



The College of Radiographers Research Awards

Final Report Form

For office use only
Grant ID: 003

Please use the tab key to move to next question

1. Principal Investigator	Sandra A Mathers
2. Project Title	X-raying children in Scotland: Identifying differences in practice between departments in general and teaching hospitals and those in dedicated children's hospitals.
3. Amount of Award	£5000
4. Did you spend the money as indicated in your proposal (if not why)?	
The project was carried out within the budget.	
5. Did you reach your intended project outcomes (if not why)?	
The main outcomes have been met. Data is now available to compare and contrast the provision for children having x-ray examinations in adult and children's hospitals. The dissemination of the study findings will inform practice to enhance imaging services for children in adult x-ray departments.	
6. What are your significant findings?	
<ul style="list-style-type: none"> • A response rate of 76% (78/103) was achieved. • In excess of 95,000 children are imaged in general hospitals throughout Scotland • 90% (59/65) of respondents had no separate amenities such as waiting rooms and toilets for children and adults. • 81% (53/65) of general hospitals and 2 of the 3 children's hospitals did not have protocols to deal with children with disabilities • In 72% of adult hospitals radiographers working in adult hospitals were reported as not attending paediatric training regarding imaging children and related policies e.g. non-accidental injury • Children's views on the provision of imaging were not sought in a systematic way in either general (0/65) or children's (1/3) hospitals. 	
7. Have you submitted the work for publication (if so where)?	
<ul style="list-style-type: none"> • A paper is in preparation for submission to Radiography • The main results will be presented as an oral presentation at the SCoR Scottish Council's Annual General Meeting in Autumn 2007 	
8. Please provide an executive summary of your work (two sides of A4 maximum)	
N.B. If you already have a draft or final version of the proposed publication can you please attach.	
<p>8. Please provide an executive summary of your work (two sides of A 4 maximum) NB If you already have a draft or final version of the proposed publication can you please attach.</p> <p>Background</p> <p>Children are major users of health care, but their perceptions of treatment and care can be very different to those of adults. Recent estimates are that one in four patients attending UK Accident and Emergency departments are children, and a significant proportion of these will proceed to a radiology department. There are only three children's hospitals in Scotland therefore, the majority of children will be examined in departments designed primarily for adult patients. Recent documents (National Service Framework, 2004) have highlighted the necessity of providing child-centred, child-friendly facilities in all hospitals which provide services for children. In addition, staff require to be adequately trained in issues relating to children. Little is known about the imaging service provided for children in both general and children's hospitals.</p> <p>Summary of original plan</p> <p>The main aim of the project was to compare and contrast the imaging of children throughout Scotland, in both general and children's hospitals. The main objectives were to establish i) the number and type of examinations performed ; ii) the training of radiographers to perform paediatric examinations; iii) the protocols and policies in place, and iv) identify the extent to which children's needs are taken into account. A questionnaire survey was undertaken to investigate these issues.</p>	

An application was sought from MREC, and a full submission was made to the North of Scotland Research Ethics Committee, but the Committee advised that the project did not require to be reviewed under the terms of the Governance Arrangements for Research Ethics Committees in the UK.

Method

Study preliminaries

Two questionnaires were developed for the children's and general hospitals respectively. Both questionnaires included a common core of questions (n=19) relating to the main objectives. Additional questions relating to specific practices in non-children's hospitals was included. A final question was left open so respondents could comment on the imaging of children.

Questionnaires were piloted in both children's and general hospitals in England and Northern Ireland. Minor amendments were made to the questionnaires.

A database was established of all hospitals and units with imaging facilities throughout Scotland. This was done by searching the SHOW website (ref). If there were any queries regarding the presence of imaging equipment these were established by personal communication with the area radiographer manager or directly with the hospital. Questionnaires were sent to superintendent radiographers or radiography managers in a total of 103 hospitals, these included acute/teaching hospitals, community/district hospitals, three children's hospitals, private hospitals, dental hospitals and small imaging units .

Distribution of questionnaires

The questionnaires (with a pre-paid envelope) were mailed directly to superintendent radiographers or radiography managers in the imaging centres. Questionnaires were given unique identifiers to ensure confidentiality, and also enable non-respondents to be followed up. To enable respondents to complete the questionnaire on line, an electronic version was developed and placed on the Health Services Research Group website (ref). The web address was placed on the front cover of the paper questionnaire.

Data collection and analysis

Data collection took place between late January and March 2007. Reminders were sent out to non-respondents.

All quantitative data from the questionnaires were entered into SPSS-PC. Qualitative analysis of all open-ended questions followed in general the procedures identifies by Miles and Hubermann (1994).

Results

Response and participation.

A response rate of 76% (n=78/103) was achieved, with three respondents completing the online-version. All three children's hospitals participated. Sixty-five general hospitals reported imaging children. This included 11 acute/ acute teaching, 47 community/ district general, and four private hospitals; two dental hospitals and one treatment Centre. A total in excess of 95,000 children were examined in general hospitals, with a range 5-10,000 per hospital.

Main findings (See also Section 6)

Imaging services:

- Respondents from general hospitals reported a wide variation in their workload which involved the imaging of children (Table 1), the type of examinations offered also varied (Table 2).

Provision for children:

- 55%, (n=36/65) of the general hospitals have provision for children in their department (Table 3). Three departments said they had no provision at all.

- 82%, (n=53/65) of general hospitals and all three children's hospitals encouraged the accompanying adult to enter the x-ray room during the child's procedure.

- 72%(n=46/64) of respondents did not consider children's requirements when choosing imaging equipment. Of the 10 departments which described the criteria used, three considered dose, nine the flexibility of the height of the equipment, and three ancillary equipment such as lead coats and gonad protection.

Staff and training:

- All radiographers within children's hospitals were reported as undertaking paediatric training courses including in-house courses for resuscitation and child protection, and external courses including the red-dot system, and study days given by the Association of Paediatric Radiographers. None identified University courses relating to the imaging of children.

- In 72% (n=47/65) of general hospitals the respondents did not attend paediatric related training either in-house or external courses.

- 71% (n=46/65) of respondents did not identify a contact at a children's hospital for provision of specialist advice.

Procedures and policies:

- Respondents were asked which policies relating to children were in place (Table 4). Two departments stated they had none.

Discussion

As there are only three children's hospitals in Scotland the majority of children are imaged in their local hospital. This study shows there is little child-centred provision, and children's needs and requirements are rarely, if ever, highlighted within the imaging departments of these general hospitals. Few departments had protocols in place to deal with children with special needs. Much work requires to be carried out to comply with the recommendations of the Improving Services for Children in Hospital (2007). In addition radiographers in Scotland appear to have received little or no training relating to the imaging of children or image interpretation.

Recommendations

It is recommended that

- child-centred facilities and policies for imaging children in adult departments be developed and implemented
- formal links be established between radiographers in children's hospitals and those in other hospitals in order to establish and maintain good practice
- radiographers should engage with children to obtain their views on the services they provide. This would adhere to the UK Government's patient focus public involvement agenda
- Professional bodies should provide guidance for the improvement of imaging services for children to ensure staff are adequately trained and policies are in place to ensure effective practice
- Universities be encouraged to provide courses in paediatric radiography practice, and service provision.

References

Department of Health. National Service Framework for Children, Young People and Maternity Services. Department of Health, 2004.

Scottish Health On the Web. Accessed 2006 www.show.scot.nhs.uk

Health Services Research Group Accessed 2007 www.rgu.ac.uk/hsrg

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

Healthcare Commission. Improving services for children in hospital. Commission in Healthcare Audit and Inspection, 2007

Appendix 1

Table 1: Approximate number of children imaged per year in general hospitals.

% of workload	Nos	%
< 10%	34	52.8
10.1- 20%	9	13.8
20.1-30%	3	4.6
> 30%	2	3.01
No information	17	26.0
Total	65	100.2

Table 2: Types of imaging provided for children*

Type	General hospitals n=65	Children's hospitals n=3
Plain film	64	3
Ultrasound	38	3
CT	18	3#
Fluoroscopy	16	3
MRI	11	3#
Other e.g. nuclear medicine	5	3#

* more than one type indicated

Available on adjacent sight

Table 3: Provision for children in x-ray waiting rooms

	General hospitals*	Children's hospital*
Toys and play mats	31	3
Books	29	3
Decoration and art	14	3
Television	5	2
Child-centred information	4	2

Music	3	1	
Lower height of fitments	3		2
DVD/videos	1	2	
Electronic games		0	2

* more than one type indicated

Table 4: Policies in place relating to children.

	General hospitals n=58	Children's hospital n=3	
Non-accidental injury	49	3	
Possible pregnancy of a minor	48		3
Consent of a minor	29	3	
Restraint and immobilisation	25		3

9. Return of application form

Please return this form to:

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Or by email at ValerieA@sor.org