

# Old Problems, New Solutions

21st Century Children's  
Healthcare

November 2002

Royal College of Paediatrics  
and Child Health



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**Royal College of Paediatrics and Child Health**  
**[www.rcpch.ac.uk](http://www.rcpch.ac.uk)**

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## FOREWORD

Over the past three years the NHS Plan, the Report of the Bristol Enquiry and the Government's commitment to develop a National Service Framework for Children have presented new challenges to medical and nursing staff who care for children. The Royal College of Paediatrics and Child Health<sup>1</sup> published two policy papers in 2002 – *The Next Ten Years* and *Strengthening the Care of Children in the Community*.

These two papers recognised the changing pattern of children's health care that would be needed in the next decade. They identified two competing pressures – on the one hand, the difficulty of sustaining a comprehensive first class service at so many hospital sites around the UK, and on the other, the need to ensure easy local access to children's health care.

The initial response of many health care professionals to these pressures (which are common to all aspects of health care) was to propose a substantial reduction in the number of hospitals providing acute round-the-clock care. With a growing understanding of public expectations and changing needs, we now have a more sophisticated understanding of how services can and should be tailored to local circumstances.

The College knew that many colleagues were developing imaginative new ways of providing children's health care. We therefore commissioned a review of eight established projects and this work was undertaken by Dr Tricia Cresswell, of the Northern & Yorkshire Public Health Observatory. This report contains a précis of her work together with several other examples of creative thinking which have come to our attention. We know that there are many other examples of innovative practice around the UK, and we encourage colleagues to send details of such work to us<sup>2</sup>. These examples will be added to the RCPCH website<sup>3</sup>.

Changing health care provision is seldom easy and often controversial but we hope that the successful examples described in this report will encourage professionals, managers, politicians and parent representatives to ask themselves these key questions: "Is the traditional pattern of paediatric practice the only way of delivering a service or are there better ways of providing the health care that children need in the 21<sup>st</sup> century?"

David Hall, President RCPCH

1<sup>st</sup> October 2002.

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<sup>1</sup> The RCPCH is the professional organisation for paediatricians (doctors who specialise in the care of babies and children).

<sup>2</sup> E-mail examples to [publications@rcpch.ac.uk](mailto:publications@rcpch.ac.uk)

<sup>3</sup> <http://www.rcpch.ac.uk>

## **Acknowledgments**

Sections sections 2.1 - 2.8 are based on original material researched and prepared by Dr Tricia Cresswell. Sections 2.9, 2.10, and the reports in section 3 were written by the authors credited in the respective contacts sections.

The idea for the review originated with Dr Keith Dodd, chair of the College Health Services Committee. We are grateful to all the other contributors who agreed to the publication of short accounts of their work. Graham Sleight edited the manuscript and prepared it for publication.

# 1. Introduction

This report is a summary of research commissioned by the Royal College of Paediatrics and Child Health, the professional organisation for paediatricians (doctors who specialise in the care of babies and children). Its aim was to find out how NHS managers and doctors are responding to the changing needs of children around the country.

Parents hope that they will never need to take their child to hospital, but if that ever happens they want an expert, safe, reliable service

	Population	Births pa	Outpatients pa	Consultants
Hospital A	100,000	1000	2700	3
Hospital B	600,000	4000	7000	9

Figure 1: Comparison of a small and large district general hospital

as close to home as possible. Of course, hospitals are all different. They vary widely in the size of their children's department and in what they can provide. At one end of the scale are the world famous specialised children's hospitals in our big cities – these can deal with all but the most exceptional cases. At the other are units serving a small local population in remote parts of the country. Doctors working in these places often need to seek help from their more specialised colleagues in large hospitals, when they are faced with an unusual problem or a very sick child.

Our research showed that the needs of children are changing. Although today's parents worry as much as *their* parents ever did when their child had a sudden illness such as a fever or breathing problems, serious infections and illnesses are much less common than they used to be. Thirty years ago, the average admission to a children's ward was for nine days. The number of children who attend for emergency assessment, usually at A & E departments, has risen steadily, much faster than the number of

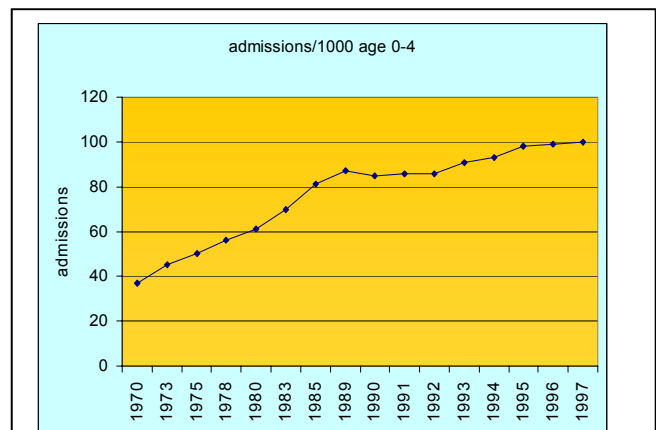


Figure 2: More than twice as many children are now admitted to hospital as 30 years ago but ...

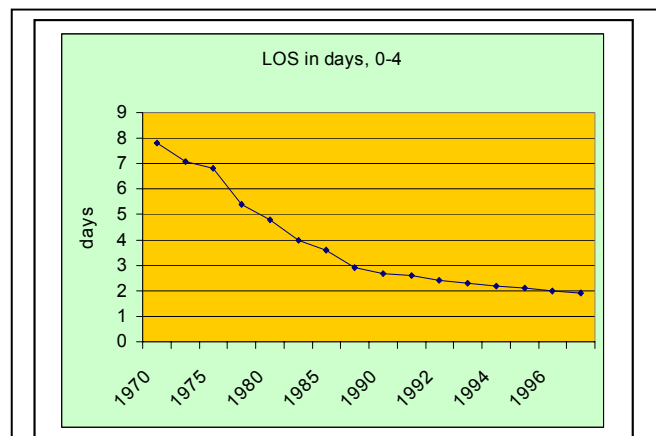


Figure 3: .... they stay one quarter as long as they used to.



admissions. And the majority of those children who are admitted to hospital now stay for less than two days and many for just a few hours observation. On the other hand, there are many more children with disabilities, long term complicated illnesses and emotional problems. We found that some hospitals had built strong links with their local community services to cater for these changing needs and introduced services such as nursing care at home – but others were still focussed mainly on emergency care and had not adapted so well to these other problems.

It is now acknowledged that there is a shortage of doctors and nurses, not just in the UK but world wide. This has been made more acute by the gradual tightening of the laws that say how long anyone is allowed to work without a break – in the past doctors in particular often worked over 100 hours a week, but this is no longer acceptable and is now known to be dangerous. A tired doctor makes mistakes. So it is not surprising that some hospitals are having problems with staffing their children's departments. This has caused a lot of anxiety and stress, but has also stimulated both professionals and managers to ask themselves – are there better ways of providing a service for children, that will improve their care and at the same time make the best possible use of our professional staff?

Our report describes more than a dozen examples of places which have found positive answers to these questions. The same principles were found to underpin each of these new services:

- provide quick access to skilled people when a child is ill,
- provide care as close to home as possible,
- keep children out of hospital where possible,
- keep their admission short,
- provide reliable support for long term illnesses,
- minimise travelling to distant places for medical care,
- recruit and use staff well.

We will describe how various services around the UK have been modernised when, for various reasons, the local hospital was not satisfied that it could provide what children now need. None of those who took part in organising these changes would pretend that it was an easy process. Neither professionals nor the local population like change. But what has emerged in each case is a better, more relevant service that is closer to what parents and children want in the 21<sup>st</sup> century.

We present the results of our research in the hope that other towns and cities will find these case studies useful. They show that change, far from being damaging, can be beneficial. Finding better ways of delivering modern health care for children is the responsibility not just of health care staff and managers, but also of local people who can influence policy development and public opinion.

## 1.1 Lessons learned

*A spectrum of provision – one size does not fit all!* The solutions to local problems described in this report are all different from each other. There is no single package that is right for every situation. There is a spectrum of provision, from a service that is very similar in many respects to the traditional hospital department but with strict rules as to what it does or does not manage; through to places where the in-patient service has been withdrawn and replaced with a hospital-at-home system.

*Financial aspects* Although we do not have detailed cost analyses for many of these examples, they are not cheap solutions and these changes were not made to save money. In some cases, the new service is more expensive than the old – and so it should be, because the needs of children are now much more complex than they were even ten years ago. Furthermore, maintaining a service in a small unit has hidden costs, such as an increased investment in transport and the need to second staff to busier units from time to time, to update their skills. Managers should not contemplate re-designing their service in the expectation of reducing costs.

*Involving the public – consultation* The local population needs to understand what is being proposed and how the services for their children will be improved. The introduction of the nurse practitioner service at Ashington was an example of good practice. The advantages of the new system were explicit, local people were involved from the start and the health professionals, both in the hospital service and in general practice, all publicly supported the proposals.

*Inter-relationships with other departments and services* A review of the mainstream hospital service for children must consider the role and staffing of NHS Direct, the A & E department and the relationship with maternity and newborn care. The contribution of local GPs must also be discussed. These services are all inter-related and changes in one are likely to affect the others.

*Nursing* Community outreach nursing by paediatric-trained nurses played an important part in most of the examples we describe in this report. In most places, it is unlikely that parents and children will receive a better or more modern service unless some form of home-based nursing care is introduced.

*Professional development* Doctors, nurses and therapists who are asked to adapt their professional style of working to a new pattern of service may need to acquire new skills or refresh dormant ones. Time for professional development must be allocated when planning how the service is to be changed.

## **1.2 Commissioning highly specialised services**

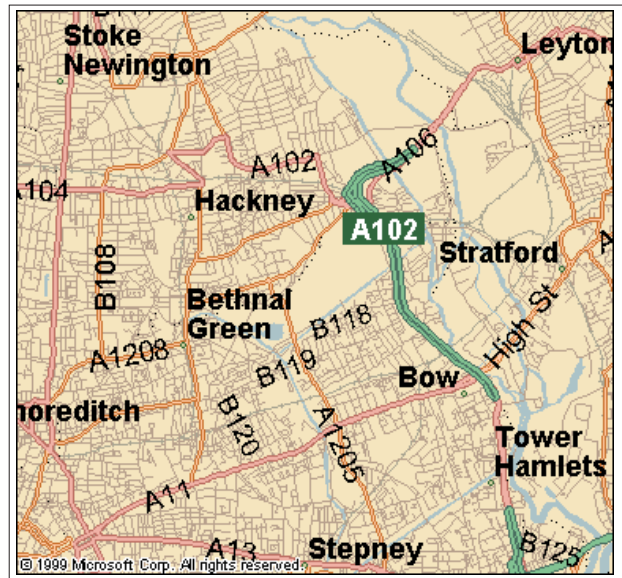
This report is mainly about services for children at local level, rather than the care of children with complicated or rare disorders. The College is preparing a separate report on how these services could be commissioned and organised ([www.rcpch.ac.uk](http://www.rcpch.ac.uk)).

## 2. New Patterns of Service

### 2.1 The Homerton, Hackney

*Setting:* An inner London borough with high levels of poverty and childhood illness, a high birth rate and a rising child population. The population is multi-ethnic with almost half of Hackney's secondary school pupils speaking English as a second language.

*Situation:* The proposed closure of the Queen Elizabeth Hospital meant that a replacement service for acutely ill children was needed



*Solution:* Rather than replicate a “traditional” hospital service based on in patient beds, a new model of ambulatory care was developed including: children’s emergency assessment; short stay admissions (up to 24 hours); children’s Hospital at Home nursing team; GP rapid referral clinic.

*Evaluation:* 94.9% of children seen at the Homerton in 2000/2001 were totally managed there; 5.1% of children required transfer to an in patient unit (usually the Royal London), over two thirds of whom required surgery or intensive care.

*Local views:* After initial concerns about “loss” of in patient beds, the service is now well received by GPs and local people.

*Caveats:* This service is still evolving.

*Generalisability?* This service meets the needs of an inner city population with high levels of need and of utilisation of A & E services. It is geographically close to in-patient units. Outside London, services with this level of activity would require an in patient unit.

*Contact:* Dr Jackie Bucknall, e-mail: [jackie.bucknall@homerton-hospital.nhs.uk](mailto:jackie.bucknall@homerton-hospital.nhs.uk)

## 2.2 Rugby

*Setting:* A county town 15 miles from Coventry. The population is overall relatively affluent.

*Situation:* The closure of the in-patient unit (due to staffing difficulties) at St Cross Hospital, Rugby created an opportunity to develop a replacement service for acutely ill children.

*Solution:* The Rugby Children's Hospital at Home nursing team was established, supported by paediatricians from Coventry. Out-patient clinics continue to be held in Rugby. The team is unusual in accepting acute referrals from GPs as well as children discharged from hospital.

*Evaluation:* Aspects of safety and satisfaction (parents and carers) have been formally and positively evaluated.

*Local views:* After initial concerns about "loss" of in patient beds, the service is now well received by GPs and local people.

*Caveats:* The St Cross in-patient unit was small and covered a small population with corresponding low levels of acute activity. Nurses have some concerns about personal safety when home visiting. Nurses were recruited initially from the acute assessment unit in Coventry and were highly experienced.

*Generalisability?* Replacement of an in-patient unit by a home nursing service with no local hospital based acute assessment may be the optimum solution if levels of activity are low, good support can be provided from the "base" unit and experienced nurses can be recruited to the home nursing team.

*Contact:* Dr Andy Coe, e-mail: [andy.coe@coventry-ha.co.mids.nhs.uk](mailto:andy.coe@coventry-ha.co.mids.nhs.uk)



## 2.3 The Hammersmith

*Setting:* An inner London borough with relatively high levels of poverty and childhood illness. There are low levels of car ownership and relatively poor access to GP services. In-patient services are at St Mary's (2.5 miles) and Chelsea & Westminster (3 miles).

*Situation:* The in-patient service at the Hammersmith was due to be closed due to rationalisation of services in West London.



*Solution:* A consultant-led ambulatory care unit (available five and a half days a week) was developed, including: out patient clinics, acute assessment and observation of ill children, booked day care surgery and investigations. The unit accepts “self referrals”.

*Evaluation:* This service has been in place for only 12 months. No children's A & E services are now available on site and there is a need to develop a children's minor injury service

*Local views:* After initial concerns about “loss” of in-patient beds, the service is now well received by GPs and local people. Current concerns centre round the absence of a minor injury service.

*Caveats:* This service is still evolving. It is responding to particular inner city needs and is to some extent providing acute primary care services to children.

*Generalisability?* Open access care may well be appropriate for some inner city populations.

*Contact:* Dr Nicky Coote, e-mail: [nickycoote@doctors.org.uk](mailto:nickycoote@doctors.org.uk)

## 2.4 St Helens

*Setting:* A northern industrial borough, overall slightly less affluent than the average for England

*Situation:* The closure of the in-patient unit (due to staffing difficulties) at St Helens Hospital and centralisation of in-patient care at the Whiston Hospital five miles away required a new model of service for the children of St Helens.

*Solution:* All acute hospital based services were withdrawn from St Helens hospital. Acute assessment and day case services were developed at the Whiston for all children. A “Hospital at Home” acute children’s nursing service was developed, also covering the whole population.

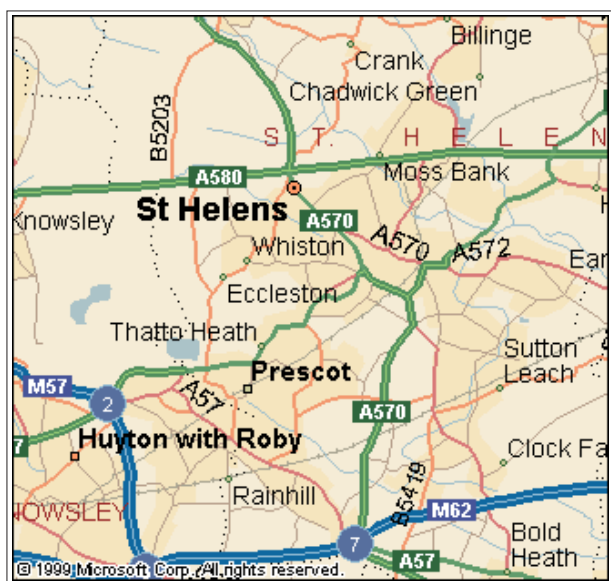
*Evaluation:* This service has now run successfully for ten years.

*Local views:* As this change happened some years ago, this service is now accepted as “the norm”.

*Caveats:* The St Helens in-patient unit was small and covered a small population with corresponding low levels of acute activity. .

*Generalisability?* Replacement of an in-patient unit by a home nursing service and access to acute assessment and in-patient care at the “base” unit may be the optimum solution if levels of activity are low, and distances small.

*Contact:* Dr Cynthia Woodhall, Whiston Hospital, Warrington Road, Prescott, Merseyside, L35 5DR



## 2.5 Grantham

*Setting:* A town in the County of Lincolnshire, 25 miles from Lincoln. The population overall is more affluent than the average for England.

*Situation:* Prior to 1998, in-patient paediatric services at Grantham were covered by paediatricians from Nottingham (this arrangement was put in place following the Allitt enquiry in 1994). Concerns about junior medical staff training required further changes to the service.



*Solution:* An ambulatory model was developed with a consultant-led acute assessment unit and out-patient clinics available five days per week plus a children's acute care community nursing service. In-patient care is provided in both Lincoln and Boston (where the consultant paediatricians are now based).

*Evaluation:* In 1999/2000, only 11.2% of children seen in the assessment unit required transfer to in-patient services.

*Local views:* After initial concerns about "loss" of in patient beds, the service is now well received by GPs and local people.

*Caveats:* There are ongoing discussions about obstetric and midwifery services. The Grantham A & E department continues to see children on a 24 hour basis. There is a problem of both distance and road quality. Concerns continue to be expressed about A & E units seeing acutely ill children with no paediatric cover. There is cover from the acute care community nursing team to escort children to in-patient units as necessary.

*Generalisability?* This model is suited to a rural situation where levels of activity plus distance justify maintaining acute day assessment services in the local unit, in addition to an acute home/ community nursing service. It may be appropriate (depending on geography) to cease providing full A & E services for children, but to continue minor injury services.

*Contact:* Dr Alastair Scammell, e-mail: [alastair.scammell@ulh.nhs.uk](mailto:alastair.scammell@ulh.nhs.uk)



## 2.6 Heatherwood

*Setting:* Heatherwood Hospital serves an affluent population (Bracknell Forest). Wexham Park Hospital is 14 miles away in Slough.

*Situation:* In 1995, three consultants were providing cover across the two hospitals, both of which had in-patient units. Concerns about medical & nurse staffing were raised.

*Solution:* An ambulatory model was developed at Heatherwood with a consultant-led acute assessment unit, out-patient clinics and booked day care available five days per week plus a children's acute care community nursing service. In-patient care is provided at Wexham Park.

*Evaluation:* The service at Heatherwood has now functioned successfully for seven years. However, some concerns are expressed about the relative "over resourcing" of the Heatherwood unit (leading to strain on the Wexham Park service) and about cover for neonatal emergencies at Heatherwood.

*Local views:* This service is now accepted as the "norm" by GPs and local people.

*Caveats:* Although the maternity service at Heatherwood is described as "midwifery led" there were around 800 deliveries in 2001 with some interventional obstetric care. This needs resolution.

*Generalisability?* This model has been successful with the above caveat. However, relatively low activity at Heatherwood means further change may be necessary. This is important for those re-designing services in relatively highly populated areas, with a number of in-patient units in close proximity.

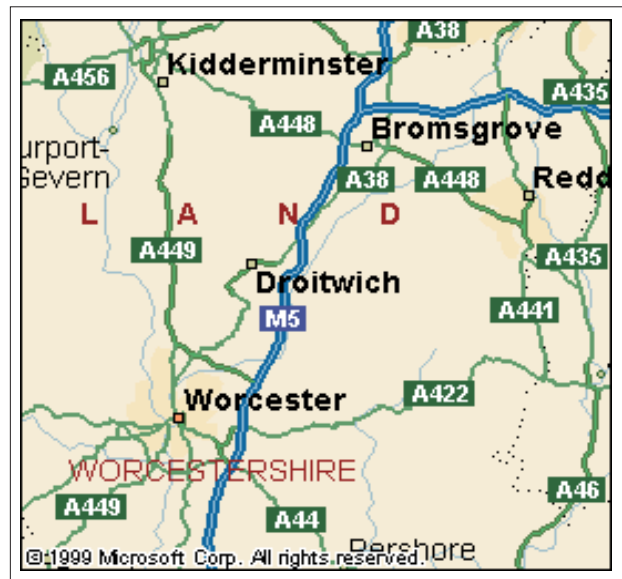
*Contact:* Dr John Connell, Wexham Park Hospital, SLOUGH, Berkshire, SL2 4HL



## 2.7 Kidderminster

*Setting:* A county town 18 miles from Worcester. The population is overall relatively affluent.

*Situation:* Concerns were expressed from 1994 about medical staffing and junior doctor training at Kidderminster. The issues became clouded by strong public concern about the “loss” of Kidderminster Hospital.



*Solution:* An ambulatory model was developed at Kidderminster with a consultant-led acute assessment unit, out-patient clinics and booked day care available initially five, now four, days per week plus a children’s “Hospital at Home” Team. In-patient care is provided at Worcester.

*Evaluation:* The Kidderminster service has been extensively formally reviewed in response to the wider Kidderminster issues. Although satisfaction with the ambulatory service has been reported to be high, concerns were expressed as early as 1997 about relative over resourcing.

*Local views:* There continues to be strong public feeling about the totality of services at Kidderminster, with vociferous objection to Kidderminster losing acute services.

*Caveats:* The ambulatory model has been successful in a difficult “political” situation. There are continued concerns about falling activity at Kidderminster and the difficulty in justifying the continuation of the assessment unit.

*Generalisability?* This model has been successful with the above caveat. However, relatively low activity at Kidderminster means further change may eventually be necessary, perhaps based on the “Hospital at Home” service.

*Contact:* Dr John Scanlon, e-mail: [johnscanlon@worceacute.wmids.nhs.uk](mailto:johnscanlon@worceacute.wmids.nhs.uk)

## 2.8 Ashford

*Setting:* Ashford Hospital serves part of North West Surrey and is 10 miles from St Peter's Hospital, Chertsey. The population is overall the most affluent of those reviewed.

*Situation:* The Ashford in-patient paediatric service was dependent on one consultant who retired. There were three other in-patient services within 20 miles, St Peter's being the nearest.



*Solution:* In 1997 the paediatric departments across St Peter's and Ashford were merged. A home care nursing team was established. Out-patient services and day case surgery are provided at Ashford but there is no acute assessment service – this is provided at St Peter's.

*Evaluation:* This service has operated without complaint since 1997.

*Local views:* There has been strong public resistance to a range of changes to services at Ashford. The fact that it was not possible to maintain the in-patient service (no paediatrician could be recruited) was clearly explained to the public.

*Caveats:* There are potential problems in maintaining support services for the day case surgery, now that acute paediatrics and A & E services have been withdrawn. However, a Minor Injuries service for children has been established.

*Generalisability?* This model has been successful with the above caveat. Replacement of an in-patient unit by a home nursing service and access to acute assessment and in-patient care at the “base” unit may be the optimum solution in similar situations to Ashford, where there are good transport links and in-patient unit(s) are geographically close.

*Contact:* Dr Paul Crawshaw, e-mail: [paul.crawshaw@stph-tr.sthames.nhs.uk](mailto:paul.crawshaw@stph-tr.sthames.nhs.uk)

Table 1: Services provided (Jan 2002) at "satellite" units (sites from which inpatient services have been withdrawn)

Site	Acute assessment Unit	Medical Day Care /Investigation	Day Care Surgical	"Hospital at Home" or Acute Home Nursing	A & E Receiving Children	Maternity – intrapartum care
*Homerton Hospital (Hackney London)	<b>Yes 24 hour Starlight Unit</b> - acute assessment and short stay (24 hours) 14 beds - GP rapid referral clinic	Yes 4 beds (day surgery & elective assessment)	Yes 4 beds (day surgery and elective assessment)	Yes Team based at Homerton. Acute nursing care e.g. iv therapy, & asthma review	"Blue light" and self referrals. Children's emergency assessment supported by Starlight Unit	Yes ** Level 3 NIC Approx 4000 deliveries <u>BUT</u> completely separate neonatal staffing
St Cross Hospital, Rugby (Warwickshire)	No  Acute assessment on B5 at Walsgrave Hospital, Coventry	No  Day care at B5, Coventry	Yes	Yes Hospital at Home Team for Rugby (employed by North Warwickshire NHS Trust). <b>Accepts acute GP referrals.</b> Acute nursing care	Yes "Blue light" direct to B5 Coventry (agreed protocols). Self referrals seen at St Cross Full adult A & E at St Cross	No Obstetric service reprovided in Coventry in 1997
Hammersmith Hospital (London)	Yes 0800 – 2000 hrs Monday to Friday and 0900 – 1400 Saturday Acute assessment GP rapid referral clinic	Yes	Yes	No But close operational links with community nursing services which do "some acute nursing care"	No All children are diverted. Protocols in place for transfer of children "brought in" by parents	Yes ** Level 3 NIC approximately 5000 deliveries <u>BUT</u> completely separate neonatal staffing
St Helen's Hospital (St Helen's)	No All services now provided on the Whiston Hospital Site	No Day care provided on children's Day Ward, Whiston	No Day care provided on children's Day Ward, Whiston	Yes Hospital at Home Team (based at the Whiston) provides acute nursing care	No Minor injuries only	No Obstetric service reprovided at Whiston 1994

Table 1, contd: Services provided (Jan 2002) at "satellite" units (sites from which in patient services have been withdrawn)

Site	Acute assessment Unit	Medical Day Care /Investigation	Day Care Surgical	"Hospital at Home" or Acute Home Nursing	A & E Receiving Children	Maternity – intrapartum care
Grantham Hospital, South Kesteven (Lincolnshire)	Yes 1000 – 1900 hrs Monday to Friday <ul style="list-style-type: none"> <li>Acute assessment</li> <li>Rapid referral system</li> </ul>	Yes 10 beds but mainly for surgery and acute assessment	Yes 10 beds	Yes Community Children's Nursing Service provides acute nursing care	Yes "Blue light" and self referrals	Yes Midwifery led unit with approximately 120 deliveries per annum.
Heatherwood Hospital, Bracknell (Berkshire)	Yes 0900 – 1700 hrs Monday to Friday <ul style="list-style-type: none"> <li>Acute assessment</li> <li>Rapid referral clinic</li> </ul>	Yes Use of Heatherwood for elective day care encouraged to reduce pressure at Wexham Park	Yes	Yes Children's Community Nursing Team (based at Wexham Park) provides acute nursing care	No Minor injuries only	Yes In theory midwifery led but some interventional obstetrics still done. Issues re paediatric cover
Kidderminster Hospital (Worcestershire)	Yes 0900 – 1700 hrs Monday to Thursday <ul style="list-style-type: none"> <li>Acute assessment</li> <li>Rapid access for GPs</li> </ul>	Yes	Yes	Yes Hospital at Home Team. Acute nursing care and some chronic disease management and support to children with special needs	No Minor injuries only	Yes Midwifery led. No interventional obstetrics since October 2000
Ashford Hospital (Surrey)	No Same day access for urgent GP referrals (Monday to Friday)	No	Yes 0700 – 1900 hrs Monday to Friday	Yes Home Care/Community Nursing Team acute and chronic nursing care plus palliative care	No Children's minor injuries only. Adult A & E now functions as "Emergency department"	No Obstetric service reprovided at St Peter's in 1997

Notes: \* The Homerton service differs from the others in that the in-patient service was removed from the Queen Elizabeth site and the Homerton service established *de novo*.  
 \*\* The Homerton and Hammersmith are atypical in having Level 3 NICU staffed separately from general paediatric service.

## 2.9 Antrim and mid-Ulster

*Setting* A district general hospital in a market town serving a childhood population of approximately 18,000.

*Situation* A paediatric in-patient unit had existed in the hospital for many years, staffed by SHOs in general medicine and three consultant physicians, with a consultant paediatrician visiting twice weekly. The College of Physicians considered it inappropriate for physicians trained in adult medicine to continue caring for acutely ill children.

Closure of the in-patient unit was therefore unavoidable.



*Solution* Following a thorough consultation process, the in-patient unit closed and was replaced by an Ambulatory Assessment Unit in April 1996. This Unit operates from 9.00 am to 5.00 pm, Monday to Friday and is staffed by one of two staff grade paediatricians on a rotating basis from the base unit at Antrim Hospital. In addition, a consultant paediatrician has dedicated sessions to provide cover for the Unit throughout its hours of opening.

*Evaluation:* In the *Irish Medical Journal* (February 2002) Volume 95, pages 41-44.

*Local views:* There was much initial concern, particularly amongst GPs, about the impact of losing a local in-patient service. Addressing these concerns involved building on the good relationships that existed between the local medical and nursing staff and the paediatricians providing cover for the existing Unit.

*Caveats:* A great deal of work was needed to prepare and develop a model, to undertake consultation, and to ensure that this was suitable for approval by relevant professional bodies. Additional consultant and staff grade posts had to be created and funding obtained. The rotation of medical staff with the base paediatric department in Antrim has proved essential.

*Generalisability?* The model has already been generalised to two other similar settings within Northern Ireland with positive results. Success depends on careful planning, targeted consultation and effective implementation within a reasonable time scale.

*Contact:* John Jenkins, e-mail: [jgjenkins@altavista.co.uk](mailto:jgjenkins@altavista.co.uk)

## 2.10 North of England

*Setting:* The Northern Deanery, the former Northern Region Health Authority (RHA).

*Situation:* There was a tradition of collaborative working between NICU providers in Newcastle, Sunderland, Stockton and Middlesbrough to provide NICU services to the RHA population, including a centralised, dedicated neonatal transport service. This informal arrangement was threatened by the formation of Trust hospitals and the purchaser provider split in the early 1990s.



*Solution:* The formation of a managed clinical network. This is run by a steering group of representatives from each partner Trust and neonatal service. There is a distinct NICU budget disaggregated from the cost of NICU within each Trust. The planned and controlled transfer of babies between hospitals within the network is integral to its function.

*Evaluation:* A network annual report analyses activity and short term outcome for the network hospitals (using a unique decentralised data collection system). Year on year geographical analysis demonstrates that while deliveries are down 20% over 10 years, NICU intensive care days are up by 10%.

*Caveats:* The former NRHA was unique in establishing relatively centralised NICU early in the development of the specialty. Peripheral hospitals therefore have no incentive or need to undertake NICU themselves, although all support babies with nasal continuous positive airway pressure therapy, some of whom might otherwise require transfer for ventilation, and all are capable of stabilising ventilated babies prior to transfer.

*Generalisability?* A managed clinical network can take many forms. The particular form used in the Northern Deanery may not be directly applicable elsewhere, but lessons learnt from its formation probably are.

Contact: Martin Ward-Platt, e-mail: [m.p.ward-platt@ncl.ac.uk](mailto:m.p.ward-platt@ncl.ac.uk)

## 3 New ways of using staff

### 3.1 Ashington

*Setting:* a small industrial town 16 miles north of Newcastle.

*Situation:* the local people wanted to maintain their maternity and newborn services but the Trust was unable to recruit doctors to look after the newborn infants.

*Solution:* a team of 8 advanced nurse practitioners (ANPs) was recruited and trained. These ANPs now deal with resuscitation of sick or premature newborn babies, care for those who are seriously ill until the transport team arrives from Newcastle to collect them, receive them back from intensive care and look after them until they are ready to go home, perform the routine examinations of all newborn infants and provide advice and support for parents after discharge if their infant is unwell.

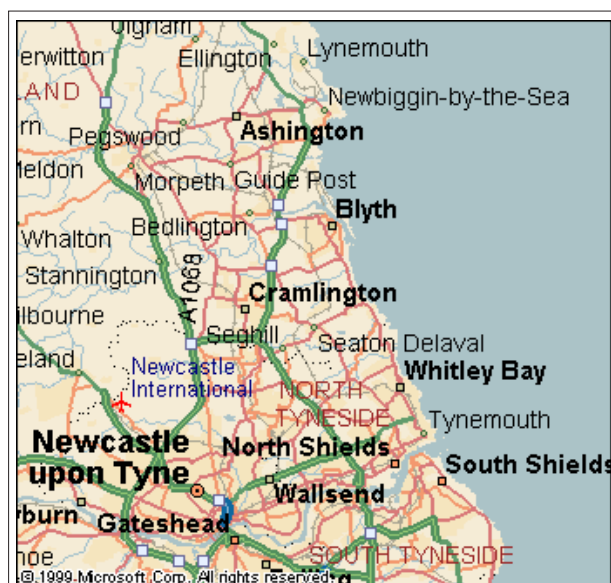
*Evaluation:* extensive data have been reviewed – there is good evidence that the service works well and provides a high standard of care.

*Local views:* the service was well received and is popular with local people and with GPs.

*Caveats:* The team needed intensive medical back-up until the ANPs were confident. Consultant visits are still highly valued and are essential to maintenance of confidence and standards. Ashington has a stable population with exceptionally low staff turnover. The ANPs had to be trained – they could not be recruited locally and there is a national shortage of ANPs.

*Generalisability?* Yes, provided that there is an increased investment in training, remuneration reflects the level of responsibility, staff support is good and further career development is encouraged.

*Contact:* Dr Unni Krishna Wariyar, Royal Victoria Infirmary, NEWCASTLE UPON TYNE, NE1 4LP





### 3.2 West of Scotland

*Setting:* Rural Argyll on Scotland's west coast with a child population (0-18 years) of 16,000.

*Situation:* Sick children in Argyll have traditionally been admitted to their local hospital - six community hospitals and one district general hospital in Argyll admit children. There are several units which are at least 2 hours by road from the nearest paediatric in-patient facility.



*Solution:* Local GPs cover the community hospitals, and the District General Hospital in Oban is staffed by adult physicians. The aim was to maintain local access to care while raising standards and improve safety.

*Evaluation:* A review of paediatric admissions was carried out in 2001. Most hospitals have made attempts to make their facilities child-friendly. GPs in particular felt capable of looking after moderately unwell children. Nursing staff expressed more concerns about training. Good lines of communication exist with secondary care providers. All units now have broadband telemedicine capability. There was a lack of relevant clinical guidelines. Transport of seriously ill children remains a problem, particularly out of hours.

*Local views:* The facility to admit children locally is valued by local families and staff.

*Caveats:* The ease of access to a local hospital may result in unnecessary admissions in less than ideal surroundings. Small numbers mean that adverse events are likely to be infrequent, and it is therefore difficult to say how "safe" such a service is.

*Generalisability?* This model of care could be applied in other remote or rural areas. Because practitioners in Argyll are responsible for children's care, they have retained their skills and confidence. Setting up this type of service where it does not already exist is likely to prove difficult. Local staff may have lost the necessary skills and be reluctant to provide in-patient care for children.

*Contact:* Jamie Houston, Lorn and Islands District General Hospital, Oban PA34 4HH.  
E-mail: [jamie@glenpark3.fsnet.co.uk](mailto:jamie@glenpark3.fsnet.co.uk)

### 3.3 Dorchester

*Setting:* A mixed urban/agricultural health district with areas of both urban and rural deprivation.

*Situation:* The unit's arrangement of on-call included 3.5 consultants providing a 1:3 rota from home and 3 resident middle grades. The College advised that this provided inadequate training support and fell below recommendations for patient safety. The unit had a strong tradition of a consultant-led service and



did not wish to dilute this. The community consultant, who was not trained to provide on call, had retired but recruitment of a replacement with an on-call responsibility failed.

*Solution:* Two years ago, the existing consultants all agreed to integration of community and acute paediatrics. Three geographical patches (contiguous with PCT areas) were agreed with two consultants for each patch. Each consultant took on specific responsibility for one area of community work. The existing consultants also agreed to a resident on-call commitment compensated for partly with a day off per week and partly financially. The community paediatrician was thus replaced by a *general* paediatrician. An ANNP provides extra support to NICU when the consultant is resident with a 2<sup>nd</sup> on call consultant at home.

*Evaluation:* No formal evaluation has been made of quality of care or length of stay. However, the College is happier with the level of resident support available to acutely sick children. The range of expertise available to in and out-patients has improved.

*Local views:* Both GPs and parents are pleasantly surprised to be able to easily access a consultant opinion out of hours. The staff team is more secure and cohesive.

*Caveats:* The general paediatrician role, although concordant with current college recommendations, is not yet fully serviced by the training experience of many current applicants.

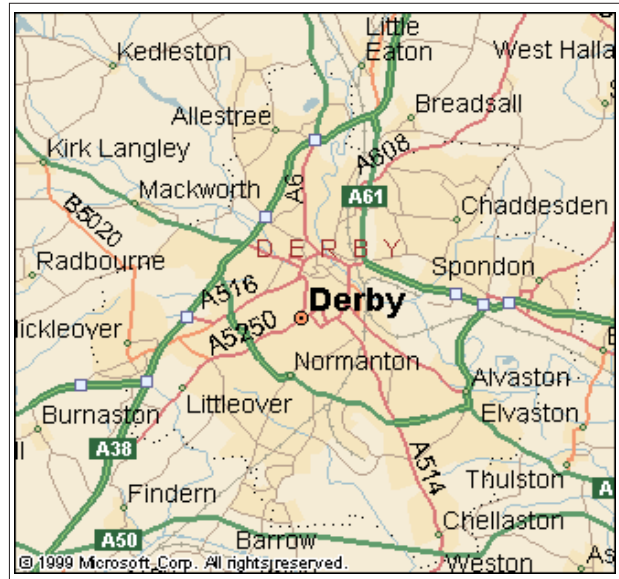
*Generalisability?* Yes, though clinical workload intensity requires prior analysis.

*Contact:* Dr. Rollo Clifford, Dorset County Hospital, Williams Ave, Dorchester, Dorset, DT1 2JY. Telephone: 01305 254240/9. E-mail: [rollo.clifford@wdgh.nhs.uk](mailto:rollo.clifford@wdgh.nhs.uk)

### 3.4 Derbyshire Children's Hospital

*Setting:* A children's hospital within a large district general hospital serving a mixed urban/rural population in the Midlands.

*Situation:* A team of 7 experienced paediatricians will be needed to provide resident-on-call cover for the newborn and children's services. In future these doctors cannot all be trainees, as the number of trainees is strictly limited for sound workforce planning reasons.



*Solution:* It is proposed initially to appoint 2 new consultant paediatricians to supplement the resident-on-call rota. Each will be contracted to work 48 hours per week, including 1 night per week resident-on-call. The remaining sessions will be devoted to out-patient clinics and ward work, and there will be opportunities to develop a special interest with a view to further career development.

*Evaluation:* the posts have been approved by the Trust Management Team and by the Regional Advisor in Paediatrics. We plan to advertise the posts in November 2002.

*Local views:* the posts have the support of the Trust Local Negotiating Committee and a number of newly-trained paediatricians locally have expressed an interest.

*Caveats:* We do not yet know how attractive these posts will be when there are vacancies in conventional consultants posts nationally. The acceptability of these posts to future applicants is likely to depend on the successful career progression of those initially appointed.

*Generalisability?* Yes, but these posts are more likely to be acceptable to new consultants if the duration of specialist training is shortened by the earlier acquisition of the Certificate of Completion of Specialist Training (CCST).

*Contact:* For further information contact Dr. Keith Dodd or Dr. Nigel Ruggins on:  
[keith.dodd@sdah-tr.trent.nhs.uk](mailto:keith.dodd@sdah-tr.trent.nhs.uk) or [nigel.ruggins@sdah-tr.trent.nhs.uk](mailto:nigel.ruggins@sdah-tr.trent.nhs.uk)

### 3.5 Southampton

*Setting:* A neonatal service based in a teaching hospital at Southampton.

*Situation:* The staff mainly involved in first-line assessment and management of babies had been SHOs. Many had received little training in the specialty prior to taking up post. There was a general view that care at this level was sub-optimal. Subsequently, the changes in junior doctors' hours of working, and the increasing requirement for their education and training, have reinforced the need for alternative staffing in the provision of neonatal care.



*Solution:* It was felt that a new type of professional – the “Advanced Neonatal Nurse Practitioner” (ANNP) – would be able to contribute to the improvement in quality of care for these patients, provided that they were appropriately prepared and assessed. Their role has involved a mixture of service provision, education/training and audit/datacollection. Over the past eight years the Neonatal Unit has employed four ANNPs at any one time.

*Evaluation:* The role of the ANNP has been evaluated, both nationally and locally, as being an important innovation in the provision of modern neonatal care<sup>1</sup>.

*Local views:* ANNPs have been found to provide a high standard of care both on the neonatal unit and the postnatal wards.

*Caveats:* The initial investment in training is relatively costly but both pre- and post-qualification attrition rates have been low. Within individual units commitment of all staff to the new role and careful role definition is important in retaining ANNPs. Inability to prescribe has been an important limiting factor in role development.

*Generalisability?* Yes, but development will be specialty specific.

*Reference 1.* Redshaw ME, Harvey ME. How clinicians in neonatal care see the introduction of neonatal nurse practitioners. *Acta Paediatrica*. 2002; 91(2):184-7.

*Contact:* Dr M Hall, Tel: 02380 796007, e-mail: [mh10@doctors.org.uk](mailto:mh10@doctors.org.uk)

### 3.6 Liverpool Alder Hey

*Setting:* A Children's Teaching Hospital in a University city serving a local population of 600,000 and a regional population of over 3 million.

*Situation:* A wish to deliver comprehensive and holistic care to children with epilepsy and their families, reduce the number of medical (Consultant) outpatient consultations and to reduce the waiting times and develop a triage service, for new patients referred by their General Practitioners with a possible diagnosis of epilepsy.



*Solution:* the appointment of a nurse specialist in paediatric epilepsy to work closely with the paediatric neurologists and paediatricians to fulfil these roles, meet service demands, liaise with community services and facilitate epilepsy service development.

*Evaluation:* audit has demonstrated that epilepsy care has improved, children's and their families' knowledge of epilepsy has increased and waiting times for new referrals and follow-up medical outpatient appointments have been reduced.

*Local services:* the epilepsy nurse service has been well received; families feel encouraged and supported by the nurse contact; the community health (General Practice and Community Child Health) and education services have welcomed the improved liaison between themselves and the hospital. These benefits have directly led to the Trust appointing a second, full-time nurse specialist in paediatric epilepsy.

*Caveats:* none identified.

*Generalisability?* Yes; the paediatric epilepsy nurse role has already served as a model for other Teaching, but perhaps more importantly, District General Hospitals throughout both the North West Region and the UK.

Contact: Dr Richard Appleton, Royal Liverpool Children's Hospital, Alder Hey, Liverpool, L12 2AP

### 3.7 Oxford

*Setting:* A paediatric gastro-enterology service in Oxford.

*Situation:* Childhood constipation is a common problem accounting for approximately 5% of referrals to general paediatricians and up to 25% of referrals to paediatric gastroenterologists. Response to treatment is often poor and inadequate management and follow-up contribute to this unsatisfactory outcome.



*Solution:* A nurse-led clinic was set up in 1996 in Oxford for children who had been diagnosed with functional constipation.

*Evaluation:* By randomised controlled trial comparing the consultant service with the nurse-led clinic. The cure rate was 52% in the nurse-led clinic and 42% in the paediatric gastroenterology clinic (difference not significant).

*Local views:* A patient satisfaction study, using a modified and validated satisfaction questionnaire, demonstrated a high degree of patient/parent satisfaction with the clinical services but for all modalities parent satisfaction was greater with the service received in the nurse-led clinic.

*Caveats:* Success depended on attention to development of detailed algorithms and agreements regarding nurse prescribing.

*Generalisability:* Yes, provided the necessary investment in training and support is made.

*Contact:* Peter Sullivan, e-mail: [peter.sullivan@paediatrics.ox.ac.uk](mailto:peter.sullivan@paediatrics.ox.ac.uk)

### 3.8 Merthyr Tydfil

*Setting:* Merthyr Tydfil is situated at the head of one of the main valleys in South Wales with one of the highest uniform concentrations of social deprivation in the UK.

*Situation:* Although there is some excellent general practice, many GPs are single handed and nearing retirement. There are serious concerns about future recruitment of GPs to Merthyr. The demands for a high quality service led by trained paediatricians and compatible with working time directives call for new solutions.



*Solution:* It is intended to introduce a new post of “primary care paediatrician”. A qualified paediatrician will support and work in primary care in a defined area, especially concentrating on children with chronic medical conditions, supporting health visitors and advising GP colleagues. S/he will share with paediatric colleagues in providing the out of hours paediatric emergency service. Additional posts of this kind would create a team which, with the support of nurse practitioners, could provide all out of hours paediatric emergency care.

*Evaluation:* this proposal is at the planning stage and it is not yet possible to assess its impact.

*Contact:* Mike Maguire, e-mail: [dr.maguire@nglam-tr.wales.nhs.uk](mailto:dr.maguire@nglam-tr.wales.nhs.uk)

### 3.9 Liverpool Women's Hospital

*Setting:* The Regional Neonatal Intensive Care Unit at Liverpool Women's Hospital; a large teaching hospital with an associated smaller unit, catering for 9000 deliveries per year and regional referrals. Admissions doubled between 1990 and 2000.

*Situation:* An increasing workload without any increase in junior medical staff numbers, coupled with shorter working hours and the need for recognised periods of teaching.



*Solution:* A team of 10 Advanced Neonatal Nurse Practitioners (ANNPs) trained at Southampton (see 3.5). They take a full clinical role in resuscitation and intensive care management of term and preterm infants alongside junior medical staff and take part in medical student teaching and nurse teaching, as well as informal training of junior medical staff. They have a separate rota and are not seen as a substitute for junior medical staff.

*Evaluation:* One formal evaluation (audit project) which showed superior performance at preterm resuscitation by ANNPs compared with junior medical staff. Adverse clinical event reporting under Clinical Governance shows far fewer events arising from ANNP practice.

*Local views:* Well received by all staff, management and parents.

*Caveats:* ANNPs cost more per hour, as SHOs do longer hours. It is difficult to recruit trained staff and it may be necessary to send existing staff for training, which currently is both distant and expensive. NW Region aims to set up its own course to allow recruits with family commitments to train – ideally with the option of a part-time course with distance learning components.

*Generalisability?* Yes – but demand outstrips supply at present. Further development of training is needed. This model works well in a highly supervised environment such as a large academic NICU.

*Contact:* Richard Cooke, e-mail [Mc19@liv.ac.uk](mailto:Mc19@liv.ac.uk)



### 3.10 Great Ormond Street Hospital for Children

*Setting:* The Trust has 335 in-patient beds, including a large intensive care unit, and provides tertiary care for a large range of specialities. The Medical Division includes Endocrinology, Gastroenterology, Metabolic, Neurology, Renal and Respiratory.

*Situation:* Seven SpRs and four SHOs provided a resident on call service, with Consultant back up off site, for the Medical Division. The workload was not of a high intensity but they were not New Deal compliant.



*Solution:* A ‘Waking Night Team’ was introduced. It comprises two Clinical Site Practitioners (CSPs) and three Registrars. CSPs are nurses with extensive paediatric intensive care backgrounds. They provide managerial support and clinical expertise across the Trust with an emphasis on assessment and intervention for those children who are high dependency, a ‘step up’ or ‘step down’ from intensive care, or for any child who may be deteriorating. The senior CSP leads the team and is responsible for chairing the handover and managing the workload. Each member of the team is equal, with role, responsibilities, and tasks carried out by the most appropriate person at the time.

*Evaluation:* An audit of the frequency and intensity of the workload of both the CSPs and the Junior Medical Staff was carried out prior to implementation and a repeat audit will be undertaken 8 weeks after implementation.

*Caveats:* The large numbers of junior medical staff incorporated within this shift system make rotas complicated and sometimes difficult to organise. The team works together on the basis that there are no longer ‘SHO’, ‘nurse’ or ‘registrar’ jobs. This requires a cultural change within the organisation.

*Generalisability?* Yes, in large units - and the approach might be considered, with some modification, in smaller units.

*Contact:* Cheryl Unthank, Senior Clinical Site Practitioner, e-mail [SimonC@gosh.nhs.uk](mailto:SimonC@gosh.nhs.uk)

