

Facing the Future: A Review of Paediatric Services

April 2011



RCPCH

Royal College of
Paediatrics and Child Health

Leading the way in Children's Health

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Foreword

The current UK paediatric workforce (both consultants and trainees) is facing huge pressures. The harsh reality is that it is impossible to do all of the following:

1. Staff in a safe and sustainable way all of the inpatient paediatric rotas that currently exist
2. Comply with the European Working Time Directive (EWTD)
3. Continue with the present numbers of consultants and trainees

As the executive summary to this report indicates, the option of 'doing nothing' is simply not an option. It is time to face the future.

One of the issues that this report highlights very clearly is that all of these issues are interwoven, that tinkering with one aspect affects the others. If the current number of inpatient units increases, then inevitably there is a requirement for more staff. If the EWTD is implemented fully, then there is a need for more staff. If there are fewer trainees, then we require more consultants, and so on.

We must provide a safe and sustainable quality paediatric service for children and young people. To meet that goal, which everyone must surely share, this report proposes changes to the number of inpatient units and a significant redesign of the staffing structure of those units with consequent changes in staff numbers.

In many ways, the proposals contained here could be considered radical and perhaps there are other solutions to our challenges. This report, for instance, does not explore the possibility of a significant expansion in primary care paediatrics which would require fewer GPs and more paediatric trainees, not less. Currently, such a switch to a model common in Europe and North America does not seem likely in the short to medium term.

A key message of this report is that there are five interlocking proposals which must be tackled together, not piecemeal.

1. Reduce the number of inpatient sites
2. Increase the number of consultants
3. Expand significantly the number of registered children's nurses
4. Expand the number of GPs trained in paediatrics
5. Decrease the number of paediatric trainees

For example, if trainee numbers are reduced before nurse, GP and consultant expansion occurs, or before the number of inpatient services declines, the consequences for children and young people would be disastrous. The transition to our proposed future design must be managed smoothly.

But what is clear is that some kind of change along the lines of this report is required. The possibility of staying the same is simply not open to us and for that reason I commend this report to our membership, to carers and to their elected representatives.

Professor Terence Stephenson

President, Royal College of Paediatrics and Child Health

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Executive Summary

The primary purpose of this report is to set out a series of service standards that the Royal College of Paediatrics and Child Health (RCPCH) believes are necessary to ensure that high quality healthcare is delivered to all children and young people. It is written against a backdrop of large-scale workforce pressures in many inpatient paediatric units, and relatively poor health outcomes for the UK childhood population. The RCPCH has a responsibility and ability to influence the quality of the service that is provided and this is critically important in the light of significant funding pressures on health and social care services. It is also the best placed of all organisations to define the paediatric workforce that is required to deliver that high quality service.

In this report the College specifies service standards for acute general services and, through detailed modelling, determines the implications of these standards for the configuration of paediatric services and the workforce. If implemented, these proposals would help contribute to better outcomes for children and young people and ensure greater efficiency in the system. Given the current pressures on the service and the relatively poor health outcomes of the UK childhood population, to “do nothing” is simply not an option. The College must address these issues as a matter of urgency if we are to deliver safe and sustainable paediatric services.

This report sets out ten service standards that the College considers to be a minimum standard for all acute general paediatric services. Each standard is accompanied by an explanatory text that indicates in more detail what the standard is seeking to achieve, and how it will be implemented.

The report maps the current acute service configuration in the UK, segregating the 218 inpatient units that exist into four categories according to the number of acute admissions that the unit receives each year. The current paediatric workforce is indicated and the report shows that with the current number of inpatient units, there are simply too few paediatric doctors to staff all of our rotas to safe and sustainable levels. It also demonstrates that there is an unsustainable ratio of consultants to trainees.

In order to implement the service standards, and achieve better quality care for children and young people, three possible scenarios for the future configuration of inpatient units are evaluated. The first of these is no change. The second is what is termed a moderate reconfiguration and involves the conversion of 48 small and very small inpatient units to 32 Short Stay Paediatric Assessment Units (SSPAUs) with alternative provision made for the remaining 16 units which would close. The last is a maximum reconfiguration which involves conversion of 76 small and very small sites to 50 SSPAUs with alternative provision made for the remaining 26 units. The majority of the proposed reconfigurations in the moderate and maximum options involve units that are proximal, that is within 30 minutes normal (non rush hour) drive time of other inpatient facilities.

The report also shows the workforce that would be required to deliver the service standards that have been set and in the process it highlights the current shortfall in the number of UK consultants across general, community, sub-specialty and academic paediatrics. The report concludes that in order to deliver safe and sustainable services the current UK consultant workforce needs to expand from 3,084 WTE consultants to between 4,500 and 4,900 WTE consultants depending on which reconfiguration model is adopted.

The workforce implications for trainees are also explored. The report demonstrates how it is possible both to reduce the number of trainees in order to achieve a more appropriate trainee to consultant ratio, and staff all of the rotas in a safe and sustainable fashion but only if there is a significant adjustment to some aspects of the workforce and in particular far greater involvement of GP trainees and children's nurses on tier 1 paediatric rotas, as well as more consultants working on tier 2 rotas. Finally the report describes the implications that these changes would have on career pathways for paediatricians.

In summary the report makes a series of interlocking recommendations: reduce the number of inpatient sites from 218 to approximately 170 with 32 new SSPAUs whilst increasing the number of consultants from 3,084 to 4,625 WTEs and changing working practices with increased use of resident consultants; expand significantly the number of advanced or enhanced neonatal nurse practitioners, the number of advanced children's nurse practitioners and the number of GPs trained in paediatrics whilst decreasing the number of ST trainees from 2,929 to 1720 WTEs (3,500 to 2,000 persons).

It would be impossible to make rapid changes to the configuration of services without causing considerable clinical disruption and risking patient safety. Hence, it is essential to recognise that any reduction of trainees is contingent upon an adequate expansion in consultant, GP trainee and children's nurse numbers having already occurred. To simply adopt one of these recommendations in isolation from the others has the potential to cause serious harm to services for children and young people, and to bring an already overstretched service to breaking point.

This document has been produced by the Royal College of Paediatrics and Child Health, but its findings are actively supported by the Royal College of General Practitioners and the Royal College of Nursing. There has been very significant investment in the paediatric workforce over the last ten years with a 50% increase in consultant posts. Despite this, paediatric services remain under considerable pressure. Adopting and implementing meaningful service standards and evaluating the best configuration would address these challenges and more importantly would ensure that the UK childhood population receives a high quality and safe paediatric service fit for the 21st Century.

Although there will be transitional difficulties in implementing these changes, the rewards of getting the right design are considerable. All children and young people seen in paediatric departments will receive high quality consultant-delivered care and be seen by medical trainees with appropriate training or children's nurses with the right skills set and knowledge. There will be safe and sustainable services with the right number of trainees on each rota who will have excellent training opportunities. Consultants will no longer have to take on unplanned resident shifts to cover gaps on middle grade rotas.

There will be far more opportunities for GPs to be trained in paediatrics. Paediatrics will become a more attractive career prospect with trainee numbers aligned to vacancies and there will be a clear view of how consultants will work, with the prospect of phased careers in which more intensive duties give way to less in a planned career pathway. In the larger, busier general acute units there will be considerably less reliance on resident consultants, with more consultants in smaller units reflecting the reduction in trainee numbers.

The proposals in this report describe a point in time some five to ten years hence and also set out one possible timeline for how we could move from our present situation to that future one. However, we recognise that there are alternative transitional models and the current reforms of commissioning will make implementation more complex. The primary intention of the report is not to specify how the transition will take place but rather to ensure that we have a secure and positive vision for the future to which we can aspire.

Dr David Shortland

Dr Justin Thacker

April 2011

1. Background

All children and young people who require it should receive high quality care, delivered by trained and competent professionals in a timely manner and in appropriate settings. The purpose of this report is to set out a series of service standards that will ensure that we can deliver this care, drawing attention to the configuration of services and workforce that is required to achieve this aim.

Our ability to deliver such high quality services has come under significant pressure in recent years for a variety of reasons. Implementation of the European Working Time Directive (EWTD) has made it extremely difficult to provide safe and sustainable levels of staffing in many paediatric units. In November 2009, an RCPCH survey found that almost three quarters of responding Trusts had concerns that their acute service would not be able to cope with the demands placed on them in the next 6 months. The report by Professor Sir John Temple, *Time for Training*, has demonstrated that EWTD is also having a negative impact on paediatric training, particularly in relation to staffing pressures, loss of structured training and increased stress levels among paediatric trainees.¹

The term “Children and Young People” in terms of RCPCH Policy applies to all young people up to the age of 18; these standards and modelling were developed on this assumption although we recognise that trusts may have their own definition with a significant number having transition to adult services at 16.

The purpose of this report is to address the current challenges in paediatric services and to make some proposals concerning how these issues could be resolved. It is clear that while the specific proposals contained here may be contested, we must have a clear strategy and a consensus to achieve change. The College recognises that these proposals have implications for other professional groups, particularly nurses and GPs with whom we have consulted extensively, and who support our findings. The College cannot implement these proposals alone and will require the support of other organisations, including commissioners, if we are to develop and deliver safe and sustainable high quality services for children and young people.

In recent years, there has been a clear strategy within the NHS to improve quality of care and safety for patients. An excellent service can only be achieved if there are appropriate numbers of well trained staff in place to deliver care. As already indicated, the primary aim of this report has been to identify service standards that should be regarded as the minimum requirements in order to deliver high quality, safe and sustainable acute paediatric services. This is especially relevant as there are poorer health outcomes for children and young people in the UK than other Western nations.²

To ensure that there is a world-class paediatric service in the UK, the College must continue to train high calibre paediatricians. There are excellent training programmes but recent competition ratios for ST1 jobs have shown that there are not as many applicants

to paediatric posts as we would like. The current uncertainties around the future working patterns of paediatricians could adversely affect recruitment and a second aim of this project has been to undertake a modelling exercise to determine the number of paediatricians that are needed, the likely configuration of paediatric services and an appropriate number of trainees. Whilst recognising that working practices will differ amongst paediatricians working in different specialities and different locations the report has attempted to look at the implications that new working practices (in particular the resident component of a post) will have on the roles that paediatricians undertake at different stages of their careers. From studies that the College has previously undertaken we are aware that there is an expectation amongst paediatric trainees that they will continue to undertake intensive duties throughout their entire career and the College recognises the detrimental effect that this has on recruitment to our specialty. These concerns could be partially alleviated by designing a realistic opportunity for phased careers in which more intensive consultant posts evolve in a planned way to less intensive ones.

Over the last ten years there has been a 50% increase in the consultant paediatric workforce in the UK. Despite this considerable increase, all of our recent workforce surveys have shown that paediatric departments are struggling to maintain essential services in the face of changing workforce legislation and increasing demands on the service, particularly out of hours. In recommending significant further expansion in our consultant workforce, the College believes that it is absolutely essential that we have a clear vision for how paediatricians will work in the future and a clear strategy that this increased workforce will address the current problems to ensure that there is a safe and sustainable service in all parts of the UK. In this way there can be a move from an historical pattern of a supply led workforce to a truly demand-led workforce.

The College recognises that this report is written against a background of a challenging financial climate and the prospect of turbulent commissioning arrangements but unless the current crisis in paediatric services is addressed the health of children and young people in the UK will continue to suffer, and we will not see the high quality consultant-delivered care that all children and young people deserve.

2. Service Standards

The following chapter specifies the ten service standards that the RCPCH believes should be achieved by all acute, general paediatric services. The College considers these standards to represent a minimum requirement and they are all underpinned by the principle that consultants are responsible and accountable for the children and young people admitted under their care. The standards are first listed and then an explanatory guide to each one is provided in the subsequent section.

The standards were developed using a review of the relevant literature and consultation with paediatricians. Three of these standards have already been adopted by the College and published in its manifesto (Standards 1-3). Standards 7, 9 and 10 were developed in consultation with the relevant specialist groups and represent consensus decisions. Standards 4, 5 and 6 emerged from our review of the literature. Standard 8 is a recommendation of the Academy of Medical Royal Colleges and is partly based on published evidence.

It is the College's intention to initiate a national audit programme against these standards in due course.

1. Every child or young person who is admitted to a paediatric department with an acute medical problem is seen by a paediatrician on the middle grade or consultant rota within four hours of admission.
 2. Every child or young person who is admitted to a paediatric department with an acute medical problem is seen by a consultant paediatrician (or equivalent staff, speciality and associate specialist grade doctor who is trained and assessed as competent in acute paediatric care) within the first 24 hours.
 3. Every child or young person with an acute medical problem who is referred for a paediatric opinion is seen by, or has the case discussed with, a paediatrician on the consultant rota, a paediatrician on the middle grade rota or a registered children's nurse who has completed a recognised programme to be an advanced practitioner.
 4. All SSPAUs (Short Stay Paediatric Assessment Units) have access to a paediatric consultant (or equivalent) opinion throughout all the hours they are open.
 5. At least one medical handover in every 24 hours is led by a paediatric consultant (or equivalent).
 6. A paediatric consultant (or equivalent) is present in the hospital during times of peak activity.
 7. All general paediatric inpatient units adopt an attending consultant (or equivalent) system, most often in the form of the 'consultant of the week' system.
 8. All general acute paediatric rotas are made up of at least ten WTEs, all of whom are EWTD compliant.
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9. Specialist paediatricians are available for immediate telephone advice for acute problems for all specialties, and for all paediatricians.

10. All children and young people, children's social care, police and health teams have access to a paediatrician with child protection experience and skills (of at least Level 3 safeguarding competencies) available to provide immediate advice and subsequent assessment, if necessary, for children and young people under 18 years of age where there are child protection concerns. The requirement is for advice, clinical assessment and the timely provision of an appropriate medical opinion, supported with a written report.

Explanatory Guide to Standards

The Temple report concluded that consultant-delivered, as opposed to consultant led or consultant-based, care was the only viable model for the future of medical care in the UK. There were a number of reasons for this but most importantly the simple fact that consultants “make better decisions more quickly and are critical to reducing the costs of patient care while maintaining quality.”³ The Temple report defines consultant-delivered care as “24 hour presence, or ready availability” and it is this model of service that underpins many of the service standards.

- 1. Every child or young person who is admitted to a paediatric department with an acute medical problem is seen by a paediatrician on the middle grade or consultant rota within four hours of admission.**

- 2. Every child or young person who is admitted to a paediatric department with an acute medical problem is seen by a consultant paediatrician (or equivalent staff, speciality and associate specialist grade doctor who is trained and assessed as competent in acute paediatric care) within the first 24 hours.**

It is important to recognise that these two standards apply to acute rather than elective admissions, and also they refer to admissions to paediatric departments rather than mere attendance at, for instance, emergency departments. The College would expect doctors on the middle grade rota to be those who are judged to have achieved level 1 competencies of the RCPCH *Framework of Competences*. This would normally mean those working in posts at ST4 or above. In units where there are just two tiers of medical cover this will not be possible and the consultant (or equivalent) should be resident when it is judged that any member of the tier 1 rota e.g. paediatric trainee, GP trainee or advanced children's nurse practitioner, does not have the basic competences of recognising a sick child and being able to initiate treatment for paediatric emergencies. When a resident rota has trainees of ST1 or ST2, who have not yet achieved level 1 competences, our first service standard would ensure that all children and young people admitted with an acute medical problem would be seen by a paediatrician on the consultant rota within 4 hours of admission. If the most senior resident doctor is at ST3 level the College would

recommend that the consultant (or equivalent) review takes place within 12 hours of admission rather than 24 hours. The admission time is taken to be the official time of admission to the paediatric department rather than, for instance, the time of presentation to the emergency department or the time of referral to the paediatric department.

For SSASG doctors to be considered as “consultant equivalent” they should successfully revalidate at this competency level through the RCPCH or a similar approved partner scheme. The RCPCH encourages SSASG doctors to develop competencies throughout their career and to take the MRCPCH exam if they wish to do so. The RCPCH also supports the provision of at least 1.5 SPAs each week for SSASGs to have adequate time for CPD and preparation for revalidation. In addition, they must have a mutually agreed named consultant who, at least as part of an annual appraisal process, has assessed them as competent to work on the consultant rota.

The RCPCH recognises that implementation of the second of these standards will need consultant rounds at least once per day, and ideally twice per day, seven days per week. However, the College believes this is necessary as there is good evidence that regular consultant review can decrease length of stay for patients and improve quality.⁴

3. Every child or young person with an acute medical problem who is referred for a paediatric opinion is seen by, or has the case discussed with, a paediatrician on the consultant rota, a paediatrician on the middle grade rota or a registered children’s nurse who has completed a recognised programme to be an advanced practitioner.

In contrast to standards 1 and 2, this standard concerns all children and young people referred for an urgent paediatric opinion whether the source of that referral is general practice, the emergency department or an SSPAU. The RCPCH would expect all children and young people to be seen by personnel with appropriate expertise. However, as a minimum the College would expect all cases to be discussed with a senior doctor or nurse as specified. This standard would preclude a less experienced doctor who has not achieved level 1 competences in paediatrics sending a child or young person home who has been referred by a general practitioner without that child or young person being discussed with a more senior colleague.

Standards 1,2 and 3 were arrived at by consensus during extensive discussions by the RCPCH Council and Executive Committee.

4. All SSPAUs have access to a paediatric consultant (or equivalent) opinion throughout all the hours they are open.

The RCPCH is aware that not all SSPAUs have medical consultant presence during their opening hours. However, studies have shown that the availability of consultants can decrease the rate of unnecessary admissions without compromising patient safety or patient satisfaction.⁵ Therefore, it is our view that all SSPAUs should have medical

consultants (or SSASG equivalents, see explanatory text to Standards 1 and 2) available for advice even if they are not physically present.

The College also would expect that any child or young person who is continuously present in an SSPAU for more than eight hours will be discussed with a consultant or paediatrician on a middle grade rota to decide upon ongoing treatment and / or transfer.

Standard 4 is based on published evidence.

- 5. At least one medical handover in every 24 hours is led by a paediatric consultant (or equivalent).**

- 6. A paediatric consultant (or equivalent) is present in the hospital during times of peak activity.**

Implementation of the EWTD and the consequent transition to shift patterns of working have significantly reduced the continuity of care that junior doctors used to provide and increased the number of clinical handovers between medical staff. At the same time, junior medical staff have not adopted the kind of structured handover process with which nurses are familiar. There is a growing body of evidence that clinically significant information can be lost during the handover process, and that this can lead to adverse outcomes for patients.⁶ It is also well documented that the peak admission time for acute paediatrics is the early evening, 5-10pm, when traditionally the consultant has not been present. Consultant presence during this time would not only improve patient outcomes, but their presence during handovers would provide an excellent training opportunity for junior staff.⁷ Hence, the College has specified these two standards in order both to improve patient safety and outcomes as well as facilitate the training of medical staff.

Standards 5 and 6 are based on published evidence.

- 7. All general paediatric inpatient units adopt an attending consultant (or equivalent) system, most often in the form of the 'consultant of the week' system.**

With the introduction of EWTD, continuity of care has become a significant problem for inpatient care. The College believes that the most appropriate system to mitigate the effect of new working practices is to adopt a consultant of the week system in which the consultant has no other clinical duties during that week but is fully available for the management of acute admissions. Anecdotal evidence received by the RCPCH has indicated that such systems have contributed towards WTD compliance, improved patient safety, created better continuity of care and better training, supervision and consultant support for trainees.⁸ The College recognises that some consultant of the week rotas may include some SSASG doctors if recognised as competent to operate at this level (see explanatory text to Standards 1 and 2).

Standard 7 has a pragmatic base, and was arrived at consensually.

8. All general acute paediatric rotas are made up of at least ten WTEs, all of whom are EWTD compliant.

The EWTD mandated that no-one should work more than 48 hours per week on average. The subsequent SiMAP⁹ and Jaeger¹⁰ judgements have clarified the implications for junior doctors. The Academy of Medical Royal Colleges have stated that in order to protect adequate training time, as well as to cover for annual leave and recovery periods, ten WTE doctors in a rota are required.¹¹ It is possible to design rotas that are compliant with just eight staff and in relation to neonatal medicine, where there is less daytime outpatient activity, rotas of this size may be entirely appropriate.¹² However, for general acute paediatrics, eight cell rotas inevitably result in the use of internal locums, and therefore in practice are not sustainable. The College does not believe that relying on junior doctors opting out of the directive is acceptable. An exception to this standard would be where resident consultants form part of the middle grade rota. In this situation, rotas with fewer trainees can be appropriate, sustainable and EWTD compliant provided there are the equivalent of ten WTEs on the rota.¹³

Standard 8 is partly pragmatic, and partly based on published evidence.

9. Specialist paediatricians are available for immediate telephone advice for acute problems for all specialties, and for all paediatricians.

With increasing centralisation of specialist care and in order to facilitate appropriate long term condition management closer to the child or young person's home, it is imperative that local paediatricians have access to appropriate specialist advice in a timely manner, at least if unnecessary referrals and admissions are to be avoided. This standard aims to ensure that the local paediatrician, whether based in the community, an SSPAU or an inpatient unit, can access the specialist opinion that is needed when faced with acute problems in children and young people with complex and specialist needs. It is optimal if such advice is provided as part of a managed clinical network which encompasses all of the local secondary care providers. It is also important to stress that this standard does not apply when the presenting problem is not an emergency, nor does it apply to referrals from non-paediatricians who should, in the first instance, seek the advice of their local paediatric service.

Standard 9 was arrived at by consensus.

10. All children and young people, children's social care, police and health teams have access to a paediatrician with child protection experience and skills (of at least Level 3 safeguarding competences) available to provide immediate advice and subsequent assessment, if necessary, for children and young people under 18 years of age where there are child protection concerns. The requirement is for advice, clinical assessment and the timely provision of an appropriate medical opinion, supported with a written report.

Standard 10 aims to ensure that any child or young person of 17 years or younger, presenting with child protection concerns, is appropriately assessed at an appropriate time by a competent paediatrician. This service must be available to all units on a 24 / 7 basis. As with all clinical presentations, the timing of the assessment is determined by the presentation and in child protection, the likelihood of finding and collecting forensic evidence.

An initial strategy discussion (with interagency colleagues) must take place in accordance with local safeguarding policies, as soon as practical and usually within two hours. Depending upon the needs of the child or young person (clinical, forensic and safety) the child or young person must be assessed and an opinion provided (which may be provisional depending upon further investigations and discussion) usually within 12 hours of presentation where there are recent injuries. The written medical document should be available within three days.

Specialist paediatric and forensic opinion should be available to all units within four hours for all acute sexual assaults and all unexpected child deaths. Paediatricians should act as the “single point of contact” for children and young people’s social care departments to articulate the concerns of the medical professionals involved with the family. They should attend initial and review conferences whenever there is likely to be a discussion of the interpretation of medical views or findings.

Standard 10 was arrived at by consensus.

3. Current Acute Service Configuration

The next four chapters of this report will present a series of tables showing the current configuration of acute paediatric services, the current numbers of consultants and trainees, and the College's proposals for the reconfiguration of services based on these figures. This chapter addresses the current provision of services. It shows the number of inpatient units and their size based on the 2009 RCPCH census and 2009 acute admission data from Hospital Episode Statistics (HES) and the health statistics departments of Scotland, Wales and Northern Ireland. It also indicates the size of the current paediatric workforce and begins to highlight some of the challenges we face. It is important to recognise that the cut off date for all of the data was 2009. It is, therefore, inevitable that the precise number of inpatient units may have changed slightly since this time, almost certainly in the direction of fewer units.

According to the 2009 data sources, there are 263 paediatric services within the UK comprising general, community and tertiary services. Of these services, 218 have paediatric inpatient beds. We have been able to identify accurate acute admission data for 94% of these and made informed estimates of activities for the other 6% of units (partly based on census returns). In addition to this, there are 13 stand-alone SSPAU's which do not have resident paediatric medical staff.

This report has defined a very small hospital as one that has up to 1,500 emergency paediatric admissions per annum and a small hospital as one which has between 1,501 and 2,500 emergency admissions per annum. Based on these data, there are 30 very small hospitals in the UK, and 75 small hospitals, representing 14% and 34% of the total respectively (Table 1). The definitions used in this report are different from those proposed by the College in 1996.¹⁴ At that time, a small unit was defined as one "with fewer than 1,800 acute paediatric medical referrals per year (including those acute problems referred but not admitted)." This equates roughly to our definition of a very small unit. However, this report has not used that definition as the currently available data for referrals is less accurate than the data that is available for admissions.

Table 1 - Inpatient Paediatric Units in the UK

		Number of hospitals (% of total)
Very Small Hospitals	≤1500 admissions per year	30 (14%)
Small Hospitals	1501-2,500 admissions per year	75 (34%)
Medium Hospitals	2,501-5,000 admissions per year	103 (47%)
Large Hospitals	>5000 admissions per year	10 (5%)
TOTAL		218

Medium hospitals were defined as those that receive between 2,501 and 5,000 emergency paediatric admissions per annum. There are over 100 of these units (Table 1). Large hospitals were defined as those that receive more than 5,000 emergency paediatric admissions per annum. There are ten hospitals in this category. It is important to appreciate that the report does not classify tertiary centres as a separate category. This was largely because our focus in this report is acute general paediatrics. There are currently 45 tertiary centres in the UK, and these are divided between the 'small', 'medium' and 'large' units. Although it might be assumed that all the tertiary centres would be large hospitals, our definition is centred on the number of general acute admissions, not the total number of admissions to hospitals. It is for that reason that some tertiary centres fall within the small and medium categories in our analysis.

The 2009 UK paediatric workforce in WTEs is shown in Table 2. There are 3,264 consultants in the UK (3,084 WTEs). The figure for consultants in Table 2 represents all consultants. For all other grades of staff listed in Table 2, the figures given are for those that participate on acute rotas (general and neonatal), and are broken down to show participation at tier 1 and tier 2 levels. It is important to note that in total there are 1,285 SSASG doctors but only 309 of these participate in on-call rotas, and so this is the figure given in Table 2. Similarly, there are many more nurses working in paediatrics than the 156 indicated in the first column. However, this is the number that participate on general and neonatal rotas.

Table 2: UK paediatric workforce (WTEs on general / neonatal rotas)

	Total number on rotas	Participating on tier 1 rotas	Participating on tier 2 rotas	Participating on consultant rotas (general / neonatal)
Consultants*	3084*	0	104	1880
Trainees (ST1-8)**	2544	1072	1472	0
SSASG	309	0	309	Unknown****
Trust Doctors***	539	232	307	0
GP Trainees	608	608	0	0
FY Doctors	448	448	0	0
Nurses	156	118	38	0
TOTALS		2478	2230	

* This represents the total number of consultants, not just those on general / neonatal rotas.

** This includes LATs, FTSTAs and ACFs.

*** This includes LAS and ST doctors from other specialties e.g. paediatric surgery.

**** The College recognises that some SSASG doctors work on consultant rotas, but we do not at present know how many. Therefore, this is given as unknown.

Table 3 shows the UK workforce requirements for tier 1 and tier 2 general and neonatal rotas based on the 2009 configuration of services.

Table 3: UK trainee paediatric workforce requirements

	Number of rotas	Number required per cell	Junior staff required for rota	Available staff
General tier 1	211	10	2110	
General tier 2	203	10	2030	
Neonates tier 1	86	8	688	
Neonates tier 2	67	8	536	
TOTAL At tier 1			2798	2478
TOTAL At tier 2			2566	2230

Tables 2 and 3 identify two significant concerns about the current UK paediatric workforce. The first of these is that there are inadequate numbers of trainees to staff all rotas in accordance with Standard 8. The second is that there is an unsustainable ratio between the number of trainees and the number of consultants.

Service Standard 8 specifies that there should be ten WTEs per rota for general paediatric rotas and the British Association of Perinatal Medicine (BAPM) have recommended at least eight per cell for neonatal rotas. If these standards were to be met in all our hospitals where there are general and neonatal rotas, there would be a requirement for 2,798 staff at tier 1 and 2,566 staff at tier 2 (Table 3). As can be seen, there are significantly fewer doctors than this participating on these rotas, and even when Trust doctors, GP trainees, FY doctors, nurses and SSASGs are included (Tables 2 and 3), there is a shortage of approximately 300 staff at both tier 1 and tier 2. Table 3 only includes the requirements for general and neonatal rotas and the shortfall is, therefore, even greater as we also require staff for specialist (non-neonatal) rotas.¹⁵

The other problem identified by Table 2 is the ratio between paediatric trainees and consultants which currently stands at 1 to 1.21. A sustainable ratio of trainee numbers to consultants to ensure a “steady state” consultant workforce is approximately 1 to 4. Recognising the impact of a high feminisation rate in paediatrics which results in a lower participation rate and prolonged training the College would argue that the figure should be 1 to 3. In the last three years the number of trainees who have obtained a CCT has been 195, 248 and 280 respectively. On average, however, less than 100 consultants leave the service each year. *Modelling the Future II* concluded “the College is therefore faced with a dual workforce dilemma - both too few trainees to cover middle grade rotas and yet more trainees than necessary to cover consultant requirements”.¹⁶ The 2009 RCPCH Workforce Census has shown a 5.5% expansion in consultant workforce numbers per annum between 2007 and 2009. If this rate of expansion continues then at the current

rate of CCT production, there should be sufficient consultant vacancies for all of the new CCT holders. However, if the current rate of consultant expansion were to fall, there would be more trainees completing training than vacancies arising.

In summary, this chapter has shown that while there is a current requirement for approximately 2,800 staff at tier 1, and 2,600 staff at tier 2, our current complement of tier 1 and tier 2 staff is significantly short of this. It has also shown that our current ratio of trainees to consultants is inappropriate, at least if the intention is to have a sustainable workforce solution.

4. Potential Acute Service Configurations

This report has already made clear that our overall goal is to see high quality paediatric healthcare delivered for all of the UK childhood population. In pursuit of that vision the College has set out ten service standards that will improve the quality of care that is provided. In order to implement those standards, and therefore ensure high quality care, we need to have the right number of staff, trained to an appropriate level, delivering care in an appropriate number of units. Although it may appear desirable for every hospital to have an inpatient paediatric unit, given the finite number of trained paediatric doctors and nurses there is a limit to how many units can be staffed safely.

Reconfiguring acute services represents part of the solution. These proposals are made to ensure that our service standards are met and high quality care is delivered for all our children and young people. The report examines the possibility of no change as well as what is termed moderate and maximum reconfigurations.

Very small hospitals are defined as those having up to 1,500 acute admissions per annum. If we define 'proximal' as those units within 30 minutes normal (non rush hour) drive time of another unit, and 'distal' as more than 30 minutes normal drive time, there are ten sites both proximal and very small, and 20 sites distal and very small (Table 4). The precise service redesigns that might take place at these sites are unpredictable as they depend on factors not simply related to the size of the unit and distance from other units, but also local politics, history and public opinion. Service standard 8 stipulates that all general acute rotas should be comprised of 10 WTEs. As indicated earlier, there are currently not enough tier 1 and tier 2 staff to deliver this in all of the existing units across the country. It is therefore likely that in order to ensure that service standard 8 is met that Deaneries will choose to concentrate their tier 1 and tier 2 doctors in those units that see the most patients in order to maximise the training opportunities for their doctors. How this will work in practice will depend on each individual area, but we would anticipate that Deaneries might choose, for instance, to remove trainees from those units which are small or very small (less than 2,500 admissions per annum). If this occurs, we would anticipate that at least a proportion of these units will reconfigure in the coming years. It is the College's view that the necessity to remove trainees from units will only apply to tier 2 doctors and not to tier 1. This is because it is easier to supplement tier 1 doctors with GP trainees and advanced children's and neonatal nurse practitioners than it is to supplement tier 2 doctors (see our detailed workforce modelling in chapter 6).

The College recognises that when an inpatient unit closes a variety of options are possible. Firstly, the unit may simply close with no specific alternative provision made. This assumes that all the children and young people who would have attended that unit will now attend the nearest alternative unit. Secondly, the unit could close and the local community children's nursing team (assuming there is one) might be strengthened, potentially enabling a larger proportion of children to avoid admission through earlier

intervention. The third option would involve alternative provision made at a local GP practice or health centre where advanced children's nurse practitioners could staff some observation beds, perhaps up to four hours for any individual child. The fourth and last option would be replacement of the unit by a new stand alone SSPAU. This could be staffed by a combination of ST1-3 trainees, foundation year doctors, GP trainees and advanced children's nurse practitioners, all of whom would be supported by a consultant, available for advice and review as necessary. It is the College's view that the last of these options would be the most appropriate for approximately two thirds of the units that will close especially for those units that are either geographically more isolated or that are larger. The College anticipates that the remaining one third of units that will close will adopt one of the other options.

Table 4 shows such potential reconfigurations of very small units. This report models for both moderate changes and maximal changes. The moderate position is one where all of the proximal, very small units close without conversion to SSPAUs, and none of the distal, very small units do. The report also assesses the implications of all of the very small proximal units closing without becoming SSPAUs and half of the very small distal units closing but becoming SSPAUs. This last option is described as maximal because although it might be thought that all very small units could convert to SSPAUs, the reality is that some very small units are geographically isolated, and irrespective of their size would need to maintain some form of inpatient provision.

Table 4: Possible Configurations of Very Small Hospitals

	Current Number	Proposed number of units			
			No change	Moderate reconfiguration	Maximum reconfiguration
Proximal	10	Closure without conversion to SSPAU	0	10	10
		Continued inpatients	10	0	0
Distal	20	Closure with conversion to SSPAU	0	0	10
		Continued inpatients	20	20	10

Table 5 shows a similar analysis for small hospitals. There are 75 small hospitals, of which 38 are within 30 minutes drive time of other hospitals, and 37 are distal. The implementation of service standard 8 (all rotas having ten WTEs) will require a concentration of tier 2 trainee doctors in the larger units, and therefore some of these smaller units are likely to lose their tier 2 trainees in precisely the same way that the very small units will. If

this happens then those units that remain open will either become two tier services or convert to an SSPAU, or simply close. There are some small units that have tertiary services, and in such cases it may be appropriate that they maintain three tiers in their general paediatric unit, even though they receive relatively few patients. Overall, given the larger size of these units compared to those that are very small, it is less likely that the maximum reconfiguration would take place.

Table 5: Possible Configurations of Small Hospitals

	Current Number	Proposed number of units			
			No change	Moderate reconfiguration	Maximum reconfiguration
Proximal	38	Closure without conversion to SSPAU	0	6	16
		Closure with conversion to SSPAU	0	32	22
		Continued inpatients	38	0	0
Distal	37	Closure with conversion to SSPAU	0	0	18
		Continued inpatients	37	37	19

For those small or very small distal units that do retain inpatient services, it is likely that there will be just two tiers of staff. Activity levels would not usually justify a third tier. The junior resident tier could consist of foundation trainees, a limited number of paediatric ST1-3 trainees, GP trainees and advanced children's nurse practitioners. The senior tier will be consultant paediatricians or SSASG doctors (assessed as competent to undertake this duty). In these services, our standards would ensure that all children and young people would be seen by a consultant within 4-12 hours of admission. Consultants may need to be resident at times depending on their assessment of the junior tier competencies. In respect of medium and large units, the College does not anticipate significant change. These units are likely to continue to receive middle grade trainees due to their size. Hence, the College would expect the current number of 103 medium units, and ten large units to remain the same.

Table 6 combines all of these proposals to provide overall figures for no change, moderate and maximum reconfigurations. If nothing changes, there will continue to be 218 inpatient units with all of the attendant problems of insufficient staffing outlined earlier. If the moderate reconfiguration scenario occurs then approximately 48 units will close, with

32 of them reconfiguring to become SSPAUs, all of them within 30 minutes drive time of another unit. If the maximum scenario occurs then 76 units will close with 50 of them converting to become SSPAUs.

Table 6: Possible Hospital Reconfigurations

Size of Unit	Current Number	Proposed number of units			
			No change	Moderate reconfiguration	Maximum reconfiguration
Very Small	30	Closure without conversion to SSPAU	0	10	10
		Closure with conversion to SSPAU	0	0	10
		Continued inpatients	30	20	10
Small	75	Closure without conversion to SSPAU	0	6	16
		Closure with conversion to SSPAU	0	32	40
		Continued inpatients	75	37	19
Medium	103	Closure	0	0	0
		Continued inpatients	103	103	103
Large	10	Closure	0	0	0
		Continued inpatients	10	10	10
TOTALS			No change	Moderate reconfiguration	Maximum reconfiguration
Closure without conversion to SSPAU			0	16	26
Closure with conversion to SSPAUs			0	32	50
Inpatient hospitals			218	170	142

It is envisaged that these SSPAUs will be open for approximately 14 hours each day and will be staffed by a single tier of ST1-3 trainees, GP trainees, Foundation Year Doctors and advanced children's nurse practitioners. There will be medical consultant advice (and review as necessary) available during all the hours they are open. The degree of consultant presence will inevitably vary according to the competencies of the staff that are available. We anticipate, for instance, that for the more experienced ST3 trainees and advanced children's nurse practitioners (ACNPs), the consultant would only be present when called upon. In contrast, we would anticipate a much greater degree of consultant presence for GP trainees, Foundation Year Doctors and less experienced ACNPs. This greater consultant presence would not only ensure that the children receive high quality care, but also provide opportunities for training of the less experienced staff.

This proposal - to increase the number of SSPAUs - is in line with recent comments from the Royal College of Nursing who have anticipated these changes. In their 'Submission to the Prime Minister's Commission on Nursing and Midwifery', they wrote, "There will be a significant decrease in the number of children and young people's inpatient units (possibly a reduction by as much as 50% over the next ten years), with a substantial increase in the availability of community children's nurses and the number of children and young people's assessment and short stay/observation beds, which will be led and staffed by advanced children's nurse practitioners."¹⁷

In outlining these possibilities, the College recognises that the closure of some units will have an impact on maternity care, particularly the availability of trained medical staff to attend the delivery suite. This report has not modelled the implications of this but recognises that given the existence of 'stand-alone' midwifery units it may be appropriate for some maternity units to adopt this model of staffing. The report also recognises that these changes may have similar implications for other specialties e.g. paediatric surgery. In the next two sections of this report, there is an analysis of the workforce implications for each of these possible reconfigurations.

5. Workforce: Consultants

In the following three chapters, the report looks at the workforce implications of the service reconfiguration proposals outlined above. In this chapter, the report addresses the impact on medical consultant numbers, and in the next chapter the report undertakes the same exercise for trainee numbers before Chapter 7 where we explore medical consultant career pathways.

There are currently 3,264 consultant paediatricians in the UK (3,084 WTEs). This number comprises three groups: General Paediatricians (with or without a special interest), sub-specialty paediatricians (Community Paediatricians, Neonatal Paediatricians and the other 18 recognised sub-specialties) and academic paediatricians. General Paediatricians are the largest group with Community Paediatricians and Neonatal Paediatricians forming the largest components of the sub-specialty workforce (see Table 9). The number of academic consultants is relatively small.

It is important to note that in some areas, Staff, Speciality and Associate Specialist Grade (SSASG) doctors are providing consultant equivalent levels of Acute Paediatric service. There is currently an absence of hard data to quantify this activity but estimates of 18.5% (average) and up to 40% in areas such as adoption and fostering have been proposed. This is likely to continue to be the case for some time in the future and a separate piece of work is proposed to identify these roles and develop a recognised career path for those within them.

General Paediatrics

Table 7 identifies the number of consultant Programmed Activities (PA) per week required for each type of unit. These figures are based on outpatient and inpatient activity from the Greater Manchester Children, Young People's and Families NHS Network data 2009. They were used to determine the activity at SSPAUs, small, medium and large hospitals according to the definitions outlined earlier. In respect of outpatients, the report has assumed 30 minutes for a new patient appointment and 15 minutes for a follow up appointment, four new patients and eight follow up per clinic.

In Table 7, SSPAUs are divided into those SSPAUs with medical consultant cover, and 24/7 consultant led SSPAUs. This distinction reflects the reality of current practice. There are some SSPAUs which only receive consultant advice when required with no automatic consultant input through regular ward rounds. These SSPAUs are usually not open 24 hours per day. There are also consultant led SSPAUs, which may be open 24 / 7 and operate as a two tier, consultant led service. In effect, such units are more like small inpatient wards except for the fact that they do not keep any individual child or young person for more than 24 hours, and therefore do not care for the most unwell children and young people. These different types of SSPAUs have different consultant requirements. In our subsequent modelling, this report assumes that those units that convert to SSPAUs will convert to those that are open 14

hours each day, seven days a week. Medical consultants will provide advice and support for these units but not necessarily a regular presence. In some situations it may be appropriate for paediatric outpatient sessions to continue and in these circumstances there will be a consultant paediatrician available.

Ten PA job plans were assumed for each consultant. This includes 7.5 PAs for Direct Clinical Care and 2.5 PA of Supporting Professional Activities. In the 7.5 direct clinical care PAs, one is allocated for patient administration and 1 or 2 for on-call which leaves 4.5 or 5.5 remaining PAs available for direct clinical care. Consultant of the week (COTW) PAs and ward round PAs were included as appropriate and WTE consultant numbers then calculated.

Table 7: WTE consultants required for different types of unit

Activity	Unit Size					
	8 till late SSPAU with cons cover**	24 / 7 Cons led SSPAU	Small / v.small**	Small / v.small with 24/7 cons	Medium	Large
Admin / SPAs per Consultant	3.5	3.5	3.5	3.5	3.5	3.5
Sub-total 1	3.5	3.5	3.5	3.5	3.5	3.5
On-Call PAs per week	9.0	9.0	6.75	0.0	9.0	9.0
Out-Patient PAs per week	9.6	9.6	9.6	9.6	19.0	22.3
Ward Round PAs per week	0.0	0.0	5.0	0.0	5.0	10.0
Community Education PAs per week***	5.0	5.0	0.0	0.0	0.0	0.0
COTW PAs per week	0.0	10.0	10.0	10.0	17.5	17.5
On-site on-call (out-of-hours)	0.0	0.0	10.25	41.0	0.0	0.0
Sub-total 2	23.6	33.6	41.6	60.6	50.5	58.8
PAs for prospective cover @20%	4.7	6.7	8.3	12.1	10.1	11.8
WTE Consultants required*	4.4	6.2	7.7	11.2	9.3	10.9

* WTE consultants required = (Sub-total 2 + prosp cover)/(ten-sub-total1)

** These two columns represent extrapolations from the data supplied by the Manchester Children and Young Persons Network

*** Community education represents the activity of consultants in educating local clinicians, particularly in regard to appropriate use of the SSPAU.

In the third column of Table 7, “small / v.small”, there is an assumption that consultants will be required to be resident on average for 25% of their on-call duties as there will be a need for consultants in these units to be resident when tier 1 staff have inadequate competencies or children and young people with high dependencies are admitted. The next column, “Small / v.small with 24/7 cons”, indicates what the required number of consultants would be if resident consultants were needed 100% of the time. The report includes this column for information, but does not use it in subsequent calculations as the College does not believe that any of these small / v.small units will require 24/7 consultant presence, especially when that would require a staff complement of 11.2 consultants.

Table 8 uses the calculations of general paediatric consultant requirements from Table 7 and combines it with modelling from Table 6 to demonstrate the number of general paediatricians required in the UK. The Table also shows the current number of general paediatricians.

Table 8: General Consultant Paediatrician Requirements in WTEs

Type of unit	No change	Moderate reconfiguration	Maximum reconfiguration	Current number of general consultant paediatricians WTEs / persons
SSPAU	0	141	220	
Small / v.small	808	439	223	
Medium	958	958	958	
Large	109	109	109	
TOTALS	1875	1647	1510	1331 / 1395

This table shows that there is currently a significant shortfall in the number of general paediatricians. Even if the maximum reconfiguration were to take place, there would still be a shortfall of over 200 consultants. This shortfall could be even greater as we have modelled assuming that all SSPAUs will not be consultant led. If they were, then the total numbers of required consultants would increase by 58 and 90 for the moderate and maximum reconfigurations respectively.

In small and very small units, resident consultants would be required a quarter of the time. It may be the case that resident consultants would be needed more than this, and if consultants were required to be resident 24/7 then the required number of consultants for these units increases from 7.7 WTE to 11.2 WTE, an extra 101-367 consultants, depending on the configuration.

Academic Paediatrics

As repeated reports and surveys from the Medical Schools Council have shown, there are significant concerns about the level of academic staffing in paediatrics and child health. Currently, there are approximately 200 academic paediatricians in the UK, which

represents 6% of the total consultant workforce. In contrast, in general medicine 12% of consultants are in academic posts. Since 2000, the paediatric consultant workforce has increased by over 50%, but the paediatric academic consultant workforce has actually decreased by 16%. The equivalent figures for general medicine and general practice are increases of 26% and 32% respectively.¹⁸ In addition, the academic workforce is disproportionately skewed both to men and to the older age group. As these individuals retire they are not being replaced by younger academics. It is imperative that as we continue to see an expansion in the consultant paediatric workforce, a significant part of this expansion takes place in academic paediatrics.

Community Paediatrics

In addition to the calculation of consultant numbers for general acute paediatrics, this report considers the requirements for Community Child Health. In 1999, the British Association of Community Child Health (BACCH) undertook detailed workforce modelling for community paediatrics. At the time, they recommended that the number of consultant community paediatricians required to deliver a 'good enough' level of care was 4.5 WTE per 300,000 population.¹⁹ This would equate to a little over 900 consultant community paediatricians in the UK. Since then, there has been a significant expansion in the range of statutory duties that fall to community paediatricians, particularly in the area of child protection. At the same time traditional hospital-based care has, albeit slowly, moved increasingly into the community. Despite this, the number of consultants working primarily in the community remains at 591 WTEs (662 persons), significantly below the required number. If service standard 10 is to be implemented then a significant expansion in the consultant community workforce would be required.

Sub-specialty Paediatrics

As part of this project, the College contacted leads from the 19 paediatric subspecialty groups to predict the requirement for consultants in their specialty. They indicated that across a range of subspecialties there exists a significant shortfall in the number of consultants. To give just two examples: the recently completed standards for paediatric endocrinology state that there should be one endocrinologist per ½ million total population. Therefore for a population of 62 million, there should be 124 consultants in paediatric endocrinology.²⁰ This represents more than a doubling of current figures. Similarly, in 2002, the British Renal Society indicated that there should be at least 72 paediatric nephrologists in the UK.²¹ The current figure is around 55.

To achieve standards across all specialty groups, there would have to be an increase in the number of sub-specialty consultants (excluding neonatology) by approximately 30%. This would mean an increase of 362 consultants to a total of 1,200 consultants.

For neonatology, using the same methodology as earlier, the College has calculated the number of PAs required for the 68 Level 3 neonatal units in medium and large hospitals. Using this approach, there is a requirement for 6.3 WTEs in Level 3 units in medium

hospitals, and 11.0 WTEs in Level 3 units in large hospitals.²² We have assumed that the former figure applies to the 32 Level 3 units in DGHs, and the latter applies to the 36 Level 3 units in tertiary centres. This gives a combined requirement of 598 consultants.

There are currently 357 WTE (369 persons) neonatologists in the UK, significantly short of the 598 required. However, if neonatal consultants are required to become resident to support tier 2 rotas (see Table 15 and discussion in chapter 6), greater numbers would be needed (265 WTE), bringing the total requirement to 863 WTE neonatologists.

These discussions assume that the configuration of tertiary neonatal units remains unchanged and, perhaps, can be used as an argument to review the configuration of neonatal services to develop a model with a more achievable and sustainable consultant workforce. We have included this figure for neonatal consultants (598) in our final modelling assumptions as it would be appropriate to have larger numbers of tertiary neonatal specialists if there were to be a reduction in neonatal Level 3 services in district hospitals.

Table 9 summarises the changes required in consultant numbers.

Table 9 - Total Consultant Workforce Requirements in WTEs

	Current consultant WTEs (persons)	Required consultant WTEs		
		No change	Moderate reconfiguration	Maximum reconfiguration
General	1331 (1395)	1875	1647	1510
Neonatology	357 (369)	863	863	863
Community	591 (662)	915	915	915
Other specialist	804 (838)	1200	1200	1200
TOTALS	3084 (3264)	4853	4625	4488

If there is to be a consultant-delivered, high quality and safe standard of care then a significant expansion in consultant numbers is needed, somewhere between 50% and 60%. This indicates that reconfiguration alone only has a minor impact on the identified consultant gap.

6. Workforce: Trainees

The previous chapter demonstrated that there is a need for at least a 50% increase in the number of consultant paediatricians to provide a high quality, consultant-delivered model of care and if the service standards are to be met. This chapter explores the implications of the potential service configurations on trainee numbers. It does this against a background of the dual problem highlighted earlier: too few trainees to staff rotas, and too many trainees for the current consultant establishment. The proposals contained in this chapter seek to address both of those problems.

The most recent figures from the RCPCH training department indicate that there are 3,461 registered trainees (including LATs, FTSTAs and ACFs). This is significantly higher than the 2,544 WTE trainees who participate on acute general and neonatal rotas. There are three different groups of doctors who account for this difference of just under 1,000. The first group is those who are currently Out Of Programme (OOP) whether due to maternity leave, research, long term sick leave or working overseas. Such doctors appear in the register collected by the training department, but are not available to participate in acute general / neonatal rotas. The second group is the significant number of trainee doctors who work part time. They will appear as whole persons in our register of trainees, but because they do not work full time will reduce the number of WTEs working on the general / neonatal rotas. The final group of doctors who account for this difference comprises those doctors who work on specialist rotas (excluding neonates). Like the OOP doctors, they will appear on our register of trainees, but will not appear in the numbers of WTEs that work on general / neonatal rotas. Unfortunately, the College do not know precisely how many doctors are in each of these categories. However, if we assume that half of our non-neonatal 'grid' trainees work on general rotas and that a further 250 (non-grid) doctors work on specialist rotas, whether at tier 1 or tier 2 level, then the effective participation rate (i.e. those actually available for work on general / neonatal rotas) for paediatric trainees is 85%.²³ If in fact a higher number than this work exclusively on specialist rotas (whether as 'grid' trainees or not), then the participation rate will be higher than 85%. If the number of trainees on specialist rotas is lower, then the participation rate will be lower than 85%.

There are two methods for calculating trainee requirements. The first is to consider how many are necessary to maintain a steady state for the number of consultants required, and so produce just the right number of CCTs to balance the number of consultant vacancies that will arise. As previously discussed, the overall ratio of trainees to consultants should be 1:3. Hence, if the consultant workforce was expanded in line with our proposals the College would require a little over 1500 WTE trainees (2,350 for a 1:2 ratio, and 1,175 for a 1:4 ratio). There are currently approximately 3,000 WTE trainees (3,461 persons) and even with an expanded consultant workforce, there are too many trainees for the predicted number of consultant vacancies.

The alternative approach is to consider the number of rotas and to calculate our trainee requirement based on that service need. Even if the College assumes the maximum reconfiguration then there would be 142 tier 1 and 113 tier 2 general inpatient rotas (Table 6). If we combine this with the tier 1 and tier 2 workforce required for neonates, then we get a combined requirement of 3,774 trainees ($1420+1130+8*(67+86)$). This figure is significantly more than our current trainee workforce and also assumes that all new SSPAUs would be staffed entirely by nurses. It also ignores the number of doctors required for specialist rotas.

Currently junior rotas in paediatrics are not solely comprised of paediatric trainees. It is feasible that through a combination of advanced children's and neonatal nurse practitioners, Trust doctors, SSASGs, GP trainees (in tier 1) and resident consultants (in tier 2), there could be a reduced requirement of paediatric trainees to 1720 WTEs, while still providing sufficient staff for our rotas. Even at this figure the number of CCTs awarded each year would be approximately 175. This is higher than the number of consultant vacancies. Nevertheless, our view is that this number would recognise the reduced participation rate for paediatric consultants reflecting the high feminisation of the paediatric workforce. If there is an expansion in the consultant workforce from 3,084 to 4,625 WTEs (Table 9), the number of retirements annually will be approximately 150 (rather than the just under 100 at present) in steady state.

In order to improve the consultant-to-trainee ratio as previously indicated and on the basis of the participation rate indicated above, the College proposes (though only after consultant numbers are expanded adequately - see the timeline below) that the current number of trainees is reduced from 3461 to just 2020, which given a participation rate of 85% means an effective workforce of 1,720 WTE trainees. An example of how those 1,720 WTEs could be used is shown in Table 10. It assumes that the number of trainee grade doctors on specialist rotas remains the same as is currently the case.

Table 10: Trainee numbers in WTEs

	Current number of trainees	Proposed number of trainees
Grid Trainees (exc neonates)	270	270
General Trainees on specialist rotas	250*	250*
Grid Trainees (neonates)	70	70
General Trainees available for tier 1 general / neonatal rotas	1072	500
General Trainees available for tier 2 general / neonatal rotas	1267**	630
Total	2929	1720

* This figure is an informed estimate

** This figure represents the number of tier 2 trainees on general / neonatal rotas minus the neonatal grid trainees and minus half the number of other grid trainees, assuming that only half are supernumerary ($1472-70-135=1267$)

Table 11 uses the figures from Table 10 to show how those 1720 trainees might be allocated across each of the eight years of training, taking into account a four per cent per year attrition rate. It also demonstrates how approximately 175 paediatricians will complete training each year.

Table 11: Trainee allocation with 4% attrition rate per annum (WTEs)

	tier 1 trainees on gen / neonatal rotas	tier 2 trainees on gen / neonatal rotas	Grid trainees	General trainees on specialist rotas	Total per year showing 4% attrition per annum
ST1	176			71	247
ST2	166			71	237
ST3	158			70	228
ST4		199		20	219
ST5		191		18	209
ST6		87	114		201
ST7		80	113		193
ST8		73	113		186*
TOTALS	500	630	340	250	1720

* This figure would generate just over 175 CCT holders each year

General Paediatrics

Table 12 shows details of the tier 1 requirement for general paediatrics. In this Table, it is assumed that the number of foundation year doctors and Trust doctors remains the same as is currently the case. It also assumes that the newly created SSPAUs will require on average 7.5 WTEs (5.5 of whom will be ACNPs) to staff them 14 hours a day seven days a week.²⁴ The number of ST trainees represents 60% of those tier 1 trainees available for general and neonatal rotas (Table 10); this proportion is used as currently 60% of tier 1 trainees work in general paediatrics, the other 40% in neonates (excluding those who work on specialist rotas). Whatever shortfall remains has been made up by GP trainees.

The 'current numbers' column shows the current provision of different types of staff. The 'no change' column represents the situation where there is no change to the configuration of services. However, there would be a change in the way the units are staffed as trainee numbers fall and this explains why the figures in this column are different from those in the 'current numbers' column. This difference is to accommodate the reduction in trainee numbers.

Table 12: General Paediatrics tier 1 Requirements for various reconfiguration models in WTEs

		Current numbers	No change in service	Moderate reconfiguration	Maximum reconfiguration
tier 1	GP Trainees	568	1303	914	670
	FY doctors	396	396	396	396
	Nurses	27	27	176	275
	Trust doctors*	154	154	154	154
	ST Trainees**	640	300	300	300
	Totals	1785	2180	1940	1795

* For Tables 12-15, Trust doctors includes LAS, and ST doctors from other specialties

** For Tables 12-15, ST trainees include LATs, FTSTAs and ACFs.

The main point to notice from Table 12 is that the reduction in paediatric trainee numbers is only manageable through a significant expansion in GP trainees contributing to paediatric rotas and through a moderate increase in children's nurses in order to staff the newly created SSPAUs. There are currently 10,000 GP trainees, and approximately 40% of these will undertake any paediatric placement. There is then significant scope to expand the number of GP trainees in tier 1 paediatric posts. This change would benefit children and young people irrespective of any reconfigurations that take place and be consistent with the RCGP's stated wish to increase the number GPs who undertake paediatric training²⁵ as well as be in line with the recent recommendations in Professor Sir Ian Kennedy's report into the state of healthcare for children.²⁶ It would, of course, be important that such trainees receive adequate supervision and support, and are given access to those placements that are most likely to benefit their clinical practice in the long run. It would probably be most appropriate, for instance, that such GP trainees spend their initial time in a general inpatient setting where a high degree of supervision is available before moving out to spend some time in an SSPAU.

In respect of the expansion in the number of advanced children's nurse practitioners it must be remembered that this is against a backdrop of a significant shortfall in the national number of children's nurses although at least a proportion of these nurses would become available due to the reconfiguration of inpatient paediatric units. It is also important to note that we have merely modelled for the number of ACNPs that would be required to staff the inpatient units and the SSPAUs. In addition to this, there would obviously be a need for many more children's nurses and other staff to run these units.

Table 13, shows a similar analysis for tier 2 general paediatric rotas. It is likely that only medium and large hospitals would have tier 2 rotas, and given the fact that our various configuration models all have precisely the same number of medium and large hospitals, the tier 2 requirement and distribution does not change across the various models. In this Table we have assumed there will be no change in the number of nurses, Trust doctors and

SSASGs doctors contributing to these rotas. The number of ST trainees in the Table uses the proposed number from Table 10 (630) minus the number that would be on neonatal rotas assuming that every trainee does one neonatal placement between ST4 and ST5 of 6 months (630-63=567). It also assumes that all grid trainees are supernumerary.

Table 13: General Paediatrics tier 2 Requirements for the various reconfiguration models in WTEs

		Current numbers	No change	Moderate reconfiguration	Maximum reconfiguration
tier 2	Nurses	21	21	21	21
	Trust doctors	220	220	220	220
	SSASG	273	273	273	273
	ST Trainees	1093	567	567	567
	Consultants	86	49	49	49
	Totals	1693	1130	1130	1130

The most significant finding from Table 13 is that it is possible to manage the reduction in trainee numbers, including a reduction in the number of consultants required to work as resident on the tier 2 rotas by removing tier 2 trainees from the acute rotas in small and very small hospitals.

Neonatology

Tables 14 and 15 show workforce numbers for neonatology. There are currently 86 tier 1 rotas and 67 tier 2 neonatal rotas. In accordance with the recent BAPM standards, the staffing requirements below are based on eight WTEs per cell model.²⁷ The number of tier 1 ST trainees represents 40% of those tier 1 trainees available for general and neonatal rotas as this reflects the current proportion of tier 1 trainees that work in neonates (excluding those who work on specialist rotas). The recent BAPM standards have indicated that although GP trainees and foundation year doctors may be appropriate at a tier 1 in Level 2 neonatal units they would not be appropriate at tier 1 in Level 3 units.²⁸ Currently there are 92 GP and Foundation Year doctor posts on tier 1 rotas, but in line with the BAPM standards the College has modelled this workforce removing GP trainees and Foundation Year doctors. The BAPM standards also indicate that it is entirely appropriate for Advanced or Enhanced Neonatal Nurse Practitioners to work at this level.²⁹ The modelling indicates that there would have to be a significant expansion in the number of nurses who work in this way. It is important to recognise that the College is not merely proposing that nurses substitute for gaps in rotas. Instead, the College's view is that a career pathway that has proved successful and attractive for some nurses should be provided for many more with clear options for career progression provided as part of it.³⁰

Table 14: Neonatology tier 1 Requirements in WTEs

		Current numbers	Proposed staffing structure
tier 1	GP Trainees	40	0
	FY doctors	52	0
	ANNPs / ENNPs	91	410
	Trust doctors	78	78
	ST Trainees	432	200
	Totals	693	688

Table 15 shows the equivalent figures for tier 2 neonatal rotas. The number of nurses, Trust doctors and SSASG doctors has not been changed from those that currently work on tier 2 rotas. The number of ST trainees represents those that are grid neonatology trainees and the number of general tier 2 trainees who would be undertaking their neonatology placement (70 grid + 63 general tier 2 trainees). This is currently six months between ST4 and ST5.

Table 15: Neonatology tier 2 Requirements in WTEs

		Current numbers	Proposed staffing structure
tier 2	ANNPs	17	17
	Trust doctors	87	87
	SSASG	36	36
	ST Trainees	379	133
	Consultants	18	263
	Totals	537	536

There are 17 advanced neonatal nurse practitioners taking part in tier 2 rotas at present and the College would anticipate that this number would at least continue at this level and possibly increase. There are 87 Trust doctors and 36 SSASG doctors who take part in tier 2 rotas. In the long term it is difficult to predict whether the SSASG grades will contribute more significantly to tier 2 rotas but we recognise the increasing difficulty in appointing Trust doctors to these posts. If the number of paediatric specialty trainees available on tier 2 rotas is reduced as we would predict from 379 to 133 there would need to be a significant increase in the number of consultant neonatologists taking part in resident rotas to maintain the current configuration of Level 3 services and achieve the BAPM standards of Neonatal Intensive Care Units (NICUs) being covered by dedicated, resident tier 2 rotas. The number of consultants would have to be increased further if Trust doctors on tier 2 rotas are replaced as well.

Sub-specialty trainees (excluding neonatology)

Throughout the analysis the College has assumed that the total number of grid trainees would not change from the current number of 340 (70 of these are neonatal grid trainees). There is an assumption that grid trainees will not take a full part in the general acute tier 2 on-call rota. The Temple report recognised that these on-call duties can detract from the grid trainee’s specialty training as a relatively high proportion of the hours that they work are out of hours therefore reducing the experience that the trainee has to their chosen specialty during normal working hours when training opportunities are most appropriate. The College recognises that maintaining the current number of grid trainees (excluding neonatology where the numbers may be appropriate) will produce sufficient numbers of specialist CCT holders for ongoing consultant expansion. However, if there was a reduction in the current consultant expansion in the future then the number of grid trainees would have to be reduced. There will need to be further work undertaken with the individual sub-specialties to determine the number of grid trainees required to maintain a steady state.

Possible Timeline

It is important to appreciate that all of the changes described in this document represent a situation some five to ten years ahead when a steady state has been reached in which there is a sufficient number of staff of adequate competency for all units, and when the number of trainees is appropriate for the number of consultant posts that will arise. There are a number of ways to achieve this transition. One possible scenario, which assumes that the moderate reconfiguration option occurs, is illustrated in the following three figures.

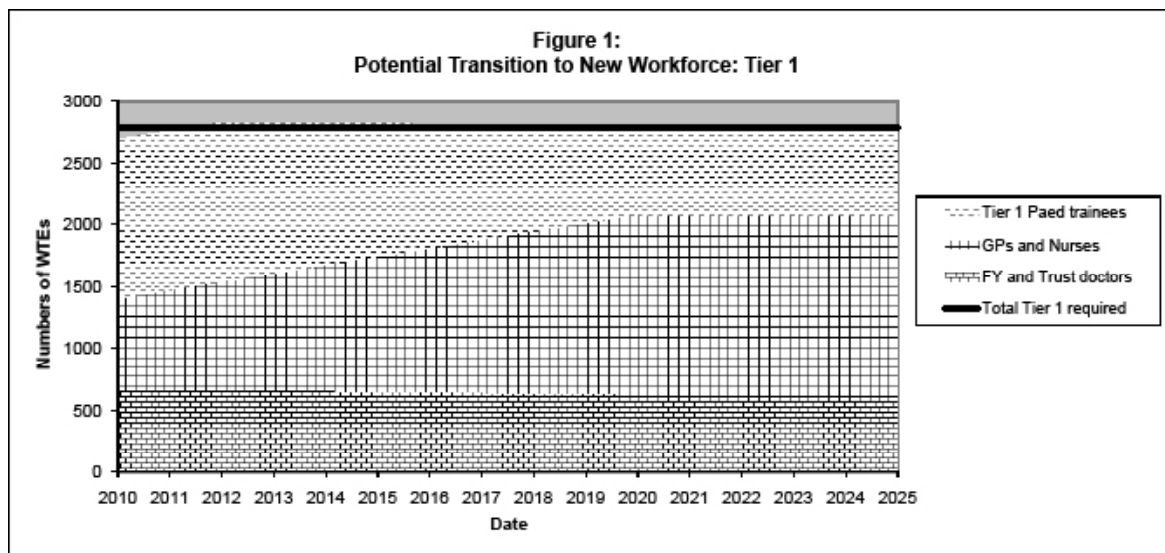


Figure 1 shows how the transition in tier 1 staff might take place over the next 15 years. It is designed so that we reach a steady state after ten years. The top solid line represents the total requirement of tier 1 staff. The bottom area represents the total number of foundation year doctors and trust doctors and shows a very slight decline over the ten years as foundation year doctors are removed from neonatal rotas. The middle area represents GP

trainees and advanced children's and neonatal nurses and shows a significant expansion in their numbers, and the top area represents paediatric trainees. It is important to note that the timeline has been designed so that the reduction in paediatric trainees only commences after two to three years in order to ensure adequate numbers on current rotas. If there is a reduction in tier 1 trainees immediately, and prior to any expansion in GP and nurse numbers, then the existing shortfall of tier 1 staff would deteriorate. Overall, the figure shows that the gap between provided and required staff is closed within just a few years. Immediately, this is facilitated by an expansion in the number of GP trainees on paediatric placements, and after two to three years by an increased number of nurses having been trained to an advanced level.

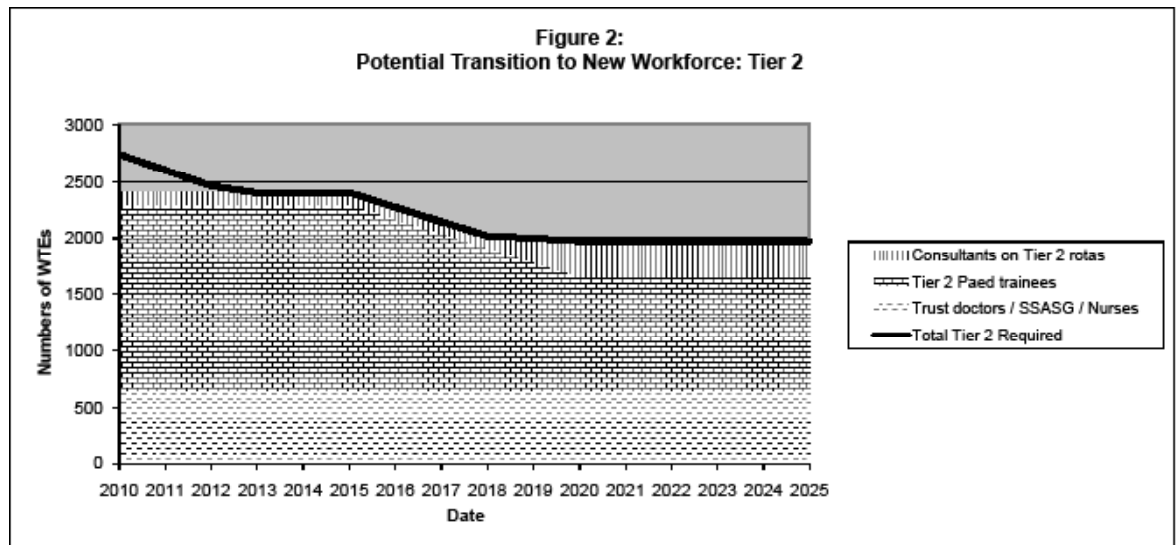
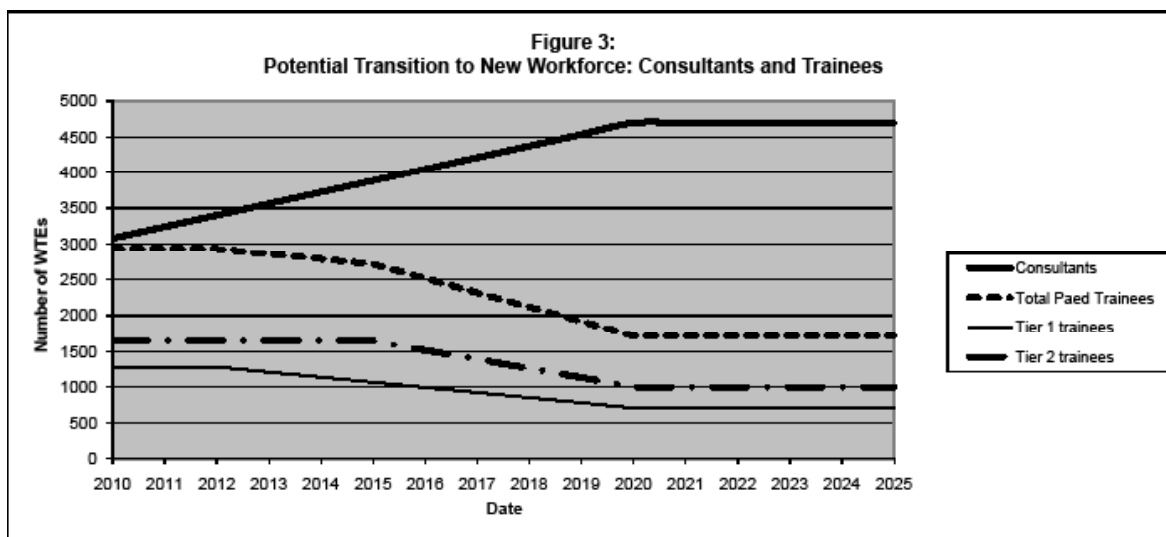


Figure 2 illustrates a similar analysis for tier 2 staff. The top solid line represents the total requirement of tier 2 staff. The precise shape of this line is crucially affected by how rapidly tier 2 trainees are removed from small and very small hospitals. The figure illustrates that we can expect that the total requirement for tier 2 staff will be met after two or three years as the smaller hospitals lose their middle grade rota. The figure also shows that the total provision of tier 2 staff remains essentially the same for the first five years before decreasing to reach a steady state at ten years. The reason that this reduction takes place some years after the reduction in tier 1 trainees (see figure 1) is that initially any reduction in paediatric trainees will only affect ST1s. It will take at least three years before any reduction in tier 1 is apparent on tier 2 rotas (see figure 3). The figure also shows that after eight years the number of consultants working on tier 2 rotas begins to expand to compensate for the ongoing loss of tier 2 trainees.



The final figure 3 summarises some of the data from figures 1 and 2 to illustrate the overall change in consultant numbers and paediatric trainee numbers. What it demonstrates is firstly, that the expansion in consultant numbers must begin before there is any reduction in trainee numbers. Although some reduction in trainee numbers takes place at three years, it only happens to a significant extent from four to three years onwards, when the expansion in consultants is well under way. This is very important as if we were to reduce trainees prior to the expansion in consultants then the service would simply not cope with the demands placed upon it, and potentially unsafe services would result. The College would also propose that any initial expansion in consultant numbers goes towards the smaller units to help alleviate potential problems that might result from their loss of tier 2 trainees. Only after that time would the continued expansion in consultants benefit other paediatric services.

The College has for many years argued that the current number of paediatric trainees should be maintained and it would represent a gross misunderstanding of this report to think that the College is now simply reversing that position. What this report is intended to demonstrate, is that *if* consultant numbers are sufficiently expanded, and *if* there is growth in the number of GP trainees and children’s nurses working in paediatrics, *only then* can the number of paediatric ST trainees be safely reduced to more appropriate levels. This is what these timelines are attempting to demonstrate.

It is of course possible to describe a different timeline to the one illustrated above. The expansion in consultants, nurses and GPs might take place faster or slower than we have anticipated. However, what these figures do indicate is one realistic and safe timeline for how over the next ten years we could ensure that paediatric units are staffed in a safe and sustainable way that will deliver high quality care for children and young people.

7. Consultant Career Pathways

As there is a transition to a consultant delivered care model in many areas of paediatric practice, consultants will need to be resident for at least part of their career. The College has attempted to calculate how long this might be for some of the career options.³¹

General Paediatrics

Describing consultant career pathways in general paediatrics is a complicated task given the variability in the types of unit in which general paediatric consultants work. For instance, nurse led SSPAUs would not require the same degree of consultant presence as consultant led SSPAUs. On the other hand, smaller units that maintain their inpatient services but convert to, or remain, two tier services will require a far greater degree of consultant presence. We have predicted that consultants in such units will only be required to be resident for approximately a quarter of the time. This depends crucially on the competencies of the junior doctors at tier 1.

For those consultants working in medium or large units with three tiers of service, consultants will spend less time resident as the rotas will be supported by a full complement of tier 2 doctors. Table 13 showed that just 49 consultants in these units would be needed on the tier 2 rotas, out of a total complement of 1067 consultants in such units. In practice consultants in these hospitals might expect to work just one or two years resident. Recognising, however, that there are over 200 Trust grade doctors on tier 2 acute paediatric rotas, and that it is becoming increasingly difficult to appoint suitable calibre doctors to these posts, it is possible that more consultants would need to take part on resident rotas but the ratio of these resident consultants to the total acute paediatric consultant workforce is relatively small and consultants would still spend a relatively small part of their career being resident. The College recognises that the resident consultant model has been considerably more successful in the smaller rather than the larger units (largely because of the intensity of work load in larger units) and it would seem appropriate that consultants working in these larger units undertake resident duties at a relatively younger age. 60% of general paediatricians will work in medium or larger units with the remainder working in smaller units where we anticipate that there will be two tiers of service. There are many examples where consultants working in the smaller unit have continued to be resident into their fifties but it would seem to be prudent, where possible, for these consultants to stop undertaking resident duties when they reach 55 years of age or before. Whether or not this is possible will depend upon the age demographics of the local consultant workforce and the local trust.

Neonatology

Tables 14 and 15 provided a breakdown of how the current complement of neonatal rotas could be staffed. There are currently 68 Level 3 neonatal units, requiring 598 neonatal consultants. However, one of the conclusions of Table 15 was that 265 WTE neonatal consultants would be required to staff the middle grade rotas unless other options are considered: for example increasing the amount of time that more senior trainees spend on Level 3 neonatal units, expanding ANNP numbers or reconfiguring neonatal services. All of this means that neonatologists could expect to spend at least the first nine years of their consultant life working in a resident fashion.

If we are to avoid a rigid separation of resident from non-resident neonatal duties then it may be more appropriate for consultants to spend no more than half of their duties on resident rotas after becoming consultants. This would mean that twice as many consultants would in effect be taking part in tier 2 rotas and therefore spending around the first 18 years after appointment as resident. A consultant in neonatology could be resident until approximately 55 years of age (assuming they are appointed at 37 years of age). Clearly, this is a very long period of time, but in the same way that consultant intensivists recognise that their specialty requires 24 hour consultant input, it might also be considered appropriate in neonatology. It would certainly provide a consultant-delivered model of care, and an excellent training opportunity for more junior medical and nursing staff.

An alternative option is to reduce the current number of Level 3 units. If the 68 Level 3 units that exist were to change to just 50, then the number of neonatal consultants required to take part in tier 2 rotas would reduce from 265 to 129. The total number of neonatologists would decrease from 863 to 613, and this would mean that a newly qualified neonatal consultant could expect to spend the first five to six years (or 10-12 years if only half of their duties are resident on-call) of their consultant life with resident on-call duties instead of the nine years indicated earlier.

Specialty Services

As part of this project the College has modelled in some detail the neonatal and general acute paediatric workforce. We recognise the need to undertake detailed modelling of sub-specialty services and, until this is done, it is more difficult to predict the working patterns of sub-specialty paediatricians. For some of these specialties (for example nephrology and haematology/oncology) the out-of-hours work is intensive and frequently involves consultants being recalled into the hospital. Very few sub-specialties have dedicated middle grade rotas and therefore the demands on consultant time are considerable. For the more intense sub-specialties, the College would recommend a minimum of six WTE consultants per rota. For sub-specialties that do not provide a dedicated consultant on-call rota there could be less WTEs on the rota. The College would encourage sub-specialty leads to engage with the RCPCH to develop these models further.

8. Discussion and Conclusion

At the start of this report, it was stated that the College is not able to deliver definitive solutions, but rather to provide information to promote a discussion around the future of Children and Young People's Services in the UK. In particular, it is important to recognise that this report has made a number of assumptions that underpin its findings. These assumptions are:

- the proportion of time that consultants (or equivalent) in small and very small units will need to be resident on-call (25%)
- the number of general (i.e. non-grid) tier 1 and tier 2 staff on specialist rotas (250) and the proportion of 'grid' trainees that are currently supernumerary (50%)
- the attrition rate for paediatric trainees (4% per annum)
- that the current number of grid trainees will remain the same, and that all grid trainees will be supernumerary
- that the newly created SSPAUs will be open 14 hours a day, seven days a week with consultant support
- that an expansion in GP trainees undertaking paediatric placements will occur and that there will be an expansion in advanced children's and neonatal nurse practitioners
- that the proposed reconfigurations of small and very small units to SSPAUs will take place, and that some units will close without alternative provision
- that the expansion in consultant numbers will happen
- that the proposed service standards are implemented
- that the requirement to meet EWTD remains

As the report has shown these assumptions are not without justification. If they are wrong then the model that has been presented would need to be adapted. If the expansion in consultants, GP trainees and nurses does not take place then a consultant-delivered high quality service will not happen even if we maintained the current number of trainees. If the reconfigurations we model for do not take place, then adjustments would be required to the number of consultants needed: a far higher number of consultants would be required. If the attrition rate in paediatrics is significantly different to that which we have suggested then the total number of trainees would have to be adjusted accordingly, and if the on-call duties of consultants in small and very small units are more onerous than we have anticipated then almost certainly greater number of consultants would be required in these units.

It should be noted that a significant number of consultant-level posts are currently filled by SSASG doctors. Whilst data on exact numbers is not currently available, these individuals form an important part of the workforce and will continue to do so for some considerable time into the future. For the purposes of this section these doctors are considered alongside "consultants" in the assumptions.

One consequence of insufficient numbers of staff on rotas is the threat to patient safety. Doctors recruited to tier 1 and tier 2 rotas (particularly those who are not paediatric trainees) may not have the necessary expertise, skills or experience that are required to

provide appropriate services for inpatients. The service standards set out at the start of this document are one way in which the College hopes to address safety concerns and improve the quality of paediatric services in the UK. The report proposes a set of minimum requirements that should apply across all paediatric units throughout the UK. If service providers cannot meet these standards, then unless there are very good reasons to the contrary, those services should reconfigure in such a way that service standards can be met or risk failing to comply with the Essential Standards required to be licensed by CQC. In addition to these safety and quality concerns the lack of trainees on resident rotas threatens the sustainability of rotas particularly in the smaller units. The College is concerned that if there are no changes to the configuration of services and that paediatrics is perceived as a specialty with poor training and intense service pressures, there is a risk that our specialty will become increasingly unattractive to prospective trainees and it will become hard to recruit into paediatrics. In this eventuality it will become impossible to sustain even the reduced number of training rotas and there would not be an expansion in the consultant workforce that the College proposes to ensure safe, sustainable and high quality services.

The College recognises that more trainees obtain CCTs each year than there are consultant retirements and has robustly defended the number of trainees in paediatrics in order to ensure that we can expand the consultant workforce to provide a consultant delivered service. While we continue to expand consultant numbers, CCT holders will find consultant posts. However, this cannot continue indefinitely and given that it takes on average 13 years to train a paediatrician, there must eventually be changes to the numbers entering training if we hope to achieve a better balance between trainee and consultant numbers and a stable workforce. If this issue is not addressed, we will train more paediatricians than there will be consultant posts available.

Although the precise figures in this document could be contested in places (for instance the precise number of hospital sites is under constant revision) the overall message of this report remains: there are too many trainees for the number of consultant posts available, there are too few trainees to staff the current number of rotas.

In broad terms, the fundamentals of our proposal are the following interlocking recommendations:

- Reduce the number of inpatient sites from 218 to approximately 170 with 32 new 14-hour SSPAUs (the moderate reconfiguration option) and increase the number of consultants from 3,084 to 4,625 WTEs whilst changing working practices with increasing use of resident consultants.
- Increase the number of advanced children's nurse practitioners, the number of advanced or enhanced neonatal nurse practitioners and the number of GP's trained in paediatrics.
- Decrease the number of ST trainees from 3,000 to 1720 WTEs (3,500 to 2,020 persons).

While it may appear that these are a series of radical proposals, they do in fact represent a relatively modest development of current practice. Most importantly, they begin to resolve the dual problem that the College faces, and in the process facilitate a safe

and sustainable consultant-delivered model of care which will improve the quality of outcomes for children and young people.

Of course, more radical solutions to these problems are possible. Such solutions that the College considered, were:

1. Create a 'hospital at night' solution by completely redesigning paediatric training such that cross cover is available either between paediatrics and obstetrics & gynaecology, or paediatrics and general medicine. Training for the other specialty would also be required to be redesigned, and inevitably such a solution would lengthen the already relatively long training time.
2. Create a whole new cadre of staff, who could cover middle grade paediatric rotas. In some sense, this has occurred with ANNPs in neonatology, but might it be possible to create a cadre of GP paediatricians or neonatal assistants who could work in this way.³²

Both of these solutions were discarded, however, in favour of the more modest proposals outlined above.

The College expects that a number of the small and very small paediatric inpatient units will either convert to SSPAUs or simply close. This is far more likely for those that are proximal and very small, and less likely for those that are merely small (particularly at the higher end of that range) and more remote. It is impossible to predict with certainty which units will reconfigure, and which will remain. This is largely because decisions to reconfigure are not just based on factors such as volume of patients and distance, but also on local politics and public opinion.³³ Nevertheless, in the current economic climate, the College believes that reconfigurations will certainly take place. As previously indicated, the College also recognises that some very small and small hospitals, especially those that are proximal, will close without conversion to an SSPAU.

A specific issue for those units that do reconfigure is what kind of SSPAU they should become. The report has already identified at least two models: the 14-hour SSPAU with consultant support and the 24/7 consultant led SSPAU. The main advantage of the former is that they would be less expensive which in the current climate may make them especially attractive to Commissioners and Health Boards. The obvious disadvantage is that the lack of senior medical presence will necessitate very clear protocols for which children and young people can and cannot be treated in the SSPAU, as well as very clear options for transfer to units where more senior medical input is available.³⁴

In some locations, a consultant led SSPAU may be the most appropriate option. Senior medical reviews will be readily available and the number of children and young people that can be safely observed in such units should be higher than in a 14-hour consultant supported SSPAU. The disadvantage is that this is a more expensive model as it would require greater consultant presence.

Some small, and possibly even very small hospitals, will retain their inpatient provision. This may be due to geographical isolation, for instance those units which are not situated on the UK mainland. The challenge for these units will be how they adjust to operating

with a two tier acute service if they are required to do so. Some units already operate in this way and have developed a resident rota consisting of a combination of paediatric ST trainees, advanced children's nurse practitioners, foundation year doctors, GP trainees and SSASGs. The difficulty in these smaller units is establishing an appropriate model for the consultant paediatrician in supporting the acute service. In a proportion of units the consultant is only resident when tier 1 competences fall below an expected level or where a child or young person is admitted who will require a high dependency of medical care. In other units consultants are resident to provide a more senior rota in support of the tier 1 staff. This is, therefore, effectively a two tier resident model and in some cases a third tier of non-resident consultants are available. Whilst this latter model could be viewed as the best solution for smaller units it is clearly an expensive option and requires consultants to be wholly resident for their on-call duties. The current financial constraints could make the former model more attractive to Commissioners and Health Boards. The first model does, however, require well defined competencies for the tier 1 staff. If implemented, our service standards would ensure a safe standard of care as all admissions would be seen by the more senior paediatricians within four hours of admission and no patient would be discharged from the unit without their case being at least discussed with a paediatrician on the consultant rota. The College has also modified the second Service Standard to ensure that a patient is seen by a consultant paediatrician within 12 hours where the most senior, resident review is by an ST3 or more junior paediatric trainee.

The College accepts that implementation of these standards will necessitate a greater degree of consultant presence than has hitherto been the case but believes that these standards will bring a level of consistency to what is currently quite a variable pattern of practice. Our intention is to ensure that every child or young person that warrants it receives appropriate review in a timely manner by a suitably experienced doctor. Whether or not this actually means consultant residence while on call depends on the particular competencies of the tier 1 team. What is imperative in this situation though is that the consultant is confident that the resident doctor is sufficiently competent to recognise a sick child and also to initiate resuscitation procedures if required.

For medium and large hospitals there is likely to be less change assuming that they can meet the service standards. These units will continue to retain their three tiers of staff. What will change in these units is the staffing structure of their tier 1 and tier 2 rotas. At tier 1, the College anticipates that the reduction in ST trainees will be offset by an expansion in the number of GP trainees. This has the added benefit of providing excellent experience which will assist these GPs in their future practice. At tier 2, these units should have a greater availability of ST trainees than has hitherto been the case. This is because, although overall there is a significant reduction in ST numbers, this reduction affects the small and very small hospitals, not the medium and large ones.

Community paediatrics is the largest RCPCH sub-specialty. With regard to paediatric trainees the College believes that these proposals should not significantly affect training in community paediatrics. The majority of community trainees take part in the acute paediatric tier 2 rotas and the College has assumed that these arrangements will continue. If the BACCH (1999) recommendations for the community paediatric workforce requirements were to be met there should be over 900 consultant community paediatricians in the United Kingdom. There would need to be 90 community trainees

to ensure that an adequate number of consultants were trained. The BACCH proposals recognise the specialist work that is currently undertaken in the community for which paediatricians must have received appropriate training. The College does, however, recognise that with changing legislation, patient expectations and the management of long term conditions that there are patients with general paediatric problems that are treated in the community by community paediatricians and patients with general paediatric problems that are treated in the hospital setting by acute paediatricians. The College recognises, therefore, the need to review the management of non-acute general paediatric problems in order to design an appropriate workforce for managing these problems within the community. Unfortunately, the time scale of this current project did not allow us to work with BACCH to perform the necessary workforce modelling but we recognise that this work is a priority and should be undertaken as soon as possible.

Finally, the configuration and workforce proposals set out in this report represent a vision of the future, perhaps five to ten years hence. As our proposed timeline indicates, the College does not expect the number of consultant paediatricians to increase by 50% overnight. The College does, however, consider a 50% increase over the next ten years to be realistic matching the 50% increase that has taken place over the last ten years. Having said that, we do also recognise that ten years is a long time and whether our proposals are implemented depends on a range of social and political factors that are beyond our control. We recognise, then, that the precise pattern of future working in ten years time may be different in some respects to that which we have outlined here. However, what we have done is set out a vision of the future that is realistic, and that addresses the challenges we face.

Perhaps what distinguishes this report from others is that it is based on detailed workforce modelling and more importantly on a set of realistic service standards that if implemented would deliver a high quality level of care for children and young people. Given that the UK childhood population does experience poorer outcomes than other Western countries, it is imperative that some means to improve the quality of their healthcare is found. The College believes that the proposals in this report represent a realistic opportunity for us to do just that.

Again, it must be stressed that these proposals cannot be taken in isolation from one another. In particular, it would be completely inappropriate to reduce trainee numbers in advance of the other changes that have been proposed. If those other changes do take place, then in time a reduction in trainee numbers would be appropriate.

In conclusion, the College's vision is one where all children and young people who require it receive timely and appropriate care in settings as near as possible to their home delivered by well-trained and competent professionals. With the current numbers of units and current workforce levels that vision is unattainable. However, if the proposals in this report are accepted and implemented then it is a vision which in due course could be realised.

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- 11 *Implementing the European Working Time Directive* (Academy of Medical Royal Colleges, 2004). Available at www.aomrc.org.uk (accessed 29th January 2011). See also Ahmed-Little, Y, Bluck, M, 'The European Working Time Directive 2009', *British Journal of Health Care Management* (2006) 12:12 pp374-376.
- 12 *Service Standards for Hospitals Providing Neonatal Care* (BAPM, August 2010)

- 13** *Delivering Safe Services: Consultant Delivered Care for Maternity, Paediatric and Neonatal Services* (Teamwork Management Services, 2008). Available at: www.healthcareworkforce.nhs.uk (accessed 29th January 2011). The College views this standard as applying primarily to rotas comprised of trainees rather than SSASG doctors. The College also recognises that it is possible to design a compliant middle grade rota comprised of 7 trainees, and the equivalent of 2 consultants.
- 14** *Future Configuration of Paediatric Services* (RCPCH, May 1996). This paper was written by Roddy MacFaul and others.
- 15** A related issue is the fact that there is a very large shortfall in the current number of children's nurses. This has obvious implications for the availability of advanced children's nurses to work on paediatrics rotas.
- 16** *Modelling the Future II: Reconfiguration and Workforce Estimates* (RCPCH: August 2008, p18). Available at rcpch.ac.uk (accessed 10th June 2010)
- 17** *Submission to the Prime Minister's Commission on Nursing and Midwifery*, (RCN, September 2009). Available at: rcn.org.uk (accessed 2nd October 2010).
- 18** *Staffing Levels of Medical Clinical Academics in UK Medical Schools, 2009 data* (Medical Schools Council, May 2010). Available at: medschools.ac.uk (accessed 14th May 2010)
- 19** *Community Paediatric Workforce Requirements To Meet The Needs Of Children and young people In The 21st Century* (BACCH, 1999). Available at bacch.org.uk (accessed 26th July 2010).
- 20** *UK Standards for Paediatric Endocrinology* (BSPED, July 2010). Available at: www.bsped.org.uk (accessed 4th August 2010)
- 21** *The Renal Team: A Multi-Professional Renal Workforce Plan For Adults and Children and young people with Renal Disease* (British Renal Society, 2002). Available at: www.britishrenal.org (accessed 29th January 2011)
- 22** The College are aware that the recent BAPM standards specify a minimum of 7 consultants for each level 3 unit. Our figures simply reflect current practice, and on average would certainly meet the BAPM requirements. *Service Standards for Hospitals Providing Neonatal Care* (BAPM, August 2010).
- 23** $(2544 + 135 + 250)/3461 = 85\%$
- 24** This is based on information received from the Royal College of Nursing
- 25** Cf the comments by the RCGP'S Chair, Professor Steve Field, in discussion with the Secretary of State, Andrew Lansley, at the 2010 RCGP annual conference: <http://www.healthcarerepublic.com/news/1035890/RCGP-chairman-challenges-health-secretary-GP-paediatrics-training/>
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- 26** Kennedy, Professor Sir Ian, *Getting it right for children and young people and young people: Overcoming cultural barriers in the NHS so as to meet their needs* (Department of Health, September 2010) Available at dh.gov.uk (accessed 1st October 2010)
- 27** *Service Standards for Hospitals Providing Neonatal Care* (BAPM, August 2010).
- 28** *Service Standards for Hospitals Providing Neonatal Care* (BAPM, August 2010).
- 29** BAPM have stated that it is appropriate for ENNPs to work at tier 1 in level 3 units, but not at tier 2, where in respect of nursing staff on the middle grade rota, only “ANNPs (with appropriate additional skills and training)” are warranted. *Service Standards for Hospitals Providing Neonatal Care* (BAPM, August 2010).
- 30** See also, Smith and Hall, ‘Advanced neonatal nurse practitioners in the workforce: a review of the evidence to date’ *Archives of Disease in Childhood* (June, 2010).
- 31** See also Shortland, D, *RCPCH guidance on the role of the consultant paediatrician in providing acute care in the hospital* (RCPCH, May 2009). Available at: rcpch.ac.uk (accessed 13th August 2010).
- 32** Cf Alan Downey, Paul Kirby and Neil Sherlock, *Payment for Success* (KPMG, June 2010), section 2.6 p11. Available at kpmg.co.uk (accessed 14th July 2010)
- 33** Cf Andrew Lansley’s statement on 21st May 2010. http://www.dh.gov.uk/en/MediaCentre/Pressreleases/DH_116290
- 34** In the CEMACH report *Why Children and young people Die?*, potentially avoidable factors were found in 43% of cases, and one of the common ones of these was that the first point of contact did not have paediatric experience. *Why Children and young people Die? A Pilot Study 2006* (CEMACH, 2008). Available at: www.cmace.org.uk



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