

# Remote and Rural Child Health Services

| <b>CONTENTS</b>          | <b>PAGE</b> |
|--------------------------|-------------|
| <b>Background</b>        | <b>3</b>    |
| <b>The Model of Care</b> | <b>4</b>    |
| <b>The Workforce</b>     | <b>9</b>    |
| <b>Technology</b>        | <b>11</b>   |
| <b>Transport Systems</b> | <b>12</b>   |
| <b>Implications</b>      | <b>13</b>   |
| <b>Forward Issues</b>    | <b>15</b>   |
| <b>Risk Assessment</b>   | <b>16</b>   |
| <b>Appendices</b>        | <b>17</b>   |

## Background

Through the Remote and Rural Project process of engagement with clinicians and others working in remote and rural areas, a number of issues were raised around the management of the acutely ill child. In order to inform the Final Report of the Remote and Rural Project and begin to address these concerns, a number of people got together in November of last year to develop a Project Initiation Document (PID). The objectives of this PID are listed below.

1. Identify the requirements for healthcare for children and young people in a remote or an island setting;
2. Develop a proposal for service delivery networks to support remote and rural child health services;
3. Establish baseline data on all remote or island sites, including workforce information;
4. Ensure that the competency frameworks take account of the skills needed in remote and rural settings;
5. Through links with other projects/stakeholders develop educational solutions to support local delivery;
6. Agree menu of appropriate skills;
7. Agree appropriate protocols and work with colleagues in specialist centres to develop these; and
8. Link this work to the work of the Remote and Rural Project.

Outcomes which are expected from the group are as follows:

- All remote and rural areas have explicit support arrangements with a specialist children's hospital by 31<sup>st</sup> December 2007;
- Discharge arrangements for all children to remote and rural setting should be structured to reflect care options available locally by 2007;
- A dedicated training package is available to support the provision of child health care in remote and rural settings by 2006;
- 95% of staff providing care to children and young people have completed the accredited training by 2007; and
- All remote and rural areas to be able to access effective clinical and educational support via telemedicine links by 2007.

A group was established in January of 2007 with membership from clinicians and managers in the remote and rural areas, along with clinicians from larger paediatric centres and Scottish Executive Health Department representation. To date, the group has progressed its objectives which will be listed under the following headings:

- The Evolving Model
- The Workforce
- Implications
- Resource Issues
- Interdependency on Other Services
- Forward Issues
- Risk Assessment

## Remote and Rural Children and Young People's Healthcare - the Model of Care

Over recent years, various groups and initiatives have explored the most appropriate and sustainable healthcare provision for children and young people in remote and rural areas in Scotland. These include the Kerr Report and subsequent government policy in *Delivering for Health*, the Remote and Rural Areas Resource Initiative (RARARI) Paediatric Project, and recently, *Delivering a Healthy Future: An Action Framework for Children and Young People's Services*<sup>1,2,3,4</sup>.

The common themes emerging from these reports include:

- Difficulties faced by local clinical staff in providing high quality care for children with significant acute or chronic illness given the small number involved and the lack of immediate specialist support;
- A perceived lack of understanding on the part of the clinicians working in dedicated paediatric units of the particular circumstances faced by staff in remote and rural settings; and
- Variable quality of discharge planning after episodes of specialist care.

These reports are consistent in their recommendations in the types of models recommended for providing health services locally which are safe and appropriate for children. The Remote and Rural Project recommends that all remote and rural healthcare should be provided within the support of a service delivery network. Paediatric models described within the reports above are based around the principles of a Managed Clinical Network. Remote and rural child health services should be firmly embedded in a formal network with a larger paediatric centre. Referral patterns from remote and rural areas were analysed and can be seen in map form in Appendix 1. Based on this analysis and taking into account geographical considerations it is proposed that these networks be established as follows:

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<sup>1</sup> (2005) *"National Framework for Service Change"* May 2005, Scottish Executive

<sup>2</sup> (2005) *"Delivering for Health"* November 2005, Scottish Executive

<sup>3</sup> (2006) *"Remote and Rural Paediatric Project"* December 2006 Scottish Executive

| <b>Remote and Rural Area</b>                                  | <b>Secondary Care Networked Paediatric Centre</b> | <b>Tertiary Care Networked Paediatric Centre</b>                 |
|---|---|--|
| Argyll, Bute and Oban   | Royal Alexandra Hospital, Paisley                 | Yorkhill Hospital, Glasgow                                       |
| Borders   | Borders District General Hospital                 | Edinburgh Sick Children's Hospital                               |
| Stranraer and Wigtownshire                                    | Dumfries and Galloway General Hospital            | Yorkhill Hospital, Glasgow                                       |
| Skye, Lochaber, Fort William, North West Highlands, Caithness | Raigmore Hospital, Inverness                      | Yorkhill Hospital, Glasgow<br>Royal Aberdeen Children's Hospital |
| Orkney  | Royal Aberdeen Sick Children's Hospital           | Royal Aberdeen Children's Hospital                               |
| Shetland  | Royal Aberdeen Sick Children's Hospital           | Royal Aberdeen Children's Hospital                               |
| Western Isles   | Yorkhill Hospital, Glasgow                        | Yorkhill Hospital, Glasgow                                       |

Managed Clinical Networks have been effective in raising standards and in maintaining access to specialist's services closer to children's homes<sup>5</sup>. The establishment of networks should incorporate the formalisation of a named specialist consultant responsible for the support of the remote area. Responsibility would include outreach support to the remote area to maximise local care, development of robust protocols for the management of common conditions and a commitment to deliver education and training.

The network should also ensure full exploration of e-health solutions. It has to be noted that some areas have already made some progress with the establishment of such networks.

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<sup>4</sup> (2007) *"Delivering a Healthy Future: An Action Framework for Children and Young People's Health in Scotland"* April 2007, Scottish Executive

<sup>5</sup> (2007) *"A Strategy for Managed Clinical Networks in Specialist Paediatric Services in Scotland"* 2007 March, Draft Document, Scottish Executive Health Department

## Current Activity

According to the Action Framework, in children's services nationally there is very little planned or elective work. The majority of children's care is either urgent or the care of long-term conditions. Achieving improved outcomes therefore depends upon good co-ordination between disciplines, services and agencies<sup>6</sup> and so the model of care must be based upon integration between all of these partners. This situation is magnified in remote and rural settings where paediatric activity is low. Medical Paediatric Activity within the Rural General Hospital (RGH) is illustrated in Table 1 below.

|                                       | Balfour    | Belford   | Caithness | Gilbert Bain | Lorn & Isles | Western Isles |
|---------------------------------------|------------|-----------|-----------|--------------|--------------|---------------|
| <b>All Acute Medical Discharges</b>   | <b>167</b> | <b>14</b> | <b>24</b> | <b>118</b>   | <b>134</b>   | <b>184</b>    |
| <b>Respiratory Disease</b>            | <b>40</b>  | <b>2</b>  | <b>6</b>  | <b>40</b>    | <b>52</b>    | <b>55</b>     |
| <b>Asthma</b>                         | <b>20</b>  | <b>2</b>  | <b>4</b>  | <b>12</b>    | <b>24</b>    | <b>17</b>     |
| <b>Injuries &amp; Poisonings</b>      | <b>15</b>  | <b>4</b>  | <b>6</b>  | <b>7</b>     | <b>11</b>    | <b>19</b>     |
| <b>All Alcohol Related Conditions</b> | <b>12</b>  | <b>3</b>  | <b>5</b>  | <b>5</b>     | <b>5</b>     | <b>11</b>     |
| <b>Diabetic Ketoacidosis</b>          | <b>4</b>   |           | <b>2</b>  | <b>1</b>     | <b>1</b>     | <b>1</b>      |
| <b>All Malignant Neoplasms</b>        |            |           |           | <b>2</b>     |              |               |
| <b>Heart Disease</b>                  |            | <b>1</b>  |           |              |              | <b>1</b>      |
| <b>Other forms of Heart Disease</b>   |            | <b>1</b>  |           |              |              | <b>1</b>      |
| <b>Drugs Misuse</b>                   |            |           |           |              |              | <b>1</b>      |

Table 1: Discharges<sup>7,8</sup> of Children: 0-15 years following an episode of care in an acute medical specialty, selected diagnoses<sup>9</sup>

Average activity April 2002- 31 March 2005<sup>10</sup>

Surgical activity currently undertaken in RGHS is shown in Table 2 below.

<sup>6</sup> (2007) Ibid

<sup>7</sup> 1 SMR01 data are derived from inpatient and day case discharge summaries from non-obstetric, non-psychiatric specialties in general acute NHS hospitals in Scotland.

<sup>8</sup> Figures are based on episodes of care. Each episode is initiated by an admission and ended by a discharge. A patient with more than one episode of care in any one year or across years will be counted each time he/she receives an episode of care.

<sup>9</sup> Primary Diagnosis coded using the International Classification of Disease 10th Revision

<sup>10</sup> based on year of discharge.

| Hospital              | IN-PATIENTS |           |          | DAY CASES | TOTAL      |
|-----------------------|-------------|-----------|----------|-----------|------------|
|                       | Elective    | Emergency | Transfer |           |            |
| Balfour               | 0           | 17        | 0        | 9         | 26         |
| Belford               | 3           | 7         | 0        | 18        | 28         |
| Caithness             | 0           | 11        | 0        | 16        | 26         |
| Gilbert Bain          | 1           | 12        | 1        | 18        | 31         |
| Lorne and the Islands | 7           | 19        | 0        | 9         | 35         |
| Western Isles         | 3           | 12        | 0        | 12        | 27         |
| <b>TOTAL</b>          | <b>14</b>   | <b>78</b> | <b>1</b> | <b>82</b> | <b>173</b> |

**Table 2: Annual Surgical Activity by admission type for Children: 0-15 years**

*Average activity April 2004- 31 March 2005 Source ISD SMR01s*

A breakdown of the above activity by types of procedure is shown in Table 3 below

|                 | Balfour | Belford | Caithness | Gilbert Bain | Lorne & Isles | Western Isles |
|-----------------|---------|---------|-----------|--------------|---------------|---------------|
| Appendicectomy  | 14      | 4       | 8         | 12           | 12            | 10            |
| Circumcision    | 3       | 7       | 2         | 7            | 4             | 6             |
| Gastroscopy     | 2       | 1       | 1         | 2            | 2             | 3             |
| Inguinal Hernia | 2       | 3       | 1         | 2            | 3             | 1             |
| Nail Surgery    | 2       | 10      | 8         | 6            | 5             | 1             |
| Orchidopexy     | 1       | 3       | 2         | 2            | 1             | 1             |

**Table 3: Top Six Surgical Procedures on Children: 0-15 years**

*Average activity April 2004- 31 March 2005 Source ISD SMR01s*

These top six procedures account for 98% of paediatric surgical activity undertaken within RGHs. There was no available data from local RGHs on transfer activity, however, the national Paediatric Intensive Care Group reported that there is an average of one transfer per month from each remote and rural area.

## Future Service Delivery

The majority of child health care will continue to be delivered in the community, concentrating on health promotion, anticipatory care, care of long term conditions and those with special needs and ensuring the provision of robust child protection arrangements.

For those children requiring secondary care intervention, whilst activity is not the best determinant of need, in the absence of detailed epidemiology it does provide some indication of the current pattern of delivery. It is difficult, however, to retrospectively determine the interventions needed and competences that were required to manage those children with the conditions listed in Table 1 above and whether those would be appropriate conditions to be managed in the future.

It is also recognised that levels of care delivered may vary according to the expertise of staff available, however, there should be boundaries as to what is deemed safe and appropriate care to deliver locally. For example, even although there is a Consultant Paediatrician in post in the Western Isles, the wider team may not have the competences to provide care above a certain level.

Views were expressed that any child requiring intravenous medication support and/or requiring admission over 24 hours were not appropriate to be cared for in a Rural General Hospital. However, this would not allow for the care of the terminally ill child. Difficulties are also experienced in the management of neonates in RGHS. For example if a neonate requires to be readmitted and they are over 28 days old, in many instances they cannot now be cared for by midwives because of the direct entry training and issues around retaining skills and competences in order to retain current first level nurse registration.

Guidance on future service delivery has been sought from policy direction. The Action Framework suggests that there is a need to balance access, quality and sustainability and that the achievement of such can only be addressed by the existence of a robust and well organised planning framework working in a collaborative manner at regional, inter-regional and national level.

The Emergency Care Framework for Children and Young People in Scotland (ECF) determines levels of care delivery<sup>11</sup>. RGHS should provide Level 2 Care as defined by the ECF. It has to be recognised, however, that due to their geographical isolation, the RGH may at times be forced to work at Level 3. Where this situation arises the child or young person's care must be supported by a formalised paediatric network, perhaps by use of e-health technology.

*“Level 2 (i.e. general hospitals with an Accident and Emergency Department but without a Paediatric In-patient Unit) may have facilities for assessing and observing children and young people over a period of time prior to making a decision about whether to discharge or not”.*

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<sup>11</sup> (2006) *“Emergency Care Framework for Children and Young People in Scotland”* October 2006 SEHD

*“Level 3 Emergency Care should be available from a general hospital with a paediatric inpatient unit which will have significant more capacity to manage the unwell child or young person than a hospital without such facilities”.*

Having examined the guidance it is proposed that the way forward is for the formal paediatric networks to be established and negotiate what is the most appropriate local service delivery within remote and rural areas based upon local resources and need and incorporating the needs of children with long term conditions.

Some discussion through the Review of Specialist Children’s Services Surgical Workstream has been held on the level of paediatric surgery which should be undertaken in RGHs in the future. It is likely that this review will recommend that only Level 1 Paediatric Emergency Care should be delivered in children and adolescents over the age of 5years in an RGH utilising recognised care pathways and that no planned surgery should be undertaken on children under 11 years in an RGH.

When establishing formal paediatric networks, consideration must also be given to child protection arrangements, including forensic examinations. The Scottish Government Health Department (SGHD) requires each Health Board to have a multidisciplinary Child Protection Action Group to deliver and co-ordinate services, planning and training. For some remote and rural areas it may be logical to incorporate these arrangements within the formal paediatric network, for example, NHS Orkney with NHS Grampian.

Where the child or young person requires admission to a larger centre to obtain specialist services, there are challenges in ensuring that the appropriate discharge arrangements are in place. Each networked central paediatric unit should, therefore have a discharge planning co-ordinator who is aware of the particular resources available in remote and rural areas.

## **The Workforce**

### **Emerging Staffing Models**

Healthcare for children and young people in remote and rural settings is currently delivered by a range of professionals, often working in isolation and sometimes working in teams. The emerging models for healthcare in remote and rural areas will vary from area to area dependant upon population need, geographical considerations and the types of practitioners available. However, all areas will deliver a service utilising an integrated team approach, demonstrated by a range of competencies. Teams may comprise of locally based

individuals, outreach specialists or a combination of both. For example, management of the acutely ill child may be carried out by a Consultant Physician in an RGH in one area supported locally by practitioners from the multidisciplinary team and at a distance by a specialist in a paediatric centre through e-health clinical decision support. Another area may provide similar support for the care of the acutely ill child by a GP with a special interest in paediatrics, again supported locally by the multidisciplinary team and at a distance by a specialist. Regardless of the type of practitioner delivering child health care, all remote and rural child health teams must be an integral part of a formal network with a paediatric centre. The Western Isles and Greater Glasgow and Clyde Health Boards have developed the paediatric network concept a stage further by proposing the appointment of a shared consultant paediatrician post between the Western Isles Hospital and the Royal Hospital for Sick Children, Yorkhill. This consultant would therefore obtain support from the paediatric centre along with regular rotation for skills update.

Community Health Partnerships and Rural General Hospitals should define the composition of their local paediatric teams based on the required competences.

## **Learning and Development**

Practitioners in remote and rural settings currently demonstrate a wide range of generalist competences. There are few specialist paediatric trained staff based in remote or rural settings. This situation is compounded by the low paediatric activity which presents challenges, particularly in gaining and maintaining practitioners' competences in resuscitation, stabilisation and initial management of an acutely ill child and transfer when necessary. This includes the management of children and young people experiencing a mental health crisis.

When paediatric networks are formalised, education of remote and rural practitioners should form an integral part of this network. This could be achieved through outreach teaching from larger centres, rotation to paediatric centres, and e-learning.

A training needs analysis was undertaken in 2004/5 to inform the work of the Emergency Care Project<sup>12</sup>. However, this work was of a high level nature and did not identify paediatric training needs of individual practitioners within remote and rural settings. There is a need, therefore to undertake a more detailed training needs analysis. This Group has been working with NES to undertake such an exercise in two remote settings: Stranraer and Orkney. Practitioners who are expected to work with children have been asked to complete a portfolio and assess their own competences against those listed as core competences for the care of the acutely ill or injured child within the ECF. It is proposed that when the training needs analysis is completed, then a

tailored programme of education and training should be made available and accessible to those practitioners who have identified skills gaps. Maintenance of those skills is challenging in remote and rural settings due to their infrequent use. NHS Education for Scotland (NES) through the Remote and Rural Healthcare Educational Alliance (RRHEAL) will be tasked with developing educational solutions to support local delivery. Regular skills updates could be achieved through a raft of measures such as clinical fire drills, e-learning and rotation to larger centres. NES should enhance the e-learning option by appointing a network administrator.

## Medical Rural Training Pathways

A recent survey of remote and rural consultant physicians reported that 18% of respondents felt that their training did not adequately prepare them to manage paediatric emergencies<sup>13</sup>. The Rural Training Pathways Steering Group should ensure that the future curriculum for medical remote and rural practitioners incorporate specific elements of paediatric training, particularly for General Practitioners, Surgeons, Physicians and Anaesthetists in order to ensure competences in the care of the acutely ill child, including the management of children or young people experiencing mental health crisis and trauma care.

## Technology

E-health solutions are increasingly being utilised for clinical decision support and for the provision of outreach services. Paediatric networks should explore e-health solutions. For example, a telemedicine link between the Emergency Department in the RGH and the Paediatric Intensive Care Unit could improve clinical decision support and could potentially allow the retrieval to be safely delayed in the case of adverse weather conditions, or cancelled altogether if the patient were seen to improve. Links such as this will only work with commitment from each side and with a willingness to use the technology.

Each Emergency Centre/Department in remote and rural areas should therefore be equipped with a telemedicine link to a paediatric centre in order to obtain timely clinical decision making support. There should be a telemedicine link facility within each Paediatric Intensive Care Unit and networked neonatal unit to enable support of remote and rural practitioners during the period of stabilisation while awaiting the retrieval team.

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<sup>12</sup> (2005) *“Getting it right for children accessing emergency services: A training needs analysis of practitioners working within accident and emergency areas.”* 2006, NMPDU

<sup>13</sup> (2004) Wilson, P, McHardy KC *“How should we train physicians for remote and rural practice? What the present incumbents say* Aug 2004 *Scottish Medical Journal* 49(3)

Each remote and rural Emergency Department should have access locally to digital imaging with reporting at a distance to allow timely clinical management decision support.

A mapping exercise is required to establish what e-technology equipment is available within the remote and rural settings and the networked paediatric centres, so that gaps can be identified and filled.

## **Transport and Retrieval Systems**

Should the patients require transportation then a robust responsive system of transport is key to a sustainable model of rural child and young person's healthcare. This will include ambulance transport, retrieval systems and the wider transport infrastructure

The Emergency Care Framework for children and young people in Scotland (ECF) recommends that each emergency care site should have a specific written procedure for the transfer of young people<sup>14</sup>. The Remote and Rural Child Health Group endorse this recommendation.

Currently patients may be uplifted and transported to their nearest hospital which may not be equipped to provide specialist care, thus the patient will require ongoing transfer. The patient should be transferred to definitive care, avoiding multiple transfers.

A national neonatal transport service has been established. There is also currently a retrieval team for children requiring intensive care (The Paediatric Intensive Care Team PICU). However, there is no such system for those patients requiring high dependency care. Practitioners from remote and rural areas should not be expected to provide an escort. This should be provided by the receiving hospital or the PICU Team from the start of the transfer.

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<sup>14</sup> Ibid

## Implications

### Local

- CHPs and RGHS should work with practitioners in the Paediatric Network to negotiate the shape of local service delivery and to develop robust care pathways for the management of the most common conditions.
- Community Health Partnerships (CHPs) and Rural General Hospitals (RGHS) should identify practitioners who will be included in paediatric teams. A training needs analysis of those practitioners should be undertaken, the outcome of which should inform education and training packages for local delivery brokered through the Remote and Rural Healthcare Education Alliance (RRHEAL), supplemented by outreach training through the formal paediatric Network.
- Where a child or young person has been admitted to a paediatric centre to obtain specialist services, the CHP should identify a local practitioner responsible for liaising with their discharge planning co-ordinator to ensure that appropriate local arrangements are in place prior to discharge.
- Rural NHS Boards should work with regional partners to establish a formal paediatric service network.
- Rural NHS Boards should incorporate paediatric services in their workforce plans.
- Rural NHS Boards should prioritise telemedicine and e-health equipment in their capital plans to ensure that remote teams have adequate access to timely clinical decision support.

### Regional

- Regional Planning Groups should work with Paediatric centres to facilitate the establishment of formal paediatric service networks to support remote and rural paediatric services.
- Regional Planning Groups should incorporate the support of paediatric services in remote and rural areas within their service development and workforce plans. For example, the named consultant in a paediatric centre with responsibility for a remote and rural area may need allocated sessions to support the remote and rural area.
- Regional Planning Groups should work with Paediatric Centres and remote and rural areas to determine the shape of local service delivery and to develop care pathways for the most common conditions.
- Paediatric Centres should identify a named consultant responsible for the support of remote and rural paediatric services in terms of the provision of outreach services, development of protocols, training and education.

- Each Paediatric Centre should appoint a discharge planning co-ordinator who is aware of the particular resources available in remote and rural areas.
- Regional Planning Groups should commission their Child Health Planning Group with considering the principles of the Remote and Rural child Health Report and explore their applicability to urban areas.

It is recognised that the Regional Planning Groups (RPGs) work differently and that it may be appropriate for some to address the above recommendations by charging their Child Health Planning Group with considering the implications of the Remote and Rural child Health Report and set out how they will take them forward. For other RPGs it may be more appropriate for them to work directly with the Paediatric Centre to implement the recommendations.

## **National**

- The Scottish Ambulance Service (SAS) should review their transport arrangements to ensure responsive systems are in place for transfer of the acutely ill child.
- The review of Specialist Services for Children and Young People should consider expanding the role of the Paediatric Intensive Care Retrieval Teams to incorporate those patients from remote and rural areas requiring transfer to high dependency care.
- E-health links and PACS roll out between networked paediatric centres should be prioritised at a national level
- There should be national prioritisation of e-health links and PACS roll out of networked paediatric centres and Regional Planning Groups should be asked to commission this.
- The Emergency Care Framework Project should support the undertaking of a training needs analysis of remote and rural practitioners in order to inform RHEAL of educational programmes required.
- NES through RRHEAL should ensure that appropriate paediatric educational solutions are in place for remote and rural practitioners.
- The Rural Training Pathways Steering Group should ensure that future curriculum for medical remote and rural practitioners incorporate specific elements of paediatric training.
- The Specialist Services for Children's General Surgery Group should facilitate discussion to determine the shape of paediatric surgical services within the RGH.

## Resource Issues

The implications locally, regionally and nationally will require to be resourced. For example, there will require to be time allocated to allow a consultant in a paediatric centre to undertake the responsibilities involved in supporting the networked remote and rural area. Each CHP, RGH, NHS Board and central department will have to examine the implications within their sphere of responsibility and allocate resource accordingly.

## Interdependency on other services

Clearly remote and rural children and young people's services do not work in isolation from other health and other agencies services. For example, there are links with emergency departments, educational provision, and all agencies involved in the area of child protection.

## Forward Issues

This report demonstrates that whilst the remote and rural child health group have made significant progress, there are a number of outstanding issues to be addressed. These are:

- Facilitate the establishment of formal paediatric networks for those areas who have not yet made progress.
- After approval of this report by the Remote and Rural Child Health Group and the Remote and Rural Steering Group, distribute the report to NHS Boards, and Regional Planning Groups, and undertake awareness sessions.
- When training needs analysis is complete, commission NES through RHEAL to develop educational solutions to meet local delivery.
- Liaise with the Scottish Centre for E-health to map the available e-health resources within remote and rural settings and to prioritise those areas which do not yet have e solutions.
- Liaise with the PACs Project to prioritise the roll out within remote and rural settings.
- Liaise with the ambulance service to ensure continued robust and responsive transport services for the acutely ill child, and to ensure that the child is transferred directly to definitive care.
- Liaise with the Specialist Children's Services PICU retrieval teams to explore addressing the transfer of children and young people requiring high dependency care.

## Risk Assessment

There are a number of risks which may affect the achievement of the objectives of the Remote and Rural Child Health Group. These have been listed under the headings below.

### **Workforce**

If we do not adequately prepare practitioners to look after children and young people in remote and rural areas we run the risk of being unable to recruit and retain practitioners within remote and rural areas. This is a particular risk where there is a specialist resident in the remote and rural area, but the wider team have not been developed to support this higher level of service expected.

The workload implications of supporting remote and rural child health networks, particularly for consultants in the paediatric centres may require additional resource. If this resource is not available, this may jeopardise the establishment of networks.

### **Sustainability**

Sustainability of remote and rural child health services in terms of local access and quality of service is dependent upon the establishment of formal paediatric networks.

Robust responsive transport and retrieval systems are also key to the support of rural paediatric services. If local healthcare systems in rural areas collapse, then all children and young people will require transfer which will place additional pressure on transport systems along with the consequential impact on the child and family.

### **Networks**

There is a cultural change needed to ensure that all larger paediatric centres see the support of remote and rural child and young people's health services as their responsibility. Also, the additional workload component may preclude the setting up of networks.

Delays in the e-health and PACs roll outs will impact upon the clinical decision support available between networked paediatric centres.

