fact does allow scope to develop the roles of Clinical Nurse Specialists to help run clinics and further their skillset on the wards.

Recommendation 1: NI DoH should establish a children's cross-specialty task force to take responsibility for the issues in children's care that have been highlighted in the media, by the RCPCH in their recent report and by this and other reports. The task force group should meet regularly to provide an update on the progress made against each recommendation.

Recommendation 2: The DoH should ensure that all NI Trusts work together to alleviate the pressure on the RBHSC. This should include prevention of the flow of straightforward cases to the Children's Hospital and early return of suitable cases to district general hospitals with paediatrics. Whilst the scope of this report is the paediatric orthopaedic service, this recommendation should be considered for all paediatric specialties.

Recommendation 3: The DoH and the Belfast Trust should reverse the age range admitted to the Children's Hospital back to the limit of 14 years old. This should reduce the demand for T&O paediatric operations by at least 10%. Whilst the scope of this report is the paediatric orthopaedic service, this recommendation should be considered for all paediatric specialties.

Recommendation 4: Given the shortage of beds and theatres at the RBHSC, the Trust should make full use of the facilities in place at MPH.

Recommendation 5: BHSCT to prioritise the recovery of paediatric services and to encourage the teams to work together more cohesively and deliver a sustainable, efficient service.

Recommendation 6: A children's multi-disciplinary forum which oversees surgery should be established to oversee service provision, pathways and policies with a focus on safety and quality improvement. Please refer to the Royal College of Anaesthetists - Guidelines for the Provision of Anaesthetic Services Report 2024. Membership should include representation from surgical, anaesthetic, nursing and management teams. For T&O services, this should provide the forum to establish standard pathways for activity at RBHSC and MPH, and remove the daily variation based on individuals' preferences.

3.2 Operating Theatres

There are three operating theatres in a single suite within RBHSC. These theatres operate a 10-session weekday model with a single theatre operating for all specialty emergencies outside scheduled lists. The theatre timetable is shown in **Figure 1**. The orthopaedic lists are mostly afternoon sessions that are often disrupted by the morning session over-running. There is a shared emergency list 4 days of the week, but this is insufficient, resulting in regular displacement of trauma work into the elective lists and necessitating additional trauma working at the weekend.

Figure 1: Theatre timetable

Specialty	Number of Lists
Orthopaedics	4
Plastics	6
General Surgery	8
ENT	2
Oncology	1
Neurosurgery	2
Spinal Surgery	2
Dental	1
Gastroenterology	1
Emergency	4

We saw data showing a high rate of cancellation of surgery. This had multiple antecedents; lack of beds, failures of pre-assessment, anaesthetic shortages, late starts, overbooking of lists/lack of scheduling. We noted that there were no scheduled orthopaedic trauma lists and that all the orthopaedic lists were scheduled for the afternoon sessions.

We were told that there were issues with stock and equipment and with imaging in theatre, particularly out of hours when there was only a single radiographer for the entire hospital. We were told that 6 out of 20 radiographer posts at the hospital were unfilled, at the time of our visit.

There are no dedicated orthopaedic trauma lists at the Children's Hospital. Orthopaedic trauma and other urgent cases are performed on the designated orthopaedic lists or on the emergency list which is shared with all other specialties. Trauma cases are a frequent cause of the cancellation of elective cases.

There was no routine scheduling meeting and few all-day lists, none of which were in T&O. There should be regular theatre scheduling meetings that take account of clinical priority, waiting time and pre-assessment status. Ideally, they should conform to the GIRFT 6-4-2 schedule guidance allowing appropriate deployment of staff and theatre resources.

There is a day-case ward with two 4-bed bays and two side rooms, which is open 8:00am-7:00pm Monday-Thursday and 8:00am-6:00pm on a Friday. Emergency Department pressures with discharge to access (DTA's) often result in this elective surgical space being used as overflow bed capacity resulting in cancellation of elective surgery.

Recommendation 7: BHSCT should ensure all patients are pre-assessed through an agreed system and this should be the same system wherever they have their operation.

Recommendation 8: BHSCT/RBHSC should ensure that there are ring fenced beds for surgical admissions to ensure that there are no delays to commencing lists. The number of beds required would need to be between three and six.

Recommendation 9: BHSCT/RBHSC should ensure that theatre lists are appropriately booked with efficient start times and agreement to finish on time. Theatre utilisation should be monitored and optimised (target 85%).

Recommendation 10: BHSCT/RBHSC should reorganise the theatre timetable so that the majority of lists are all day lists to increase efficiency, for T&O and surgery in general.

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Recommendation 12: BHSCT/RBHSC should urgently institute theatre usage of three session days to decrease the number of cancellations due to lack of theatre time.

Recommendation 13: BHSCT/RBHSC should maximise utilisation of the beds and theatre suite of the Children's Hospital.

Recommendation 14: BHSCT/RBHSC should make provision for orthopaedic trauma lists to be scheduled regularly, including at the weekend.

Recommendation 15: BHSCT/RBHSC should ensure that day case beds are protected for day case activity.

3.3 Musgrave Park Hospital

MPH is 2½ miles from the Children's Hospital on a spacious campus with plentiful parking facilities, which are attractive and convenient features for families. On-site there is a large elective orthopaedic unit with 10 theatres and 7 wards with a total of 115 beds. Other specialties on site include the regional acquired brain injury unit, the spinal-cord injuries unit, neuro rehabilitation and other associated specialties. Adult and paediatric rheumatology and paediatric neuro disability services are delivered from the MPH site.

The facilities include a 15 bedded children's ward staffed by RCN nurses (Ward 2B) consisting of three bays and three side rooms. Currently this is used for day case orthopaedic procedures and some single night stays. The facility is also used for rheumatology clinics, infusions and injections. There is excellent parental accommodation in a Ronald McDonald house, immediately next to the ward. The gait laboratory is located in the immediate vicinity. Currently there is no formal paediatric medical cover for the patients on the children's ward. There is some informal cover from the visiting rheumatologists and neuro disability consultants, but this is entirely ad hoc. There are currently 5.5 lists per week of elective orthopaedic surgery provided for children.

There is no theatre identified as specifically for children and so it is difficult to enhance the environment and ensure all essential equipment is available for all age ranges attending. The pathway for children is to transfer them from the ward to theatre and then from recovery back to the children's ward. Children appear to be booked on to mixed lists based on the surgeon operating, and it is not clear if children are being cohorted onto paediatric only lists or prioritised to the front of lists.

Recovery has two identified dedicated paediatric bays with appropriate equipment available including an airway trolley and emergency trolley. The lead recovery nurse organises staff to ensure an RCN with Advanced Paediatric Life Support (APLS) is always available in theatre on each shift. All recovery staff are Paediatric Immediate Life Support (PILS) trained. Parents are permitted to sit with their children in recovery. The lead nurse reports no significant adverse events in children. No patient controlled analgesia, nurse controlled analgesia (PCA, NCA) or epidurals are provided on the MPH site, said to be in response to the

recommendations of the Royal College of Anaesthetists report in 2016. Algorithms on pain assessment, pain management, fluid administration and anaphylaxis were not immediately visible. The nursing team reported some variation in confidence in the anaesthetists with younger children (3-6 year olds).

The children's ward is well-staffed with RCN trained nurses. The ward space is also used to provide some out-patient paediatric clinic capacity (rheumatology).

The case selection agreed is predominantly day cases (>2 year, ASA I or II). The limiting factors for expanding the volume of activity to include overnight stays have been identified as the provision of appropriate pre-assessment for children, the accessibility of an acute pain service and appropriate paediatric medical provision to manage unexpected medical emergencies in children out of hours. The individual variability on age ranges and comorbidities of the children being referred for surgery, leads to frustration, conflict and poor professional behaviours, and this must be improved. Standardisation of the pre-assessment process and better communication between colleagues should facilitate this.

Ongoing care of the patients on the orthopaedic wards is provided by resident medical officers (RMOs). These doctors are long-standing members of the orthopaedic team but have had no experience of the care of children, apart from as day cases, in the last seven years. We were told that they would not be happy to look after sick children and that they and the adult anaesthetists might be unhappy to prescribe fluids to children post operatively. Training in the care of children for these doctors would need to be a part of increasing the use of the paediatric ward at MPH.

A pilot is under way to fund a consultant paediatrician to remain resident overnight and facilitate overnight stays for children, and 1 overnight case is being admitted per fortnight. Following the concerns described in the March 2016 RCOA report, an action plan was devised by managerial and clinical teams to meet the points raised and enable safe delivery of children's care at the MPH site out of hours. This has progressed well, and most of the key points have been met, although some remain in progress.

There is no established anaesthetic service for children at MPH, physically or administratively.

Anaesthetic services are provided both by consultants visiting from the RBHSC and by consultants with an interest in paediatric anaesthesia who are based at MPH and part of the orthopaedic anaesthesia team of over 30 consultants. Anaesthetic cover at MPH is consultant based with no resident junior or middle grade anaesthetist. Even during the day there are few middle grade anaesthetists working at the hospital.

The 5 anaesthetists at MPH with an interest in paediatrics are overseen by a different division within BHSCT compared to the specialist paediatric anaesthetists. The MPH does have a clinical director for anaesthesia, but he has not been able to appoint a lead to oversee delivery of the service for children.

3.3.1 Perioperative in-patient care of children

The most important requirement to allow the safe delivery of care for children as in-patients is the establishment of a model to provide appropriately skilled paediatric clinical presence Monday to Friday, in hours and out of hours in alignment with standards of care on paediatric wards. This will enable elective surgery to be delivered with the option for overnight stays. However, this does not equate to a significant increase in the complexity of the cases being delivered there. The overnight stay provision would enable the transfer of further cohorts to MPH for surgery or for a period of recovery, which could free bed capacity at RBHSC which

would benefit all surgical specialties. This could include trauma work in otherwise fit and healthy children.

3.3.2 Administrative provision

A clear structure for the administration and delivery of paediatric services on the MPH site should be established with appropriate resource allocated to these individuals. There should be close collaboration with the BHSCT facilitating simple, reliable and timely exchange of clinical/laboratory information.

Recommendation 16: Children undergoing operations at MPH should be done in a cohorted fashion, ideally on children only lists or the morning part of mixed lists. Paediatric operating should be concentrated on days early in the week.

Recommendation 17: A designated lead for paediatric anaesthesia and perioperative care should be appointed at MPH and this should have assigned time in their job plan. This role should ensure the safe selection of children for surgery on the MPH site through standardised pre-assessment pathways and the delivery of safe quality care for children in the perioperative period on the MPH site. They should work in close partnership with the specialist anaesthetists from RBHSC who also work at MPH.

Recommendation 18: MPH should increase the number of paediatric and adolescent operations performed. In order to achieve this, the children's ward should be opened to the transfer of appropriate cases from RBHSC both pre-and post-operatively. This will require careful liaison between orthopaedics, paediatrics and anaesthesia; our observation is that some team-building will need to be built in to achieve this.

Recommendation 19: Surgical activity in Children and Young People which is appropriate for delivery at an alternative site (MPH) needs to be clearly identified in accordance with agreed criteria. This needs to be agreed collaboratively at service level (orthopaedics and anaesthetics and paediatricians).

Recommendation 20: Additional bed capacity at RBHSC could be generated by considering other cohorts of children who could receive their care at MPH if a fully established paediatric ward was available on this site. This should include trauma inpatients with little co-morbidity and predictable discharges which would result in a significant decrease in demand on the orthopaedic and emergency theatre sessions.

3.4 Specialist Paediatric T&O Services

The paediatric orthopaedic service is a regional service covering the whole of Northern Ireland. Historically this has been a highly effective service, delivering all the standard elements of a paediatric orthopaedic practice and has been a leading UK practice in some areas through publication.

We were told that the paediatric T&O consultants are concerned for the future of paediatric T&O in the province due to under-resourcing. One consultant has resigned and re-located to England and others have diversified into areas of adult practice. The uncertainty relating to the provision and delivery of paediatric orthopaedic services has resulted in few recent T&O trainees opting to sub-specialise in Paediatric Orthopaedics.

There are typical outreach clinics in other hospitals and special schools and there are specialist clinics for the major pathology that is treated by the specialty e.g. clubfoot, developmental dysplasia of the hip (DDH) and cerebral palsy.

The DDH screening service is provided in clinics at MPH and Altnagelvin Area Hospital in the Western Health and Social Care Trust (WHSCT). Benchmarking against recent publications from England suggest that it is a successful service demonstrating a reduction in late presentation and a consequent reduction in the requirement for surgery. The service runs on specialist nurses with consultant supervision. The team is small and vulnerable to sickness, maternity leave and retirement. Currently the DDH service has 2.5 whole time equivalents (WTE) band seven nurses.

The clubfoot service for the entire province runs from MPH, supervised by a single consultant paediatric orthopaedic surgeon and specialist nurses. Audited figures show a tenotomy rate of 81%. Tenotomy is performed in theatre under local anaesthetic. Currently this does not impinge on other procedures.

There are between 800 and 1000 children under 16 with Cerebral Palsy (CP) in Northern Ireland. There is no cerebral palsy integrated pathway (CPIP) but the children are seen annually by appropriate trained physiotherapists. A pilot CPIP in the Northern Health and Social Care Trust (NHSCT) was successful but demised following the resignation of a consultant paediatric orthopaedic surgeon in 2022. Children with CP are seen in 83 specific clinics both at MPH and externally. Many of these are held in conjunction with orthotics, allowing integrated care.

There is a well-equipped and staffed gait laboratory at MPH. Currently there is only one gait trained paediatric orthopaedic surgeon; he has already retired and returned to work. The gait lab staff otherwise consists of a specialist physiotherapist and bioengineer. Succession planning is imperative.

Surgery for children with CP is mostly conducted at the RBHSC and these children appear to have suffered disproportionately from the prolonged waiting times and cancellations that have been experienced. We were shown clear examples in which they had come to harm.

Recommendation 21: BHSCT and WHSCT should work together and undertake a review of the developmental dysplasia of the hip screen service workforce and develop a strategy to improve the resilience of this service.

Recommendation 22: The expansion of the paediatric T&O team should include the appointment of a consultant with appropriate training and experience in the assessment and treatment of ambulant cerebral palsy.

3.5 Emergency Department/Trauma

The emergency department (ED) at RBHSC sees between 45,000 and 50,000 patients per year. This benchmarks to a similar level to the paediatric ED in Nottingham and there are few single site trusts in England receiving many more paediatric patients. There are issues with major trauma. The RVH is the regional trauma centre for Northern Ireland but the Children's Hospital is not a major trauma centre. However, it receives major trauma cases through the major trauma system for adults as the RVH has no facilities for patients under 14. This activity appears to be neither commissioned nor funded. The situation regarding children's major trauma provision should be reviewed and probably requires investment. The combination of a small department, staff shortages and waits for beds has led to long trolley waits being the norm.

The department is staffed by seven full-time equivalent consultants working between 8:00am and 11:00pm but frequently longer. It was noted that there are no urgent care centres for children and that there appeared to be a tendency for GPs to triage urgent cases to the RBHSC rather than local DGHs with paediatric beds/services.

We were told that at 2:00am there are frequently 30 or 40 patients waiting to be seen and on the day of our visit most of the cubicles in the ED were occupied by children waiting for beds in the hospital thus preventing any throughput. The shortage of radiographers negatively impacts ED flow. Despite all this, there is excellent co-operative working between the ED and the T&O surgeons. The ED has facility to do both light and deeper procedural sedation and undertakes many fracture manipulations. The orthopaedic surgeons have assisted with the pressures on ED by taking more patients to their fracture clinic and virtual fracture clinic.

3.6 Fracture clinic

The fracture clinic runs each morning and two afternoons a week. It is extremely busy and in 2023 saw approximately 7000 new and review patients. A virtual fracture clinic operates successfully; approximately 35% of new cases are treated without direct contact.

The flow of patients through the fracture clinic can be impacted by the reallocation of trained fracture clinic nurses to other parts of the outpatient department. Increased use of plaster technicians should be considered to supplement the workforce.

The consultant workforce is insufficient to provide cover to the fracture clinic every day without cross cover that can impinge on the delivery of other parts of the service.

Recommendation 23: The paediatric T&O consultant team should be expanded to allow a consultant of the week model covering all fracture clinics and trauma lists and fully staffing the rota.

3.7 Paediatric Anaesthesia

There are insufficient paediatric anaesthetists to maintain consistent cover of the operating theatres at RBHSC. Anaesthetic posts have been replaced by intensivists to run the Paediatric Intensive Care Unit (PICU). Whilst this is in line with national trends it has left a shortage to manage the anaesthetic on-call and operating theatres. We were told that there is no funding for a daily duty/coordinating anaesthetist or for the clinical lead positions. Although the rota was notionally 1 in 11 there were constant gaps due to sickness and maternity leave. There were few sessions available for pre-assessment, two per week.

We were told that there are fellowship trained paediatric anaesthetic trainees in the system who could be appointed to address the shortfall. The departments of anaesthetics and theatres are shortly to present a paper to the board at RBHSC outlining strategies to improve all the areas that are under resourced. On the background of the shortages, the anaesthetists told us honestly that they did not favour development of the resource at MPH, although they recognised that some form of hub and spoke working could be useful to protect the beds at the Children's Hospital.

The anaesthetic service is under resourced because of reductions in the total WTE available over the last few years, some of which is attributable to a reduction in recruitment of paediatric anaesthetists as PICU consultants, and also an absence of recruitment of specialist paediatric anaesthetists. An additional 4 posts would return the department to its previous anaesthetic capacity, based on the loss of activity due to the appointment of paediatric intensivists. It would also enable additional capacity to support work at MPH, and establish a pre-assessment service in accordance with Best Practice Guidelines (RCOA/APAGBI 2022), an acute pain service (which would lead and support pain management on RBHSC and MPH sites), and the role of duty anaesthetist who provides flexible support to all consultant and trainee anaesthetists delivering lists during the day. This reduces avoidable cancellations, improves start times and theatre utilisation rates. This immediate expansion should be followed by a workforce review to establish the requirement going forwards.

Whilst there is a nurse delivered pain service at RBHSC, the acute pain service should be configured in line with the recommendations of the Faculty of Pain Medicine and include consultant anaesthetist led ward rounds, recognised in job plans. The lead for acute pain should also support the establishment of appropriate acute pain service provision and governance at MPH in partnership with a nominated MPH paediatric anaesthetic lead.

The designated anaesthetic lead for paediatrics at MPH should work closely with the paediatric pain service based at RBHSC to ensure clear protocols are in place for pain assessment and management of all ranges.

Pain assessment tools should be displayed in all clinical areas for non-verbal and non-verbal assessment of children. Pain protocols for simple routine and rescue analgesia in the post-operative period should be available.

Recommendation 24: The DoH and the Trust should immediately invest in paediatric anaesthesia such that the rota is resilient. The principle should be that theatre lists at the Children's Hospital are never cancelled due to anaesthetic shortages.

Recommendation 25: The Trust should expand the paediatric anaesthesia group to establish the pre-assessment service and the duty anaesthetist service, whilst supporting the current nurse-led acute pain service.

3.8 Pre-assessment

Pre-assessment is performed virtually with face-to-face encounters if required. Anaesthetic review is not routine but can be arranged if required for complex procedures or complex children. The lack of pre-assessment was highlighted by the paediatric anaesthetists as an area of concern.

The pre-assessment service should be configured in line with recent best practice guidance (APAGBI/RCOA 2022) to ensure all children undergo nurse led pre-assessment with criteria for referral to a consultant anaesthetist in a properly timetabled and resourced pre-assessment clinic. Clear policies should be designed to guide the nursing team to triage children appropriately and assess their suitability for surgery at the MPH site. There must be an agreed standard of anaesthetic provision to support this triage process, and a move away from individual driven preferences. The pre-assessment service should include orthopaedic and discharge planning with input from physio and occupational therapy. Effective pre-assessment will reduce on the day cancellations and improve theatre efficiency and utilisation.

Recommendation 26: BHSCT should ensure that all children undergoing surgery at the RBHSC and MPH sites should have a standardised pre-operative assessment completed in accordance with national best practice guidelines:

- **Anaesthetic and nursing teams should have structured protected time to deliver a pre-operative assessment service, and nursing teams supported in accessing established training courses in paediatric pre-assessment in England.**

Pre-operative assessment services at RBHSC and MPH should work together to develop shared policies to ensure standardisation of the combined service. This should ensure a standardised approach to triage, preparation and discharge of children at each site.