

## **CoRIPS Research Award 010**

**Sandra Mathers**

**Awarded £5,548**

### **Imaging services for children in England and Wales**

#### **Back ground/Literature review**

Children are major users of health care, but their perceptions of treatment and care can be very different to those of adults. Recent estimates have indicated that 2.9 million are treated in Accident and Emergency departments in England each year (Health care commission, Improving services for children in hospital, 2007), and a significant number of these will proceed to radiology for imaging. With 11 children's hospitals in England and one in Wales the majority of children will be examined in departments designed primarily for adults. The Department of Health Report on the acutely or critically sick child in a district general hospital (2006) ,although acknowledging that the health professionals who less frequently treat and care for children face immense challenges when dealing with a critically injured child, imaging staff are not considered in this report. However, it is highly likely that imaging would be required in such situations in such hospitals.

It is almost 50 years since the Platt Report (1959) highlighted that children cannot be treated the same way as adults whilst in hospital. This was further endorsed by the Children's National Service Framework ( 2003, DoH) which emphasised that health services should be child-centred to meet the needs of the child and access to these services should be available no matter where the child lives. The Department of Health (2006) also advocated that staff who are working with children are appropriately trained, and carry out enough examinations to maintain their skills level.

A search of Medline (1996-2007) and Cihahl ( 1982-2007) indicated a lack of research relating to the provision imaging services provided for children in the United Kingdom, apart from that undertaken in children's hospitals. The majority of papers describe the development of imaging procedures for specific conditions rather than the service as a whole. Papers have been published describing radiographer practice relating to non – accident injury (Brown and Henwood, 1997; Rigley and Davis, 2004), and immobilisation and restraint of children during imaging (Graham and Hardy, 2004; Allison and McHugh, 2007). In addition the Society and College of Radiographers Guidelines (2005) providing advice and guidance relating to education and training in relationship to consent, non-accidental injury, and immobilisation in relationship to the law.

Our research relating to the imaging of children is of significance as one of the few investigations of imaging provision for children in adult settings (Appendix 1) . Our Scottish survey indicates that: i) 90% of adult hospitals had no separate amenities such as waiting room and toilets for children and adults; ii)81% of adult hospitals and 2 out of 3 children's hospital did not have protocols to deal with children with disabilities; iii) 72% of respondents indicated that staff had not received paediatric training regarding the imaging children, and

iv) children's views on the provision were not sought in a systematic way in any of the non-children's hospitals. We do not know, however, if a similar situation exists in England and Wales. As little has been reported on the provision of imaging of children in adult hospitals in England and Wales, we are seeking funding, therefore, to replicate our survey in England and Wales, and so build up a comprehensive picture of UK practice.

### **Aims and objectives of the investigation**

The main aims of the study are to

- establish the provision of imaging services such as plain film, CT, and ultrasound for children in adult and children's hospitals
- establish and disseminate good practice thus enhancing the provision of imaging services for children within adult x-ray departments.

### **Objectives**

The main objectives are to

- determine provision for children in the x-ray departments
- establish numbers of children x-rayed
- investigate the preparation, especially the training of radiographers in adult and dedicated children's hospitals to carry out the imaging of children
- ascertain the availability of child centred environments in adult hospitals both within the normal working day and 'out of hours'
- identify the extent to which children's needs are taken into account when providing an imaging service in a non-dedicated department, and developing policies and protocols, and procuring equipment
- ascertain the involvement of x-ray departments with children in the community for example through contact with schools.

### **Methodology**

Research plan: In broad terms the approach of the Scottish survey will be replicated. A quantitative methodology will be adopted in order to obtain robust evidence of current practice. A survey of all hospitals containing x-ray facilities in England and Wales, including the dedicated children's hospitals, will be undertaken using a mailed questionnaire.

Sample: Whereas all Scottish hospitals were included in the previous survey, here we will select a sample. This is due to the large numbers of hospitals involved and the limits on our resources. We propose to take a stratified sample of hospitals known to have imaging facilities. A sampling frame will be developed using the NHS and Social Service Directory, 2007. The NHS Choices website (2007) currently estimates there are approximately 300 Trusts throughout England. We aim to have a sample size of 300 hospitals in England, ( based on 20% of the total Trusts selected by geographical location and hospitals types

[Foundation and Primary Care] ). We calculate on including 60 Trusts with each having 5 hospitals on average. Similarly, we estimate a representative sample of 50 hospital will be selected from the Health of Wales Information Service ( 2007).

All children's hospitals in England (n=16) and Wales (n=1) will be included.

Data collection: Our previously developed questionnaire ( Appendix 1) for the Scottish survey achieved a 76% response rate, and no problems were reported regarding its use. The form, therefore, will be distributed for completion by superintendent radiographers in the sample hospitals. Prepaid envelopes will be included with the questionnaires. Respondents will be given unique identifiers to ensure confidentiality and enable non-respondents to be followed up. Two reminders will be sent out to non-respondents ( 1st after a period of three weeks, and the 2nd three weeks later. The questionnaire will also be converted into electronic form and placed on the Health Services Research Group website, for those who wish to complete the questionnaire on line.

Data analysis: The coding frame, and data base previously developed for the Scottish survey will be utilised for data analysis. All quantitative data will be entered into SPSS-PC. The analysis of open-ended questions will in general follow the procedures identified by Miles and Hubermann (1994).

### **Area(s) of research activity**

The team responsible for the Scottish survey will be undertaking this work. As previously, this research will be based within the Health Services Research Group, Faculty of Health and Social Care, The Robert Gordon University, Aberdeen, which is a multi-disciplinary research unit. The Group has considerable experience of research relating to children. Close liaison will be maintained with Sheila McDonald, Superintendent Radiographer at Royal Aberdeen Children's Hospital, and currently the Chairperson of the Paediatric Radiographers Association, who has contributed to the development of the proposal.

The principal investigator (SM) is a research practitioner in radiography who has 10 years experience of both quantitative and qualitative research. The data collection, and data input will be undertaken by a research radiographer (HA), who was previously seconded to the Health Service Research Group. She currently works as a radiographer in the community, as well as being a paediatric radiographer . This research time will be in addition to her current part-time commitment, and will be for one day a week for six months. Professor Rosemary Chesson, Head of the Health Services Research at the Robert Gordon University, who has extensive experience of research with children (Appendix 2) will act in an advisory capacity to the project

### **Outcomes**

- Increased knowledge of the provision of imaging for children in both England and Wales
- Data will be available to policy managers and NHS managers in England and Wales for improvement to imaging services for children

### **Timetable**

Preliminaries: Contact has been made with NRES, and initial discussion suggests that ethical approval will not be required because this work is classified as service evaluation.

#### Start if funded work

Phase 1 ( Oct 07): Establish a database of hospitals within England and Wales using the NHS and Social Science Directory. Develop a sampling frame of hospitals which have imaging facilities available. Advice will be sought from two experienced paediatric radiographers (England and Wales) who will act in an advisory capacity to the project.

Phase 2 (Nov 07) Data collection: Print and distribute questionnaires with accompanying letter and stamp-addressed envelope included for ease of return. First reminders will be sent out three weeks after initial posting, and second reminder after six weeks from initial posting. An electronic version of questionnaires will be developed and placed on Health Services Research Group website for those who prefer to complete the questionnaire on line.

Phase 3 (Dec 07) Data input: Commence input of responses into SPSS-PC. Write preliminary report for submission to College of Radiographers.

Phase 4 (Jan 08): Continue with quantitative data input.

Phase 5 (Feb 08) Data analysis): Complete data input. Responses from open – ended questions will be analysed following familiarisation by identification of recurring themes and their coding and clustering. Qualitative and quantitative data will be merged to answer main questions of the study.

Phase 6 (March 08): Production of final report, and draft paper. Arrange feedback material. Explore possibilities for obtaining Knowledge Transfer Partnership (KTP) funding for transferring recommendations into practice.

### **Evaluation strategy**

Submit papers to peer-reviewed journals ( Such as Radiography, and Paediatric Radiology)

### **Dissemination strategy**

- A final report to be sent to the College and Society of Radiographers for publishing on their website.
- Feedback to participating hospitals by sending them a copy of the final report.

- Feedback to radiographers via the Regions and Countries networks within the Society of Radiographers to inform practice.
- Develop a pack to distribute to radiography departments suggesting innovative methods of communication with children in order to find out their views on service provision, and explore strategies for improvement.
- Meet with children's organisation such as Action for Sick Children to discuss findings
- Presentations at Conferences such as UKRC, RSNA, and ESPR (Edinburgh, 2008)

## References

1. Healthcare Commission. Improving services for children in hospital. London, Commission for Healthcare Audit and Inspection, 2007
2. Department of Health. The acutely or critically sick or injured child in the district general hospital: a team response. London, Department of Health, 2006
3. Platt H. The Welfare of Children in Hospital. (The Platt Report) 1959
4. Department of Health. Getting the right start. National Service Framework for children. Standards for hospital services. April 2003
5. Brown A and Henwood S. Good practice for radiographers and non-accidental injury. Radiography 3;3: 201-203 1997
6. Rigney D and Davis M Radiographers and non-accidental injury in children – an Irish perspective. Radiography 10;1: 7-13 2004
7. Graham P and Hardy M. The immobilisation and restraining of paediatric patients during plain film radiographic examinations. Radiography 10;1: 23-31 2004
8. Allison A and McHugh K. Immobilisation and restraining of paediatric patients in a radiology department: A perspective and review of legislation relevant to UK radiographic professionals. Radiography (Online) Available from 3 April 2007
9. The Society and College of Radiographers. The Child and the Law: The roles and responsibilities of the Radiographer. London, Society of Radiographers 2005
10. Mathers S, Anderson H and MacDonald S. X- raying children in Scotland: Identifying differences in practice between departments in general and teaching hospitals and in dedicated. Final Report. 2007
11. NHS and Social Services Directory Edited by A Llewellyn. London, Alcourt Publishing and Guardian Newspapers. 2006
12. The NHS Choices Available from <http://www.dh.gov.uk/en/Policyandguidance/PatientChoice/index.htm> [Accessed 26 June 2007]
13. Health of Wales Information Service. Available from [www.wales.nhs.uk/hospitals.cfm](http://www.wales.nhs.uk/hospitals.cfm) [Accessed 26 June 2007] .

14. Miles MB, Huberman AM (1994) *Qualitative data analysis*. 2nd edition. Thousand Oaks, CA, Sage Publication