



Review of General Paediatric Surgery in Northern Ireland

December 2019

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Assurance, Challenge and Improvement in Health and Social Care

The Regulation and Quality Improvement Authority

The Regulation and Quality Improvement Authority (RQIA) is the independent body responsible for regulating and inspecting the quality and availability of health and social care (HSC) services in Northern Ireland. RQIA's reviews identify best practice, highlight gaps or shortfalls in services requiring improvement and protect the public interest. Our reviews are carried out by teams of independent assessors, who are either experienced practitioners or experts by experience. Our reports are submitted to the Department of Health (DoH) and are available on our website at www.rqia.org.uk.

RQIA wishes to thank the management and staff from HSC organisations for their co-operation and engagement with this Review.

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Glossary

APLS	Advanced Paediatric Life Support
Belfast HSC Trust	Belfast Health and Social Care Trust
CSF	Children's Surgical Forum
DGH	District General Hospital
DHSSPS	Department of Health, Social Services and Public Safety (renamed DoH in 2016)
DoH	Department of Health
ED	Emergency Department
ENT	Ear, Nose and Throat
HSC	Health and Social Care
MRI	Magnetic Resonance Imaging
Northern HSC Trust	Northern Health and Social Care Trust
PHA	Public Health Agency
PICU	Paediatric Intensive Care Unit
PILS	Paediatric Immediate Life Support
RBHSC	Royal Belfast Hospital for Sick Children
RCN	Registered Children's Nurse
RQIA	Regulation and Quality Improvement Authority
SBAs	Service and Budget Agreements
South Eastern HSC Trust	South Eastern Health and Social Care Trust
Southern HSC Trust	Southern Health and Social Care Trust
Western HSC Trust	Western Health and Social Care Trust
UK	United Kingdom
Surgery	All references to surgery, throughout this report, relate to general paediatric surgery unless otherwise specified.
2007 CSF report	Surgery for Children: delivering a first class service – Children's Surgical Forum of the Royal College of Surgeons of England, July 2007
2010 Standards	Improving Services for General Paediatric Surgery – Policy and Standards of Care for General Paediatric Surgery in Northern Ireland – DHSSPS, May 2010
2016 Strategy	Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026) - DoH, November 2016

Executive Summary

This RQIA initiated review was undertaken as part of RQIA's Three Year Review Programme 2015-2018. The fieldwork for this Review was completed in March 2017.

The terms of reference for this Review were:

- To establish a baseline for paediatric surgery in Northern Ireland as measured against Improving Services for General Paediatric Surgery – Policy and Standards of Care for General Paediatric Surgery in Northern Ireland, May 2010;
- To consider the current model of general paediatric surgery in Northern Ireland in relation to the new Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026);
- To assess the views of stakeholders in relation to the provision of general paediatric surgery in Northern Ireland; and
- To report on findings, identify areas of good practice and where appropriate make recommendations for improvements.

Background

In May 2010, the Department of Health, Social Services and Public Safety (DHSSPS) introduced new standards for general paediatric surgery; Improving Services for General Paediatric Surgery – Policy and Standards of Care for General Paediatric Surgery in Northern Ireland (Appendix 1)¹. These Standards were developed in response to an emerging trend of reducing numbers of paediatric surgeries being performed in district general hospitals (DGHs) and were designed to help drive improvement in paediatric surgery across Northern Ireland.

The 2010 Standards outlined that surgery would be performed at DGHs by either a paediatric surgeon or an adult general surgeon with the appropriate skills and competence in paediatric surgery. They also promoted a hub and spoke model of service which would incorporate the Royal Belfast Hospital for Sick Children (RBHSC) as the hub and DGHs as the spokes. It was envisaged that this model would facilitate collaboration between surgeons in DGHs and those in the RBHSC, and provide flexibility for service delivery at DGHs either by RBHSC paediatric surgeons, or by upskilling adult surgeons in DGHs to perform elective paediatric surgery independently.

¹ Improving Services for General Paediatric Surgery – Policy and Standards of Care for General Paediatric Surgery in Northern Ireland – DHSSPS - May 2010

Since 2010, health services for children and young people have undergone considerable change and it is anticipated that further change will be necessary in the years ahead.

In 2016, to provide a framework to support the development of future service models, the Department of Health (DoH) published a Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland 2016-2026 (2016 Strategy)². The 2016 Strategy outlined the co-ordinated development of paediatric services for the following ten years. It encompassed all paediatric services in the acute setting, including areas that are specific to surgery.

Alignment of Current Arrangements with Strategy and Standards

This Review assessed arrangements for the provision of general paediatric surgery in Northern Ireland against the 2010 Standards and it proposed a future service model aligned to the 2016 strategy published by DoH³. The Expert Review Team concluded that the 2010 Standards had not been fully implemented into practice in Northern Ireland. Consequently, the majority of general paediatric surgery was being performed by specialist paediatric surgeons based at the RBHSC. These arrangements presented a challenge for the RBHSC in the delivery of both general and specialist surgery for the region.

A hub and spoke model exists between the RBHSC and South Eastern Health and Social Care Trust (South Eastern HSC Trust) and the Western Health and Social Care Trust (Western HSC Trust). The Northern Health and Social Care Trust (Northern HSC Trust) and the Southern Health and Social Care Trust (Southern HSC Trust) advised the Expert Review Team of their willingness to explore the establishment of a hub and spoke model with the RBHSC.

The Expert Review Team concluded that the current inequity of access to elective surgery must be addressed to reduce waiting lists across general paediatric surgery, and recommended that Health and Social Care (HSC) organisations should prioritise the development and implementation of systems for centralised referral and waiting list management.

² Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026) - DoH, November 2016 - <https://www.health-ni.gov.uk/sites/default/files/publications/health/paediatric-strategy-hospital-andcommunity.pdf>

Staff Training and Workforce Planning

There is a recognised shortage of registered children's nurses in Northern Ireland, resulting in vacant posts being subsequently occupied by non-children's nurses. The Expert Review team found that though the majority of staff had received training in child protection, safeguarding, and paediatric life support, there is a need for an ongoing programme of refresher training in relation to these areas to be developed and provided for staff currently working with children.

Although HSC Trusts are currently developing their own bespoke children's training to meet their organisational needs, it is recommended that key paediatric competencies are identified with the aim of developing a regional training programme for non-children's nurses currently working with children.

Future Model and Managed Clinical Network

The Expert Review Team heard many different opinions from staff in relation to what the future model for general paediatric surgery provision should be. Therefore, reaching agreement on a suitable model for local delivery of surgery which would benefit patients, improve access and reduce waiting lists will present a challenge. The Expert Review Team supports the implementation of the objectives outlined in the 2016 Strategy aimed at reforming and modernising surgery (Appendix 2).

The Expert Review Team considered that a model whereby elective general paediatric surgery is performed at specific DGHs, using paediatric surgeons from RBHSC and DGHs, should be put forward as the future model for general paediatric surgery in Northern Ireland. It was recognised, however, that the final decision on the configuration of the future model rests with those stakeholders involved in commissioning, delivering and assuring this hub and spoke model.

In line with the 2016 Strategy, the establishment and operation of a managed clinical network is recommended. This managed network should inform the commissioning of services, develop new regional models of care, monitor the quality of services, benchmark outcomes and drive service improvement. This network must be sufficiently resourced and supported to ensure it is sustainable long-term. Initial meetings in relation to developing a managed clinical network commenced in May 2017, and included representatives from HSC organisations providing general paediatric surgery; however, the Expert Review Team noted that progress in establishing this network had been slow.

In all HSC Trusts, the Expert Review Team found staff were highly motivated and committed to delivering a quality service, with many surgeons having established informal links facilitating a level of communication between DGHs and RBHSC.

However, as part of the development of a future service model, formal links (with supporting processes) should be established between DGHs and RBHSC. The Expert Review Team recommends the development of agreed regional processes for staff in DGHs contacting the Paediatric Intensive Care Unit and paediatric surgeons in the RBHSC, and an agreed process for the transfer of children from DGHs to RBHSC. Implementation of these processes will require training for staff and appropriate assurance mechanisms.

The Expert Review Team determined there is a need to address inequity in relation to access to elective general paediatric surgery across the region and recommended the development and implementation of centralised referral and waiting list systems. Commissioners and service managers must also clearly identify: the available capacity associated with specialist and general surgery; the totality of historic investment into paediatric surgery; how this is reflected within the individual consultant job plans; and fully understand current and future demand on these services. This information is essential in order that commissioners and Trusts can identify the required resources and infrastructure to support the modernisation of these services.

Those involved in the development and modernisation of general and specialist paediatric surgery services will also be cognisant of recommendations published in January 2018, by the Inquiry into Hyponatraemia-related Deaths in Northern Ireland. A number of the Inquiry's recommendations have relevance to those made as part of this Review. In particular, those relating to ensuring the provision of age-appropriate care, the need for clear processes for the transfer of children between DGHs and the RBHSC and the need for a clearly identified lead consultant overseeing the care of children in hospital.

This Review makes a total of 13 recommendations which aim to improve general paediatric surgical services across Northern Ireland. It is the view of the Expert Review Team that these should be implemented alongside the full implementation of the 2016 Strategy.

Recommendations have been prioritised in relation to timescales in which they should be implemented:

- Priority 1 - completed within 6 months of publication of report
- Priority 2 - completed within 12 months of publication of report
- Priority 3 - completed within 18 months of publication of report

Recommendations

Rec. Number	Recommendation	Priority
1	<p>The Health and Social Care Board, Public Health Agency, and Health and Social Care Trusts should:</p> <p>a) review and update arrangements for monitoring activity relating to paediatric surgery performed in District General Hospitals and in the Royal Belfast Hospital for Sick Children, activity by site should be regularly reported for both general and specialist paediatric surgery; and</p> <p>b) complete a mapping exercise to clarify current funding for paediatric surgery, both specialist and general, to accurately reflect the current financial resource spent through District General Hospitals, Royal Belfast Hospital for Sick Children and other parts of the health and social care system as relevant.</p>	2
2	<p>The Health and Social Care Board and Public Health Agency should ensure that the managed clinical network, outlined within the Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026) is:</p> <p>a) established; b) appropriately resourced and supported; c) appropriately constituted; d) inclusive of a range of specialties; and e) appropriately governed.</p>	1
3	<p>The Health and Social Care Board and Public Health Agency should work with Health and Social Care Trusts to identify and agree key paediatric competencies, to underpin a regional training programme for non-children's nurses who provide care and treatment to children. Responsibility for this work could transition to the managed clinical network once it is firmly established.</p>	2
4	<p>The Health and Social Care Board and Public Health Agency should provide leadership for development and implementation of a process for staff in District General Hospitals to contact and obtain clinical advice from the Paediatric Intensive Care Unit and/or paediatric surgeons in Royal Belfast Hospital for Sick Children; all staff should be trained in use of this protocol and a suitable mechanism implemented to provide assurance that the protocol is fully implemented.</p>	1

Rec. Number	Recommendation	Priority
5	The Health and Social Care Board and Public Health Agency should provide leadership for development and implementation of a region-wide process, agreed across all Health and Social Care Trusts, for transferring children between District General Hospitals and Royal Belfast Hospital for Sick Children; relevant staff should be trained in use of this protocol and a suitable mechanism implemented to provide assurance that the protocol is fully implemented.	1
6	Health and Social Care Trusts should work collaboratively with the Health and Social Care Board and Public Health Agency to develop and implement a regional pain management policy for children, which is accessible to all staff. Trusts should assure full implementation of this policy across their paediatric services.	1
7	Health and Social Care Trusts should ensure that all protocols relating to the care and treatment of children, in particular those relating to management of Intravenous fluids and head injuries, clearly identify the lead clinician with overall responsibility for care of the child; Trusts should ensure that all such protocols are fully implemented and regularly assured.	1
8	Health and Social Care Trusts should develop play specialist services in those hospitals where the service is currently unavailable or underdeveloped.	2
9	The Health and Social Care Board and Public Health Agency should work with Health and Social Care Trusts to prioritise the development and implementation of a centralised waiting list system for general paediatric surgery.	2
10	<p>The Health and Social Care Board and Public Health Agency should work collaboratively with each Health and Social Care Trust to:</p> <ul style="list-style-type: none"> a) define precisely the respective capacity available for general paediatric surgery and specialist paediatric surgery; b) define the historic investment into general paediatric surgery and associated service capacity; and c) quantify the resources required for a future hub and spoke model to meet the population needs. 	2

Rec. Number	Recommendation	Priority
11	Each Health and Social Care Trust, in collaboration with the Health and Social Care Board and Public Health Agency, should review its job plans for consultant surgeons and anaesthetists currently involved in delivering general paediatric surgery; this exercise should identify the number of programmed activities available to deliver the current service and inform work on requirements for the future region-wide service model for paediatric surgery.	2
12	Health and Social Care Trusts should work collaboratively with the Health and Social Care Board and Public Health Agency to ensure effective implementation of age-appropriate care across paediatric surgical services and to develop future age-appropriate surgical services for adolescents.	2
13	<p>The Health and Social Care Board, Public Health Agency and Health and Social Care Trusts should work in partnership to agree:</p> <ul style="list-style-type: none"> a) a hub and spoke model for general paediatric surgery across Health and Social Care Trusts; b) general paediatric surgery is performed in specified District General Hospitals by appropriately skilled surgeons from either Royal Belfast Hospital for Sick Children or the District General Hospitals; c) that investment, commissioning and monitoring arrangements for the agreed service model are clear, these should be based on a thorough understanding of previous investments and a detailed capacity/demand analysis. 	2

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Section 1 - Introduction

1.1 Context for the Review

Children access a variety of health services throughout their childhood years. These will mostly be in primary and community care and include services delivered by general medical practitioners, community pharmacists, dentists, optometrists and within community teams by nurses, health visitors, allied health professionals and social workers. A smaller number of children will develop more complex health problems and, as a result, need to access services provided in secondary or tertiary care.

Children differ from adults anatomically, physiologically, cognitively and psychologically and, as such, the principles of adult medicine are not directly transferrable to the medical treatment of children. Treating injury or illness in children presents many challenges for health providers. When ill, children have the potential to deteriorate very quickly. They also need to be treated in environments that are designed to meet their physical, emotional, psychological, social and educational needs. This is equally applicable when children require surgical procedures.

Paediatric surgery is the only surgical specialty that is defined not only by the nature of the disorder but also by the age of the patient⁴. Paediatric surgery can be divided into two categories, general surgery and specialist surgery.

General paediatric surgery⁵ is defined as the surgical management of relatively straightforward conditions, which usually do not require specialist surgical input or complex perioperative care arrangements. General paediatric surgery can be performed by specialist paediatric surgeons or by adult general surgeons who primarily operate on adults but who also have expertise in paediatric surgery.

For the purposes of this Review, the most common procedures⁶ that are included within the definition of general paediatric surgery are:

Elective surgery

- Inguinal herniotomy
- Umbilical herniotomy
- Orchidopexy for undescended testicle
- Circumcision
- Minor soft-tissue abnormalities

⁴ National Specialised Commissioning Group. Specialised Services National Definitions Set, 3rd edition. Specialised Services for Children – Definition No. 23. London: NSCG ; 2010.

⁵ Royal College of Surgeons - <https://www.rcseng.ac.uk/news-and-events/media-centre/media-background-briefings-and-statistics/paediatric-surgery/>

⁶ Children's Surgical Forum - Ensuring the Provision of General Paediatric Surgery in the District General Hospital - Guidance to Commissioners and Service Planners

Emergency surgery

- Acute abdominal pain including appendicitis
- Obstructed hernias
- Acute scrotal pathology
- Minor trauma
- Abscesses

The Specialised Services National Definitions Set⁷ includes detailed descriptions of specialist and general surgical procedures.

The National Specialised Commissioning Group⁸ has defined specialist paediatric surgery under three areas:

- neonatal surgery;
- the management of children who require specialist surgical expertise; and
- the management of children with relatively straightforward surgical conditions, with an associated disorder which requires management in a specialist centre.

Within paediatric surgical services, there is an overlap between general and specialist surgery in relation to both staff and resources. Although specialist surgery was not the main focus of this Review, it has been referenced as specialist surgery provision, where it has a bearing on the provision of general surgery.

Other allied services, such as radiology and anaesthetics, have been referenced during this Review. This is due to their close links with, and subsequent influence on, the provision of paediatric surgery.

In 1999, a comprehensive review of services for children and young people in Northern Ireland took place⁹. This Review assessed the services available for the acutely ill child, to inform an understanding of service provision at that time and to determine the principles upon which services should be developed.

Historically, paediatric surgery was a service provided in DGHs, with procedures usually performed by adult general surgeons. However, the increasing desire of surgical trainees to focus on specialist surgery and changes to the training curriculum, contributed to insufficient numbers of adult general surgeons with appropriate paediatric skills and experience. These changes have resulted in a reduction in the volume of elective surgery being carried out in DGHs in Northern Ireland. This trend has also been observed throughout other parts of the United Kingdom (UK).

⁷ National Specialised Commissioning Group. Specialised Services National Definitions Set, 3rd edition. Specialised Services for Children – Definition No. 23. London: NSCG ; 2010.

⁸ National Specialised Commissioning Group - <https://www.england.nhs.uk/commissioning/spec-services/>

⁹ Hospital Services for the Acutely Ill Child in Northern Ireland, Nursing Services for the Acutely Ill Child in Northern Ireland, and Paediatric Surgical Services in Northern Ireland, DHSSPS, 1999.

The Children's Surgical Forum (CSF) of the Royal College of Surgeons of England has recognised this trend and the consequence that many DGHs may now find it challenging to provide paediatric surgery. The CSF advised that children's surgical services should be regarded as an essential service within a DGH, and that children must have local access to routine surgery and outpatient clinics.

In July 2007, the CSF published a report entitled *Surgery for Children: delivering a first class service*¹⁰ (2007 CSF report). The 2007 CSF report set out standards for the delivery of both general and specialist surgical care to children, and made reference to a hub and spoke model.

In such a hub and spoke model the tertiary centre becomes the hub and DGHs become the spokes. The configuration of the hub and spoke model is not fixed, and its design should be configured to meet the particular needs of the local service and the local population.

A hub and spoke model for general surgical services has been established and continues to develop. In 2017, members of the British Association of Paediatric Surgeons undertook a UK-wide survey of tertiary outreach for the provision of surgery. It found that tertiary units in the UK are providing significant surgical outreach with a doubling of clinical support provided by tertiary units between 2007 and 2017¹¹.

In response to the publication of the 2007 CSF report, the DoH (formerly DHSSPS) established a working group to develop standards for improving general paediatric surgical services in Northern Ireland. Following public consultation, the Standards '*Improving Services for General Paediatric Surgery – Policy and Standards of Care for General Paediatric Surgery in Northern Ireland*', were published in May 2010.

In 2012, DoH undertook a further review of healthcare services for children and young people in Northern Ireland. The outcome of this Review was a proposal setting out the strategic direction for paediatric care, which was subject to public consultation in 2013. In November 2016, DoH published the *Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026)*¹² (the 2016 Strategy).

¹⁰ *Surgery for Children: delivering a first class service – Children's Surgical Forum of the Royal College of Surgeons of England, July 2007* - <https://www.rcseng.ac.uk/library-and-publications/college-publications/docs/surgery-for-children-delivering-a-first-class-service/>

¹¹ Survey presented at the British Association of Paediatric Surgeons International Conference, Liverpool 2019.

¹² *Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026)* - DoH, November 2016 - <https://www.health-ni.gov.uk/sites/default/files/publications/health/paediatric-strategy-hospital-andcommunity.pdf>

1.2 Terms of Reference

The terms of reference for this RQIA review were:

1. To provide a baseline review of the current arrangements for general paediatric surgery in Northern Ireland against Improving Services for General Paediatric Surgery – Policy and Standards of Care for General Paediatric Surgery in Northern Ireland, May 2010¹³ (Appendix 1);
2. To consider the current model of general paediatric surgery in Northern Ireland in relation to the new Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026);
3. To assess the views of stakeholders in relation to the provision of general paediatric surgery in Northern Ireland; and
4. To report on findings, identify areas of good practice and, where appropriate, make recommendations for improvements.

1.3 Exclusions

Paediatric medicine and specialist paediatric surgery were excluded from this Review. Specialist paediatric surgery is referenced in relation to its impacts on general paediatric surgery provision.

1.4 Review Methodology

This Review comprised five phases, designed to enable the collection, review and analysis of information in relation to general paediatric surgery throughout Northern Ireland.

Phase one included a literature review to identify standards, guidelines and other documents specifically related to general paediatric surgery. Representatives from the Public Health Agency (PHA), the HSC Board and the HSC Trusts were involved in meetings to discuss the current arrangements and identify challenges relevant to service delivery. This helped to inform the development of, and set the context for, the review at an early stage.

¹³ Improving Services for General Paediatric Surgery – Policy and Standards of Care for General Paediatric Surgery in Northern Ireland – DHSSPS - May 2010

Phase two involved further meetings with staff from HSC Trusts delivering general paediatric surgical services. Meetings were held in DGHs where surgery is performed. The Expert Review Team met with 104 members of multidisciplinary staff, including surgeons (paediatric and adult), nursing and medical staff, anaesthetists, radiographers, pharmacists, managers, service leads and other staff who had an input into the delivery of surgery. Participants shared their views about the current arrangements for delivering general paediatric surgery and possible future service models.

Phase three required each of the five HSC Trusts to complete two questionnaires. One questionnaire detailed each HSC Trust's arrangements for surgery against the 2010 Standards and the second questionnaire facilitated each Trust to outline its vision for the future model for surgery.

Phase four involved the engagement of an independent Expert Review Team, which included expert peer reviewers with knowledge and experience of paediatric surgery, nursing and anaesthesia. The Expert Review Team analysed information obtained during the review to consider current and future models for surgery; met with representatives from the HSC Board, the PHA and the HSC Trusts; provided expert opinion on the services; and made recommendations for improvement.

Phase five involved a comprehensive review and analysis of information obtained during the course of the review, which informed the content of this report.

Section 2 – Findings from the Review

2.1 Current Arrangements for General Paediatric Surgery in Northern Ireland

The 2010 Standards envisaged that surgery in Northern Ireland would be performed at DGHs by either a paediatric surgeon or an adult general surgeon with the requisite skills and competence in paediatric surgery.

The 2010 Standards also envisaged a hub and spoke model which would incorporate the RBHSC as the hub (regional specialist and general surgery services) supporting DGHs as the spokes (general surgery services). This model would facilitate collaboration between surgeons in DGHs and colleagues in the tertiary centre. This model would also provide flexibility for service delivery either directly by RBHSC paediatric surgeons at DGHs, or by upskilling local adult general surgeons in DGHs, to enable them to perform elective surgery independently. This hub and spoke model has not been fully implemented across HSC, as only three hospitals, located in two HSC Trusts are delivering a service in this way, as outlined in Table 1 below.

Table 1: Outline of current hub and spoke model

Organisation	Hospital	Model for general paediatric surgery
South Eastern HSC Trust	Ulster Hospital	RBHSC surgeon performs surgery
Western HSC Trust	Altnagelvin Hospital	RBHSC surgeon performs surgery
Western HSC Trust	South West Acute Hospital	RBHSC trains Western HSC Trust's surgeons to perform surgery

The Expert Review Team was informed that, following the publication of the 2010 Standards, there was not a co-ordinated regional approach to their implementation and HSC Trusts implemented the 2010 Standards individually rather than collectively. As a result, the proposed hub and spoke model was not fully developed and there was limited progress in establishment of a support network.

Incomplete implementation of the 2010 Standards was also evident during focus group meetings with clinical staff in the DGHs. Although many staff in the DGHs were aware of the 2010 Standards, they told us that the Standards were not regularly referenced and they were unclear about their use in practice.

Staff reported that they would frequently reference other documents developed by Royal Colleges, such as Surgery for Children: Delivering a first class service¹⁴, Ensuring the Provision of General Paediatric Surgery in the District General Hospital¹⁵, Standards for Children's Surgery¹⁶, and Defining Staffing Levels for Children and Young People's Services¹⁷.

A contributing factor in the evolution of the current model for surgery was identified as HSC Trusts' inability to meet requirements as set out in the 2010 Standards. The 2010 Standards advised that surgeons performing surgery on children should undertake a sufficient volume of surgery to maintain their skills and competence. This, combined with the low volume of surgeries performed in DGHs, has made it difficult for adult general surgeons to sustain the required experience and maintain their skills and competence. Consequently, there is a growing reluctance among adult general surgeons to perform elective paediatric surgery in the DGHs; the effect of which is that more children are being transferred to the RBHSC for surgery.

The practice of transferring children for surgery means that some children are travelling long distances to have relatively straightforward surgery. This practice reduces the volume of surgery in DGHs and will result in surgeons performing fewer procedures and impacting upon their ability to retain and develop key skills and competencies. Staff indicated that surgical waiting lists in the RBHSC are long and these children are also waiting for long periods for outpatient appointments in the RBHSC.

In 2014, the HSC Board and PHA secured additional funding to support the paediatric surgical service. This funding was used to increase the Consultant Surgical Team in the RBHSC by 0.5 whole time equivalents. It was envisaged that this investment would help to develop the hub and spoke model, as well as contribute to increases in volumes of surgery, benchmarking, peer review, modernisation and reform. Improvements have however been limited, as information shared by the HSC Board indicated that the expansion of the hub and spoke model has stalled and there has been minimal reduction in the waiting times for general paediatric surgery.

¹⁴ Surgery for Children: Delivering a First Class Service – The Royal College of Surgeons of England, 2007 - <https://www.rcseng.ac.uk/library-and-publications/rcs-publications/docs/surgery-for-children-delivering-a-first-class-service/>

¹⁵ Ensuring the Provision of General Paediatric Surgery in the District General Hospital - The Royal College of Surgeons of England, 2010 - <https://www.rcseng.ac.uk/library-and-publications/college-publications/docs/ensuring-the-provision-of-general-paediatric-surgery-in-the-district-general-hospital/>

¹⁶ Standards for Children's Surgery - The Royal College of Surgeons of England, 2013 - <https://www.rcseng.ac.uk/library-and-publications/college-publications/docs/standards-for-childrens-surgery/>

¹⁷ Defining staffing levels for children and young people's services – Royal College of Nursing, 2013 - https://www2.rcn.org.uk/_data/assets/pdf_file/0004/78592/002-172.pdf

Individual HSC Trust Arrangements

2.1.1 Belfast Health and Social Care Trust

The Belfast HSC Trust provides DGH services to its local population of 355,593 people¹⁸ and is also the regional tertiary centre for specialist paediatric and neonatal surgery. In addition to providing elective specialist surgery, the team of seven Paediatric Surgeons also delivers an emergency surgery service.

Historical arrangements pre-dating establishment of the current HSC Trusts, involved RBHSC paediatric surgeons performing elective surgery in the Ulster Hospital in the South Eastern HSC Trust. Publication of the 2010 Standards led to these service arrangements being supplemented with introduction of a more formal outreach service model between the South Eastern HSC Trust and RBHSC in relation to paediatric surgery.

In 2010, the RBHSC established an outreach service model with the Western HSC Trust within Altnagelvin Hospital, and in Autumn 2016 extended this service to the South West Acute Hospital.

Data provided by the PHA, indicates that paediatric surgeons in the RBHSC performed approximately 88% of all elective surgery in Northern Ireland (Table 3). These surgeons used the RBHSC facilities for approximately 49% of surgery and perform approximately 51% of this surgery at two other DGHs - the Ulster Hospital in the South Eastern HSC Trust and Altnagelvin Hospital in the Western HSC Trust.

2.1.2 Northern Health and Social Care Trust

At the time of this Review, no outreach service for delivery of paediatric surgery had been developed between the Northern HSC Trust and the RBHSC and no elective surgery was undertaken at Antrim Area Hospital at the time of this Review. The Northern HSC Trust told us that it had no capacity to undertake elective surgery at Antrim Area Hospital.

In Causeway Hospital, some elective surgery was performed by an adult general surgeon with paediatric surgery experience. Other surgeons within the hospital had spent time training in the RBHSC and were increasing their experience of surgery through joint working with the local paediatric experienced adult surgeon. Surgeons in Causeway Hospital had expressed an interest in establishing an outreach service model with the RBHSC. The Northern HSC Trust indicated that it had capacity to increase the volume of surgery at Causeway Hospital.

¹⁸ Northern Ireland Statistics and Research Agency - Population Estimates for Belfast Health and Social Care Trust at 30 June 2017 - <http://www.ninis2.nisra.gov.uk/public/AreaProfileReportViewer.aspx?FromAPAddressMultipleRecords=Belfast@@Belfast@20?>

2.1.3 South Eastern Health and Social Care Trust

Following publication of the 2010 Standards, historical arrangements within the South Eastern HSC Trust resulted in it being the only HSC Trust in a position to facilitate an outreach service for elective surgery with the RBHSC. This was due to it having the available theatres and required staff to support this model.

Elective day case surgery was performed in the Ulster Hospital by visiting paediatric surgeons from the RBHSC. Associated outpatient clinics were also delivered in the Ulster Hospital. Waiting lists for outpatient clinics and elective surgery in the Ulster Hospital were generally shorter than the waiting lists for the RBHSC.

At the time of this Review, the South Eastern HSC Trust told the Expert Review Team that any increase beyond the current volume of surgery would require additional recurrent funding to expand theatre capacity, and provide additional staff and goods and services.

2.1.4 Southern Health and Social Care Trust

At the time of this Review, there were no outreach service arrangements in place between the Southern HSC Trust and the RBHSC. In Craigavon Area Hospital, a small volume of elective surgery is undertaken by an adult general surgeon with paediatric surgery experience. The Expert Review Team was unable to determine whether there was any available capacity to increase the volume of surgery within the Southern HSC Trust. The Trust however indicated that it would be interested in establishing an outreach service model with RBHSC.

2.1.5 Western Health and Social Care Trust

In September 2014, the Western HSC Trust established an outreach service model for elective surgery in Altnagelvin Hospital in association with RBHSC. The original intention of this service model was to mentor and train a general adult surgeon in the Western HSC Trust to perform elective paediatric surgery. Over time, this surgeon would then take on the lead role for paediatric surgery, linking in with the RBHSC for training, audit and peer review.

Unfortunately the surgeon who was appointed to take on this role subsequently transferred to another hospital. This limited the delivery of the service and its continuing development. As a result RBHSC surgeons performed paediatric surgery in Altnagelvin Hospital. At the time of this Review this approach to delivery of the outreach service model continued, with the number of surgical lists in Altnagelvin Hospital at two per month, performed by an RBHSC paediatric surgeon.

Associated outpatient clinics are also held. At the time of this Review, the Western HSC Trust told the Expert Review Team that it had no capacity to increase the volume of surgery at Altnagelvin Hospital.

In the South West Acute Hospital, some elective surgery is undertaken by a Western HSC Trust general surgeon with experience in paediatric surgery. Other surgeons within the hospital have expressed an interest in performing paediatric surgery and in 2016 an outreach service model was established with RBHSC. This outreach service model supported mentoring and training for Western HSC Trust adult general surgeons so they could continue to perform paediatric elective surgery procedures in the hospital. The Western HSC Trust reflected that this approach has been successful and would like to see it developed further.

2.1.6 Emergency General Paediatric Surgery

All major trauma cases involving children who require surgery are brought to the RBHSC, unless the condition is time critical or so severe that it necessitates immediate surgery in a DGH.

The 2010 Standards advise that:

- emergency general paediatric surgery for children aged under five should be performed at the RBHSC;
- for children aged five and over the surgery, where appropriate, should be undertaken at the DGH; and
- cases that are time critical, such as an emergency appendicectomy or testicular torsion, the surgery should be performed in the DGH.

At the time of this Review, the Expert Review Team was told that emergency surgery including emergency appendectomy, was being performed in all DGHs. Using information¹⁹ supplied by the HSC Board (Table 2), during 2015-16 it is apparent that, using this example, emergency surgery was performed on children from 0-16 years in DGHs across Northern Ireland.

¹⁹ The accuracy of the information on surgical procedures is dependent upon the coding used to extract the information. More specific local coding may have been used at the time of the procedure in the hospital. The figures should only be used for representative purposes.

Table 2: Emergency paediatric appendectomy procedures performed on children aged 0-16 years Northern Ireland 2015-16.

Organisation	Hospital	Emergency Appendectomy
Belfast HSC Trust	RBHSC	98
Northern HSC Trust	Antrim	89
	Causeway	34
South Eastern HSC Trust	Ulster	12
Southern HSC Trust	Craigavon	61
	Daisy Hill	58
Western HSC Trust	Altnagelvin	56
	South West Acute	44
Total		452

While some emergency surgery is undertaken at DGHs, feedback from HSC Trusts and the PHA indicates that in some areas, more recently qualified adult general surgeons are becoming increasingly reluctant to perform emergency surgery for children, particularly within younger age groups. One of the reasons expressed for the reluctance to operate was a lack of experience due to a reduction in the amount of paediatric surgery being performed in DGHs.

The Expert Review Team noted that an increase in the number of children being transferred to RBHSC for emergency surgery had the potential to place additional pressure on the RBHSC surgeons to deliver general and specialist surgery; and may contribute to an increase in waiting times for patients. The Expert Review Team concluded that if a managed clinical network was in place, adult general surgeons could be supported to perform more emergency paediatric surgeries in their local DGHs.

2.1.7 Elective General Paediatric Surgery

The 2010 Standards envisaged that paediatric elective surgery in Northern Ireland should be provided through a hub and spoke model. At the time of this Review, this model operates only between the RBHSC and the South Eastern and Western HSC Trusts; no outreach service model arrangements from the RBHSC to the Northern HSC Trust or the Southern HSC Trust were in place.

The majority of elective surgery was being performed by paediatric surgeons from the RBHSC, either in the RBHSC or in one of the DGHs (Ulster and Altnagelvin hospitals).

A small number of elective surgery procedures were performed by Trust adult general surgeons in Causeway, Craigavon and South West Acute hospitals.

Using information²⁰ supplied by the HSC Board, during 2015-2016, paediatric surgeons from the RBHSC performed 88% of common elective surgery procedures on children aged 0-16 years and adult general surgeons in DGHs undertook 12% of these procedures.

Table 3 outlines the numbers of common elective general paediatric surgery procedures performed during 2015-16 on children 0-16 years old by hospital and by type of procedure across Northern Ireland.

Table 3: Common elective general paediatric surgery procedures performed on children 0-16 years Northern Ireland 2015-16.

Organisation	Hospital	Circumcision	Hydrocele	Umbilical Hernia	Orchidopexy	Infant Herniotomy	Other Inguinal Hernia	Total
Belfast HSC Trust	RBHSC	31	0	4	79	46	10	170
Northern HSC Trust	Antrim	0	0	0	0	0	0	0
	Causeway	2	1	0	0	0	0	3
South Eastern HSC Trust	Ulster	70	2	8	50	17	11	158
Southern HSC Trust	Craigavon	30	0	1	0	1	0	32
	South Tyrone	1	0	0	0	0	0	1
Western HSC Trust	Altnagelvin	10	0	2	5	1	3	21
	South West Acute	11	2	0	0	0	0	13
Total		155	5	15	134	65	24	398

With limited surgery undertaken in the DGHs, the majority of children are transferred to the Belfast HSC Trust for surgery, either in RBHSC or in the Ulster Hospital as part of the outreach service model / arrangements. During 2015-16, approximately 82% of elective surgeries were undertaken at these two locations.

²⁰ The accuracy of the information on surgical procedures is dependent upon the coding used to extract the information. More specific local coding may have been used at the time of the procedure in the hospital. The figures should only be used for representative purposes.

Belfast HSC Trust clinicians perceived that an increase in numbers of children transferring in for general surgery placed additional pressure on the RBHSC services for emergency and specialist surgery and contributed to an increase in waiting times for these services. Although data to evidence this correlation was not provided, the Expert Review Team concluded that a managed clinical network and hub and spoke model could support adult general surgeons being trained and supported to perform more elective surgeries in DGHs which may improve waiting times.

The Expert Review Team was concerned about the number of children transferred to the Belfast HSC Trust for surgery. It considered that HSC Trusts have a responsibility to provide services for children resident in their geographical area and therefore, where possible, should provide a paediatric surgery service in their local DGH.

At the time of this Review, the HSC Board informed the Expert Review Team that, with the exception of the Belfast HSC Trust, there was an expectation that paediatric general surgery should be undertaken in DGHs. Based on this expectation, HSC Trusts receive funding for paediatric surgery, although it is included in their overall surgical budget. The fact that it is included in a trust's overall surgical budget makes it difficult to ascertain accurate figures for spending in relation to paediatric surgery. The Belfast HSC Trust's organisational structures and clear differentiation between adult and children's services which are provided in the RBHSC, enables funding for children's surgery to be identified as distinct from adult surgery.

Service and Budget Agreements (SBA's) are in place with each HSC Trust to monitor performance and the expenditure of their respective surgical budgets. However, the SBAs do not specify particular surgical procedures; therefore there is currently no mechanism to accurately identify which types of surgery are performed.

The Expert Review Team recommends that the HSC Board, PHA, and HSC Trusts review and update reporting arrangements in relation to the volume of paediatric surgery performed on children in DGHs. It is further recommended that the HSC Board, PHA and HSC Trusts undertake a review of SBAs that will more accurately reflect paediatric spend and a mapping exercise with analysis of existing funding for children's surgery. This should determine actual spend for surgery at DGHs and allow accurate contract monitoring by the PHA and HSC Board. A greater understanding of activity and a realignment of funding could facilitate the development of the hub and spoke model.

Recommendation 1	Priority 2
<p>The Health and Social Care Board, Public Health Agency, and Health and Social Care Trusts should:</p> <p>a) review and update arrangements for monitoring activity relating to paediatric surgery performed in District General Hospitals and in the Royal Belfast Hospital for Sick Children, activity by site should be regularly reported for both general and specialist paediatric surgery; and</p> <p>b) complete a mapping exercise to clarify current funding for paediatric surgery, both specialist and general, to accurately reflect the current financial resource spent through District General Hospitals, Royal Belfast Hospital for Sick Children and other parts of the health and social care system as relevant.</p>	

2.1.8 Managed Clinical Network

The Expert Review Team considered that arrangements for effective communication and support through a managed clinical network would have been a key component in successful implementation of the 2010 Standards. The formation of a network was not specified within the 2010 Standards and consequently was never established. This was acknowledged by DoH and the 2016 Strategy, Objective 4²¹ (Appendix 2) which made a specific recommendation for the establishment of a regional paediatric managed clinical network to cover all paediatric services; with a surgical sub-group to support the safe delivery of paediatric surgical services across Northern Ireland.

The Expert Review Team considered that a managed clinical network would play an important role in the future development of general paediatric surgery across Northern Ireland. It would be a platform to provide leadership and support, to improve collaborative working and to drive service improvement (models and pathways).

A dedicated network offers the opportunity to bring together a range of health and social care professionals with paediatric expertise from across HSC Trusts and the wider health and social care sector. The Expert Review Team considers a network has the potential to:

- standardise care and access across traditional HSC Trust boundaries;
- improve emergency surgery through a support network which would facilitate, for example, mentoring, peer review and audit;
- reduce the number of inappropriate transfers to the RBHSC;

²¹ Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026) - DoH, November 2016 – Objective 4, Page 34 - <https://www.health-ni.gov.uk/sites/default/files/publications/health/paediatric-strategy-hospital-andcommunity.pdf>

- facilitate the sharing of learning and good practice between HSC Trusts; and
- increase and strengthen training opportunities for surgeons working in DGHs.

In all meetings with the Expert Review Team, staff (particularly surgeons) were very supportive of establishing a managed clinical network. The Expert Review Team was told by staff in other disciplines, such as nursing and anaesthetics, that they were unsure where they would fit into such a network. The Expert Review Team considered that other disciplines with an input into paediatric surgery should be fully involved in the development of a managed clinical network. The Review Team also considered that all disciplines should be actively engaged and that all organisations should support and facilitate the participation of their staff in the network.

To maximise involvement and buy-in from other disciplines to the development of the network, such as nursing and anaesthetics, the Expert Review Team recommended that consideration is given to an appropriate name for the network. Although the term “Paediatric” relates to services delivered to babies, children and young people from birth up to their 18th birthday, the Expert Review Team is aware of a perception that, for references made about paediatrics, staff frequently associated this term with paediatric medicine and not the wider spectrum of care and/or treatment provided for children. Similarly, for references made about paediatric surgery, staff are inclined to associate this with specialist services rather than general paediatric surgery.

During this Review, some examples of a title for the network were proposed; these included the Children’s Surgical Network and the Children’s Perioperative Network. The Expert Review Team considered the term ‘children’ is important, as the network would be relevant to any specialty that cares for children. The Expert Review Team noted that the managed clinical network for surgery is likely to be a sub-network of an overall Children’s Network, and considered that the name must be carefully chosen through collaborative discussions with all stakeholders.

In developing the network, the Expert Review Team considered that it must have robust governance arrangements, particularly in relation to structure and function. The network must be structured to allow sufficient autonomy to make decisions at a regional level. There must be close links between the network and the individual HSC Trusts, so that work to be progressed can be appropriately discussed at HSC Trust level. Close working partnerships must be in place to minimise the potential for decisions taken by the network to be changed or overturned through discussion by individual trusts.

For the managed clinical network to be effective and sustainable, it would require appropriate funding and resources. As the network was a specific recommendation from the 2016 Strategy,²² (Appendix 2), the Expert Review Team recommended that the necessary funding and resources should be made available to support its establishment and functioning. The HSC Board / PHA informed the Expert Review Team that since 2011, approximately £5.2 million had been invested in paediatric services through the Belfast Local Commissioning Group. While acknowledging this important funding, the Expert Review Team identified that most of the funding had been allocated to specialist paediatric services rather than general paediatric surgery.

Many of the recommendations contained in this report will be driven by a collaborative approach. The Expert Review Team supported the recommendation of the 2016 Strategy for a managed clinical network and recommended that organisations prioritised the establishment of this network.

The identification and nomination of leads for particular areas was identified as a key objective within the 2010 Standards. The Expert Review Team recognised that at the time of this Review, in each DGH, leads for paediatric surgery within each of the different specialties (paediatric surgery, nursing and anaesthetics) had not been appointed. The Expert Review Team considered that when appointed, named leads should have overall responsibility for paediatric surgery within their specialty and their DGH. These individuals would therefore be the most appropriate individuals to work closely with the network as it is developed and implemented.

The Expert Review Team recommended that HSC Trusts appoint leads within the paediatric surgical and medical specialties, as outlined in the 2010 Standards.

Recommendation 2	Priority 1
<p>The Health and Social Care Board and Public Health Agency should ensure that the managed clinical network, outlined within the Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026) is: a) established; b) appropriately resourced and supported; c) appropriately constituted; d) inclusive of a range of specialties'; and e) appropriately governed.</p>	

²² Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026) - DoH, November 2016 – Objective 4, Page 34 - <https://www.health-ni.gov.uk/sites/default/files/publications/health/paediatric-strategy-hospital-andcommunity.pdf>

2.2 Assessment of General Paediatric Surgery in Northern Ireland

At the time of this Review, the limited implementation of the 2010 Standards and the low volume of general paediatric surgery currently being performed in DGHs meant that the Expert Review Team concluded that it was not feasible to report on a detailed baseline assessment of each DGH against these Standards. The low volume of surgeries being performed in DGHs did not facilitate HSC Trusts to fully meet the criteria advised within certain sections of the 2010 Standards (including supervision of surgery, maintenance of skills and competence, and audit of practice).

The intention of the 2010 Standards was that emergency and elective surgery would be performed in an appropriate environment, transfer arrangements would be in place, staff would have requisite skills, and liaison arrangements would be in place to support staff (Appendix 1).

2.2.1 Training

Surgical Staff

Due to changes in the general training curriculum for surgery, trainee surgeons no longer rotate through paediatrics and therefore do not obtain experience of surgery on children. Surgeons informed the Expert Review Team of the ways in which those who perform elective surgery sought to maintain their skills and competence in paediatric surgery, including:

- Surgeons in the RBHSC kept their skills and competence up to date through their day to day work, internal departmental education programmes and through attending external training courses and conferences.
- Surgeons in South West Acute Hospital sought to improve their skills and competence through performing surgery and by receiving mentoring and training, provided by either a local experienced adult general surgeon or the visiting RBHSC surgeons. Opportunities for improving skills were limited by the low volumes of surgery.
- Surgeons in Causeway Hospital sought to improve their skills and competence through performing surgery and by receiving mentoring and training provided by a local experienced adult general surgeon. Opportunities for improving skills were limited by the low volumes of surgery;
- In Craigavon Area Hospital, the more experienced adult general surgeons sought to maintain their skills by performing a small number of surgeries. The Expert Review Team questioned whether a sufficient volume of surgeries were being undertaken to maintain skills and competencies.
- In the other DGHs, there were either none or limited opportunities for adult general surgeons to improve their skills and competencies in general paediatric surgery.

At the time of this Review, surgeons from the RBHSC performed the majority of the elective surgery in the DGHs. With the exception of the arrangements in South West Acute Hospital, there were no formal arrangements in place to use these surgeries for training or learning purposes and for adult general surgeons in the DGHs to gain additional experience in paediatric surgical procedures. The RBHSC surgeons arranged some ad hoc surgical training in the Ulster Hospital for surgeons from DGHs who have expressed an interest to attend. At the time of this Review, few adult general surgeons indicated that they could or would avail of this opportunity.

Nursing Staff

At the time of this Review, throughout Northern Ireland and the rest of the UK, there was a general shortage of Registered Children's Nurses (RCNs). Many staff mentioned this during meetings and highlighted difficulties associated with recruiting trained RCNs. Staff indicated that there were limited incentives for undertaking training in children's nursing, including perceptions relating to a lack of promotion or progression opportunities. The Expert Review Team considered that a perceived lack of opportunity is impacting on numbers of nurses choosing to undertake specialist paediatric training. Despite the shortage of RCNs, the Expert Review Team identified during visits undertaken as part of the review, that day procedure units and wards were staffed with some RCNs. The numbers of RCNs working in day procedure units varied between hospitals visited.

To address the overall shortage of RCNs and to meet the requirements of the 2010 Standards, some HSC Trusts had developed specific paediatric training which has been provided to trained adult nurses. This training is unique to each HSC Trust and provides nurses with the knowledge and skills necessary to care for children in general paediatric surgery settings. Training undertaken by staff was highlighted to the Expert Review Team and included a two year conversion course, five day intensive paediatric modules and specific training in adolescent care.

The Expert Review Team found that nurses working in general paediatric surgery settings had all completed life support training, the exceptions being newly employed staff. The Team was informed that most nurses caring for children in each HSC Trust had undertaken Paediatric Immediate Life Support (PILS) training, and a few in each DGH had also undertaken Advanced Paediatric Life Support (APLS) training. Despite the level of life support training, the Expert Review Team considered that HSC Trusts should be mindful of providing staff with refresher training to ensure they are up-to-date with new techniques. When a managed clinical network is established, appropriate refresher training could be provided on a regional basis.

The Expert Review Team considered that the challenges facing HSC Trusts in relation to training and staffing in general paediatric surgery settings with appropriately trained RCNs are similar to the challenges faced by hospitals throughout the UK.

At the time of this Review, the Team acknowledged that it was unlikely that DGHs could staff their general paediatric surgery settings solely with RCNs. However, as a minimum, RCNs and staff trained in paediatric life support should be on duty and fully contactable at all times.

To improve consistency and standardisation of training and to facilitate a smoother transition for staff who may transfer between hospitals, the Expert Review Team recommended development of a single regional training programme which could be provided for non-children’s nurses who may provide care and treatment in paediatric settings. Ideally this work stream should be led by the managed clinical network; however, as the network was in development, the PHA could take a lead role in overseeing this. HSC Trusts should work collaboratively to identify and agree a set of key paediatric competencies which could be based on existing training. These should be used to develop a regional training programme for non-children’s nurses, to ensure they receive the appropriate knowledge, skills and competencies to work in general paediatric surgery settings.

Recommendation 3	Priority 2
<p>The Health and Social Care Board and Public Health Agency should work with Health and Social Care Trusts to identify and agree key paediatric competencies, to underpin a regional training programme for non-children’s nurses who provide care and treatment to children. Responsibility for this work could transition to the managed clinical network once it is firmly established.</p>	

Anaesthetic Staff

Anaesthetics is a key discipline in the delivery of general paediatric surgery. However, this is one of many areas of work within the scope of anaesthetists’ work. Whilst training in anaesthetics covers both children and adults, it is through practice that general anaesthetists build and maintain their skills and competencies in anaesthetising children.

The 2010 Standards advocate that regular surgical lists are undertaken to ensure anaesthetists maintain their skills and competency in caring for children. At the time of the Review, in the RBHSC, consultant paediatric anaesthetists were involved in surgical procedures on a daily basis, ensuring their skills and competencies were up-to-date. In the DGHs, general paediatric surgery lists were frequently too small to achieve this.

Anaesthetists were aware of the need to maintain their skills and competencies in relation to children. They informed the Expert Review Team that exposure increased their confidence, which helped them when they were/are involved in emergency cases.

Anaesthetists in the DGHs discussed the steps they take to maintain their skills and competencies; these steps varied between HSC Trust hospitals and included:

- In Antrim Area Hospital, exposure to anaesthetising children was mostly through dental and ENT procedures. Anaesthetists with an interest in paediatric anaesthesia are usually prioritised to undertake these procedures;
- In Causeway Hospital, designated anaesthetists with an interest in paediatric anaesthesia cover paediatric surgical lists. Other anaesthetists in the department had the opportunity to rotate through these lists and maintain their skills by working with colleagues who regularly anaesthetise children;
- In Craigavon Area and Daisy Hill Hospitals, staff rotas were in place to ensure that anaesthetists, who may be called to a paediatric emergency, have exposure to anaesthetising children on dental, ENT, and magnetic resonance imaging (MRI) lists on a regular basis;
- In the Ulster Hospital, a rota was in place which allowed anaesthetists to gain experience anaesthetising children to maintain their skills;
- In Altnagelvin Hospital, anaesthetists covered regular dental, ENT, and MRI lists. Less frequent general paediatric surgical lists are covered by anaesthetists with a specific interest in paediatric anaesthesia; and
- In South West Acute Hospital, anaesthetists worked together on paediatric surgery cases to gain experience.

The Expert Review Team found that anaesthetists were generally willing to anaesthetise children within a wide age range, including very young children from six months of age. The age range however varied across hospitals and depended on the experience of the anaesthetist. It was only in certain circumstances that individual anaesthetists were reluctant to anaesthetise a child. Such scenarios included:

- Less experienced anaesthetists reluctant to anaesthetise very young or unwell children; and
- Lack of facilities necessary to ensure appropriate perioperative care for the child.

Anaesthetists were clearly aware of the need to maintain their knowledge and training in relation to paediatric anaesthesia. The Expert Review Team determined that they were making good efforts to supplement their practical experience.

Examples shared with the Expert Review Team included:

- A regional monthly teleconference with paediatric intensive care units (PICU) to discuss cases and share learning;
- Informal multidisciplinary training sessions facilitated by the Northern HSC Trust, which included nursing colleagues;
- Audit days to present findings (Section 2.2.2);

- Anaesthetists working together locally to maintain skills; and
- Anaesthetists visit the RBHSC to work with colleagues to gain additional experience in anaesthetising children.

It was noted that some anaesthetists from DGHs did not participate in the monthly teleconference and the Expert Review Team recommended that this meeting is publicised more widely to include all anaesthetists.

2.2.2 Clinical Audit

Surgeons in all HSC Trust hospitals referred to the regular audit of their surgical practice; however, none of the audits described were specific to general paediatric surgery. Due to the low volume of general paediatric surgery performed in DGHs at the time of the review, the Expert Review Team acknowledged that obtaining sufficient data to inform meaningful audit in relation to general paediatric surgery was difficult. The Expert Review Team suggested that surgeons might explore the possibility of, for example, combining general paediatric audit data with data obtained from dental and/or ENT care.

Surgical cases undertaken by RBHSC surgeons in DGHs were audited and discussed during monthly meetings within the RBHSC. Complications were analysed and learning points or recommendations recorded.

Information from audits undertaken by RBHSC surgeons in DGHs was added to the other surgical audits carried out within the RBHSC and RBHSC surgeons told us that their Clinical Director was kept informed of the outcome of audits. The Expert Review Team considered that work undertaken by RBHSC surgeons was being discussed; however, the Expert Review Team was concerned about whether the RBHSC Clinical Director was taking responsibility for reviewing or assuring work undertaken by RBHSC surgeons in DGHs.

All surgeons informed the Expert Review Team that they participate in annual appraisal, providing them with an opportunity to discuss areas of their personal practice associated with general paediatric surgery, such as their case workload, training and outcomes achieved.

2.2.3 Processes / Protocols to Support General Paediatric Surgery

Safeguarding

The Expert Review Team found that all HSC Trusts had a child protection policy in place, which was readily accessible on all children's wards. For newly appointed staff, child protection and safeguarding training was a mandatory component of their induction training; therefore all staff caring for children would have completed this training. They would receive information on child protection responsibilities and be familiarised with the procedures to follow should safeguarding concerns arise.

Protocols for Contact with and Transfer to RBHSC

Many of the surgeons across HSC involved in general paediatric surgery had established informal links. As a result of these informal links, surgeons told the Expert Review Team that they felt they could contact colleagues in other HSC Trusts for advice on individual cases or to discuss patient transfers to RBHSC. Although discussions do take place, there are only limited formal processes to support communication between HSC Trusts and individual healthcare professionals.

Within the 2010 Standards, reference is made to several protocols that support general paediatric surgery. Section 4 of the 2010 Standards states that protocols for assistance and transfer of day cases without an on-site inpatient paediatric medical unit must be in writing and all staff must be aware of them and trained in their use.

In discussions with staff, the Expert Review Team identified that the term 'protocol' was perceived to be very formal and bureaucratic. The Expert Review Team considers that this was sometimes off-putting for staff and would recommend that HSC Trusts consider changing the terminology from 'protocol' to 'process'. The same outcome could be achieved, but in a simplified and less bureaucratic way. The Expert Review Team considered that it was essential to have clarity regarding agreed processes for advice and transfer. Not all the protocols / processes referenced within the 2010 Standards were documented or available in each hospital.

Influenced by the development of informal links between clinicians, agreement of a formal protocol / process for staff in DGHs to contact PICU and/or paediatric surgeons has never been completed.

The Expert Review Team recommended that a formal regional process for all staff to contact PICU and paediatric surgeons in the RBHSC is developed and implemented as soon as possible.

Recommendation 4	Priority 1
The Health and Social Care Board and Public Health Agency should provide leadership for development and implementation of a process for staff in District General Hospitals to contact and obtain clinical advice from the Paediatric Intensive Care Unit and/or paediatric surgeons in Royal Belfast Hospital for Sick Children; all staff should be trained in use of this protocol and a suitable mechanism implemented to provide assurance that the protocol is fully implemented.	

Although a form for referral to PICU was available in the RBHSC, there was limited evidence of a formal written process to support the transfer of children from DGHs to the RBHSC. Transfers were usually arranged through a telephone call between hospital staff. The Expert Review Team recommended that a formal regional process for transferring children from DGHs to the RBHSC is developed and implemented as soon as possible.

Recommendation 5	Priority 1
<p>The Health and Social Care Board and Public Health Agency should provide leadership for development and implementation of a region-wide process, agreed across all Health and Social Care Trusts, for transferring children between District General Hospitals and Royal Belfast Hospital for Sick Children; relevant staff should be trained in use of this protocol and a suitable mechanism implemented to provide assurance that the protocol is fully implemented.</p>	

At the time of this Review, the Western HSC Trust was piloting a newly developed pathway “Draft WHSCT/RBHSC Pathway for Appendicitis”. The pathway outlined the steps involved in assessment of a child with appendicitis and the decision-making process leading to an emergency operation at the DGH and/or transfer to RBHSC. The Expert Review Team considers that if the pilot to test implementation of this pathway is successful, it should be shared with the other HSC Trusts and adopted regionally.

Pain Management Policies

The Expert Review Team was informed that at the time of this Review, not all Trusts had a documented pain management pathway for children. For those which had a pain management pathway, the Expert Review Team noted inconsistencies in content of the local policies and knowledge of these varied across organisations. The Expert Review Team recommends that all HSC Trusts have an appropriate pain management policy in place for children, made accessible for all staff. HSC Trusts should consider a collaborative approach to the development of a regional pain management policy for children. Subsequently Trusts should then work together to implement the policy and develop robust methods for assuring its use.

Recommendation 6	Priority 1
<p>Health and Social Care Trusts should work collaboratively with the Health and Social Care Board and Public Health Agency to develop and implement a regional pain management policy for children, which is accessible to all staff. Trusts should assure full implementation of this policy across their paediatric services.</p>	

Observation of Paediatric Patients

Standard 9 of the 2010 Standards relates to Paediatric Observation and covers admission to a local paediatric inpatient unit, with close involvement by paediatricians in DGHs and an agreed written protocol for the management of children with possible surgical problems which ensures clarity of responsibility if a child is transferring between the care of a surgeon and care of a paediatrician (Appendix 1).

Standard 11 of the 2010 Standards relates specifically to Paediatric Head Injury protocols and includes assessment and outcomes for children presenting at EDs with a head injury, involvement of paediatric surgeons and the need for a protocol to govern care delivered (Appendix 1).

All HSC Trusts reported that they had a protocol / process in place for the assessment and management of a child with a possible head injury. Following discussions with staff, the Expert Review Team considered that responsibilities in relation to the operation of the protocol were not as clear as they should be. The specialty with lead responsibility for the child varied between HSC Trusts. In some HSC Trusts the medical paediatrician had responsibility, while in other HSC Trusts the surgeon had responsibility. Discussions with staff highlighted that there were differing opinions among staff as to who should take lead responsibility in this context.

The same scenario applied to children diagnosed with a definite head injury. Although each HSC Trust had a protocol for the management of a child with a head injury, depending upon the HSC Trust responsibility was designated to either the medical paediatrician or the surgeon. Again, there were differing opinions as to who should take lead responsibility in this context.

The Expert Review Team acknowledged a heightened awareness among clinical staff of the responsibilities of lead clinicians responsible for overseeing a child's care. This was associated with the Inquiry into Hyponatraemia-related Deaths in Northern Ireland²³, which was ongoing at the time. This particularly concerned clinicians with limited experience of caring for children.

HSC Trusts advised that they had been involved in regional work relating to the management of intravenous fluids in children and have reviewed and updated their local processes accordingly. In many HSC Trusts, arrangements at the time of this Review had been reassessed and the responsibility for the care of the child was now a joint medical paediatric and surgical responsibility; however, it was not clear to the Expert Review Team whether these new processes in relation to joint responsibility or lead responsibility had been fully implemented in practice and were being appropriately monitored.

During their various engagements, the Expert Review Team acknowledged that there was not consensus among clinicians as to whether medical paediatric or surgical consultants should retain overall responsibility for children undergoing surgery in hospital. Subsequent to this Review, a recommendation arising from Inquiry into Hyponatraemia-related Deaths in Northern Ireland advised that senior paediatric medical staff should hold overall responsibility²⁴.

²³ The Inquiry into Hyponatraemia-related Deaths was established in 2004 by the Minister with responsibility for Health, Angela Smith, under Article 54 of the Health and Social Services (Northern Ireland) Order 1972 - <http://www.ihrdni.org/index.htm>

²⁴ Subsequent to the fieldwork for this review the report of the Inquiry into Hyponatraemia-related Deaths in Northern Ireland has published a recommendation that senior paediatric

The Expert Review Team concluded that treatment protocols involving paediatric surgery should at all times clearly identify the lead and responsible clinicians. These protocols should be regionally agreed, implemented locally and their implementation monitored and assured.

Recommendation 7	Priority 1
<p>Health and Social Care Trusts should ensure that all protocols relating to the care and treatment of children, in particular those relating to management of Intravenous fluids and head injuries, clearly identify the lead clinician with overall responsibility for care of the child; Trusts should ensure that all such protocols are fully implemented and regularly assured.</p>	

2.2.4 Services Supporting General Paediatric Surgery

Emergency Departments

Standard 8 of the 2010 Standards relates to assessment of children in Emergency Departments (ED), whereby staff should maintain skills and competence for accurately assessing and diagnosing children who may require surgery; as well as maintaining skills and competence to undertake resuscitation, by an anaesthetist or at least one member of the team on duty having completed APLS training (Appendix 1).

The Expert Review Team was informed that all hospitals with an ED at the time of this Review had appropriate arrangements in place for managing a child that requires emergency general paediatric surgery. No elective general paediatric surgery patients would present through the ED.

HSC Trusts reported that ED staff had the skills and competencies to undertake resuscitation of a collapsed child. While not all staff had APLS training, there would be at least one person available on duty who had completed APLS training.

During meetings with our Expert Review Team, Consultant Anaesthetists told us that they would sometimes be called to the ED to anaesthetise or resuscitate a child and they described variation with regard to where an intensively unwell child would ultimately be managed, either in the ED or in theatre.

HSC Trusts reported that ED staff had the skills to assess and identify a child that required surgery. There were clear processes in place within the DGHs for transferring a child from ED to theatre for surgery.

medical staff should hold overall responsibility in children's wards accommodating both medical and surgical patients.

Radiology

The Expert Review Team was informed that the radiology procedures associated with general paediatric surgery are commonly plain imaging and ultrasound, with the majority of other procedures associated with specialist paediatric surgery and trauma.

At the time of this Review, radiology services across Northern Ireland were experiencing major challenges, particularly in relation to filling a high number of vacant consultant radiologist posts. In paediatric radiology this had led to problems fulfilling clinical commitments but also had led to difficulties in providing teaching and training opportunities for the next generation of paediatric radiologists.

DoH was undertaking a review of imaging services with the aim of producing a Strategic Framework for Imaging Services in Health and Social Care which would include recommendations in relation to paediatric radiology. The 2016 Strategy acknowledged challenges and highlighted the potential for a hub and spoke model for paediatric radiology. The 2016 Strategy proposed two objectives Objective 20 and 21²⁵ (Appendix 2) which advocate that:

- organisations should work together to ensure regional availability of paediatric radiology expertise, including out of hours; and
- a business case is prepared to support the implementation of recommendations from the ongoing DoH review of imaging services.

The Expert Review Team considered that radiology provision was an essential component for the success of any future model of general paediatric surgery and supported the DoH review of imaging services.

2.2.5 Environment

The 2010 Standards set out a number of expectations in relation to paediatric units, in that these units should be child friendly environments and have play specialists available (Appendix 1).

During their visits to HSC Trusts, the Expert Review Team visited some of the paediatric inpatient and recovery wards. The Review Team was informed that elective general paediatric surgery was performed as a day case with patients discharged on the day of their procedure. A small number of patients may develop complications and require admission.

Occasionally a small number of elective general paediatric surgery procedures were undertaken as planned inpatient cases.

²⁵ Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026) - DoH, November 2016 – Objective 20 and 21, Page 50 - <https://www.health-ni.gov.uk/sites/default/files/publications/health/paediatric-strategy-hospital-andcommunity.pdf>

All hospitals performing elective general paediatric surgery day procedures had inpatient facilities that could be accessed if an admission was required.

Within the RBHSC child-only theatre lists were always used. In the DGHs child-only theatre lists were maintained where possible, but in cases where there were insufficient numbers of children to make up a full theatre list, children would always be placed at the start of the list.

Most wards were painted or decorated in such a way as to provide a child-friendly environment. However, there were a few areas that lacked any enhancements to promote a more child-friendly environment. Staff informed the Expert Review Team that they were always exploring new and innovative ways to make the environment more child-friendly. The Expert Review Team considers that the environment within the wards visited was consistent with similar children's wards in hospitals elsewhere in the UK.

The Expert Review Team noted two instances where children and adult patients were treated or cared for in close proximity. One in which the paediatric day procedure recovery units was used to accommodate adult patients from other wards at times when children recovering from surgery were present. The second involved a paediatric day procedure theatre being used for adult surgical procedures. While the Expert Review Team was informed about measures which had been put in place to mitigate these risks, the Team agreed that additional measures would strengthen the arrangements. This was escalated to the two Trusts, and RQIA requested that Safeguarding Teams in each Trust undertake a risk assessment to assure themselves that children were being cared for appropriately.

An example of good practice was highlighted to the Expert Review Team through the identification of a defined adolescent bay on the paediatric ward in the Ulster Hospital. It was acknowledged that this arrangement facilitated an age-appropriate environment for that patient group.

Play specialists were employed in most hospitals and were usually located in paediatric areas. Play specialists were available to visit any ward that had children as inpatients, to engage with them prior to and following surgery. Staff in hospitals which employed play specialists spoke very highly of the benefits provided, particularly in relation to reassuring children and preparing them for surgery. HSC Trusts advised that play specialists covered other medical and surgical specialties for children and were not solely employed within general paediatric surgery.

Given the benefits play specialists can contribute to a child's experience, the Expert Review Team considered that HSC Trusts should introduce or expand the services of play specialists into those hospitals where the service is currently unavailable or underdeveloped.

Recommendation 8	Priority 2
Health and Social Care Trusts should develop play specialist services in those hospitals where the service is currently unavailable or underdeveloped.	

2.3 Future Provision of General Paediatric Surgery in Northern Ireland

In the years preceding this Review, work had been undertaken in relation to planning for the future provision of general paediatric surgery in Northern Ireland. This had involved the participation of experts at both a local and regional level. The release of the 2016 Strategy was the culmination of this work, setting out the strategic direction for the reform and modernisation of paediatric care. The 2016 Strategy was designed to manage the change in paediatric services in a co-ordinated way, in order to further improve the delivery of services for children, young people and parents of the future. This Review has considered improvements to the current model of general paediatric surgery and recommends that these improvements are progressed in conjunction with the 2016 Strategy.

At the time of this Review there was a clear acknowledgement that the current model for general paediatric surgery was unsustainable and that reform and modernisation was necessary. Since the majority of general paediatric surgery was being performed by paediatric surgeons from RBHSC, any new model for general paediatric surgery cannot be looked at in isolation from other types of paediatric surgery. Specialist paediatric services have a direct impact on general paediatric surgery and need to be considered.

Staff from the RBHSC reported being under significant pressure to deliver both a general paediatric surgery service and a specialist paediatric service. Despite efforts to implement a hub and spoke model it was their view that an increasing number of children were being referred to RBHSC for their surgery.

Resources within RBHSC, in terms of theatre and clinic space, beds and medical and nursing staff, were challenged as the Trust attempted to meet the demand for general paediatric surgery. The consequent outcomes are long waiting lists for both surgery and outpatient clinic appointments. The Expert Review Team considers that a number of factors need to be taken into account when planning any future service delivery model. These include access, the distinction between general and specialist activity and the delivery of age-appropriate care.

2.3.1 Access to Services

A lack of equity of access to elective general paediatric surgery was evident from a comparison of the waiting list times. Information supplied by the HSC Board demonstrates longer waiting lists for a first general paediatric surgery outpatient appointment, for patients in the Northern and Western HSC Trust areas, when compared to the other Trusts. For outpatient clinic appointments and surgery, the waiting times in the Ulster Hospital were considerably shorter than the waiting list times in the RBHSC. The Expert Review Team identified that protected surgery lists in the Ulster Hospital have resulted in fewer cancelled surgeries and shorter waiting list times. The Team noted that emergency cases in RBHSC meant that protected surgery lists could not always be facilitated in this setting.

The Expert Review Team was advised that, as a consequence of long waiting lists in DGHs, referrals for standard procedures were being sent as priority cases by some General Practitioners, influenced by the length of time the patient had been waiting. Referrals were being sent directly to the RBHSC rather than through local DGHs. These referrals were adversely impacting on waiting times for RBHSC services and were sometimes duplicated.

The Expert Review Team was advised that the PHA has been working on implementation of the Clinical Communications Gateway in conjunction with the Belfast HSC Trust, which would facilitate a centralised referral system. Centralising referrals would provide a more co-ordinated approach for appropriate allocation of surgery to a hospital geographically suited to the individual patient. This approach could also be utilised to improve the equity of access across the region.

The Expert Review Team considered that further improvements in the equity of access to general paediatric surgery could be achieved by the creation of a centralised waiting list, for both outpatient clinic appointments and for general surgery. A centralised waiting list has the potential to:

- balance the overall waiting list times across Northern Ireland;
- stabilise or reduce waiting lists for certain procedures; and
- allocate surgery to hospitals geographically closer to a patient's home.

The PHA advised that a project to establish a centralised waiting list within the Belfast HSC Trust was in the early stages of development at the time of this Review. The Expert Review Team welcomed this initiative; however, recommended that it was prioritised in light of waiting list times and inequity of access at the time of this Review.

The Team also recognised that a centralised waiting list could not be created in isolation and would need co-operation from all Trusts.

Recommendation 9	Priority 2
The Health and Social Care Board and Public Health Agency should work with Health and Social Care Trusts to prioritise the development and implementation of a centralised waiting list system for general paediatric surgery.	

The Expert Review Team advised that, for both the centralised referral and waiting list systems, relevant clinicians should be fully involved in their development and in establishing how their use could be optimised to improve service delivery. This engagement would ensure that appropriate arrangements were put in place for the management, oversight and operation of the systems. This would safeguard referrals and would ensure that surgical cases are being reviewed, assessed, and allocated correctly.

The Expert Review Team considered that the development of centralised referral and waiting list systems would be an excellent opportunity for the managed clinical network to support and drive improvements in general paediatric surgery services. This would be facilitated by the network being established and fully operational.

The Expert Review Team further identified that public perception could impact on the success of implementation and management of a centralised waiting list, in particular regarding the allocation of surgery to DGHs. It is possible that the public may be of the opinion that all surgery should be performed by a paediatric surgeon within RBHSC. The Expert Review Team considered that some form of public communication strategy in relation to general paediatric surgery may be required to inform the public as to the purpose and benefits of a centralised referral and waiting list systems.

2.3.2 Distinction between General and Specialist Activity

At the time of this Review, within RBHSC paediatric surgeons were delivering both general and specialist paediatric services and demands on their time inevitably meant that prioritisation of their workload was required. Since emergency cases can take priority, elective surgeries are frequently cancelled or rescheduled with consequent impact on waiting lists. The reduction in the volume of elective general paediatric surgery being performed in DGHs has increased the workload within RBHSC and increased the number of children on waiting lists.

The Expert Review Team was told that the interdependency between general paediatric surgery and specialist paediatric surgery was complex. The ability to meet targets for a specific specialty could be challenging due to prioritisation on the basis of clinical need. An increased demand on paediatric surgery services in RBHSC was identified within the 2016 Strategy.

Objective 13 of the Strategy ²⁶ (Appendix 2) aimed to promote improved equity of access to services by establishing a clear distinction between general and specialised paediatric services. This objective would facilitate improved future planning of paediatric services. The Expert Review Team welcomed the development of a clear distinction between general and specialist paediatric services as the changes in the system and the subsequent work that flows from these changes could result in protected time for elective general paediatric surgery.

DoH acknowledged that the distinction between services would be impacted on by the changes to age-appropriate care. The 2016 Strategy which identified the need for a review of services in line with the requirements of age-appropriate care outlined in Objective 5 (Appendix 2). As part of any proposed review, the Expert Review Team considers that robust baseline data is required to accurately define the current capacity and that the relative proportions of surgeon's job plans aligned to general and specialist surgery should be established. This applies to surgeons both in the RBHSC and those surgeons in the DGHs who would perform general paediatric surgery.

Recommendation 10	Priority 2
<p>The Health and Social Care Board and Public Health Agency should work collaboratively with each Health and Social Care Trust to:</p> <p>a) define precisely the respective capacity available for general paediatric surgery and specialist paediatric surgery;</p> <p>b) define the historic investment into general paediatric surgery and associated service capacity; and</p> <p>c) quantify the resources required for a future hub and spoke model to meet the population needs.</p>	

Within RBHSC paediatric surgeons normally delivered both specialist and general paediatric surgery. In future, job plans should take account of the different types of work undertaken and specify protected time for each. Protected activity may include:

- emergency paediatric activity;
- specialist paediatric activity;
- general paediatric activity within the RBHSC; and
- general paediatric activity within DGHs, such as surgery or training (including travel time).

²⁶ Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026) - DoH, November 2016 – Objective 4, Page 42 - <https://www.health-ni.gov.uk/sites/default/files/publications/health/paediatric-strategy-hospital-andcommunity.pdf>

For surgeons and anaesthetists in the DGHs who would perform elective general paediatric surgery their job plans would have to be evaluated and updated to ensure that time is appropriately detailed and protected.

The Expert Review Team was not able to clearly identify the proportion of consultant capacity that was aligned to either general or specialist paediatric surgery which makes accurate service planning difficult. The Team therefore recommended that HSC Trusts consider defining the proportion of protected time for general paediatric surgery into the job plans for new surgical appointments. For surgeons that may lack the necessary skills and competence for general paediatric surgery, appropriate mechanisms can be established with the RBHSC to provide the necessary training.

Recommendation 11	Priority 2
<p>Each Health and Social Care Trust, in collaboration with the Health and Social Care Board and Public Health Agency, should review its job plans for consultant surgeons and anaesthetists currently involved in delivering general paediatric surgery; this exercise should identify the number of programmed activities available to deliver the current service and inform work on requirements for the future region-wide service model for paediatric surgery.</p>	

2.3.3 Age-Appropriate Care

At the time of this Review, the Expert Review Team noted that there was variability in the age limits for admission to paediatric wards. RBHSC admitted children up to 13 years of age onto their paediatric medical and surgical wards and subsequently reviewed them in paediatric outpatient clinics. The Children’s ED within the RBHSC admitted and treated children up to 14 years of age. Some DGH paediatric units admitted children up to their 16th birthday.

The 2016 Strategy aims to eliminate variability and standardise the age limits for all hospitals across the HSC Trusts. The Strategy defines paediatric services as those services delivered to babies, children and young people from birth up to their 18th birthday. Under Objective 5²⁷ (Appendix 2), the Strategy advised that children up to their 16th birthday should be cared for by the paediatric team in paediatric settings, and those aged 16-17 years should be managed in age-appropriate settings within either paediatric or adult settings.

²⁷ Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community in Northern Ireland (2016 - 2026) - DoH, November 2016 – Objective 5, Page 36 - <https://www.health-ni.gov.uk/sites/default/files/publications/health/paediatric-strategy-hospital-andcommunity.pdf>

Information supplied by the HSC Board advised that, at the time of this Review, only one HSC Trust was fully compliant with the requirements for age-appropriate care outlined in the 2016 Strategy. The other four HSC Trusts were partially compliant. In two of the HSC Trusts described as partially compliant, at least one hospital site was fully compliant while the other hospital sites were working towards compliance.

RBHSC clinicians raised concerns about the impact that an increase in the age thresholds could potentially have. They highlighted the problems they were having meeting the existing demand and they considered that increasing the age thresholds would further exacerbate capacity and resource problems. The Expert Review Team was informed that the commissioning team in the HSC Board / PHA was working to take account of any expected increase in activity in the RBHSC that would arise when age-appropriate care standards were fully implemented.

The Expert Review Team recognised that changes to age-appropriate care had the potential for further movement of children into RBHSC from other specialties in the Belfast HSC Trust and also from other HSC Trusts. Any increase in patient numbers within the RBHSC as a result of age-appropriate care could impact upon areas such as specialist and neonatal surgery, which cannot be performed anywhere else in Northern Ireland. Any movement of children to RBHSC should be carefully planned, so that the required expertise and assured resources were available to provide age-appropriate care.

Paediatric surgeons in the RBHSC also raised concerns about whether they were the most appropriate clinicians to deliver surgical care to adolescents, highlighting that the anatomy, physiology and pathologies associated with adolescents are frequently of an adult nature. It was emphasised that paediatric surgeons' training and experience may not equip them to deliver surgical care to adolescents in the same way that a trained adult surgeon could.

The Expert Review Team considered that the number of additional elective general paediatric surgery procedures for children over the age of 13 years would be small. The Team considered that the biggest impact of moving to full implementation of age-appropriate care would be on emergency general paediatric surgery and specialist inpatient paediatric surgery. Although it was outside the scope of this Review to assess the full implementation of age-appropriate care, the Expert Review Team acknowledged it may present some challenges.

The future direction for age-appropriate care was clearly defined by DoH through the 2016 Strategy. At the time of this Review, the operational implications for delivering age-appropriate care remained unclear in practice for some HSC Trusts, and particularly for paediatric surgeons in RBHSC.

The Expert Review Team was also unclear as to the level of active engagement between clinicians and management in RBHSC in relation to the development of the future services for children.

In line with the Belfast Trust's Leadership and Management Framework 2016-2019, clinicians and management should work together, within the Trust's collective leadership model, to address challenges and to discuss and agree solutions for delivering high quality children's services.

The Expert Review Team considers that further analysis of the implications of age-appropriate care should be undertaken to inform an appropriate approach, to ensure paediatric surgeons in the RBHSC and general surgeons in DGHs can provide appropriate surgical care to adolescents.

Recommendation 12	Priority 2
HSC Trusts should work collaboratively with the Health and Social Care Board and Public Health Agency to ensure effective implementation of age-appropriate care across paediatric surgical services and to develop future age-appropriate surgical services for adolescents.	

2.3.4 Future Models for Service Provision

The Expert Review Team discussed the future model of service provision with staff in all HSC Trusts.

The Expert Review Team considered that although the current model for service provision is functioning, it is not sustainable into the future. With the exception of arrangements in the South West Acute and Causeway Hospitals, there was no evidence of succession planning for surgeons who perform general paediatric surgery in DGHs. For DGHs with outreach service model arrangements in place involving the RBHSC, there was no evidence of contingency planning if the current arrangements were to change; for example, RBHSC surgeons no longer able to provide services that were in place at the time of this Review.

At the time of this Review, the 2010 Standards provided the basis against which HSC Trusts should deliver general paediatric surgery. However, the evolution of the service to its current model makes it difficult for DGHs to meet the requirements of these Standards. The Expert Review Team considered that reconfiguration of the current service model was necessary to ensure that general paediatric surgery was sustainable into the future.

The Team considered that for general paediatric surgery to continue to be performed in DGHs an appropriate model for service delivery must be identified and implemented. This must include robust arrangements for succession planning for surgeons.

A range of opinions was expressed to the Expert Review Team about the most appropriate model for general paediatric surgery; three distinct models were described:

- (i) Performing all elective general paediatric surgery in the greater Belfast area, divided across two Trusts - the RBHSC in the Belfast HSC Trust and the Ulster Hospital in the South East HSC Trust;
- (ii) Performing all elective general paediatric surgery within the RBHSC and in specified DGHs, using paediatric surgeons from the RBHSC;
- (iii) Performing elective general paediatric surgery at specific DGHs, using paediatric surgeons from the RBHSC and DGHs.

At the time of this Review, in view of the capacity and resource issues at the RBHSC, the Expert Review Team considered that Option (i) was impractical and would not provide appropriate patient care into the future. Therefore, the Expert Review Team considered that a fully centralised service would not be in the best interests of patients, and that Option (i) should not be considered.

Although Option (ii) offered the possibility of increased theatre capacity at some DGHs and may have increased the number of surgeries performed locally, the Expert Review Team considered that Option (ii) did not provide an opportunity for DGH surgeons to contribute to this important service. This option was heavily reliant on the RBHSC surgeons and services would be vulnerable if there was pressure on delivering services at the RBHSC. The Expert Review Team was of the opinion that this hub and spoke model was restrictive, and that Option (ii) should not be considered.

Despite some DGH surgeons expressing a preference not to be involved in elective general paediatric surgery several other DGH surgeons were willing and welcomed the opportunity to become involved in providing this service. The Expert Review Team considered that Option (iii) should be proposed as the future model for general paediatric surgery in Northern Ireland. However, the final decision on the configuration of the future model rested with those stakeholders involved in commissioning, delivering and assuring the model.

Recommendation 13	Priority 2
<p>The Health and Social Care Board, Public Health Agency and Health and Social Care Trusts should work in partnership to agree:</p> <ul style="list-style-type: none"> a) a hub and spoke model for general paediatric surgery across Health and Social Care Trusts; b) general paediatric surgery is performed in specified District General Hospitals by appropriately skilled surgeons from either Royal Belfast Hospital for Sick Children or the District General Hospitals; c) that investment, commissioning and monitoring arrangements for the agreed service model are clear, these should be based on a thorough understanding of previous investments and a detailed capacity/demand analysis. 	

The Expert Review Team was informed of a number of additional factors that would have to be considered before the final decision on the precise configuration of the model could be made. Trusts were undertaking some work which would help inform planning for the hub and spoke model, particularly for the two Trusts which did not have active spokes in place.

2.3.5 Next Steps

The Expert Review Team considered that many of the issues identified during this Review were similar to the issues identified during the development of the 2016 Strategy. Many of these issues would be resolved by meeting the objectives contained in the 2016 Strategy; as such the Expert Review Team considers it to be unnecessary to make further recommendations in some areas.

The Expert Review Team considered that there are some early steps that would help to support implementation of the 2016 Strategy and recommendations outlined in this Review.

These include:

- Continuing collaborative working and partnerships involving the commissioner (PHA and HSC Board), clinicians and managers;
- Identifying which HSC Trusts / hospitals are willing to engage in a hub and spoke model for general paediatric surgery and their preferred service configuration;
- Identifying which surgeons in the DGHs are interested in performing general paediatric surgery; and
- Identifying what additional capacity (theatres, finance and healthcare professionals) is available in DGHs to support additional / new general paediatric surgery.

The Expert Review Team acknowledged a strong desire among all stakeholders to improve general paediatric surgical services across the HSC and was impressed by the level of commitment displayed. Implementation of the recommendations from this Review alongside full implementation of the 2016 strategy will require continued partnership working involving all stakeholders (commissioners, clinicians, managers and parents/carers). This approach will support the future development and drive improvements of general paediatric services across Northern Ireland.

Appendix 1 - Improving Services for General Paediatric Surgery – Policy and Standards of Care for General Paediatric Surgery in Northern Ireland – May, 2010.



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AN ROINN

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agus Sábháilteachta Poiblí**

MÁNNYSTRIE O

**Poustie, Resydènter Heisin
an Fowk Siccar**

***Improving Services for General Paediatric Surgery
– Policy and Standards of Care for General
Paediatric Surgery in Northern Ireland***

May 2010

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Introduction

Purpose

This policy aims to set out clearly standards for General Paediatric Surgery (GPS) in Northern Ireland. It is linked to the document *Improving Services for Paediatric ENT Surgery - Policy and Standards of Care for Paediatric ENT Surgery in Northern Ireland* (2010).

The Children's Surgical Forum (CSF) of the Royal College of Surgeons of represents the full range of professionals involved in delivering surgical services to children. In July 2007, the CSF published its report entitled *Surgery for Children: delivering a first class service*¹. The report sets out up-to-date, definitive standards on the organisation and delivery of surgical care to the young. Given the broad representation and professional standing of the CSF, this Royal College report forms the basis of the 2010 policy for provision of all paediatric surgery in Northern Ireland.

By distinguishing elective GPS services from emergencies, assessment for surgery from the surgery itself, and the care of older children from the care of children under five years of age, this policy is intended to ensure that:

- all children who require emergency or elective GPS are managed in an appropriate environment by staff with the requisite skills
- assessment of emergency GPS cases occurs locally as this will minimise the risks and distress associated with unnecessary transfer
- consultant-level senior decision makers determine the need for transfer to ensure that transfers are clinically appropriate
- children who need transfer to Royal Belfast Hospital for Sick Children (RBHSC) are transferred quickly
- emergency surgery in older children is provided locally in an appropriate environment
- that, where clinically appropriate, elective GPS procedures are performed locally, with the benefits that brings to children and their families
- an audit and peer review process is developed to assure the quality and safety of care.

¹ <http://www.rcseng.ac.uk/rcseng/content/publications/docs/CSF.html>

Background

A General Paediatric Surgery Working Group was established to draft a policy to improve provision of paediatric general surgery in Northern Ireland. The Working Group had multidisciplinary representation from across Northern Ireland. To inform this policy, the Working Group tested it at a workshop with a wider group of stakeholders involved in general paediatric surgery.

The drafted policy was then issued for public consultation in October 2009. This final version of the policy is a result of a consideration of the comments received from consultees who responded to DHSSPS.

Definitions

Within this policy document, the following definitions apply:

Paediatric patients: children up their 13th birthday

General Paediatric surgery: surgery carried out by a general surgeon or general paediatric surgeon

Elective surgery: planned surgery, either inpatient or day-case

Standards of Care for General Paediatric Surgery

1. Elective Inpatient vs. Day-case GPS Services

General paediatric surgery should be performed on a day-case basis where possible, with inpatient stays only if clinically indicated.



2. Inpatient Elective Surgery

Inpatient elective GPS in children who have not reached their 13th birthday must only be undertaken in sites which have:

- on-site inpatient paediatric medical units
- paediatrically trained nursing staff
- anaesthetists assisted by dedicated staff (operating department practitioners, assistants, anaesthetic nurses) with specific paediatric skills and training¹
- a child-friendly environment
- child-only theatre lists
- peer review of practice and outcomes.
- child protection policy and appropriate staff training.



3. Day-cases With On-site Inpatient Paediatric Medical Unit

Hospitals with on-site inpatient paediatric medical units should meet the following standards in order to provide day-case GPS¹:

- parents and carers should receive clear instructions on follow up and written information on arrangements to deal with any post-operative emergency, including out-of-hours contact telephone numbers.

- day-case sessions must be staffed by children’s nurses
- units must develop and implement a pain management policy, including advice on pain assessment and management at home, and the provision of ‘take home’ analgesia
- play specialists should be available and the environment should be child- and family-friendly
- the pattern of day-case activity should be audited and regularly reviewed
- peer review of practice and outcomes should be undertaken
- there is a clear protocol for contact with PICU and paediatric surgeons in the RBHSC to arrange the transfer of patients should complications arise.



4. Day-cases Without On-site Inpatient Paediatric Medical Unit

In addition to the standards outlined in Standard 3 above, centres with no on-site inpatient paediatric medical unit which undertake day-case GPS should also meet the following standards in order to provide day-case GPS¹:

- the surgery should be undertaken by a surgeon experienced in the condition
- the surgeon must remain at the hospital until arrangements have been made for the discharge of all patients or patients have been transferred to the surgeon’s base hospital
- at least one member of the team involved in treating day-cases should hold the *APLS/EPLS* certificate and other team members must have up-to-date basic skills for paediatric resuscitation
- while the child is in the unit, at least one member of staff with up-to-date skills in basic paediatric life support should be present
- a neighboring children’s service within the parent Trust should take formal responsibility for the children being managed in the unit. There must be a written agreement to this effect signed by the relevant Trust Clinical Director, Medical Director and Chief Executive

- agreed and robust arrangements should be in place for paediatric assistance and transfer if required. Protocols must be in writing and all staff must be aware of these and trained to maintain and test that awareness. All transfers of children from the unit following surgery must be investigated and the investigation report signed by the relevant Trust Clinical Director and Medical Director and Chief Executive. Any concerns about the safety or quality of care in the unit should be addressed through the Trust's governance arrangements.



5. Surgeons

A surgeon who performs elective GPS:

- must be either a paediatric surgeon or a general surgeon designated for paediatric surgery
- day-case surgery may be undertaken by senior, experienced trainees or other experienced non-consultant career grade surgeons, but only under appropriate consultant supervision.
- must undertake a sufficient volume of general paediatric surgery to maintain skills and competence. This could be demonstrated by the equivalent of at least one elective GPS list per month or, ideally, one per fortnight
- must audit their practice on key outcomes, including, but not limited to:
 - mortality
 - unexpected readmission rate
 - complication rate
 - unexpected onward referral to RBHSC
- must participate in audits involving surgeons in DGHs and the RBHSC
- must have their audit results signed off as satisfactory by their Clinical Director, e.g. through their annual appraisal
- must update their skills by participating in CPD events with other paediatric surgeons and designated lead surgeons for GPS, possibly through in reach or outreach arrangements, including advanced resuscitation.



6. Anaesthetic Services

Each Trust providing GPS must have one designated lead anaesthetist who has undergone additional training.¹



7. Anaesthetists

The **lead** anaesthetist should undertake the equivalent of at least one child-only list per week which can include ENT, dental, or other specialty cases¹.

All other anaesthetists must undertake a sufficient volume of paediatric anaesthesia to maintain skills and competence. This could be demonstrated by the equivalent of at least one child-only list per month or, ideally, one per fortnight which can include ENT, dental, or other specialty cases.

All anaesthetists who provide anaesthetic services for elective GPS cases:

- must have sufficient training, and maintain their skills in paediatric resuscitation to the level of advanced paediatric life support or equivalent
- must audit their practice on key outcomes, including, but not limited to:
 - mortality
 - unexpected readmission rate
 - complication rate
 - unexpected onward referral to RBHSC
- must participate in audits involving anaesthetists in DGHS and the RBHSC
- must have their audit results signed off as satisfactory by their Clinical Director, e.g. through their annual appraisal
- must update their skills by participating in CPD events with paediatric anaesthetists, possibly through in reach or outreach arrangements, including advanced resuscitation.



8. Assessment in Emergency Departments

Staff in Emergency Departments or other units that receive children must:

- maintain the skills and competence to undertake resuscitation of a collapsed child in an emergency. At all times, at least one member of the team on duty should have completed APLS training. In addition, any anaesthetist should be prepared to manage children in such an emergency. This recommendation is in line with DHSSPS policy as set out in a letter to Trusts and Boards on 8 November, 2005
- maintain the skills and competence to accurately assess and diagnose children who may require surgery. Following assessment in the Emergency Department or other units, a child may be discharged, admitted for observation and/or surgery locally, or transferred for surgery in RBHSC (see below).



9. Paediatric Observation

Children who require observation, including those under five years, should be admitted to the local paediatric inpatient unit. While local arrangements may vary between hospitals, all units must ensure that paediatricians in DGHs are closely involved in the management of children with surgical emergencies, particularly the very young.

Each unit should develop an agreed written protocol for the management of children with possible surgical problems who are referred by their GP or the A&E department, ensuring clarity of responsibility if a child is transferring between the care of a surgeon and care of a paediatrician. All junior medical staff must be made aware of these protocols.

Emergency GPS cases should only be admitted to a hospital where there is inpatient paediatric support and appropriate anaesthetic cover.



10. Location for Emergency Surgery

If it is determined that a child needs surgery, or is likely to need surgery, the following should apply:

- all children **who have not reached their fifth birthday** should be transferred for surgery to RBHSC unless:
 - the child's clinical condition is time-critical, e.g. situations such as testicular torsion or trauma, or
 - the designated consultant general surgeon for GPS is able to perform the operation within a time period appropriate to the child's clinical condition
- If the child is **aged over five years**, the surgery should normally be performed in the local paediatric inpatient unit, unless there are clinical reasons why the child should be transferred to a different unit.

Practical arrangements for transfer

- the final decision on the need for transfer to RBHSC should be taken by a Consultant in the local unit. Typically this will be a consultant in general surgery or emergency medicine, depending on the circumstances of presentation, with input as necessary from a paediatrician
- the consultant in the local unit should contact the on-call consultant paediatric surgeon in RBHSC to discuss the case and arrange transfer. Following consultant-to-consultant discussion, children who need transfer will be transferred. A bed must be found in RBHSC as if the patient had presented there in the first place
- the child's parent(s) should be involved in the decision and given a clear explanation of the reasons for transfer
- the NI Ambulance Service should be alerted to the possibility of transfer at as early a stage as possible
- the arrangements for transfer will depend on the clinical condition of the child and should follow normal transfer procedures
- each Trust should have a protocol on the transfer to RBHSC of emergency GPS cases which should be consistent with the recommended pathway for emergency GPS outlined in this policy.



11. Paediatric Head Injury

Children presenting to Emergency Departments with a head injury should be assessed according to the local Trust protocol for management of head injury and either:

- discharged home
- admitted for observation before either discharge home or onward referral to neurosurgery, or
- referred directly to neurosurgery.

Paediatric surgeons from RBHSC do not need to be involved in the care of these children unless the child has a co-existent problem which requires specialist paediatric surgery.

Trusts should develop a protocol for the management of children with a head injury based on the current NICE guidelines (CG56 – Head Injury), as endorsed by DHSSPS.



12. Child Protection

All units, including those offering day-case treatment with no on-site paediatric unit, must have child protection policy and appropriate staff training.

Appendix 2 - Summary of Strategic Objectives - A Strategy for Paediatric Healthcare Services Provided in Hospitals and in the Community (2016 – 2026) – November 2016

ANNEX 1

Summary of Strategic Objectives

Objective 1

Information and support provided for paediatric services should be reviewed and enhanced to ensure that the right information and support is available to children, their parents and families so that they may be actively involved in decisions about treatment and care, including self-management.

Objective 2

The Health and Social Care Board and Public Health Agency should work with GPs and other primary care and community care services to further improve access to primary and community care for children and families for those conditions which are more appropriately managed outside secondary care settings.

Objective 3

The needs of children as well as adults should be recognised in developing services for people with long-term conditions, including at transition to adulthood, and supported by improvements in connected health technologies.

Objective 4

A regional Managed Clinical Paediatric Network should be established to ensure equity of access to high-quality services across the North. The Network would include commissioners, providers, clinicians, social workers and patient representatives and should work closely with the voluntary and community sector. The Network should:

- a) include a surgical sub-group to support the safe delivery of paediatric surgical services in line with the Department's standards for general paediatric surgery;
- b) include a paediatric imaging sub-group to support the safe delivery of paediatric imaging services in line with the emerging DoH standards for imaging;
- c) include a paediatric palliative care subgroup to take forward the implementation of the Paediatric Palliative and End of Life Care Strategy;
- d) work with GPs, community dentists, and other members of surgical teams to review certain conditions and develop alternative pathways for the health and wellbeing of the child. For example, the development of alternative options to dental extraction of decayed teeth in young children, the management of glue ear or the removal of tonsils;

- e) consider a formal relationship between the paediatric network, the neonatal network and Integrated Care Partnerships in order to establish firm linkages; and,
- f) work with clinicians and academics to develop research resources.

Objective 5

Children (from birth up to 16th birthday) should usually be cared for by the paediatric team in paediatric settings, and those aged 16-17 years should be managed in age-appropriate settings within either paediatric or adult settings. In all cases, children and young people should have treatment and care delivered to them in an age-appropriate environment to meet their physical, emotional, social, spiritual, educational and psychological needs.

Objective 6

To address the clinical and safeguarding issues for children in an adult in patient setting, HSC Trusts should put in place a system that records these children and ensures paediatric input to their care.

Objective 7

A paediatric model such as rapid response clinics, or short stay assessment and observation units, should be developed to allow rapid assessment and treatment by a range of skilled professionals, which avoids unnecessary inpatient admission. In addition the community children's nurses' skill set should be further developed to provide them with skills in the rapid assessment and management of children who present with an acute medical problem.

Objective 8

Children presenting to Emergency Departments should be cared for by staff with appropriate skills including paediatric basic life support and safeguarding training. At all times there should be:

- at least one member of staff trained to advanced paediatric life support standard or equivalent and one children's nurse or nurse with a core set of competencies and skills as set out in the RCN document *Maximising Nursing Skills in caring for children in Emergency Departments* (March 2010)¹⁹
- arrangements in place for immediate paediatric input to care, and
- at least one member of staff who has received appropriate training in the management of child protection and child safeguarding issues.

Objective 9

Emergency Departments that accept children aged under 16 but which do not have paediatric on-site support, should have senior emergency department clinicians* with skills to distinguish minor from more serious illness and injury, life support and stabilisation skills available at all times.

**Associate specialist, staff grade, ST4 or higher, Advanced nurse practitioner or equivalent.*

¹⁹ *Maximising Nursing Skills in caring for children in Emergency Departments, RCN, 2010.*

Objective 10

Emergency Departments that accept children aged under 16 should have a paediatric resuscitation area with immediate access to children's resuscitation equipment and algorithms. Emergency Departments should also have a physical environment which separates children and young people from adults where possible.

Objective 11

Every child who is admitted to a paediatric department should be seen by a paediatric practitioner at ST 4* or equivalent (including advanced children's nurse practitioner)²⁰ within four hours of admission and by a consultant within 24 hours of admission. This will be kept under review by the Managed Clinical Network (see Objective 4).

**Assessment by ST4 or equivalent within 4 hours of admission means that in practical terms there should be a ST4 practitioner or higher resident in the hospital.*

Objective 12

There should be continued progress towards implementation of the *General Paediatric Surgery and ENT standards* (DHSSPS, 2010). Children under the age of 5 years should have emergency surgery undertaken in the Royal Belfast Hospital for Sick Children (RBHSC), unless the child's condition is time critical or the designated consultant surgeon for general paediatric surgery, in the local district general hospital, is able to perform the operation within a time period appropriate to the child's clinical condition. Straightforward elective general paediatric surgery should continue to be delivered outside the regional centre in line with the 2010 standards.

Objective 13

In order to further promote equity of access there should be clearly defined capacity for both specialist paediatric services and general paediatric services in the Royal Belfast Hospital for Sick Children (RBHSC). This is to ensure equity of access to specialist services for children across the region and to ensure that children residing in Belfast can access general paediatric services in their local hospital.

Objective 14

The Health and Social Care Board and the Public Health Agency should support formal partnerships with other units in Britain and Ireland in order to provide support and sustainability of local service provision where safe and appropriate to do so.

²⁰ Advanced nurse practitioner, staff grade or associate specialist doctor or Doctor in training at ST4 or higher.

Objective 15

The Health and Social Care Board and the Public Health Agency should work with the neonatal network to develop a service specification for the regional neonatal intensive care unit, local neonatal units and special care units to meet the needs of local populations.

Objective 16

Babies with the most complex healthcare needs should normally be cared for in the regional intensive care unit, Royal Jubilee Maternity Hospital (RJMh), including those under 27 weeks' gestation and 1,000g at birth in order to ensure that they have access to the highest level of consultant care and associated services.

Objective 17

The Health and Social Care Board, Public Health Agency and Health and Social Care Trusts working with the paediatric network should put in arrangements to facilitate the earlier discharge of children with complex health needs into their local community.

Objective 18

All medical and dental staff that regularly provide care for children should include child health in their annual appraisal.

Objective 19

The Department should work with regional medical, nursing and allied health professional training providers to ensure that workforce planning and training reflect service needs for children.

Objective 20

The Health and Social Care Board should work with the Health and Social Care Trusts to ensure regional availability of paediatric radiology expertise, including out of hours.

Objective 21

The proposed Paediatric Managed Clinical Network should prepare a business case to support the implementation of recommendations from the ongoing DOH Review of Imaging Services, which identify the future needs of paediatric radiology and related diagnostic services, when the recommendations have been finalised.

Objective 22

In taking forward the implementation of the Health and Social Care ICT Strategy, the Health and Social Care Board should ensure that the requirements of paediatric services are included in ICT projects where appropriate.

Objective 23

Health and Social Care data collection systems, including agreed definitions, should be put in place to better manage demand, capacity and outcomes of paediatric services.

Appendix 3 – RQIA Published Reviews

RQIA reviews a wide range of services across health and social care. Our review programme takes into consideration relevant standards and guidelines, the views of the public, healthcare experts and current research. During our reviews we examine the service provided, highlight areas of good practice and make recommendations for improvement. We report our findings and share any lessons learned across the wider health and social care sector. In addition, when required, we carry out reviews and investigations to respond to specific issues of concern or failures in service provision.

You can access a full list of all RQIA's reviews at:

https://www.rqia.org.uk/RQIA/media/RQIA/Resources/WhatWeDo/Review/RQIA_Reviews_Published_Online.pdf

Individual review reports can be accessed at:

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