Acute health care services

Report of a Working Party

September 2007

ACADEMY OF
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This section is available as an online appendix at www.a0mrc.org.uk

Foreword

Why is there a need for another report on the reorganisation of acute services? Much has been written on the subject. The Medical Royal Colleges,[1–5] the College of Emergency Medicine,[6] the British Medical Association[7] and other organisations such as the Institute of Public Policy Research,[8] and the King's Fund,[9] and the Department of Health (DH)[10] have all published views on this topic. Many reorganisations have taken place, some quietly and efficiently, some with a huge amount of debate. This is not a new issue. However, in November 2006 the DH (England) invited the Academy of Medical Royal Colleges ('the Academy') to set out its position on the organisation of acute services from the perspective of the health needs of the population.

In response, the Academy set up a Working Party to consider the issues relating specifically to emergency care services, obstetrics, paediatrics, cardiovascular medicine, stroke and medicine for the elderly.

The task of the Working Party was shaped by the need to respond to three main challenges:

i) To ensure that the main driver of any change should be the safety and quality of patient care.

ii) To consider the impact of the European Working Time Directive (EWTD)[11] and other health policies on the present staffing arrangements of the medical specialties and how this will affect how services are delivered.

iii) The interdependency of acute services means that changes to one part of the system affects utilisation and provision of services elsewhere in the system. The effects may be beneficial or detrimental. We need to consider the potential effect of any major changes for patients, staff and delivery of services.

Patient safety and quality of care are the main concern of the Colleges. In spite of the huge volume written and the strong opinions held, the primary evidence is not clear. There is evidence that for some very serious conditions, care in specialised units is associated with better outcomes.[12] Childbirth is a potentially high-risk situation where again there is evidence that the ready availability of specialist obstetric and anaesthetic care improves outcomes in labour wards.[3] However, these conditions together only account for a small percentage of acute care episodes. The evidence is much less clear for the majority of common conditions that make up 95% of acute care. There is evidence that larger emergency departments have longer waiting times.[13,14] Big is not necessarily better. Outcome measures for acute care are being developed but, with the possible exception of major trauma,[15] we are not at the stage of providing robust evidence. Reviews of the processes of care have revealed less than ideal standards of care for some groups of patients.[8,16,17]

Primary care has always been the foundation of the system and huge numbers of patients with acute health problems are seen by their general practitioner. However, the transfer of a small, but significant, part of this workload to hospital services has caused problems.[13] If reorganisation is to work, this foundation of primary care must be strengthened. This will need the reversal of some recent trends, requiring increased community services, especially for the elderly and children, and the re-engagement of general practice. Failure will leave a gap that would need to be filled by either acute trusts or private providers.

The EWTD will bring pressures on the ability to maintain staffing of all acute services on the current number of sites. The legislation will have a disproportionate impact on specialties such as paediatrics, surgery and obstetrics.

This subject will arouse fierce public and political debate. We hope this document can assist focus on the issues, inform the debate with such evidence as is available and give a range of options to overcome problems. The provision of acute health care is a complex system, driven by geography and history as much as by design. There is no magic formula to problem-solving. However, a focus on primary evidence and the needs of the population may help the debate.

June 2007

Jim Wardrope and Ian Gilmore
for the Academy of the Medical Royal Colleges

Executive summary

This document explores options for the organisation of acute health care. In many areas, there may be little or no change, but in others changes will be needed.

Local health communities have the best understanding of the needs of their population for acute health care. They know the resources available and how these might change in the future.

The delivery of acute care needs to be organised at a high level by managed clinical networks to ensure co-ordination of services. If these networks are to be successful, they will need strong clinical leadership, funding, and the support of Strategic Health Authorities, local commissioners and providers.

There is a lack of evidence of outcome for the large majority of patients using acute health care services, but there is evidence that the best possible care is not provided at present for some conditions.

More acute care should be delivered by fully trained doctors, but there are real problems facing specialties such as paediatrics and surgical specialties. They may not have enough doctors to provide safe levels of care in all hospitals. Emergency medicine with clinical decision unit (CDU) facilities or combined medical/surgical assessment units would be able to provide the initial investigation, diagnosis, stabilisation and treatment of patients with for example abdominal pain. This would involve triage to a unit with appropriate surgical support which may be on another site. This may allow sustainable out of hours surgical rotas in most hospitals.

Primary care (general practice and community services) will continue to provide care for most episodes of acute illness, continuing care for those with chronic conditions and offering oversight and co-ordination of care. Improvements in the organisation of primary care and in community services, especially 'out-of-hours', are needed if the current increases in hospital attendances are to be reversed.

Community hospitals and urgent care centres can provide a focus for the care of less serious injury and illness and for local access to X-rays. There is a risk of care fragmenting with a corresponding increase in costs unless urgent care centres and the services they provide are integrated within a network of providers and work synergistically with general practice.

Most *district hospitals* should continue to provide a full emergency service but with better integration with out-of-hours services, walk-in centre services and minor injury care.

Some *local hospitals* may not have 24-hour specialist paediatric services and specialist surgery. We would expect that some, though perhaps not all, local hospitals would continue

to have 24-hour general surgery on-site. Where on-site surgery is not provided, the hospital should not accept unselected medical patients. In hospitals without emergency surgery it would be logistically difficult to staff junior and senior rotas to run an intensive care unit. This will require greater restrictions on the type of emergency medical patients that can be admitted.

Those *local hospitals* that have an accident and emergency department and accept medical cases must be supported by a continuous intensive care service as well as 24-hour imaging and laboratory services. Intensive care is currently provided predominantly by anaesthetists in most hospitals. If acute surgery and/or obstetric services were to be withdrawn, maintaining a intensive care service will become a problem as anaesthetists with critical care expertise are likely to move with the acute surgery and obstetrics services. Such a hospital needs enough doctors trained to the appropriate standards to support 24-hour intensive care provision (see section 2.7).

Emergency medicine and acute medicine, supported by intensive care, would be able to manage most of the current workload of a local hospital. Some conditions such as serious trauma, serious illness in children and patients with some surgical conditions would need to bypass hospitals that could not provide full treatment, or be transferred after stabilisation. Potentially, separation of medicine from surgery for emergency admissions is sustainable with careful planning and use of networks, but the realignment of all acute services should be a longer term aim. Bypass polices for patients who might need surgical assessment and intervention (eg gastrointestinal bleeding) need to be in place. If units need to move to a selected 'medical take', this may result in a significant drop in numbers of emergency patients, affecting the clinical and/or financial viability of such units.

Some conditions requiring highly specialised care, such as serious trauma or acute myocardial infarction, are best treated in specialised centres.

Increasing use can be made of electronic image transmission for radiology opinion but highly specialised interventional radiology will need to be centralised.

The recommendations of the National Service Framework for Children, Young People and Maternity Services, and Maternity Matters, should be implemented. The maternity standard includes increased availability of trained obstetricians for complex problems during childbirth.

Paediatric care should be delivered as part of a managed clinical network including primary care, paediatric assessment units, emergency departments, inpatient paediatric units and specialist units. All clinicians assessing children should have training in the skills needed for the safe care of children.

Older patients need more targeted services both in the community and in hospital with better co-ordination of health and social care. Medicine for the elderly will become more involved in the care of patients at home by supporting general practice through new models of care, and hospital services for the elderly should be more focused on their specific needs.

There are a number of threats to the provision of an effective system of acute care that need urgent review, such as current systems of payment for services and fragmentation of services caused by increasing use of non-NHS providers.

Plans to redesign services which involve moving services from one site must be evidenced based and not be fully implemented until replacement services are established and their safety audited. This will involve running services in tandem for some time and these extra costs must be factored into plans for reconfiguration.

The impact of any service reorganisation on the training of future doctors must be given consideration.

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1 Issues common to all services

1.1 Principles

1.1.1 Background

The Academy of Medical Royal Colleges was approached by the Department of Health in November 2006 to advise on clinical issues surrounding the configuration of acute services. The objectives of this document are:

i) to set out the views of the Medical Royal Colleges on overarching principles of the provision of clinical services and to give specific guidance on five services:

- Obstetrics
- Paediatrics
- Emergency care (to include, medicine, surgery and supporting services)
- Cardiovascular disease and stroke
- Medicine for the Elderly

ii) to recommend patterns and systems for the optimal provision of care, and

iii) to advise on issues of health policy with the aim of improving the quality and safety of patient care.

Definitions

The terms primary care, urgent care, acute care and emergency care can be confusing to both public and profession. There is very significant overlap in how these terms describe a type of service which meets the needs of patients with sudden illness or acute injury (as illustrated in Figure 1, see page 18). A pragmatic approach might be:

Primary Care provides the assessment, management and prioritisation of undifferentiated problems in the general population in all age groups. Most of this care is delivered by General Practitioners (GPs) and their teams.

Urgent Care provides the assessment and management of common problems where the patient thinks there is moderate degree of urgency. Much of this care is delivered by General Practitioners and their teams, although GP out-of-hours services Urgent Care and Emergency Departments deal with increasing numbers of patients with urgent care needs.

Emergency Care is the assessment and management of illness and injury where the patient or the clinician thinks there is a need for immediate assessment and care of their problem. This care is provided mainly by out-of-hours services, Emergency Departments and hospitals.

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1.1.2 Key issues

The Academy strongly believes that the main reason for change should be a need to sustain and improve high standards of care for patients.

- The reorganisation of primary care, urgent care and emergency care services should aim to improve patient safety and quality of care.
- Reorganisation should provide cost-effective services that make best use of existing resources. It should not be aimed at saving money. Wherever possible reorganisation should be evidence-based.
- Reorganisation is about using some of our hospitals in better ways, not closing them.
- Patients should have good access to emergency care but for some serious acute conditions they and their relatives may have to travel further.
- The population and patients should be involved in shaping proposals to change services at an early stage. This will need an honest discussion of the real reasons for change and recognition of the challenges facing the provision of emergency and urgent care.
- No single model of provision will suit all localities and the principles need to be sufficiently flexible to adapt to local needs.
- Specific solutions will be needed for those specialties, such as paediatrics, surgery, obstetrics and radiology, where cross-specialty cover out-of-hours is rarely appropriate.
- Plans to redesign services which involve moving services from a particular site must not be fully implemented until replacement services are established and their safety audited. This may involve running services in tandem for some time and these extra costs must be factored into plans for reconfiguration.
- Although there is evidence to suggest that the centralisation of services to deal with complex or specialised work provides better outcomes for patients, evidence for centralisation of non-complex and high volume cases does not exist.
- Transfer of patients between hospitals and within hospitals should be kept to a minimum by arranging the first admission to the most appropriate site wherever possible.
- If specialist services are centralised, there will need to be major changes in pre-hospital care in order that patients are assessed and transported in an appropriate and timely way. Consolidation of services will make inter-hospital transfers more common, potentially increasing the risks to patient safety. The resource implications, particularly for critical care staff, need to be identified and well resourced.
- Centralisation may also have disadvantages for remote and rural communities.
- Payment by results is perceived as a significant barrier to change.
- The systems of care described in this document will require organisations to work together across traditional boundaries and across the local health economy. Incentives must exist to encourage collaboration. Current policies on competition are barriers that make such joint working less attractive for many providers.
- The sustainability of many hospitals and services will be compromised when increasing elective work is placed with other providers.

1.2 The present system

The present system delivers a huge amount of care. With a few notable exceptions where detailed national audits[18,19] have shown problems and advised solutions and improvement, little is known about the real quality of outcome of much of that care. Other audits, for example in major trauma,[20] have shown little change in outcome. Measures of process such as the 4-hour target for Emergency Care and call to needle times for thrombolysis[21] have improved. Some aspects of the care of patients suffering a stroke have improved. Outcome measures for acute care systems are being developed but are not yet able to give reliable comparison between different types of systems.

Demand on acute secondary care services is increasing. This is driven partly by demographic changes, changes in primary care and the introduction of new services that have created new demand.

In 2007 there are new challenges to meet. There is increasing evidence that better outcomes for some types of illness and injury are possible, but cracks are beginning to appear in some parts of the system, driven in part by policies such as the European Working Time Directive, plurality of provision and changes in primary care.

1.3 Reasons for change

1.3.1 Quality of care and patient safety

A central objective of the NHS Plan[22] is that optimum care for patients should be delivered by appropriately trained doctors and other clinical staff. To achieve this aim, procedures requiring a highly specialised teams and equipment may need to be centralised to provide a 24-hour service and best outcomes for patients.

Recent reports have indicated that the current organisation of acute services does not always provide best care.[16] Outcomes for patients have been reported to be worse if they are admitted at weekends when staffing levels are lower.[8]

There is no strong evidence of outcome for specialties treating high numbers of patients with common conditions (eg emergency medicine, acute medicine and some surgery). Studies in the USA[23] and the UK[24] have not found a correlation between high volume and better outcomes for most patients, although some benefits for patients with severe injuries have been found.[8,15] Waiting times in very large A&E departments have been shown to be longer than in smaller departments.[13,14] However, larger units are more likely to be able to provide senior staff 24 hours per day. There are good data showing that transfer of seriously ill patients from one hospital to another is associated with a worse clinical outcome.

1.3.2 Workforce changes

Historically, the NHS has depended a great deal on doctors 'in training', especially in staffing the out-of-hours rotas. From 2007, these doctors may enter directly into specialist training requiring them to focus on acquiring competencies, rather than providing service commitment. Specialties

such as obstetrics have good evidence that outcomes are better if trained doctors are available[3] and the changes to training[25] should mean that future care will be delivered by doctors who have completed their training.

The quality care and safety of care for emergency patients would be improved by the involvement of more experienced senior doctors. However, the changes will have an impact on how services are delivered, and they are likely to affect the staffing of the acute specialties differently (see section 2.7 Summary of Standards).

Significant numbers of 'training posts', mainly occupied by international medical graduates, are effectively service posts with no career progression beyond senior house officer (SHO) or registrar level. Following recent legislation,[26] the numbers of international medical graduates coming to the UK will reduce.[27] The impact of these changes for the delivery of acute and critical care services and for the careers of UK-trained doctors is unknown.

The reduction in working hours to meet the requirements of the EWTD will have a major impact on how services are delivered. By 2009, doctors will be able to work an average of only 48 hours per week. In some specialties this would require a hospital to employ many more doctors to staff a 24/7 service. On a current rota of eight doctors this means that an extra two doctors will be needed to comply with legislation. Some specialties will not have sufficient trained doctors to meet these extra demands (see section 2.7 Summary of standards).

Increasingly, doctors want to achieve a more appropriate work-life balance. This may result in more part-time working with a reduction in the current whole-time equivalent (WTE) of 0.9 to perhaps nearer 0.7 for specific age groups in some specialties. This would also have an impact on the ability of services to staff 24-hour rotas.

Expansion of the roles of nurses, ambulance staff and other professional groups has been an integral part of the NHS plan, and there are many examples of the development of new roles such as emergency nurse practitioners and specialist nurses. However, experience has shown that doctors remain an essential part of the team, other roles being complementary to doctors rather than replacing them.

1.3.3 Specialisation

Certain types of care are becoming much more specialised and there is a need to concentrate some expertise to maintain doctor competence. The demand for such services may be met by reorganising resources within a hospital site or trust. Where this cannot be achieved, improved collaborative working between emergency medicine, acute medicine and surgery with the enhanced imaging techniques now possible might allow specialised services in smaller districts to continue. Some services for the treatment of rarer conditions[28,29,30] may need to be organised on a regional basis.

If more specialist work moves towards larger hospitals, the challenge will be to avoid some facilities becoming run down through loss of staff and poor morale. There is also a need to maintain generalist skills. The Modernising Medical Careers (MMC) process needs to ensure that doctors' training reflects these differing service needs. Appropriate measures to maintain services need to be in place.

1.3.4 Demographics and chronic conditions

The population is ageing. The prevalence of chronic disease is rising. This will lead to an increase in demand for emergency care. As more frail older people live at the margins of safety in the community, the need for health and social support will increase. Unless there are improved community support services, there will be an acceleration of current trends in acute admission to hospital. The elderly often have complex assessment and treatment needs.

Successes in treatment, for example in heart disease and in some childhood conditions, will place more demands on the emergency care system as patients with these diseases often suffer from acute exacerbations.

Changes in the delivery of out-of-hours services have made it more difficult to ensure continuity of care in the community; in some areas, this has led to an increase in reliance on hospital services.

1.4 Finance

This document is not primarily concerned with the financial situation of the NHS but equally we have to practise medicine in the real world. At the time of writing, it appears unclear whether there will be substantial real growth in NHS resources over the next few years. Lack of resources in the current system may result in patients not receiving the optimum care.[31]

The effective commissioning of services is essential if real improvements in patient care are to be achieved. This responsibility rests with the primary care trusts (PCTs) commissioning and contracting effectively with their local providers but they need strong oversight by strategic health authorities (StHAs).

1.5 Political considerations

The reorganisation of services always provokes intense public and political interest. This is completely understandable. The arguments around reorganisation are complex; often there is not a 'right' or a 'wrong'. However, in many cases a judgement has to be made on the basis of the best evidence for the whole of the system. Public, patients, staff and doctors all need to be involved. It is important that the debate is constructive and sets out a range of options to improve the system as a whole, while retaining the flexibility to adapt to local service provision and patient need.

1.6 Plurality of providers and competition

Competition in health care must be tightly managed to ensure that patients are not disadvantaged. Clearly it is important to ensure that the provision of acute services is publicly accountable and that services are delivered in a safe and appropriate way.

The policy to increase capacity and introduce more competition to the NHS has resulted in significant amounts of elective surgical work being lost from some acute hospitals to independent

sector treatment centres. Other initiatives such as clinical assessment and treatment services (CATS) and referral management centres also have the potential to divert large volumes of work to the private sector. This may affect the ability of many acute hospitals to sustain surgical, anaesthetic and intensive care services and the delivery of safe emergency services locally. CATS and referral management centres appear to contradict the patient choice initiative. To succeed, such services must engage senior acute care clinicians.

The structure of foundation trusts means that they have considerable freedom to decide the services they will provide and how these will be provided. While they have a legal obligation to co-operate with other parts of the NHS, they may occasionally experience significant conflicts. The scale and type of change envisaged requires full co-operation between all parts of the NHS and private sector providers.

1.7 Payment by results

Payment by results has achieved a linkage between activity and payment in some clinical areas. However, potential conflicts in the system are seen to hinder co-operative working across organisations in the delivery of pathways of care.

- There is a need to examine how the costs of organising a pathway of care can be rewarded rather than rewarding distinct episodes.
- The costs of some complex services delivered on a 24/7 basis are not adequately reflected.
- The real costs of running 24/7 emergency services are often subsidised by a higher volume of in-hours episodes. 'Cherry picking' of these cases by diverting them to private providers will increase the financial burden on trusts of emergency out-of-hours services.
- The currencies used neither reflect complexity adequately nor reward providers for providing complex and safe, high-quality services. This represents a fundamental problem with payment by results which will need to be addressed if clinicians are to be fully engaged in the process.

The Academy is preparing a response to the consultation on payment by results which will examine this issue in more detail.

1.8 Cost-effectiveness

Studies from the USA and the UK have found that severely injured patients whose care is managed in specialised units such as trauma centres[32] or neurosurgical units[30] have better outcomes in terms of mortality than those treated in other settings. However, there is other evidence that trauma care is expensive and health care systems may not be willing to pay these costs.[33,34] The Royal College of Surgeons of England is pressing for a national plan for trauma services (see section 3.11).

We found no evidence to show that new ways of delivering emergency and urgent care introduced in the UK (eg an experimental regional trauma centre,[35] hospital at home,[36] nurse practitioners

in primary care[37] and minor injury units,[38] and NHS Direct[39]) are more cost-effective than existing models. In some cases the costs of the new services were higher than the cost of services they replaced.[37] Explanations in the literature for this are the limits of the new roles, the need to work within protocols, the costs of support and supervision and the possibility that the availability of a new service generates demand not met previously.

In a health service with little growth, therefore, it is hard to assess how the money will be found to fund existing gaps in specialist services or fund new developments.

1.9 Proposed acute and emergency care structure

The following model represents a *spectrum* of types of service. It does not imply any difference in the *standard* of care available. The Academy's objective is to advise on the provision of the best possible standard of care wherever that is delivered. However, we have to take account of the constraints of workforce and specialisation. These ideas are not new. They are well articulated in the report on acute service reorganisation in Scotland[40] and in other health care systems.[41]

'District general hospital' is the most common usage for hospitals dealing with most emergency cases. Alternative names were considered. The advice from the patient's perspective was that 'level 3/level 4/level 5 hospital' or different names might be confusing. Clearly there are different levels of specialty cover in the three hospital settings described below which need to be acknowledged in a way that does not confuse patients.

Table 1 Summary of spectrum of types of care
(the exact distribution of services will depend on local needs)

Acute and emergency services	
Primary care	Provides assessment and treatment of most less serious acute problems
Community hospital/urgent care centres	Also provides some imaging/tests, simple treatments such as suturing/plaster of Paris
Local hospital	Provides 24-hour services including A&E, acute medicine, imaging including CT, laboratory services, level 3 critical care (intensive care), general surgery and orthopaedics where safe. In exceptional circumstances where on-site surgery is not provided, the hospital must not accept unselected medical patients
District hospital	In addition to local hospital services provides 24-hour specialist services such as paediatrics, some surgical specialties and possibly obstetrics
District hospital with highly specialised services	In addition to district hospital services will provide highly specialised services

We believe StHAs should oversee the work of PCTs which should take responsibility for working with their local health providers and other PCTs in arriving at the best way to organise acute services. StHAs are best placed to review the needs of the population and how these fit with current systems. This will mean close working with local communities and health professionals. The Colleges and specialist societies can provide advice.

We will set out our suggestions on the future types of acute service frameworks under the following headings:

- Population needs for different types of acute care
- How the service would best deliver this care
- Examples of the types and structures of service.

1.9.1 Potential configuration of acute care services based on population need

A. Primary care (general practice)/community services

Patients need rapid access to advice, assessment and treatment for undifferentiated presentations.

Patients need support to manage exacerbations of long-term conditions and some groups, such as older patients, need speedy assessment of social as well as medical needs at times of crisis.

General practice and community services, including social services and mental health services, provide the best framework to deliver this care. The more complex issues of support for the elderly will need increased use of specialists and generalists working together in teams in this type of care, the focus being on a comprehensive assessment and formulation of treatment plans.

Increased immediate access to diagnostic services would enhance the capacity of the GP to manage some conditions at home.

B. Community hospital/urgent care centre

The patient needs care of less serious injury or illness but may need investigation or treatment not available in primary care.

Some patients need facilities such as day clinics or intermediate care.

The community hospital/urgent care centre (UCC) would be staffed by multidisciplinary teams. Doctors would provide some clinical support, a clinical governance framework and training. The centre must be integrated within an emergency care network and would provide investigations such as basic imaging, some blood tests and some other tests.

It could provide a focus for:

- out-of-hours primary care
- day clinics
- therapy services
- intermediate care
- paediatric day assessment unit.

C. Local hospital

The patient needs 24/7 access to a facility able to provide the initial assessment, treatment and stabilisation of most serious conditions. This would include inpatient care for most 'medical' conditions.

The local hospital as a minimum would provide a full emergency medicine (A&E) service, acute medical beds, a medicine for the elderly unit, intensive care unit backed up by 24-hour imaging that would include full CT and interventional services as well as laboratory services.

The local hospital may provide general surgery on-site when clinically safe to do so. It may provide other services such as a paediatric assessment unit. Where, in exceptional circumstances, it is not possible to provide on-site surgery, the hospital should not accept unselected medical patients .

The defining characteristic of any emergency hospital is 24-hour presence of intensive care which may be difficult to maintain without on-site operative surgery.

D. District Hospital with paediatrics and some specialist surgery

The patient needs 24/7 access to a hospital able to provide the management of most serious conditions.

The District Hospital with all key supporting services would provide a full emergency medicine (A&E) service, acute medical and surgical beds, medical and surgical specialty beds, a medicine for the elderly unit, an adult intensive care unit backed up by 24-hour imaging including CT and interventional radiology as well as laboratory services. It would provide inpatient care for most medical, surgical and paediatric conditions and would also probably have obstetric services. The Kerr report highlighted the issue of the provision of acute care in geographically isolated areas of Scotland.[40] There are a few sites in England where such special measures are needed to sustain a viable acute service to a significant rural population.

E. District Hospital with highly specialised services

The District Hospital with highly specialised services will usually provide all the services of a District Hospital plus one or more specialised services.

1.10 Networks

Managed clinical networks have been seen as a way to achieve the objectives in the NHS plan[22] by moving from a system of organisation-based health care towards a 'problem-solving' model planned around patient need. In 2004, the National Audit Office (NAO) reported that, while there were some examples of successful networks in emergency and urgent care, many lacked power and influence.[13] These barriers to joint working persist.

The NAO report highlighted many issues including patient access, fragmentation of the system, conflicts between targets and performance indicators between different organisations, the objectives and the appropriate size of the networks. If networks are to be a viable mechanism for improving the delivery of emergency and urgent care, all these problems will need to be addressed. Adequate funding and formal management structures will all need to be identified. To be effective, networks will require:

- high level leadership by clinicians
- the full support of commissioners
- adequate funding and resources
- direct responsibility to an appropriate board
- the development of indicative budgets across the health and social care spectrum.

Successful networks cannot be imposed from above. They should be developed by clinicians working together.

1.11 Ambulance services, helicopters and bypass of local hospitals

The present levels of expertise and knowledge about patient transfers in the UK are not distributed evenly. The number of critically ill patients transferred between hospitals in the UK is reported as more than 10,000 but with most hospitals transferring less than 20 a year.[42] Reconfiguring services may mean that the number of ambulance journeys and the distances that patients will

have to travel will increase. There will be a need to increase training and capacity in the ambulance service and to improve the services available for transfers, especially of critically ill patients. The time and resources required to achieve this should not be underestimated.

Some prospective and clinical outcomes' studies of ambulance transportation have been carried out in the UK[43,44,45] and abroad.[46,47] However, the evidence base is weak. The issues of transportation of patients that would need to be considered in any reorganisation of services include:

- the safety and reliability of triage systems;[48]
- the quality of patient care during transfer;
- the risks of transporting patients with deranged and unstable physiology;
- the risks of infection;
- compliance with checklists and published protocols;[49]
- the impact of ambulances bypassing the nearest hospital to go straight to the facility most capable of providing the definitive care the patient requires;[50]
- interhospital transportation from the receiving to the specialist facility;[51]
- delay to treatment and variations between specialist and non-specialist patient transfer teams;[52]
- the effect of ambulance diversions on patient safety and on the capacity of the receiving hospitals to absorb the demand;[53,54]
- the occupational risks of ground and air emergency medical systems travel;[55,56,57]
- the cost-effectiveness of different modes of patient transport;[58,59,60]
- equitable access.[61,62]

Critical care transfers involve moving seriously ill, complex, unstable patients with unfamiliar staff and equipment and without immediate supervision. This requires well-trained doctors with the necessary skills. The organisation of proper staffing of such services is essential. A major problem is that removing such personnel from the originating hospital may remove the only senior anaesthesia and/or critical care cover.

1.12 Directing patients to appropriate services

The development of new services has given patients more choice. It may also have caused confusion for patients and for some health and social care professionals about which is the most appropriate service. Ten years ago, the only options were to contact a GP, go to A&E or telephone 999. New services such as NHS Direct, minor injury units, walk-in centres and various community response teams have widened this choice. There is no evidence that giving patients more choice has reduced demand for the ambulance service or emergency (A&E) departments.[41] Indeed these services are busier than ever.

Any new system has to have the capability of increasing the number of patients referred to the appropriate service at the first attempt. How this might be accomplished effectively is less clear. NHS Direct has not completely fulfilled this role, perhaps due to reliance on computer-assisted decision making algorithms with limited options for advice. Standards should be set for local

systems, setting out clear options for patients so that they can access the right part of the service. The concept of a second national 'urgent number' has been suggested in a recent discussion paper.[63] This might give patients, carers and other health care professionals an alternative to 999 when the need is for a timely assessment of the problem and an appropriate response rather than an immediately life-threatening problem. Primary care doctors have a large amount of experience in telephone triage.

1.13 Implications for training

The assessment of care of the acutely ill is a cornerstone of medical training. Any changes in the organisation of acute services will require thought as to the effects on training and how this will be managed.

Primary care. Training in the assessment of urgent and emergency problems needs to be consolidated and even enhanced. There are major opportunities in urgent care centres/out-of-hours services to provide training to GP specialist trainees. Consideration should be given to extending the amount of time devoted to such training. Attachments to community medicine for the older patient, mental health liaison and community paediatrics might all provide good concentrated exposure. GPs with a special interest in emergency care should be encouraged.

Urgent care centres. As noted above, these centres will provide excellent training opportunities for GP SpRs or foundation year 2 (FY2) doctors in primary care as long as there is sufficient supervision from trainers.

Local hospital. If a hospital lacks some supporting specialties it is essential that junior doctors in remaining specialties have good senior support. For emergency medicine and acute medicine this will mean an enhanced presence of senior doctors. For specialist training, it is essential that trainees rotate to other larger hospitals as part of a balanced programme. Training in this type of hospital will have to be carefully managed to ensure trainees are protected from undue service pressures and clinical risk.

The concentration of staff should allow for better staffing rotas in hard-pressed specialties. Specialist centres will provide enhanced training opportunities due to the concentration of patients, resources and specialist trainers.

Training in retrieval medicine and intensive care skills. This will be an area that will need to grow to ensure success and safety of the suggested model.

Trusts must ensure that staff are appropriately skilled and trained to care for patients and must provide opportunities for CPD to facilitate this. Arrangements should be in place for secondment opportunities and joint appointments may be considered.

2.1 Emergency care

2.1.1 Background

The majority of primary and urgent care occurs in the community. GP services are attended by 80 million patients per year with an acute or urgent condition. Others are treated by community nursing staff, social services, community pharmacies and the ambulance service. New services have developed to treat patients, including UCCs, walk-in centres and local minor injury units.

Emergency workload is a major part of the daily activity for acute hospitals. In England, 14 million patients per year either self-refer or are referred by primary care providers or the 999 emergency services to major emergency (A&E) departments. Approximately 20% require subsequent admission to a hospital bed. Medical emergencies account for 80% of medical bed use and 60% of beds in the surgical specialties.

Emergency (A&E) departments (ED) provide the initial care for patients who present with more serious symptoms who require immediate assessment, investigation and treatment. Most emergency admissions to hospital occur through the ED, but emergency admissions arranged by primary care should be referred directly to acute medical or surgical assessment units where these exist. A small percentage (1–2%) of patients requiring complex specialist inpatient care will require intrahospital transfer to regional services such as neurosurgery, burns services, cardiothoracic services, infectious diseases, renal medicine or neurology.

2.1.2 Current level of provision and need

A population of 2–3 million is likely to be the base for a coherent emergency care system as highly specialised services such as neurosurgery and specialised cardiology are centred around this model. This size of population is larger than a PCT population, and the appropriate administrative level would be a StHA.

Figure 1 tries to put into context the volumes of patients needing the various types of service. The actual numbers of patients are given in section 3 (see section 3.2 Emergency medicine).

The services available in any area will be influenced by the need for highly specialised services, geography and the density of population, population need, seasonal variation, demographics and socio-economic factors.

Medical emergencies

Medical emergencies (mostly aged over 65 years) constitute the largest group of patients admitted to hospital. Common presentations include cardiac and non-cardiac chest pain, shortness of

Section 3 (Evidence submitted by the specialties and a lay summary) is available as an online appendix at www.aomrc.org.uk

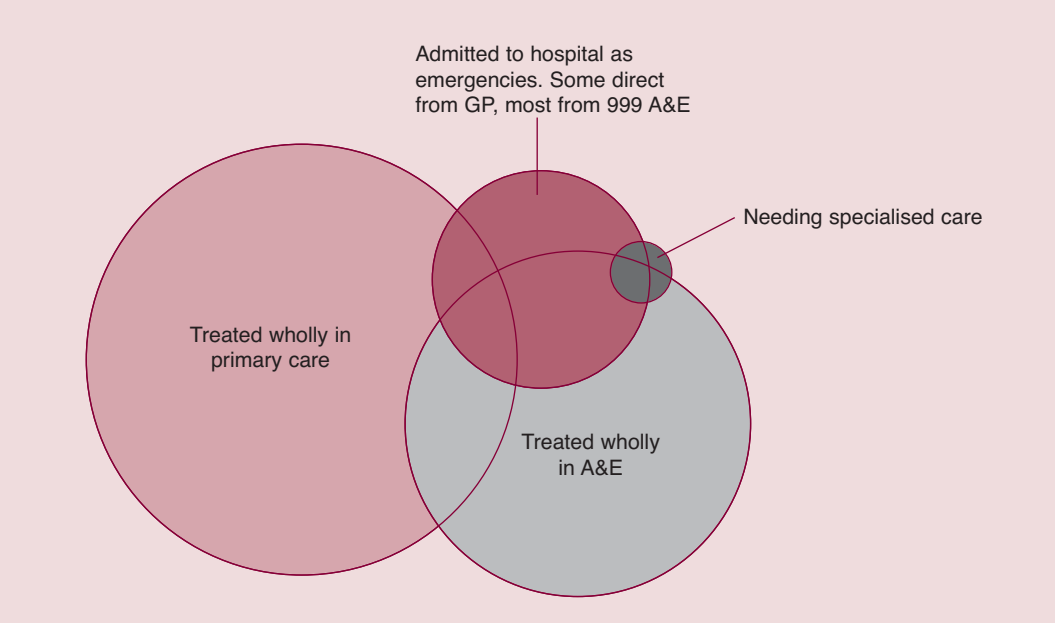

Figure 1. This figure illustrates the volumes of patients needing urgent and emergency health care. The majority of patients are treated only in primary care or in A&E. Some patients will be referred to A&E by their GP. Patients requiring admission to hospital may be referred by their GP, A&E or directly from community services. The diagram indicates the relatively small numbers of patients with conditions requiring care in highly specialised units. (For estimates of patient numbers see section 3.2 Emergency medicine.)

breath, syncope, self harm, exacerbation of chronic disease or new illness in patients with complex needs. These patients require rapid access to acute medical care. A small percentage will require triage to specialist services and clear policies must exist to expedite this. Acute medicine units working closely with emergency medicine should be available in all local and district general hospitals. General and orthopaedic surgery should also be available where clinically safe to do so. Where surgery is not available on-site, the hospital should not accept unselected medical patients. Medicine for the elderly, whose patients often present with non-specific symptoms such as falls, immobility, incontinence or confusion requiring a specific diagnostic approach, is an essential part of any emergency service. In hospitals where full A&E services may not exist, acute medicine units will require careful planning, taking only certain types of emergency case.

Orthopaedics and trauma (see section 3.11 Surgery)

The orthopaedic service provides inpatient treatment for serious fractures and fracture clinics for the outpatient management of many less serious injuries. Many patients with more minor orthopaedic injuries are treated in emergency (A&E) departments. **It is clearly preferable to have such a high volume service on site.**

Other surgical specialties are also involved in some trauma patients. Some of these services are already centralised (eg neurosurgery, cardiothoracic surgery, burns and plastic surgery) and tend to be regionally based.

Patients with very serious injuries have been shown to benefit from care in specialised centres.[8,15,30] At present, these centres do not have enough bed capacity to deal with all patients requiring such care and there is no coherent trauma network in most areas (see section 3.11 Surgery).

General surgery (see section 3.11 Surgery)

Large numbers of patients are admitted as emergencies to general surgery but many of them are treated without an operation, for example non-specific abdominal pain. Emergency medicine with clinical decision unit (CDU) facilities or combined medical/surgical assessment units would be able to provide the initial assessment, investigation, triage and management of many patients with abdominal pain. They would need good surgical support with access to CT 24 hours a day. This will allow sustainable out of hours surgical rotas in most hospitals.

General surgeons also provide assistance to patients in hospital who need surgery, for example gastrointestinal haemorrhage.

Other surgical specialties

Ophthalmology, maxillofacial surgery, paediatric surgery and ear nose and throat surgery are increasingly provided on a 'hub and spoke' model.

Children

25% of patients attending a general emergency (A&E) department are children, with peaks in the evening and at weekends. It is vital that receiving hospitals have staff with the skills to differentiate minor illness from that requiring a specialist consultation and to recognise when a child is critically ill. There should be co-operative working between emergency physicians and paediatricians to decide how children can be managed safely in the local hospital. Specialist intensive care and clear procedures for appropriate transfer must be available (see section 2.3 Paediatrics).

Anaesthesia and intensive care

Intensive care is essential in any hospital accepting unselected emergencies. At present, the majority of intensive care is provided by anaesthetists who may or may not have a daytime sessional commitment to intensive care. Also, frequently they do not have regular paediatric sessions but nevertheless provide staff for the interhospital transfer of all critically ill patients.

Imaging

A hospital with an emergency (A&E) department admitting unselected emergencies must have CT and interventional radiology services. If services are limited, 24-hour CT support would be essential; however, it is unlikely to be feasible to have interventional radiology cover for 24/7.

Clinical pathology and laboratory medicine

24/7 availability of clinical chemistry, haematology, microbiology and blood bank are essential. These need to be in departments registered with CPA (UK) Limited or an equivalent accreditation scheme (see section 3.9 Clinical pathology and laboratory medicine).

Mental health

This is an important group of patients with a high morbidity. Suicide is one of the leading causes of death in young males. There have been significant changes in the provision of emergency psychiatric care through crisis teams and liaison psychiatry services. However, further development of these services is required (see section 3.6 Mental health).

2.1.3 Is change needed and why?

The EWTD[11] makes it impossible to continue to provide full 24-hour a day emergency service in all core acute and critical care specialties across all the current acute sites. This is highlighted by paediatrics, cardiovascular medicine, surgical specialties and anaesthesia (see section 2.7 Summary of standards). Emergency medicine and acute medicine agree that it makes sense to integrate and rearrange some units where this can be shown to be in the interests of improving patient care, and provided that the clinicians are involved in shaping how services are delivered.

Advanced or specialised care is required for a small proportion of patients, the care of serious trauma (see section 3.11 Surgery), acute myocardial infarction (AMI) (section 2.4 Cardiovascular disease, 2.5 Stroke and 3.11 Surgery), paediatric intensive care (section 2.3 Paediatrics, section 3.1 Anaesthesia and intensive care and section 3.8 Paediatrics). At present, the provision of some of these services is reported to be suboptimal.[8]

2.1.4 Proposed acute and emergency care structure

The details are given in section 1.9 – summary Table 1 is reproduced below:

Table 1 Summary of spectrum of types of care
(the exact distribution of services will depend on local needs)

Acute and emergency services	
Primary care	Provides assessment and treatment of most less serious acute problems
Community hospital/urgent care centres	Also provides some imaging/tests, simple treatments such as suturing/plaster of Paris
Local hospital	Provides 24-hour services including A&E, acute medicine, imaging including CT, laboratory services, level 3 critical care (intensive care), general surgery* and orthopaedics where safe. In exceptional circumstances where on-site surgery is not provided, the hospital must not accept unselected medical patients
District hospital	In addition to local hospital services provides 24-hour specialist services such as paediatrics, some surgical specialties and possibly obstetrics
District hospital with highly specialised services	In addition to district hospital services will provide highly specialised services

*Where, in exceptional circumstances, it is not possible to provide on-site surgery, the hospital should not accept unselected medical patients.

2.1.5 Are there problems with this model?

General practitioner engagement

The model is dependent on increased engagement in urgent care by general practice. There is evidence that there may be a small but significant drift away from urgent care by GPs in some areas. The Royal College of General Practitioners has issued a position statement on the issue and a 10-point plan to improve urgent care (see section 3.3 General practice). If this initiative is not successful, independent providers or acute trusts may become alternative providers.

Specialty support

The local hospital with only emergency medicine, acute medicine, intensive care plus imaging and laboratory services would raise significant challenges. The Royal College of Surgeons of England insist that there must be on-site surgery in hospitals accepting unselected medical emergencies (See section 3.11). The Royal College of Paediatrics and Child Health (see section 2.3 and section 3.8 Paediatrics) consider it would be preferable to have inpatient paediatric facilities in support of any hospital taking emergency cases but, as noted above, have the most difficulty in meeting the challenges of the EWTD.[11] Any separation of services will impact considerably on anaesthesia (see section 2.7 Summary of standards and Section 3.1 Anaesthesia and critical care). The lack of general surgical support or paediatric inpatient services might be mitigated by peak time short-stay facilities such as a CDU or combined medical/surgical assessment unit. However, these depend on the availability of appropriately trained and experienced staff and the impact of the EWTD.

Triage and bypass

Risk assessment and risk minimisation are essential. The balance of risk is having large numbers of patients travelling long distances set against providing a less than ideal configuration of specialty support locally.

A basic local hospital without surgery/paediatric and orthopaedic 24-hour services might be able to care for 80–90% of the ED and medical workload of an existing district general hospital. This would still entail a significant number of transfers to other hospitals and the effective use of 'bypass protocols' with the ambulance service taking certain types of patients to larger hospitals. The logistical challenges in arranging large numbers of interhospital transfers and the resultant impact on patient care and on the medical workforce must not be underestimated. The clinical and financial viability of such units may be affected by this reduction in patient numbers.

There will be a need for increased decision-making by the ambulance service to bypass a local hospital without all services and at times to bypass a district hospital to take a patient to specialised services (eg trauma, percutaneous coronary intervention (PCI)). The ambulance service will require increased medical leadership to achieve these aims.

Intensive care

It is essential to have high level intensive care skills on-site 24/7 to support any hospital receiving emergencies. The sustainability of the critical care rota would be made difficult if there was no need for any other anaesthetic services in the hospital, for example the complete withdrawal of

all operative surgery. The hospital would depend heavily on being part of a network with rotation of staff between this and other larger hospitals. As training develops, it is possible that doctors providing support for intensive care will increasingly have an emergency medicine or acute medicine background.

2.1.6 Recommendations on the future of emergency care

- **The Academy suggests the facilities and services for urgent and emergency care should be part of a co-ordinated system, including primary care, community hospitals/UCCs, local hospitals, district hospitals with all key supporting services, and district hospitals with highly specialist services. The exact configuration of these services will have to be determined by PCTs working with each other and with their local providers and overseen by StHAs. Professional advice is available from the Colleges and specialty associations.**
- **Clinicians from primary care and the acute specialties need to be engaged at an early stage in framing any proposals.**
- **Public and staff involvement is vital.**
- **Hospitals accepting unselected medical emergencies must have on-site surgery.**
- **Where similar services are offered by hospitals in close proximity, thorough clinical assessment of emergency departments may conclude that some are not viable. Where this is the case, then potentially difficult political decisions will need to be taken. It may be that the most appropriate response from a clinical perspective would be to close one emergency department rather than convert it to one which accepts only selected medical emergencies.**
- **Strong and effective urgent and emergency care networks should be established, funded and their performance audited.**
- **The system of care planning for those with complex and chronic conditions needs to be improved.**
- **There should be an increase in the capacity of some highly specialised services.**

2.2 Obstetrics

2.2.1 Background

The National Service Framework (NSF) for Maternity Services[64] and Maternity Matters[65] set out a number of markers for good practice including managed maternity and neonatal care networks. Maternity care should be seen as a continuum with care pathways ranging from anticipated normal delivery up to complex tertiary care. Within this framework, the key issues of choice, safety and quality need to be addressed. There is concern that a number of NHS reforms and initiatives, not least payment by results, will inhibit or impair the implementation of the NSF. The major achievement of the NSF is that it has the full support and commitment of all stakeholders – the clinicians, the patients, the public and the politicians (manifesto commitment to deliver the NSF by 2009). Thus an approach that keeps the emphasis on the implementation at regional and local level of the key objectives of the NSF, rather than one which puts the emphasis on reconfiguration of services, may be more effective in the longer term.

2.2.2 Current level of provision and need

Most routine antenatal care can be delivered in the community by midwives. Access to consultant-led obstetric services is required for many obstetric and medical conditions and procedures such as detailed scanning, as well as the management of high-risk pregnancy.

Birth is a time of relatively high risk for both mother and child. Over 95% of births are managed with immediate access to a consultant-led obstetric unit with supporting anaesthetic and paediatric services. Even a pregnancy judged as low risk might develop sudden and unexpected complications that need immediate specialised management. A minority of births take place at home (2–3%) or in stand-alone midwife-led units (3%). There is increasing evidence that the management of risk is more difficult in these circumstances and that transfer to an obstetric unit as an emergency in labour is a poor experience for the mother. Currently 30% of primigravidae are transferred from home or from free-standing midwifery units to a consultant-led service. Women opting for such care should be made aware of the risks they are accepting in such choices.

2.2.3 Is change needed and why?

There is evidence that the continuous presence of trained obstetricians in delivery suites, particularly those dealing with high-risk pregnancies, improves maternal and neonatal outcomes. Intrapartum care, like other aspects of high-risk medicine, benefits from the presence of fully trained, experienced individuals. The implications for the specialty and the obstetric workforce have been published previously[66] and these will be confirmed in *Safer Childbirth: Minimum Standards for Service Provision and Care in Labour*. (www.rcog.org.uk/index.asp?PageID=498)

Table 2 illustrates the consultant sessions available in maternity units in England at present and demonstrates how far we are from achieving daytime consultant presence, even in the bigger units.

Table 2 Maternity units and consultant sessions in 2005.

Size of unit	Number (n=247)	Proportion with >10 consultant sessions (%)
<1,000	17	6
1–2,000	51	37
2–3,000	68	40
3–4,000	58	64
4–6,000	49	74
>6,000	4	100

2.2.4 Proposals to improve the quality of care

The gradual introduction of a consultant-based service in obstetrics was the key recommendation in *The Future Role* document,[66] and the new specialist training programme in obstetrics and gynaecology is to a great extent designed to meet this need. The evidence indicates that senior involvement leads to improved safety, less intervention and better outcomes, and is recommended by clinical negligence scheme for trusts.

The eventual target outlined in the *Safer Childbirth* document is to achieve 168-hour consultant presence in the biggest units and certainly by 2010 in those units delivering more than 5,000 babies. For units delivering 4,000–5,000 babies the aspiration is that 98-hour presence would be achieved by 2009, and for units delivering 2,500–4,000 babies by 2014 (see Table 3).

Table 3 Consultant presence on labour ward.

Size of unit	60-hour	98-hour	168-hour
<2,500	Local decision	Local decision	Local decision
2,500–4,000	2009	2014	
4,000–5,000	2008	2009	
5,000–6,000	2007	2008	2010
>6,000		2006	2008

It is anticipated that units delivering less than 2,500 babies per year will be regarded to a great extent as low-risk units and will have to make arrangements according to an assessment of the level of risk (at present only one-third of those units even have daytime consultant presence).

These aspirations to increase the trained presence in UK delivery suites would require an expansion in the number of trained specialists of the order of 60–70%, increasing the workforce in England from about 1,500 to approximately 2,500, which is probably unattainable. However, if there was to be a degree of reorganisation of the services, particularly smaller consultant-led

units — which seems inevitable with the additional pressures of the EWTD — an acceptable consultant presence throughout the delivery suites in the country could be delivered by 2,100 consultants; this figure could be achieved by a 5% expansion over five years (see Table 4).

Table 4 Anticipated workforce in 2011 (England and Wales).

Consultant expansion (%)	2005	2007	2009	2011
3	1,544	1,637	1,737	1,843
5	1,544	1,702	1,876	2,069
7	1,544	1,768	2,024	2,318

It should perhaps be emphasised that these calculations refer to reconfiguration of consultant-led services delivering more than 2,500 patients (or thereabout) and do not refer to the very small consultant-led units or indeed to midwifery-led units, particularly those that are free-standing. Thus fluctuations up or down in the number delivering in smaller and midwifery-led units do not affect these calculations and in no way undermine the need to reconfigure the other consultant-led units. Less than 6% of UK deliveries currently take place at home or in free-standing midwifery units. Similar issues occur in staffing neonatal and obstetric anaesthetic services.

Rural and isolated populations

In many parts of England, particularly in the North and South West, the provision of maternity services is greatly affected by the geography of the region and the necessity to meet the needs of dispersed, rural and remote populations. The provision of maternity and neonatal care in these circumstances requires consideration of a number of quality issues including safety and satisfaction (delivery closer to home). There will be particular resource issues, as well as personnel issues, including morale and the maintenance of skills. The closure of a unit in these circumstances rapidly becomes a political issue as the local communities rally round their small hospital or delivery unit.

A major neglected issue in these considerations is the quality of transfer and transport, in the event of emergency, to a suitable unit. Some work addressing the issues in the context of neonatal transfer has been carried out in Scotland. This particular issue (ie the transport and transfer of women and their babies) requires more serious consideration when issues of reconfiguring of services are discussed.

2.2.5 Are there problems with this model?

A number of policies are acting as barriers to change and to setting up meaningful networks of care.

Payment by results makes it difficult to set up pathways of care as it is individual episodes that receive funding, which may lead to perverse incentives. Also payment by results might lead some

providers to provide low-risk 'office hours' services but hand back the high-risk 24/7 service to the NHS.

The provision of obstetric services is a very emotional issue for health communities and a perceived loss of a service will generate a great deal of debate and anxiety. Local and at times national politicians inevitably become involved in these debates. This can be a major barrier to change.

2.2.6 Recommendations

- **The NSF for Children, Young People and Maternity Services[64] and Maternity Matters[65] should be implemented with particular respect to the issues of choice, equity, accessibility and continuity of care. There is a need to reach the vulnerable sections of our community more effectively. However there is also a need to improve the provision and quality of care for the 95% of the population who deliver in consultant-led delivery units. Recent experience with failing maternity services has indicated the importance of clinical leadership, consultant presence and multidisciplinary working. Safety remains a significant issue in the organisation of services.**
- **The key steps are to derive an agreed set of national maternity standards which encompass the whole of maternity care, including antenatal, intrapartum and postnatal care. In addition, there is a need for the appointment of local maternity leaders, probably in England at StHA level.**
- **A more detailed piece of work on the reorganisation and reconfiguration of maternity services should now be carried out.**

2.3 Paediatrics

2.3.1 Background

The care of the acutely ill or injured child may require input from a wide range of paediatricians and a number of other specialists including surgeons and anaesthetists.[67] The development of networks of care linking primary, secondary and tertiary care are essential to provide the best care for children and their families.

2.3.2 Current level of provision and need

Demand

- About one in four attendees at UK A&E departments are children, accounting for about four million attendances each year. The majority of these children and young people will have minor illness or injury. They will be treated and discharged by ED doctors (see section 2.1 Emergency medicine).
- Around 50% of children less than one year old and about 25% of children and young people between one and 16 years old are seen in an ED at least once a year.
- There has been an increase of 14–18% over the past few years of children attending EDs. Many of those children have 'primary care problems', but present to the acute sector of the NHS.
- Out-of-hours work provides a significant workload. A DH survey in 2002, prior to the changes in the general medical services contract, showed that one in six calls were to see a child with a severe or life-threatening condition compared with one in 20 for adults.

The nature of illness in children

Acute services for children are distinct from adult acute care in several important ways.

The clinical course of acutely ill children is often much less predictable than for adults; many conditions seen in childhood do not occur in adulthood and require knowledge of their natural history and treatment.

The early stages of undifferentiated illness in children can be challenging to even the most experienced paediatrician. Observation of the progression of the illness, with the judicious use of investigation, helps in deciding whether they need further treatment. This is within the context of the four-hour target and a seasonal variation in the number of children presenting to the secondary setting.

Injury may be due to non-accidental causes and an awareness of safeguarding children is mandatory amongst all front-line clinicians.

Communication with young children and families requires different skills to those in adult medicine; social and domestic considerations have to be taken into account when arranging the child's management. A multidisciplinary approach may be required, particularly if the child's condition is an acute presentation on the background of long-term illness.

Acute paediatric services include a multiplicity of service types: medical, surgical and neonatal care, as well as child protection and child mental health. In general EDs should be co-operative, working between paediatricians and emergency physicians to decide how children and young people can be managed safely in the local hospital.

Newborn services

Newborn intensive care needs to be considered as integral to acute paediatric care services. Good outcomes from neonatal intensive care provide a foundation from which all subsequent development depends. The long-term cost to society of not providing high-quality care is substantial and there are difficult ethical decisions to be made around the viability of very premature infants.

Cross-cover between newborn services, acute paediatric care, and emergency children's services creates considerable knock-on effects for the organisation of services.

The improvement in the numbers of survivors of neonatal intensive care and developments in modern medicine have meant that, as well as an increase in the number of normal survivors, there is an increased number of children who have long-term conditions or complications arising as part of their condition.

2.3.3 Is change needed and why?

Size and location of services

The NSF for Children, Young People and Maternity Services[64] laid down standards for children's services. A recent review by the Healthcare Commission[16] showed that these standards are not being met in the majority of hospitals. The Intercollegiate Working Party for A&E Services for Children has just revisited the document produced in June 1999 and has updated the service standards.[68]

The current configuration of acute services for children requires a fundamental review. While the traditional expectation is that high quality inpatient care should be available locally, most patients are prepared to travel to receive more specialist care. In countries where there are more centralised general services, there does not seem to be an increase in mortality or morbidity as a result. On the contrary, the outcomes in Europe for children with conditions such as solid tumours, diabetes or prematurity are now better than those in the UK and this needs urgent attention.

Workforce issues

There are currently approximately 2,700 paediatric consultants in the UK, working across the full range of general, neonatal, community and specialist services. They are contracted for an average of 11.5 programmed activities, but diary analyses reveal considerably longer working

hours, with a majority failing to meet EWTD requirements.[11] The medium-sized district hospital serving a population of approximately 300,000 has at present about five consultants who may have responsibilities for the local neonatal service as well as running paediatric inpatient, emergency and outpatient services. In some settings, community-based paediatricians take a role in covering the acute hospital service. Additional roles such as accommodating the changes arising from MMC[25] will put further pressure on the time available to such a consultant body in delivering clinical services.

To provide this breadth of cover within an EWTD-compliant rota, eight consultant paediatricians are required. However, paediatric consultant expansion has fallen from 7.3% (2001–2003) to 4% (2003–2005), making this target unattainable at the current rate of health service investment – and even more so when investment in the NHS is reduced in 2008. Even if additional investment was to be made, the number of trainees currently in the paediatric programme would not be sufficient to feed the required expansion by 2009.

The above calculations for consultant expansion do not take account of the option of being resident on call, and hence there is a continuing heavy reliance on middle-grade junior staff in particular for safe out-of-hours cover. Our most recent data indicate that 65% of junior paediatric rotas will not meet EWTD 2009 criteria for compliance. In summary, paediatrics is short of medical staff at all levels.

Based on the current rate of consultant expansion and the predicted output from the paediatric programme, we anticipate that 25% of current district general units would have to close to achieve EWTD compliance for consultants.

Paediatrics has enjoyed the recruitment of a relatively large proportion of female doctors, many of whom may wish to work less than full time at some stage in their career; indeed, the same is increasingly the case for a number of male doctors.

Workforce issues specific to neonatal services

The critical issue for future delivery of neonatal services is the recruitment, training and retention of both medical and nursing staff. The future reduction of trainees' working hours will have an immediate impact on the delivery of care. There should be less reliance on doctors in training and more reliance on trained doctors in delivering the service.

As with obstetricians, it is likely that, in future, consultant presence 24/7 on the largest units will be required. Routine newborn examinations should be an integral part of postnatal midwifery care, but with support from neonatologists where concerns are identified. Midwives in midwifery-led units must be competent to provide basic resuscitation, and their skills in caring for a sick infant until a retrieval team arrives need to be defined and assessed.

It is not possible – nor an efficient use of resources – to provide 'flying squads' to provide emergency care to midwifery units. Women must be aware of what can and what cannot be provided in such units.

2.3.4 Proposed structure of care for acute conditions in childhood

The intention is to provide the same quality of care 24/7, regardless of where the child and their family reside in the UK. Reducing inequalities of access and improving inequities of outcome should be an integral objective of urgent care delivery. No single model of care will be appropriate for all social or geographical settings but the outcomes of urgent care must be similar. Potential configurations of acute services for children are given in the boxes below.

In planning paediatric services where small units are located in close proximity to larger units or two medium-sized units are in close proximity, serious consideration needs to be given to amalgamation of services and reducing inpatient accommodation.

New and innovative methods for improving outcomes for children presenting for urgent or unscheduled care and reducing pressure on hospital services need urgent exploration, particularly in settings where reconfiguration of services is not practical. GPs currently provide much of the routine 'in hours' urgent care for children. An innovative model is being developed in North London where it is proposed that secondary care practitioners could work alongside GPs and other members of the primary care team by day to support delivery of both acute and planned care in the community. Primary care practitioners could work on the hospital site to support management of primary urgent care by day and/or by night. In all settings, the clinical team would be multiprofessional, including children's nurses and other staff with targeted paediatric training.

A. Primary care and community services

Example

The need is for a local service for the large numbers of children with acute undifferentiated illness/injury.

This need will mostly be met by primary care, but there is a need for better access to a paediatric opinion. The delivery of safe care depends on:

- Maintenance of competence within a large clinical workforce, where first-line presentation of serious illness is relatively uncommon but potentially devastating if unrecognised.
- The continued development of clinical teams who are trained in the recognition and treatment of common paediatric conditions, and who are able to discern potentially complex diseases that require referral to more specialist services.
- Easy access to a second opinion when front-line clinicians feel outside their competence.

B. UCCs, community hospitals serving small populations, paediatric assessment units

Example

Children need assessment and treatment of moderate injury, the assessment of minor illness and local access to basic imaging.

A lead paediatrician (as part of the network) to advise on clinical guidelines, staff training and clinical governance issues.

Staff should be competent in the initial assessment of children, including recognition of the sick child, basic life-support skills, recognition of important but uncommon conditions and child protection recognition skills.

continued

B. UCCs, community hospitals serving small populations, paediatric assessment units – *continued*

The interface between primary care and initial point of access must include effective channels of communication between clinicians. This would allow the assessment of clinical trends, a focus for a child-friendly approach to investigations and awaiting specialist opinion.

There must be fast and easy access to effective transport systems when the illness is more serious.

Extended hours (14–16 hours) ambulatory paediatric assessment services can provide a local focus for the assessment of children. There are successful examples in the UK, such as at Welwyn Garden City.

An alternative model is at Weston (25 miles from Bristol Royal Hospital for Children). Four paediatric consultants who are part of the acute rota at the Children's Hospital provide an outpatient service which is responsive to urgent needs. The ambulatory service is limited to 0900–1700 h. There are no junior staff and the department manages urgent care only (ie walk-ins). All emergency care and ambulance cases are managed in Bristol.

C. A model for acute services in remote and rural settings

Example This will require an acute hospital because it is remote

- Co-located urgent care centre and/or current systems for GP-delivered out-of-hours care.
- Access to district hospital.
- All ED staff trained to level where they can assess – and where necessary stabilise and arrange transfer – of sick children.
- All paediatric staff to take part in urgent care rota, including those working in community settings during the day.
- Child and adolescent friendly observation area attached to ED.
- Children's ward if adequate staffing.
- Access to retrieval or emergency transport service.
- Paediatric support from a larger centre to the local GPs and ED staff.
- Access to specialist second opinion, use of telemedicine.

Children would need transfer if:

- Unstable/'collapsed'.
- Unstable/deteriorating after four hours.
- Needing hospital-specific investigation or treatment.
- Unable to cope at home with support/domestic or social concerns beyond the immediate management of primary care/social services.

D. The district hospital

Example Typically, such a unit would be the current 'medium-sized' district general hospital, serving a local population of approximately 300,000 adults and children. About 15,000 of the ED attendees would be children; there could be expected to be 3,000 admissions per year and 3,750 newborn deliveries per year.

Children needing emergency treatment and care requiring multidisciplinary services including:

- Medical conditions (eg febrile illness, asthma, bronchiolitis, diarrhoea, convulsions).
- Surgical conditions (eg head injury, fractures, the acute abdomen, burns).
- Neonatal care (eg resuscitation at birth, prematurity, infectious disease, congenital abnormalities).
- Child protection (eg acute injuries, sexual assault).
- Child mental health (eg acute psychosis, depression, suicidal behaviour and self harm).

Services provided:

- Urgent care out-of-hours centre co-located with the ED.
- Designated ED liaison consultant paediatrician.
- If over 16,000 ED attendees, consultant with accreditation in paediatric emergency medicine.
- Child friendly observation area attached to ED.
- Acute paediatric consultant rota 8 WTEs.
- Neonatal unit – level 1 or 2
- If level 3 neonatal unit, 8 WTEs consultant rota
- Children's ward
- Retrieval or emergency transport service.
- Telemedicine support.

E. Specialist services – a model for acute service in a large centre

Example Typically based on the current 'large-sized' district general hospital, serving a local population of approximately 500,000 adults and children. About 25,000 of the ED attendees would be children; there could be expected to be 5,000 admissions per year and 6,250 newborn deliveries per year.

- Urgent care out-of-hours centre co-located with the ED.
- Children's ED.
- Emergency physician with accreditation in paediatric emergency medicine.
- Consultant in paediatric emergency medicine from paediatric background.
- Acute consultant on-call rota 8 WTEs.
- Other specialist rotas (eg neurology, infectious disease, specialist child protection).
- Children's ward.
- High dependency unit (HDU).
- If level 3 neonatal unit with 8 WTEs consultant rota
- Paediatric intensive care unit.
- Specialist consultant rotas.
- Provision of transport/retrieval service.
- Co-located specialist services.
- Provision of telemedicine/second opinion to smaller places.

Neonatal care

The integral relationship between general paediatrics services, services for the newborn and maternity services must underpin any plans for reconfiguration. Services must be designed so as to enable midwifery-led units to provide safe and effective initial resuscitation and stabilisation for the unexpected premature or acutely unwell neonate prior to the arrival of retrieval services. Level 3 neonatal intensive care units must have the capacity to enable the networks to function as designed. As intensive care becomes increasingly specialist, the model of 'many centres doing a little' becomes increasingly less viable (see section 2.2, and section 3.7 Obstetrics).

The British Association of Perinatal Medicine (BAPM) standards for designation as a level 3 unit[69] advise there should be a neonatal registrar and consultant with rotas separate from general paediatrics. As such, should the number of units currently designated as level 2, but providing medical care to all ages of gestations be redesignated as level 3, more paediatric staff will be needed.

2.3.5 Are there problems with this model?

It is not likely that there will be enough consultant paediatricians to staff small hospitals (ie those with no inpatient cover). Assessment units at a distance from inpatient services have had a mixed success. They have worked in some areas where they are well networked with the local larger service, but in others where there is a perceived 'loser' and 'winner' there have been problems.

If an extended-hours ambulatory unit is left on the non-inpatient site, this could offset any economy of scale that might have been achieved by the amalgamation of units. The worst case scenario would be that an increasing number of paediatricians would be required across the two sites.

In small units which are remote from a large centre, the challenge is maintaining competence of practitioners when the numbers of children are small. There are two immediate solutions. The first is that small units are networked into larger centres that have the capacity to support clinicians through the development of management protocols, education and training, assurance and improvement programmes. The second is that there are rotations of staff between large and small units. Examples are seen in remote locations such as Stornoway on the Isle of Lewis, with support from the major centre in Glasgow, and more local support offered by Inverness. Child-friendly assessment/observation areas should be seen as an essential feature of such models.

The existing model of secondary care paediatrics, which requires a 1:1 ratio of consultants to middle grades, and at least a 1:2 ratio of consultants to juniors overall will not provide a sustainable EWTD-compliant solution for paediatric provision. The current ratio of consultants to juniors in paediatrics is 1:1.6; most specialties envisage that a 3:1 ratio of consultants to trainees will be required when we are in steady state.

2.3.6 Recommendations

- **The current interface between primary care and secondary care needs to be reviewed. Increasingly, care which has traditionally been provided in hospitals will be delivered in community settings, and there will be occasions when urgent care traditionally delivered**

by primary care is best delivered in close proximity to an ED on a hospital site. Similar clarification is needed for the interface between secondary and tertiary care.

- The concept of a family-friendly journey, along a pathway delivered by teams working together in managed network to deliver a safe and effective service, is fundamental. In terms of resources, this cannot be achieved without partnership between those commissioning and those providing services. The ideal network will vary according to setting. Small rural areas will have different requirements than large urban ones. The key issue is a managed network[70] with agreed governance, protocols and referral criteria. Resources, including transport for parents and patients, must be agreed and allocated fairly across the network.
- Neonatal services are probably the best example of the introduction of pathway thinking by the use of protocols and managed networks at a national level. Strong leadership and comprehensive standards of practice have enabled a successful transition from independent units to managed networks.
- The balance between maintaining local access to high-quality services and achieving and sustaining specialist expertise in centres of excellence is a challenging one to achieve. The complexity of these issues is compounded since neonatal service must integrate seamlessly with antenatal/obstetric services and sometimes cross-cover with other paediatric services.

2.4 Cardiovascular disease

2.4.1 Background

Patients requiring hospital treatment for suspected cardiovascular emergencies are currently admitted to the nearest acute hospital. Those requiring highly specialised care that is not available in the admitting hospital are transferred, either as emergencies or urgently, to centres with the appropriate facilities.

2.4.2 Current level of provision and need

Local planning of cardiac services in England is primarily the responsibility of the 32 networks set up following the introduction in 2000 of the NSF for Coronary Heart Disease.

Based on the most recent available information (2006), 31 hospitals in England, the 'tertiary' centres, provide a full range of cardiac services including surgery. Patients with heart attacks are managed in 208 hospitals and 28 of the 31 ambulance services have the capability to provide prehospital thrombolysis.[71] In 2005, 130 NHS hospitals had cardiac catheterisation laboratories, 73 of them undertaking only diagnostic procedures and 57 both diagnostic angiography and coronary angioplasty (PCI).[72] Primary PCI was being carried out as the default strategy for acute ST elevation MI (STEMI) in 30 hospitals, but only 14 were providing this service 24 hours per day. A total of 150 hospitals provide permanent pacing, of which 42 also implant defibrillators. Thirty-four of the 42 defibrillator services (as of 2004) also undertake advanced arrhythmia management ('ablation').

Hospital Episode Statistics for 2005 record that of 755,353 patients admitted to hospitals in England with a primary heart disease diagnosis (excluding cerebrovascular disease, pulmonary heart disease and diseases of the arteries and arterioles), 476,641 (60%) were categorised as emergencies.[73]

The focus of the proposals for the reconfiguration of acute services for cardiovascular disorders is on STEMI.[74] It is important to recognise, however, that many other cardiovascular diseases present at various times in their natural history as emergencies; the management of these patients requires expert care by a cardiologist, intensive care facilities and the 24 hours a day availability of imaging and laboratory services.

The optimal treatment of patients with acute STEMI is primary percutaneous coronary intervention (PPCI). This requires 24-hour access to cardiac catheterisation laboratories, the appropriate consultant-based clinical teams and a sufficient number of procedures to maintain individual operator and institutional competence. Studies from the USA, Czechoslovakia, Denmark and Norway have demonstrated that the benefits of primary PCI (over thrombolysis) are preserved even when patients have to be transferred over relatively long distances with journey times of perhaps up to three hours.[28] For patients who present very early after symptom onset,

and where longer transfer times apply, the balance may tip in favour of thrombolytic therapy. In these cases, the optimal strategy is prehospital thrombolysis delivered by the paramedic team, followed by emergency transfer to a PPCI centre for possible rescue PCI, which may be required in up to 30% of cases.[75–77]

Currently, PPCI is carried out in only a small proportion of STEMI patients. During 2005–2006, almost 26,000 STEMIs were eligible for reperfusion treatment:[71] 20,315 had thrombolytic therapy (2,399 prehospital) and 2,034 underwent PPCI. By the end of 2006 it is estimated that 15% of patients were receiving PPCI and 14% prehospital thrombolysis.[78]

Reasons for the low uptake of PPCI in the NHS include:

- The EWTD that limits hours of work.
- The minimum of 6–10 consultant cardiologists with expertise in coronary intervention to provide a sustainable (24-hour a day) service.[79]
- The national shortage of non-medical cardiac catheterisation laboratory staff.

STEMI accounts for little more than one-third of patients with AMIs.[71] Moreover, while admissions for all types of AMI are declining, there has been an inexorable rise in the number of emergency admissions for angina and chest pain,[80] and only about 5% of those with a suspected acute coronary syndrome have a final diagnosis of STEMI. The great majority of these patients are currently assessed, admitted and managed in DGHs.

Patients with non-ST elevation myocardial infarction (NSTEMI) are optimally managed by initial stabilisation with medical therapy followed by early, but not emergency (ie not outside normal working hours), coronary angiography with revascularisation by PCI or coronary artery bypass grafting (CABG) in appropriate circumstances.[81,82] Such patients require admission under the care of a consultant-led cardiology team with access (which may require transfer) to appropriate diagnostic and revascularisation facilities.

Several pathways of care exist for the management of these patients:

- Admission to a district hospital without facilities for coronary angiography. Patients are transferred to a specialist centre for angiography and intervention. This is satisfactory, provided that stable patients can be transferred expeditiously (within 48 hours) and those with refractory or recurrent myocardial ischaemia can be transferred immediately.
- Admission to a district hospital with angiography but without angioplasty facilities. Those requiring angiography and possible revascularisation may:
  a) Angiography followed by transfer to the PCI centre for intervention (or surgery). This policy has the advantage of reducing the angiography workload of the PCI centres by avoiding transfer, expediting discharge of patients not requiring revascularisation and diverting patients who can be referred directly for CABG.
  b) Transfer of all patients for angiography and intervention if appropriate.
  c) A selective approach, with local angiography for patients judged clinically to be unlikely to require urgent revascularisation and transfer of those perceived to be at high risk.

- Admission of patients to a district hospital with PCI facilities, with local angiography and intervention or, for high-risk patients, transfer to a tertiary (surgical) centre for these procedures.
- Direct admission to a tertiary centre with angiography and follow-on PCI or surgery in appropriate cases.

Optimal management of patients with NSTEMI, from both the patient's and economic perspectives (a single admission to the catheter laboratory), is for angiography to be undertaken in a facility that enables immediate, 'follow-on' PCI to be carried out. This will be achieved only when sufficient infrastructure exists to ensure rapid transfer (or direct admission) to such a centre. Until then, the advantages of local angiography in filtering off patients not requiring or not suitable for revascularisation and in selecting the type of revascularisation for those in whom it is indicated will sustain the practice of angiography for NSTEMI in non-PCI cardiac departments.

Patients are currently experiencing long waits for transfer from the admitting hospital to the interventional centre. An audit by the Heart Improvement Programme (HIP) in English networks over a single month in 2005 showed that the median delay between admission to the first hospital and the performance of angiography and PCI in the specialist centre was six days, with many patients waiting up to three weeks.[83] The existence of such long delays, which block beds in the receiving hospital, is known to result in high-risk patients being discharged and not offered the appropriate, early, invasive assessment and treatment.

Patients presenting with other cardiac emergencies (eg arrhythmias, heart failure and endocarditis) are admitted either under the care of the acute medical team with subsequent transfer to the care of a cardiologist or directly to the cardiology firm. Their management requires the support of laboratory and intensive care facilities, and the facility for transfer to a tertiary centre for specialist treatment. No data on the number of patients being transferred are available, but the HIP audit found that those referred for advanced arrhythmia management waited, as inpatients, for a median of 11 days for their first procedure.[78]

A specific problem relates to patients with bradycardia requiring urgent implantation of permanent pacemakers. Patients admitted to non-pacing hospitals experience long inpatient waits for transfer to a pacing centre: the 2005 HIP audit recorded a median wait between presentation and pacemaker implantation of seven days.[78]

The HIP audit estimated that bed blocking by cardiac patients awaiting urgent transfer for specialised investigation or treatment is equivalent to the bed complement of two medium-sized DGHs every year.

2.4.3 Is change needed and why?

Changes are required to overcome the shortcomings identified in Section 1 and to enable the NHS in England to provide:

- Optimal management – primary PCI or prehospital thrombolysis with admission to a centre for rescue PCI if required – for the majority of patients with STEMI.
- Prompt coronary angiography and revascularisation for patients with NSTEMI (same day for patients with recurrent or refractory myocardial ischaemia; within 48 hours for those responding to medical therapy but with high-risk features).

- Permanent pacemaker implantation within 48 hours for patients presenting acutely with symptomatic bradycardia, particularly for those with temporary pacing wires.
- Prompt expert management of life-threatening cardiac arrhythmias.

2.4.4 Proposed structures for cardiovascular services

It would be inappropriate to define a single service structure for the whole of England. Moreover the optimal strategy for individual cardiac networks will be better informed when the results of the national infarct angioplasty pilot are published. Each network should devise its own strategy according to its existing facilities and geography, but in line with the following general principles.

It is not feasible to provide a PPCI service in the majority of existing acute hospitals because of the workforce implications of a 24-hour service and the necessity for a minimum throughput of cases to maintain institutional competence. If PPCI is to be the default management for STEMI, patients will therefore require rapid transfer to one of a smaller number of specialist heart attack centres. In most networks, these are likely to be the existing tertiary cardiac centres. However, there is no reason to exclude larger district hospitals with sufficient workforce and facilities from providing the service.

To provide a very approximate estimate of the workload: if there were to be 32 centres (the number of English networks) providing round the clock PPCI, each would, on average, carry out about 800 procedures per year, or two to three per centre every day. If many more units were to provide the service it might be difficult, on the basis of the small number of out-of-hours cases, to justify the cost of a 24-hour service.

Most patients who have undergone successful PPCI can be discharged within 48–72 hours. However, to prevent overloading of beds in the PPCI hospitals (which will also be providing other specialist cardiac services), to engage the involvement of local clinical teams and to minimise the time that patients spend in hospitals distant from their homes, treated patients should be transferred to their local hospitals for initiation of cardiac rehabilitation.

Ideally the diagnosis of STEMI should be made by the paramedic ambulance team attending the patient so that they can be taken direct to the heart attack centre. This requires:

- Competence of all front-line ambulance crews in the diagnosis of STEMI, advanced life support, aspirin administration, analgesia and emergency arrhythmia management.
- ECG telemetry from ambulances to the centres for assistance with the diagnosis of doubtful cases.
- In rural areas, or in other circumstances likely to be associated with prolonged transfer times to hospital, the ambulance crews should administer thrombolytic therapy to eligible patients.

Arrangements with the ambulance service must enable emergency transfer of patients who have presented directly to outlying hospitals or in whom evidence of STEMI begins while in such an environment.

A large expansion in staffing and facilities would be required in the designated heart attack centres if they were to assume responsibility for the management of all cardiac emergencies or even of all suspected heart attacks. Patients with chest pain suspected of being cardiac in origin, but in whom initial assessment is inconclusive or ambiguous, require observation for up to 12 hours. Advances in diagnostic imaging might in future enable more rapid assessment of these patients, but no justification currently exists for the closure of DGH cardiac departments or removal of their responsibility for accepting the majority of cardiac emergencies.

To achieve the ideal objective of angiography followed by immediate PCI for patients with STEMI, expansion of capacity in the PCI centres to accommodate the increased workload resulting from loss of the 'filtering' function of non-interventional centres needs to be developed. It is important that enough spare capacity is created to allow for the inevitable peak attendance periods . The ultimate consequence of this development will be that non-interventional catheterisation laboratories will investigate only elective patients.

Pacing services need to be expanded. Depending on local circumstances, options are to develop additional capacity in district hospitals (about 50% of pacing activity is elective rather than emergency) or in the tertiary centres.

The long inpatient waiting times for treatment of life-threatening arrhythmias emphasise that similar considerations apply to advanced arrhythmia services, in particular the implantation of defibrillators. Decisions on the site of these services should be determined by the networks and will depend on anticipated demand and existing expertise and facilities.

2.4.5 Problems with this model

Round the clock provision of PPCI places heavy demands on medical and other professional staff. There is a national shortage of physiologists, nurses and radiographers trained to work in cardiac catheterisation laboratories. Availability for on-call duties and working through the night is unpopular; trained members of staff are readily attracted to peripheral centres to work in 9–5 catheter laboratories with no on-call responsibilities. A potential knock-on effect of the introduction of 24-hour activity for emergencies is that staff shortages may result in a reduction in capacity for elective work.

Pressure on beds (general cardiac and intensive care) already exists in most hospitals; an increase in the designated heart attack centres will be required to allow a maximum of 85% average occupancy to ensure that the service can cope with the additional, unpredictable, emergency workload. A concomitant increase in appropriately trained nursing staff will also be required.

Concentration of STEMIs in a restricted number of centres could reduce training opportunities for medical and nursing staff in other hospitals, with consequent deskilling and loss of job satisfaction.

As a result of perverse incentives inherent in current tariff arrangements, PCTs will be reluctant to allow early repatriation from the PPCI centre to the district hospital as this will increase the cost of the clinical episode. For similar reasons, there will be pressure from PCTs to persuade 'diagnostic only' centres to undertake PCI in order to reduce the cost of NSTEMIs treated by PCI (angiography with transfer for PCI almost doubles the cost of the episode). The result will be an increase in low-volume PCI centres, with the risk of inferior patient outcomes.

2.4.6 Solutions

Participation of all interventional cardiologists in the network should make it possible to sustain the 24-hour a day rota. In large networks with more than one PPCI centre, the impact of the unpredictable additional workload on staff, facilities and elective activity could be mitigated by rotating responsibility for the service. Smaller networks without a sufficiently large centre or workforce will need to co-operate or amalgamate with an adjacent network.

Bed occupancy and availability in the heart attack centres should be optimised by same-day or next-day transfer of patients undergoing PPCI to their local hospitals.

Training and job satisfaction issues can be resolved by maintenance of existing cardiac units, joint rotas and appropriate staff rotations.

The system of payment by results and the associated tariffs must be redesigned to remove the perverse incentives that promote suboptimal patient care.

2.4.7 Recommendations

- **The Academy supports the proposal to designate a limited number of hospitals to provide primary PCI for patients with STEMI. Implementation of the plan will require some reorganisation of ambulance services and training of their front-line crews.**
- **The service should be based on and planned by the cardiac networks. Those with multiple DGHs and more than one tertiary centre may designate more than one heart attack centre; small networks may need to co-operate with adjacent organisations.**
- **Urgent measures are required to expand the number of staff trained to work in cardiac catheterisation laboratories.**
- **Additional capacity for coronary intervention should be developed in order to ensure that patients with NSTEMI have access to early invasive management. Once this capacity is achieved, 'non-PCI' catheterisation laboratories should investigate only elective patients.**
- **Cardiac emergencies other than STEMI should continue to be admitted to local cardiac departments, but further expansion of pacing and arrhythmia services is required to ensure timely transfer for those requiring specialised management.**

2.5 Stroke

2.5.1 Background

Stroke is the third most frequent cause of death in the UK and one of the most important causes of adult disability, with approximately 110,000 strokes in the UK per year. Contrary to popular belief, it is a treatable disease and there is good quality evidence to show that rapid admission to hospital and management by stroke specialists reduces death and disability. Despite this, recent data collected for the fifth National Sentinel Stroke Audit (2007)[84] and the NAO report on stroke (2005)[85] shows that many stroke patients do not receive high-quality care; consequently, it is probable that patients are dying unnecessarily and those that survive will in many cases live with higher levels of disability than necessary. Hyperacute care is a particular problem. Out of usual hours most hospital services do not have specialist stroke consultant expertise available.

2.5.2 Current level of provision and need

Admission for stroke and acute management

Only 12% of hospitals report having arrangements with the local paramedical service for the rapid recognition and transfer of stroke patients for acute care. Less than 40% of patients are admitted within two hours of stroke. These are the patients who might be appropriate for thrombolysis, given that they will need to be assessed clinically and scanned before the three-hour time window.

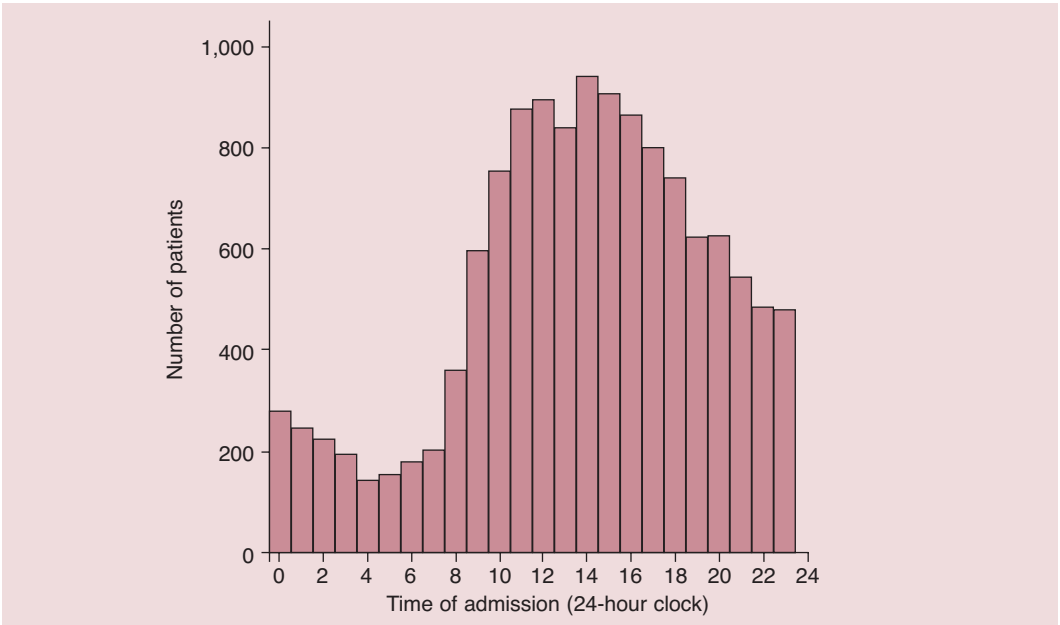

Figure 2. Times of day stroke patients are admitted to hospital.

The majority of patients with stroke are admitted between 8 am and midnight (see Figure 2). Provision of a thrombolysis service between these hours would cover six out of seven patients. Public knowledge about stroke is low and therefore admission to hospital is often delayed beyond the point when effective acute care can prevent ischaemic brain become infarction. Over a quarter of stroke patients are not admitted to hospital on the day of their stroke.

Stroke patients were admitted to medical assessment units in 83% of hospitals and to acute stroke units in only 10%. Patients require the skills of neurologically trained nurses who are often not provided on medical assessment units or admission wards. No specialist acute stroke unit care is provided in 18% of hospitals. Less than 0.3% of stroke patients were thrombolysed in the year to April 2006, with only 24 hospitals having thrombolysed any patients at all in England, Wales and Northern Ireland. An effective national stroke service should be aiming to achieve rates of about 10%. Although thrombolysis has no impact on overall mortality, the combined outcome of death and disability is significantly reduced, with a number-needed-to-treat of only seven for treatment within three hours of symptom onset; the benefits are greater the earlier treatment is initiated within this time window. Effective acute stroke care is, however, not just about providing a thrombolysis service. Outcomes are improved by provision of high-quality basic care through the maintenance of homoeostasis (ie control of hydration, nutrition, blood glucose and electrolytes, oxygenation etc). Management of patients on general wards has been shown to be less effective at controlling these factors than on acute stroke units.

Stroke units

The number of stroke units has increased dramatically over the last 10 years, with 95% of acute hospitals having some form of stroke unit and 62% of patients being admitted to a stroke unit at some point during their stay; 54% spent more than 50% of their stay in a stroke unit. Apart from the small number of patients who require intensive care facilities, all stroke patients should be managed on a stroke unit. There is still a lack of capacity within these units to manage all appropriate stroke patients: 76% of patients staying in hospital less than two days are not being managed on specialist units. This indicates that few patients with minor stroke are admitted within 24 hours to an acute stroke unit. A quarter of patients with mild or moderate strokes deteriorate with stroke progression in the first 72 hours, and these patients generally reach an acute stroke unit only after deterioration has occurred.

Improvement of services for these patients should become a priority in the development of stroke services in the UK. Data from the audit show that patients managed on a stroke unit had considerably better quality of care, confirming the importance of reorganising hospital care for stroke patients so that the vast majority are managed on specialist units. Patients were much less likely to suffer progression of the stroke, more likely to have a swallow screen, to have started aspirin within 48 hours, to have been assessed by therapists within recommended time frames, had rehabilitation goals documented, and a home visit performed before discharge.

Brain imaging

Nearly all hospitals now have the facilities to scan the brain and carotid arteries; however, access remains difficult for some patients, particularly out of normal working hours. Early brain imaging is required to deliver thrombolytic therapy, exclude stroke mimics and confirm a diagnosis of

ischaemic or haemorrhagic stroke to plan appropriate secondary prevention. Only 9% of the patients audited in 2006 were scanned within three hours of stroke and only 42% had brain imaging to confirm their diagnosis within 24 hours of the onset of symptoms. The data suggest that those patients not scanned during daytime hours on the day of admission have to wait until the next working day before the scan is performed.

Management of transient ischaemic attack

The risk of stroke within the first four weeks after transient ischaemic attack (TIA) can be as high as 30%. It is therefore vital that patients with TIA are seen urgently, investigated and a management plan put into place. Where significant carotid stenosis is found, carotid endarterectomy should be performed as soon as possible and within two weeks of symptoms. Once 12 weeks have passed from the TIA, carotid endarterectomy ceases to be of value. National Clinical Guidelines for Stroke[86] recommend that patients with TIA are seen in a neurovascular clinic within one week of the onset of symptoms. However, only 38% of hospitals currently achieve the target of seeing, assessing and managing patients within that time. For very high-risk patients even a delay of a week may result in unnecessary stroke and arrangements must be in place to manage these patients urgently.

Stroke physician workforce

The British Association of Stroke Physicians identifies the need for the provision of a total of 2,379 consultant sessions of direct clinical care across the UK. For England, Wales and Northern Ireland this represents an increase of 63% on currently available stroke physician sessions; for Scotland the required increase is 23%. This total represents a national consultant workforce requirement of between 317 and 525 stroke physicians, dependent on the proportion of work done in other 'parent' specialties such as neurology or medicine for the elderly.

Overall quality of hospital stroke care

There are huge variations between hospitals in the quality of care being delivered, as illustrated in Figure 3. A significant cohort of hospitals has failed to improve standards over successive rounds of audit.

2.5.3 Is change needed and why?

There is good evidence that stroke should be managed as a medical emergency by expert clinicians. This will result in lives saved, less long-term disability and financial savings. Only a few hospitals currently offer comprehensive high-quality care and there are too many hospitals where the standard of care is poor.

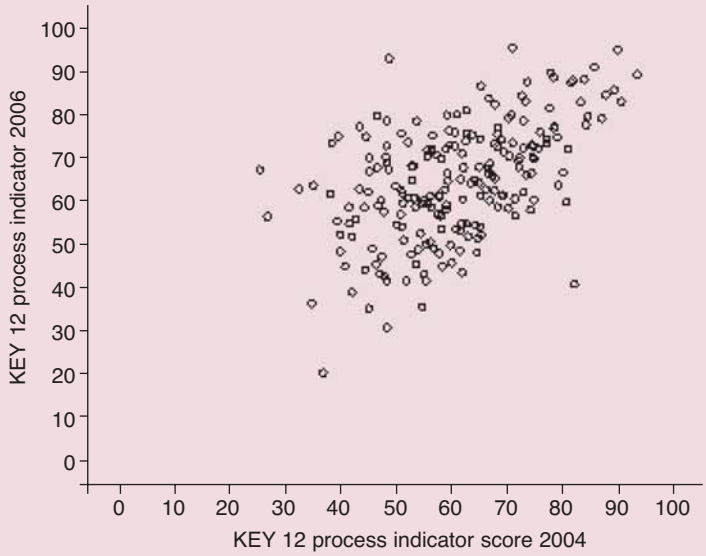

Figure 3. Change in stroke care between the 2004 and 2006 audits showing variation between hospitals in quality of stroke care provided.

2.5.4 Proposed structure for stroke services

Acute admission

Public awareness of how to recognise stroke and how to respond needs to be raised.

Paramedics should incorporate the Face Arm Speech Test (FAST) into their routine assessment of patients and arrange rapid transfer of appropriate patients to a unit capable of delivering thrombolysis. Where thrombolysis is not an option, patients should be taken to their nearest district hospital for direct admission to a stroke unit.

It is unrealistic to attempt to achieve high-quality hyperacute stroke care in all hospitals, the main reason being the shortage of stroke specialists to staff such a service 24 hours a day and seven days a week. In addition, the numbers of admissions are relatively small: an average local/district hospital serving a population of 250,000 will have only approximately one stroke admission per day. Each region will need to design a structure that is appropriate for its local population that is able to provide at all times expert assessment with stroke specialist support, immediate brain imaging and direct admission to an acute stroke unit. For most, it is likely that a 'hub and spoke' model of care, with units capable of delivering thrombolysis and other hyperacute interventions at all times, will be the most rational approach. Such centres would need to have consultant-level stroke physician cover at all times, stroke nurses, access to immediate brain and carotid imaging (CT, MRI and carotid Doppler), neuroradiologists and neurosurgery. Ring- fenced beds would be required similar to the model used for primary angioplasty centres for acute coronary syndrome. Patients would be transferred back to their local hospital once urgent treatment has been delivered and the patient stabilised.

In some areas a telemedicine solution may be considered. This has been shown to be feasible in Bavaria and some other parts of the world where an expert provides specialist opinion via a

video link to a district hospital. Specialist nursing would be needed in the local centres as well as access to emergency brain imaging.

2.5.5 Problems with this model?

The stroke tariff will need to be unbundled to enable sharing of care between different NHS trusts.

The impact on ambulance trusts of triage of suspected stroke patients to 'hub' centres will need to be considered to ensure that a hub centre system benefits all patients with suspected stroke and not just those who receive thrombolysis: for example, the provision of high-quality palliative care for a minority of patients and intensive rehabilitation for the majority.

Provision of sufficient stroke physician sessions to provide 24-hour cover. Many stroke physicians currently also participate in general internal medicine (GIM) rotas, so there may be knock-on effects for GIM cover.

Maintaining skilled staff in the hospitals that are not developed as hyperacute centres (particularly nurses) may be difficult if all the 'exciting cases' are first managed elsewhere.

Engaging the departments of radiology to provide the level of service required may be a difficulty. With current shortages of radiography staff and neuroradiologists there could be problems delivering the service even in the hub hospitals. However, similar services already exist for head injury patients, therefore the stroke service should be achievable.

Training of paramedics to perform effective triaging of patients and delivering them to the correct hospital may be a problem.

The efficient transfer of patients from the hub hospital to their local local/district hospital after emergency treatment has been delivered must be enabled.

2.5.6 Solutions

High-level political commitment and the necessary pump priming financially to set up services will be needed.

Increasing the training places available for registrars wishing to become stroke physicians and training for existing consultant physicians wishing to increase their skills in acute stroke management are required. One option would be to develop training centres based on existing high-performing units. Some additional resource would need to be provided to such centres.

Close working and service level agreements between acute trusts, ambulance trusts and regional neuroscience centres need to be realised.

StHAs should develop a plan for stroke services for their region with the flexibility to develop local solutions appropriate for their geography and population, with the absolute requirement that all patients, regardless of where they live, should have access to the highest standard of care.

2.5.7 Recommendations

- **Subregional/regional stroke networks should be developed to deliver emergency treatment for all appropriate stroke patients using the model already developed for primary angioplasty for acute coronary syndrome.**
- **Patients should be transferred back to their local stroke unit as soon as appropriate.**
- **Stroke should be recognised and treated as a medical emergency by paramedics, ED staff, radiology and stroke physicians.**
- **All stroke patients, even if not appropriate for thrombolysis, should be managed on acute stroke units, equipped and staffed to deliver high-quality care.**
- **Workforce issues, including the training of sufficient stroke physicians, stroke nurses and radiographers, need to be urgently addressed.**

2.6 Medicine for the elderly

2.6.1 Background

People over 65 years constitute 16% of the general population and occupy 43% of acute hospital beds. Elderly patients are three times more likely to be admitted from A&E departments than younger patients.[87] Geriatricians tend to see people over 65 years with 'geriatric' problems (immobility, falls, confusion, incontinence, adverse drug reactions, multiple comorbidity and caregiver strain). However, most patients seen in geriatric units are over 80 years old. Some patients have single-system problems (increasingly, many of these patients will be managed by specialist physicians, eg for management of MI, gastrointestinal bleeding, respiratory failure). The fastest growing group in the population is the over 85 year olds. The diagnosis, management and care of very old people who become ill or present with complex disability is one of the major challenges to medical services worldwide.

Ill older people merit a first-class service. This means that they should be accurately diagnosed (usually the sooner the better), comprehensively assessed by a skilled interdisciplinary team and given the best care in the most appropriate place.

2.6.2 Current level of provision and need

Most elderly care is delivered in primary care. Hospital admission is usually due to a clear medical emergency, for example, dyspnoea, stroke, sepsis, heart failure, pain in many sites, fits, hypothermia. More insidious problems (often labelled 'geriatric' problems such as falls, confusion and reduced mobility) are still sometimes mistakenly assumed to be 'social' problems or non-specific difficulties in coping (frailty, weakness, general deterioration). However often there is a serious underlying condition that may require an acute hospital admission. In the UK, most acutely ill old people are seen on a geriatric or medical acute reception unit, where there are daily (often twice daily) consultant rounds. Some go home from here, some die, some can be transferred to intermediate care, either at home or to another facility, such as a care in the community (CIC) bed in a care home. Most will be transferred to a general or specialist elderly care ward (eg for stroke care).

Geriatricians also provide outpatient clinics (general or specialist, eg falls, movement disorders, incontinence, TIAs), day-hospital care, expertise on orthopaedic and other specialty wards, a referral service to all adult specialties, home visits and a community service.

A core feature of successful geriatrics is rehabilitation, which usually starts on day one of an illness and which involves an optimum number of trained and enthusiastic staff.

Over the years, standards of elderly care have risen and lengths of hospital stay have fallen dramatically. The specialty is now the biggest in the Royal Colleges of Physicians and attracts high calibre clinicians attracted by the challenges and rewards of geriatric medicine.

2.6.3 Is change needed and why?

The demographic pressures, political directives to move more care into the community, the rising expectations of patients, the changes in training schemes and the EWTD (among other factors) mean that creative solutions will have to be found so that the increasing numbers of very old people get the best care at the right time in the best place.

Hospital services were not designed with old people in mind.[87] The buildings often do not meet the needs of those with disabilities. Moving patients from ward to ward is contraindicated in delirium and can increase the number of nosocomial infections. Mixed wards and bays are not popular with elderly patients. The reduction of therapy services has meant that some rehabilitation is not as good as it might be. Some trusts are in financial difficulties and do not replace staff who leave: this can place great strain on staff in wards that, even in times of plenty, were not especially well resourced. There is a concern that some patients are being discharged 'quicker and sicker', largely because of reduction in bed numbers. This is a particular problem in the winter, when there is a big increase in the number of elderly admissions. Many geriatricians take responsibility for acute intakes of all ages, taking time away from elderly patients. Many old people do not wish to go to hospital and few that do wish they had stayed longer.

2.6.4 Proposed structures

A Admission avoidance

The concept of diverting ill old people from hospital causes concern to many geriatricians who fear a return to ageist practices. However, there are some possible approaches that might be useful.

Admissions from care homes

In a city of 750,000, there will be about 5,000 hospital admissions of old people from residential and nursing homes each year. With earlier assessment and staff training, many of these patients could be managed just as well without coming into hospital. There is evidence for this from GP-run visiting teams. Community matrons may also have an important role, but as yet there is no evidence for effectiveness.

Intermediate care

Many conditions could be managed by a community-based multidisciplinary team treating patients at home, in care homes or community hospitals. Common presentations treated in this way are falls (carefully selected to ensure that those with underlying medical problems are fully assessed), minor injuries, urinary infections, selected chest infections and cellulitis. With better training and facilities, it is possible to manage some chest infections, dehydration, delirium and perhaps other disorders in upgraded nursing homes.

Case management

Focusing the activities of skilled nurses on patients who are frequently admitted might offer reduction in admissions, but a recent study of Evercare nurses in the UK found that this hope was not realised.[88] It remains to be seen whether other benefits result from this intervention.

Rapid access clinics, specialist clinics and day hospitals

Though the evidence base is not strong, quick access to a geriatrician and the team may enable patients who are causing concern to be reviewed within a day or two. Falls' clinics are of proven value in reducing the number admitted with falls and fractures. The role of specialist nurses warrants further investigation.

Ambulance teams

Specially trained ambulance personnel can assess those who fall and others who might otherwise have been taken to A&E departments. In some places, all old people who fall and are helped by the ambulance team are referred within two hours to the intermediate care team, who may then consult the GP or geriatrician. The safety and acceptability of this approach merits further study.

Home visits

Domiciliary visits by geriatricians have the potential to prevent unnecessary admissions and to offer a repertoire of alternative options for patient care. They also have the potential for mutual teaching by consultant and GP as well as trainees and students. They are often time-consuming but popular with patients and families.

Primary and secondary prevention

Educating older people about diet, exercise, smoking and alcohol ought to result in reduction in admissions in the long term but again hard evidence is meagre. Attention given to oral care, foot care, vision, hearing and continence promotion would be expected to increase health gain.

Community geriatricians

The ready availability of an experienced physician to community colleagues might help reduce admissions. Community geriatricians see people in care homes (CIC beds and permanent residents), do home visits at the request of nurses, therapists and GPs, give advice to everyone in the team, get details of complex patients from hospital records and other sources and provide training programmes. Again, the provision of this service has preceded evaluation of efficacy and cost-effectiveness.

Alternatives to the accident and emergency department

It might be argued that the only patients who should be treated in A&E are those with chest pain, surgical emergencies, trauma and those with abnormal physiology (temperature, blood pressure coma, etc). Ill old people in particular should not be subjected to long waits before a treatment and placement plan has been formulated. A unit for sick old people adjacent to A&E might offer advantages. Ill old people could be seen promptly by a consultant-led team. The input of intermediate care staff could ensure that the full range of community options is considered, key information is available to intermediate care and early relocation takes place without the need for admission.

B Early supported discharge

There is a range of community options which could allow more old people to leave hospital earlier. These include intermediate care beds, intermediate care at home (where rehabilitation is usually better geared to the patient's needs), community palliative care, stroke support teams, care by other specialists (eg chronic obstructive pulmonary disease (COPD nurses) and community hospitals.

2.6.5 Problems with this model

A major barrier to acceptance is the fear that the changes are retrograde and being put into place rapidly to save money rather than to provide high-quality care. They are seen to be discriminating against old people. The rolling out of innovations ahead of evaluation is also a cause for concern. The closure of beds, wards and units is sometimes done before community-based services are fully in place. The potential for nursing homes is great but there are major training and resource implications.

2.6.6 Recommendations

- **The key to successful management of older people is comprehensive geriatric assessment. This requires a skilled interdisciplinary team working with patient and family to assess physical, psychological, functional, social and other aspects in order to improve health, function and well-being. There is a large evidence base for comprehensive geriatric assessment.[89–91] This could be carried out in community settings as well as in hospital.**
- **There needs to be an increase in the numbers of community geriatricians working with primary care and rehabilitation teams.**
- **New concepts such as teaching care homes or community hospitals should be trialled.**
- **Many of the concepts for newer methods of care need careful evaluation.**
- **Older patients with sudden acute illness need access to emergency hospital facilities and, if required, to specialist hospitals.**

2.7 Summary of standards*

Specialty	Patient need	Delivery and organisation standards	Current staffing/provision	Projected 2009	Projected 2012
INTENSIVE CARE 24/7 service for sickest patients Anaesthesia is the first specialty of most UK intensivists (see section 3.1 Anaesthesia and intensive care)	24/7 Intensive care; needs-based access to acute specialties and equipment.	Minimum of two (preferably three) ward rounds daily with consultant present.	24/7 – consultant-led. 24/7 – a medical practitioner of appropriate experience and training. 24/7 – staff capable of managing an airway emergency <3 minutes; initial assessment of patient; minute by minute physiological manipulation.	Not enough experienced doctors to provide 24-hour dedicated intensive care unit cover in some hospitals. Challenges of recruitment and retention of medical staff if full services not provided on site.	Sufficient trained doctors to provide 24/7 cover in all intensive care units if consultant expansion continues.
ANAESTHESIA Largest single specialty in acute hospital – major contributors to delivery of care (see section 3.1 Anaesthesia and intensive care)	Theatre management for surgical patients/ adult and paediatric intensive care/high dependency/acute pain management/ patient transfers within and between hospitals.	24/7 consultant-led service, immediate response cover by minimum on-call rota of 8 doctors including staff and associate specialist (SAS) grades and SpRs. Consultant-trainee ratio 1:1; larger hospitals need more tiers of on-call, eg for obstetrics. Training is the biggest challenge; 7 years to acquire aptitude and competencies across full range of anaesthetic practice. Average 4 years' experience post-FY training for SAS grades. After 2 years training, an anaesthetist is able to provide only basic activity and even then will need close and continuous supervision. Too few anaesthetists in training to fill gaps necessary to provide universal cover to all hospitals. A number of anaesthetists undertaking specialty training in intensive care medicine, likely to work only in very large units, impact on small hospitals likely to be negligible. Surgical reconfiguration will distance anaesthetic trainees from their base hospital if they have to be rostered to smaller hospitals.		

Continued

*Section 3 (Evidence submitted by the specialties and a lay summary) is available as an online appendix at www.a0mrc.org.uk

Specialty	Patient need	Delivery and organisation standards	Current staffing/provision	Projected 2009	Projected 2012
EMERGENCY MEDICINE (formerly A&E medicine) (see section 2.1 Emergency care and section 3.2)	24/7 access without non-clinical filter. Timely and accurate assessment and management. Inpatient admission facilities. Triage to other care pathways.	24/7 emergency medicine consultant cover. Work towards 24/7 trained doctor in department. Hospital needs to predict demands for acute beds and manage availability daily. A suitable standard for percentage of attenders admitted or discharged within 4 hours is vital but should be attainable, clinically, operationally and financially viable. 7 key specialties: acute medicine, intensive care, imaging (including 24/7 CT), laboratory services, paediatrics, surgery, orthopaedics. Minimum support: acute medicine, intensive care, imaging (including 24/7 CT) and laboratory services on site.	50% units covered 24/7 by experienced doctors; almost all units have medicine/labs/imaging on site. Not all have access to CT.[i] A few units operating without one or even two supporting services such as paediatrics, surgery or orthopaedics. These units operate in networks with other hospitals; ambulance diversion and interhospital transfer of patients.	Enough experienced doctors to provide 24/7 cover in 75% of emergency departments.[ii] Increasing pressures from withdrawal of inpatient paediatric, surgical and orthopaedic services. Pressures on some units to provide viable intensive care, especially if all surgical operating and outpatient work is withdrawn.	Sufficient trained doctors to provide 24/7 cover in 160–200 EDs (subject to work patterns of 'trained' doctors). More units affected by withdrawal of inpatient paediatric, surgical and orthopaedic services; struggle to provide viable intensive care.
ACUTE MEDICINE (see section 3.4 Medicine (acute))	Integrated care for acute needs unselected take.	Fastest growing medical specialty and this growth will soon provide adequate consultant numbers; standards in course of development. Consultant lead in acute medicine per site and larger units will require several consultants in acute medicine. All units to have SpRs (ST3) and above 24/7. Multidisciplinary team essential. Minimum 2 ward rounds per day 24/7. Protected consultant time to support ongoing clinical take essential with extended day working. Continuing professional development essential as part of annual appraisal.			All acute hospitals sites will have sufficient trainees and consultants to deliver integrated acute medical care.

[i]NCEPOD 2005
[ii]Workforce projections CEM

Specialty	Patient need	Delivery and organisation standards	Current staffing/provision	Projected 2009	Projected 2012
SURGERY (see section 2.4 Cardiovascular disease, section 2.5 Stroke and section 3.11 Surgery)	An increase in number of consultants in almost all specialties Equitable access to safe and acceptable care. Rural areas have specific needs.	Care delivered by multidisciplinary teams led by consultant surgeons. Appropriate training opportunities. Need to identify consultant surgeon trainers to provide training within contracted hours; supported and given incentives. Configuration in some specialties is required to provide safe care and tolerable rotas for surgeons.	Consultant expansion targets based on traditional service models of regional teaching and district hospitals may be met by 2010 or soon after. In some specialties (eg cardiothoracic surgery) the targets will be exceeded. However, the reconfiguration debate and recent health policy reform make workforce projections out of date as there will be a significant impact of workforce requirements. The situation is therefore unclear because of difficulties in predicting the impact of MMC on front-line delivery of acute care to patients especially in the out-of-hours (OOH) period. Specific consideration for training to comply with EWTD		Subject to achieving a stable consultant workforce, specialist trainees to consultant ratio may approach 1:4 (although may vary amongst specialties).
MEDICINE FOR THE ELDERLY People aged >65 years are 16% of population, occupy 43% of acute hospital beds. (see section 2.5 and section 3.5 Medicine for the elderly)	Non-age-discriminatory assessment, accurate diagnosis and referral to the appropriate care pathway. Minimum of transfers between wards; not to be admitted inappropriately or discharged 'quicker and sicker' because of bed shortages.	Consultant-led geriatric service; skilled interdisciplinary team in community, acute and specialised hospital settings working with patient and family to ensure high-quality care appropriate to the needs of the patient. Most geriatric or medical acute reception units have up to two consultant ward rounds daily.		Strengthen training and management of common presentations. Increase in community geriatricians to support colleagues in primary and community care (including intermediate care). Reorganisation, but no closures of hospital-based facilities until other appropriate clinical management and support services in place. Health promotion and education. Need for a good evidence base. The effectiveness of some new and existing services for the elderly needs to be properly evaluated.	

Continued

Specialty	Patient need	Delivery and organisation standards	Current staffing/provision	Projected 2009	Projected 2012
RADIOLOGY (see section 3.10 Radiology)	Competent, prompt image acquisition and interpretation underpinning diagnoses at all levels of care.	Currently departments based in secondary care delivering subspecialty services to all specialties. Varying levels of 24/7 cover depending on size and locality of trust. Most are 'on- call' arrangements, increasingly consultant delivered with some teleradiology support either to consultants' homes or to outsourced services. There are some first on-call rotas staffed by trainees in large/teaching trusts. Few networked services.	Predominantly consultant delivered service. Departments average 8–10 radiologists (range 5–30). Cross-cover for specialty interests/multidisciplinary teams cover essential in smaller departments; consultants may need to cross-cover two or three subspecialties. Very patchy interventional services, usually ad hoc out-of-hours.	20% increase in trained doctors as increased training numbers identified 3–5 years ago come through. Should start to fill unmet need subject to trust financial situation.	Likely further increase in emergency imaging needs as rapid accurate diagnostic possibilities increase reliance on imaging for emergency management.
CLINICAL PATHOLOGY AND LABORATORY MEDICINE Clinical biochemistry, haematology, medical microbiology, virology (see section 3.9 Clinical pathology and laboratory medicine)	Access to appropriate quality assured diagnostics, clinical advice and support. All other specialties are dependent on local 24/7 services, without which they will not be able to provide safe and effective care.	Most acute care decisions and key early steps in the acutely ill patient's journey require immediately available laboratory services and interpretive advice. Laboratories and the associated clinical advisory and liaison service are inextricably linked. Departments predominantly consultant-led; clinical and interpretive advice predominantly consultant delivered. Currently departments are based in secondary care and deliver services to all specialties including primary care. Some point-of-care testing in primary care and secondary care locations. There are many standards for the delivery of clinical pathology and laboratory medicine services (eg external and internal quality assurance, blood transfusion, infection control, point-of-care testing). It is recommended that all departments are registered with CPA (UK) Ltd or equivalent accreditation scheme. Organisation and delivery of pathology currently under review by Lord Carter. Further recommendations expected late 2007.			Clinical biochemistry, haematology, medical microbiology – all judged shortage specialties by the workforce review team in 2006. At that time, staffing was not projected to reach requirements by 2012.

Specialty	Patient need	Delivery and organisation standards	Current staffing/provision	Projected 2009	Projected 2012
OBSTETRICS (see section 2.2 and section 3.7 Obstetrics)	Birth is a time of relatively high risk for both mother and child. Choice, equity, safe and high-quality care during pregnancy and delivery of child. Emergency transfer in labour poor experience for the mother Continuous presence of trained obstetricians in delivery suites.[iii] Multidisciplinary working.	Routine antenatal care in community or by community midwives, with consultant-led services for special procedures, management of complications and high-risk pregnancies. 90% births managed with immediate access to consultant-led obstetric unit with supporting anaesthetic and paediatric services. 2% home births, 4% stand-alone midwife-led units. 30% of first pregnancies are transferred to consultant-led service.	Obstetric services not meeting recommendation for continuous presence of trained obstetricians in delivery suites. Only one-third of consultant-led units have even daytime consultant presence. Standard is achievable by some reconfiguring of smaller consultant-led units, subject to the need to consider quality issues around safety and patient satisfaction (delivery closer to home), to dispersed, rural and geographically remote populations. The quality of patient transfer and transport to a suitable unit in the event of an emergency requires serious consideration.		5% annual expansion in consultant obstetricians would provide 2,100 consultants by 2011. Note that this calculation refers to consultant-led units delivering >2,500 patients only. Projections are not affected by fluctuations in the numbers of births at home or in free-standing midwifery units which are less than 6% of all deliveries.

[iii]Safer Childbirth: Minimum Standards for Service Provision and Care in Labour (in press)

Continued

Specialty	Patient need	Delivery and organisation standards	Current staffing/provision	Projected 2009	Projected 2012
PAEDIATRICS (see section 2.3 and section 3.8 Paediatrics) Paediatric emergency medicine (PEM) training established for trainees from paediatric and general A&E backgrounds.	Emergency medicine and acute care for children, optimal care. Urgent and unscheduled care – in and out of hours. Appropriately trained and experienced professionals in a protected environment. Access to neonatal and paediatric intensive care.	Units seeing >16,000 children per year – trained consultant in PEM with original training in paediatrics. Small and medium-sized district hospitals (15,000 attendees, 3,000 admissions, 3,750 deliveries) rota of 8 consultant paediatricians to cover mix of inpatient, emergency, neonatal and outpatient work; HDU cover – dedicated consultant for neonatal unit, level 1 competent junior doctor; SHO or Advanced Neonatal Practitioners (ANNP) specific to neonatal and maternity unit. Middle-grade rota of 9, junior rota of 6 (subject to skill mix with other professionals). Large district hospitals (25,000 attendees, 5,000 admissions, 6,250 deliveries) double rotas at consultant and middle-grade level (14–16 consultants, 18 SpRs) depending on level 3 neonatal unit. BAPM standards applied to the staffing of all services for the newborn. All hospitals to follow recommendations of the Laming Enquiry.[iv] To nominate a lead consultant and lead nurse to safeguard children within any area where children are cared for and to have specific guidelines for safeguarding children. *Non-paediatric staff*: appropriately trained in: recognition and referral of child protection issues, resuscitation determined by level of activity within ED and on-site presence of paediatric cover. If paediatric on-site support is lost, enhancement of paediatric skill of ED staff. *Environment* At least 1 clinical cubicle or trolley space dedicated for every 5,000 annual child attendances; specialists at peak times; audio and visual separation from adults.		Current progress of achieving the paediatric staffing standards outlined in section 2.3 together with summary of constraints on achieving EWTD by 2009. Progress on environmental issues – Health Commission Report.[v]

[iv] Lord Laming. The Victoria Climbie Inquiry. HMSO: January 2003

[v] Improving services for children in hospital. Commission for Healthcare Audit and Inspection, February 2007.

References

1 Senate of Surgery of Great Britain and Ireland. *Reconfiguration of surgical, accident and emergency and trauma services in the UK*. Glasgow: Senate of Surgery, 2004.

2 Royal College of Physicians. *Acute medicine: making it work for patients. A blueprint for organisation and training*. Report of a Working Party. RCP, 2004.

3 Royal College of Obstetricians and Gynaecologists, Royal College of Midwives, *Towards safer childbirth. Minimum standards for the organisation of labour wards*. RCOG, RCM, 1999.

4 Royal College of Paediatrics and Child Health. *Old problems, new solutions: 21st century children's healthcare*. RCPCH, 2002.

5 The Royal College of Surgeons of England. *Delivering high quality surgical services for the future*. RCSENG, 2006, http://www.rcseng.ac.uk/publications/docs/reconfig.html.

6 British Association for Emergency Medicine, College of Emergency Medicine. *Way ahead 2005*. BAEM, CEM, 2005 http://www.emergencymed.org.uk/BAEM/Publications%20Committee/Publications.asp.

7 British Medical Association. *Leaner & fitter. What future model of delivery for acute hospital services?* Health Policy and Economic Research Unit. BMA, 2007.

8 Institute for Public Policy Research. *The future hospital: the progressive case for change*. IPPR, 2007.

9 King's Fund. *The reconfiguration of hospital services*. A King's Fund briefing, 2006.

10 Department of Health. *Emergency access; clinical case for change*. Report by Sir George Alberti, the National Director for Emergency Access. DH, 2006.

11 Council of the European Union (93/104/EC) Working time regulations 1998 Statutory Instrument (S.I) number 1833 and the working time (Amendment regulations 2003 S.I. number 1684).

12 Patterson M, Jones M, Lloyd DA. Development, implementation and prospective evaluation of guidelines for transfer of severely injured children to specialist centres. *British Journal of Surgery* 2006 90(11):1418–23.

13 National Audit Office. *Improving emergency care in England*. Report by the Comptroller and Auditor General. HC 1075 Session 2003–2004. NAO, 2004.

14 Mason S, Locker T, Carter A, Walters S, Stride C, Casson J. *What are the organisational factors that influence waiting times in emergency departments?* A report to the NHS Service Delivery Organisation. University of Sheffield, 2006.

15 Royal College of Surgeons of England, British Orthopaedic Association. *Better care for the severely injured*. A joint report. RCSENG, 2000.

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

17 Rudd AG, Hoffman A, Down C, Pearson M, Low D. Access to stroke care in England, Wales and Northern Ireland: the effect of age, gender and weekend admission. *Age and Ageing*, 2007 doi:10.1093/ageing/afm007.

18 National Confidential Enquiry into Perioperative Deaths.

19 The Confidential Enquiry into Maternal and Child Health.

20 Lecky F. Woodford M. Yates DW. Trends in trauma care in England and Wales 1989–97. UK Trauma Audit and Research Network. *The Lancet*. 2000;355(9217):1771–75.

21 Myocardial Infarction National Audit Project. *3rd public report of the MINAP*. RCP, 2004.

22 Department of Health. *The NHS Plan: a plan for investment, a plan for reform*. DH, 2000.

23 Glance LG, Osler TM, Dick A, Mukamel D. The relation between trauma center outcome and volume in the National Trauma Databank. *Journal of Trauma-Injury Infection & Critical Care* 2004;56(3):682–690.

24 Freeman J, Nicholl J, Turner J. Does size matter? The relationship between volume and outcome in the care of major trauma. *Journal of Health Services Research and Policy* 2006;11(2):101–105.

25 Department of Health, *Modernising Medical Careers. The next steps. The future shape of foundation, specialist and general practice training programmes.* DH, The Stationery Office, 2004.

26 Statement of changes 08/11/06 and 05/12/06 under s.3(2) Immigration Act 1971.

27 Department of Health. *International medical graduates. Extra investment and increase in home-grown medical recruits eases UK reliance on overseas doctors.* DH Press Release, 2006/0093.

28 Dalby M, Bouzamondo A, Lechat P, Montalescot MD. Transfer for primary angioplasty versus immediate thombolysis in acute myocardial infarction. A meta analysis. *Circulation* 2003;103: 1809–1814.

29 Tasker RC, Gupta S, White DK. Severe head injury in children: geographical range of an emergency neurosurgical practice. *Emergency Medicine Journal* 2004;21(4):433–437.

30 Patel HC, O Bouamra O, Woodford M, King AT, Yates DW, Lecky FE. Trends in head injury outcome from 1989 to 2003 and the effect of neurosurgical care: an observational study. *The Lancet* 2005;366: 1538–1544.

31 Crimmins DW, Palmer JD. Snapshot view of emergency neurosurgical head injury care in Great Britain and Ireland. *Journal of Neurology, Neurosurgery & Psychiatry* 2000;68(1):8–13.

32 Mackenzie E J, Rivara FP, Jurkovich GJ, Nathens AB, Frey KP, Egleston BL, Salkever DS, Scharfstein DO. A national evaluation of the effect of trauma-centre care on mortality. *The New England Journal of Medicine* 2006;354(4):366–378.

33 Elliott DC, Rodriguez A. Cost effectiveness in trauma care. *Surgical Clinics of North America* 1996; 76(1):47–62.

34 Taheri PA, Butz DA, Lottenberg L, Clawson A, Flint LM. The cost of trauma center readiness. *American Journal of Surgery* 2004;187(1):7–13.

35 Nicholl J, Turner J. Effectiveness of a regional trauma system in reducing mortality from major trauma: before and after study. *British Medical Journal* 1997;315:1349–1354.

36 Shepperd S, Iliffe S. Hospital-at-home versus in-patient hospital care. *Cochrane Database of Systematic Reviews* 2001;3:CD000356.

37 Hollinghurst S, Horrocks S, Anderson E, Salisbury C. Comparing the cost of nurse practitioners and GP in primary care: modelling economic data from randomised trials. *British Journal of General Practice* 2006;56(530):718.

38 Sakr M, Kendall R, Angus J, Sanders A, Nicholl J, Wardrope J. Emergency nurse practitioners: a three part study in clinical and cost effectiveness. *Emergency Medicine Journal* 2003;20(3):302.

39 Richards DA, Godfrey L, Tawfik J, Ryan M, Meakins J, Dutton E, Miles J. NHS Direct versus general practice based triage for same day appointments in primary care: cluster randomised controlled trial. *British Medical Journal* 2004;329:774.

40 Scottish Executive. *Building a health service fit for the future. A national framework for service change in the NHS in Scotland.* The Scottish Government Publications, 2005. http://www.scotland.gov.uk/Publications/2005/05/23141307/13104

41 Cooke M *et al. Reducing attendances and waits in emergency departments: a systematic review of present innovations.* A report to NHS Service and Delivery Organisation. Professor Matthew Cooke Publications, Warwick Medical School, 2005.

42 Wallace PGM, Ridley SA. ABC of intensive care. Transport of critically ill patients. Clinical review. *British Medical Journal* 1999;319:368–371.

43 Gray A, Gill S, Airey M, Williams R. Descriptive epidemiology of adult critical care transfers from the emergency department. *Emergency Medicine Journal* 2003;20(3):242–246.

44 Nicholl JP, Brazier JE, Snooks HA. Effects of London helicopter emergency medical service on survival after trauma. *British Medical Journal* 1995;311:217–222.

45 Tasker RC, Gupta S, White DK. Severe head injury in children: geographical range of an emergency neurosurgical practice. *Emergency Medicine Journal* 2004:21(4):433–437.
46 Lightenberg JJ, Arnold LG, Steinstra Y, van der Werf TS, Meertens JH, Tulleken JE, Zijlstra, JG. Quality of interhospital transport of critically ill patients: a prospective audit. *Critical Care* 2005; 9(4):R446–451.
47 Redeimeier DA, Blair PJ, Collins WE. No place to unload: a preliminary analysis of the prevalence, risk factors and consequences of ambulance diversion. *Annals of Emergency Medicine* 1994;23(1):43–47.
48 Utter GH, Maier RV, Rivara FP, Mock CN, Jurkovich GJ, Nathens AB. Inclusive trauma systems: do they improve triage or outcomes of the severely injured? *Journal of Trauma-Injury Infection and Critical Care* 2006;60(3):529–535.
49 Armagan E, Gultekin Al M, Engindeniz Z, Tokyay R. Compliance with protocols in transferring emergency patients to a tertiary care centre. *Injury* 2004;35(9):857–863.
50 Van de Loo A, Saurbier B, Kalbhenn J, Koberne F, Zehender M. Primary percutaneous coronary intervention in acute myocardial infarction: direct transportation to catheterization laboratory by emergency teams reduces door-to-balloon time. *Clinical Cardiology* 2006;29(3):112–116.
51 Hartl R, Gerber LM, Iacono L, Ni Q, Lyons K, Ghajar J. Direct transport within an organized state trauma system reduces mortality in patients with severe traumatic brain injury. *Journal of Trauma-Injury Infection and Critical Care* 2006;60(6):1250–1256.
52 Tasker RC, Morris KP, Forsyth RJ, Hawley CA, Parslow RC. Severe head injury in children: emergency access to neurosurgery in the United Kingdom. *Emergency Medicine Journal* 2006;23(7): 519–522.
53 Sun BC, Mohanty SA, Weiss R, Tadeo R, Hasbrouck M, Koenig W, Meyer C, Asch S. Effects of hospital closures and hospital characteristics on emergency department ambulance diversion, Los Angeles County, 1998 to 2004. *Annals of Emergency Medicine* 2006;47(4):309–316.
54 Begley CE, Chang Y, Wood R, Weltge A. Emergency department diversion and trauma mortality: evidence from Houston,Texas. *Journal of Trauma-Injury Infection and Critical Care* 2004;57(6): 1260–1265.
55 Maguire BJ, Hunting KL, Smith GS, Levick NR. Occupational fatalities in emergency medical services: a hidden crisis. *Annals of Emergency Medicine* 2002;40(6):625–632.
56 Baker SP,Grabowski JG, Dodd RS, Shanahan DF, Lamb MW, Li GH. EMS helicopter crashes: what influences fatal outcome? *Annals of Emergency Medicine* 2006;47(4):351–356.
57 King BR, Woodward GA Pediatric critical care transport – the safety of the journey: a five-year review of vehicular collisions involving pediatric and neonatal transport teams. *Prehospital Emergency Care* 2002;6(4):449–454.
58 Safford SD, Hayward TZ, Safford KM, Georgiade GS, Rice HE, Skinner MA. A cost and outcomes comparison of a novel integrated pediatric air and ground transportation system. *Journal of the American College of Surgeons* 2002;195(6):790–795.
59 Snooks HA, Nicholl JP, Brazier JE, Lees-Mlanga S. The costs and benefits of helicopter emergency ambulance services in England and Wales. *Journal of Public Health Medicine* 1996;18(1):67–77.
60 Kurola J, Wangel M, Uusaro A,Ruokonen E. Paramedic helicopter emergency service in rural Finland – do benefits justify the cost? *Acta Anaesthesiologica Scandinavica* 2002;46(7):757–758.
61 Wakefield DS, Ward M, Miller T, Ohsfeldt R, Jaana M, Lei Y, Tracy R, Schneider J. Intensive care unit utilization and interhospital transfers as potential indicators of rural hospital quality. *Journal of Rural Health* 2004;20(4):394–400.
62 Poltavski D, Muus K. Factors associated with incidence of 'inappropriate' ambulance transport in rural areas in cases of moderate to severe head injury in children. *Journal of Rural Health* 2005; 21(3):272–277.
63 Department of Health. *Direction of travel for urgent care: a discussion document.* DH, 2006.

64 Department of Health. *National Service Framework (NSF) for Children, Young People and Maternity Services*. DH, 2004.

65 Department of Health. *Maternity matters: choice, access and continuity of care in a safe service*. DH, 2007.

66 Royal College of Obstetricians and Gynaecologists. *The future role of the consultant – a working party report*. RCOG, 2005.

67 Department of Health. *The acutely or critically sick or injured child in the district general hospital. A team response*. A report of an intercollegiate working party. DH, 2006.

68 The Royal College of Paediatrics and Child Health. *Services for children in emergency departments*. RCPCH, 2007.

69 British Association of Perinatal Medicine. *Standards for hospitals providing neonatal intensive and high dependency care* (second edition). BAPM, 2001.

70 Cropper S, Hopper A, Spencer SA. Leading article. Paediatric services. Managed clinical networks. *Archives of Disease in Childhood* 2002;87:1–4.

71 Royal College of Physicians. Myocardial Infarction National Audit Project (MINAP). Clinical Effectiveness Evaluation Unit. RCP. http://www.rcplondon.ac.uk/college/ceeu/ami/minaprcpfinal.ppt

72 British Cardiovascular Intervention Society. www.bcis.org.uk.

73 Department of Health. http://www.doh.gov.uk/hes/table/tb00702e.xls

74 Department of Health. *Mending hearts and brains. Clinical case for change*. Report by Professor Roger Boyle, National Director for Heart Disease and Stroke. DH, 2006.

75 Armstrong P, WEST Steering Committee. The WEST Study (Which early ST-elevation myocardial infarction therapy?) *European Heart Journal* 2006;27:1530–1538.

76 Gershlick AH, Stephens-Lloyd A, Hughes S, *et al*. Rescue angioplasty after failed thrombolytic therapy for acute myocardial infarction. *New England Journal of Medicine* 2005;353:2758–2768.

77 Bonnefoy E, Lapostolle F, Leizorovicz A, *et al*, on behalf of the Comparison of Angioplasty and Prehospital Thrombolysis in Acute Myocardial Infarction (CAPTIM) study group. Primary angioplasty versus prehospital fibrinolysis in acute myocardial infarction: a randomised study. *The Lancet* 2002;360:825–829.

78 Birkhead J. Personal communication.

79 Hackett D. *Cardiac workforce requirements in the UK*. British Cardiac Society, 2003. http://www.bcis.org.uk/resources/documents/BCS_Cardiology_Workforce_Group_2003.pdf.

80 Murphy NF, MacIntyre S, Capewell S, *et al*. Hospital discharge rates for suspected acute coronary syndromes between 1990 and 2000: population based analysis. *British Medical Journal* 2004;328: 1413–1414.

81 Lagerqvist B, Husted S, Kotny F *et al*. A long-term perspective on the protective effects of an early invasive strategy in unstable coronary artery disease. Two-year follow-up of the FRISC-II invasive study. *American Journal of Cardiology* 2002;40:1902–1914.

82 Fox K, Poor-Wilson P, Clayton R *et al*. 5-year outcome of an interventional strategy in non-ST-elevation acute coronary syndrome: the British Heart Foundation RITA 3 randomised trial. *The Lancet* 2005;366:914–920.

83 NHS Heart Improvement Programme. www.heart.nhs.uk.

84 Royal College of Physicians. *National Sentinel Stroke Audit*. A report for England, Wales and Northern Ireland. Clinical Effectiveness and Evaluation Unit, RCP, 2007.

85 National Audit Office. *Reducing brain damage: faster access to better stroke care*. Report by the Comptroller and Auditor General. NAO, 2005.

86 Royal College of Physicians. *National Clinical Guidelines for Stroke* (second edition). The Intercollegiate Working Party for Stroke. RCP, 2004.

87 Department of Health. *A recipe for care – not a single ingredient. Clinical case for change*. Report by Professor Ian Philp, National Director for Older People. DH, 2007.

88 Gravelle H, Dusheiko M, Sheaff R, Sargent P, Boaden R, Pickard S, Parker S, Roland M. Impact of case management (Evercare) on frail elderly patients: controlled before and after analysis of quantitative outcome data. *British Medical Journal* 2007;334:31.

89 Richards S, Coast J. Interventions to improve access to health and social care after discharge from hospital: a systematic review. *Journal of Health Services Research & Policy* 2003;8(3):171–179.

90 Wells JL, Seabrook JA, Stolee P, Borrie MJ, Knoefel F. State of the art in geriatric rehabilitation. Part I: review of frailty and comprehensive geriatric assessment (review). *Archives of Physical Medicine & Rehabilitation* 2003;84(6):890–897.

91 Byles JE. A thorough going over: evidence for health assessments for older persons (review). *Australian & New Zealand Journal of Public Health* 2000;24(2):117–123.

Acute health care services

Part 3: APPENDIX

- Evidence submitted by the specialties
- Lay summary

Contents

3.1 Anaesthesia and critical care

3.1.1 Background

Anaesthesia is the largest single specialty in acute hospital practice and is involved in 75% of all patient journeys. The generic skills of anaesthetists underpin many of those needed in the acute care of patients; several of these skills may also be practised by other members of the emergency team. It is in recognition of this that the Royal College of Anaesthetists (RCoA) has been such a committed champion of the Acute Care Common Stem programme, as exemplified by the curriculum writing process for recognition by the Postgraduate Medical Education and Training Board (PMETB) of the training programme.

In many small intensive care units the anaesthesia team provides both first on-call and consultant cover. Larger hospitals tend to have a separate on-call team that may include members from other specialties trained to an appropriate standard. There may be additional tiers to the on-call team and the consultant, whilst usually an anaesthetist, may be from any of the parent Colleges of the Intercollegiate Board for Training in Intensive Care Medicine (IBTICM). Large units may have some consultants who only practise intensive care medicine; even in these units anaesthetists are major contributors to the delivery of care.

The core business of a department of anaesthesia includes the theatre management of surgical patients, provision of intensive care/high dependency care and supervision of acute pain management within hospitals. It is the theatre management activity that determines the size of the department and therefore its flexibility to meet external demands such as transfers and calls to the A&E department. The minimum sustainable on-call rota for anaesthesia involves eight doctors, a number that may include both staff and associate specialist (SAS) grade and trainees in many general emergency hospitals. The consultant-to-trainee ratio has to exceed 1:1 for all training units to ensure that the necessary 1:1 training occurs. Further expansion to a second on-call rota will usually (unacceptably) fall below this standard in emergency hospitals.

However, smaller hospitals play a major part in the early training of anaesthetists (including intensive care medicine (ICM)) and this training element is linked inextricably to acute/emergency surgery. The movement of this activity to more central units will further increase the pressures on the smaller hospitals to deliver appropriately skilled cover for the A&E departments.

About 80% of transfers of patients between hospitals directly involve the anaesthesia team both in the direct care of the transferred patient and in covering the hospital during the absence of the escorting doctor.

Increasingly, many first level (senior house officer (SHO)) practitioners in intensive care are from the foundation programme, often foundation year (FY) 2. The next level (specialty registrar (SpR)) has been affected by a direct loss of run through training posts with a high dependence on fixed term specialist training appointments (FTSTA) or other posts following the adoption of the Modernising Medical Careers (MMC) process. Both these challenge the ability of a unit to deliver appropriate skills to time and on time.

3.1.2 Present services

Emergency care

The care of the emergency patient is a team process that usually begins before admission to hospital. In some areas of the country there are prehospital care teams involving doctors who start treatment at the scene of injury and facilitate rapid transfer to a place of definitive care. Reception of these patients and their subsequent management involve the emergency care team, anaesthesia and critical care. Diagnostic procedures (eg imaging) often require the intrahospital transfer of the patient, a task often performed by the anaesthesia/critical care team (in small hospitals this is the same person).

Other challenges

Severely ill patients, such as those with major trauma, are usually transferred directly to a major unit but may be diverted to a small hospital because of the distances involved, poor road conditions or adverse weather. These patients often require immediate operative treatment concurrently with resuscitation. The surgical and anaesthesia skills have to be available and appropriately resourced. Alternative transport systems (fixed wing or helicopter) will need to be funded and available for most areas, especially rural areas, if all these patients have potentially to be seen at the emergency hospital.

Paediatric care

The resuscitation of the severely ill child is multiprofessional and anaesthesia provides several of the key, high-level skills necessary to rescue these children. This remains so, even with the dilution of paediatric hospital-based care in smaller units. Whilst there are very successful models for dedicated paediatric retrieval systems, these are not yet universal or immediately available to the urgently presenting, severely ill child in a small rural unit. Despite the reorganisation of paediatric surgical services, the anaesthetic skills present in the senior/consultant levels of on-call are essential for the resuscitation of these children.

One of the main points for discussion is drive-by policies. Is a very sick child safer in any hospital than the back of an ambulance? What if that hospital has no facilities, appropriate staff or equipment? How far is it safe to drive? What are the criteria on which ambulance crews (generally not much trained in paediatrics) should base their decisions?

The RCoA's 2002 document *Paediatric anaesthesia and critical care emergency services in hospitals* lays out the minimum skills required by the team in any hospital which has open access for children.

See also *Guidelines for the provision of anaesthetic services, RCoA 2005,* and the Tanner report: *The acutely or critically sick or injured child in the district general hospital: a team response.*[1]

Transfers of children under three years of age are usually by specialised paediatric transfer teams, but the older children and almost all adolescents are transferred by the anaesthetic team. The same provision that is necessary to deliver safe provision for emergency care will also support this aspect of paediatric demand.

Obstetric care

Anaesthetic provision to the obstetric service is fundamental to the safe care of many mothers and their infants. The anaesthetic service falls into two broad areas: pain relief during labour, often by epidural techniques, and emergency or elective operative care of mother and child.

The proportion of mothers needing advanced antenatal and delivery care will not change with reconfiguration of this service, simply that a larger number will have to move into a medium sized unit. Unless the necessary resources in space, staffing and back-up services are moved, the service delivered will be diluted rather than improved. One element that will become necessary again (after many years) is the obstetric flying squad to take the expertise to the patient in outlying units.

Safer childbirth (in preparation) details the obstetric and anaesthetic staffing levels for all units based upon the number of births per year in any one unit. This will take some time to be realised but it defines the standard against which the provision of service should be measured. The skills necessary to provide anaesthesia cover for most mothers is at the level of an advanced ST2 anaesthetist; training to this level demands a period of supernumerary exposure to obstetric patients during the working day. Elective Caesarean sections are covered by consultant anaesthetists as are all complex emergency patients. Access to an obstetric high dependency unit, and in larger departments to obstetric intensive care facilities, is necessary for those mothers with severe disease of pregnancy or after major surgery for massive blood loss.

Cardiovascular

The majority of endovascular interventional cardiology does not require anaesthetic cover unless emergency bypass grafting is necessary. This is rare now.

Medicine for the elderly

The elderly often present acutely following trauma or after falls and may need surgical intervention to enable rapid rehabilitation. The risks of surgery to these patients demand the highest quality of anaesthesia care to avoid such major complications as postoperative cognitive dysfunction. This care cannot be delivered by inexperienced practitioners.

3.1.3 Workforce issues

An increase of experienced anaesthetists to the number necessary to provide immediate cover to emergency, obstetric and critical care is not possible within less than three years. The extended training of doctors in the acute common stem training may provide doctors who can provide in-house cover for critical care and transfers but not for either anaesthesia or the obstetric service.

Senior staff will remain only in units that provide professional satisfaction. The demands of working in small units not directly linked to specialist hospitals are not likely to be enough to maintain professional skills and interest, leading to recruitment and retention difficulties.

The current mismatch between jobs and applicants will not be sustained; many posts are 'frozen' during the financial processes in place for this financial year.

Placing the increase in numbers of medical students after £250k of public investment will

challenge the entry level processes in all specialties and fuel a process of increased supply – but only after six to nine years. New ways of working using physician assistants are unlikely to make a significant impact nationally although they may make useful local contributions. The loss of central funding is a difficulty for this process.

Retirements are predicted to occur nearer to 60 than 65 which will reduce the number of experienced anaesthetists.

Standards, now and in the future

The minimum standards for anaesthesia care are defined in the 'certificate of completion of training (CCT) in anaesthesia' documentation for independent practice. The standard for supervised practice at any one level depends on the competencies achieved during training; this will severely limit the practicality of using anaesthetists with less than three to four years in specialty training.

The impacts of the European Working Time Directive (EWTD) on experience and of MMC and the foundation programmes mean that it could be legally possible to employ an anaesthetist after only two years of training. They would be unable to provide any but the most basic of activity, even then under close and continuous supervision. It takes four years on average, from the equivalent of the end of FY1, for enough experience to have been gained to function in the SAS grade. FY2 does not equate to the erstwhile first year of training in anaesthesia.

Such standards will not change over the foreseeable future. Most anaesthetists act as 'generalists' which requires aptitude and competence across the whole range of anaesthetic practice. It is this that takes approximately seven years to complete.

Equally, the numbers of practitioners who will seek single specialty training in ICM, if it becomes a reality, will be too small to make a national difference and they are likely to wish to work only in very large units. The impact on small hospitals will be negligible.

Service gaps, present and projected

There are too few anaesthetists in training to fill the gaps necessary to provide universal cover for all hospitals requiring critical care provision and to maintain emergency and acute medicine activity. This will remain the case for some years and resolution will depend on changes in funding opportunities. If surgical reconfiguration occurs, this will distance anaesthetic trainees from their base hospital if they are rostered to provide cover at the smaller hospitals.

The commercial management of mergers is well documented and clear pathways exist to execute the process. Even with appropriate management and financial imperatives their success rate is about 10%. The NHS has neither a management strategy nor a clear process and its success rate at merging trusts into effective, unified providers is poor.

Unless this changes, getting a reliable degree of cover across acute and non-acute sites will prove difficult.

How the specialty can help the projected models

Anaesthesia, critical care and acute pain management are capable of developing the doctors with the skills to provide the service necessary to meet the demands of major reconfiguration across the NHS.

3.1.4 Problems the specialty foresees with the projected models

The largest problem is the provision of training. Service models can be developed to resolve problems with reconfiguration, but the inequality between the multiplicity of service providers (independent sector treatment centres (ISTC), primary care trusts (PCT) units and the NHS) and the present single training body (the NHS alone) remains ignored. It is inconceivable that such sponsoring of more commercial delivery systems by the NHS is sustainable even if acceptable from other points of view.

3.1.5 Possible solutions

Immediate options

There are no safe options available to support immediate reconfiguration of anaesthesia/ICM provision, but changes in training opportunities and funding (if made available from strategic health authorities (StHAs) to trusts) could enable extended training opportunities for those in FTSTA posts.

Medium term

The skills mix necessary to support the emergency requirement could be provided if the skills of those in FTSTA posts in anaesthesia or critical care were enhanced by a further two years of clinical experience and training. (They are completely unprepared to perform such demanding work after only two years of specialty training, safely). These doctors would need a defined career pathway and access to further training otherwise recruitment to posts would prove difficult. Ideally, they would have job descriptions that allowed access through Article 14 (PMETB) to an equivalent award of specialist registration.

Long term

A workforce that recognises that changes in activity over a career could encompass a progression through all career grades, finally to consultant responsibilities, is likely. This will take at least eight years (time in training and experience).

It will occur only if it is embraced by all specialties and enacted across a hospital at the same time and pace. Mistakes have occurred in the past with one group accepting one model of service delivery left isolated as another refuses to make the changes. This will not be repeated and advances will only be made as a concerted process across a trust or StHA.

3.1.6 Overview of critical care

The Intensive Care Society (ICS) recognises that there are pressures in the provision of acute services and accepts the need to consider new frameworks for healthcare provision.

ICM is a support service with a predominantly emergency workload: *'patients don't plan to need it, but when they do they need it there and then'*. Critical care is a 24-hour service that needs access to other acute specialties and equipment; it epitomises the team approach to patient care. Intensive care units (ICUs) treat the sickest patients in a hospital and must provide an appropriate standard of care delivered by fully trained specialists in ICM.

There are approximately 100,000 admissions per year to ICUs in England with roughly the following distribution:

- non-surgical emergency admissions 60%
- emergency surgical admissions 20%
- elective postoperative admissions 20%

Specialist services are increasingly concentrated in larger hospitals, with smaller hospitals providing a range of services to their local communities. However, of 61 isolated medical services in England, Wales and Northern Ireland, 37% take unselected acute medical admissions and 12% do not have an ICU *(Isolated Acute Medical Services, Royal College of Physicians (RCP), June 2002)*[2] even though the RCP recommends that critical care services should be available where acutely ill medical patients are admitted. *Interface between acute general medicine and critical care, RCP, London, July 2002.*[3]

The January 2007 KH03a census* of critical care beds showed

Total critical care beds:	3,242
level 3:	1,796 (approximately 55% of total)
level 2:	1,446
Total beds in acute trusts:	108,113

*http://www.performance.doh.gov.uk/hospitalactivity/data_requests/critical_care_beds.htm

Therefore, about 3% of total acute hospital beds are designated for critical care but only about 1.7% of beds are capable of delivering level 3 care (ie intensive care providing multiple organ support). Repeated point prevalence analyses have demonstrated that level 2 and 3 patients are frequently not receiving the appropriate level of care because there are no available beds.

Failure to invest in adequate critical care capacity eventually leads to 'choking' of the system and to poorer patient experience with cancelled operations, increased infection rates and needless long-distance transfers.

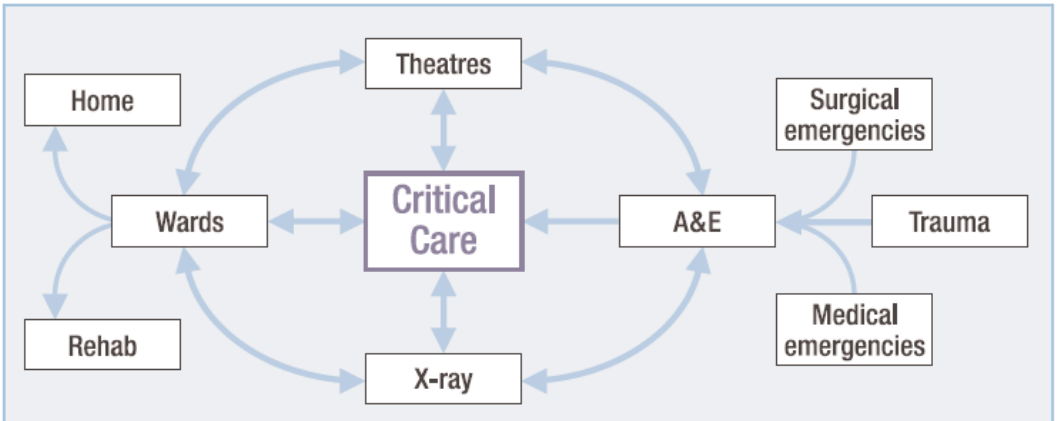

Figure 1: Critical interface - the central role of critical care

A recent phenomenon is that this is often due to inability to discharge patients in a timely manner because of paucity of ward beds or beds being preferentially allocated to '4-hour waiters' or

elective admissions for planned surgery.

Some patients may not need full ICU support but remain dependent on partial or full ventilatory support. There may be a need for long-term ventilation units and an expansion in home ventilation services.[4]

Unit size

The optimum size of critical care units (CCUs) is difficult to ascertain; very small (or very large) units are difficult to manage. Less than eight level 3 beds may not be sustainable because of the need for adequate numbers of staff at all times.

There is some degree of economy of scale as the number of beds is increased, but over a certain level a second team of doctors becomes necessary because of the intensity of input required by these patients. There are no economies of scale in small units and, with limited patient exposure (that is 'case mix'), such units would not be recognised for training by the IBTICM.

Unit outcomes

There is evidence that critically ill patients have better outcomes at less cost when they are cared for in 'closed' or 'semi-closed' units staffed 24 hours by consultants with an interest in critical care.[5] This is the model endorsed by the ICS and is the most common in the UK.

Outcomes are better for patients undergoing artificial ventilation when they are cared for in a hospital admitting greater numbers of such patients.[6]

Consultants for critical care need to be specialists in acute medicine and resuscitation. Because of the complexity of the patients' problems, critical care (level 3) should be '…. consultant led at all times, with a high proportion of direct consultant input into patient care and immediate consultant availability for advice or recall at other times. Each daytime session should be covered by a consultant with no other commitments' (ICS Standards). Most UK intensivists have anaesthesia as their first specialty, but there are still not enough consultants with daytime sessions on the ICU.

The specialty faces manpower issues such as a shortage of skilled critical care nurses. As the nature of the hospital population changes, becoming sicker and older and with increasing patient expectations, there is likely to be a need further to expand the number of critical care beds to 5–10% of acute hospital beds.

3.1.7 Challenges for provision of critical and intensive care services

In any proposed rationalisation of acute services the following issues need highlighting:

- **Day and night staffing of ICUs with the current limited numbers of skilled nurses and intensive care doctors.**
  Medical care at both trainee and consultant level has traditionally been supplied by anaesthetists. This model is changing slowly at consultant level but more quickly at trainee level to fit in with the requirements of the FY programme. Other specialties can be trained to manage critically ill patients but there is a persisting requirement for high-level airway management skills at short notice for critically ill patients.

In hospitals without emergency surgery it would be difficult to justify a full rota of anaesthesia trainees on-call just to run an ICU. At present, there is no system or plan to generate a large skilled workforce from within, say, medicine to support a predominantly medical ICU in a hospital with little or no surgery.

Suggestions are made that other practitioners, including advanced nurse practitioners, could be trained to take on much of the work and provide a first on-call tier, especially at night. At present, there is no history of their use or infrastructure to facilitate this. There are issues around the availability of these trained nurses. Consideration needs to be given to what can be done by nurses and other healthcare professionals and how the relevant competencies can be established. What are the issues around training? Who will be professionally responsible for the patient's care? It does not seem possible for the workforce issues to be solved in the timeframe allowed if all hospitals wish to provide level 3 care.

- **Critical care may not be deliverable in some hospitals.**
  This is the logical conclusion to the above. This will affect the work that can be carried out in the hospital, especially major elective surgery and emergency admissions. Not all CCUs will be able to care for all types of critically ill patients. There will always be a need for stabilisation and support then transfer to more specialised units for some patients, but this should be minimised by careful selection of elective work and emergency capabilities. Specialist transfer teams may be needed to avoid denuding hospitals of their limited medical and nursing resource.

- **Anaesthesia services**
  With the development of ICM, the situation of variable levels of cover by consultant anaesthetists has changed to one where most ICUs have dedicated medical staff, still largely drawn from anaesthesia. Patient management is difficult to undertake in isolation. Anaesthesia is recognised as a key service even though intensivists are increasingly drawn from other acute specialties.

- **Teleconsultation**
  It may be possible in some instances to use teleconsultation to allow expert opinion on cases from afar, but examination of the patient remains the key to management.

  Telemedicine could support some of the work in an ICU but, in order to deliver a high quality level of care, physical presence of a trained consultant with advanced airway skills would still be required at short notice and the practicalities of covering more than one unit are very limited.

- **Transfers**
  Patients being transferred require skilled care to stabilise them before transfer or senior staff capable of making the decision to 'scoop and run' when the treatment they require precludes stabilisation.

  Unless transfer teams are provided, transfers seriously deplete the pool of available staff to care for the remaining patients. However, whilst transfer teams are apparently the gold standard, they are suitable only for semi-elective transfers and take too long for certain patients, for example head injuries and leaking aortic aneurysm, both categories unfortunately being quite common reasons for transfer.

  The ICS has published standards of care for critically ill patients who require transfer.[7]

Current progress
The majority of ICUs have 24-hour cover by experienced doctors, but this is not always dedicated to the ICU in some smaller hospitals.

The sustainability of the critical care rota would be made difficult if there was no need for any other anaesthetic services in the hospital, for example the complete withdrawal of all operative surgery. The hospital would depend heavily on being part of a network with rotation of staff between it and other larger hospitals.

There is not a sufficient pool of trained intensivists sufficient to provide ICU on-call rotas in units as they exist. It would take several years to train extra intensivists to support a widespread devolved intensive care system.

Units operate in a network with other hospitals for provision of specialist services.

The lack of ICU capacity still means that large numbers of patients are being transferred for non-clinical reasons.

Projected situation in 2009 (EWTD)
There will not be enough experienced doctors to provide 24-hour dedicated ICU cover in some hospitals.

Some units will face challenges of recruitment if a full level 3 service is not provided on-site.

Projected situation in 2012.
It is hoped that there will be enough trained doctors to provide 24-hour cover in all ICUs.

3.1.8 Standards

The ICS and the IBTICM have set standards that specify how to achieve safe, effective care for all patients receiving level 3 or level 2 care at any location in a hospital.[8]

A Consultant staffing in ICUs
Consultants providing a continuous consultant-led service have consistently been shown to offer patients the best chance of a good outcome. Intensive care is a service that should be delivered by appropriately and fully trained staff. This is not yet possible in the UK. In view of this deficiency, and whilst the numbers of trained personnel are insufficient to provide a full-time service, certain minimum staffing standards should be observed.

B Training of consultants

- All consultants with daytime sessions in ICM should have acquired step 1 competencies or equivalent.
- All consultants with over 50% commitment to ICM should have acquired step 2 competencies or equivalent.
- All consultants with over 50% commitment to ICM should have a higher qualification in ICM (eg diploma in intensive care medicine (DICM) UK or EDICM).
- All consultants with ICM responsibilities must provide evidence of continuing medical education in ICM.

In future, standards would be expected to rise such that:

- All consultants with daytime sessions in ICM should have acquired step 1 competencies or equivalent and have a minimum of 25% of their programmed activities (PAs) dedicated to ICM.

- All consultants with over 50% commitment to ICM should have acquired step 2 competencies, a CCT in ICM or an equivalent level of training.
- All units must have a minimum of 15 PAs of consultant time totally committed to ICM each week per eight level 3 beds.
- All consultants providing an on-call service to the ICU must have PAs committed to ICM.
- Consultants should not have any other clinical commitment when covering the ICU during daytime hours.
- During working hours the consultant in charge of the ICU should spend the majority of their time on the ICU and must always be immediately available on the ICU.
- There must be 24–hour cover of the ICU by a named consultant with appropriate experience and competencies.
- A consultant in ICM must see all admissions to the ICU within 12 hours.

C Staffing of units

- All units must have a named director of intensive care.
- A whole-time director whose job plan is committed to patient care and management of the ICU must be considered for ICUs with more than 20 level 3 beds.
- The director must have sufficient time for administration of the ICU: a minimum of one PA each week is recommended.
- There must be appropriate data and secretarial support, office space and equipment.
- There must be 24–hour cover of the ICU by named consultants with appropriate experience and competencies to manage the patients in that unit.
- All units must have a minimum of 15 PAs of consultant time totally committed to ICM each week per eight level 3 beds.
- Consultants should not be rostered for any other clinical commitment when covering the ICU during daytime hours.
- During working hours the consultant in charge of the ICU should spend most of their time on the ICU and must always be immediately available on the ICU.
- The total daytime consultant commitment to ICUs with more than eight level 3 beds should be during the normal working week.
- Daytime sessions in ICM at the weekends and on public holidays should be routine for all level 3 units.
- All consultants providing an on-call service to the ICU must have PAs committed to ICM.
- Consultants with a daytime commitment to ICM must have a minimum of two PAs devoted to ICM but four is desirable.

D Clinical management

- A medical practitioner of appropriate experience and training must normally be present on the unit at all times. There must be continuous presence of staff capable of:
  managing an airway emergency in less than three minutes initial assessment of patients minute by minute physiological manipulation.
- There should be a minimum of two (preferably 3) ICU rounds every day at which a consultant is present; the only exception is when the round has been specifically delegated to a senior trainee for training purposes.
- There must be continuity of care in the consultant cover of the ICU. A consultant managing the unit for a period of several days at a time may best achieve this. Where a group of consultants have a significant overlapping commitment to ICU, a single-day working

pattern is acceptable, but adequate time must be provided for a full clinical handover of patient care.

- A handover must occur between the consultants in charge of the ICU whenever transfer of responsibility for the unit is handed over. Sufficient time must be allowed in the job plans for an effective handover between consultants. This will depend on the size of the ICU.
- The maximum number of beds managed by one consultant must be carefully considered and will depend on the number of other partly qualified staff available.
- All admissions and refused admissions must be discussed with the duty ICU consultant and a management plan formulated.
- A consultant in ICM must see all patients admitted to the ICU within 12 hours of admission.

E Standards other than consultant staffing

Structure

- This should follow hospital building note 57 for all new builds or refurbishment.
- This should move towards 100% single-bedded rooms, 25% of them with potentially reversible laminar flow.
- The ICU must have sufficient space and equipment for training and education.

Management

- There must be a clear line of leadership in line with the trust clinical management structure.
- Intensivists should be responsible for the overall management of patients in the ICU and consult with the medical team responsible for other parts of the integrated care pathway when appropriate.

Operational policies must include:

- Admission, discharge and referral.
- Futility ('do not escalate treatment' and 'do not resuscitate' policies).
- Clinical management.
- Infection control.
- Clinical governance: there must be a structure in place that integrates with the trust clinical governance structure, including regular incident monitoring.
- Audit.
- Review of outcomes against national outcome data.

Training

- A documented induction programme for new staff must take place.
- Training must be available for all staff.
- There should be explicit mandatory training and assessment with dedicated time allocated to this:
- At trust level
- At ICU level for equipment and procedures.
- There must be access to on-line resources and e-learning packages.

Supporting documents

- Good Practice documents
- Safer childbirth documents
- Paediatric emergency provision documents
- Association of Anaesthetists of Great Britain and Ireland guidelines on anaesthesia team
- National audit, RCoA

3.2 Emergency medicine (formerly accident & emergency)

3.2.1 Background

Emergency medicine (EM) (previously accident and emergency (A&E)) has grown and evolved over the past 25 years. EM doctors are specialists in the assessment and early treatment of all types of emergency conditions in all age groups.

There are currently about 200 A&E departments in England. They see about 14 million patients per year, three million of whom have problems that need admission to hospital.[9] The case mix of these patients has changed over the past 10 years with more medical cases, more older patients and more patients requiring admission to hospital.[10]

Six million other patients are seen in specialised A&E departments, walk-in centres (WIC) and minor injury units (MIU) (Table 1).[9]

Table 1 Numbers of patients per year in a population of 2 million people (selected specialties).[9]

A&E attendances (type 1)	470,000 (100,000 of these admitted)
Emergency admissions (all sources)	190,000
General medicine	46,000
Geriatric medicine	10,000
Cardiology	4,000
Other medicine	9,100
Surgery	18,000
Orthopaedics	11,000
Neurosurgery	500
Paediatrics	18,000
Paediatric surgery	600
Obstetrics	27,000
Gynaecology	7,000
Other surgical specialties	2,900
Adult mental health	2,400
MI requiring thrombolysis, PCI	500
Major trauma	400
Major bleeding from penetrating trauma	20 per year

A&E = accident and emergency; MI = myocardial infarction; PCI = percutaneous coronary intervention.

There are currently 730 consultants and 500 SpRs in EM. In addition, there are 1,600 doctors in training at the SHO level (now a mix of FY2, SHOs and trust grade SHO) and about 500 staff grade/associate specialist doctors.[11]

At present, about 50% of A&E departments currently have 24–hour cover.[10]

The A&E department is supported by the other specialties in the hospital, including acute medicine, anaesthesia/intensive therapy unit (ITU), surgery, orthopaedics and paediatrics. Radiology and laboratory services provide essential diagnostic back-up.

3.2.2 How would EM fit with the proposed Academy model?

A Community hospital/urgent care centre

EM already provides supervision and clinical support to many MIUs. Given the extensive experience in ambulatory care, EM would be able to provide clinical advice, guidance and clinical governance frameworks for this type of hospital.

B Local hospital

This would be a challenging environment. EM already has the skills in the assessment, treatment and stabilisation of all types of patients, but in most departments needs to work with anaesthesia/intensive care for very ill patients. Clinical decision units (CDUs) run by EM doctors can manage patients requiring a short period of treatment, further investigation or tests, for example a patient with chest pain, query deep vein thrombosis (DVT), minor head injury or non-specific abdominal pain. Working with paediatrics, EM might also help staff paediatric ambulatory units.

C District hospital

EM would provide a normal A&E department service as now. CDUs run by EM doctors can manage patients requiring a short period of treatment, further investigation or tests, for example a patient with chest pain, query DVT, minor head injury or non-specific abdominal pain. The major change would be the need to work closely in support of the emergency hospital. There are existing good examples of cross-cover between such units.[12]

D District emergency hospital with highly specialised services

EM would provide all the functions including CDU but also the initial reception and resuscitation for patients being transferred into specialised services. This would require an enhanced trained doctor presence 24 hours a day. It would also contribute to the retrieval and out-of-hospital care. Helicopter services could be based and staffed by EM/coronary care/anaesthetics.

3.2.3 Teaching, training and clinical support

EM has been at the forefront in training other healthcare professionals in extended roles such as emergency nurse practitioners and emergency care practitioners (ECP).[13,14,15] Telemedicine research and practice is common in EM,[16] ranging from giving advice to remote sites to advising paramedics on thrombolysis. This role of leading and advising could expand.

3.2.4 Workforce issues

The workforce strategy for EM was last published in the *Way ahead 2005*.[17] The objective was to deliver defined levels of senior doctor presence in the A&E department, an experienced doctor presence 24 hours per day and consultant presence 18 hours a day. This was estimated to need 1,700 whole-time equivalent (WTE) consultants. The baseline at that time was less than 500 WTE consultants. However, there have been major changes in the training of doctors with a large increase in those training in EM.

There are currently 730 consultants and 500 SpRs in EM. In addition, there are 1,600 doctors in training at the SHO level (now a mix of FY2, SHOs and trust grade SHOs) and about 500 staff grade/associate specialist doctors.

It is estimated that the recent injection of new posts will result in an increase of 360 doctors to

the trainee workforce in 2007. By 2012, it is projected that there will be 1,500 doctors trained to consultant level, with 500 staff grade posts and 200-300 senior trainee posts.

This would enable 24-hour senior cover for all 200 A&E departments, but would stretch very thinly in some departments.[11]

3.2.5 Challenges for EM in an emergency hospital

Access

The A&E department should be the hub of emergency services for the hospital. Patients should have access to the A&E department if they wish. Some PCTs have put forward plans to 'filter' self-referring to A&E. Triaging patients to a co-located primary care service is acceptable but any plan that limits proper access to the A&E department would be against the principles of EM.

Critical care

Only a small proportion (5–10%) of A&E patients will have a problem that *might* be immediately life-threatening and only 1–2% a problem requiring immediate critical care intervention. However, in a department serving a population of 250,000, this means that 3,000–6,000 patients per year have a possibly immediately life-threatening problem and 600–1,200 will need immediate critical care.

In a population of this size - and even in smaller populations that are geographically isolated - critical care will be essential. By this is meant the knowledge, skills and experience required to care for the critically ill patient. This needs a high degree of training and judgement.

The College of Emergency Medicine and the British Association for Emergency Medicine strongly believe that in order to provide a safe service an emergency department requires 24–hour support by doctors skilled in critical care.

Acute medicine

This is an essential component of acute hospital care as the largest numbers of admissions to hospital from the A&E department are to acute medicine.

Some types of patients may require triage to regional centres for ST elevation myocardial infarction (STEMI) or for acute stroke thrombolysis. There should be clear guidance on how these patients should be treated (eg pre-hospital triage for primary PCI). The safe management of gastrointestinal (GI) haemorrhage requires prompt access to interventional endoscopy.

Orthopaedics

This is the second most common destination for admissions from the A&E department. It is clearly preferable to have such a high volume service on-site. If there is no on-site emergency orthopaedic service, ideally the A&E department should not receive trauma ambulance cases. There should be clear protocols for the ambulance service that they should not take trauma cases to those departments.

Where geographical circumstances or existing arrangements necessitate the reception of patients with serious bony injuries in departments without on-site orthopaedic support, protocols must

be established for their care in consultation between the regional orthopaedic unit and the A&E departments involved.

Many patients with more minor orthopaedic injuries are treated in A&E departments. If the orthopaedic service provided local fracture clinics and day case surgery it would retain vital links to A&E.

Serious musculoskeletal injuries such as spinal injury, complex lower limb injury and major pelvic injury should be treated in specialised centres.

General surgery

There is an increasing trend to centralisation of this service which poses two problems. Firstly, many patients are admitted with acute abdominal pain. Most require only a period of observation and a proper CDU led by EM could assess many of these patients. A significant minority will need an operation. There should be clear processes for the management of these cases, preferably with their review at least once a day by a general surgeon. Telemedicine could assist in such a process.

Secondly, some patients are admitted with severe uncontrollable bleeding. All the evidence suggests that control of bleeding as quickly as possible improves outcomes. Giving fluids and delaying surgery results in poorer outcomes. This is a low frequency but high risk occurrence. The management of such situations should be agreed in advance of any changes. Clinical examples are bleeding ectopic pregnancy, severe obstetric haemorrhage, GI bleeding and trauma such as direct arterial injury.

Paediatrics

Of the patients attending a general A&E department 25% are children, and attendance peaks in the evening and weekends. A&E consultants are expert in the management of all types of childhood emergencies. Most of these children will have minor illness or injury not requiring a specialist inpatient service, but they all need to be treated by doctors and staff with specific training and experience. EM doctors have these skills and working with paediatricians could shape appropriate services.

A significant number of children benefit from a period of observation of less than 12 hours to differentiate minor illness from that requiring a specialist consultation. There should be co-operative working between paediatricians and A&E consultants to decide how children can be managed safely in the local hospital.

Fortunately, a critically ill child is rare but these occurrences present one of the most difficult clinical situations, even for experienced and skilled staff. It is vital that level 3 critical care is available. There have to be clear procedures for the transfer of such cases.

3.2.6 Effect of removal of supporting services on an A&E department

1 **Expertise.** Removal of a supporting service means that as expertise is not available from outside the A&E department there must be an increase in the expertise available within the department. This will need more, better trained doctors who are available for increased amounts of time. It is recommended that by 2012 any hospital with an A&E department should have doctors experienced in EM available in the department at all times. Hospitals

should be working towards this over the next five years.

2 **Transfers.** There will be more non-critical transfers. Many documents concentrate on the critical care transfers, but the urgent, but non-critical transfers will be of much greater volume. This will mean more staff time taken in preparing patients for transfer and escorting patients, and very significant amounts of ambulance time.

3 **Critical care transfers.** Some issues have to be addressed where there are increased numbers of critically ill patients being transferred. Such patients need to be accompanied by skilled and experienced staff, at least one of whom must have level 3 critical care skills. The effects on staffing of units can be considerable if staff are involved in transfers; this can leave units vulnerable.

4 **Ambulance service.** The more services not provided in a local hospital, the greater the responsibility of the ambulance service. They will need to be more skilled in pre-hospital triage and will have longer journey times if they are 'bypassing' an A&E department. They will have increased risks in the care of seriously ill and injured patients. At times, the ambulance may not 'bypass' a department if the patient is *in extremis*. This will place the staff in that department in a very difficult position and might result in poorer outcome for that patient.

   Ambulance staff will have to undertake a larger number of emergency transfers and manage increased numbers of critical care transfers. Given the current pressures on the 999 system, it is essential that these increased demands are assessed and resource given to ensure a speedy response to a request for transfer.

5 **Telemedicine facilities**, especially for image transfer, will be essential to avoid unnecessary transfers and to allow urgent opinions, for example in orthopaedics.

District hospitals

There may be a need to acknowledge that at times key skilled staff may have to travel to a peripheral unit to deal with emergency cases. There can at times be reluctance by some specialised staff to travel to assess or treat patients. Experience seems to indicate that a blanket 'no travel' approach is not in the best interests of patient care. It is felt that there are rare occasions when moving the doctor to the patient is essential. This should be part of planning and discussions.

Processes for transfer should be agreed in advance. Transfer documentation and proformas can assist in communication. If retrieval teams are to be used, the process and quality standards should be agreed.

Support for clinicians faced with clinical problems out with their normal expertise

In an ideal world this should not happen. Increasingly, doctors will be faced with an extremely ill or injured patent without immediate specialist back-up. They should be trained adequately and have the confidence to act even if they have to perform a procedure not part of their everyday practice. This is not an uncommon occurrence in EM and may become more common for other specialties.

There is an increasing trend for minute examination of critical decisions, especially in an unexpected death. Clinicians can face complaints, an inquest, civil litigation, General Medical Council (GMC) investigation and even criminal investigation. Where the healthcare system is

exposing the clinician to such risks, it must accept the need to support clinicians who have acted in the best interests of the patient using their skills to the best of their ability. The medical profession, especially those acting in an expert witness capacity, should acknowledge this dimension to any investigation and factor this variable into their opinion.

Risk assessment

A&E records will be an important source of the frequency and type of patient attendances. Resuscitation room logs are a good source of information on the frequency and type of critical care cases. If a service is to be withdrawn, the risk can be assessed using standard risk assessment techniques to assess the frequency and severity of the risk. This will allow risk management strategy to be outlined - important if staff are criticised, even when they have done their best in an impossible situation.

The risk assessment should be agreed by all the major specialties involved.

3.2.7 Standards

Patient focus

Patients who wish to be seen in an A&E department should be able to do so without having to pass any non-clinical filter.

Hospitals should have enough inpatient capacity to ensure that patients are not kept waiting for admission to a hospital bed.

The current access target for treatment of 98% of patients admitted or discharged within four hours might be seen as an aspirational standard. A standard of 95% of patients admitted or discharged within four hours is more likely to be sustainable, and has more clinical, operational and financial logic.

Specialty focus

Unselected patients presenting to a hospital with an A&E department should be seen in the A&E department by staff working in conjunction with primary care colleagues if possible.

Staff training

By 2012, all A&E departments should have a doctor trained to specialty training registrar (StR) level 4, 24 hours a day.

Specialty support

The optimum support for an A&E department consists of the seven key specialties of acute medicine, critical care, imaging (including 24-hour computed tomography (CT)), laboratory services, paediatrics, surgery and orthopaedics.

The absolute minimum support for the A&E department is 24-hour on-site acute medicine, critical care unit, imaging (including 24-hour CT) and laboratory services.

3.2.8 Current progress

Patients presenting to an A&E department are seen and assessed without any need to pass any 'assessment of need' process.

Block to admission remains one of the major threats to the whole of the emergency care system. The access targets have greatly improved this problem but it remains a pressure.

While 98% of patients are admitted or discharged within four hours, this includes figures from type 2 and 3 units (MIU and WICs). Questions have been raised over the clinical utility, sustainability and financial cost of this high target.

50% of units have 24-hour cover by experienced doctors.

Almost all units have medicine/laboratories/imaging on-site but not all units have 24-hour access to CT (NCEPOD 2005).[18]

A few units are operating without one or even two supporting services such as paediatrics, surgery or orthopaedics. These operate in networks with other hospitals with ambulance diversion and transfer of patients.

Projected situation in 2009 (EWTD)
There will be enough experienced doctors to provide 24-hour cover in 75% of departments (Workforce projections College of Emergency Medicine (CEM)).
More units will face challenges of withdrawal of inpatient paediatric, surgical and orthopaedic services.
Some hospitals will struggle to provide viable critical care, especially if all surgical operating and outpatient work is withdrawn.

Projected situation in 2012
There will be enough trained doctors to provide 24-hour cover in 160–200 departments (depends on how the work patterns of 'trained doctors' develop in the future).

More units will face challenges of withdrawal of inpatient paediatric, surgical and orthopaedic services.

Some hospitals will struggle to provide viable critical care, especially if all surgical operating and outpatient work is withdrawn.

3.2.9 Recommendations

- Health communities considering service reconfiguration should ask local EM consultants for their assistance at the earliest possible stage. It is also important that the views of the local population are sought.
- EM consultants should assist health communities in planning any service changes. They will be well aware of the drivers for change and the need to change. There is a very real tension between the need to keep services local and the risks of centralisation. There is no 'one size fits all' solution. Each emergency care system will have to balance the risks and benefits of any configuration.
- Critical care services are an essential back up to an A&E department.
- A&E departments will require increased levels of senior staffing to provide the necessary clinical back-up in the absence of some services. By 2012, we recommend that all A&E departments should have a doctor experienced in EM available in the department 24 hours a day seven days a week.
- The costs of transfers, both urgent and critical, must be taken into account, both in terms of the extra burden on the A&E department and the ambulance service. Detailed work is required to minimise the risks of increased transfer of patients.

3.3 General practice

3.3.1 Summary

Until the new general medical services (nGMS) contract, introduced in 2004, general practitioners (GPs) had 24-hour contractual responsibility for their patients. Responsibility for commissioning out-of-hours (OOH) care and training in the relevant competencies in England now rests with primary care trusts (PCTs). A variety of service models has been set up. Good OOH care exists in some areas but significant concerns remain about the quality and safety of patient care and variability of services and training. Furthermore, the new PCT arrangement is not being monitored to the same stringent quality standards previously applied. These are issues of high public concern and interest. The system is also complex and confusing for patients. This position statement[19] emphasises the important role of GPs in urgent care and makes a series of recommendations. It urges PCTs to take action to improve the situation.

Recommendations are made for PCTs, the Department of Health (DH), GP practices, the Healthcare Commission and educationalists. They include improving the organisation of care and services, configuring care around the needs of patients, monitoring clinical standards, the importance of engaging GP practices through incentivisation and the promotion of stronger and integrated multidisciplinary teams.

3.3.2 The ten recommendations:

For strategic health authorities (StHAs) and PCTs

1 Show leadership and champion the cause of urgent care. Develop urgent care networks to foster integration and co-ordination of care between providers (Figure 2 – see page A34).
2 Configure care around the needs of patients, with better signposting for access and the promotion of self-care skills.
3 Strengthen clinical and educational governance arrangements for urgent care; monitor and enforce quality standards, including clinical outcomes; learn from significant events including complaints.
4 Engage local GPs and recognise their pivotal role in leadership, planning and support for OOH services; this should be achieved by incentivising GP practice involvement.
5 Promote stronger multidisciplinary urgent care teams whose members have been trained to nationally agreed standards; ensure effective training opportunities in urgent care for GP registrars.

For the DH

6 Make urgent care a priority and set a clear national strategy for this, emphasising the necessity for high clinical standards. Ensure that policy is complied with and that sufficient support is given to local health economies to implement better services.
7 Ensure that ECPs are trained to a defined national standard including an assessment of competence (including English language and communication skills) and work within a robust clinical governance arrangement.

For GP practices

8 Urgent care is an important part of the daytime work of GPs and GP practices. All practices should have a clearly understood system for responding to and dealing with urgent care during surgery hours. Although GPs are no longer contractually responsible for OOH work, they should champion optimal levels of urgent care for their patients. Practices must have systems in place for alerting urgent care providers to patients with complex care needs.

For the Healthcare Commission

9 Given the high level of public concern in this area, the Healthcare Commission should ensure that the quality and safety of urgent care *including clinical outcomes* is monitored regularly. Based on these findings, the Commission should make recommendations for improvement.

For educationalists

10 Primary care educationalists must ensure that the quality of urgent care training receives a high priority. GPs remain pivotal to urgent care provision. To maintain this quality, a systematic approach to the training of GPStRs, including practical experience, must be established and appropriately monitored with organised supervision in a range of urgent care settings. Urgent care competencies should also be incorporated within GP appraisal and continuing professional development (CPD).

Annex

URGENT CARE

A position statement from the Royal College of General Practitioners (RCGP) in response to the 'Urgent Care – Direction of Travel', a Department of Health consultation

1 Introduction

1.1 There is considerable public and professional concern about the quality of OOH services, most recently confirmed in a report by the National Audit Office (NAO).[20] Whilst good provision of OOH care exists in some areas, there is confusion about access routes amongst patients, in addition to concerns about inconsistent response and fragmentation of patient experience.

1.2 Until the nGMS contract (introduced in April 2004), GPs had contractual responsibility for their patients' care 24 hours a day. Responsibility for commissioning OOH care now lies with PCTs in England.

1.3 In this position statement, the RCGP explores current concerns about urgent care. The document builds on our national OOH quality accreditation scheme[21] and considers issues in the context of the community white paper *Our health, our care, our say*[22] which has signaled a national review of urgent care.

2 The key issues

2.1 The quality of OOH care has been a significant concern for patients and their GPs since the change in responsibility for 24-hour care in 2004. In February 2005, Council agreed a motion that requested the College to work at a national level to improve the quality of OOH care. Since then, the College has consistently raised the issue with senior officials and

politicians at the DH. Urgent care was mentioned in the RCGP General Election Manifesto and the College's submission to the consultation on the white paper submission. The previous OOH accreditation scheme was devised by the RCGP and implemented widely by PCTs until accreditation requirements were changed by the DH in 2004.

2.2 Following the motion to Council, a think tank meeting including patient groups was held. The meeting identified the following key issues:

2.2.1 There is public confusion about what to do and which service to access OOH.

2.2.2 While urgent care was not of a uniformly high standard before the nGMS contract, it would be sensible to learn from past successes of the GP co-operative movement.

2.2.3 A collaborative approach is essential, as is the need to keep OOH care high on the agenda.

2.2.4 Provision of care in rural locations poses particular challenges – centralisation can cause worsening of access for rural and remote healthcare communities.

2.2.5 Although standards exist for monitoring OOH services, these are inconsistently applied and there is no clear mechanism for routine national reporting and discussion.

2.2.6 There is wide variation in the quality of services.

2.2.7 GP StRs must continue to receive adequate, high quality training in urgent care backed up by robust monitoring and assessment measures.

2.2.8 There is concern that some nurses and ECPs may be being exposed to situations beyond their competencies. Adequate monitoring systems are not in place.

2.2.9 Patient demands and expectations for urgent care are increasing. There is a need for better patient education and the promotion of self-care policies.

2.2.10 Providing comprehensive, high quality OOH services is costly.

2.3 The meeting identified several themes to be addressed when generating solutions:

2.3.1 The organisation of urgent care services needs to improve. Fragmentation of care must be dealt with. This requires the adoption of a 'whole systems approach' to ensure integration of services and the creation of virtual urgent care centres (UCCs) in which different providers work together.

2.3.2 Focus on quality and safety of clinical care – by developing, monitoring and enforcing standards and paying due attention to the training of healthcare professionals to national quality standards.

2.3.3 Put the patient at the centre of urgent care services. Empower patients by providing information to make access and navigation easier.

The paper will now consider these issues in greater detail.

3 Terminology

3.1 There is confusion about the terminology used by users, providers and commissioners of urgent care. Terms such as unscheduled care, unplanned care, emergency care and urgent

care are used interchangeably. This confusion may prevent the development of a fully integrated system based on the needs of patients.

3.2 The DH guidance on telephone access to OOH[23] sought to clarify commonly used terms:

3.2.1 *Emergency care* = immediate response to time critical healthcare need; *unscheduled care* = services available for the public to access without prior arrangement where there is an urgent actual or perceived need for intervention by a health or social care professional; *urgent care* = a response before the next in-hours or routine (primary care) service is available.

3.2.2 A definition of urgent care has since been issued by the DH in England:[24]

*'**Urgent care** is the range of responses that health and care services provide to people who require – or who perceive the need for – urgent advice, care, treatment or diagnosis. People using services and carers should expect 24/7 consistent and rigorous assessment of the urgency of their care need and an appropriate and prompt response to that need.'*

3.3 This definition has been supported by the RCGP in its formal response to the DH consultation. In this paper, the term 'urgent care' and the definition above are adopted.

3.4 The term 'urgent care' should be used as the umbrella term to include unscheduled care, unplanned care and emergency care to ensure a single recognisable identity and to promote a more integrated approach to commissioning and service provision.

4 The underlying principles and values

4.1 It is possible to identify some principles and values that must inform the development of new systems of urgent care. The quality and safety of care are all important given the nature of urgent care work – with the need to promptly diagnose serious clinical conditions such as meningitis or appendicitis. The provision of high quality, safe and responsive urgent care services must be acknowledged as an important and essential function of the NHS and not be regarded as an 'add on'.

4.2 Patients find the current system for accessing OOH care confusing. Access to urgent care must therefore be made as simple as possible for patients. Services must be designed around the clinical needs of patients and be responsive to those with particular needs such as end-of-life care. Patients should expect a consistent and rigorous assessment of the urgency of their care need and an appropriate and prompt response to that need.

4.3 Urgent care must be differentiated from 'convenient care'. A request for the issue of a non-emergency prescription might be dealt with quickly when presented in-hours even though an urgent response is not needed, but the same cannot be expected when requested OOH. Whilst care must be patient centred and responsive, it should not be at the expense of the clinical needs of the individual or other patients.

4.4 The concept of urgency for a patient may be different from that of a clinician. An urgent care system responsive to patients' needs should be able to handle a clinical emergency, a cry for help or a request for information efficiently and effectively. From a patient's perspective, all these may be perceived as a need for urgent care. However, the clinical emergency must take priority. Urgent care services therefore need mechanisms for dealing with patients needing reassurance as well as for those requiring formal face-to face clinical

assessment and treatment. The response to an urgent care need must take into account the clinical urgency of the situation.

4.5 Although the change of contractual responsibility for OOH care has, of necessity, shifted urgent care from being purely a GP discipline to a multiprofessional system delivered from a variety of locations, the College believes that the number of providers and healthcare professionals involved must be kept as few as possible, compatible with delivering a safe level of service. This is because a large number of 'hand-offs' involved in the care of an individual can lead to harm and increase costs. Effective team working and co-ordination of care are also essential when different providers are involved in the provision of urgent care to ensure a coherent patient experience.

4.6 During OOH the virtues of general practice, such as patient centredness, handling uncertainty and co-ordination of care, are as important as during surgery hours. PCTs must apply the lessons learned from previous GP OOH provision to new systems. GPs should be encouraged to offer leadership, support and participation in service delivery. Of necessity, patients may need several different providers of urgent care, but experienced GPs must be at the centre to ensure the quality of the past is not lost.

4.7 Urgent care must be accorded a priority by PCTs: services must be properly organised and resourced, staff be trained and competent, and there must be high levels of clinical leadership and engagement.

5 The organisation of care: urgent care networks

5.1 Better organisation of care will assist patients and promote the better use of resources. The creation of urgent care networks is suggested. These should be clearly defined and encompass GP practices, WICs and MIUs working within larger networks of care, including A&E departments, inpatient and specialist units (eg stroke units), as appropriate (Fig 1). No single model will be appropriate for all areas. Local solutions must be developed that offer a well organised, responsive service readily understood by patients. The needs of rural as well as urban areas must be considered.

5.2 In urgent care networks, co-operation between health professionals and provider services must be improved. Integrated 'whole system' working will reduce both duplication of services and patients having to repeat their needs and details many times. Such a system must be underpinned by robust and safe electronic patient records and data communication management designed with due regard for patient confidentiality and consent.

5.3 To provide comprehensive 24-hour urgent care cover will need the combination of several providers and professionals. Long-standing barriers between providers and services must be broken down. GPs should not be replaced in this system. The focus must be on the needs of patients, not on those of the providers. This should be supported by multiprofessional learning.

5.4 Commissioners must ensure that appropriate principles of continuity – in the broadest sense – are applied to urgent care services. Continuity has been defined as: 'the experience of co-ordinated and smooth progression of care from the patients' point of view'.[25] This includes:

5.4.1 Informational continuity – the use of information on past events and personal circumstances to make current care appropriate for each individual.

5.4.2 Management continuity – a consistent and coherent approach to the management of a health condition responsive to the patient's changing needs.

5.4.3 Relational continuity – an ongoing therapeutic relationship between a patient and one or more providers.

5.5 Informational and management continuity can be achieved through the use of shared electronic patient records and individual care plans for patients with long-term conditions (LTC).

5.6 Access to GPs and continuity are particularly important for certain groups of patients, for example, the terminally ill, older frail patients with multiple and complex medical conditions, and those with mental illness. It is extremely difficult to provide continuity of care at all times and on every occasion, but urgent care services should be tailored to meet the needs of such patients wherever possible.

5.7 While centralised schemes may work well in urban areas, they may diminish access in rural areas. This should be addressed through careful planning and engagement of communities. Arrangements must be tailored to local needs. Better and wider use of technology such as telemedicine can be helpful.[26]

5.8 Concluding remarks: the current system is confusing for patients and fragmented. The organisation of care needs to improve. We agree with the white paper *Our health, our care, our say*[22] which states that 'all health partners should be encouraged to work together in a system-wide approach to developing urgent care services'.

6 Assessment of urgent care needs and the role of NHS Direct (NHSD)

6.1 The DH states that 'an appropriate response may include anything from telephone advice and reassurance to self-care, through to face-to-face consultation with a clinician or deployment of a crisis team or admission to hospital in an emergency requiring specialised facilities. Wherever clinically safe, care should be delivered as close to home as possible within a community setting'. It is important that any problem being assessed as requiring an immediate response utilising validated or robust methods – as defined by the clinical need – should receive this regardless of when and where the episode presents.

6.2 The white paper *Our health, our care, our say*[22] stated that urgent care should focus on 'ensuring that the skills and experience of NHSD are fully utilised by patients and healthcare organisations', 'enabling patients to self-care where this is appropriate', and 'help to provide better information about local services'. An NHSD on-line website and digital TV service have also been introduced.[27]

6.3 The NHSD nurse-led telephone helpline has been widely used by patients; however, capacity[28] and cost issues[29] as well as use of perceived risk-averse decision support software mean that it has not always been popular with GP OOH providers and PCT commissioners.[30]

6.4 NHSD has worked, but not universally or consistently. Well-developed, pre-existing OOH services have not been enhanced by NHSD; however, in those areas where such OOH care

is lacking, NHSD has proven beneficial. The DH exemplar programme of integrating the NHSD telephone service with GP OOH services has also produced equivocal results in terms of demand management.[31] In areas where local urgent care services are already delivering high quality care, the added value of NHSD has been questioned.[7] It would therefore be premature to assume that all urgent care should be channelled through the NHSD telephone service, as described in the Carson model[32] arising from the DH OOH review.[33]

6.5 The 'one size fits all' approach of call handling with nurse assessment of the national NHSD telephone service needs to evolve and adapt to local needs.

6.6 Telephone assessments of urgent care needs must be properly carried out and not done in a 'mechanistic' fashion. Patients with a perceived urgent care need should expect a consistent and rigorous assessment of the urgency of their needs and an appropriate and timely response to them. There is a growing trend for urgency assessment to be carried out by a variety of healthcare professionals, but the limits of this must be understood. The skills of experienced GPs in triage must be acknowledged.

6.7 Given the high volume of paediatric urgent care contacts, robust risk assessment needs to be in place when assessing children via telephone contact with a parent or carer. There should be an appropriate threshold for resorting to a face-to-face contact for the clinical assessment of children.

6.8 Managing risk appropriately has both clinical and resource implications. While generalist GPs are able to consult safely and effectively without the aid of computerised decision support tools, many call prioritisation or 'streaming' systems have a tendency to be risk averse. Future systems must add value to individual patient care without causing unnecessary delays or inconsistencies. Electronic record keeping should support clinical audit and allow more robust data to be collected for quality improvement.

7 The role of WICs, MIUs and A&E departments

WICs and MIUs

7.1 Patients have a variety of options for urgent care provision. Nurse-led MIUs provide valuable alternatives to A&E for certain patients. WICs are currently in vogue, and there is no doubt that they can improve access to healthcare and serve a valuable purpose depending on their location and remit.[34] However, underutilisation, particularly of commuter WICs at London and Manchester rail stations, raises questions about cost-effectiveness. Where WIC services are combined with the availability of diagnostics, multiprofessional input and co-location with GP OOH services (eg Loughborough WIC), the arrangement works well. With the introduction of payment by results (PBR), innovative models are being implemented with primary care professionals (GPs & nurses) practising within A&E departments (eg Guildford PCT, Surrey).

A&E departments

7.2 Concern has been expressed about the impact of the change in OOH service provision on A&E attendance. Many PCTs in England have mapped the utilisation of their urgent care

services. A significant proportion of A&E attendances could be dealt with in primary care with appropriate support. The causes of increased attendance at A&E departments remain controversial. In one study of an NHS foundation trust, increased A&E attendance was found to be linked to the change in OOH arrangements.[35] Some departments observe increases in A&E workload at weekends and bank holidays. However, the DH has stated that '[it] did not think that increases in A&E attendances were connected to lack of access to GPs'.[36] One possible reason for the increase is because A&E has become so much better than it used to be. However, most people do not want to go to A&E but do not know about any alternatives.

7.2.1 The perception that there are excessive referrals to A&E by GPs in-hours and by GP OOH services is not supported by the evidence.[37] In a study from Croydon PCT, referrals from the GP OOH service, plus those from NHSD, a WIC and MIU together accounted for only 3% of A&E attendances.

7.2.2 Although self-referrals by patients account for the majority of A&E attendances, some patients are advised to attend A&E by other healthcare professionals. Management of urgent care in general practice and improving access to primary care would be one way of reducing A&E attendances. There remains a perception among some patients that they may be unlikely to get an urgent appointment with their GP, even though this may not be true. Mechanisms need to be developed to tackle this.

7.2.3 Patients are often blamed, unfairly in our view, for doing the wrong thing by attending the 'wrong' provider of urgent care. This is hardly surprising when they have rarely been empowered to do otherwise – for instance, in London the majority of self-referrers to A&E aged 25–45 do so because they are infrequent users of the healthcare system and do not know how to get the best out of it to meet their individual needs.[38] They only know A&E, so this is where they go. There is an urgent need to provide effective health education and self-care support systems (both electronic and paper-based).

7.3 Social services have important parts to play in urgent care; in some centres, they provide a community triage desk. Senior nurses can be trained to co-ordinate packages of social as well as medical care, dealing with problems immediately rather than waiting until social services are available in working hours. An integrated approach to urgent health and social care should be encouraged.

8 The role of GPs

8.1 The majority of urgent care is undertaken in primary care by GP practices during normal working hours. Many GP practices operate a flexible and responsive access system for patients with urgent needs during surgery hours. Some practices do more (daytime) urgent care than others who may need additional support. It must be recognised that the sheer volume and unpredictable nature of this work make it unrealistic for any single access system to manage all urgent care during surgery opening hours and that an 'overflow' system is needed to ensure patient safety.

8.2 GPs voted in a national ballot to opt out of 24-hour contractual responsibility. None the less a significant number of GPs remain involved in OOH provision. GPs have welcomed

the flexibility offered by the opt-out; 24-hour provision of care was an issue of significant concern to the profession and was not a sustainable arrangement for the future. We believe the opt-out has helped GP morale, recruitment and retention.

8.3 The College acknowledges that the change in 24-hour responsibilities remains a difficult issue for the profession. It has been widely supported by many doctors, but there is no doubt that it has been viewed negatively by some GPs, the media and patients. The College is cognisant of this and therefore urges PCTs to find ways of engaging GP practices and incentivising their involvement in urgent care. It must be emphasised that the College does not support contractual change as a way of achieving this objective. For those GPs and practices who want to participate in urgent care work, innovative ways of organising care should encourage them to participate in OOH care without returning to the past burden of these activities

8.4 Urgent care is an important part of the daytime work of GPs and GP practices. All practices should have a clearly understood system for responding to and dealing with urgent care during surgery hours. Although GP practices are not contractually responsible for OOH work, they should champion and influence optimal care for their patients. There must be systems for alerting urgent care providers about patients with complex needs.

8.5 Urgent care provided by GPs and other members of the primary healthcare team should be celebrated and nurtured. Primary healthcare teams should be supported in their efforts to deliver appropriate urgent care services in the daytime.

8.6 All PCTs must engage GPs and practices and recognise their pivotal role in leadership, planning and support of OOH services; they should incentivise GP practice involvement in urgent care.

9 Maximising the potential of professional skill mix

9.1 It is acknowledged that where it is difficult to recruit GPs to provide urgent care PCTs resort to assessment and provision of care by other healthcare professionals such as ECPs. This must be done to support GPs, not to replace GPs in the system.

9.2 GPs remain the best managers of clinical risk, particularly of undifferentiated presentation of illness within urgent care. Replacing GPs would be, at best, a costly diversion and, at worst, an unsafe destabilising action that would inevitably increase fragmentation of care and reduce the skills pool available to urgent care.

9.3 Where possible, it may be tempting to employ other professionals who may be cheaper than GPs but to do so may be a false economy. Use of higher paid professionals can be more cost-effective, especially in triage. GPs have proven expertise in delivering urgent care and must have a strong influence on those providing this care and in conducting triage.

9.4 As experts in urgent care, GPs undertake fewer investigations and have less recourse to high cost referrals to A&E or ambulance services than other groups. They are used to dealing with a high rate of individual contacts (throughput) and their efficiency is reflected by a high 'episode completion rate' per contact. In one study, 97% of GP contacts resulted in resolution of the problem within the OOH period with only 3% being referred on to emergency ambulance or A&E services.[39] When considering skill mix, it is important to take into account the total cost of multiple contacts with health professionals and

organisations per individual episode of care rather than just considering the hourly costs of different health professionals.

9.5 The Health Select Committee (HSC) emphasised this point when it said that it is 'vital that [GPs] do not become disengaged from the process of redesigning OOH services during this critical transition phase, and their expertise and local knowledge lost.[40]

9.6 The training of ambulance ECPs is highly variable across the country, as is their deployment. ECPs must be trained to a defined national standard, including an assessment of competence with appropriate monitoring. They should work within a proper clinical and educational governance structure under the guidance of a GP, since GPs have the experience of providing comprehensive urgent care and can guide others in these skills. There is therefore a need to have consistent competencies for ECPs across the country and better integration into the wider urgent care service provision.

9.7 The GP is the proven expert in the field of delivering urgent care and must have a strong influence on and educational input to others providing this care. Other healthcare professionals must not be seen as replacements for GPs. Consistent competencies for ECPs and better integration into the wider urgent care service provision across the country is therefore essential.

10 Team working

10.1 The expertise required for urgent care must be determined by clinical needs and not simply by the skills available locally. The urgent care system must have pathways whereby patients can access the appropriate healthcare professional in a timely manner. All providers of urgent care must be used for what they do best by maximising the use of skills and existing services. However, the expertise and quality of advice, assessment and care provided must be consistent.

10.2 Teams remain the arrangement of choice for people when working in primary healthcare. However, community nurses, such as district nurses and health visitors, are being distanced from existing practice-based teams. The break-up of primary healthcare teams will work against efficient urgent care provision during the daytime.

10.3 Integrated primary healthcare teams can best address the challenges of an ageing population who often develop urgent care needs due to an increasing burden of long-term conditions (LTC) and comorbidity. Primary care organisations must adopt a policy of ensuring that community nursing roles are integrated with existing primary healthcare teams and primary care practices. Such an arrangement is essential to bring about a much needed improvement in the co-ordination and integration of care – an issue repeatedly shown to be of concern to patients and a crucial function of primary care. There is no doubt that close working, physical co-location or virtual teams foster better working relationships than individuals working within professional 'silos'.

10.4 'One size does not fit all' in terms of urgent care workforce models. There needs to be a drive to promote multiprofessional teaching and training with a competency based approach. This will ensure consistent quality of care across the entire urgent care workforce.

10.5 Staff new to urgent care or with an identified learning need should have specific telephone

consultation training to acquire the skills to listen, prioritise, empathise, reassure and give easy, understandable advice. They also need to know how to elicit appropriate information from confused and/or distressed callers. The RCGP has issued a manual on telephone consultations.[41]

11 Patient involvement and empowerment

11.1 The traditional approach to urgent care provision has been from the service providers' perspective. This must change to that of the patient. The current 'call back' system in both OOH, and indeed in-hours services, exists simply because this is the way the system has evolved and it smoothes the peaks and troughs of work in a busy day. However, this means that urgent care is not necessarily dealt with quickly enough from the patient's perspective. Even the notion of 'right' and 'wrong' choice of provider by the patient or carer is based on the perspective of the service provider.

11.2 Access to the various providers of urgent care outside normal surgery hours must be made simpler. Publicity through patient leaflets and standardised OOH surgery telephone messages telling patients how to access urgent care will improve knowledge in this area. No matter which service is accessed it is essential that the patient's own GP must be informed rapidly, efficiently and accurately.

11.3 Patients can make appropriate choices for their healthcare needs from a variety of options – from face-to-face contacts with health professionals, via the telephone and increasingly via the internet and digital TV. Why do patients make the choices they do? Past experience or peer support are commonly the only source of information on which patients can base their decision. Patients are often unfairly blamed for making the 'wrong' choice when they have not been empowered to make the right choice. This must be addressed by all urgent care providers giving consistent advice about self-care, the most appropriate place to attend or how to call a doctor if this is necessary. The College must champion the cause of patient involvement in service redesign.

11.4 Patients must be empowered to use self-care and to access timely and helpful information when needed. Such information can also be provided in the consultation (preferably in writing) so that patients understand what to do next time. Demand flows must be managed from the patient perspective and not the clinician's. The redesign of the system must be moved on to promote telephone access directly and efficiently through to the appropriate clinician or provider – particularly in urgent cases. For example, Kingston PCT's newly commissioned urgent care OOH service involves live call transfer to a GP for urgent calls, thus ensuring a 'real time' clinical response.

11.5 In palliative care, it is good practice for healthcare professionals and carers to be provided with a single local phone number for palliative care advice OOH. The OOH team should have access to high level palliative care advice from the on-call consultant or specialist team and should carry a list of recommended drugs. This can be facilitated by a 'special note' system. Similar systems could also be set up for patients with serious mental health problems.

11.6 Urgent care must be configured around the needs of patients. Successful, effective delivery of urgent care depends upon patient empowerment. The College must champion the patient perspective and involvement with service redesign.

12 The quality perspective

12.1 The monitoring of quality in urgent care services has traditionally been process-led, for example measuring the time-to-call answer or time-to-visit rather than the clinical outcome. The OOH national quality requirements[42] delineate the process-driven targets, although providers are also required to audit the consultations of all those involved in service provision. Such monitoring by PCTs has been highly variable and sometimes hindered by shortcomings in the available software. There is no effective national system for collating this information.[20] Studies have shown that the highest patient satisfaction in urgent care is achieved by local GP co-operatives.[43]

12.2 Clinical audit: to ensure a consistently high quality of urgent care OOH, both the patient experience and the quality of the clinical encounter must be monitored and audited. The RCGP has developed an OOH clinical audit toolkit[44] to provide a consistent framework for organisations to implement or develop routine clinical audit processes for informing, monitoring and continually improving the quality of OOH services. The audit includes:

- an assessment of the need for emergency intervention
- clear identification of the main presenting problem
- recording of past medical history, medication/allergies and a diagnosis
- evidence of effective decision making with critical appraisal of information
- consultation displays empowering behaviour, and
- recording of instructions in the event of deterioration.

12.3 Monitoring of 24-hour urgent care requires the development of quality standards for both in-hours and OOH periods. This must include assessments of clinical quality and patient experience as well as measures of process timeliness. It is important to ensure that there is no levelling down of quality as a result of any harmonisation of policy on in-hours urgent care with OOH. The same quality requirements must be applied to all urgent care services and providers (eg mental health, WICs, MIUs and A&Es) to ensure that patients can expect a consistently high quality service wherever they present.

12.4 Robust governance arrangements for providers of OOH urgent care are essential. The development of core quality and governance requirements across different providers in urgent care will promote consistency and integration.

12.5 There has been variable recording of, and learning from, patient safety incidents and other forms of feedback.[45] Arrangements must be made for learning and dissemination of good practice in urgent care. For example the NAO[20] noted that in some areas there has been considerable improvement and innovation in OOH provision which provides a useful learning experience for other PCTs. In south-west London, informal urgent care learning 'sets' involving front-line practitioners, senior managers, commissioners and providers have been found to be useful conduits for sharing innovation, learning and good practice, as well as developing a strategic view of urgent care.[46]

12.6 Monitoring the quality of urgent care, including clinical outcomes, is essential. In view of the importance of urgent care to patients, and in consideration of patient safety issues, it is recommended that the Healthcare Commission should regularly monitor national standards of urgent care.

13 Clinician and patient safety

13.1 Providers of urgent care services must be mindful of the potential risks to clinical professionals when visiting patients or seeing unknown patients. There is a very real danger to clinicians visiting in poorly lit areas, and cases of assault on clinicians have been recorded (perhaps because they were perceived to be carrying drugs). Clinicians should not have to place themselves in danger and should be provided with escorts to minimise the risk of assault. Guidelines should be established with the local police to escort clinicians into especially dangerous environments. There must also be effective means of securing urgent help for clinicians threatened by physically aggressive patients in the consulting room (eg alarm systems).

13.2 There has been much recent debate about the requirement and provision of chaperones during the examination of patients. The GMC states that, particularly when an intimate examination is to be conducted, a chaperone should be offered to a patient in the form of a friend or other medical professional. However, this can be difficult to arrange in urgent situations particularly in the home of a patient OOH. The design of urgent care provision systems must take into account the need to provide chaperones and to provide patients with their preferred gender of clinician if at all possible. Patients must be advised that chaperones may not always be available when a clinician visits a patient's home and that, if necessary, a patient should arrange for a friend or relative to be present during the consultation. National guidelines on chaperones have been issued.[47]

14 Training future GPs in urgent care

14.1 The opportunity for GPs to opt out of the GMS contract may adversely affect the training of future GPs. For example, in some areas, such as south London, many training practices have opted out. Some GP registrars may therefore lose the opportunity to develop critical skills in risk management and clinical decision making. Consideration must be given to GP registrars who do not undertake the same amount of OOH care in training as previous generations of GPs.

14.2 To maintain quality, appropriate training and experience must be ensured for all GP registrars. A systematic approach is needed to ensure organised supervision in urgent care to achieve all competencies expected, including an understanding of the 'bigger picture' of urgent care through exposure to different services. New training models must be explored (eg the urgent care practitioner training scheme at Croydon for GP registrars for Croydon, Kingston, and Sutton & Merton PCTs) to ensure that GPs acquire the necessary confidence to tackle urgent care. Some categories of patient deserve specific attention, such as older people with acute problems, children, the mentally ill and patients requiring palliative care.

14.3 There is a risk of deskilling GPs if they are not exposed to sufficient urgent care work. GPs' urgent care skills should be reviewed as part of their individual appraisal.

14.4 Primary care educationalists must ensure that training in urgent care receives a high priority. GPs remain pivotal to urgent care provision. To maintain this quality, a systematic approach to the training of all GP SpRs must be ensured, with practical experience and organised supervision in a range of urgent care settings.

15 Getting improvement: the potential of practice based commissioning (PBC)

15.1 Financial constraints are reported by both service providers and commissioners as a barrier to achieving national quality requirements. The NAO[20] recently reported that 'shortfalls in funding were leading PCTs to let contracts that were largely driven by cost' and 'that this focus on cost was not allowing [providers] to spend money on any spend-to-save measures, such as experimenting with skill mix, upgrading facilities or innovative integration pilots'. As a measure of 'quality', more emphasis now must be 'given to clinically and cost-effective innovative service redesign'. This may mean other essential services such as diagnostics become more available for the management of urgent care.

15.2 Creating improvements will depend on service redesign and integration. This is a complex task involving multiple NHS organisations. Some areas have been more successful than others in doing this. Strong clinical leadership, particularly from GPs, is essential. To redesign urgent care services responsive to patients requires a redistribution of resources from secondary to primary care: PBC potentially offers a vehicle to achieve this. PBC's potential to improve urgent care should be explored.

15.3 With the advent of PBR there is a need to redesign access to A&E departments to improve both value for money and clinical effectiveness. The link between A&E attendance and clinically inappropriate outpatient referrals and admissions is increasingly being made. There is therefore a need for primary care services to exert greater control on the 'gateway' into A&E. One way of doing this is to develop a 'primary care front end to A&E' staffed by GPs.

15.4 PBC, with unified practice or locality budgets, might become the major driver of service redesign. This will mean that practices might wish to influence quality of care by offering better services or access themselves, joining up into local groups to offer services or exerting control on OOH providers via commissioning tools.

The majority of care for LTC is provided within primary care during the daytime. Responding to the urgent needs of those with LTC often means a home visit and a complex consultation. With an ageing population there will be increasing demands in this area. GPs need extra support to manage patients at home and in the community, where appropriate. This may require innovative approaches such as community multidisciplinary specialist teams. Often problems are more about ethics and end-of-life care than clinical issues. Judgements are difficult, and experienced doctors are needed to formulate and amend care plans. The idea of increased community triage is worth exploring as a way of reducing inappropriate hospital admissions – however, it must be remembered that inpatient treatment is a necessary and valuable option for many acutely ill patients and sufficient bed capacity must be available

16 Conclusion

Significant concerns exist about the quality and safety of patient care in the OOH period. The PCTs responsible for commissioning such services must take strong action to improve the situation. The advent of PBC afford opportunities to achieve significant improvements in OOH services. Models of good practice already exist in many areas. The term 'urgent care' should be used as the umbrella term to include unscheduled care, unplanned care and emergency care to ensure a single recognisable identity. The change of responsibility for urgent care has, of necessity,

shifted urgent care from being purely a GP discipline to a multiprofessional system delivered from a variety of locations within primary, secondary and community care 24 hours a day. However, despite their changing role, GPs cannot be replaced in urgent care. From an analysis on the issues ten recommendations are made (reproduced in this document).

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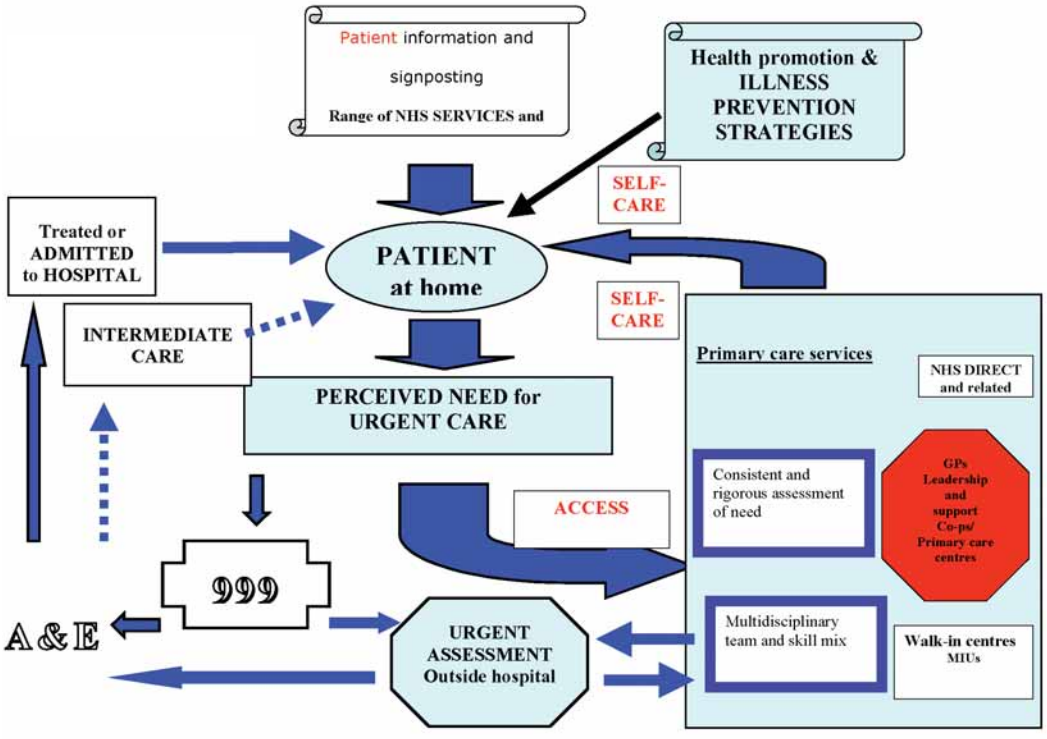
Figure 2. Urgent care network.



3.4 Acute medicine

3.4.1 Background

Acute medicine is defined as 'that part of general 'internal' medicine concerned with the immediate and early specialist management of adult patients with a wide range of medical conditions who present in hospital as emergencies.[48] As a specialty, it has grown rapidly over the last decade, with the focus on the early phase of care of the acutely ill, typically the initial 24–72 hours. The acute physician, however, will require many of the competencies of the 'general physician' as well as the generic competencies expected of all physicians. These are outlined in the Curricula.[49]

Acute medicine has developed to provide high quality care to meet the needs of patients admitted as medical emergencies. This group of patients constitute the majority of unscheduled patients admitted to hospital beds, their presentation varying from the acutely unwell to those with complex needs. These services are therefore essential for prompt and effective care, and as such require early involvement of a wide range of healthcare professionals working as part of a team within an acute medical (assessment) unit (AMAU). The majority of acute hospitals within the UK now have an AMAU and some have an integrated medical/surgical assessment unit. National data show the length of stay for many patients admitted for unscheduled medical care is often less than 48 hours.[50] Acute medicine systems, therefore, should be designed to manage the majority of this patient group within an AMAU to maintain continuity and reduce unnecessary transfers of care. For other patients, however, acute medicine should ensure that transfer to specialty care, for example critical care, occurs at the earliest appropriate time. Thus, it is essential to have close working with all core medical specialties and critical care, EM, primary care and social services.[3,51,52]

Acute medicine is central to the new models of care proposed for the following reasons:

- Direct access to urgent medical care will be provided by acute medicine for patients who have been pre-assessed in primary care, by the ambulance service or NHSD/24 using agreed protocols. This will be particularly helpful if hospitals do not have an A&E department but would also be suitable to support A&E departments in larger hospitals. Direct admission protocols will shorten the patient journey by ensuring that patients are seen by the appropriate clinician rapidly and reduce congestion in the A&E department.
- Protocols involving acute medicine will need to be developed, if they are not already in place, to ensure patients are transferred to the right 'level' of care as quickly as possible based on diagnosis and illness severity.[53,54]
- For patients presenting to A&E, acute medicine must provide prompt access and clinical support.
- Acute medicine should support the development of ambulatory care in collaboration with primary care and provide rapid access clinics to support early senior medical opinion for patients. For those requiring acute assessment it will be essential to provide care as close to home as possible, particularly for smaller units, but should apply across all health economies whether large or small.
- Acute medicine services should be able to assess patients with complex needs promptly to ensure that appropriate care, including discharge arrangements, are recognised and planned

for at point of entry to care. This is necessary to support the maintenance of patient independence. This planning requires early input from allied health professionals, pharmacy with close working relationships between acute medicine, medicine for the elderly, primary care and social services.

- Acute medicine is ideally positioned to co-ordinate the 'hospital at night' systems that have developed in response to both working time pressures and concerns about the overnight management of care.[55]
- The majority of acute problems developing in patients within hospitals are medical so there must be involvement of acute medicine in the development of daytime services. Daytime care of medical problems in non-medical wards could be managed by acute medicine or by further integration with critical care outreach teams.

3.4.2 Recommendations

- The delivery of this agenda mandates that resources are aligned to ensure that the distribution of clinical staff is responsive to the clinical needs of the patients.
- In addition to access to services, the working environment for AMAU should meet agreed standards and also provide an appropriate training environment.[56,57]
- The new training curricula define the competencies that must be acquired for staff to be able to deliver high quality care to patients who require acute medical care. To date, AMAUs have been underutilised in many areas of the UK for the training of healthcare staff, although they are now increasingly recognised by universities as essential training environments. Acute medicine must provide a high quality learning environment for staff, underpinned by adequate supervision, assessment and feedback.
- To deliver the needs of the acutely medically ill there must be an expansion in the multiprofessional workforce adequately trained to care for these patients. The recognition of acute medicine as a specialty has helped to define career pathways, but work must be done to promote training programmes, recruitment and retention for this vital workforce.

3.5 Medicine for the elderly

3.5.1 Background

Over the past 50 years there has been a remarkable evolution in the assessment and management of sick and disabled old people in the UK. In recent years, the landscape has altered further. Specialisation within geriatrics has helped improve the standards of care for patients with specific conditions. Stroke units, falls clinics, continence promotion clinics, movement disorder clinics, orthopaedic geriatric wards, delirium units and memory clinics are a few examples. Latterly, more geriatricians have developed an interest and expertise in community geriatrics. Geriatricians have always been willing to change approach if patient care improved in consequence. Examples of proven effectiveness of geriatricians working in with others include early falls assessment, A&E schemes for admission avoidance of falls patients, community hospitals, home care by hospital outreach teams and some early supported discharge schemes.

However, not all the changes have necessarily benefited old people. Many geriatricians have taken on a disproportionate responsibility for all-age acute medical take, sometimes to the detriment of old people with complex needs and rehabilitation problems. The year-on-year reduction in hospital bed numbers has meant that some patients are discharged before they are fit; others are transferred to long-term care without either the benefit of a truly comprehensive geriatric assessment or the opportunity to receive optimum rehabilitation. Patients are often moved from ward to ward in hospitals – this increases the risk of delirium and nosocomial infection. The added closure of beds because of outbreaks of infection adds to these pressures. There is often underprovision of beds in the winter when there is usually a big increase of admissions of elderly people with chest infections, stroke and heart disease. It also means that staff do not always know the patients as well as they might – this can make for inappropriate or badly planned discharges, with the risk of early readmission. The reduction in rehabilitation staff in many acute units means that rehabilitation is not always started early or not as good as it might be. The closure of large numbers of geriatric rehabilitation beds may have deprived patients of the opportunity to achieve their potential. Many day hospitals have closed (admittedly, studies of their efficiency and effectiveness have not shown positive results). There has been a decline in the number of domiciliary visits.

3.5.2 Important principles in geriatric medicine

- It might be useful to list some fundamental aspects of elderly care.
- Few sick old people are suffering from 'old age'.
- Many ill old people who present to geriatricians do so in a non-specific way. Common presentations are falls, reduced mobility, confusion and incontinence.
- These are not 'social' problems – they are medical problems in disguise. It can take much skill and experience to elucidate the underlying causes of these problems.
- Every ill old person deserves a diagnosis.
- In some cases, the diagnosis should be made urgently before the person deteriorates or develops complications.
- Rehabilitation, optimising function and well-being are of central importance and many aspects have a strong evidence base. In most cases it should begin on day one of an illness. Later in recovery, new medical problems may arise and further geriatric input may be

needed. It is therefore important to maintain – and perhaps expand – rehabilitation services in acute units and ensure that rehabilitation teams have ready access to a geriatrician. Separating acute care from rehabilitation is not always in the patient's interests.

- The key to successful management of older people is comprehensive geriatric assessment (CGA). This requires a skilled interdisciplinary team who work with patient and family to assess physical, psychological, functional, social and other aspects in order to improve health, function and well-being. There is a strong evidence base for CGA.[58]

3.5.3 Concerns about some current policies and beliefs

A number of assertions and practices are questionable and should not be accepted uncritically.

- **Many elderly admissions to hospital could be avoided**
  Geriatricians who work on acute assessment see relatively few patients who do not benefit from timely assessment by a skilled team with access to diagnostic and therapeutic facilities. On the other hand, the experience of intermediate care teams is that selected people can be well cared for without the need to go into hospital – for example, selected falls patients, those with uncomplicated chest or urinary infections, patients with DVTs, cellulitis.
  The current pressures and incentives to keep old people out of hospital simply because they are old are unacceptable. They are intrinsically ageist and may deny the ill person the opportunity of CGA. There is a concern among geriatricians that more sick people are now being diverted from acute geriatric assessment units and may not be being properly diagnosed or are being managed suboptimally at home or elsewhere. It would be better to assess these patients quickly in a well resourced centre, then arrange for efficient transfer to the most suitable management once the crisis has been resolved.

- **Elderly people prefer treatment nearer to home**
  Easy access by public transport and convenient parking at a unit where the patient will receive the best care is far more important than simple geographical considerations.

- **Elderly people should be discharged as quickly as possible**
  Most old people in hospital do want to return home as soon as possible. Huge strides have been made over the years in reducing lengths of stay in geriatric wards (hundreds of days a few decades ago). Sending people home when the acute medical problem has been stabilised but before their other concerns have been addressed is a questionable approach and can lead to readmission. Good discharges should be carefully planned, with detailed communications between the hospital and community teams.

- **Geriatric care is easy and can be practised by people with relatively little specialist training.**
  It is important to recognise that it is easy to practice elderly medicine badly. Elderly people deserve the best. About 40% of GPs have had no formal training in elderly medicine (there is a role here for the revamped diploma in geriatric medicine (DGM)). Nurses in intermediate care often feel out of their depth and are worried that they may be missing something, especially when reviewing patients who have fallen (the commonest group of people seen by intermediate care teams). It is not always easy on first contact with the GP or ambulance service to determine which patients might benefit from the panoply of hospital investigations and interventions. Direct involvement of geriatricians with community teams can help ensure that important diagnoses are not missed and patients not deprived of the possibility of treatment, rehabilitation and secondary prevention.

3.5.4 Possible future styles of care for old people

Given the inexorable move to fewer hospitals with fewer beds and an increasing focus on high-technology interventions in these places, together with increasing management of more people in the home or other non-hospital settings, how can we ensure that old people get safe and effective high quality medical care?

A Specialist centres

Old people with myocardial infarction (MI) benefit from thrombolysis and angioplasty and should be admitted promptly to CCUs. There is evidence of benefit from thrombolysis in people under 80 with ischaemic stroke and urgent admission is vital. Other old people who might benefit from specialist care include those with acute limb ischaemia, subdural haematoma, respiratory failure, spinal cord compression and certain cancers.

It would be wise to have a sufficient number of geriatric beds on-site so that those who are not suitable for these treatments or who are found to have other geriatric or medical problems can be transferred promptly to a unit with expertise in elderly care.

Just as orthopaedic care of older people has benefited from the close involvement of geriatricians, so might general surgery, vascular surgery and other high-tech disciplines.

B Comprehensive geriatric assessment

CGA may not necessarily have to be done in hospital. Other possible options are day hospitals, care homes, community hospitals, rapid access clinics, GP surgeries, independent treatment centres and perhaps selected nursing homes. There are important questions about diagnostic facilities, staffing levels and availability. Travelling to such units may mean that fewer patients can be seen in a session than in a traditional ward. Studies of safety and effectiveness are needed. It is uncertain whether providing these new models of care would be any cheaper than the present system.

The move away from hospitals has major implications for undergraduate and postgraduate teaching and training. Initial experience of undergraduate community firms is encouraging, with opportunities for interdisciplinary education and increasing awareness of the role of other members of the team.

C Improving hospital facilities

Much could be done to improve the experience of those old people who need to spend some time in hospital:

- Rapid movement through A&E to a dedicated elderly care unit with close links to intermediate care teams where rapid comprehensive assessment could take place.
- A sympathetic environment for people with delirium, with closer working between geriatricians and old-age psychiatrists.
- More single rooms for patients with transmissible infections.
- Improving staffing levels so that old people are properly fed (there is a role here for dietary assistants), fully assessed (gait, continence, cognition) and given optimum and timely rehabilitation.
- Rapid access to CT head scanning for those with suspected stroke.
- Education and awareness training to improve dignity of care and avoid inappropriate interventions and investigations.

D More geriatricians working outside hospitals

In those places where there are community geriatricians, community teams welcome inclusion of committed and experienced clinicians. The work can involve rounds in care homes (to review both permanent residents and intermediate care patients), home assessments at the request of community colleagues and GPs, working with stroke early supported discharge teams, being integral members of community case discussions, providing education and stimulating research. Closer links should be established with community matrons, nurse consultants and other specialist nurses.

Experience from the USA suggests that many ill people can be managed in non-hospital settings – intravenous (IV) or subcutaneous IV fluids, antibiotics, analgesia, anticoagulation, palliative care. There are implications here for training, audit and staffing levels.

The development of academic community geriatric units would be important in raising the status of this subspecialty, as well as fostering much needed research on effectiveness.

E Enhancing the role of care homes and community hospitals

Many care homes have felt 'locked- out' of the mainstream NHS services. There are important opportunities to enhance and extend the care provided to old people in these facilities. Some could become centres of excellence (eg in dementia care, stroke, movement disorders, rehabilitation). The concept of teaching nursing homes should be seriously considered, with opportunities for academic appointments.

Closer involvement of geriatricians with long-stay residents may reduce the number of inappropriate hospital admissions of these people. Advice can be given on ethical and practical aspects of tube-feeding and resuscitation.

Community hospitals are popular with patients, relatives and staff, and there is evidence of benefit when a geriatrician visits regularly. Infection rates may be lower, family support may be better and recruitment of staff easier

F Red flags, pathways and guidelines

The use of these by GPs, community nurses and therapists would potentially improve the safety of old people who are being considered for community care. Evidence-based teaching to community colleagues on 'diagnoses not to be missed' would be an important step forwards. Perhaps the Royal College of Physicians (RCP) could consider national or regional interdisciplinary meetings to inform people how to ensure that important reversible, modifiable or preventable conditions are not missed.

3.5.5 Final thoughts

There is considerable unease among geriatricians that the move away from the hospital model may result in a return to the bad old days when old people were deprived of full and timely assessment and appropriate treatment. The introduction of untried initiatives - some of which have been found subsequently to be ineffective - has not helped. The evercare system of case management, for example, has not resulted in a reduction of acute admissions, nor has the lack of engagement of geriatricians in the formulation of policy. However, the hospital model has its limitations and there are many opportunities for new ways of working. The emphasis should be on identifying the best forms of care for old people and their families and basing decisions on good evidence.

3.6 Mental health

3.6.1 Background

If more acute and specialist work moves towards larger hospitals, the challenges will be to avoid some facilities becoming run down through loss of staff and poor morale and to maintain generalist skills. The modernising medical careers process (MMC) must ensure that doctors' training reflects the needs of the service. Services must be considered as a whole when planning care for unscheduled emergency conditions. Potentially, networks with rotation of staff or cross-cover of units are ways to compensate for such attrition.

This section advises on the part mental health services might play in the reorgansiation of acute services.

The patient groups commonly attending A&E departments with mental health problems include people:

- brought by the police under section 136 of the Mental Health Act
- who are acutely disturbed, who may be psychotic or have another serious and acute mental health problem
- who may be delirious or who have dementia
- with coexisting physical and mental health problems
- under the influence of alcohol or other drugs
- who have harmed themselves or who are feeling suicidal
- who attend specifically because of a mental health problem such as depression. People who have harmed themselves constitute one of the commonest groups presenting to A&E departments[59,60] and represent 20% of acute medical admissions to hospital.

3.6.2 Current situation

The current situation is complex and a variety of factors make a significant contribution, including:

- local configuration of services
- services to young people aged 16 and 17
- National Institute for Health and Clinical Excellence (NICE) guideline for self-harm
- recommended response times
- place of safety issues
- observation wards
- commissioning of services
- funding of services
- payment by results (PBR)
- conflicting targets.

3.6.3 Local configuration of services

Summary

The input of mental health services to both A&E departments and acute hospitals in general is a vital element of the delivery of a modern, responsive and integrated service to patients.

Currently, this area is seen as of low priority by commissioners, different teams working in A&E are subject to various and conflicting targets, standards (eg response times, psychosocial assessments for people who have self-harmed) are not being met, and there is the continuing potential for serious situations to develop as a result.

The nature of mental health services providing input to A&E departments varies greatly around the country and at different times of the week.

Generic service input
This model is gradually becoming less common, but was common in many areas until recently. There is no dedicated service to the A&E department, but each mental health team provides an assessment if a patient who comes within their area of responsibility presents to A&E. Referrers report great frustration in contacting the correct team or the correct person within that team. Referrals to each mental health team are relatively rare, so there is little chance of building a constructive relationship between departments. Mental health team bases are often situated a significant distance away from the A&E department and response times are generally very slow.

Services to young people aged 16 and 17
There are local variations in the provision of mental health services to people in this age group. Child and adolescent mental health services (CAMHS) are responsible for this service provision in some locations. They are trained regarding the assessment and the needs of this particular age group, but services are often stretched and response times may be slow. In many other locations the adult mental health services are responsible. Rarely do staff in these services receive any specific training in the assessment and needs of these young people.

Crisis team input
Crisis and home treatment mental health teams have now been commissioned across England and Wales. In many areas input to the A&E department is provided by the crisis team which usually has the advantage of providing 24-hour services. Although this approach may be seen as an obvious answer to the provision of services, in practice many problems have arisen. Many crisis teams are commissioned to provide a service only to people between the ages of 16 and 65. Alternative services may be available for children but there are often difficulties in the provision of services to people over the age of 65. In addition, most crisis services are primarily responsible for the provision of crisis assessment and home treatment in the community. The vast majority (90%) of assessments conducted in A&E do not result in an episode of home treatment. Crisis teams will prioritise community assessments and home treatment over attendance at A&E. A crisis in the community will almost invariably be seen as having greater priority compared with a crisis in A&E where there are at least other professionals to hand. As a result of these problems, responsibility for input into A&E is, in many areas, passing to the local liaison team.

Liaison team input
There is patchy provision of liaison services across England and Wales. Liaison services are configured to provide a service geared to the needs of the acute hospital setting. Even where there are liaison services, not all of them are responsible for A&E input. Few, if any, liaison services provide 24-hour cover. Reports from user groups and A&E departments indicate that, where liaison teams provide input to the A&E department, the service is universally appreciated. An on-site team geared to the needs of the acute hospital can provide timely and appropriate input.

In addition, a smaller team can develop more effective working relationships with their counterparts in the A&E department. The provision of training is usually a key component of the responsibilities to the A&E department of the liaison teams.

The on-call system

Traditionally, the provision of (OOH) (and in some places within hours) services to the A&E department was provided by the on-call junior doctor for psychiatry. In effect, often the most inexperienced member of the mental health team was responsible for this service. This system is still used to fill gaps in current provision, for instance where crisis teams provide input only to the under-65s, despite the fact that the junior doctor on-call may often have no experience of the mental health care of older adults. This system is dependent not only on the experience of an individual but also on their immediate availability (what other calls may they be responding to?) and how inclined they may be to seek more senior advice and assistance. The quality of any system is dependent on knowledge of local service structure; the on-call doctor is the professional least likely to be familiar with local networks. The on-call psychiatrist may have responsibilities extending over a number of widely dispersed sites. Not surprisingly, response times and quality of service vary enormously. Supervision of the on-call psychiatrist remains problematical.

In-house registered mental health nurse (RMN)

Some A&E departments have employed their own RMNs to provide an in-house service. Various problems have been reported with this approach, including a tendency to deploy the RMNs as an extra pair of hands during busy periods in the department. There is also a tendency for rapid burnout of staff, high staff turnover, high vacancies and service prone to frequent collapse without notice. There are also problems with supervision and support for isolated specialists and potential problems with Clinical Negligence Scheme for Trusts. Very few RMNs have the skills to address the complex amalgam of mental and physical health problems experienced by many attendees at the A&E department, particularly more elderly patients.

Combinations of the above systems work in parallel in different areas. Hybrid services, offering components of the services above are also to be found.

The National Institute for Clinical Excellence guideline for self-harm

The NICE self-harm guideline (2004)[61] recommended that anyone presenting to the health service following an episode of self-harm should be offered a psychosocial assessment. There is some evidence that people who have such an assessment are less likely to repeat self-harm or to commit suicide. Evidence from surveys suggests that as many as 50% of people who have self-harmed do not receive a psychosocial assessment and many leave hospital before the psychosocial assessment takes place. In most areas the system in place, such as the crisis service or the on-call system, is unable to provide a psychosocial assessment to everyone who presents.

Recommended response times

The Royal College of Psychiatrists (RCPsych) and the British Association for Emergency Medicine (BAEM) have recommended specific response times for mental health services providing a service to A&E departments (CR118, 2004).[62]

Place of safety issues

Section 136 of the Mental Health Act 1983 requires that every locality has a designated place of safety, agreed between the health service and the police. This may be a police station, an A&E department or a designated unit within the mental health services. Under section 136, the police

are empowered to remove someone from a public place if they appear to be suffering from a mental disorder and take them to the designated place of safety. A place of safety must therefore expect to receive people who may be acutely disturbed. It is essential that a skilled and experienced staff is available to care for and assess these people's needs. As most centres receive only a small number of people in these circumstances, it is usually impossible to have staff dedicated to this responsibility alone.

Observation wards

Following the introduction of the four-hour wait, many acute hospitals have developed observation wards associated with the A&E department. These wards are invaluable as a resource to allow intoxicated patients to sleep off whatever has intoxicated them and to allow a subsequent psychosocial assessment if appropriate.

Commissioning of services

Commissioners and their provider partners have a complex task. Commissioning is informed by national priorities, targets and documents such as the various national service frameworks (NSF). Input by mental health services into A&E departments (or indeed the entire interface between acute medicine and mental health) does not figure directly in these and is therefore frequently overlooked in the commissioning process. Crisis teams usually have performance targets relating to home treatments but not to A&E input. In recent years, mental health commissioners have concentrated on ensuring adequate services for people with severe and enduring mental health problems, early intervention services, assertive outreach services and home treatment services. Commissioners of acute services have had a variety of priorities, but the mental health service input to the acute hospital has not figured in either set of priorities.

Funding of services

Although not directly commissioned, these services exist and therefore are funded, albeit (in many cases) indirectly. In most cases the local mental health trust provides the service and the funding is absorbed within the overall budget. Some liaison services are provided by acute trusts; in other cases the acute trust provides a degree of funding for the service. Without explicit commissioning, all these services are under threat when there are financial stringencies.

Payment by results

PBR is now a reality in acute hospitals. Mental health services are not included in the acute PBR arrangements. Work is currently under way to develop PBR for mental health services, but initial indications suggest that it is not anticipated that this type of service will be included. Failure to include mental health services in PBR is likely to represent another threat to the provision of this service.

Conflicting targets

As mentioned above, A&E departments have the four-hour target to achieve. Mental health services have different targets, including targets for home treatments. When services are working to different targets, tensions between services almost invariably develop, often to the detriment of patients.

3.6.4 Potential solutions to address the issues

The complexities of the current situation require some thought in various dimensions in order to address the problems outlined above. Solutions under the following headings are discussed below:

- Standards
- Shape of service delivery
- Commissioning, PBR, etc
- Training

Standards

Nationally agreed standards for the input of mental health services into A&E departments and acute hospitals would provide commissioners with a working template. Providers would also be given a clearer lead regarding the requirements of this vital component of service provision. Suggested standards for response times in A&E are included in the joint report CR118 (2004). Standards for the management of people who have harmed themselves, both for A&E departments and acute hospital wards, are included in the NICE self-harm guideline. The RCPsych is producing a document, *Child and adolescent mental health services (CAMHS) in the Emergency Department* which will advise standards for younger people.[63] Standards should also include the equivalent provision of services across the age range. Further standards for the attendance, assessment and management of patients with mental health problems in the acute hospital could easily be informed by examination of the standards used by local liaison teams around the country. Performance could be measured against these standards and improved by a national quality improvement programme, such as the 'Better services for people who self-harm' project run by the RCPsych research unit.

Shape of service delivery

Various options exist for the shape of service delivery:

Liaison mental health services and crisis teams to develop joint responsibility
The development of liaison teams to provide the service to A&E during normal or extended working hours, with the crisis team providing the service at other times, may offer a pragmatic approach. The use of devices such as the rotation of staff members between the teams may address some of the potential disadvantages.
Advantages: pragmatic. Relieves crisis teams of the commitment during their busiest hours for home treatment.
Disadvantages: the involvement of two separate teams, with handover of responsibility twice a day, has the potential for communication difficulties. Potential two-tier service, with a different type of service depending on when the patient presents, with differing response times and differing working relationships between departments. The issue of service provision to people over 65 and to young people would have to be addressed.

Mental health assessment units attached to A&E departments
The Mental Health Act section 136 requires a local agreement regarding a place of safety. There is rarely enough resource to staff such a unit simply to accommodate patients under section 136, but staffing levels are crucial in order to provide a safe service. One option is to develop a mental health assessment centre to provide assessments for a wider variety of patients. Ideally, these centres should be attached to A&E departments as a proportion of patients will require the facilities of the A&E department. Staffing of such a centre poses its own difficulties: crisis teams need to be working in the community not centre based. Staffing from an enhanced liaison team or the development of an independently staffed unit offer two possible solutions.

Advantages: these units may address the problem of a place of safety and where to conduct certain mental health assessments.
Disadvantages: high capital cost. Some patients will still require assessment in the A&E department. Does not address the issue of patients with coexisting physical and mental health problems. Potential for 'demarcation disputes' between departments. Does not address the issue of constructive working relationships.

Commissioners to deploy local solutions, related to explicit national standards
Advantages: national standards can be deployed for local solutions.
Disadvantages: may not address the haphazard and variable levels of service provision currently in evidence.

Commissioning, payment by results etc
Clearer standards would help make explicit the responsibilities of commissioners in ensuring service delivery. There is, however, no clarity regarding how these services should be commissioned. Should they be commissioned via acute services or mental health services?

It is suggested that national guidance alongside national standards is issued to commissioners regarding how these services are commissioned. Commissioning via acute services would emphasise the joint responsibility to this group of patients owned by both acute services and mental health services.

The inclusion of these services within PBR is also vital. It is advised that as a matter of urgency a mechanism is set in motion to devise a suitable tariff, under PBR, for this work.

Training
The development of effective services also requires appropriate training of staff. This should include training of age-related issues, both for young people and older adults. In particular, in areas where adult services have responsibility to provide services to 16- and 17-year-olds, specific training should be provided to help staff address these issues. Supervision and co-ordination with CAMHS services will also have to be addressed.

3.6.5 Summary

It is likely that the most cost-effective and clinically effective solution lies in developing the role of liaison psychiatry teams working with A&E departments and in developing liaison services for people over 65. Liaison services for the under-65s and over-65s will have to work closely or be integrated. The development of CAMHS liaison services should also be considered.

In the likely event that liaison teams will not be able to provide 24-hour cover, it is essential that clear working arrangements are in place with the relevant crisis team. The introduction of national standards would greatly assist in this process. In large centres, the possibility of a mental health assessment service attached to the A&E department may be considered feasible, but cannot be seen as the solution to all the issues that arise in the A&E department.

3.7 Obstetrics

3.7.1 Background: Maternity services and NHS reforms

'Service redesign was most hampered by the existence of the many change initiatives and management agendas that differed from the goals of the implementation team.'

The National Service Framework (NSF) for maternity services was a considerable achievement, laying out a vision for the provision of maternity services in England.[64] It set out a number of markers for good practice, including managed maternity and neonatal care networks. The important issue was that maternity care should be seen as a continuum, with clearly defined care pathways whether for anticipated normal delivery or tertiary care. Within this framework there was the inevitability of service reorganisation and reconfiguration as the key issues of choice, safety and quality were addressed. Subsequently there was concern that a number of further NHS reforms and initiatives, not least payment by results (PBR), would inhibit or impair the implementation of the NSF.

Concern has also been expressed that an approach to maternity services which focuses on reconfiguration – which in the perception of many is code for closure – rather than an approach which emphasises, in the spirit of the NSF, reorganisation to ensure and enhance the quality of services, is potentially fraught. The major achievement of the NSF is that it has the full support and commitment of all stakeholders – the clinicians, the patients, the public and the politicians (manifesto commitment to deliver the NSF by 2009).

Thus an approach that keeps the emphasis on the implementation at regional and local level of the key objectives of the NSF, rather than one which puts the emphasis on reconfiguration of services, may be more effective in the longer term. However, further focused work is needed by the maternity services implementation group, as well as two further key initiatives which would considerably enhance the likelihood of successful implementation. First, an agreed set of maternity service standards, based around quality and to include choice, safety and satisfaction, should be developed. These should also take account and show an understanding of achievability and affordability. The Royal College of Obstetricians and Gynaecologists (RCOG) has initiated a multidisciplinary group to address such a piece of work and hopes to have the support of the Department of Health (DH). Secondly, there needs to be a system of accountability for maternity care, with the appointment in each strategic health authority (StHA) of an individual with responsibility for the implementation of the NSF, the maternity standards and the safety of patients. These individuals should be appointed on the basis of ability, experience and peer respect, and should be accountable in turn to a DH appointed figure with national responsibility for maternity care.

3.7.2 Reconfiguration and the quality of care

There is increasing evidence of the need for a continuous presence of trained obstetricians in delivery suites, particularly those dealing with high-risk women. This need was spelt out most clearly in *Towards safer childbirth,*[65] since when it has been accepted that intrapartum care, like other aspects of high-risk medicine, benefits from the presence of fully trained, experienced individuals. The implications for the specialty and the obstetric workforce are spelt out clearly in *The future role of the consultant working party report,*[66] and again emphasised in the soon to

be published *Safer childbirth: minimum standards for service provision and care in* l*abour.*

The gradual introduction of a consultant based service in obstetrics was the key recommendation in *The future role* document,[66] and indeed the new specialist training programme in obstetrics and gynaecology is to a great extent designed to meet this purpose.

Table 2 illustrates the consultant sessions available in maternity units in England at present, and demonstrates how far we are from achieving even daytime consultant presence, even in the bigger units.

The eventual target outlined in the *Towards safer childbirth* document[65] is to achieve 168-hour presence in the biggest units, certainly those delivering more than 5,000 babies, by 2010. For units delivering 4,000–5,000 babies the aspiration is that 98-hour presence would be achieved by 2009, and for units delivering 2,500–4,000 babies by 2014 (Table 3). It is anticipated that units delivering less than 2,500 babies will be essentially low-risk units and will have to make arrangements according to an assessment of the level of risk (at present only one-third even have daytime consultant presence). To achieve all this there would have to be an expansion in the number of trained specialists (ca 60–70%), increasing the workforce in England from approximately 1,500 to approximately 2,500, which is probably unattainable. However, if there was to be a degree of reconfiguration of the services, particularly of smaller consultant led units, which seems inevitable with the additional pressures of the EWTD, an acceptable consultant presence throughout the delivery suites in the country could be delivered by 2,100 consultants; this is a figure achievable by a 5% expansion over five years (Table 4). It should perhaps be emphasised that these calculations refer to reconfiguration of consultant led services delivering more than 2,500 patients and not to the very small consultant led units or indeed to midwifery led units and particularly those that are free-standing. Thus, fluctuations up or down in the number delivering in smaller and midwifery led units do not affect these calculations and in no way undermine the need to reconfigure consultant led units.

3.7.3 Reconfiguration and geography

In many parts of England, particularly in the north and south-west, the provision of maternity services is greatly affected by the geography of the region and the necessity of meeting the needs of dispersed, rural and remote populations. The provision of maternity and neonatal care in these circumstances requires consideration of a number of quality issues, including safety and satisfaction (delivery closer to home). Inevitably there will be particular resource issues, as well as personnel issues including morale and maintenance of skills. Furthermore, the closure of a unit in these circumstances rapidly becomes a political issue as the local communities rally round their small hospital or delivery unit.

A major neglected issue in these considerations is the quality of transfer and transport, in the event of emergency to a suitable unit. A piece of work addressing the issues in the context of neonatal transfer has been carried out in Scotland. This particular issue, (ie the transport and transfer of women and their babies) requires more serious consideration when discussing issues of reconfiguring of services.

Table 2 Maternity units and consultant sessions in 2005.

Size of unit	No. (n=247)	% with >10 consultant sessions
<1,000	17	6
1,000–2,000	51	37
2,000–3,000	68	40
3,000–4,000	58	64
4,000–6,000	49	74
>6,000	4	100

Table 3 Consultant presence on labour ward.

Size of unit	60-hour	98-hour	168-hour
<2,500		Local decision	
2,500–4,000	2009	2014	
4,000–5,000	2008	2009	
5,000–6,000	2007	2008	2010
>6,000		2006	2008

Table 4 Anticipated workforce in 2011 (England and Wales).

Consultant expansion (%)	2005	2007	2009	2011
3	1,544	1,637	1,737	1,843
5	1,544	1,702	1,876	2,069
7	1,544	1,768	2,024	2,318

3.8 Paediatrics

3.8.1 Background

Acute services for children are distinct from adult acute care in several important ways. Large numbers of children are seen in the acute setting. The clinical course of acutely ill children is often much less predictable than for adults, and the potential for poor outcomes from overlooking treatable conditions is a constant and real concern. Communication with young children and families requires different skills than in adult medicine. Moreover, acute paediatric services include a multiplicity of service types: medical, surgical and neonatal care, as well as child protection and child mental health.

Definitions (see Figure 3)
The terms acute, urgent and emergency are often used interchangeably and can be mistakenly used to imply severity. These differences become crucial when considering health services structures.

Acute implies a concern of rapid onset, usually within the 24 hours: it could be an emergency, an urgent or self-limiting condition.

Emergency implies that treatment or critical care is required within an hour.

Urgent refers to a perceived need for health services with 24 hours.

Figure 3 Matching conditions with service type

		Severity of condition	
		High	Low
Acuteness of presentation	High	Emergency services	Urgent services
	Low	Urgent services	Non-urgent services

Acute services need to manage both urgent and emergency conditions. The concept of patient pathways is useful for creating a system to identify, assess, treat and review children according to acuteness and severity, whilst ensuring an appropriate level of interventions based on assessed need and minimising needless duplication along the pathway.

3.8.2 Issues to be considered in children's acute services

The quality of acute services for children is variable, as identified by a recent Healthcare Commission report.[67] The unacceptable implication is that not every child will have the best clinical outcome. Paediatrics faces many challenges, particularly around how to maintain safe services with limited numbers of paediatricians and how to ensure appropriate clinical competence to assess and treat children and young people in a range of clinical settings that extends beyond a hospital-based paediatric department.

The nature of illness in children

The early stages of undifferentiated, often febrile, illness in children can be challenging to the most experienced paediatrician. Most children require a period of observation, possibly with some investigations, to decide whether they need further treatment. The development of observation or assessment units appears sensible, but initial experience suggests they may not reduce admissions but merely act as a substitute for primary care. Further research is needed to clarify the situation.

Changing epidemiology

Serious bacterial disease is becoming rarer, management of long-term conditions such as asthma and diabetes is improving, and children are discharged from hospital faster.

Injury is the commonest cause of death and disability in children over the age of one year. The potential for prevention and better management is not realised fully. Paediatricians have traditionally not been strongly involved with the management of all injured children, restricting their work to children with more severe injuries, particularly those likely to lead to long-term disability. In addition, safeguarding of children is a critically important aspect of acute services, one that is easily overlooked in an injury-only service.

Workforce capacity

Estimates suggest that in 2009 the paediatric workforce will be unable to sustain the current number of paediatric units and comply with European Working Time Directive (EWTD) regulations (Table 5). Paediatrics cannot rely on cross-cover with other specialties, given the particular skills and knowledge required for the treatment of children and young people. Therefore, careful consideration is required of the staffing and number of paediatric units that can safely be run.

Table 5 Workforce modelling calculations (excluding tertiary centres).

Paediatric units in England (Feb 2007)	*Number*
General units (single on-call rota)	127
General unit with level 3 neonatal unit	31
Level 3 neonatal only	9
Total no. of units	167
Total no. of on-call rotas (assuming separate level 3 rota)	**198**
Consultant workforce in England in 2009	
No. of acute paediatricians in acute trusts 2005 (RCPCH census)	818
Estimate of additional consultants 2006-2009	360
Potential consultant workforce for general paediatrics in 2009	**1178**
Assuming 8 consultants per rota, no. of rotas potentially to be staffed in 2009 to be EWTD compliant	**147**
Difference between no. of current units and no. that could be staffed in 2009	**51 (25%)**

Size and location of services

Acute services are often perceived as the centre of children's health services. Historically, every reasonably sized place had its own hospital, often built with funds raised locally. Improvements in medicine and raised patient expectations mean that some of these hospitals are no longer fit for purpose. In many places acute care has transferred to larger centres. However, there is a legacy of relatively small units, sometimes in close proximity, where this rationalisation has not occurred.

The debate about what size of hospital is optimal for the efficient delivery of care is ongoing because of the changing epidemiology of disease and progress in medicine and technology, all of which will be different for different specialties. The optimal size of a children's unit in terms of effectiveness and efficiency for delivery of acute care is not known.

While the traditional expectation is that high quality inpatient care should be available locally, most patients are prepared to travel to receive more specialist care. In countries where there are more centralised general services, there does not seem to be an increase in mortality or morbidity as a result. It is important to learn why such systems are effective.

The wider NHS

There is a multiplicity of providers of initial urgent care, with variable training, working in a variety of places of service delivery all outside a network. Overall, there is insufficient systematic management or quality control in children's acute services. This is compounded by inadequate data on conditions and service use, which makes planning and improvement of services particularly difficult.

It is increasingly apparent that the current configuration of acute services for children requires a fundamental review. The separation of urgent from non-urgent care needs to be undertaken, with a whole-systems approach considering the totality of unscheduled care delivered in community settings, urgent care delivered in hospital settings, observation and admission units.

3.8.3 Services for acute conditions in childhood

Unique elements of acute services

- The need to provide a local service for the very large numbers of children with acute undifferentiated illness or injury.
- Maintenance of competence within a large workforce, where first-line presentation of serious illness is relatively rare.
- Too many hospitals with inpatient beds for the size of the paediatric workforce.
- Critical issues for safe and effective care.
- Competence in the initial assessment and management of potentially sick children by those who first see the child.
- Easy access to a second opinion when these clinicians feel outside their competence.
- Access to child orientated investigative services such as radiology and laboratory services.
- Accessible and effective transport systems when children are critically ill.
- Access to anaesthetic and surgical skills.

Acute children's services have to be able to triage in terms of severity and by service needed. The

intention is for children to receive appropriate levels of care through the shortest (ie most efficient) pathway. Future first-line contact is likely to be by telephone, which should assess seriousness and therefore level of urgency to access services. Second-line contact is likely to be face-to-face and needs to decide if, and then where, children are next best assessed. Acute conditions that require different services include:

- medical conditions: mainly febrile illness, asthma, diarrhoea, convulsions
- surgical conditions: brain injury, fractures, the acute abdomen, burns
- neonatal care: resuscitation at birth, prematurity, infectious disease, congenital abnormalities
- child protection: acute injuries, sexual assault
- child mental health: acute psychosis, suicidal behaviour.

The intention is to provide the same quality of care 24/7, regardless of where the child and their family reside in the UK. Reducing inequalities of access and improving inequities of outcome should be the integral objective of acute service delivery. While no single model of care will be appropriate for all social/geographical settings, the outcomes of acute services should be similar.

Service perspectives

Families want services that are effective, provided as locally as possible, joined up, that involve them in decision-making and manage the child's condition, as well as the wider impact of the condition on the child and the consequences for their family.

Professionals want to deliver services that make best use of their skills by working in a competent sustainable system that supports team working, recognises the changing nature of evidence and need for continued reflection, learning and improvement.

Managers also want to develop competent systems, which enable safe patient journeys, use resources both efficiently and effectively, and are fair to both patient and professional groups.

Commissioners and politicians are responsible for the distribution of resources in the system and want to ensure both equitable access and equitable outcomes from the resources invested.

All involved need to be committed to a process that ensures a whole system continually improves, constantly disinvesting in the less effective and reinvesting in the more effective.

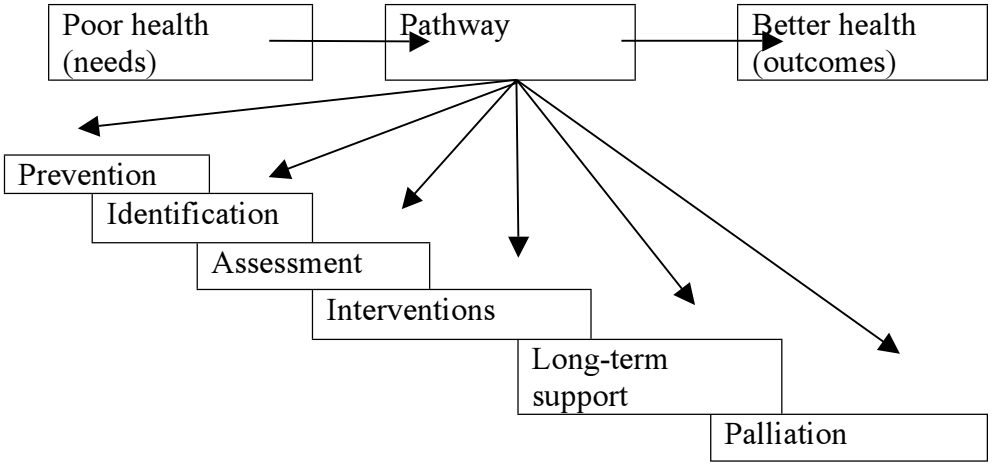
These multiple perspectives need to come together, ideally into a model that has practical utility, is equally applicable to all parts of children's services and has universal appeal to those commissioning, providing or regulating services.

What is needed - whole systems thinking
The majority of acute services could be provided in community settings. The division between primary and secondary care is unhelpful. As more hospital care is provided in community settings and as hospitals are part of the community provision, there will be occasions when urgent care traditionally delivered by primary care is best delivered in close proximity to an A&E department on a hospital site.

The concept of a family friendly journey along a pathway through services, where components of the pathway are delivered by teams working together in a managed network to deliver a needs-driven, safe and effective, outcome-orientated service is fundamental (Figure 4). In terms of

resources, there needs to be a balance of investment between prevention, short-term interventions and long-term support of conditions. This cannot be achieved without the partnership between those commissioning and those providing services.

Figure 4 Concept diagram of pathway thinking



Each component of the pathway (Table 6) should be evidence based, and translated into guidelines, protocols or algorithms for professionals, with similar information being available for children and families. An integral part of the pathway is a process for identifying the weakest links and rectifying the problems identified.

Table 6 Possible components of an acute services pathway.

Prevention	Identification	Assessment and intervention	LTS	Palliation
Immunisation	Health education programmes	Recognition and assessment of the sick child	Link with LTC services	Ethical advice
Breast-feeding	NHSD protocols	Basic life-support skills		
Parent support		The ability to initiate treatment	Parenting skills for vulnerable families	Acute bereavement service
Injury prevention		Recognition of the rare but treatable conditions Child protection recognition skills Assessing clinical trends Ability to transfer* Ward and intensive care provision		

LTC = long-term conditions; LTS = long term support; NHSD = NHS Direct.

3.8.4 Essential elements of urgent care

Initial assessment

Essential competencies:

- recognition of the sick child
- basic life-support skills

- the ability to initiate treatment
- recognition of the rare but treatable conditions
- child protection recognition skills.

Observation/assessment

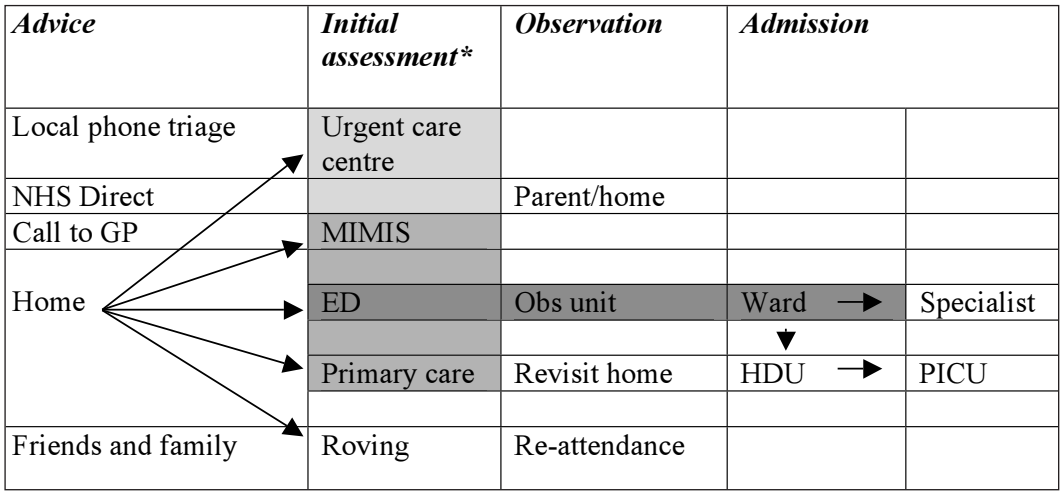
- assessing clinical trends
- awaiting investigation
- awaiting specialist opinion.

**Threshold for admission, retrieval team or transfer*

- the unstable/collapsed child
- unstable/deteriorating after four hours
- needing hospital specific investigation or treatment
- unable to cope at home with support.

The common themes of providing a family-friendly environment, use of care pathways and a culture of constant improvement should run through all parts of the network. The ideal network will vary according to setting. Small rural areas will have different requirements from those of large urban services.

Figure 5 Schematic diagram of pathway thinking applied to acute services



Roving = paramedic, ECP, GP
Shading = potential for co-location
HDU = high dependency unit; MIMIS = minor injury and minor illness services; PICU = paediatric intensive care unit.

**Threshold for admission, retrieval team or transfer*

3.8.5 Local innovation

For each component of the pathway there should be an evidence based process for what needs to be done clinically which is likely to be universal. However, who, where and how it is delivered and the configuration of support services are issues for local consideration.

Examples of local innovation would include:

- alternative forms of out of hours (OOH) care including MIMIS, UCCs, ECPs
- observation assessment units
- combining functions of UCCs and A&E departments
- consultant of the week

- combined medical/nursing/allied health professionals clinical records
- paediatric ICU-based retrieval teams
- injury surveillance systems
- hospital at-home teams
- primary care asthma nurses
- community children's nursing teams
- electronic prescribing
- automated discharge letters
- ward-based decision support systems
- changed skill mixes within acute teams
- consultants resident on-call
- expert patient programmes
- post-operation satisfaction assessment

Configurations issues

In small places, the challenge is maintaining competence of practitioners when numbers of children are small. There are two immediate solutions: firstly, that small places are networked into larger centres with the capacity to support clinicians through the development of management protocols, education and training, assurance and improvement programmes; secondly, rotation of staff between large and small places.

Where small units are located in close proximity to larger units, serious consideration needs to be given to amalgamation of management structures and reduction of inpatient accommodation. The need to maintain observation assessment capacity in the small units has to be balanced against the available numbers of appropriately skilled professionals. This will limit opening hours of such units. Transport/retrieval services need to be developed, reducing the need for overnight paediatric cover.

In remote places, options to combine urgent care and emergency care provision for children need to be considered, for example with co-location of urgent care and emergency care on the hospital site.

In medium-sized places, there needs to be sufficient consultant capacity to provide 24 hours a day cover and support to the acute team. The issue of the skill mix of the acute team, the balance of staff between the A&E department, assessment unit and acute wards needs to be resolved locally.

In larger places (ie tertiary centres), there should be sufficient general paediatric capacity to be able to cover the emergency (and urgent care if co-located) without a conflict of interest with the other functions such as specialist care, education and training, and research.

A Model for acute services in remote and rural settings

- A&E department
- Primary care OOH centre co-located with the A&E department
- Children's assessment/observation area attached to A&E department or within children's ward
- Children's ward
- Retrieval or emergency transport service
- Access to specialist second opinion, use of telemedicine

B Model of acute service for small settings near to larger centres

- A&E department
- Urgent care OOH centre co-located with the A&E department
- Children's observation area attached to A&E department
- Retrieval or emergency transport service
- Telemedicine support

C Model acute service for medium-sized settings

- A&E department
- Ideally, co-located primary care OOH centre
- Other initial assessment facilities (eg MIMIS, urgent care centres (UCCs), walk in centres (WICs) etc)
- Children's assessment/observation area attached to A&E department or within children's ward
- Children's ward
- HDU
- Access to transport/retrieval service
- Access to telemedicine/second opinion

D Model acute service for large settings

- Children's A&E department
- Ideally, co-located primary care OOH centre
- Other initial assessment facilities (eg MIMIS, UCCs, WICs, etc)
- Children's observation area attached to A&E department
- Children's ward(s)
- HDU
- Paediatric ICU
- Provision of transport/retrieval service
- Co-located specialist services
- Provision of telemedicine/second opinion to smaller places

Workforce issues

There are two major drivers at work. The first is limited time. The EWTD and MMC limit the hours of consultants and trainees so that the total paediatric working time capacity has been reduced. This, coupled with the reduction in length of training again reduces the numbers available for on-call rotas. As outlined in Table 5, there are insufficient paediatricians to staff current service configurations and achieve EWTD compliance.

The second driver is change in primary care provision, with both an expansion of first contact facilities eg walk-in centres and a reduction in experienced GP contact, especially out of hours. The result is a skill mixing process which may be safe and acceptable to adults who can voice their concerns. Potentially children are more vulnerable because of their inability to communicate and their physical signs are more difficult to interpret and they can deteriorate rapidly.

The new workforce that is complementing GPs needs to be rigorously trained and assessed to ensure they are competent to look after children and families. In the new system GPs have far

less exposure to the acutely sick child and also need to maintain their acute assessment competencies. Therefore, the numbers of units providing both urgent care (first contact), and emergency care (A&E departments, inpatient units) need to be reduced to ensure that children see competent practitioners who can meet their needs.

In small places, these consultants will also cover neonatal care, but in medium-sized places the designation of the neonatal unit will determine whether a separate neonatal rota is required. In large tertiary centres there should be an acute/urgent general paediatric team for the local population, separate from the provision of specialist care over a wider geographical area.

The issue of whether consultants need to be resident on-call depends on the capacity and competence of the urgent care team. When trainees are an integral part of service delivery, consultant cover will depend on trainee experience and may vary depending on where they are in their training.

3.8.6 Newborn services

Unique elements of newborn services

Newborn intensive care is every bit as intensive as paediatric intensive care or adult intensive care. Whilst infants have not yet reached their full potential, good outcomes from neonatal intensive care provide a foundation from which all subsequent development depends. The long-term cost to society of not providing high-quality care is very substantial, and there are difficult ethical decisions to be made around the viability of very premature infants.

The inextricable link caused by cross-cover between newborn services, antenatal care, paediatric and emergency children's services creates considerable knock-on effects for reconfiguration.

Critical issues for safe and effective care

- High-quality antenatal care, especially for those at greatest risk of poor outcomes, is essential to achieve good outcomes from neonatal care
- Access to resuscitation skills at birth
- Availability of retrieval services
- Level 3 neonatal ICU capacity and its distribution
- Workforce recruitment and retention both medical and nursing
- Access to training for neonatal nurses.

Network thinking

Neonatal services are probably the best example of the introduction of pathway thinking, the use of protocols and managed networks at a national level. The balance between maintaining local access to high quality services and achieving and sustaining specialist expertise in centres of excellence is challenging to achieve. The complexity of these issues is compounded since neonatal service must integrate seamlessly with antenatal/obstetric services and sometimes cross-cover with other paediatric services.

Pathway components

Prevention of prematurity, newborn screening and routine newborn care, and for a proportion

links to networks for long-term conditions and vulnerable children, are all vital functions of a comprehensive newborn service (Table 7).

Table 7 Possible components of neonatal pathway.

Prevention	Identification	Assessment and Intervention		LTS	Palliation
		Initial	Subsequent		
Education	Antenatal screening programmes	Newborn resuscitation	Neonatal ICU	Social support	Palliative care services
Family planning			Specialist services		
Folate supplementation	Postnatal screening			Community neonatal nurse team	Bereavement services
				Link to long-term conditions	

ICU = intensive care unit; LTS = long term support .

Workforce issues for neonatal services

The critical issue for future delivery of neonatal services is the recruitment, training and retention of both medical and nursing staff. The future reduction of trainees' working hours will have an immediate impact on the delivery of care. There is general consensus that there should be less reliance on doctors in training and more on neonatal nurses. Arrangements for commissioning neonatal training require an urgent review as they are not keeping pace with need. The service roles of SHOs in a unit need to be defined.

Routine newborn examinations should be an integral part of postnatal midwifery care, but with support from neonatologists where concerns are identified. The extended roles of midwives in midwifery led or GP led obstetric units to resuscitate and stabilise infants need to be defined, assessed, trained and assured.

Provision of community nursing support may offer the opportunity for early discharge of stable but small infants. Neonatal nursing outreach teams need to interface with community children's nursing teams. Where there is a strong community children's nursing team, neonatal nurses act more as advisers rather than hands-on providers.

3.8.7 Implications for reconfiguration

There are two major issues: first, how to enable midwifery led units to provide safe and effective initial resuscitation and stabilisation for the unexpected premature or acutely unwell neonate prior to the arrival of retrieval services. Secondly, whether level 3 neonatal intensive care should be provided in more than just 'tertiary centres' – in other words, whether some of the level 2 (sometimes described as level 2A) units should be formally resourced and redesignated level 3. Either option requires investment in neonatal transport services.

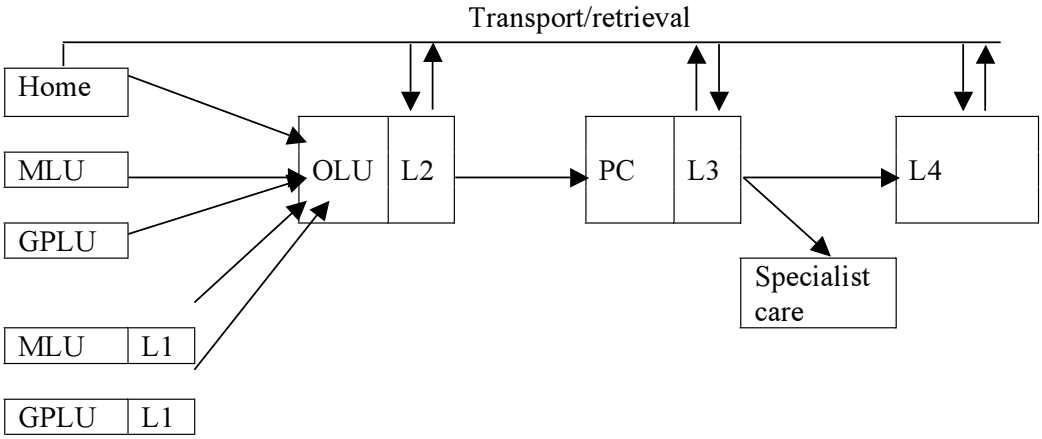
The issue of level 3 capacity, and where it is, has implications for level 2 units and the numbers of paediatricians required. As intensive care becomes increasingly specialist, the model of 'many centres doing a little' becomes increasingly less viable.

Local innovation

For each component of the pathway there should be an evidence based process for what needs to be done clinically; this is likely to be universal. However, who delivers, where and how it is delivered, and the configuration of support services are issues for local consideration:

- advanced neonatal life support
- neonatal nurses
- extended midwifery roles
- network management protocols
- hospital at home
- electronic records
- play provision for siblings
- retrieval/transport systems.

Figure 6 Network configuration



Obstetric units: MLU = midwifery led unit; GPLU = GP led unit; PC = perinatal unit; OLU = obstetrician led unit.

Neonatal units
L1 = level 1
L2 = level 2
L3 = level 3
L4 = level 4
Specialist care (eg surgery)

3.9 Clinical pathology and laboratory medicine

3.9.1 Background

This section considers the provision of pathology diagnostic services in conjunction with the proposed reorganisation of acute service healthcare provision. It discusses the configuration of these services based around five proposed levels of care:

1 Primary care/community services
2 An urgent care hospital
3 An emergency hospital
4 A general hospital
5 A general hospital with specialised services

Patients require comprehensive clinical pathology and laboratory medicine services appropriate to their illness and level of care provided.

In the context of acute services, haematology, clinical biochemistry and medical microbiology/virology (infection diagnostics and control) are the major considerations, though clearly other pathology and laboratory medicine services will also be of importance. In particular, consideration will need to be given to providing a frozen section service in histopathology, and in some circumstances a more extensive service depending on local clinical circumstances.

3.9.2 Review of NHS pathology services in England

Clinical pathology and laboratory medicine are themselves undergoing a review. Carter published his comprehensive and wide ranging *Report of the review of NHS pathology services in England* in August 2006.[68] Based on the recommendations of that report, 12 pilot studies are underway in differing healthcare environments covering rural, urban and metropolitan configurations. These studies are currently collecting data on workforce, workload, costing and the overall contribution of the pathology services to healthcare provision. These data will inform the future make-up of clinical pathology and laboratory medicine services.

The work underway at the Carter pilot sites and the accumulating data are likely to provide authoritative information on the differing models for pathology and laboratory medicine provision and should be used by strategic health authorities (StHAs) and commissioners in decision making about the future structure and delivery of the service.

It is likely, however, that models will be based on managed clinical networks of laboratories, including point-of-care testing, with input from the independent sector. All hospitals that provide an acute service will require a laboratory service on-site that provides those tests and services that require a rapid turn-around time – as a minimum these would be tests needed in less than four hours. These 'essential services' should be differentiated from the bulk tests that do not require such a rapid return and the lower volume, high technology work that requires more specialised laboratory and clinical input. These would need to be centralised in a smaller number of 'core' laboratories.

Nationally, no single model will suit all circumstances. Models will vary from a 'hub and spoke', with a central core/reference laboratory supporting a number of laboratories providing local essential services, to a true network of laboratories that between them provide the majority of

provision for the local population – in this model, provision of the specialties may be shared between hospitals rather than provided in all. This latter configuration is likely to be seen in areas where there is no major laboratory, and it is likely that there will still be a requirement to link into a regional larger laboratory for the more detailed low volume, high technology services.

Much in Carter's review is highly relevant to any proposed reconfiguration and it is worth noting some of the points made therein:

- It is estimated that 70% of all healthcare decisions affecting diagnosis or treatment involve a pathology investigation, with decisions on an individual's diagnosis and treatment and the monitoring of their response to treatment often dependent on a range of pathology based tests and investigations.
- Many of the issues identified in the review stem from the recognition that pathology needs to be managed in future as an end-to-end clinical service in its own right, both as a provider of optimal laboratory based services and a core contributor to the clinical aspects of a patient's journey.
- Critically, it requires pathology services to be viewed within a broad clinical context so that the contribution they can make to the provision of healthcare services generally can be maximised for the benefit of patients whilst also ensuring the most effective use of resource.
- One of the key drivers for change is that the pathology service needs to be recognised as a core clinical service in relation to its impact on the patient's journey, and therefore should be planned, commissioned and delivered as part of an integrated healthcare system.
- One of the barriers to change is the exclusion of pathology from local delivery planning processes and investment strategies, as well as the lack of consideration of pathology when formulating national plans, leading to unexpected, unplanned and unresourced demands being made on the pathology services.
- The importance of the service in providing teaching and training for all sectors of the healthcare workforce was recognised, and the impact of this on costs must be recognised and acknowledged.
- Carter also draws attention to three other important issues which must be addressed in any reconfiguration: first, lack of end-to-end IT connectivity in pathology, which limits the opportunity to deliver effective order communications, result delivery and decision support; secondly, fragmentation of sample collection services, which limits the opportunity for delivery of a timely and efficient patient focused service; thirdly, for laboratory services, the questionable quality of logistical support (especially transport of samples) and the impact this has on the efficiency of service.
- The dangers of fragmentation of the service were also highlighted in the review. The indiscriminate and uncontrolled removal of the high volume, low cost element of the service runs the risk of destabilising the financial base that allows the provision of the more expensive, high technology service elements. This in turn will have an impact on the ability to pursue the research and development element inherent in all large laboratories, crucial for the evolution of the service and the continuing provision of high quality diagnostics for patients. The proposed development of managed pathology networks will allow the movement of services between NHS laboratories, while maintaining the integrity and capacity of the overall service.

3.9.3 Principles

Many of the principles around the provision of clinical pathology and laboratory medicine services are similar to those for clinical radiology. As has been acknowledged, 70% of clinical decisions rest on pathology testing. In order to maintain this level of service, like radiology, the full range of relevant investigations needs to be available in a timely manner, with appropriate expert interpretation and advice and appropriate quality assurance.

Clinical pathology and laboratory medicine services are essential for the efficient use of clinical services in emergency and elective care and primary and secondary care. Good co-ordination is needed to minimise not only the repetition of investigations but to ensure that appropriate investigations are performed at the appropriate time and that the right action is taken on the results.

Most acute care decisions and key early steps in the acutely ill patient's journey require immediately available services and interpretative advice: for example, full blood count, coagulation testing, sickle test screening, and blood transfusion, electrolytes, renal and liver function, blood gases, drug screening and toxicology and microbiology for infection control, and antimicrobial advice. The physical configuration and distribution of buildings, specimen transport to laboratories, result delivery and point-of-care testing are key to providing this immediate service. Acute services cannot be reconfigured without ensuring that the local clinical pathology and laboratory medicine services are also included in the feasibility studies and planning stage.

Clinical service

Laboratory investigation and the associated clinical advisory and liaison service are inextricably linked. This includes the OOH clinical advisory service. Although this varies slightly between the clinical pathology/laboratory medicine specialties, it includes advice on appropriate diagnostic testing and the pre- and postanalytical stages. Both these depend on the clinical advisory service and interface with consultants, junior doctors, GPs and other healthcare workers in primary and secondary care. It includes choice of appropriate investigation, further investigation and treatment advice.

Many current training initiatives and working patterns mean that those requesting tests and receiving results are less well informed, making it even more important for a semispecialist or those with delegated responsibility to have instant access to expertise.[69]

3.9.4 Configuration

Any reorganisation of acute services will involve some centralisation, with a co-ordinated provision of community based services and facilities in GP acute units or the smaller local district general hospital (DGH) units.

Most acute care decisions and key early steps in the acutely ill patient's journey require immediately available clinical pathology services and interpretive advice, which requires some degree of on-site service. This raises issues such as the critical mass of expertise for the workload generated, aligned with patient flows, which in general should be encompassed in an effectively networked service.

Effective local solutions to providing these clinical pathology and laboratory medicine services will differ from place to place depending on geography and currently available facilities. Solutions will be influenced by the many factors mentioned already, including Carter's review and local resource implications.

Some form of networking of laboratories and their clinical staff and point-of-care testing are likely to provide optimal arrangements for reconfigured acute services. In order to provide this efficiently, IT connectivity is important to ensure that all results, from whatever source, are recorded in the patient's electronic record.

Both the general hospital and the general hospital with specialised services will require 24-hour comprehensive haematology, clinical biochemistry and medical microbiology/virology services with consultant clinical cover. This will include an on-site blood bank. Point-of-care testing will also be part of services. Any specialised services will generally require an appropriately expanded clinical pathology/laboratory medicine service.

The emergency hospital will also require 24-hour laboratory services, blood bank and consultant clinical cover, though some aspects may be provided by networking with the general hospital (with or without specialised services).

It is essential that primary care and the UCC have access to, and are networked with, the laboratory network providing services to the larger hospitals. They would both have some point-of-care testing and the UCC may have an expanded repertoire. They would also have access to network clinical cover. It is likely that diagnostic monitoring of patients with chronic diseases will increasingly involve point-of-care testing, where this is appropriate, or easy access to phlebotomy services in the community without the need to attend hospital, and that the results will be delivered both to the patient and to the relevant medical teams.

It is desirable for the provision of diagnostic services in any area to be co-ordinated with a common managerial structure to allow continuity of support.

Clinical governance and quality

Point-of-care testing should be subject to the same vigorous quality standards that are demanded of NHS laboratories. Point-of-care testing should be provided in conjunction with a local laboratory, and it is absolutely essential that the results of any point-of-care tests are recorded in the patient's notes.[70]

NHS laboratories are expected to be registered with CPA (UK) Ltd or equivalent. This is a clinical pathology accreditation scheme that ensures standards are maintained across all aspects of clinical pathology services.[71]

Equity of access for patients. It is important that patients have equity of access to quality assured tests and advice, not just range and type of test.

3.9.5 Key recommendations

- Any reconfiguration of acute services will require appropriate clinical pathology and laboratory medicine support; these must be considered at an early stage.
- Lord Carter's independent review, the informed submissions to his review and the outcome of the pilot studies should be used to inform the configuration of clinical pathology and laboratory medicine services.

- The importance of the clinical pathologists' direct contribution to patient care should not be underestimated. This covers both all disciplines of pathology and the 'patient' pathway from primary through to tertiary care and back.

Specialty specific comments

Haematology and blood transfusion

It is important to emphasise the need for on-site 24/7 consultant haematologist availability in the laboratory and at the bedside for all hospitals in which there will be any level, however minor, of services for acute or EM, surgery, orthopaedics, trauma, obstetrics and paediatrics. This is not just about the routine interpretation of laboratory results or the provision of a safe transfusion service but also about the aspect of work which consumes many hours a week and is often overlooked – the active involvement in the clinical care of patients in other specialties which is unpredictable and immediate.

Haematologists are essential to the safe and effective use of anticoagulants in the management of thrombosis and the network of improved services for ethnic minorities. The upcoming cancer review strategy will emphasise the need to ensure that community DGH based care of haematological cancers in elderly patients is protected as intensive care for younger patients becomes more centralised.

Medical microbiology

It is important to emphasise that this is a clinical service which supports the investigation and management of patients through all stages of their care when suspected of having infection. This is done in a number of ways of immediate relevance to acute service delivery in the areas under discussion:

- Diagnostics, including pre-and postanalytical (as above).
- The clinical management of the infected patient which, as in haematology, is the active involvement of the clinical care of patients in other specialties or outside the hospital. This is of particular relevance, for example, in intensive care, paediatrics and medicine for the elderly.
- Antimicrobial stewardship.
- Infection control, providing strategic and operational leadership, access to laboratories and medical expertise, and surveillance and work for patient safety (eg methacillin-resistant *Staphylococcus aureus* (MRSA), *Clostridium difficile*).
- Health protection, microbiologists have responsibilities beyond the individual patient – population based responsibilities around surveillance and the control and prevention of infectious disease.

Clinical biochemistry

The clinical biochemistry advisory service, as well as the analytical service, is crucial in provision for emergency care. Patients are often cared for by the most junior staff who have the least knowledge and experience, which puts patients' safety at high risk. Patients who come to A&E department often have the most deranged biochemical abnormalities and cases of suspected poisoning will need toxicological input.

In obstetrics, the clinical advisory service is frequently required for emergency maternal cases, such as HELPP syndrome and pre-eclamptic toxaemia, where support for the junior staff involved in immediate care is crucial.

For paediatrics, not only is routine biochemistry required but also more esoteric tests and clinical advice, frequently in an emergency, particularly for children with inherited metabolic diseases. This service needs to be on-site, with access to consultant chemical pathologists and clinical biochemists for advice – they have unique expertise in this area. Paediatricians rely heavily on this resource.

Cardiovascular medicine and elderly care again rely heavily on clinical biochemistry for both acute and chronic management. Particularly for cardiovascular medicine, many consultant chemical pathologists help with management of these patients, especially in secondary prevention and inpatients with comorbidities, in particular those with concomitant diabetes mellitus.

If point-of-care testing is to be utilised clinically and cost-effectively, the laboratory must be involved, as recognised by the Medicines and Healthcare products Regulatory Agency (MHRA) and Professor Sir George Alberti's group. Unless well managed, the risk to patient safety is extremely high, reflecting the importance of quality assurance and accredited services. Clinical biochemistry is recognised nationally and internationally as having the most experience and expertise in this area.

Histopathology

The provision of emergency OOH frozen section service must be considered in any facility where surgery occurs. There is concern that redistribution (centralisation) of acute services might take with it slightly less acute services which generate a large quantity of routine work (for example cancer) and thus destabilise histopathology services. Acute services for the severely ill sadly sometimes generate a sudden need for mortuary services; reconfiguration would need to include assessment that the mortuary services are adequate.

3.10 Radiology

3.10.1 Background

i) Aim

This section outlines the view of the Royal College of Radiologists (RCR) with respect to the reconfiguration of imaging services in England, as part of the wider project concerning the reorganisation of acute services currently being undertaken by the Academy of Medical Royal Colleges on the invitation of the Department of Health (DH).

ii) Imaging departments

Imaging departments are essential for efficient use of services at three levels: emergency cover, elective care and primary care. They are also critical to the success of the co-ordination needed to minimise the repetition of investigations and to comply with radiation legislation (IR(ME)R), as well as in the interests of good patient care.

iii) Role of consultant clinical radiologist

The role of a consultant clinical radiologist encompasses the following:

Clinical

- Diagnostics: performing, interpreting and reporting imaging examinations
- Advice on imaging and clinical management across primary and secondary care
- Invasive interventions
- 24/7 emergency provision across all clinical specialties
- Multidisciplinary team contributions, often as lead
- Co-ordinating individual patient pathways across primary, secondary and tertiary care to avoid excess exposure to radiation and the resultant costs.

Non-clinical

- Leading the imaging department
- Responsible for clinical governance of imaging services
- Teaching/training: trainee radiologists, radiographers and doctors from other specialties (eg obstetricians)
- Evaluation and development of new technologies and ways of working: magnetic resonance /CT/positron emission tomography CT/ teleradiology/ networking etc.

3.10.2 Superspecialisation

As secondary care services become more specialised, the radiologist is required to develop increased specialisation across one or more specialist clinical interests. For a safe service, there needs to be sufficient expertise within a unit to provide this specialist cover outside normal working hours, at weekends, during holidays and other absences. It requires a sufficient number of clinical radiologists available to cross cover while developing and maintaining individual specialist skills.

This particularly applies to interventional skills. Interventional radiology is becoming an essential therapeutic tool, frequently replacing open surgery and providing treatment in cases where surgery is impossible. The range of conditions treated in this way extends from aortic aneurysms to internal bleeding, major trauma and sepsis. These are all life-threatening emergencies requiring 24-hour availability of expertise.

3.10.3 Context

i) Drivers for reconfiguration of secondary care

The overarching drivers for the reorganisation of acute services are:

- increased efficiency
- specialisation
- patient safety
- medical workforce considerations.

The variations in service provision around the country should be addressed, thereby enhancing standards of care and patient safety.

The specific drivers for imaging are:

- improving quality
- technological requirements
- provision of 24-hour emergency care
- need for specialisation.

ii) Advances in radiology

The following developments could assist in the reorganisation of imaging services:

- Picture archiving and communications system (PACS) enables images to be stored electronically and viewed on computer screens. This allows faster delivery and more flexible viewing of images from multiple terminals and locations and, in turn, permits a more flexible approach to the provision of acute services.
  Teleradiology allows images to be viewed and reported remotely, and second specialist opinions sought.
  Skills mix: extended radiographer roles permit the most efficient means of using all members of the team under the overall control of a clinical radiologist.[72]
  Plurality of providers: if safely co-ordinated across the patient pathway, this could provide increased capacity.

iii) Challenges

The following challenges will need to be addressed when reorganising imaging services:

- Current financial climate within the NHS: uncertainty over future employment for radiologists and radiographers.
- Implications of universal PACS roll-out (currently about 50% complete).[73]
- Uncertainty over the effects of wave 2 and 18-week wait target initiatives[74] on imaging departments.
- Risk of deskilling of the workforce (clinical radiologists and radiographers) if elective work goes to independent sector treatment centres (ISTCs), with a separate workforce and a non-integrated service.
- Risk to acute trust comprehensive service if elective work is removed, with reduction in staff available to provide 24/7 cover.
- Loyalty to traditional structures, teams and organisations.
- Appropriate infrastructures need to be in place (eg appropriate administrative and management structures).

- Networking approaches do not sit well with the developing competition culture (PBR and contestability).
- Reconfigured imaging services will have implications for other specialties such as paediatrics, obstetrics etc.
- Case mix and training: trainees will need to follow the full patient care pathway, not just isolated components. It will be necessary to guarantee training standards and appropriate case mix for medical staff and radiographers.

3.10.4 Recommendations for organisation of imaging services

i) Hub and spoke model

This would consist of larger units in which all radiologists would have clinical sessions co-ordinated with smaller 'spokes'. The relative size of the hubs and spokes would depend on geography and existing clinical units.

ii) Networking

This could be applied across existing units with electronic linkage (eg PACS). Provision of specialist and interventional services could be organised in this way but would need to be co-ordinated with clinical networks (vascular, urology etc).

In a geographical area, organisation of the imaging services could be delivered by reassessing the level of expertise appropriate for each component of the network. Clinical staff would work across institutional boundaries as part of structured clinical networks.

iii) Networked radiology services

- The overall unit of organisation of clinical radiologists will need to be larger than at present.
- The effect of PACS and teleradiology will be that images can be transmitted and reviewed anywhere so that patients can have access to the best standards of interpretation. Image acquisition could potentially become increasingly separate from image interpretation as electronic networks become universal and operational difficulties are resolved and become more reliable. Consequently, a system needs to be built in whereby electronic consultation is possible between the radiologist and the referring clinician when on separate sites.
- It is essential to have a fully co-ordinated service across secondary care, primary care and the independent sector in the interests of patient safety as well as allowing radiologists to maintain their expertise in elective work and emergency care while sustaining on-call rotas. This ensures efficient use of radiologists' time whilst providing high quality, non-acute services for patients.
- Provision of imaging services should be standardised across England and Wales. Large acute trusts (hub) would require comprehensive specialist services 18/7–24/7, whereas smaller units (spoke), if networked, could provide safe cover on the basis of more limited hours.
- All sites accepting acute admissions would need full CT facilities with a suitably trained workforce to provide this service.
- There should be a networked superspecialist and interventional radiology service for all acute hospitals within an appropriate geographical area; this should include formalised on-call arrangements. The size of the network would depend on the geographical situation of the units in question.

iv) Integration of services, standards and management
For the model to function, it would need to be properly managed across well-defined and accountable networks. Appropriate protocols and referral policies would need to be put in place.

v) Clinical governance
Systems of clinical governance would need to be co-ordinated across the network, including audit and CPD for all healthcare workers in the department.

3.10.5 Key recommendations

- Larger overall unit of organisation.
- Integrated services across primary care, secondary care and the independent sector.
- All sites accepting acute admissions to provide full CT facilities.
- Networked emergency and specialist services.

3.11 Surgery

3.11.1 Background

There is recognition within the surgical community that the status quo cannot continue. Service reorganisation is required to provide safe and effective services to patients in some surgical specialties. The Royal College of Surgeons of England (the RCS) welcomes the opportunity to become involved in discussions on the delivery of surgical services within a wider debate on the future delivery of health services. There are many tensions within the health service. The current set of health policy reforms complicate the issue of delivering the best care in the most appropriate location for the patient and these must be resolved before any meaningful debate on reorganisation can be taken forward.

There is some hard evidence that outcome for a select group of patients is improved in specialist centres where surgeons can maintain their specialist skills by treating a greater number of people. People who have experienced major trauma and those requiring specialist neurosurgery and vascular care do fare better if they are treated in specialist units.

However, there is conflicting evidence that specialist centres are beneficial for other kinds of surgery. At this stage, any decision to withdraw 24-hour surgical cover from some hospitals in favour of centralisation is not supported by current clinical evidence. These decisions, whether taken locally or centrally, will necessarily therefore be driven by other factors, such as the European Working Time Directive (EWTD).

The RCS considers that care must be delivered as locally as possible providing there is no compromise on the safety and quality of that care. Our March 2006 report *Delivering High Quality Surgical Services for the Future*[75] outlined what we believe to be the three main drivers for reconfiguration:

- clinical need (for example, the need to reconfigure specialised services such as paediatric cardiac surgery, or the need to reconfigure services in smaller hospitals);
- the introduction of contestability and competition in the health service; and
- the cost of providing services.

The RCS insists that any reorganisation of health services has a sound clinical and evidence base. Financial, political and managerial expediency must not be primary drivers for service reorganisation.

The main drivers for service reorganisation are:-

- a range of service pressures, such as the EWTD, and Modernising Medical Careers (MMC);
- increasing specialization;
- an ageing population, unevenly spread across the country;
- health policy reforms which introduce "constructive discomfort" within the health service, and bring destabilisation to some health economies;
- initiatives of contestability, competition, patient choice and payment by results (PBR) which create sustainability problems for the NHS and, if uncontrolled, may lead to the closure of some services/units;
- the increasing influence of clinical networks;
- the increase in independent sector provision.

The RCS recognises that improved information technology systems and the better utilisation of telemedicine techniques will aid the delivery of a range of services, especially to those remote and rural hospitals without ready access to appropriately skilled specialists. However, we remain concerned with the lack of progress in this area particularly given the potential for reduced NHS funding post-2008. We do not consider that service models can be based upon systems which are, as yet, largely untried and untested.

3.11.2 Workforce challenges/projections

The NHS Plan[76] signaled a commitment from the government and the Department of Health for a consultant-delivered service. The RCS has pressed, for many years, for consultant expansion in order to achieve this, and our plans have been based on staffing a combination of teaching hospitals and district general hospitals (DGHs). We have seen the surgical consultant workforce grow by almost 60% over the ten year period 1995–2005. In the same period, the number of surgical SpRs has grown by 83% to prime consultant expansion. In September 2006, there were 5,612 consultant surgeons in England. This growth was necessary and has been welcomed.

MMC will see less experienced foundation year 2 (FY2) doctors entering specialist surgical training thus placing an increased responsibility on more senior doctors and non-training grades to provide cover in the out of hours period. The 2009 EWTD requirements will cut working hours to an average of 48/week and this will require a shift pattern including at least 8 doctors at specialist training level. Most surgical specialties will struggle to achieve a cell of eight trainees. However, if the number of sites providing emergency on-call services is rationalised, fewer doctors may be required.

The surgical specialist associations set consultant expansion targets for 2010 based on the traditional service models of regional teaching units and DGHs.[77,78] Current projections suggest that these targets will be reached in most specialties by or soon after 2010 and, in some specialties, the targets may be exceeded. However, there remain the pressures of MMC, the working time directive and service reconfigurations, which we believe require a continued expansion in consultant numbers in some surgical specialties. Recently there have been reports of recruitment to consultant posts being frozen and of consultant redundancies. This is a worrying trend and a significant shift away from the 'gold standard' of a consultant-delivered service. The unpredictable swings in recruitment driven particularly by the need to achieve financial balance make sensible and informed workforce planning almost impossible. It is extremely wasteful to train specialists at great expense to the taxpayer and then not utilise their skills.

Surgical services must be delivered by multiprofessional teams led by consultant surgeons. Workforce planning will need to reflect service design and the diversity of roles within the clinical team. A flexible and well developed workforce underpins the development of new models of care.

With the establishment of the College of Emergency Medicine and with the new specialty of the acute physician, it would seem appropriate to commence a debate on the concept of an emergency surgeon role – the RCS will take this forward with the surgical specialist associations. In the interim we consider that the overarching principle to providing a safe emergency service is to have senior clinicians at key points in the patient pathway – as such we believe that the possession of appropriate skill and competence to manage emergency patients is of vital significance.

3.11.3 Service models

The RCS considers it essential to maintain local services as long as they are safe, it is therefore important that staff in local hospitals can remain skilled in their specialty.

The focus on planned care has been welcome and has led to much needed improvements in the delivery of elective surgical care, however, we consider that the focus on measures of process such as access targets have been to the detriment of acute surgical services. We therefore seek to redress the balance to ensure that emergency surgical services are organised in a way which maximises the safety of patients and the training of future surgeons.

The RCS would press for a national plan for the identification of specialist major trauma facilities. As a minimum, major trauma centres should admit more than 250 critically injured patients per year.[79] In England this would equate to one major trauma centre per 3–4 million population, depending on location. We are therefore calling for a national plan for the identification of specialist major trauma facilities of which there should be no more than 12–16 very large centres. A national trauma system needs to be developed using a network model between hospitals. Each geographical network would integrate pre-hospital care, initial transfer, inter-hospital transfer where required, definitive hospital care and rehabilitation.[80] It is vital that NHS administrative boundaries and current health policy reforms which introduce competition and contestability to the provision of services do not constrain the organisation of such a system of care – collaboration and not competition is required.

With a national network of such centres, decisions about the location of, and services to be provided in local and district hospitals must be made by Strategic Health Authorities (StHAs) with appropriate professional and managerial advice. These decisions cannot be made by individual PCTs or 'the market'. Advice on surgical aspects of service reorganisation is available from the RCS.

We are particularly concerned about the unplanned migration of paediatric general surgical procedures to tertiary centres, the impact on parents and patients of having to travel longer distances for treatment and the impact on workload in the specialist paediatric surgical centres. There is similar concern over the provision of general paediatric orthopaedic services. We would look to the commissioning process, which must include statutory patient and public involvement, and to the skill of commissioners to provide appropriate incentives to providers, to ensure that local provision of elective and emergency children's surgery is safeguarded.

RCS Position on the Academy of Medical Royal College's Proposals for the Configuration of Acute Care Services

There is significant potential for confusion given the different titles and types of services suggested. It is vital that the public are fully engaged in discussions about service change.

A Primary/community care and urgent care hospital

The RCS insists that elective minor/routine surgical procedures carried out in the primary care/community setting must be safe, cost effective and meet appropriate clinical governance standards. Professionals undertaking such procedures must be trained to the required standards and undertake proper audit.

Defined processes are required to ensure that an appropriate level of surgical training is provided in these settings. The *Our Health, Our Care, Our Say* proposals,[22] if implemented as the government suggests could, if not monitored, be almost as damaging to surgical training as that of moving elective provision to ISTCs.

The limited opening hours of both primary care and urgent care facilities may create service pressures on emergency units in the out of hours period and this must be considered.

B Local hospital

The RCS insists that local hospitals accepting unselected medical patients must have 24-hour on-site surgical opinion, Departure from this standard would be tolerable only in the most exceptional circumstances and should only take place after rigorous risk assessment. The long-term viability of a unit accepting unselected patients without on-site surgery could be questioned due to the difficulty in maintaining critical care facilities without a significant on-site surgical presence. The Royal College of Anaesthetists consider that, in hospitals without emergency surgery it would be logistically difficult to staff an intensive care unit. This will require greater restrictions on the type of emergency medical patients that can be admitted.

If, after rigorous risk assessment, it is deemed impossible for a site to maintain on-site surgery, the RCS insists that the hospital should not accept unselected medical emergencies.

Access to surgical skills for this type of hospital will need to be obtained via a defined network. These networks must be well established and their performance audited before any reduction in local facilities/services takes place. The practicalities of establishing and maintaining managed clinical networks are often underestimated.

The RCS believes that in 'local hospitals' without on-site surgery, it would be inappropriate to obtain surgical opinion from visiting surgeons who were on-site to undertake elective surgical procedures during the day. There is a distinct possibility that elective surgery on these sites could be undertaken in independent sector treatment centres (ISTCs). Surgeons working in the independent sector may not have the required skills and competencies to provide advice on potential surgical emergencies. Wherever elective surgery is provided, there must be robust protocols in place to deal with complications and the potential for iatrogenic harm.

It would appear that the concept of providing unselected medical take without ready access to surgical opinion has been adopted by service planners as a blueprint in some areas. The RCS considers that this concept has been misconstrued from the National Leadership Network's (NLN) report[81]. The NLN report provides a set of "absolute minimum" requirements for acute care to be provided on-site to support a safe ED, on the condition that emergency care networks can ensure prompt access to other services at local partner hospitals. As such, the list of support services they provide is an absolute minimum and not a positive 'blueprint' for standard service provision.

The RCS believes that the following must be available on 'local hospital' sites where unselected patients are accepted:-

- 24-hour ED with appropriately trained resident medical staff
- 24-hour radiology, to include x-ray and CT scanning
- skills to ensure the stabilisation and immediate inter-hospital transfer of patients to hospital with the appropriate specialised services
- operating theatre services

- the presence of consultant surgeons taking part in an emergency rota.
- anaesthetics and appropriate provision of high dependency care
- access to intensive therapy unit facilities, if required (ideally on-site – the logistics, resource implications and potential dangers of transferring significant numbers of sick patients are formidable)
- access to general medical opinion and resident medical cover (for post-operative management of complex surgery and routine surgery on patients with co morbidities)
- explicit ambulance bypass protocols

C District hospital (with some surgical specialties)

Such hospitals would vary in size and may not have all surgical specialties on site, however, they should be able to deal with the majority of surgical emergencies and all but the most severe trauma. Patients with severe or multiple injuries or with a suspected complex surgical emergency should bypass these hospitals and be taken directly to a more appropriate service. These hospitals may be at a distant location from a centre providing all surgical specialties and will need to act in partnership with other hospitals in the system to ensure the best care for patients.

As a minimum we would expect the following services to be in place:

- 24-hour A&E department led by A&E consultants
- sufficient skills for resuscitation
- ICU beds
- 24-hour x-ray and CT scanning with immediate reporting facilities
- dedicated emergency operating theatre(s) and daily emergency lists
- helicopter landing pad nearby

Major supporting services normally accessible on the same hospital site for emergency surgical provision would be:

- acute general medicine
- coronary care
- major operating theatres with access to 24/7 CEPOD emergency theatre(s)
- acute general surgery
- orthopaedic trauma
- anaesthetics
- intensive care
- radiology (x-ray, CT and ultrasound)
- laboratory services
- paediatrics (if children are treated in the A&E department)

All these services must be supported by liaison with paediatric surgery, cardiothoracic surgery, ENT, oral and maxillofacial surgery. neurosurgery, ophthalmology, plastic surgery, urology and obstetrics and gynaecology, some of which may be available on-site.

D District hospital plus highly specialised services

This type of hospital would receive all cases from its immediate catchment population and receive patients directly from any part of the hospital system, even though this may mean bypassing other hospitals where appropriate. The hospital will also accept secondary transfers from other hospitals and would provide pre-hospital advice to ambulance personnel.

In addition to the requirements listed above, all hospitals in this category must have access to the following on-site 24/7:

- orthopaedic trauma
- neurosurgery
- general and vascular surgery
- plastic surgery
- cardiothoracic surgery
- ENT
- head and neck surgery
- urology
- anaesthesia with intensive care
- interventional radiology
- paediatric surgery and intensive care beds for children
- acute general medicine

E Trauma Services

As outlined above, the RCS would press for a national plan for the identification of specialist major trauma facilities which might be based in 12–16 very large centres serving populations of 3–4 million, depending on location.

3.12 Ophthalmology

3.12.1 Background

Ophthalmology as an 'acute' specialty

Ophthalmology can be regarded as an acute specialty in the sense that it encompasses a number of sight-threatening emergencies for which 24/7 provision of care must be available. Few GPs have the confidence, skills or facilities to diagnose and manage more than a few minor eye conditions, with the result that ophthalmology is one of the major contributors to hospital outpatient activity. The trend in recent years to day case surgery under local anaesthesia has tended to reduce the dependence of ophthalmology on other hospital specialties and support services, though the management of complex eye disease often requires close liaison with a range of other specialties. Indeed, the development of guidelines for the management of certain categories of ophthalmic patient has increased the importance of proximity to other specialties. This is particularly relevant to paediatric ophthalmology.

Ophthalmology as a 'community' specialty

The fact that many aspects of ophthalmology can be provided without close proximity to other specialties and with relatively little reliance on support services has formed a prominent part of a central health policy in relation to eye care for a number of years. The Department of Health (DH) publications *Keeping the NHS local – a new direction of travel*,[82] and *Our health, our care, our say: a new direction for community services*,[22] articulate the desire to counterbalance a tendency for centralisation of specialist services into ever-larger hospitals. PCTs and GP commissioning collaboratives have been encouraged to commission ophthalmology services in settings other than hospital (thereby avoiding the need to purchase services at NHS tariff prices) and to involve other professions (eg optometry, orthoptics, nursing, general practice) in the provision of ophthalmic care. There are many such initiatives in existence, though most are locally designed and relatively small scale.

3.12.2 Principles for reorganisation of services

The College agrees with the general principles set out in this Academy report and the reasons given for the need to proceed in this direction set out in sections 1 and 2. Medical workforce constraints and a trend towards subspecialisation have already brought about some of these changes in ophthalmology units in recent years. For instance, retinal detachment surgery (one of the commonest urgent surgical procedures in ophthalmology) is now performed almost exclusively by vitreoretinal subspecialists in a limited number of centres, whereas 15 years ago it was part of the repertoire of the general ophthalmologist. The number of ophthalmic inpatient beds nationally continues to diminish because of the trend towards day case surgery. Partly because of this and partly because of reductions in maximum working hours, the number of units offering 24/7 cover has also diminished. The impending reduction of working hours from 56 to 48 per week will affect the viability of a considerable number of existing ophthalmic duty rotas.

The College particularly agrees with the principles that reconfiguration needs to be evidence-based and that one model is not necessarily appropriate for all areas. Currently, the need to save

money is one of the most powerful drivers for change, despite the paucity of evidence that proposals to move significant amounts of ophthalmology workload into primary care are capable of delivering financial savings or maintaining clinical standards.

3.12.3 Other specifics that should be included in these principles

Careful thought needs to be given to the complex interdependencies which exist between clinical and support services when planning reconfigurations of services. Certain clinical services are viable only if they exist in close proximity to certain other services which will limit the portfolio of services offered by 'non-24/7' hospitals (the 'house of cards' argument). The idiosyncrasies of NHS funding have also created complex financial interdependencies and cross-subsidies which mean that a decision to move one service from one location to another may affect the financial viability of other services or even of a whole unit. The introduction of PBR in theory reduces such interdependencies, but in practice a considerable degree of cross-subsidy between services continues to exist within acute trusts. For example, the loss of services such as ophthalmology or dermatology from a medium-sized acute trust to an ISTC might have a serious impact on the financial viability of other services or the trust as a whole because, in multispecialty hospitals these specialties tend to be net contributors to the hospital budget. There is already evidence that this is happening in one major ophthalmic teaching unit in the UK where the commissioning of a number of independent sector treatment sectors (ISTCs) locally is resulting in the loss of a large proportion of cataract surgery from the unit and is threatening the viability of the unit's ophthalmic emergency service (J McGill; personal communication).

3.12.4 Options on how your services might be delivered

Despite the paucity of evidence that moving ophthalmology services closer to primary care compares favourably in terms of quality of care or cost-effectiveness with current service provision, it seems unlikely that central pressure to move in this direction will diminish. Phase 2 of the ISTC programme continues to be rolled out and its architects are on record as stating that it is justifiable to commission ISTCs in areas where there are no significant capacity or waiting time issues. The College has accumulated clear evidence that ISTCs select patients with straightforward cataracts without significant systemic comorbidity ('cherry-picking'), leaving NHS units with a smaller number of more complex cases.

In the light of these pressures and those highlighted in the Academy's document, there are a number of (not necessarily mutually) exclusive ways in which ophthalmology might respond:

- Greater centralisation of more complex subspecialty work in teaching hospitals.
- Greater centralisation of OOH emergency ophthalmic cover.
- Development of postgraduate schools of ophthalmology, not necessarily based on university teaching hospitals, which might contract with a variety of NHS and other providers for training.
- Development of financially autonomous ophthalmic units within NHS hospitals with freedom to contract with a variety of commissioners within or without PBR.
- Development of ophthalmic units based in general practice or other community settings.
- A more general movement of ophthalmology into the independent sector.

It should be noted that the inclusion of the options above does not indicate that the College endorses them. The College's aim is to promote the highest standards of patient care in ophthalmology and believes that this is best achieved where care is integrated rather than fragmented. In order to preserve high standards of ophthalmic care in the face of the vagaries of political imperative, the College is working to promote the standardisation of data collection and audit. Approval is currently being sought from the NHS Information Standards Board for adoption of datasets for cataract, glaucoma and diabetic eye disease into the national care record, the aim of which is to ensure consistently high standards of care for patients regardless of where their care is provided and by whom.

3.12.5 Potential barriers to delivery and risks

- The need to reduce budget deficits may result in hasty or ill-judged decisions to reconfigure clinical services which fail to deliver savings or result in poorer clinical services (or both) and the loss of existing clinical teams.
- Training and clinical research may suffer.
- Financial interdependencies and cross-subsidies within secondary care are deeply ingrained and have not been addressed effectively by PBR. This makes it difficult for traditionally hospital-based specialties such as ophthalmology to compete with the independent sector or to adapt promptly to the needs of patients and the wishes of commissioners.

3.13 References

1 The acutely or critically sick or injured child in the district general hospital. A team response. A report of an intercollegiate working party. Department of Health; London 2006.
2 Isolated acute medical services. Royal College of Physicians; London, June 2002.
3 The interface between acute general medicine and critical care. Report of a working party. Royal College of Physicians; London 2002.
4 Weaning and long term ventilation, NHS Modernisation Agency; April 2002.
5 Pronovost PJ, Angus DC, Dorman T *et al.* Physician staffing patterns and clinical outcomes in critically ill patients. *Journal of the American Medical Association* 2002;288:2151–62.
6 Khan JM, Goss CH, Heagerty PJ, Kramer AA, O'Brien CR, Rubenfeld GD. Hospital volume and the outcomes of mechanical ventilation. *New England Journal of Medicine* 2006;355(1):41–50.
7 Transport of the critically ill adult. Intensive Care Society; 2002.
8 Standards for consultant staffing of intensive care units. Intensive Care Society; May 2007.
9 Hospital Episode Statistics. Department of Health. London. http://www.dh.gov.uk
10 Mason S, Locker T, Carter A *et al.* What are the organisational factors that influence waiting times in Emergency Departments? Report to the Service Delivery Organisation; 2006. http://www.sdo.lshtm.ac.uk/files/project/49-final-report.pdf
11 Modernising Medical Careers. London: College of Emergency Medicine; 2007. http://www.emergencymed.org.uk
12 Hanson J, Fothergill J. Personal communication.
13 Sakr M, Kendall R, Angus J *et al.* Emergency nurse practitioners: a three part study in clinical and cost effectiveness. *Emergency Medicine Journal* 2003;20:158–63.
14 Ball ST, Walton K, Hawes S. Do emergency department physiotherapy practitioners, emergency nurse practitioners and doctors investigate, treat and refer patients with closed musculoskeletal injuries differently? *Emergency Medicine Journal* 2007;24:185–8.
15 Mason S, Wardrope J, Perrin J. Developing a community paramedic practitioner intermediate care support scheme for older people with minor conditions. *Emergency Medicine Journal* 2003;20:196–8.
16 Benger JR, Noble SM, Coast J, Kendall JM. The safety and effectiveness of minor injuries telemedicine. *Emergency Medicine Journal* 2004;21:438–45.
17 The Way Ahead 2005. London: British Association for Emergency Medicine and Faculty of Accident and Emergency Medicine; 2005.
18 National confidential enquiry into patient outcome and death, (NCEPOD); 2005.
19 Lakhani M, Fernandes A, Archard G. Urgent care. A position statement from the Royal College of General Practitioners. London: RCGP, March 2007.
20 National Audit Office. The provision of out of hours care in England. London: NAO, 2006.
21 Royal College of General Practitioners out of hours accreditation scheme, 2002.
22 Department of Health. Our health, our care, our say: a new direction for community services. London: DH, 2006.
23 Department of Health. Telephone access to out-of-hours care: supporting PCTs commissioning call handling and telephone clinical assessment services – practical guidance. London: DH, 2004.
24 Department of Health. Urgent care. Direction of travel. Consultation document. London: DH, 2005.
25 Haggerty J, Reid R, Freeman G *et al.* Continuity of care: a multidisciplinary review. *British Medical Journal* 2003;327:219–21.
26 Smith AC, Bensink M, Armfield N, Stillman J, Caffery L. Telemedicine and rural health care applications. *J Postgrad Med* 2005;51:286–93.
27 Eminovic N, Wyatt JC, Tarpey AM, Murray G, Ingrams GJ. First evaluation of the NHS Direct online clinical enquiry service: a nurse-led web chat triage service for the public. *J Med Internet Res* 2004;6:e17.

28 Lattimer V, Turnbull J, Burgess A *et al.* Effect of introduction of integrated out of hours care in England: observational study. *British Medical Journal* 2005;331:81–4.

29 Richards DA, Godfrey L, Tawfik J *et al.* NHS Direct versus general practice based triage for same day appointments in primary care: cluster randomised controlled trial. *British Medical Journal* 2004;329:774.

30 Greatbatch D, Hanlon G, Goode J *et al.* Telephone triage, expert systems and clinical expertise. *Sociol Health Illn* 2005;27:802–30.

31 University of Southampton Faculty of Medicine, Health and Life Sciences. Exemplar programme for integrated out-of-hours care: final report. University of Southampton, 2004.

32 Department of Health. Reforming emergency care: first steps to a new approach. London: DH, 2001.

33 Department of Health. Raising standards for patients new partnerships in out-of-hours care: an independent review of GP out-of-hours services in England. London: DH, 2000.

34 Salisbury C, Chalder M, Manku-Scott T, Pope C, Moore, L. What is the role of walk-in centres in the NHS? *British Medical Journal* 2002;324:399–402.

35 Fisher J, Cooke M. What is the evidence for increases in A & E and what are the causes? University of Warwick: 2006.

36 Select Committee on Public Accounts. Department of Health: improving emergency care in England (Sixteenth Report of Session 2004/05). London: The Stationery Office, 2005.

37 Department of Health. An organisation with a memory: report of an expert group on learning from adverse events in the NHS. London: DH, 2000.

38 Rajpar S, Smith M, Cooke, M. Study of choice between accident and emergency departments and general practice centres for out of hours primary care problems. *Journal of Accident and Emergency Medicine* 2000;17:18–21.

39 CROYDOC – information from CROYDOC.

40 House of Commons Health Committee. GP out-of-hours services (Fifth Report of Session 2003/04). London: The Stationery Office, 2004.

41 Males T. Telephone consultations in primary care: a practical guide. London: Royal College of General Practitioners, 2007.

42 Department of Health. National quality requirements in the delivery of out-of-hours services. London: DH, 2004.

43 Foster J, Dale J, Jessop L. A qualitative study of older people's views of out of hours services. *British Journal of General Practice* 2001;51:719–23.

44 Royal College of General Practitioners. Clinical audit toolkit. 2007 (in press).

45 Committee of Public Accounts. A safer place for patients: learning to improve patient safety. London: Committee of Public Accounts, 2006.

46 Department of Health out of hours Website. OOH exemplar sites. http://www.out-of-hours.info/exemplarlist.php

47 NHS Clinical Governance Support Team. Guidance on the role and effective use of chaperones in primary and community care settings. London: NHSCGST, 2005.

48 Royal College of Physicians. Acute medicine: making it work for patients. A blueprint for organisation and training. Report of a working party. ISBN 1 86016 204 5. London: RCP, 2004.

49 Joint Royal Colleges of Physicians Training Board. The physician of tomorrow. Curriculum for general internal medicine (acute medicine). March 2007.

50 NHS Institute for Innovation and Improvement. Focus on: short stay emergency care. 2006.

51 Royal College of Physicians. Management of the older medical patients. London: RCP, 2000.

52 Royal College of Physicians. The interface of accident and emergency and acute medicine. Report of a working party. London: RCP, 2002.

53 Paterson R, Macleod DC, Thetford D *et al.* Prediction of in-hospital mortality and length of stay using an early warning scoring system: clinical audit. *Clin Med* 2006;6:281–3.

54 Subbe CP, Kruger M, Rutherford M *et al.* Validation of an early warning scoring system in medical admissions. *QMJ* 2001;94:521–6.

55 Seward E, Greig E, Preston S *et al.* A confidential study of deaths after emergency medical admission: issues relating to quality of care. *Clin Med* 2003;3:425–34.

56 Society for Acute Medicine (UK). Recommendations for medical assessment/admission units. www/acutemedicine/org/uk

57 Emergency Assessment unit checklist. www.publications.doh.gov.uk/emergencyassessmentunitchecklist.htm

58 Wells JL, Seabrook JA, Stolee P, Borrie MJ, Knoefel F. State of the art in geriatric rehabilitation. Part I: review of frailty and comprehensive geriatric assessment (review). *Arch Phys Med Rehabil* 2003;84: 890–7.

59 Gunnell D, Bennewith O, Peters TJ, House A, Hawton K. The epidemiology and management of self-harm amongst adults in England. *J Public Health* 2005;27:67–73.

60 Bennewith O, Gunnell D, Peters T, Hawton K, House A. Variations in the hospital management of self harm in adults: observational study. *British Medical Journal* 2004;328:1108–9. http://eprints.ouls.ox.ac.uk/archive/00000970/01/bennewith_variations.pdf

61 National Institute for Clinical Excellence. Self-harm: the short-term physical and psychological management and secondary prevention of self-harm in primary and secondary care. CG16. 2004. http://www.nice.org.uk/guidance/CG16/niceguidance/pdf/English

62 The Royal College of Psychiatrists and British Association for Emergency Medicine: CR118. Psychiatric services to accident and emergency departments. 2004. http://www.rcpsych.ac.uk/publications/collegereports/cr/cr118.aspx

63 The Royal College of Psychiatrists. CAMHS in the ED (in preparation, to be published 2007).

64 National Service Framework (NSF) for children, young people and maternity services. London: Department of Health, 2004.

65 Towards safer childbirth. Minimum standards for the organisation of labour wards. London: Royal College of Obstetricians and Gynaecologists; Royal College of Midwives, 1999.

66 The future role of the consultant. A working party report. Royal College of Obstetricians and Gynaecologists, December 2005.

67 Improving services for children in hospital. London: The Commission for Healthcare Audit and Inspection, February 2007.

68 Report of the Review of NHS pathology services in England. An independent review for the Department of Health. London: DH, August 2006.

69 Kyle B. Competency crisis facing the NHS. *British Medical Journal Careers* 2007;110:47–8.

70 Cramb R. Guidelines on point of care testing. Royal College of Pathologists, 2004. Accessed at http://www.rcpath.org/resources/pdf/Point-of-CareTesting-updatedOct04.pdf on 26 March 2007.

71 CPA (UK) Ltd. Accessed at http://www.cpa-uk.co.uk on 26 March 2007.

72 Joint guidance from The Royal College of Radiologists and The Society and College of Radiographers. Team working within clinical imaging. A contemporary view of skills mix. London: 2007.

73 www.connectingforhealth.nhs.uk/systemsandservices/pacs (last accessed 08/05/07)

74 www.18weeks.nhs.uk/public/default.aspx (last accessed 08/05/07)

75 The Royal College of Surgeons of England *Delivering High Quality Surgical Services for the Future.* March 2006 (http://www.rcseng.ac.uk/service_delivery/reconfig)

76 Department of Health. *The NHS Plan: A plan for investment. A plan for reform.* London: The Stationery Office; July 2000

77 The Royal College of Surgeons of England *Developing a Modern Surgical Workforce.* January 2005 (http://www.rcseng.ac.uk/rcseng/content/publications/docs/modern_surgical_workforce.html)

78 The Royal College of Surgeons of England *The Surgical Workforce 2006: Interim Report and Policy Update from The Royal College of Surgeons of England* (http://www.rcseng.ac.uk/rcseng/content/publications/docs/workforce_policy_update.pdf))

79 Relationship Between Trauma Center Volume and Outcomes. Nathens A et al, Journal of the American Medical Association 2001;285:1164–1171

80 The Royal College of Surgeons of England/The British Orthopaedic Association. *Better Care for the Severely Injured.* July 2000. (http://www.rcseng.ac.uk/publications/docs/severely_injured.html/view?searchterm=better%20care%20severely%20injured

3.14 Lay summary

In November 2006 the Department of Health (England) invited the Academy of Medical Royal Colleges ('the Academy')* to describe its position on the organisation of acute services. This paper is a summary of the Academy's report: *Acute health care services, Report of the Working Party of the Academy of Medical Royal Colleges, September 2007*, which contains recommendations for the future of acute hospital services with specific reference to emergency care services, maternity services (obstetrics), children's services (paediatrics), cardiovascular disease, stroke, and medicine for the elderly (geriatrics).

3.14.1 Background

Since the NHS was first set up in 1948, it has continued to grow and adapt to changes in scientific and medical knowledge as well as to changes in society. The patterns of diseases have changed with a decline in infectious diseases and more people living with long term conditions. There has been an increase in the population. More people are living longer with more people living on their own and there are more one parent families. There have also been changes in transport for example more cars that can affect how patients use medical services. New hospitals have been built and continue to be built. However many hospitals are older and were built to serve centres of populations that may have changed. There have also been changes in the way hospitals are staffed with greater recognition of the skills of professionals other than doctors and the emphasis on team work in treating and caring for patients.

3.14.2 The medical workforce

Historically, the NHS has depended a great deal on junior doctors in particular to work out of hours. The recent introduction of the European Working Time Directive (EWTD) means that by 2009, doctors will have to work an average 48 hour week. This is much less than the number of hours doctors have worked previously and will require a hospital to employ more doctors to keep the hospital open 24 hours a day, 7 days per week. Some specialties currently do not have sufficient doctors to meet this demand.

There is good evidence that the results of treatments are better if carried out by trained doctors and the current changes in the training of junior doctors should mean that future care will be delivered by doctors who have completed their training. In addition to these changes the numbers of international medical graduates who currently form a substantial part of the hospital workforce, coming to the UK will reduce as a result of recent legislation.

3.14.3 Adapting to change

There have always been changes in the way that health care has been delivered since the start of the NHS. When the changes described above are considered, it becomes important to examine the ways that acute services are organised in order to continue to:

- Ensure a high quality service for all patients
- Ensure safe services for all patients

* The Academy of Medical Royal Colleges is the organisation that represents the collective views of 19 medical royal colleges and faculties

- Respond to new ways of treating patients who require very specialist care and equipment
- Ensure that the public gets the best value form the NHS

Many of our existing general hospitals can currently provide a wide range of services including accident and emergency and other specialist services. There is good evidence that patients who have had, for example, a serious head injury or a heart attack need specialist care given by highly skilled staff with access to the most sophisticated equipment. These patients make up a small proportion of patients treated in acute hospitals. There is little or no evidence that most patients currently admitted to hospital with other problems need these highly specialised facilities.

3.14.4 Description of existing hospitals

There are at present different types of hospitals. Community hospitals are often situated in smaller towns and a providing a variety of services including out patient clinics from the general hospital, X-Ray department, and walk-in centre for minor injuries. Some community hospitals have inpatient beds. The district general hospitals provide a wide range of services including accident and emergency, children's services, intensive care, surgical and medical and radiology and pathology. Some larger hospitals may, in addition, have some very specialised departments such as neurosurgery, neurology and cardiac services, to provide for a large population. Even now hospitals seldom offer identical services. There will be variations resulting from when the hospital was developed and local population need.

3.14.5 Definitions of acute, urgent and emergency care

Different words are used to describe what is meant by acute care and where patients may be treated for problems described as acute.

Primary care
This is where patients of all ages go to be diagnosed and treated for all sorts of problems by general practitioners (GPs) and their teams. The GP is the first person to be consulted by the majority of patients for non serious and some acute problems.

Acute care
This is where the patient has a new problem that needs assessment and advice within a few days. The largest amount of this work is currently carried out general practitioners. Some will be provided by 'out of hours services', walk in centres and in district general hospitals.

Urgent care
Urgent care provides the diagnosis and treatment of common problems where the patient thinks there is some urgency. For example a chest infection or bad urine infection. Most of this care is given by GPs although, increasingly, 'out of hours services', urgent care centres and accident and emergency departments are seeing patients with urgent care needs.

Emergency care
Emergency care involves the diagnosis of an injury or illness where the patient, the doctor or other health care professional thinks that the patient needs immediate assessment of the problem. This type of care is mainly provided by the out of hours services, accident and emergency departments and hospitals.

This is a complex classification as there is a large overlap between the different groups. It is estimated that approximately 20–30% of patients have a problem that could be dealt with in any of these settings.

3.14.6 The Academy's recommendations for the organisation of acute services

Patients requiring acute services come from all age groups (although the majority of patients with a medical problem are over 65), and suffer from many different problems. The medical problems include chest pain, worsening of an existing chronic illness in an older patient, self harm. Surgeons and anaesthetists are needed for the treatment of fractures, internal bleeding, burns and injuries caused by accidents. 25% of patients attending A&E departments are children, most will be treated by A&E staff but about 10% will need further care from looked a children's doctor (paediatrician). X-ray (imaging) and laboratory departments are also required for all these situations. The following five examples are given to show potentially, how and where patients may receive acute care.

There will be variations throughout the country depending on the needs of the local communities.

General practitioner (primary care services) should provide rapid access to advice, diagnosis and treatment for most less serious problems and referral as appropriate to a hospital for further investigation. These services will continue to be provided close to where people live.

Community hospitals or urgent care centres will concentrate on the treatment of less serious injuries and illnesses. They will have some types of X-ray and laboratory services. There might be specialist clinics or wards for the care of older people and patients with more serious long term conditions.

Local hospitals will have all the services required to provide an emergency service for most patients. It may not have 24 hour surgical or inpatient specialised children's services. Ill patients requiring hospital treatment for surgical problems or serious childhood illness might be taken directly to the general hospital by the ambulance service or transferred after initial treatment at the local hospital.

District hospitals will be similar to local hospitals but will usually have 24 hour children's services, 24 hour surgical services and possibly maternity services and will serve a population of 250,000-300,000.

District hospital with highly specialised services will be similar to a general hospital but in addition will have at least one of the very specialised services such as those required for serious head injuries or sudden heart attack and will be serving a larger population of about 2–3 million people.

3.14.7 Conclusion

These changes are being recommended to ensure that the highest standard of safe acute care is provided for all patients by well qualified staff as well as to make the best use of available resources. They do not mean that all acute services will change. In some parts of the country there may be little change. In other parts of the country specialist services may move from the district general hospital to a general hospital providing specialist services for a larger population. There must be local discussion about proposed changes. When changes are introduced there will be clear information widely available for everyone explaining the implications of the changes.