An Orthopaedic Plan for Wales

Source Document
# CONTENTS

1. Introduction 3  
   1.1 Rationale 3  
   1.2 Objectives 4  
   1.3 Background 5  
   1.4 Interim Plan 6  
   1.5 Strategic Approach 7  

2. Scoping the Problem 9  
   2.1 Demand 9  
   2.2 Activity 20  
   2.3 Capacity 29  
   2.4 Activity/ Capacity Gap 45  

3. Patient Access 53  
   3.1 Waiting Times and Waiting Lists 53  

4. Managing Demand 63  
   4.1 Prevention 63  
   4.2 Primary Care 72  

5. Using our Capacity Efficiently 81  
   5.1 Management Processes and Good Practice 81  
   5.2 Service Improvement and Innovation 88  
   5.3 Discharge and Rehabilitation 96  

6. Using our Staff Effectively 103  
   6.1 Workforce 103  
   6.2 Education, Training and Research 112  
   6.3 Diagnostic and Therapy Services 117  

7. Adding Capacity 123  
   7.1 Protected Elective Capacity 123  

8. Informing the Process 129  
   8.1 Management Information and Data Sources 129  

9. Conclusions 133
10. Appendices
Appendix 1: Membership of the Orthopaedic Group 135
Appendix 2: Figures and Tables 136
Appendix 3: References 138
Section 1: INTRODUCTION

1.1 Rationale

This strategy is intended to bring about change: change to the way in which aspects of trauma and orthopaedic services are delivered, and change in the time that patients have to wait to access these services. Whilst a great deal has been achieved in recent years, there is more to be done to build on developments to date. This strategy seeks to identify those factors that might impede continuing progress and to identify long term, sustainable solutions that can be implemented over the next ten years to improve access and reduce waiting times for the people of Wales. Delivery of the changes envisaged will be in incremental stages that represent steady and sustainable improvement.

**Aim:** To develop a detailed strategy for the delivery of a high quality and timely orthopaedic service across Wales, taking into account the impact of emergency trauma on elective capacity. To undertake early actions towards providing a sustainable service solution, including compliance with national waiting times targets.

Waiting times and associated issues surrounding equity of patient access to care remain high on the health agenda. Shortfalls in orthopaedic services in Wales are firmly acknowledged and current waiting times for outpatient appointments and inpatient/daycase treatments are recognised as being too long. The long waiting times have been the subject of much debate and planning in recent years and this strategy builds on previous approaches, in order to deliver continued reductions. Currently, however, within Wales inequalities remain, with the greatest challenges occurring in the South East.

The recent *Review of Health and Social Care* (Welsh Assembly Government, 2003) warned that, ‘demand for health and social care services could overwhelm the system of provision and the workforce,’ and it is evident that in many areas of the country demand for orthopaedic services outstrips both activity and capacity. There is now a clear expectation from Ministers that waiting times in this speciality must be driven down in identified hot spot areas as a matter of priority, followed by the development of firm plans for ongoing improvement throughout the country.

This strategy proposes that this can be achieved through a combination of tighter management, service improvement and innovation, along with strong demand management and an increase in protected elective capacity. It is supported by an interim strategy, which comprises of a number of early actions intended to underpin the long-term approach. All endeavours must be firmly based on a whole systems approach to the patient pathway.
This work is to be undertaken within a wider strategic context, particularly linking with the recommendations of *The Review of Health and Social Care* and development of local Health, Social Care and Well-Being strategies.

### 1.2 Objectives

In order to provide a focus for service and capacity improvement, a Welsh Assembly Government Orthopaedic Working Group was formed to advise on development of the strategy. Membership of this group, which includes consultant representatives, is given in Appendix 1. The stated objectives of the group and therefore of the strategy were:

- To analyse current levels of orthopaedic service provision within health communities in Wales, and use evidence available to confirm problem hot spots.

- To review the former Health Authority Orthopaedic Service Reviews and to critically examine their proposed solutions.

- To consider opportunities to modernise aspects of the service to improve patient pathways.

- To collate waiting times and activity information in order to confirm current trends, informing decision making about future approaches.

- To analyse adequacy of available orthopaedic capacity (inpatient/daycase/outpatient) and develop innovative short and long term expediency measures.

- To develop a detailed two-part action plan, giving deliverable short term solutions to reduce long waiting times and to provide sustainable long term solutions to ensure accessibility to appropriate treatment pathways.

- To investigate workforce issues, including recruitment and retention for all members of the orthopaedic team (consultants, training grade medical staff, nurses, theatre staff, Allied Health Professionals etc).

- To engage with the University of Wales College of Medicine to pursue the re-establishment of a Chair in Orthopaedics to provide research/academic leadership within the profession.

- To consider financial implications and to source future investment.

- To devise suitable performance management criteria and an evaluation system.

The Working Group met regularly between October 2002 and November 2003 to consider evidence relating to the current service and agree a combination of workable methodologies for overcoming identified shortfalls. Where
necessary, additional professional advice was sought out with the membership of the group. The resulting strategic approach is the conclusion of an iterative process, which has been adopted by the wide range of service representatives involved.

1.3 Background

The practice of trauma and orthopaedic surgery has changed dramatically in recent years, leading to increased expectations and demand. Trusts continue in their attempts to reduce waiting times, and waiting times figures demonstrate that considerable progress has been made in meeting national targets set by the Welsh Assembly Government. However, the impact of trauma and emergency medical admissions can have a serious effect on the availability of cold elective orthopaedic capacity. Trauma accounts for approximately 50% of the trauma and orthopaedic workload and routinely impacts upon organisations’ ability to deliver their planned elective work. Continual reductions in orthopaedic waiting times targets in England, and a recent European Court Ruling on undue delay provide a further imperative for reaching early solutions which will reduce waiting times in Wales in a sustainable manner.

In response to growing concerns about the size of orthopaedic waiting lists and the waiting times that patients were experiencing, a series of Health Authority Reviews of Orthopaedic services were undertaken during the late 1990s. Further to these, the Welsh Assembly Government provided a report giving recommendations for trauma and orthopaedic services in South East Wales (Salter, 1999). In 2000/01, the Welsh Assembly Government requested Health Authorities to each develop a three year plan for reducing their orthopaedic waiting times. To date these plans have had limited sustainable impact on the service.

In 2000 the Assembly established the Innovations in Care (IiC) team to encourage innovation and best practice in health care. This team was empowered to work with service providers to improve efficiency and to offer a focus for service renewal, in advance of any further investment in capacity. As part of their work, they have focused on models for the organisation and delivery of trauma and orthopaedics in Wales and substantial investment has been made.

In January 2001, the Minister launched *Improving Health in Wales* (Welsh Assembly Government, 2001), which set out clear delivery criteria for reducing long waiting times as well as restructuring orthopaedic services. *Improving Health in Wales* also made a commitment ‘to ensuring that Welsh residents should not face longer waits than people elsewhere in the United Kingdom.’ Consequently, waiting times targets in Wales will inevitably become more challenging in future years.

Significant amounts of funding have been provided in support of Wales’ waiting times targets. In May 2000, the Minister for Health and Social Services made available over £40 million for health communities to tackle
unacceptably long waiting times and emergency pressures in Wales. In June 2001, the Minister announced a £12 million package to reduce the maximum wait for inpatient / daycase orthopaedic treatment to 18 months by July 2002. In order to ensure that the service maintains the target of no over 18 month waiters for orthopaedic inpatient / daycase treatment, additional waiting list money was allocated in 2002/03 and 2003/04. However, much of this has been non recurrent, and as such has had limited ongoing impact.

In response to specific concerns, Professor Brian Edwards was commissioned to undertake a Review of Orthopaedic Services in Gwent (Edwards, 2003), and reported to the Minister for Health and Social Services in January 2003. His report found that the orthopaedic waiting lists in Gwent were far too long, and highlighted management, innovation and capacity issues which contributed to the problem. He also concluded that the NHS in Wales does not have enough capacity in this speciality to handle current pressures and predicted future demand. The Edwards’ report endorsed proposals to provide additional capacity in Gwent and Cardiff & Vale NHS trusts.

Ministers place a high priority on tackling all waiting times in a sustained way. In recent years trusts have been heavily reliant upon finance for waiting list initiatives and private sector contracts to help meet the targets set. This must change if there is to be an improved sustainable orthopaedic service in Wales. The function of this plan is to outline approaches to reduce waiting times and to facilitate equity of access to this speciality in Wales, with the resultant actions focusing mainly on the delivery of secondary care elective orthopaedic services.

### 1.4 Interim Plan

The working group places considerable emphasis on the importance of phased, long term sustainable solutions, but has recognised that these may take time to implement. As a result a series of initial solutions were developed to make some early impact. These take into account the recommendations of the Review of Orthopaedic Services in Gwent (Edwards, 2003) and recognised the fact that South East Wales has the longest waiting times for inpatient / daycases and outpatients in Wales. The initial solutions adopted by the Minister in February 2003 cover:

- Targeted, phased investment in additional capacity
- Extending the number of Specialist Registrar training places
- Re-establishing the academic chair in Orthopaedics to raise status within the profession and improve clinical recruitment and retention
- Continuing Innovations in Care programmes, particularly waiting list management, outpatient bookings, theatre utilisation, and the wide spread use of extended scope physiotherapists
- Ringfencing of orthopaedic beds for elective surgery
- Rationalisation of prostheses costs to facilitate increased activity and value for money
To support these recommendations the Minister committed a revenue funding stream of £5 million recurrently, specifically allocated for:

- providing a further four Specialist Registrar training places commencing 2003/04
- supporting and developing services and capacity at St Woolos Hospital in Newport
- developing the first phase of an orthopaedic ambulatory care centre at Llandough Hospital in Cardiff, and
- strengthening services in North Bro Taf by providing additional support for the new consultant orthopaedic surgeon in North Glamorgan hospital at Merthyr Tydfil

In addition, capital investment of over £10 million was earmarked for the schemes in St Woolos and Llandough Hospitals to achieve additional elective treatments and facilitate meaningful and sustainable improvements in orthopaedic service delivery and waiting times.

The working group recognised that, whilst early action in the South East region will go some way towards alleviating identified pressures, there remains much to be done across Wales to reduce orthopaedic waiting times overall and to achieve more equitable and sustainable patterns of care. Sustained service development is essential and these interim measures form part of an ongoing programme of reform and investment in orthopaedics across Wales.

1.5 Strategic Approach

The long term approach builds upon the interim plan and maps the way forward for the future. It may also offer a blueprint to other specialties that are experiencing long waiting lists and times.

The intent of this plan is to optimise opportunities for elective orthopaedic work and to ensure that it is not engulfed by emergency trauma. It considers management, service improvement and capacity issues across the whole of Wales which will bring sustainable solutions and involve new ways of working, with closer liaison between secondary care, primary care and intermediate care services. It places considerable emphasis upon the increasing importance of prevention and early intervention and the scope for improved demand management. Redirection of patient flows to ensure treatment in the most appropriate care setting and consolidation of alternative patient pathways is also a major consideration. At the same time, the plan acknowledges the need to increase protected elective capacity within secondary care, but with tighter management and adopting best practice, along with an increased focus on whole systems working.

This document offers the evidence to support the strategy. This involves scoping the problem, considering epidemiology and factors governing demand, focussing on activity and current capacity, plus the range of drivers and enablers. These influences form the basis upon which the recommendations are built. For ease of reference, the conclusions and
recommendations for change are given in a separate, shorter strategic document.
Section 2: SCOPING THE PROBLEM

2.1 Demand

2.1.1 Demography

Population size
Population size and its geographical distribution are key factors governing demand for health services. The current population of Wales is just over 2.9 million. Demographic projections indicate that the population might rise by 41,000 over the next 10 years. This represents a percentage increase of over 1%. Figure 1 illustrates the actual and projected population 2001 – 2013, by age bands.

Figure 1: Projected Population in Wales by Age, 2001 - 2013

The population of Wales is projected to increase by more than 1% over the next 10 years, but with wide variation by age group

In comparison, UK wide projections of population suggest a rise of 3%, with Northern Ireland having the greatest rate of projected growth. The uptake of services and increased demand may be affected by this distribution, as may patterns of patient flows across the country.

Population Density
Population concentration within Wales will also have a major influence on the level of demand in each of the three regions and traditionally service provision has been planned to meet the health and social care needs locally. Figure 2
illustrates the population density across Wales. From this it can be seen that the South East Wales health economy has the greatest population concentration per square kilometre.

**Figure 2: Local Authority Population Density**

Source: Digest of Welsh Local Area Statistics (2003)

The greatest population concentration is in South East Wales

**Resident Population**

Health and Social Services in Wales are organised into three regions or ‘health economies.’ Within these, there are 22 Local Health Boards (LHBs) whose boundaries are co-terminous with those of the Local Authorities. Local Health Boards are commissioners of both primary and secondary care services. It is normally the resident population base that is used as a proxy for demand to plan service requirements, rather than that of patient flow.

43% of the population of Wales live in the South East region
Catchment Population
Within Wales, although there are some cross boundary flows, and out of area commissioning, services to meet the health and social care needs of the population are, in the main, locally based. Nevertheless, inevitably, a proportion of referrals to each region is from outside that region, thereby increasing the actual catchment population.

46% of the catchment population of Wales is treated in the South East region

Cross Border Flows
In addition, the flow of patients in and out of Wales can have a significant impact on service provision. Analysis confirms that the number of English residents treated in Wales each year as an emergency trauma inpatient (n=1,214) is similar to the number of Welsh residents treated in English hospitals (n=1,414). However, some regional variation is apparent.

For emergency trauma patients, there is an overall balancing of cross border flows

For elective orthopaedic work, a different picture emerges. In 2001/02, 13% of the Welsh residents admitted as an elective inpatient or daycase at a NHS hospital received their treatment at an English trust (n=3,666). Conversely, only 210 English residents received their elective treatment in a Welsh trust.

For elective orthopaedic patients, there is a net cross border outflow of patients for treatment in English trusts

Cross border flows are greatest in North Wales. Many orthopaedic services are jointly provided by the North East Wales NHS Trust in Wrexham, and by the Robert Jones and Agnes Hunt Orthopaedic and District Hospital Trust in Gobowen, near Oswestry. That trust is a provider of routine and specialist orthopaedic services for local, regional and national elective referrals, but does not provide a trauma service. This has lead to an increasing trend of elective flows from North Wales to English trusts, which may in part, be due to commissioning arrangements in this locality, as well as the joint appointment of clinical staff in Wrexham and Gobowen and the effect of inequitable waiting times.

There are significant differences in waiting times in Wales and England. When considering the cross border issues this disparity and inequity is a cause of confusion and anxiety for clinicians, managers and patients.

Ageing Population
Statistics show that currently 29% of the population is aged 55 and over. Historic trends demonstrate that there has been a steady overall growth in the older population in Wales, and this growth is set to continue, as shown in Figure 3. However, the highest projected increase is for those aged 65 – 74 with an expected growth of 22% between 2001 and 2013. The number of males aged over 55 is increasing at a greater rate than the females, although
female element of the elderly population remains markedly higher than the males.

**Figure 3: Projected Change in Population by Broad Age Bands**

![Projected Change in Population by Broad Age Bands](image)

Source: 2001-based interim population projections, Government Actuary's Department (GAD)

The population aged 55 and over will continue to increase. The greatest projected increase is for those aged 65 – 74

Further consideration of the statistics relating to the elderly population by region is illustrated in Figure 4. The proportion of the population aged over 55, and the distribution between age bands within each region in Wales is broadly the same.

**Figure 4: Population Aged 55+ Within Regions in Wales**

![Population Aged 55+ Within Regions in Wales](image)

Source: ONS (2002) - Mid-year population estimates
2.1.2 Epidemiology

Service Needs of the Elderly

These changing trends in the population profile are mirrored by the changing trends in demand for services both for emergency trauma and elective orthopaedics. Older people are some of the most frequent users of health care, with hospital admissions increasing with age. For example, in 2001/2002 there were approximately 178,000 admissions involving people aged 65 and over, which accounts for a third of all hospital admissions. In addition, lengths of stay are longer for older people, often due to their fragility and associated co-morbidity.

For trauma and orthopaedics, evidence demonstrates that older people have a much higher rate of fracture than younger people. This can be seen in Figure 5 which illustrates that this section of the population suffer a greater incidence of trauma than the rest of the population, therefore placing the greatest level of demand on the service. Similarly, epidemiological studies of the distribution of osteoarthritis of the hip have shown that prevalence increases with age, with ‘5% or more of the population older than 65 years showing evidence of severe change on radiography’ (Frankel et al 1999). The impact of these needs on the available resource is significant.

Figure 5: Emergency Trauma Inpatient Activity Rates per 100,000 Resident Population by Age Group

Demographic changes leading to an increasing elderly population will contribute significantly to increasing requirement for emergency trauma and for major elective orthopaedic surgery.
Mortality and Morbidity

Over the last century, changes in lifestyle, living conditions and health and social care provision have led to improvements in life expectancy. In South Wales, the history of mining and heavy industry influenced the health of older people, particularly men, leading to a high death rate from chronic obstructive pulmonary disease. However, by the 1970s demand related largely to coronary heart disease, strokes and cancer. Over the last three decades, the rates of coronary heart disease and stroke have declined and the rates of cancer have decreased in the under 70s. As these cohort effects work through the population, the overall outlook in terms of premature death is encouraging but this will inevitably impact on the need for increased trauma and orthopaedic interventions.

Demographic changes over the last two decades have already affected demand. Assuming no change in their level of fitness, the growing numbers of older people will lead to an increase in the incidence of hip fracture, the prevalence of hip and knee disease, and the need for hip and knee replacement. As people are living longer, together with the fact that people are able to be more active in their life after surgery, then the number of major joint replacements and revisions is likely to increase. This will have a significant impact on demand for orthopaedic surgery in Wales.

There is also an increasing recognition that the general health of older people needs to be proactively improved. Mobility is taken for granted until something happens to threaten it. In older people, a very small reduction in mobility can precipitate an inability to perform everyday activities. This can lead to isolation, social exclusion, dependency, risk of depression and further ill health. Whilst this emphasises the need to invest in a healthy lifestyle throughout life in order to maintain mobility in later life, for those who are already on the waiting list for hip and knee replacement there are inevitably consequences to their quality of life. Recent projections have shown that increasing fitness of successive cohorts of older people in the United Kingdom could reduce the burden of disability by threefold by 2051.

The practice of trauma and orthopaedic surgery has also changed dramatically in recent years. The National Bed Inquiry (DTI, 1999) considers that the drivers likely to have the most significant impact on future service requirements are medical advances, information technology, developments in the evidence base and changing consumer and professional attitudes. Advances have been made in understanding orthopaedic diseases and disorders, as well as the way in which they can be treated. This has led to an increase in expectation and demand that has not necessarily been accompanied by a corresponding increase in service provision, or by uniform implementation of best practice in service delivery and management. The result is that demand currently exceeds activity in Wales.

The burden on orthopaedics is influenced by three adverse pressures:
Increasing life expectancy, new technologies and raised public expectations
Source: DTI (1999)
Primary Hip Replacement Rates
Total hip replacement is one of the most common elective procedures, and as such is a good indicator of orthopaedic demand and provision. However, there are huge variations in the rate of hip replacements undertaken per 100,000 population, which highlights current shortfalls in access in Wales.

Figure 6 shows crude rates of primary hip replacement across whole populations. This suggests that a lesser number of this key procedure per 100,000 population are performed in Wales when compared to other countries.

Figure 6: Crude Primary Hip Replacement Rate by Country


Hip replacement rates in Wales are lower than the rates in other countries

However when activity is considered at a regional level, Mid & West Wales and North Wales are shown to be able to deliver a comparable number of this procedure to each other and to England. Figure 7 gives the crude primary hip replacement rate for residents in all three regions in Wales. This demonstrates a lower rate of access to primary hip replacement across all ages for residents within the South East region at 48 per 100,000 population as compared with 85 and 84 per 100,000 population for Mid & West and North Wales respectively. This highlights the shortfall in access to primary hip replacements as being mainly focused in South East Wales.
Figure 7: Crude Primary Hip Replacement Rate by Region

Source: PEDW (2001 / 02)

Hip replacement rates in South East Wales need to increase to compare with the rates in the other regions, which are comparable to rates in the other countries cited.

More detailed analysis at health community level reveals further inequities. Wide variations in access to primary hip replacement activity for residents of the 22 LHB areas in Wales are highlighted through consideration of the European Age Standardised rate for primary hip replacements as shown in Figure 8. Of particular note, is that residents within Blaenau Gwent have 3 times the rate of access to primary hip replacement than the residents in Newport.

Figure 8: European Age Standardised Primary Hip Replacement by LHB

Source: ONS (2001)
There are considerable variations in access to hip replacements across the LHB areas, even within South East Wales. However the areas with the lowest access rates, largely coincide with the areas where orthopaedic waiting times are longest.

Activity rates for other procedures reveal similar findings (hip revisions, primary knee replacements, cartilages) with considerable variation in access rates across the health economies.

2.1.3 Incident Need

Incident need relates to the levels of activity that must be undertaken each year in order to maintain the balance of supply and demand. This is based upon the requirements to meet current levels of need if there was no waiting list; it is not intended to take into account addressing the backlog of waiting patients. Neither does it take into account latent demand (demand that has yet to be identified).

Current Incident Need (Primary Hips)

The incident need for primary hip replacement is regarded as a useful indicator of current demand for a wider range of orthopaedic procedures.

Frankel et al (1999), in a recent study, postulate that “there has been a long standing failure in many countries to satisfy the demand for total hip replacement.” Their research, based on specific snapshot needs assessments for populations aged between 35 and 85, set out to estimate the population requirement for primary hip replacement in England. A further study by Juni et al (2003) applied this methodology to knee replacement surgery. These studies assessed a large sample of the population between these two ages, who were identified as requiring hip replacement based on both clinical and radiological findings.

Their methods and assumptions have been used to estimate levels of demand in Wales. Figure 9 shows current access to hip replacements as compared with estimated need extrapolated for the population in the 3 regions and in Wales.
This demonstrates that Wales as a whole is not providing sufficient access to meet current levels of need. The incident need is greater than the supply especially in South East Wales; Mid & West and North Wales only require a marginal increase in activity in order to meet current levels of need. The South East Wales health economy need to double their current levels of access in order to address current demand for primary hip replacement.

Current levels of access do not meet the incident need for primary hip replacements across Wales, particularly in South East Wales where double the current level of access is needed

**Projected Incident Need (Primary Hips)**

Estimates of projected need given in Figure 10 build upon incident need figures for the three regions. Projections take into account the demographic changes predicted to occur in Wales with the expansion of the proportion of the elderly population, who are the most likely to require hip replacement, and the increase in the need for revisions as patients outlive the life of their prosthesis.

If there is no change in current service provision, then Figure 10 shows estimated projected access required to prevent the development of a waiting list.

Projected incident need for primary hip replacement across Wales suggests an increasing gap in provision, based on current levels of service.
2.1.4 Prevalent Pool

The prevalent pool relates to unmet demand in the wider sense. It comprises the total number of procedures on the waiting list, plus latent demand. The studies by Frankel et al (1999) and Juni et al (2003) also addressed unmet need for their given population, which provided an assessment of the prevalent pool of hip disease requiring hip replacement. Their figures are based on an assumption that 19% of patients whose physiological condition showed a requirement for surgery, were either too unfit for or did not wish to have the operation. Estimates of the prevalent pool for Wales based on this approach suggest a significant capacity gap to be addressed, although this must be regarded as 'a worst case scenario.'

Table 1: Estimate of Prevalent Pool Requiring Hip Replacement

<table>
<thead>
<tr>
<th>Region</th>
<th>Estimated Prevalent Pool (based on 81% uptake)</th>
</tr>
</thead>
<tbody>
<tr>
<td>South East Wales</td>
<td>8,154</td>
</tr>
<tr>
<td>Mid &amp; West Wales</td>
<td>6,750</td>
</tr>
<tr>
<td>North Wales</td>
<td>4,539</td>
</tr>
<tr>
<td>Wales</td>
<td>19,443</td>
</tr>
</tbody>
</table>

Source: PEDW 2001/02

This suggests that latent demand in Wales is significant, which if added to the waiting list could totally unbalance the system.

In a worst case scenario latent demand for hip replacements is significant and its potential impact must be recognised.
2.2 Activity

Activity may, to some extent, be treated as a proxy for capacity, and offers a useful starting point for assessing the extent of the capacity gap in Wales. Available figures suggest that levels of activity have reduced marginally, and also demonstrate that there is local variation in trauma and orthopaedic activity rates across Wales. This variation is in part due to the capacity available, the service models in place in each health community and the extent to which trauma impacts on elective orthopaedic work; limitations of data capture are also felt to skew the picture.

It is essential though, that activity undertaken makes optimum use of the resources and assets available, taking into account innovative ways of working and suitable efficiency measures.

Overall activity appears to have reduced marginally, and there are variations in activity rates in Wales influenced by differing service models, levels of efficiency and the impact of trauma

2.2.1 Activity Recording

Underlying reasons behind the apparent reduction in activity across Wales are various, and conclusions can only be drawn with caution. For example, variations in data coding definitions across localities can affect the figures, and for daycases in particular a high proportion are submitted without a procedure code which results in a significant element of estimation. Some organisations code joint injections for example as daycases which inflates the daycases figure, others as outpatient procedures, whilst other organisations do not record them at all. Definitions of new patients to fracture clinic also vary, with some organisations counting only A&E referrals, whilst others include ward referrals too. Similarly changes in coding to reflect changes in the clinical pathway affect the information that can be derived from the activity figures, e.g. head injuries are now recorded under neuro-surgery, not trauma and orthopaedics.

Other influences that affect the levels of activity must also be taken into account to ensure appropriate messages are drawn from the data. For example activity data shows a decrease in activity levels per consultant. However, the increase in consultant numbers has been necessary to cope with changing working practices such as planned reductions in the working hours of junior doctors, the effect of more stringent training requirements, increased management, audit and clinical governance requirements and a move towards a more consultant led service. The effect of the Calman training programme has meant that while consultant surgeons continue their existing theatre throughput, the concurrent lists previously undertaken by the Registrar are no longer tenable, resulting in a significant reduction in overall activity by the existing workforce. The effects of the European Working Time Directive (EWTD) and the new consultant contract will have further impact on the future ability of the service to maintain current activity levels within the existing resource.
Some aspects of the activity recorded require further verification, due to changes to coding and the impact of changing managerial and clinical working practices

2.2.2 Non-Consultant Activity
Another important consideration with regard to activity levels relates to the increasing prevalence of non-consultant-led activity. NHS Wales has identified a number of service developments that are neither reported centrally, nor consistently captured in local hospital activity reporting systems. These activities include for example, alternatives to emergency admission, nurse-led clinics and procedures undertaken in outpatients; they may for instance relate to the work of community based support teams, work undertaken by specialist nurses, physiotherapy activity, or activity relating to telemedicine. As such approaches are becoming increasingly widespread to optimise use of the available staff resource, the need for a modernisation of data capture to record other activity has become critical.

National data collection systems have historically focused upon hospital consultant-led inpatient, daycase and outpatient activity, which form the basis for the activity trends shown below. However, Ministerial concern has been brought to bear, to ensure an accurate recording system that will provide a full reflection of all types of activity undertaken in hospitals. Due to variations in the way that these services are configured and delivered, there is currently no agreed reporting mechanism for these types of activity and quarterly statistical releases have been suspended since September 2002 while further investigation of realistic activity levels has been undertaken. All this reflects new ways of working that must be meaningfully captured in national data collection processes, in order to ensure an accurate assessment of activity is made.

Data collection systems do not adequately capture non-consultant-led activity, which may account for apparent reduction in activity levels across health communities

2.2.3 Inpatient/Daycase Activity

Wales/England Trends
National benchmarking indicates that Wales has a higher level of trauma and orthopaedic admissions per 1,000 catchment population than England. The level of emergency trauma admissions is significantly higher, which allows reduced capacity for elective orthopaedic work, as illustrated in Table 2.

<table>
<thead>
<tr>
<th>Table 2: Trauma and Orthopaedic Admission Rates</th>
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<tbody>
<tr>
<td>Total admissions / 1,000 catchment population</td>
</tr>
<tr>
<td>Emergency admissions / 1,000 catchment population</td>
</tr>
<tr>
<td>Non emergency admissions / 1,000 catchment population</td>
</tr>
</tbody>
</table>

Source: IACC, University of Birmingham
Wales has a higher rate of emergency trauma admissions and a lower rate of elective admissions than England

All Wales Trends
All Wales activity data indicates that, although a slight reduction is evident, total activity levels in trauma and orthopaedics have remained relatively stable in recent years, as shown in Figure 11. Some local variation is apparent.

This figure further indicates that the total inpatient/daycase spells for trauma and orthopaedics comprises approximately 50% trauma and 50% elective activity.

Figure 11 also illustrates that elective activity has slightly reduced over time, which gives cause for concern given the high numbers of patients waiting and increasing demand. Reasons for this are various but are likely to include the impact of trauma, medical outliers, increasing case complexity, theatre scheduling and bed use/availability.

The data confirms that nationally trauma activity has in fact fallen slightly over the last decade, despite anecdotal evidence to suggest that trauma activity is increasing, although Figure 13 illustrates regional variations.

Figure 11: Total Inpatient and Daycase Spells in Wales

Overall activity has fallen slightly, but trauma consistently accounts for approximately 50% of the overall trauma and orthopaedic workload

Consultant Inpatient / Daycase Activity Trends
However, when considered on the basis of activity by consultant, this provides a slightly different picture, as shown in Figure 12. Although the total annual spells have remained fairly constant, the large increase in consultant numbers computes to a large fall in admissions' workload per consultant to a 2002/03
value that is two-thirds that of 1995/96. The reasons behind this are well rehearsed. In particular, although the number of orthopaedic consultants has increased, opportunities for greater throughput have been offset by a number of factors. These include heightened medical training stipulations (in anaesthetics as well as trauma and orthopaedics), the effect of consultant specialisation, more complex casemix, increased clinical governance requirements and the impact of the European Working Time Directive (EWTD). These factors all affect the level of activity that can be undertaken in each firm. It is important that the issues are fully understood so that, assuming at least average performance, capacity shortfalls can be more readily quantified.

**Figure 12: Inpatient and Daycases Spells: Wales Total per Consultant**

Given the long waiting times in this region, additional levels of activity are therefore needed in order to address demand.

**Regional Inpatient / Daycase Trends**

National figures mask the regional trends for inpatient / daycase activity. As with the national picture, Figure 13 shows that the trend in elective activity is relatively stable, although there is some variation by trust. However, as previously discussed in respect of primary hip replacement rates, when standardised per 1,000 population the rate of elective activity in the South East is consistently lower than the other regions. Given the long waiting times in this region, additional levels of activity are therefore needed in order to address demand.

Analysis of emergency admissions by region indicates that trauma is falling in the South East but there is a slight upward trend in the North and Mid & West Wales. Data suggests that trauma accounts for approximately 50% of the
activity in North Wales and more recently in the South East, however, in the Mid & West region it only accounts for an average of 45% of the activity.

**Figure 13: Regional Inpatient and Daycase Spells**

![Graph showing regional inpatient and daycase spells](image)

Source: PEDW (2001/02)

Elective activity per 1,000 population is lowest in South East Wales. Trauma activity demonstrates varying trends across the regions

**Impact of Trauma upon Elective Activity**

From this information, the tensions between emergency trauma and elective orthopaedic treatments become apparent. Whilst trauma can be difficult to predict, trends relating to trauma activity suggest higher rates of trauma during holiday periods and at weekends. Due to its nature, emergency trauma is treated on demand, but this can impact significantly upon elective work due to restrictions of the available bed and theatre capacity. As a result of elective work being compromised by emergency trauma admissions, elective activity is in effect capped. Consequently, elective activity may not be able to increase as much as is required, leading to increasing waiting list length. Further management information to facilitate improved prediction of trauma work could assist in planning for peaks and troughs in demand, hence minimising adverse effects on elective work. This should also take into consideration emerging trends in the trauma casemix and the acuity of cases presenting.

Much trauma operating is undertaken in scheduled trauma lists or out of hours, but even so, delays in access to theatre can frequently occur. This can add significantly to length of stay both pre- and post-operatively, often due to deterioration if there is a delay. The effect of introducing acute response teams and other community based admission avoidance schemes, may reduce trauma admissions, which could improve opportunities for planning.
elective work. However this would also affect the trauma casemix complexity remaining.

The imbalance between emergency trauma and elective orthopaedic activity is further illustrated in Table 3 below, which demonstrates that trauma takes up considerably more of the available capacity than elective work.

### Table 3: Inpatient Bed Days in Welsh NHS Trusts

<table>
<thead>
<tr>
<th>Total Emergency Inpatient Occupied Bed Days</th>
<th>Total Elective Inpatient Occupied Bed Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>230,887</td>
<td>98,230</td>
</tr>
</tbody>
</table>

Source: PEDW (2001/02)

Emergency trauma impacts on elective orthopaedic activity and takes up a disproportionate amount of bed days compared with elective orthopaedics

**Private Sector Contracts**

There has been a sizeable financial expenditure within the private sector in order to avoid waiting times that breach 18 months. Exact numbers are not recorded separately, but survey data indicates that in Wales this amounts to approximately 1,000 spells per annum; figures are captured as part of each trust’s total activity figures.

Costs per case in the private sector are high and those patients who are treated outside an NHS setting are carefully selected from the waiting lists. These patients are generally the less complex cases, requiring minimal rehabilitation and having a single morbidity. The more complex cases are then left to be treated in the NHS hospitals, which skews the casemix of the remainder of the list.

A proportion of activity is undertaken through private sector contracts

### 2.2.4 Outpatient Activity

**Wales/England Trends**

National benchmarking indicates that Wales compares to England with a similar number of new outpatients per 1,000 catchment population, yet a lower number of new outpatients per consultant. This is illustrated in Table 4, along with the respective outpatient return to new ratios. This suggests that a reduction in follow up rates would allow more new clinic appointments and reduce the numbers on the waiting list. Further consideration of the reasons behind this should be undertaken at health community level.

### Table 4: Trauma and Orthopaedic Outpatient Activity Rates

<table>
<thead>
<tr>
<th></th>
<th>England</th>
<th>Wales</th>
</tr>
</thead>
<tbody>
<tr>
<td>New outpatients / 1,000 catchment population</td>
<td>37.31</td>
<td>36.74</td>
</tr>
<tr>
<td>New outpatients per consultant</td>
<td>1,449</td>
<td>1,373</td>
</tr>
<tr>
<td>Outpatient return to new ratio</td>
<td>1.92</td>
<td>2.21</td>
</tr>
</tbody>
</table>

Source: IACC, University of Birmingham
Wales has a higher outpatient return to new ratio than England

All Wales Trends
All Wales outpatient data suggests a stable activity rate in the numbers of outpatients seen, both for total outpatients, and for new outpatients, as shown in Figure 14. However, the proportion of new outpatients compared with the total number is lower than might be anticipated, given English benchmarking figures.

Figure 14: All Wales Total Outpatients and New Outpatients

Outpatient activity remains relatively stable, but the proportion of new outpatients, seen compared with total numbers, is low

Consultant Outpatient Activity Trends
When new outpatient work is considered on the basis of activity by consultant, this provides a slightly different picture, as shown in Figure 15. The reasons behind this are similar to those mentioned earlier for consultant inpatient/daycase activity trends. Additionally BOA guidelines (British Orthopaedic Association, 2002) relating to the number of patients that can safely be seen in clinic could be a further limiting factor, along with recording systems for non-consultant-led activity.
Consultant activity trends are influenced not only by individual work rates, but also by management and clinical systems in place

Regional Outpatient Trends
When considered across the regions, some variations are apparent in activity rates, as shown in Figure 16.

Figure 15: New Outpatient Activity: Wales Total per Consultant

Source: IACC, University of Birmingham (2003)

Figure 16: Regional Outpatient Activity

Source: QS1 (2001/02)
Total outpatient activity has increased in both South East and North Wales, whilst outpatient activity in Mid & West Wales shows a continuous reduction. Activity rates for new outpatients follow a similar curve, but proportionally Mid & West Wales have a lower rate of follow up activity than the other regions.

There is regional variation in outpatient activity including return to new ratios

**Follow up activity**
Planned attempts to reduce follow up rates in order to allow more new outpatients to be seen, will result in an overall reduction in the outpatient waiting list, without having to increase total numbers seen by the consultant in clinic. Scope for additional nurse-led clinics or GP specialists and physiotherapy outpatient services could also have a positive affect on numbers seen. However, the impact of this approach must be recognised, as the concentration of new outpatients is likely to intensify and raise the rate of conversions to the inpatient/daycase waiting list.

Alternative processes could allow more new outpatient appointments although the consequent impact on inpatient / daycase waiting lists should be recognised

**Waiting List Initiatives**
Over recent years there has been a heavy reliance on non-recurrent waiting list initiatives to meet targets. These have become an important part of the waiting list strategy and concerted efforts of clinicians and managers have had some impact in containing long waiting times. With the additional funding that has been made available, often at short notice, clinical and managerial staff in hospitals have planned and managed additional outpatient clinics. However, recurrent funding is key to building lasting solutions, and non recurrent investment cannot support the required volume of work with the present numbers of clinicians.

Waiting list initiatives have contained long waiting times but do not offer a long term sustainable solution
2.3 Capacity

There is some evidence of capacity limitations in parts of Wales, which affects patient access. However there is also evidence that effectiveness of service delivery does vary across health communities. Both must be addressed together in order to optimise capacity available for trauma and orthopaedic work in Wales.

**Capacity in Wales is limited, but there are also differing degrees of effectiveness across health communities**

2.3.1 Primary Care Services

The primary care team provide early diagnosis / treatment and determine the initial care pathway for patients. They are also the main gatekeeper to secondary care services. However, capacity within primary care is limited and it is essential that a balance be struck between primary and secondary care services, with due consideration of how these sectors can work together for mutual benefit. This philosophy is emphasised in *The Review of Health and Social Care* (Welsh Assembly Government, 2003).

The Welsh NHS Confederation (2002) believes that, ‘…much outpatient activity, currently carried out in secondary care settings, could arguably be far more effective if carried out in primary care.’ Nevertheless it appears that service patterns vary considerably in different localities, as illustrated in Innovations in Care’s *Expected Standards for the Organisation and Delivery of Trauma and Orthopaedic Services in Wales* (*IiC*, 2003). Reviewing referral systems, changing patient care pathways and introducing new ways of working with suitable training are each important factors in ensuring patients are treated in the most appropriate setting and maximising use of available expertise and capacity.

Data on general practice capacity and referral patterns is limited and is insufficient to allow a robust basis for service planning. However, the workload faced by GPs in Wales is relatively high compared with the rest of the UK. The proportion of partnerships/single handed practitioners influences an area’s ability to accommodate additional services (e.g. minor surgery), with a knock on effect on the acute sector. Some geographical areas have better access to GP services than others; this too can have a consequent effect on reliance on secondary care services and capacity requirements in different parts of the system.

Local Health Boards are responsible for planning and commissioning primary and secondary care services within their locality. Through the new GMS contract, Local Health Boards enter into contracts with individual practices for the delivery of primary care services. It is anticipated that the new GMS contract, along side other strategic initiatives such as Agenda for Change and the new consultant contract will facilitate the redesign of service sand the introduction of new ways of working, which should lead to increased capacity and improved services for patients.
Limited capacity within Primary Care can influence the level of reliance on Secondary Care services

Figure 17 shows the distribution of GPs in Wales. There is limited data availability regarding other members of the Primary Care Team.

**Figure 17:** General Practitioners per 10,000 population by LHB


### 2.3.2 Acute Trauma & Orthopaedic Services

The geographical distribution of trauma and orthopaedic services in acute secondary care are shown in Figure 18.
2.3.3 Bed Allocations

The allocation and availability of beds for trauma and orthopaedic services is a critical factor for the delivery of care in this speciality. The majority of trusts in Wales do not separate their trauma and orthopaedic beds and, therefore, the bed figures given cover both aspects within the speciality. Current bed allocations are shown in Table 5. It should be noted that average daily availability of beds takes into account outliers and borrowed beds.
### Table 5: All Wales Trauma and Orthopaedic Bed Allocations

<table>
<thead>
<tr>
<th>NHS Trust</th>
<th>Average daily available beds</th>
<th>Average daily occupied beds</th>
<th>Percentage bed occupancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bro Morgannwg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Princess of Wales</td>
<td>79.8</td>
<td>69.8</td>
<td>87.4</td>
</tr>
<tr>
<td>- Neath Port Talbot</td>
<td>- 57.0</td>
<td>- 53.2</td>
<td>- 93.3</td>
</tr>
<tr>
<td>- Neath Port Talbot</td>
<td>- 22.8</td>
<td>- 16.6</td>
<td>- 72.8</td>
</tr>
<tr>
<td>Cardiff &amp; Vale</td>
<td>168.2</td>
<td>138.0</td>
<td>82.1</td>
</tr>
<tr>
<td>- UHW</td>
<td>- 112.5</td>
<td>- 97.2</td>
<td>- 86.4</td>
</tr>
<tr>
<td>- Llandough</td>
<td>- 55.5</td>
<td>- 40.4</td>
<td>- 73.1</td>
</tr>
<tr>
<td>Carmarthenshire</td>
<td>78.4</td>
<td>61.2</td>
<td>78.0</td>
</tr>
<tr>
<td>- West Wales General</td>
<td>- 62.5</td>
<td>- 53.3</td>
<td>- 85.4</td>
</tr>
<tr>
<td>- Prince Phillip</td>
<td>- 15.9</td>
<td>- 7.8</td>
<td>- 49.1</td>
</tr>
<tr>
<td>Ceredigion</td>
<td>19.2</td>
<td>19.2</td>
<td>100.0</td>
</tr>
<tr>
<td>- Bronglais</td>
<td>- 19.2</td>
<td>- 19.2</td>
<td>- 100.0</td>
</tr>
<tr>
<td>Conwy &amp; Denbighshire</td>
<td>87.0</td>
<td>55.4</td>
<td>63.7</td>
</tr>
<tr>
<td>- Ysbyty Glan Clwyd</td>
<td>- 37.0</td>
<td>- 26.4</td>
<td>- 71.2</td>
</tr>
<tr>
<td>- Abergale</td>
<td>- 50.0</td>
<td>- 29.1</td>
<td>- 58.2</td>
</tr>
<tr>
<td>Gwent</td>
<td>193.7</td>
<td>155.8</td>
<td>80.4</td>
</tr>
<tr>
<td>- Nevill Hall</td>
<td>- 71.5</td>
<td>- 57.1</td>
<td>- 79.9</td>
</tr>
<tr>
<td>- Royal Gwent</td>
<td>- 92.6</td>
<td>- 77.6</td>
<td>- 83.8</td>
</tr>
<tr>
<td>- Caerphilly District Miners</td>
<td>- 5.1</td>
<td>- 1.0</td>
<td>- 20.6</td>
</tr>
<tr>
<td>North East</td>
<td>60.1</td>
<td>49.1</td>
<td>81.6</td>
</tr>
<tr>
<td>- Wrexham Maelor</td>
<td>- 60.1</td>
<td>- 49.1</td>
<td>- 91.5</td>
</tr>
<tr>
<td>North Glamorgan</td>
<td>71.4</td>
<td>60.1</td>
<td>84.1</td>
</tr>
<tr>
<td>- Prince Charles</td>
<td>- 62.7</td>
<td>- 51.4</td>
<td>- 81.9</td>
</tr>
<tr>
<td>North West</td>
<td>76.8</td>
<td>57.9</td>
<td>75.5</td>
</tr>
<tr>
<td>- Ysbyty Gwynedd</td>
<td>- 76.0</td>
<td>- 57.9</td>
<td>- 76.1</td>
</tr>
<tr>
<td>- Llandudno General</td>
<td>- 0.8</td>
<td>- 0.1</td>
<td>- 10.3</td>
</tr>
<tr>
<td>Pembrokeshire</td>
<td>35.2</td>
<td>32.2</td>
<td>91.5</td>
</tr>
<tr>
<td>- Withybush</td>
<td>- 35.2</td>
<td>- 32.2</td>
<td>- 91.5</td>
</tr>
<tr>
<td>Ponty &amp; Rhondda</td>
<td>56.5</td>
<td>46.3</td>
<td>81.9</td>
</tr>
<tr>
<td>- Royal Glamorgan</td>
<td>- 56.5</td>
<td>- 46.3</td>
<td>- 81.9</td>
</tr>
<tr>
<td>Swansea</td>
<td>133.0</td>
<td>119.1</td>
<td>89.5</td>
</tr>
<tr>
<td>- Morriston</td>
<td>- 114.1</td>
<td>- 100.7</td>
<td>- 88.3</td>
</tr>
<tr>
<td>- Singleton</td>
<td>- n/a</td>
<td>- n/a</td>
<td>- n/a</td>
</tr>
<tr>
<td>All Wales Providers</td>
<td>1059.3</td>
<td>864.1</td>
<td>81.6</td>
</tr>
</tbody>
</table>

Source: QS1 (2001/02)

---

1 Hospitals with 20 or less beds have not been included.

Average Daily available beds: average daily number of staffed beds, including borrowed, in which inpatients are being or could be treated without any change in facilities or staff being made.

Average daily occupied beds: the average daily number of beds occupied by inpatients, under the care of a consultant in T&O.

Percentage Occupancy: the percentage of time that beds are occupied. Calculated as follows:

\[
\text{Percentage Occupancy} = \left( \frac{\text{Average daily occupied beds}}{\text{Average daily available beds}} \right) \times 100
\]
Allocated bed capacity varies considerably across the trusts

The information on bed allocations and occupancy levels is collected from individual trusts and is subject to central validation. However *A Question of Balance* (Williams, 2002) notes that ‘it is generally accepted that midnight bed occupancy figures do not adequately represent the pressures experienced in hospitals. Most patients are admitted between 8am and 8pm and the greatest pressure is experienced from midday until early evening.’ *A Question of Balance* cites the Bagust model (Bagust et al, 1999) which states that bed occupancy should not exceed 85% to optimise efficiency.

Despite a number of factors that can influence bed statistics, the number of allocated beds in each organisation and their usage patterns are an essential indicator of capacity. Bed occupancy figures may be affected, for example, by the split of trauma and orthopaedics across sites in some trusts in Wales, the impact of 5 or 7 day working on occupancy figures or by the use of the ambulatory care model. Nevertheless bed occupancy remains a vital piece of management information in determining the adequacy of current capacity.

Trauma and Orthopaedic wards should run at 85% occupancy to allow optimal efficiency

Due to the nature of their condition, emergency trauma patients take priority on the call on trauma and orthopaedic beds. Elective orthopaedic cases may be compromised as a result. This serves to emphasise the importance of tight bed management systems, and alternative patient flows to minimise this eventuality, as well as need to predict trauma levels where possible.

**2.3.4 Bed Use**

Optimum bed usage must be regarded as an essential element of management and delivery of patient care. Nevertheless, evidence shows that patterns of use within the capacity available vary considerably between trusts. Bed use figures offer a useful indicator of the extent to which available capacity is utilised, and therefore in part, how any new capacity may be used, or whether indeed new capacity is actually required. This is illustrated in Table 6 below.

<p>| Table 6: Use of Trauma and Orthopaedic Beds by Trust |</p>
<table>
<thead>
<tr>
<th>Area</th>
<th>Average length of stay</th>
<th>Turnover interval[^2]</th>
<th>Bed use factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bro Morgannwg</td>
<td>7.5</td>
<td>1.1</td>
<td>42.5</td>
</tr>
<tr>
<td>Cardiff &amp; Vale</td>
<td>8.6</td>
<td>1.9</td>
<td>34.9</td>
</tr>
<tr>
<td>Carmarthenshire</td>
<td>7.8</td>
<td>2.2</td>
<td>36.3</td>
</tr>
<tr>
<td>Ceredigion</td>
<td>6.6</td>
<td>0.0</td>
<td>55.2</td>
</tr>
<tr>
<td>Conwy &amp; Denbighshire</td>
<td>6.9</td>
<td>3.9</td>
<td>33.7</td>
</tr>
<tr>
<td>Gwent</td>
<td>7.4</td>
<td>1.8</td>
<td>39.6</td>
</tr>
<tr>
<td>North East Wales</td>
<td>7.2</td>
<td>1.6</td>
<td>41.4</td>
</tr>
<tr>
<td>North Glamorgan</td>
<td>9.4</td>
<td>1.8</td>
<td>32.8</td>
</tr>
<tr>
<td>North West Wales</td>
<td>7.8</td>
<td>2.5</td>
<td>35.1</td>
</tr>
<tr>
<td>Pembrokeshire</td>
<td>5.7</td>
<td>0.5</td>
<td>58.5</td>
</tr>
<tr>
<td>Pontypridd &amp; Rhondda</td>
<td>6.9</td>
<td>1.5</td>
<td>43.1</td>
</tr>
<tr>
<td>Swansea</td>
<td>9.9</td>
<td>1.2</td>
<td>33.1</td>
</tr>
<tr>
<td>All Wales Providers</td>
<td>7.8</td>
<td>1.8</td>
<td>38.0</td>
</tr>
</tbody>
</table>


[^2]: Turnover interval: the length of time in days that the bed is empty between patients
Bed use factor: the average number of patients using each bed in a year

Bed use varies considerably across the trusts and therefore across the three regions

The factors that influence the bed use are best examined at the local level. For example, the bed use factor in elective-only units may be affected by theatre availability; short length of stay may be facilitated by the availability of a community discharge scheme. These figures must therefore be regarded as a management tool to be interpreted and acted upon within each health community.

This said, average length of stay is a key indicator of how available bed capacity is utilised. Reasons for significant variations are likely to be a combination of bed management processes (including discharge arrangements), clinical need and the trauma workload.

Increasingly, alternative care pathways and rehabilitation schemes are being used to manage and reduce average length of stay. This may, for example, cover early discharge through hospital at home schemes, or scheduling of bed use within the hospital setting by casemix. Nevertheless there remains a significant variation in average length of stay between trusts as illustrated in Figures 19 and 20.
**Figure 19:** Trusts Average Length of Stay for Emergency Trauma Inpatients

Source: PEDW (2001/02)

Average length of stay for emergency trauma patients is 9 days but considerable variation between trusts is apparent

**Figure 20:** Trusts Average Length of Stay for Elective Orthopaedic Inpatients

Source: PEDW (2001/02)

Average length of stay for elective orthopaedic patients is 6.6 days but considerable variation between trusts is apparent
2.3.5 Theatre Sessions
Analysis of theatre capacity in Wales is a problem. Central collection of theatre data and the management information that it derived ceased in the 1990s. Whilst individual trusts maintain their own local theatre systems, the methodology for collection and collation of data is variable. Some have bespoke electronic theatre systems whilst others continue to rely on manual theatre records. This makes comparison difficult. The stringency of data collection and the robustness of the resultant information remains uneven. Central data available has largely been provided by the Audit Commission, taken from their Acute Hospital Portfolio Review of National Findings: Operating Theatres (2002) and from trust responses to individual queries sought through the Innovations In Care Theatre Project.

It should also be noted that with tighter theatre management, trusts increasingly use their theatre sessions flexibly, and allocate additional sessions on a temporary basis to those specialities with longer waiting lists. In this context trauma and orthopaedics could be a temporary gainer. Additionally, trauma sessions may be difficult to quantify accurately, particularly as non-scheduled emergency sessions may be needed or existing Confidential Enquiry into Patient Outcome and Death (CEPOD) sessions utilised.

Robust information on theatre sessions for trauma and orthopaedics is not readily available

2.3.6 Theatre Usage
As with bed usage, the management of theatres varies considerably between trusts, but the optimum use of this resource for both trauma and orthopaedics is crucial to maximising service delivery. Scheduling of trauma lists in particular varies and influences throughput, with a subsequent effect on elective cases. The introduction of 7-day staffed dedicated trauma lists should be the norm in Wales as it will significantly help to establish a long term sustainable solution to the service shortfalls in Wales.

Many of these efficiency issues are considered in the Audit Commission’s Acute Hospital Portfolio Review, which reviews practice in both Welsh and English trusts. Whilst the published report does not specifically highlight trauma and orthopaedics, many of the issues and conclusions apply to all specialities. Additionally, the underlying data does include trauma and orthopaedic work, and specific issues and lessons learnt are being pursued on an individual trust basis across England and Wales. The Welsh trusts are shown anonymously and there is significant disparity in the results. Nevertheless, in many instances the Welsh trusts appear in the lower quartile suggesting that considerable efficiencies may be achieved.
Efficiency factors considered include:

- Efficient use of scheduled theatre time
- Measurement of use of scheduled theatre time
- Potential for carrying out more elective operations
- Use of existing theatre space
- Average operating hours per available theatre
- Variation in workload
- Daytime scheduled sessions for trauma operations
- Specialised theatres
- Provision of other key theatre resources
- Theatre staffing
- Theatre equipment
- Management
- Trust management
- Monitoring theatre performance

Source: Audit Commission, 2002

The *Acute Hospital Portfolio Review* concluded that ‘…many trusts should be able to find extra capacity within their existing theatres. The needs of both elective and emergency surgery should be carefully balanced.’ The review also recommends that the majority of trusts need to make better use of the theatre resources they have in order to increase surgical activity, specifically:

- Minimising the number of cancelled operating lists;
- Making full use of available session time;
- Minimising the causes of unnecessary gaps between patients while lists are in progress.

All these factors that restrict theatre usage should be examined at the local level, and measures introduced to improve processes and efficiency in every health community.

### 2.3.7 Daycase sessions

*Improving Health in Wales* (Welsh Assembly Government, 2001) anticipates that ‘the number of patients able to receive surgery on a daycase/short stay basis will be increased.’ However in Wales the level of daycase work is below the benchmarked English figures.

**Wales has a daycase rate of 36% of the total inpatient/daycase treatments whilst the figure in England is currently 43%**

IACC, University of Birmingham

Daycase rates vary considerably across trusts, as illustrated in Figure 21. To some extent this is affected by clinical practices and the availability of recovery facilities. The availability of dedicated daycase capacity is another important factor, and difficulties of access due to rurality can restrict opportunities for daycase work in some areas. There is also significant variation in daycase rates for different procedures e.g. carpal tunnel. This level of variation may be caused by protocols for pre-assessment, geographical considerations etc.
There is a recognition that increased daycase rates for orthopaedic procedures could have an impact on capacity, both directly and by freeing up time in main theatre. There is also scope for developing the ambulatory care model based on maximum lengths of stay of 23 hours 59 minutes. This all forms part of the Innovations in Care day surgery programme.

There is a need to increase daycase rates in order to relieve pressure on inpatient treatments and therefore beds.

### 2.3.8 Outpatient Clinics

Nationally available data on outpatient clinics undertaken is not entirely reliable, despite this being an all Wales information source, routinely verified by trusts on submission. Data recording issues, including definitions, are currently under review, e.g. for pre-admission clinics. It is anticipated that the revised data set will include non-consultant-led work. Further details on the level of fracture clinics too will be captured. Using the data that is available, Figure 22 illustrates the new and follow-up outpatient attendances by trust.

**Figure 22: Outpatient Attendances**

Source: QS1 (2001/02)
The all Wales mean new : follow up ratio is 2.21, for England the figure is 1.92

Variation in new : follow up ratios is an important capacity consideration. By altering this ratio to allow more new patients to be seen, waiting lists could be reduced within the existing capacity available. In some instances, junior staff have a tendency to list whole cohorts of patients for follow up, rather than discharging them once their condition dictates. This might be addressed through additional training or by developing discharge protocols. Variations exist within trusts and local considerations of the range of new : follow up ratios between trauma and orthopaedic consultants is likely to highlight scope for change in individual firms.

2.3.9 Clinic Utilisation

As with other key resources, optimising use of trauma and orthopaedic clinics is essential. The *Expected Standards for Waiting List Management in Wales* (Innovations in Care, 2000) advises that ‘trusts should analyse outpatient clinic performance and booking activity to develop an understanding of the changes that take place and the impact these may have on performance and efficiency.’ Currently, whilst a maximum number of slots are fully booked, there are also a high proportion of Did Not Attends (DNAs) recorded. The outpatient partial booking system in Wales should help to alleviate this inefficiency to some extent by giving more patient flexibility in making their appointment and *A Guide to Good Practice* (Innovations in Care, 2003) addresses these issues in some detail. However, an indication of the current wastage this causes is given in Figure 23.

**Figure 23: Outpatient Attendance Record**

![Outpatient Attendance Record](source: QS1 (2001/02))
The proportion of Did Not Attends for follow up outpatient appointments is high. Similarly, clinic cancellations can undermine efficiencies within the system. Some concerns have been raised over aspects of the data quality which include varying definitions on what constitutes a cancellation and at what stage clinics should be cancelled. Current data available is given in Figure 24, which suggests that there is a particularly high rate of DNAs for follow up appointments. Further work on clinic usage and cancellations is required within each health community in order to identify and tackle the root causes of inefficiencies and differences in working practices.

**Figure 24: Percentage of Clinic Sessions Cancelled**

Source: QS1 (2001/02)

### 2.3.10 Workforce capacity

The workforce accounts for a significant proportion of the NHS resource and constitutes a major factor in capacity considerations. Adequate planning is therefore essential to facilitate appropriate staffing levels (with suitable skills mix) and to make sure the available resource is used in the most effective way.

**Career Grades**

The clinical workforce in all specialities is increasingly becoming a consultant-led service. In trauma and orthopaedics, the number of consultants by region in Wales is comparable with the all Wales benchmarked average and also the English average figure. These do not reach the British Orthopaedic Association (BOA, 2002) recommendation of 4 consultants per 100,000 population, although as this is intended as a guide across the UK, the particular needs and characteristics of Wales should be taken into consideration.
### Table 7: Number of Trauma and Orthopaedic Consultants per 100,000 Population

<table>
<thead>
<tr>
<th>Region</th>
<th>Population</th>
<th>Consultants (WTE)</th>
<th>Consultants per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Wales</td>
<td>663,536</td>
<td>17.82</td>
<td>2.7</td>
</tr>
<tr>
<td>Mid &amp; West Wales</td>
<td>974,696</td>
<td>24.86</td>
<td>2.6</td>
</tr>
<tr>
<td>South East Wales</td>
<td>1,264,924</td>
<td>35.01</td>
<td>2.8</td>
</tr>
<tr>
<td>All Wales</td>
<td>2,903,156</td>
<td>77.69</td>
<td>2.7</td>
</tr>
<tr>
<td>England</td>
<td>48,968,310</td>
<td>1,267</td>
<td>2.6</td>
</tr>
<tr>
<td>British Orthopaedic Association</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


In terms of other career grade staff, the configuration of substantive posts varies considerably across trusts, depending on service configuration, recruitment considerations, eligibility for training grade staff etc.

Wales has a similar number of consultants per 100,000 population as England. Regional distribution is also comparable.

**Non-Career Grades**

The number of middle grade and training grade staffing available in each trust will inevitably affect workload capacity. Whilst non-career grade staff make a significant contribution to operational workload, training requirements for all levels of staff may also affect the throughput in theatre or clinic. This is particularly apparent since the introduction of Calman training requirements, which has resulted in an increasingly consultant-led service.

Medical training requirements can affect levels of activity.

**Other Clinical Specialities**

The practice of trauma and orthopaedics is reliant upon integrated working with a number of other specialities, and it is therefore essential that sufficient capacity is available within these disciplines. In particular, this relates to anaesthetics, pathology and radiology. Current consultant capacity in these specialities is illustrated in Table 8. It should be noted that the staff in these specialities do not work exclusively in the field of trauma and orthopaedics and data collection systems do not allow their input to be disaggregated. The figures given do not include long term locums working in the NHS in Wales. Vacancies relate to posts that have been vacant for 3 months or more.

---

3 Population Data - Welsh - ONS Mid year estimates of population 2001; English - Based on 2002 ADS reconciled to mid-2001 LA population estimates (DOH Website)
Table 8: Consultant Staff Involved in Trauma and Orthopaedics

<table>
<thead>
<tr>
<th></th>
<th>Orthopaedics</th>
<th>Anaesthetics</th>
<th>Radiology</th>
<th>Histopathology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Staff in Post WTE</td>
<td>3 Month Vacancies</td>
<td>Staff in Post WTE</td>
<td>3 Month Vacancies</td>
</tr>
<tr>
<td>North Wales</td>
<td>17.82</td>
<td>0</td>
<td>42.37</td>
<td>2</td>
</tr>
<tr>
<td>Mid &amp; West</td>
<td>24.86</td>
<td>3</td>
<td>80.75</td>
<td>10</td>
</tr>
<tr>
<td>South East</td>
<td>35.01</td>
<td>2</td>
<td>104.65</td>
<td>5</td>
</tr>
<tr>
<td>All Wales Total</td>
<td>77.69</td>
<td>5</td>
<td>227.77</td>
<td>17</td>
</tr>
</tbody>
</table>

Source: Statistical Bulletins (SB 43/2003 and SB 70/2003)

A suitable balance of consultant capacity in other specialties involved in trauma and orthopaedics is vital and current vacancy rates/staffing levels affect this.

Nursing Staff
Nursing staff complements are recorded according to the branch of nursing that they qualified in, rather than by the speciality they work in. It is not therefore possible, with current data collection systems, to identify nurses that specifically work in trauma and orthopaedics. However, in general terms, the current qualified nursing workforce in Wales is identified in Table 9.

Table 9: Current Qualified Nursing Workforce in Wales

<table>
<thead>
<tr>
<th></th>
<th>Total qualified nurses</th>
<th>Vacancies</th>
<th>Theatre nurses</th>
<th>ICU nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Wales</td>
<td>4,107.51</td>
<td>49.9</td>
<td>224.66</td>
<td>101.7</td>
</tr>
<tr>
<td>Mid &amp; West</td>
<td>6,468.76</td>
<td>167.4</td>
<td>396.06</td>
<td>332.57</td>
</tr>
<tr>
<td>South East</td>
<td>8,012.25</td>
<td>447.3</td>
<td>419.06</td>
<td>302.38</td>
</tr>
<tr>
<td>Total Wales</td>
<td>18,587.52</td>
<td>664.6</td>
<td>1040</td>
<td>736.7</td>
</tr>
</tbody>
</table>


Consideration could be given to the nursing skills mix on trauma and orthopaedic wards is not optimally balanced, and introduction of an increased skills mix could improve the level of care and hence patient outcomes. This should be analysed in more detail at health community levels.

Nursing skills mix in trauma and orthopaedics is difficult to disaggregate but could be increased for improved patient outcomes.

Allied Health Professionals
Trauma and orthopaedic delivery and throughput are heavily reliant upon the allied health professionals, particularly physiotherapists, occupational
therapists and radiographers. Table 10 below shows current staff in post, vacancies, and projected workforce needs.

**Table 10: Allied Health Professionals Present and Future Workforce**

<table>
<thead>
<tr>
<th></th>
<th>Staff in post 2002</th>
<th>3 Month Vacancies</th>
<th>Workforce Requirements 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiotherapists</td>
<td>860</td>
<td>81</td>
<td>1764</td>
</tr>
<tr>
<td>Occupational Therapists</td>
<td>606</td>
<td>40</td>
<td>1410</td>
</tr>
<tr>
<td>Diagnostic Radiographers</td>
<td>730</td>
<td>48</td>
<td>974</td>
</tr>
</tbody>
</table>


This demonstrates a significant staffing shortfall to be addressed through a combination of increased training opportunities, recruitment and retention strategies and new ways of working.

**Allied Health Professionals’ capacity to support trauma and orthopaedics is limited. Increased training numbers and new ways of working might improve this**

**General Practitioners**

The total number of GPs, at 30 September 2002, stood at 1,930. In the last decade the average GP list size, based on numbers of General Medical Practitioners, fell from 1,743 to 1,704 (2%). However, list size based on whole-time equivalent numbers increased from 1,805 to 1,842 (2%). The most recent data shows that there were 86.75 whole time equivalent vacancies as at 30 September 2003; this is equivalent to 5% of the 1,649 whole time equivalent GPs recorded at the last GP Census as at 30 September 2002. The percentage of vacancies that have been outstanding for 3 months or more is 3.1%.

**General Practice capacity is affected by high vacancy rates**

**Vacancy Rates**

Vacancy rates have been identified for the main staff groups contributing to trauma and orthopaedic care. It is important to recognise that recruitment problems are no longer exclusive to a small number of staff groups. There has been considerable investment in the workforce over the last five years and this can be seen in the notable increase in staffing numbers across the whole service. However, difficulties with vacancies and recruitment across many professions remain, raising questions of sustainability and workforce capacity.

Current vacancy rates have led to a heavy reliance upon locums, bank and agency staff, which have higher costs associated with them. In particular, this relates to medical and nursing staff. Agency staff in some of the shortage professions e.g. physiotherapy are in short supply.
Recruitment and retention difficulties emphasise the importance of working differently with enhanced roles and responsibilities
2.4 Activity / Capacity Gap

Having considered current levels of demand and compared these with current rates of activity, it is evident that there is a gap between supply and demand: we are not undertaking sufficient activity to meet existing demand. If no changes are made to the way in which services are provided, then with increases in demand caused by demographic and epidemiological changes, this gap is set to increase.

However, analysis of the available capacity and the way in which it is used has demonstrated that more throughput could be undertaken within the resource envelope that is already available. This is all about working differently or 'working smarter.' This applies in particular to the way in which beds and theatres are used, and Innovations in Care programmes have been developed in recognition of these priorities. It also applies to achieving a balance in the way in which services are provided in primary and secondary care.

By applying a culture of tighter management and introducing new ways of working, the treatment process and patient flows may be considerably improved, offering better patient access to care. Only at that stage, once performance and efficiency have been optimised, should extra capacity be added. Although planning should of course take place in tandem. It is nevertheless recognised that physical capacity for trauma and orthopaedics is limited and that the geographical location of services does not always match the distribution of patients presenting. Therefore, plans to add more capacity should be developed, and these should include consideration of new ways of working to ensure that all processes and patient flows are optimised, taking advantage of new facilities.

In Wales there is an activity gap and a capacity gap to be addressed

2.4.1 Activity Gap

The evidence shows variation in activity rates between regions and between trusts. It also shows that inpatient/daycase activity is lowest in South East Wales where the waiting lists are longest. For outpatients too there are significant variations in activity profiles between the different localities.

Reasons behind some relatively low levels of activity may be open to different interpretation, and this poses a challenge in identifying the true extent of the activity/capacity gap. Influencing factors perhaps include the extent to which trauma displaces elective activity, the varying levels of management efficiency and service configuration that enable activity levels to be maximised, workforce limitations or the actual shortage of capacity in different organisations which caps throughput. It is therefore important that all possible steps are taken to maximise activity levels in order to make consistent and optimal use of our existing resources, before additional capacity is developed.

In advance of adding capacity, consistent and optimal use must be made of existing capacity to ensure maximum activity
The first step in addressing the activity/capacity gap must be to manage bottlenecks and overcome issues of poor efficiency. It is crucial that organisations achieve at least a benchmarked average rate of performance, although the impact this will have on overall activity rates may be difficult to quantify. Nevertheless a range of tighter management and best practice approaches to streamlining processes will release a substantial number of bed days.

**Introduction of efficiency measures already discussed will have a positive effect on capacity and release a substantial number of bed days**

As an example, efficiencies for daycase rates and for average length of stay have been calculated, which suggests that significant capacity savings may be made within the current resource. Details would of course need to be assessed at the local level.

### Daycase Rates

For orthopaedics, in Wales the daycase rate currently stands at 36%. This could be considered in the context of England’s national capacity assumption that the daycase rate should be increased to 75%. Based on an assumption that a 50% rate is achievable in all Welsh trusts by 2013/14, then this could have an effect on beds released within each trust. An illustration of the impact this may have is given in Table 11.

#### Table 11: Potential Daycase Rates: an Illustration

<table>
<thead>
<tr>
<th>Trust</th>
<th>Current daycase rate 2001/02</th>
<th>Projected daycase rate 2013/14</th>
<th>Potential beds released</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bro Morgannwg</td>
<td>34%</td>
<td>50%</td>
<td>11.3</td>
</tr>
<tr>
<td>Cardiff &amp; Vale</td>
<td>32%</td>
<td>50%</td>
<td>18.5</td>
</tr>
<tr>
<td>Carmarthenshire</td>
<td>50%</td>
<td>50%</td>
<td>0.2</td>
</tr>
<tr>
<td>Ceredigion</td>
<td>42%</td>
<td>50%</td>
<td>1.3</td>
</tr>
<tr>
<td>Conwy &amp; Denbighshire</td>
<td>50%</td>
<td>50%</td>
<td>0</td>
</tr>
<tr>
<td>Gwent</td>
<td>25%</td>
<td>50%</td>
<td>44.4</td>
</tr>
<tr>
<td>North East Wales</td>
<td>29%</td>
<td>50%</td>
<td>7.6</td>
</tr>
<tr>
<td>North Glamorgan</td>
<td>61%</td>
<td>61%</td>
<td>0.1</td>
</tr>
<tr>
<td>North West Wales</td>
<td>42%</td>
<td>50%</td>
<td>5.3</td>
</tr>
<tr>
<td>Pembrokeshire</td>
<td>48%</td>
<td>50%</td>
<td>0.4</td>
</tr>
<tr>
<td>Pontypridd &amp; Rhondda</td>
<td>40%</td>
<td>50%</td>
<td>5.9</td>
</tr>
<tr>
<td>Powys</td>
<td>70%</td>
<td>70%</td>
<td>0</td>
</tr>
<tr>
<td>Swansea</td>
<td>35%</td>
<td>50%</td>
<td>9.9</td>
</tr>
<tr>
<td>All Wales Providers</td>
<td>37%</td>
<td>50%</td>
<td>105 beds</td>
</tr>
</tbody>
</table>

Source: PEDW (2001/02)

This is summarised by region in Table 12
### Table 12: Potential Daycase Rates by Region: an Illustration

<table>
<thead>
<tr>
<th>Region</th>
<th>Potential Beds released</th>
</tr>
</thead>
<tbody>
<tr>
<td>South East Wales</td>
<td>68.9</td>
</tr>
<tr>
<td>Mid &amp; West Wales</td>
<td>22.8</td>
</tr>
<tr>
<td>North Wales</td>
<td>13.1</td>
</tr>
<tr>
<td>Wales</td>
<td>105</td>
</tr>
</tbody>
</table>

By increasing the daycase rate to 50% in each trust by 2013/14, this could achieve an efficiency gain of 105 beds.

### Average Length of Stay

Similarly, for trauma and orthopaedics in Wales, there is great variation in bed use and in particular average length of stay. Whilst this will clearly be affected by demography, casemix complexity, and clinical considerations, there remains scope for reducing the range in Wales, especially for trauma. Again, this could have an effect on bed days released within each trust. Calculations in Table 13 offer an example, and are based on the assumptions that trusts with an average length of stay of 10 days or more for trauma patients could reduce this by 1 day from 2004/05 onwards; trusts with an average length of stay of 7 days or more for elective patients could reduce this by 0.5 days from 2004/05 onwards. Clinical opinion suggests that this could be achievable. This would bring them more closely into line with the current average length of stay for trauma and orthopaedics of 9 days and 6.6 days respectively.

### Table 13: Potential Average Length of Stay: an Illustration

<table>
<thead>
<tr>
<th>Provider</th>
<th>ALOS Trauma 2001/02</th>
<th>Reduced ALOS Trauma 2004/05</th>
<th>ALOS Elective 2001/02</th>
<th>Reduced ALOS Elective 2004/05</th>
<th>Potential Beds released</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bro Morgannwg</td>
<td>11.03</td>
<td>10.03</td>
<td>6.13</td>
<td>6.13</td>
<td>6</td>
</tr>
<tr>
<td>Cardiff &amp; Vale</td>
<td>10.14</td>
<td>9.14</td>
<td>7.01</td>
<td>6.51</td>
<td>17.3</td>
</tr>
<tr>
<td>Carmarthenshire</td>
<td>9.07</td>
<td>9.07</td>
<td>5.92</td>
<td>5.92</td>
<td>0</td>
</tr>
<tr>
<td>Ceredigion</td>
<td>6.35</td>
<td>6.35</td>
<td>6.53</td>
<td>6.53</td>
<td>0</td>
</tr>
<tr>
<td>Conwy &amp; Denbighshire</td>
<td>6.69</td>
<td>6.69</td>
<td>6.89</td>
<td>6.89</td>
<td>0</td>
</tr>
<tr>
<td>Gwent</td>
<td>8.32</td>
<td>8.32</td>
<td>7.00</td>
<td>6.50</td>
<td>8.4</td>
</tr>
<tr>
<td>North East Wales</td>
<td>7.78</td>
<td>7.78</td>
<td>5.48</td>
<td>5.48</td>
<td>0</td>
</tr>
<tr>
<td>North Glamorgan</td>
<td>11.96</td>
<td>10.96</td>
<td>7.0</td>
<td>6.5</td>
<td>7.3</td>
</tr>
<tr>
<td>North West Wales</td>
<td>8.4</td>
<td>8.4</td>
<td>7.35</td>
<td>6.85</td>
<td>1.7</td>
</tr>
<tr>
<td>Pembrokeshire</td>
<td>5.66</td>
<td>5.66</td>
<td>4.02</td>
<td>4.02</td>
<td>0</td>
</tr>
<tr>
<td>Pontypridd &amp; Rhondda</td>
<td>6.79</td>
<td>6.79</td>
<td>7.08</td>
<td>6.58</td>
<td>2</td>
</tr>
<tr>
<td>Powys</td>
<td>0</td>
<td>0</td>
<td>1.32</td>
<td>1.32</td>
<td>0</td>
</tr>
<tr>
<td>Swansea</td>
<td>11.2</td>
<td>10.22</td>
<td>7.12</td>
<td>6.62</td>
<td>13.5</td>
</tr>
<tr>
<td>All Wales Providers</td>
<td>9.0</td>
<td>6.58</td>
<td>56</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: PEDW (2001/02)
The potential number of beds released for trauma and for elective orthopaedics is summarised by region in Table 14:

**Table 14: Potential Beds Released by Region: an Illustration**

<table>
<thead>
<tr>
<th>Projected 2013/14</th>
<th>Potential Trauma beds released</th>
<th>Potential Orthopaedic beds released</th>
</tr>
</thead>
<tbody>
<tr>
<td>South East Wales</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>Mid &amp; West Wales</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>North Wales</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Wales</td>
<td>35</td>
<td>21</td>
</tr>
</tbody>
</table>

Further analysis of reasons behind varying average length of stay is needed. In some health communities specific schemes are in place that positively influence length of stay, and these should be considered for wider use. For example, increased community reablement and hospital at home schemes.

**By marginally reducing average length of stay in trauma and orthopaedics for those trusts above the current average this could achieve an efficiency gain of 56 beds**

Other areas that will have a major and positive influence on levels of activity that can be undertaken are, for example, reducing high numbers of follow up appointments in outpatients, optimising knife to skin time in theatre and reducing delayed transfers of care.

**2.4.2 Essential Measures for Managers**

*Guide to Good Practice* (Innovations in Care, 2003) emphasises that 'capacity is only the same as activity when the whole system is operating at 100% efficiency – and experience shows that this is rarely the case.' Clear guidance is therefore given for managing activity and demand, focusing on tight management and uniform good practice.

The guide states that 'staff managing services in trusts must have a clear understanding of the capacity of their service, the activity levels provided by the service, the demand on the service, and the backlog of work in the system.' It offers a series of tools that will provide the basis for informed process change and performance improvement:

- Activity, Backlog, Capacity and Demand graphs;
- Process Maps of the key processes in the service;
- Flow models of the use of key constraints in the service.

Through undertaking this kind of analysis, it is considered that work flows may be altered and scheduling of care may be rethought to make best use of scarce resources. The guide confirms that 'if a speciality has greater demand than activity, there are only two ways to resolve the problem: Permanent increase in activity…or permanent initiatives to reduce demand.'
2.4.3 Capacity Gap

The challenge is to identify to what extent the shortfall in activity required to address identified levels of need is due to inefficiencies in processes and the way in which services are organised. Beyond this, the extent of the true capacity gap has to be quantified in order to ensure that adequate capacity is provided.

Acute capacity can of course relate to beds, theatres, outpatient facilities and workforce. Capacity considerations in primary care and rehabilitation must also be taken into account. Data capture systems, however, can make meaningful comparisons difficult. As a result, analysis normally focuses on bed capacity. An analysis of trauma and orthopaedic bed capacity in Wales is given below.

Bed Requirements (current and projected)

This modelling approach uses current treatment patterns to calculate demand and activity and hence to model the capacity gap. Levels of activity may then be used to project demand for treatment by region to 2013/14. The following calculations are based on existing working practices and do not factor in any efficiency considerations.

This modelling focuses on secondary care beds, which can be regarded as a primary indicator of capacity shortfalls. However, it is also important to note that modelling in other areas, especially primary care and rehabilitation, is currently restricted by the unavailability of robust data on which to build assumptions.

All Wales Trauma Demand

Current demand may be calculated as being: Demand for trauma is equivalent to current trauma activity.

Taking into account cross border flows and using actual average length of stay by region, plus the assumption that each bed is occupied for 85% of the time (Bagust et al, 1999) then the number of trauma beds required and used in 2001/02 was 744.

Any variance in bed occupancy rates above or below 85%, or in the average length of stay within each organisation will affect the outcome of the calculation. The average length of stay at each trust for emergency inpatients and for elective inpatients are assumed to be the same as for 2001/02.

Incident demand for trauma in Wales currently requires 744 beds.

There is currently no agreement about projected increase in trauma, although data considered earlier suggests that nationally the rate of demand is in fact declining slightly. As a consequence, a zero growth figure has been used for the projections for emergency trauma inpatient treatment per 100,000 resident population adjusted by the projected increase in population over the period to 2013/14. No efficiency factor has been built into this calculation.
Based on this population growth and assuming 85% occupancy, the number of trauma beds required for 2013/14 is projected to be 776 for Wales, comprising 342 for South East Wales, 279 for Mid & West Wales and 155 for North Wales.

Projected demand to 2013/14 for trauma in Wales requires 776 beds

All Wales Elective Demand

Current demand may be calculated as being:
Current inpatient/daycase elective activity + net waiting list growth + NHS procedures contracted to private providers

Modelling of elective orthopaedic demand takes into account cross border flows, the growth in the inpatient/daycase waiting list and assumes a conversion rate of 24%, plus patients contracted to receive treatment in the private sector. Using actual average length of stay by region, and making the assumption that each bed is occupied for 85% of the time (Bagust et al, 1999) the number of orthopaedic beds required to meet the demand in 2001/02 was 345.

As with trauma, any variance in bed occupancy rates above or below 85%, or in the average length of stay within each organisation will affect the calculation. Additionally, the referral patterns of Welsh residents to trusts in Wales and England is assumed to be the same as for 2001 / 02.

Incident demand for elective orthopaedics currently requires 345 beds

Between 2001/02 and 2013/14 the demand for elective inpatient and daycase treatment is projected to grow at an annual rate of 2.2% per 100,000 resident population (DTI, 1999)

Assuming 85% occupancy the number of elective orthopaedic beds required for 2013/14 is projected to be 456 for Wales, comprising 235 for South East Wales, 142 for Mid & West Wales and 79 for North Wales.

Projected demand for elective orthopaedics in Wales requires 456 beds
Table 15: Current and Projected Bed Requirements for Trauma & Orthopaedics

<table>
<thead>
<tr>
<th>NHS Trust</th>
<th>Current available beds</th>
<th>Estimated bed requirement 2001/02</th>
<th>Estimated bed requirement 2013/14</th>
<th>Projected shortfall 2013/14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiff &amp; Vale</td>
<td>168</td>
<td>173</td>
<td>194</td>
<td>26</td>
</tr>
<tr>
<td>Gwent</td>
<td>194</td>
<td>197</td>
<td>229</td>
<td>35</td>
</tr>
<tr>
<td>North Glamorgan</td>
<td>71</td>
<td>84</td>
<td>90</td>
<td>19</td>
</tr>
<tr>
<td>Pontypridd &amp; Rhondda</td>
<td>57</td>
<td>56</td>
<td>64</td>
<td>7</td>
</tr>
<tr>
<td><strong>South East Wales</strong></td>
<td><strong>490</strong></td>
<td><strong>510</strong></td>
<td><strong>577</strong></td>
<td><strong>87</strong></td>
</tr>
<tr>
<td>Bro Morgannwg</td>
<td>80</td>
<td>98</td>
<td>113</td>
<td>33</td>
</tr>
<tr>
<td>Carmarthenshire</td>
<td>78</td>
<td>75</td>
<td>85</td>
<td>7</td>
</tr>
<tr>
<td>Ceredigion</td>
<td>19</td>
<td>21</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td>Pembrokeshire &amp; Derwen</td>
<td>35</td>
<td>34</td>
<td>38</td>
<td>3</td>
</tr>
<tr>
<td>Swansea</td>
<td>133</td>
<td>144</td>
<td>161</td>
<td>28</td>
</tr>
<tr>
<td><strong>Mid &amp; West Wales</strong></td>
<td><strong>345</strong></td>
<td><strong>372</strong></td>
<td><strong>422</strong></td>
<td><strong>77</strong></td>
</tr>
<tr>
<td>North East Wales</td>
<td>60</td>
<td>58</td>
<td>66</td>
<td>6</td>
</tr>
<tr>
<td>Conwy &amp; Denbighshire</td>
<td>87</td>
<td>66</td>
<td>75</td>
<td>-12</td>
</tr>
<tr>
<td>North West Wales</td>
<td>77</td>
<td>83</td>
<td>92</td>
<td>15</td>
</tr>
<tr>
<td><strong>North Wales</strong></td>
<td><strong>224</strong></td>
<td><strong>207</strong></td>
<td><strong>233</strong></td>
<td><strong>9</strong></td>
</tr>
<tr>
<td><strong>All Wales</strong></td>
<td><strong>1059</strong></td>
<td><strong>1089</strong></td>
<td><strong>1232</strong></td>
<td><strong>173</strong></td>
</tr>
</tbody>
</table>

Source: QS1 (2001/02)

Based on existing working practices, the projected bed shortfall in Wales for trauma and orthopaedics by 2013/14 is quantified at **173 beds**

**Discussion**

These figures suggest that there is an underlying shortfall in the current trauma and orthopaedic bed provision in Wales, and that when projected to 2013/14, this amounts to 173 beds across the speciality. However, because there is flexible use of beds by emergency trauma and elective orthopaedic cases it is not possible to disaggregate this any further.

These figures should be treated with some caution as they are based on current ways of working and current bed use statistics. The fact that some trusts appear to require less beds than others may be due to their already low average length of stay, low delayed transfers of care rates etc. Other trusts should be expected to match these efficiency levels. Current efficiencies may perhaps be gauged by calculating bed figures per 1,000 population as given in Table 16.
Across the regions there is some disparity but when current bed figures are analysed per 1000 population the following distribution is apparent:

**Table 16: Available Beds per 1,000 Population**

<table>
<thead>
<tr>
<th>Region</th>
<th>Population (000s)</th>
<th>Current available beds</th>
<th>Beds per 1000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>South East</td>
<td>1,269</td>
<td>490</td>
<td>0.39</td>
</tr>
<tr>
<td>Mid &amp; West</td>
<td>981</td>
<td>345</td>
<td>0.35</td>
</tr>
<tr>
<td>North</td>
<td>668</td>
<td>224</td>
<td>0.34</td>
</tr>
</tbody>
</table>

Source: ONS (2002) – Mid-year population estimates

This suggests that despite the current bed allocations and comparisons with activity suggesting over provision in parts of Wales, when considered per 1,000 resident population, North Wales has a lower bed complement than the other two regions. Another consideration that affects the estimated requirement is current average length of stay, upon which the figures are calculated. Variations suggest that those trusts with lower length of stay require less beds, rather than suggesting that the trusts with higher length of stay should be aiming to reduce their length of stay as opposed to increasing their bed numbers. This serves to emphasise the impact of cross border flows on the activity and demand for trauma and orthopaedic services.

This analysis does not take into account latent demand, nor does it consider the implications of reducing waiting times targets below the current 18 month maximum waiting time. Instead, the calculations suggest that attempts to achieve efficiencies against benchmarked averages could release a significant number of bed days. Further focus on admission alternatives and community reablement schemes could release additional capacity, which to some extent may be offset against reducing waiting times targets and latent demand.

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4 Population data is 2002 mid year estimate.
Section 3: PATIENT ACCESS

3.1 Waiting Times and Waiting Lists

The Edwards Review of Orthopaedic Services in Gwent (Edwards, 2003) found that ‘the current orthopaedic waiting lists … are far too long.’ Although his report reviews orthopaedic services in Gwent, many of the findings have a wider application across Wales, both for inpatient/daycase treatments and first outpatient appointments. The long waiting times confirm a gap between activity levels required and activity undertaken. This raises serious issues of patient access and long term sustainable solutions are needed to address this position.

Current waiting lists for an orthopaedic inpatient/daycase procedure and for a first outpatient consultation in Wales are too long. This demonstrates a mismatch between supply and demand.

3.1.1 Waiting Times Policy

Ministerial manifesto commitments reaffirm expectations to improve patient access by driving down waiting times in key areas. Firm policy direction on future targets will form part of a detailed waiting times strategy currently under development, and this will inevitably require shorter waiting times for orthopaedics. Emphasis is placed nationally upon the length of time that an individual waits for their appointment, rather than the overall number of people waiting. Modelling is being undertaken to assess the likely impact of sustaining the 18 months waiting times target, and then reducing incrementally to 15 months and 12 months for inpatient/daycases, with a further reduction for outpatient waits to a maximum of 6 months.

To improve patient access, orthopaedic waiting times targets will become more challenging in future

Whilst initiatives to reduce long waiting times have become widespread practice, these are generally high cost and often focus on minor/daycase procedures, or on reducing outpatient waits which then impact on the inpatient/daycase list. Contracts with the private sector have been established in some localities to reduce long waiting times but these too are costly and generally not integral to the commissioning process. The introduction of long term sustainable solutions must negate the need for this approach.

Improving Health in Wales (Welsh Assembly Government, 2001) set out the Assembly’s firm intention to exert continuous downward pressure on waiting times. At that time a commitment was made ‘to ensuring that Welsh residents should not face longer waits than people elsewhere in the United Kingdom.’ The plan confirmed that ‘targets will be agreed on an annual basis to ensure that waiting times quickly fall to levels that compare with the best…’
Improving Health in Wales stipulates:

A sustained reduction, year on year, in the number of people waiting:
- over 12 months for orthopaedic treatment;
- more than 6 months for an orthopaedic outpatient appointment.

Health organisations were also required to demonstrate how they will:
- increase by a minimum of 10% the number of hip and knee replacement/revision operations;
- restructure orthopaedic services to match best practice.

Variation in targets between Wales and England causes considerable difficulties in regard of commissioning arrangements and equity of patient access. In England, waiting times targets for inpatient/daycase treatment are set to reduce to 3 months by March 2008 and for a first outpatient appointment to 3 months by December 2005. Parity across the European Community is a further factor to be considered. A recent European Court of Justice high court ruling raises issues of ‘undue delay’ which take precedence over European and domestic law. This will be an important element of the waiting times strategy and future target considerations for Wales.

Waiting times policy is managed through the annual Service and Financial Framework (SAFF) process. Current targets are:
- no patient to wait more than 18 months for an elective procedure (inpatient/daycase),
- no patient to wait more than 18 months for their first consultant appointment (outpatient),
- where the 18 month target has been met, at least a 10% reduction in maximum waiting time should be achieved.

3.1.2 Performance Against SAFF Targets
At the end of March 2003, all three regions met the 18 month inpatient/daycase target for orthopaedics. However, the underlying waiting times profile on the list gives cause for concern and raises questions of sustainability. Additionally, differential waiting times in Wales and England are proving increasingly problematic, particularly for North Wales due to cross border issues.

At the end of March 2003, the number of patients waiting over 18 months on the orthopaedic inpatient/daycase waiting list was 0

Meeting the outpatient target for orthopaedics has not been possible in some health communities, with Gwent Healthcare and Cardiff & Vale NHS Trusts having the longest orthopaedic waiting times and waiting lists. The effect of controlling inpatient/daycase lists has impacted heavily upon outpatient waiting times and contributes to the backlog at that stage of the care pathway. An added consideration is the frequent discrepancy between the number of cases that must be seen in order to achieve target waiting times and the level of activity purchased by commissioners within a health community. This is
illustrative of the continuous pressure that the service faces in balancing supply and demand, electives and trauma, inpatient/daycases and outpatients. Levels of activity and demand must be balanced if sustainable solutions are to be achieved.

At the end of March 2003, the number of patients waiting over 18 months on the orthopaedic outpatient waiting list for their first consultant appointment was 5,759

3.1.3 All Wales Waiting Times Trends
Closer analysis of all Wales trends demonstrates that there has been substantial progress in reducing the long waiting times for orthopaedic inpatient/daycase treatment, as illustrated in Figure 25.

Figure 25: Patients Waiting for Inpatient/Daycase Treatment

Source: PEDW (2002/03)

However, whilst the numbers waiting over 18 months has been decreasing as activity has been concentrated on this area, the numbers coming on to the inpatient/daycase waiting list has not reduced to the same extent. Consequently, the numbers waiting in the 15 - 18 month category give cause for concern. Known as a ‘cliff,’ a large proportion of this group of patients are forecast to breach the 18 month waiting time target if they are not actively managed in advance.

The number of long waiters for inpatient /daycase treatment has reduced significantly, but the numbers of people on the waiting list overall has not. Profiling reveals imminent ‘cliffs’ in long waiters that are likely to breach the 18 month target if not actively managed in advance
Conversely however, the number of patients waiting over 18 months for their first orthopaedic outpatient appointment demonstrates an upward trend, as illustrated in Figure 26. The overall list size also shows a worrying rate of growth. This results in long outpatient waiting times and supports Professor Edwards’ statement that ‘…patients are being added to lists quicker than they are being seen or treated.’ (Edwards, 2003)

**Figure 26: Patients Waiting for First Outpatient Appointment**

The number of patients waiting over 18 months for their first outpatient consultation has increased, and the total number of patients on the list has also risen.

Much has been done to reduce waiting times for inpatient/daycase treatment and increasing emphasis is now being placed on the outpatient waiting times. However, the concentration on the inpatient/daycase list to date has skewed the outpatient profile. Lack of capacity for inpatient/daycase treatment has created a bottleneck and in effect the outpatient waiting list might be regarded as a ‘valve’ (i.e. less outpatients are seen in order that the inpatient/daycase list does not grow out of control). This is evidenced to some extent by the previous two figures, showing little overall growth in the inpatient/daycase waiting list coupled with considerable growth in the outpatient list. The long wait for admission can often be preceded by long waits for outpatient appointments and addressing this could put an impossible strain on the system. The obvious effect that increased outpatient work will have upon inpatient/daycase conversion, and consequent list length must be clearly recognised.

Additional outpatient activity will have a significant impact on inpatient/daycase waiting lists.
Across Wales, trauma accounts for approximately 50% of trauma and orthopaedic activity. Inevitably, due to the nature of trauma, this generally takes priority over cold elective treatments, and can regularly lead to cancellation of elective activity and consequent growth in waiting lists. Methodologies for predicting trauma should therefore be developed, and linked with management of elective orthopaedic waiting lists to maximise use of the available resource. Furthermore, since the average length of stay for each trauma case is longer than the average length of stay for an elective case, trauma patients occupy a disproportionate amount of the available trauma and orthopaedic bedstock. The number of bed days that could be saved through the alternative management of trauma care is significant, and as such the impact of this on waiting list activity should not be underestimated.

The impact of trauma on orthopaedic elective waiting lists must be recognised and managed. This could be facilitated through profiling trauma trends and casemix.

Understanding casemix and its impact on access times is an essential element in the management of waiting lists. There has been a significant increase both in casemix complexity and the ratio of major to minor cases on the waiting list. Current epidemiological evidence suggests an overriding demand for joint replacements. However there is no reliable central picture and detailed analysis and associated waiting list management decisions are a matter for individual health communities. This is recognised in A Guide to Good Practice (Innovations in Care, 2003) which confirms that ‘the carve out caused by sub-specialisation must be managed, rather than trying to prevent it.’

The impact of sub-specialisation on elective orthopaedics must be managed locally.

3.1.4 Regional Waiting Times Trends
To some extent, the national waiting times trends mask regional variations that have emerged in recent years.

For inpatient/daycases, the South East and the Mid & West regions have a similar trend to the national picture. The number of patients waiting has remained relatively stable in these regions, yet in North Wales the total numbers on the waiting list has shown an increase since May 2001. This perhaps reflects the rate of outpatient to inpatient/daycase conversions in North Wales. All three regions have successfully eliminated their over 18 month waiting time category as at the end of March 2003.

The number of patients on the inpatient/daycase waiting list has remained relatively stable in South East and Mid & West Wales, but the list in North Wales has increased.
For outpatients, South East Wales has the highest number of patients experiencing long waiting times, and proportionately very high numbers of patients who have been waiting over 18 months compared with the overall list. The total number of patients on the outpatient waiting list demonstrates a rising trend in South East and Mid & West Wales. North Wales however, shows a marked fall in numbers waiting for their first outpatient appointment, possibly as these are converted onto the inpatient/daycase list. Overall list size for the regions reflects the different population size, with substantially greater numbers of patients waiting in South East Wales than in North Wales.

**The numbers of patients waiting over 18 months for a first consultant appointment is greatest in South East Wales**

### 3.1.5 Referral Rates

The size of the waiting list is determined by the number of patients removed from the list compared with the number added: the balance of supply and demand. In this context referral patterns are important. The data that is available on referrals to secondary care is not regarded as sufficiently reliable to draw firm conclusions from, but offers a useful indicator. Figure 27 demonstrates that, in keeping with population density, referrals are greatest in South East Wales.

**Figure 27: Number of Referrals by Region**

![Number of Orthopaedic Referrals by Region](image)


*Improving Health in Wales* emphasised that ‘robust referral monitoring arrangements and a planning model for elective and emergency care must be in place across Wales by March 2001.’ However the former Health Authorities

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5 December 2002 is the last available published data
concluded that referral rates in Wales are higher than planned activity and therefore the service is ‘planning to fail.’ Commissioning arrangements must therefore be considerably strengthened in order to ensure a move away from this scenario.

Current levels of referral exceed the level of activity that is commissioned

Commissioners might also have greater involvement in formalising processes for moving patients between consultants, or indeed between trusts for their treatment. This will to some extent rebalance the use of available capacity and allow geographical equity of access.

Improving Health in Wales also advocated that ‘referral protocols in line with National Institute for Clinical Excellence (NICE) guidelines must be in place with NHS Trusts and protocols for at least two main waiting list specialities in place for each LHB…’ There is also considerable scope for reviewing patient pathways, with associated referral guidelines as a form of demand management. These systems are largely still under development within the health communities, although pockets of good practice have already been implemented which may be drawn upon further.

Demand management must be strengthened to reduce the number of referrals into secondary care through the introduction of referral protocols and alternative patient pathways

3.1.6 Prioritisation

Clinical priorities for listing patients are well accepted, and it would be anticipated that most treatments are removed either from the start of the list as ‘urgent’ or from the end of the list as ‘routine.’ Whilst there will inevitably be some expedites this would not normally be the expected approach. This is particularly true in orthopaedics where trauma is dealt with non-electively and there are few electives clinically classed in the ‘urgent’ category. Systems do exist to prioritise patients according to clinical need, e.g. the ‘Carmarthen prioritisation system’ and it is important that such principles are uniformly applied.

Improving Health in Wales aimed to ensure that, over time, ‘non-emergency patients waiting for inpatient/daycase treatment are prioritised according to the severity of their condition in a consistent and transparent way.’ However the current patterns of removals from the list suggest that prioritisation of cases varies and that routine patients are not always listed in order. In accordance with queuing theory this results in overall longer waiting times for a majority of patients. A Guide to Good Practice confirms that the key to good prioritisation is consistency of use and ensuring that patients within each category are seen in strict date order. Further emphasis is therefore needed on the Clinically Prioritise and Treat Toolkit (CPaT) supported by Innovations in Care, to ensure that waiting lists are managed appropriately according to clinical priority.

A consistent approach is needed to prioritisation and scheduling in order to...
3.1.7 Diagnostics and Therapies Waiting Times

Waits for diagnostic and therapy services can influence surgical waiting times. However, unlike data for inpatient / daycase and outpatient waiting times, data on waits for diagnostic and therapy services has not historically been centrally collected. Until recently, there has been a paucity of analysis in this field and a consequent inability to judge what impact waiting times in these services are having. A project has now been set up to introduce the collection of diagnostics and therapies waiting times information and there is a pilot underway, with the first publication of all Wales data expected in October/November 2004. Preliminary work suggests that there are long waits in diagnostic and therapy services and it is therefore appropriate to expect diagnostic and therapy services to adhere to good practice in the management of their waiting lists as set out in A Guide to Good Practice (Innovations in Care, 2003). Further work will be required to ascertain the extent to which the very long waiting times experienced by some patients to access orthopaedic services are directly related to waiting times for diagnostic or therapy services, and whole systems solutions should be sought.

Measurement of diagnostic and therapy waiting times will facilitate tighter management of these waiting lists

Solutions

**Conclusion:** Orthopaedic access times may be improved by strengthening management of waiting lists, including commissioning arrangements

- Waiting times policy should be clarified at a national level, including future waiting times targets and cross border issues.

- Long term sustainable solutions to improve orthopaedic services in Wales are preferable to short term waiting list initiatives to remove long waiters and meet waiting times targets. They are costly and have a consequent impact on outpatient conversion to the inpatient list and the length of the waiting list.

- Reliance on costly contracts with the private sector to treat long waiters must be reduced. Any contracting for extra capacity in the private sector should be part of the commissioning process and should be planned in advance using a whole systems approach for mutual benefit.

- Commissioners should work across the whole system to develop robust activity agreements that more closely mirror demand presenting. There is a need to move away from existing arrangements where referrals exceed planned activity and the system may be regarded as 'planning to fail.'

- Where health communities have long waiting times and list length, particularly in the South East, commissioners should give consideration
not only to moving patients between consultants, but also between trusts for their treatment in order to rebalance use of available capacity and allow geographical equity of access.

√ Rising levels of demand have, in some instances, led to the use of the outpatient waiting list as a ‘valve’ to control inpatient and daycase waiting times. Demand management approaches must ensure that waiting times for outpatients and inpatients/daycases are tackled concurrently, and this is likely to require additional capacity and/or new ways of working.

√ Referral monitoring arrangements are not robust. Further emphasis should be placed on reliable referral data as this forms an important element of demand management.

√ Forward planning of latent demand (prevalent pool) and how this should be managed in the future is also essential to minimise future risk.

√ Referral guidelines and protocols should be jointly developed across the care sectors to ensure treatment in the most appropriate care settings and to create a seamless service that covers primary, secondary and intermediate care services.

√ Treatment prioritisation and scheduling patterns should be consistent and transparent. Prioritisation according to clinical need could be assisted through the use of a nationally agreed priority scoring system, e.g. the Carmarthen model. Similarly, the Clinically Prioritise and Treat Toolkit (CPaT) supported by Innovations in Care should be used in all trusts to ensure that waiting lists are managed appropriately within clinical priority.

√ Levels of consultant specialisation must be appropriate to demand patterns and coincide with the casemix presenting on a regional basis. This should be managed at the local level.

√ Trauma must be tightly managed and predicted in each locality to minimise its adverse impact on elective orthopaedic surgery.

√ Diagnostic and therapy services should adhere to best practice guidance in the management of their waiting lists to ensure optimum activity within the available resource. Further analysis of the impact that long waiting times for these services may have on patient access to orthopaedic services is also needed to allow the development of whole systems solutions.
Section 4: MANAGING DEMAND

4.1 Prevention

The Review of Health and Social Care (Welsh Assembly Government, 2003) considers that, ‘services will need to be realigned to focus on prevention and early intervention.’ Evidence suggests that this offers significant long-term cost and quality of life gains. In the case of trauma and orthopaedic services, where people at greatest risk are those with low bone mass (osteoporosis) and those who are likely to fall, a multi-factorial intervention strategy could have a very significant impact. Prevention strategies should therefore focus on the avoidance of osteoporosis and the prevention of falls and fracture amongst clearly identifiable risk groups. This will also contribute to the achievement of the national health gain target to reduce the European Age Standardised Rate for hip fractures in the 75 and over age group by 10% by 2012.

Prevention and early intervention to improve bone health and reduce the incidence of fracture will have a major impact on T&O service demand

4.1.1 At Risk Groups

The elderly are the key group suffering low bone density and are at high risk of fracture, and therefore the group who would gain the most benefit from prevention and early intervention. For example, a population-based study of injury undertaken in Cardiff (Johansen et al, 1997) demonstrates that the number of presentations with fracture is highest in the 65+ age group, particularly in women (Figure 28). The study found that, each year, a total of 80 fractures will be suffered among every 1,000 women aged over 85. These include 40 fractures of the hip, 15 of the wrist, 6 of the upper arm, 4 of the spine, 4 of the hand and 4 of the ankle/foot.

Figure 28: Overall Incidence of Fracture

Source: Johansen et al (1997)
This age and sex distribution is mirrored in the incidence of hip fracture, which again is highest in the female population. Hip fracture is a devastating injury with up to 10% of people dying within a month of suffering the fracture, and half of survivors failing to regain their former independence (National Osteoporosis Society, 2003). The injury is rare in people under the age of 65, and has its greatest impact in people in their eighties, as illustrated in Figure 29.

**Figure 29: Incidence of Hip Fracture**

![Incidence of Hip Fracture](image)

Source: Johansen et al (1997)

The elderly female population are the group most likely to suffer fracture

With more than 4,200 patients suffering hip fractures each year in Wales, this is approximately equivalent to the continuous occupation of 400 beds a year. The age and frailty of this key group of people who suffer hip fracture leads to their needing prolonged inpatient care, with an average length of stay of 35 days (Figure 30). As a result, approximately half of acute orthopaedic beds in Wales are occupied by people recovering from osteoporotic fractures - the majority of these being hip fractures. This underlines the significant impact that successful prevention could achieve.

Numbers of fractures and resulting costs will rise by 1% per year simply as a result of ageing of the Welsh population

Hip fracture care requires collaboration between many agencies: several directorates within secondary care, as well as crucial contributions from primary care, social and voluntary services. The total cost of the injury to these agencies in the first two years after injury is £20,000 (Johansen et al, 2000). This implies a total cost to health and social services in Wales of £84 million a year.

The National Osteoporosis Society’s *Osteoporosis and Fracture Prevention Strategy* (2003) highlights specific sub-groups of the elderly population who should be targeted if we are to reduce the burden of hip fracture on the population, and on trauma and orthopaedic services in Wales. Key target groups are regarded as being frail housebound and institutionalised older people; people presenting with a fragility fracture; and, people at high risk of falls.

**Key risk groups are frail housebound and institutionalised older people; people presenting with a fragility fracture; and, people at high risk of falls**

### 4.1.2 Secondary Interventions

**Frail housebound and institutionalised older people**

Evidence suggests that residents of nursing and residential homes are a major contributor to total hip fracture numbers, with over one quarter of patients suffering their fracture in a care home, as shown in Figure 31.
A study by Johansen et al (2003) found that even after adjustment for the age and sex profile of the care home population, fracture incidence remained 2.3 times higher and hip fracture incidence 3.6 times higher than in the general elderly population (Figure 32).

**Figure 31: Place of Residence of People Presenting with Hip Fracture**

![Figure 31: Place of Residence of People Presenting with Hip Fracture](image)


**Figure 32: Risk of Hip Fracture in Care Home Residents, Compared with the General Population, In People Aged 65+**

![Figure 32: Risk of Hip Fracture in Care Home Residents, Compared with the General Population, In People Aged 65+](image)

The incidence of hip fracture is over three times higher among care home residents than in the general elderly population

Care home residents have similar length of stay after hip fracture to other sectors of the population, but much higher mortality than those admitted from their own home. In spite of this, to date, there has been limited progress in developing a coordinated strategy to ensure that such individuals are offered appropriate preventive treatment. Elderly people living in residential and nursing homes are an easily defined, easily accessible, high risk potential target population for fracture prevention. In order to reduce the number of patients who come from this group with fracture incidence, there is a need to develop a strategy to ensure these individuals are offered appropriate preventative treatment.

Secondary Prevention of Fragility Fracture
The *Osteoporosis and Fracture Prevention Strategy* confirms that hip fracture is preventable. Fractures occur in elderly people because of skeletal fragility, and have a major impact on this group in terms of increased mortality, long term disability and loss of independence. Evidence demonstrates that two-thirds of women with a hip fracture have previously had a fracture at another site. This implies that they have already presented to medical attention with an injury that demonstrates their risk of osteoporotic fracture. In spite of this at present there is rarely any coordinated strategy to address questions of osteoporosis assessment and fracture prevention in this patient group.

Evidence confirms that hip fracture is preventable and intervention in high risk groups has been found to reduce fractures

Experience in Aberystwyth has shown how a Fracture Liaison Nurse can lead secondary fracture prevention as a routine part of fracture management in the elderly. This should apply to inpatients recovering from surgery and to outpatients presenting with fracture. A protocol driven assessment, combined with assessment of bone densitometry, and appropriate drug therapy can be provided efficiently to large numbers of patients alongside their orthopaedic care.

Given that this group of patients must be at the highest risk of future fracture this approach is a most appropriate way of avoiding further fracture and future pressures on trauma and orthopaedic services.

Falls Prevention
Falls account for over 90% of hip fractures (Johansen et al 1999) and the risk of falling increases with age. Although it is difficult to identify those at greatest risk of falls, a previous fall is a strong indicator. People aged 65 and over account for almost half of the serious cases of falls in the UK. Almost half these serious cases include those aged 85 and over, and result in hospital admission. (Department of Trade and Industry, 1999)

Much research has been undertaken in the area of falls prevention among the elderly. For example, Close et al (1999) studied 400 over 65 year olds
presenting to A&E with a fall. They found that with medical review and occupational therapist home visits, recurrent falls were reduced by two thirds, and hospital admissions reduced by one third. There was also a trend for reduction in serious injury.

Investigation of reasons for previous falls and unsteadiness in aged patients, has been shown to reduce recurrent falls, through medical review and occupational therapist home visits

Data from the University Hospital of Wales' Emergency Unit shows that 3,000 people present each year with injuries that result from falls, half of whom are admitted. As a result Cardiff & Vale NHS trust has produced a falls risk screening tool based on the National Guidelines for falls prevention (British Geriatrics Society, 2001). However, according to these guidelines, one in six older people require falls assessment (Pooviah et al, 2003). It may also be beneficial for trusts with a large A&E Department to arrange orthogeriatric input within their trauma unit.

Cardiff & Vale Falls Risk Screening Tool is therefore designed to identify people who are at high risk of falls, and leads directly into a nurse-led care pathway for falls assessment. This care pathway allows the nurse to assess and address remediable falls risk factors, and rationalises any subsequent specialist referral (such as to the voluntary sector, social services, physiotherapist, occupational therapist, Elderly Care Assessment Service, day hospital, GP, optician or fracture liaison nurse). Additionally, this screening function may be strengthened through the introduction of drug therapy, where appropriate.

Environmental risk factors can also have a significant impact on the incidence of falls. Ensuring a safe home environment is an important consideration, particularly relating to aids and adaptations. Modification within the home such as the introduction of handrails can reduce accidents and increase confidence, and home assessment visits have been found to prevent falls among older people (Cummings et al, 1999).

Interventions aimed at preventing falls should target both health related and environmental risk factors for individual patients

(Gillespie et al 2000)

Evidence suggests that wearing of hip protectors by at risk groups will significantly reduce the occurrence of hip fractures. A study published by Lauritzen et al in 1993 concluded that where nursing home residents wore hip protectors, the risk of hip fracture reduced by half. Thirty-nine hip fractures were recorded during the study, and all affected people who were not wearing hip protectors. This illustrates a major difficulty in that the use of hip protectors is not well taken up.

These messages are reinforced through the English National Service Framework for Older People (Department of Health, 2001). Although it does not directly apply to Wales, many of the messages are valid to the Welsh
population. In particular, a key standard - “Standard 8 - Falls” - requires the NHS to take action to prevent falls and reduce resultant fractures or other injuries in their population of older people. It also requires that older people who have fallen should receive effective treatment and rehabilitation and, with their carers, receive advice on prevention through a specialised falls service. The National Service Framework also offers a detailed falls and osteoporosis care pathway for older persons who fall or who are identified as being at high risk of falling.

Wales’ National Service Framework for older people is in preparation, and will address similar issues for the population of Wales. Initial action will involve a detailed review of local health and social care needs of older people and establish mechanisms to support the local delivery of the National Service Framework for Older People in Wales.

4.1.3 Primary Prevention
In June 2003, The National Osteoporosis Society published its Osteoporosis and Fracture Prevention Strategy. This strategy is intended to help inform Local Health Boards working with NHS trusts and social services in order to address the rising tide of osteoporotic fractures. Its main message is that early intervention to promote and maintain bone health can make a real impact on the future health and well being of patients. A sedentary lifestyle, poor diet, smoking, and alcohol misuse are each detrimental to bone health.

The benefits of exercise throughout life are well proven, and have been shown to benefit both quality and duration of life. The recent Health Promotion Technical Report (Windle et al, 2003) confirms that ‘exercise has been found to improve strength, balance and flexibility, improve bone density…’ However findings in the report also suggest that although frail older people potentially have the most to gain from exercise by maximising residual function, many older adults do not partake in any regular physical activity.

Poor diet is also associated with osteoporosis. Dietary supplements such as calcium and vitamin D may be beneficial particularly to older adults. The capacity for calcium absorption is reduced with age and vitamin D is needed for bone health. Dietary supplements can be particularly beneficial to older adults: a study undertaken in France revealed that calcium and vitamin D intake over three years reduced hip fractures by 28% (Chapuy et al, 1994). In North West Wales NHS Trust, calcium and vitamin D is routinely prescribed to all those suffering fractured neck of femur.

A further study by Bischoff et al (2003) concluded that vitamin D supplements accounted for a 49% reduction of falls. Other fracture prevention programmes have recommended that this approach be promoted among high risk groups, particularly people in care homes.
Combined calcium and vitamin D is a highly effective approach to the management of fracture risk and osteoporosis in frail older people, particularly those in care homes.

These findings suggest that those with low bone mass (osteoporosis) would therefore benefit from a health promotion programme focusing on lifestyle factors, particularly exercise and nutrition.

**Drug Treatments**
Pharmacological agents can increase bone mass. A study of the effect of alendronate on the risk of fracture (Black et al, 1996), found that the risk of hip, wrist and vertebral fractures was reduced by half in patients with osteoporosis who were treated with alendronate. Similar benefits have been shown for the other bisphosphonate drug, risedronate (McClung et al, 2001).

Less potent anti-osteoporotic drugs including vitamin D analogues, selective oestrogen receptor modulators (SERMs), HRT, and calcitonin all have a role, especially for inpatients who are unable to take bisphosphonates.

**Osteoporosis screening**
The occurrence of a fracture reflects the ability of bone to withstand the impact of a fall. Osteoporosis may be diagnosed using accurate and non-invasive measures of bone mineral density. Screening for bone density and fragility fracture and the use of DEXA scanning is well debated. The British Orthopaedic Association (2003) considers that ‘all patients more than 60 years old presenting with fragility fracture should be evaluated for osteoporosis by measurement of bone density.’ This normally requires specialist equipment, which is currently concentrated in South Wales, plus an adequate staff resource to coordinate screening.

**4.1.4 Solutions**

**Conclusion:** Prevention and early intervention offer significant long term cost and quality of life gains, and are likely to impact favourably on capacity

- All prevention programmes should pay particular attention to the high risk group living in care homes that will particularly benefit from prevention strategies.

- Commissioners should require that secondary prevention be a routine part of fracture management in people over the age of 50, both for inpatients recovering from surgery, and for outpatients presenting to fracture clinic.

- There should be locally based falls’ prevention programmes, which may significantly reduce the incidence of fractures. This should focus on environmental factors, and the use of hip protectors as well as health related risks.
√ Primary care surveillance schemes focusing on at risk individuals could have a considerable impact.

√ The Health Promotion team should develop a multiple intervention campaign that builds upon the belief systems of the elderly to promote the benefit of general lifestyle factors - particularly diet and exercise - that improve bone density, as well as overall health and well being.

√ Calcium and vitamin D supplementation should be routinely considered for appropriate older people to reduce the incidence of osteoporosis, including those who are frail, at risk of falls, have sustained previous hip fracture, are housebound, or living in institutional care. Groups known to be at especially high risk of osteoporotic fracture should be assessed and considered for bisphosphonate therapy.

√ Enhanced screening for bone density and fragility fracture could be beneficial. This would require adequate staffing and equipment.
4.2 Primary Care

*Improving Health in Wales: The Future of Primary Care* (Welsh Assembly Government, 2001) seeks to strengthen and develop primary care services, and to place a value on the continuity and the stability of the service. Traditionally, emphasis has been focused on the secondary care sector to provide the greater range of treatment options, whilst primary care resource availability has restricted the level of care that can be provided within the community. A re-shifting of this balance is needed to achieve improved partnership working that offers patient-centred care in the most appropriate setting.

Increased partnership working between primary and secondary care to enable more patient care to be undertaken in the community will improve the patient experience.

4.2.1 Primary Care Led Service

General Practice is normally the first point of contact for patients with non-emergency orthopaedic complaints. Primary care practitioners, therefore, have an important role to play in early prevention, treatment or onward referral to ensure that patients receive the most appropriate treatment at the most appropriate time, in the most appropriate setting. However, current practices, resources and expectations restrict the extent to which patients can be adequately managed within the primary care setting. *The Review of Health and Social Care* intends to make a reality of the preventative and primary care led service, which forms part of the Assembly’s policy, although it agrees that ‘the primary care sector as currently configured requires considerable development to take on its enhanced role.’

For example, it seems that a proportion of a GPs working week is taken up with patients who want an update on their wait to see a consultant; only 2% of consultations involve significant conditions that require referral. Figure 33 provides a snap shot of a week in a GPs surgery in Merthyr Tydfil in June 2003.

**Figure 33: A Snap Shot of a Week in a GP Surgery, June 2003**

- 25% of adult consultations are orthopaedic
  - of which 18%:
    - minor musculoskeletal
    - foot, osteoarthritis of multi-joints
    - lower back
    - soft tissue conditions
  - The outstanding 7%:
    - 2% significant conditions that require referral
    - 5% requesting an update on where they are on the waiting list
This illustrates a pressing need to rebalance the nature of the services provided. Given appropriate infrastructure, primary care could offer a different contribution to the provision of orthopaedic services than the current service model. At the present time, there remains a divide between primary and secondary care services, and the way in which each sector contributes to the management and care of trauma and orthopaedic patients. The intermediate and social care sectors too have an important role to play in joined up whole systems working.

There is a need for closer partnership working between primary and secondary care to enable more work to be undertaken in the community, with further emphasis being placed on how secondary care can support primary care. The *Future of Primary Care* strategy envisages an integrated framework for delivery, building upon the generalist GP service, with some specialist services provided in individual practices, and a critical mass of support, diagnostic and therapy services based within the community setting.

For example, there is great potential for innovative use of primary care, supported by extended scope practitioners to develop a musculo skeletal service in the community, to avoid the need for a significant proportion of referrals into secondary care. Additionally, evidence suggests that increased numbers of joint injections could be undertaken within primary care as well as a greater level of minor surgical interventions. However, the potential is limited by the number of GPs currently accredited to undertake minor surgery, and the restrictions associated with single-handed practice in a number of areas of Wales. The introduction of the GMS contract may also influence aspects of service delivery.

With appropriate processes and support, primary care provision might be refocused to provide more point of contact treatment and a true primary care led service.

### 4.2.2 Primary Care Team

The *Future of Primary Care* strategy considers that, ‘well developed primary care teams, working closely with public health, health promotion and an appropriate secondary/tertiary service, are an essential part of our plan to deal with the determinants of health, health inequalities...’ It states that new models of working for nursing and Allied Health Professionals will be developed as part of the redesign of the primary care workforce as key professionals in the primary care team. This is important if the primary care team is to undertake a role in prevention, surveillance and symptom management.

Members of the primary care team are well placed to encourage health promotion and prevention of osteoporosis and fracture amongst the elderly, in particular. This can be achieved through a combination of raising public awareness and opportunistic or proactive interventions. Surveillance of at-risk individuals, both in terms of those with low bone density and those at risk of falls, is an important role for all members of the primary care team. The team
also have a significant role to play in prevention by encouraging healthy lifestyles e.g. smoking cessation, weight loss, diet and exercise.

In shifting the focus of services from secondary care to the primary care sector it will be important to consider not only workforce configuration, but also the clinical governance arrangements for the services, particularly ensuring that the primary care staff are appropriately trained and supervised. The importance of the primary/secondary care network in ensuring sound clinical governance arrangements for the service is, therefore, essential.

Further emphasis should be placed on the role of primary care, with adequate support and strengthening of the primary care team to facilitate this

4.2.3 Demand Management and Treatment Options

The Future of Primary Care strategy confirms that “primary care will play an expanded role in the management of demand in the future”.

Currently, GPs are the main gatekeeper to secondary care services and are pivotal in demand managing and co-ordinating access to wider health care provision in Wales. However, current pressures and limited care pathways can mean that onward referral to secondary care may appear to be the only treatment option available. There is significant potential for exploring the joint development of care pathways by clinicians in the primary and secondary sectors. A good example of this are back pain and musculo skeletal pathways.

There is some evidence of GPs still referring largest volumes of patients to consultants with long waiting times. Reasons behind this are variable, but on some occasions may be a result of historic practice or patient choice. In other scenarios, GPs are not referring patients into secondary care until it is really necessary because of the long waiting lists and lack of any other apparent route of patient care under which to be treated. This might be addressed through the introduction of a central referral hub for each trust or health community.

In this context, referral protocols and guidelines have an important role to play. Some LHB areas have already produced referral guidelines between GPs and hospital consultants to reduce avoidable referrals.

A large proportion of referrals relate to major joint surgery and revisions. These patients are often forced to wait 18 months for their first outpatient consultation and then up to a further 18 months for their inpatient procedure. Consideration might be given to alleviating an element of this waiting time, through direct referral onto the inpatient waiting list without the preceding and perhaps unnecessary outpatient appointment. This might be best undertaken by a specialist GP for orthopaedics, and this model is becoming increasingly widespread in England. This would have to be governed by strict referral
protocols and a robust pre-assessment service but, if successful could substantially reduce long waiting times.

4.2.4 Direct access to diagnostics and therapies
Access to diagnostic and therapy services from primary care is variable but would provide significant support for GPs and strengthen primary care. Lack of direct access can result in significant delays, more ‘revolving door’ and even duplication.

Direct GP access to diagnostic and therapy services could make an important contribution to demand management, and this is crucial to managing workflow. For example physiotherapy services can speed up mobilisation and return to work significantly; evidence suggests that increased physiotherapy in primary care could recast workloads and reduce the pressure on GPs. GPs should also have direct access to a range of diagnostics with direct report back, although this would have to be addressed in a whole systems context, taking into consideration the potential knock on effects. This may involve for example further skills’ training for radiographers for example who would interpret x-rays and use Royal College guidelines to advise onward referral to secondary care as necessary. This could usefully be advanced through the introduction of Specialist GPs who can manage and control appropriate levels of direct access to certain diagnostic and therapy services.

Protocol driven direct access for GPs to diagnostic and therapy services could significantly improve the treatment pathway, reduce patient waiting times, and focus use of limited resources

4.2.5 Extended Roles
The Review of Health and Social Care believes that primary care must have increased capacity facilitated by the development of new roles, e.g. specialist GPs, nurse practitioners.

The role of the specialist GP offers potential to considerably strengthen services. Accredited courses have been developed to equip interested GPs with higher levels of skills in certain areas of clinical practice, including orthopaedics, which has supported different models of clinical services. This approach is already widespread in England. For example, a specialist GP may provide minor surgery, joint injections, and act as an intermediary for direct access to more complex diagnosis.

Specialist GPs may also play an enhanced role in overseeing appropriate referral pathways to channel the patient through the most suitable treatment option. An example is where a specialist GP, working with the local department, receives referrals from fellow GPs in the area and provides specialist advice on patient management or onward referral to a hospital consultant, where indicated. This provides an effective triage for referrals, although GPs retain the right of direct referral, and maintain the primary care gate-keeping role. It is an example of primary and secondary care providing support for each other to manage capacity issues.
In England, the Department of Health has found that where GPs with a special interest are working, patients are seeing real benefits. Waiting times are reduced and patients are able to receive treatment traditionally only available in hospitals.

Each LHB should assess the scope for Specialist GPs within their health community to provide extended capacity and to facilitate extended roles.

Extended roles for other members of the practice team is also a model that could be developed further. For example, the Review of Health and Social Care rehearses a vision of ‘most primary care provided by nurses and other healthcare professionals, and GPs focusing on patients with more complex needs and providing a wider range of diagnostic and treatment services.’ At present, the reality varies from practice to practice, with some offering a range of extended services and others following the single-handed GP model. Further consideration of alternative management routes and multi disciplinary team care programmes forms an important part of this approach.

Extended roles for other members of the primary care team should be encouraged wherever workforce considerations allow.

Recruitment and retention issues are as problematic in primary care as they are in secondary care. For more specialist primary care services to be sustainable, there needs to be appropriate workforce planning for all members of the primary health care team.

**4.2.6 GMS Contract**

There are many examples of good practice and new ways of working in the primary care setting across Wales, and the new GP contract provides a unique opportunity to introduce the changes in a co-ordinated and effective manner. The GMS contract is a very significant potential lever for change. Enhanced services provide a very real opportunity for integrating some secondary care services into the community and developing the roles of GPs with a special interest and introducing more therapy and nursing services into the community.

GP recruitment is an issue in many areas of Wales and in certain areas, there may be a shortage of GPs who have an interest in, or who wish to develop an interest in orthopaedics or minor injuries. Thus the use of specific salaried GPs working across a wider area may be an alternative. Again, the new GMS contract may be helpful in facilitating this method of working.

**4.2.7 Primary Care Resource Centres**

A key part of The Future of Primary Care strategy focused upon ‘the development of primary care resource centres to support general practices…’ The strategy explains that there are different resource centre models, but they will provide a base for many of the more specialised services to support primary care in the locality.
Resource Centres will be established by Local Health Boards and will develop managerial and clinical services serving a population of about 50,000 people. They should be seen as part of community wide and whole-system service development plans that link primary care to developments in intermediate and secondary services. They will become the hub of local professional education and governance activities in collaboration with local practices.

Source: The Future of Primary Care (Welsh Assembly Government, 2001)

A typical primary care resource centre would provide:

- a combination of extended primary care services e.g. GPs with a special interest, health promotion clinics;
- diagnostic and therapy services, e.g. simple diagnostics, occupational therapy services, telemedicine.
- First contact services e.g. minor injuries, self help advice;
- Partnership services, e.g. social care, links to community groups.

Such centres would offer an opportunity to strengthen support for primary care and to redress the balance with the acute sector allowing an opportunity to support local services by outreaching some of the functions ‘…currently locked within a hospital model.’

Current pressures faced by general practitioners can affect the level of services that they are able to provide. This offers a firm case for working differently. There must be a recasting of the balance so that more treatments occur in primary care, but the support provided by secondary care must alter to achieve a balance. This may take the form, for example of increased outreach services from secondary care, or direct access to investigations or physiotherapy that will allow consequent alteration of patient flows. Some of the services that are available vary significantly by LHB area, or even by practice.

Information technology (IT) could provide a significant lever for change to enable more traditional secondary care services to take place in the community. Telemedicine could be used for specific services e.g. minor injuries and minor surgery. IT access to the results of diagnostic tests, x-ray images and electronic health records would also be helpful for devolving services to primary care.

Primary care and secondary care must join together to offer a seamless and mutually supportive service to enable optimum care, which could be facilitated through the primary care resource centre model and aided by improvements in information technology.

The primary care resource centres described are intended to support the existing practice model of primary care, by providing local services (dietetics, physiotherapy, chiropody, speech therapy, occupational therapy etc) that require larger scale organisation for support. Resource centres will enable the
development of new models of primary care, for example nurse practitioner based services.

4.2.8 Solutions

**Conclusion:** Primary care capacity requires significant strengthening to allow increased emphasis on a primary care led service. Managing demand is a further key element of the solution to balancing supply and demand for trauma and orthopaedic services in Wales.

- In keeping with the findings of the *Review of Health and Social Care*, further emphasis should be placed on a primary care led service, with a reshifting of the balance and due consideration of how secondary care can support primary care, particularly with outreach functions.

- Primary care teams should be strengthened to allow new ways of working. For example, support could be available to allow all members of the primary care team to provide routine prevention, surveillance, and symptom management.

- Systems for channelling demand should be developed in order to reduce pressure on capacity. Developing alternative patient pathways, e.g. for musculo skeletal conditions will mean that certain categories of patient need not hit an outpatient or treatment waiting list.

- Consideration should be given to piloting a central referral hub for each trust or each health community. Development of a referral hub could address instances were large volumes of patients are still being referred to consultants with the longest waiting times, facilitate partial booking systems and provide a focus for any queries about appointments and waiting times.

- Consideration should be given to reducing outpatient waiting lists by listing major joints direct onto consultant inpatient lists, negating the need for an outpatient consultation. This would require careful discussion and clear guidelines and criteria, and might be a role best undertaken by the Specialist GP (Orthopaedics). This would also require formal pre-assessment within secondary care prior to admission for surgery, which could be nurse led.

- GP direct access to diagnostic and therapy services must be made available to strengthen the primary care function. This could reduce waiting times, improve patient outcomes and channel demand. There should be a set of services directly available to primary care practitioners, taking secondary care into primary care e.g. CT/MRI scanners.

- Increased emphasis should be placed on physiotherapy care pathways to allow access to an appropriate level of expertise in each care setting. This is likely to involve access to a general physiotherapist in the primary care
setting, greater expertise within the primary care resource centres for more complex treatment or diagnosis and access to consultant therapists within secondary care for specialist conditions.

✓ Commissioners should develop a network of specialist GPs (orthopaedics) to help with the assessment and treatment of orthopaedic patients within the primary care arena. This will facilitate earlier access for simple procedures, reduce deterioration, and improve the patient experience through increased point of contact treatment. Specialist GP functions would include, for example, minor surgery and joint injections. Specialist GPs should also play an important role in accessing more advanced diagnostic and therapy services within primary care and interpreting films following set protocols.

✓ Other work is being undertaken to develop the concept of primary care resource centres in Wales. Within orthopaedics it would be beneficial for the primary care resource centres to incorporate direct access to key diagnostic and therapy services, and to support the role of the specialist GP. Primary care resource centres could offer additional services such as outreach physiotherapy; back pain clinics; osteopathy; acupuncture and chiropody, as well as extended outreach secondary care, simple diagnostic and therapy services and partnership services.
Section 5: USING OUR CAPACITY EFFICIENTLY

5.1 Management Processes and Good Practice

The Review of Health and Social Care considers that changes in demography and technology mean that in order to address demand, health and social care services need to work more efficiently. It states that ‘there is some good and some excellent performance in health and social care. But there is also widespread under-performance associated with systemic defects.’ It is therefore important that management processes are streamlined in order to optimise use of the capacity available and examples of evaluated good practice are widely applied to ensure equity and quality of care.

The current service profile for trauma and orthopaedics demonstrates a whole range of good practice, but there is a need to standardise and roll out those practices that have been shown to be effective right across the health economies in order to achieve maximum benefit. It is apparent that changes are possible within the existing service to improve overall throughput, although it is recognised that this is unlikely to be sufficient to meet demand.

Community wide whole systems working is needed to ensure that services are well managed and good practice is widely applied, to ensure that minimum standards and continuous improvements are promoted

5.1.1 Tighter Management Processes

Whilst it is acknowledged that current access difficulties for trauma and orthopaedic services in some parts of Wales might be influenced by capacity limitations, there is a recognition that providing long term sustainable solutions is not solely about increasing capacity. Service improvement must also be achieved through tighter management and streamlining of processes, and this should be routinely undertaken as a matter of course. This view was one of the key findings of the Review of Orthopaedic Services in Gwent (Edwards, 2003), which emphasised ‘…the need to manage orthopaedic services more tightly.’ Professor Edwards’ recommendations include, for example, tighter management of waiting lists, and better use of theatre capacity.

It is crucial that all organisations apply a uniform standard of good management practice and develop specific action plans for improvement in areas identified as not functioning optimally. Many trusts now employ a Modernisation Manager to help facilitate this. At a national level, the development of processes and culture within health organisations is influenced through the work of Innovations in Care. A number of their key programme areas offer clearly defined expected standards for the management of specific process areas, although compliance with such standards remains variable. The recent introduction of National Change Agents and Regional Service Improvement Teams will act as a further catalyst
for change, facilitating the implementation of national policies and identified best practice.

Good management practice for trauma and orthopaedics can be influenced through strong local management processes and national expected standards guidance to minimise variation

5.1.2 Waiting List Management
In order to make better use of existing resources, all trusts are tasked with assuring stringent waiting list management to streamline the patient journey and facilitate shorter waiting times. The Guide to Good Practice published in November 2003 by Innovations in Care sets out clear guidelines for managing waiting lists across Wales. The guide covers, for example, primary targeting lists, pooling, booking systems and validation of both inpatient and outpatient waiting lists, and sets out specific good practices that should be applied. A copy of the guide is available from http://howis.wales.nhs.uk/inic

In particular, effective booking systems can lead to improved use of valuable NHS facilities and offer greater certainty and choice for patients. The Innovations in Care outpatient improvement programme is supporting health organisations in the development of partially booked outpatient appointments and fully booked admissions. Already, as a result of this approach, reductions in both cancelled clinics and rescheduling of inpatient appointments have been achieved. A key part of all booking systems is adherence to the six-week leave policy by all staff.

Best practice requires that, where possible, NHS trusts plan both elective and emergency work through the year, predict peaks and troughs and detect, analyse and tackle changes in the environment. This already forms part of good management practice in many trusts and should be undertaken continuously.

In England it has been found that by changing the management and scheduling of patients on both the outpatient and inpatient/daycase waiting lists, waiting times can be reduced by up to 6 months without increasing activity or capacity. Through the use of full booking systems and the English approach of ‘waiting in line’, it has been suggested that waiting lists could become a thing of the past. A scoping study to identify the optimum way forward for reducing waiting lists and times throughout Wales has recently been undertaken by Innovations in Care, which forms the basis of the ‘Treat in Turn’ initiative and Clinically Prioritise and Treat Toolkit (CPaT).

Other waiting list management tools are widely used in England to facilitate better understanding of waiting lists and their management, leading to improved decision making. For example, ‘Checklist’ is a sophisticated waiting list and hospital-planning model, which uses the clinical urgency profile for different specialities to reduce waiting times, calculating the optimum configuration of beds, operating theatres and clinics for each month of the year. By identifying optimum maximum waiting times achievable within given resources and according to predetermined priority categories, it can help
managers and clinicians to reduce waiting times together. A number of trusts in Wales have acquired ‘Checklist’ but its use is not currently widespread as a
waiting list management tool.

Waiting times may be reduced by application of good practice to waiting list management, including booking systems and scheduling

5.1.3 Bed Management
The Audit Commission’s Acute Hospital Portfolio Review of Bed Management (2003) finds that ‘most trusts…should aim first to improve patient experience by increased efficiency in the use of their existing beds.’ Current practice suggests that patient flows and bed management systems require substantial development in the majority of trusts to ensure that the existing beds are utilised in a proactive way. It is important that robust systems exist to ensure that patients are admitted quickly to the most appropriate bed and, where possible, that medical outliers and trauma patients do not disadvantage orthopaedic elective cases. The national bed management group, led by the Waiting Times and Emergency Care Policy Branch of the Assembly is continuously promoting new and tighter bed management approaches across Wales, which will inevitably have an impact on trauma and orthopaedic services. Innovations in Care have also developed a Bed Management Modular Programme in support of this approach.

Further development of bed management policies and protocols for access will be a key consideration in improving patient flows and optimising bed use

Within the context of bed management and improved patient flows, experience suggests that protecting elective orthopaedic beds brings benefits to both the service and the patient. Managers and clinicians can better plan and manage theatre lists, increasing efficiency and reducing cancelled operations. Trusts, such as Gwent, that have already implemented this approach have shown an increase in the number of operations performed and helped meet their targets. However at present this approach is not uniform across Wales, largely due to the knock on effect where elective facilities are shared with trauma or where medical emergency admissions spill over into allocated surgical beds.

For ringfencing of elective beds to work there must be a robust local bed management policy and bed allocation must be planned in tandem with theatre lists and pre-operative assessment, and managed within a framework of clear integrated care pathways. Occupancy levels are another important consideration and any ringfencing must form an integral part of a trust’s overall approach to optimising bed use and patient flows. Protocols should be agreed at executive board level about the required level of authority to refuse admittance of non-elective patients to protected beds, and escalation policies should be made clear in cases where the trust may need to breach the ringfencing policy.
As a speciality with long waiting lists, ringfencing of trauma and orthopaedic beds is advocated, to be governed by strict protocol at trust level, and associated management of patient flows to ensure best use of all available bedstock.

Studies also show that infection control is much improved with the introduction of ringfencing in orthopaedics. Post-operative infections for patients with deep wounds, particularly following bone surgery, can be both extremely serious for the patient and costly to the trust in the treatment required and longer length of stay. However equally important are good facilities beside every bed for hand washing or cleaning with anti-bacterial fluids, and good standards of basic hygiene.

The national strategy towards a reduction in healthcare acquired infection emphasises the role of each trust in addressing the organisation and infrastructure of infection control and the individual responsibilities of all healthcare workers in this respect. As part of each trusts surveillance and audit programmes to monitor and direct their infection control programmes, they have been required to participate in the National Public Health Service Orthopaedics Surgical Site Infection Scheme.

**5.1.4 Theatre Management**

All acute trusts in Wales have agreed to participate in the National Theatre Programme, which is supported by Innovations in Care. IIIC has joined with the NHS Modernisation Agency Theatre Project and the Audit Commission who together will play an important role in informing and supporting good practice in this field.

The operating theatre is the focal point of most trauma and orthopaedic patients’ journey, and for a large number of NHS providers this is a recognised bottleneck. Improving theatre performance is key to achieving shorter waiting times for treatment. Many surgeons feel that the allocated theatre time is not maximised, with patient flows, management processes and staffing levels significantly affecting the actual knife-to-skin time available. Even with efficient running, newer anaesthetic approaches that improve clinical outcomes can take longer, and the increasing complexity of theatre equipment can lead to a need for increased preparation time.

As part of the Innovations in Care Programme, work is underway to identify and develop good theatre practice and then to embed this good practice through modernisation and redesign. This must be based upon strong communication networks and a willingness to share good practice between sites. Possible examples include tighter scheduling of cases and more flexibility to allow increased throughput of major joints and revisions in an extended session, scheduling of more staffed trauma lists or improving patient flows to reduce down time between cases. Through this approach it is
intended to improve the patient and carer experience, optimise theatre utilisation and reduce cancelled operations.

Clean air theatres must be used for all major orthopaedic surgery. Such practice is not currently universal. This is essential to reduce the risk of infection, and to comply with clinical governance regulations, not least patient safety and potential litigation.

Continuous sharing and development of good practice in theatre management will be an essential element in making best use of the theatre resource available

5.1.5 Day cases
In appropriate circumstances, day surgery is an effective method of carrying out simple surgical procedures. In principle, this approach provides an opportunity to increase throughput and reduce both inpatient and daycase waiting lists. In Wales however the daycase rate for orthopaedic procedures is low, currently standing at 36% compared with an English figure of 43%.

It has also been suggested that there is some trauma, such as upper limb fracture and manipulations under anaesthetic, that could be carried out on a daycase basis. Cardiff and Vale NHS Trust, for example, runs a direct booking daycase list for hand trauma patients seen in fracture clinic. For patients who can manage without disturbing the fracture (i.e. those other than patients who have foot, ankle or leg fractures), or for the removal of wires or frames for example, this is an ideal solution.

Whilst it is acknowledged that not all cases are suitable for daycase treatment, and in some localities geographical considerations influence the level of daycase work possible, there remains considerable scope for the planning of simple procedures without the intention to admit. Efficiencies that can be achieved through day surgery are being actively encouraged in order to improve the service for patients and introduce a culture where ‘this patient will be admitted as a daycase unless…’ is the norm. In turn this should bring about change, freeing up more inpatient capacity for major cases, thus achieving shorter waiting times for treatment, spreading good practice and making best use of NHS Wales capacity.

Existing models of good practice focusing on ambulatory care are also being promoted, based on the ACAD at the North West London Hospitals NHS Trust. It is apparent that an overnight step down option, or longer recovery time will allow increased daycase throughput. This model is already proving successful and mirrors the Treatment Centre philosophy of protected elective capacity, as discussed in section 7.

Further emphasis on daycase procedures should become the norm, freeing up inpatient capacity for more complex procedures and allowing increased levels of throughput
5.1.6 Performance Management

*The Review of Health and Social Care* places great emphasis on rewarding success with greater freedom to act. Current monitoring systems demonstrate considerable variation in performance across Wales. It is therefore important to benchmark current services against expected standards to allow health communities to incorporate proposals for change into their framework for continuous performance improvement.

Performance indicators demonstrate that in some areas the services are not running at optimum efficiency and there are uneven levels of performance in different localities.

The Service and Financial Framework (SAFF) process and the national performance management framework in Wales have been designed to facilitate ongoing improvement. Regional Offices have a key role to play in monitoring and coordinating this process. The Balanced Scorecard approach is intended to provide a useful tool for health communities to ensure delivery of minimum standards and continuous improvement within their organisations and across their whole system. The scorecard, which can operate at any level, is to be populated with macro and micro benchmarking data and will highlight areas for further emphasis and improvement including management processes. The approach is supported by a system of incentives and sanctions to facilitate optimum waiting times and equity of access across Wales.

5.1.7 Solutions

**Conclusion:** A culture of tight management and good practice with strong leadership is fundamental to ensuring continuous improvement and high quality patient care.

√ All organisations should, as a matter of course, apply basic good management practice to all their activities. That is to say there should be baseline standards that are applied uniformly in all trusts and LHBs. Each health community should investigate those areas which are not running at optimum efficiency and develop specific action plans for improvement.

√ Each health community must put in place stringent management arrangements to oversee the delivery of current waiting times targets and to ensure that their lists are managed efficiently and effectively. Fundamental principles of waiting list management should be implemented as a matter of course, including for example pooled lists where this offers a vehicle for reduced waiting times.

√ All trusts should review their patient flows to optimise bed use. Trusts and LHBs should also analyse their local bed use statistics, to ensure understanding and accuracy, and use them as a catalyst for change where appropriate. All trusts must adhere to a proactive bed management policy.
√ Protecting orthopaedic beds to safeguard elective capacity could become a standard management approach in all trusts. This should apply to medical outliers in particular, but encompass surgical outliers and trauma patients where appropriate. Each health community should establish firm protocols to facilitate this under their bed management policy. There will be occasions when it becomes necessary to override this approach, and clear escalation arrangements must be in place.

√ Control of infection on orthopaedic wards should be regarded as a priority in order to reduce re-infection rates and long lengths of stay. This should be adequately profiled as good practice in all care settings.

√ Systems should also be established to ensure sharing of good practice and continuous modernisation with the patient at the centre.

√ Health communities should review theatre management and patient flows within theatre in order to optimise total knife-to-skin time.

√ Clean air theatres should be used for all major orthopaedic surgery as a matter of course, to include surgery for hip fractures. Such practice is not universal but is essential to reduce infection risk for reasons of clinical governance, patient safety and potential litigation.

√ Wherever possible, with the exception of geographical or clinical reasons, daycase work without the intention to admit should become the norm for the orthopaedic basket of minor procedures.

√ All health organisations should use the balanced scorecard approach to ensure tight management and continuous improvement within their organisation.
5.2 Service Improvement and Innovation

The Review of Health and Social Care agrees that ‘best practice must be encouraged.’ Across Wales this is supported by a firm commitment to renewal and to the delivery of high quality care that matches and embeds good practice. The Review of Health and Social Care also states that ‘where and how care is provided will need to change. Health and social care services need to be brought closer together.’ It is apparent that current service shortfalls are unlikely to be resolved by doing more of the same, and service improvement can only be achieved by working differently across the whole care system.

In order to impact on service delivery and to improve patient access in the longer term, there must be a change in the way the whole system works. This must involve adopting new ways of working in all areas and building upon best practice.

5.2.1 Expected Best Standards

Improving Health in Wales clarifies that ‘service improvement is at the core of the role of the Innovations in Care Programme, which has been established to develop and disseminate best practice.’ As part of their work to drive change in trauma and orthopaedic services, Innovations in Care set up a multidisciplinary consultative group to look at good practice and to advise on how these services could be delivered in Wales. The result of their work is the Expected Standards for the Organisation and Delivery of Trauma and Orthopaedic Services in Wales. This sets out in practical terms how trauma and orthopaedics could be managed across the whole system from patient self-management, general practice input, secondary care and back into the community. It clarifies the roles and responsibilities of the parties involved, and is intended to assist all health service providers and commissioners in reviewing their current services against good practice.

The Innovations in Care team visited all trauma and orthopaedic services regularly and undertook a baseline assessment against these standards. Local Innovations in Care Boards have since been established, and part of their remit includes service development and renewal within trauma and orthopaedics. Innovations in Care’s national Change Agents’ roles will also facilitate change in trauma and orthopaedics as well as other specialities.

A standardised approach to ensuring best practice should be established

5.2.2 Managed Clinical Networks

Levels of service provision vary across Wales, with a small number of large departments providing tertiary services for specialist conditions and a large number of small departments providing general services. As a result of this, development of formal clinical networks is proposed in Wales that span many NHS organisations. These could be used to ensure continuity of approach and consistency of care standards and could follow the existing model provided by the Coronary Heart Disease and Cancer networks in Wales. It
has also been suggested that the development of managed clinical networks may increase the movement of patients between trusts to facilitate their treatment at the earliest opportunity, and play a role in planning for specialist tertiary services. Currently, this happens to some extent on an informal basis, dependent on local circumstances. The network could also take responsibility for emerging issues and possible future changes in clinical practices.

Managed clinical networks could be beneficial in the management of services across an area containing service providers of varying size and varying ability to deliver a full range of services, and for facilitating consistency of care standards.

As part of the clinical network, certain orthopaedic sub specialist areas that could be dealt with on a regional basis, should probably be centrally funded to avoid issues of inequitable resourcing, which in itself may affect the centres’ ability to offer these tertiary services. The particular areas of interest in Wales are spinal surgery, including trauma, infection, tumour and scoliosis work; children’s orthopaedic services; and limb reconstruction following trauma, which may or may not require plastic surgery involvement.

Furthermore, non-unions and infected non-unions of fractures are a huge drain on the resources of the community. Modern surgical techniques allow, in many instances, these patients to return to a normal functioning life. There is a great deal of clinical evidence to suggest that, although such treatment is expensive, it is much cheaper for a health community in the long term, preventing these patients becoming a continuing drain on resources. However, at present, funding considerations for units taking on such work may be a disincentive to develop the services that the community requires.

In South Wales, spinal orthopaedic work is concentrated in Cardiff with a smaller amount carried out in Newport and some neurosurgical work carried out on two sites in Swansea and Cardiff. All implantation work, including scoliosis work, trauma, tumour and infection work is carried out in Cardiff as this requires access to both paediatric intensive care and adult intensive care services in addition to the use of costly implants. Some outstanding considerations have been identified in terms of funding streams and financial flows.

Changes in the anaesthetic requirements for children and the development of the children’s hospital in Cardiff is likely to lead to acute hospitals passing on virtually all children’s work to specialist centres. For example, it is likely that South Wales will have only two centres: namely in Cardiff and Swansea. No planning has been instigated to take account of this change in the movement of patients. As a result, no resources have been put in place to develop the service to allow them to deal with the need when it arises. The situation may differ in North Wales as referrals from there are made to Liverpool, Oswestry and Birmingham.
A strong case can be made for central funding for orthopaedic sub-specialist work as this will reduce the need for constant cross charging between health economies.

5.2.3 Care Pathways

Evidence suggests that a high proportion of patients who find themselves on an acute inpatient waiting list could be successfully treated in primary care or through an alternative multi-disciplinary team care programme. Approximately one third of patients referred to secondary care services do not need to be seen by a consultant. A significant proportion of referrals to a consultant trauma and orthopaedic surgeon’s waiting list do not require surgery, and many of these patients may, therefore, be better treated through an alternative patient pathway.

One of the important principles is ensuring that patients see the right professional, in the right place, at the right time, first time. The experience of many patients is that this does not happen, with multiple visits and repeated history taking, causing much frustration as a result. There are all sorts of access points and patient pathways that are not currently exploited and in general, alternative patient management approaches are not well explored. Redesigning the care pathway to achieve a balance across the whole care system will allow development of a seamless model of care, with the patient at the centre. The resultant integrated care pathway should involve primary, secondary, intermediate and social care working together to provide care in the most appropriate setting. This could offer scope for GPs with a special interest for example to undertake a triage role, with consequent referral to alternative patient pathways.

*Improving Health in Wales* confirmed that ‘all trusts will be required to develop at least three patient-centred clinical pathways for major procedures by March 2002.’ Integrated care pathways that guide and track the patients journey through a healthcare experience are valuable tools in assuring quality healthcare. Many elective and some trauma cases lend themselves to an integrated care pathway approach to the care delivery and the establishment of common care pathways, largely protocol driven, have been proven to usefully streamline care and to facilitate earlier discharge. The *Expected Standards* (IiC, 2003) recommends that all trusts, in partnership with LHBs and Social Services, should produce integrated care pathways for their trauma and orthopaedics services that reflect the needs of their patients and the best use of resources to meet those needs. As a minimum this should include hip and knee replacement, backpain and fractured neck of femur pathways.

Alternative care pathways and treatment options have already been set in place in some health communities and there are a host of examples of good practice that exist in different areas of Wales. IiC has developed agreed standards for care pathways, and has started work on integrated care pathways with individual services within trusts.
One of the most common and most effective care pathways relates to back pain and musculo-skeletal conditions. Health care providers are now using more appropriate and consistent pathways for seeing and treating patients with back pain. There is good evidence that for these conditions particularly, well-structured referrals, with good information, do not need to be seen by a consultant trauma and orthopaedic surgeon. This has helped to free up time in consultant outpatient clinics and allowed those patients with back pain to be seen more quickly and appropriately. Trained physiotherapists, nurses, podiatrists and occupational therapists, working to guidelines, can assess which professional should see the patient, and identify the urgency of the referral. The earlier in their treatment that patients have access to appropriate therapy services the better their treatment outcome. It takes training and time to build confidence between professionals and therefore an appropriate model should be agreed locally.

Development of alternative patient pathways will provide alternative access points to enable referral to the right professional at the right time

5.2.4 New Ways of Working
A range of new approaches has been identified which may improve access to orthopaedic outpatient services through better utilisation of staff resources, helping to ensure that patients are treated quickly and appropriately. Many trusts are already making good use of alternatives to consultant outpatient appointments, with nurse-led clinics for arthroplasty patients, for example. Nurse-led clinics have proved successful in seeing follow-up patients under protocol, helping to release consultant time and allowing additional new patients to be seen, with a corresponding increase in throughput.

Another important approach, which has already been adopted by the majority of trusts, relates to the introduction of extended scope practitioner clinics. The use of extended scope physiotherapists, for example, is increasingly being adopted to ensure that patients who probably will not require an appointment with a consultant surgeon are assessed and treated at an early stage. Outpatient triage by extended scope physiotherapists has also proved useful in Wales in assessing patients in a timely manner and ensuring they access the right services, rather than waiting unnecessarily to see a surgeon.

Earlier treatment is an important factor in reducing deterioration, where disability increases the longer people remain inactive with back pain for example.

Continuous exploration of new ways of working and direct access to improved patient pathways can be facilitated through the input of allied health professionals, particularly therapy services

There are a number of further different working practices which, if adopted, can help to smooth the process of the admission and treatment of elective patients, by ensuring that patients who are admitted are fit for surgery. For example, the role of the arthroplasty nurse has proved to be effective in carrying out pre-operative assessment; this forms part of an integrated care
pathway for patients requiring arthroplasty. Care pathway driven inpatient care can also have a positive impact on patient outcomes, by ensuring the most suitable pre-operative management, treatment and rehabilitative care for each condition.

Seven-day working has been identified as another potential approach to facilitate the rehabilitation and discharge of trauma and arthroplasty patients. In some areas of Wales, this has been facilitated by the use of qualified staff to carry out assessments and begin treatment during the week and therapy assistants or technical instructors to continue work at the weekends. Patients who have had joint replacement surgery need to be mobilised quickly, but currently, in many cases, this can only be done on weekdays. Seven-day working for the therapies is therefore an important consideration, using either qualified or trained unqualified staff to cover weekends.

A range of approaches may be introduced to modernise service provision and improve patient outcomes

5.2.5 Trauma Care
Trauma admissions account for a significant proportion of hospital activity and often have an impact on a trusts’ ability to carry out elective operating. In 2001, over 25,000 patients were admitted to trauma and orthopaedic wards in Wales as an emergency. Patients with fractured hips account for approximately 80% of the trauma admitted and because of their complex needs this group of patients pose the biggest challenge in the running of orthopaedic services. They use a disproportionate element of the available financial and staff resource.

Half the trauma and orthopaedic workload is trauma. Resources are disproportionately used by hip fracture patients which has a knock on effect across the speciality

Information suggests that the incidence of trauma and the admission rates for trauma are uniformly higher in Wales than in England. This may relate to social geography, admission thresholds or alternative schemes in place to prevent admission.

The treatment process is different for emergency trauma and elective orthopaedic patients. However, both processes run in parallel and each inevitably impacts on the other. Improving trauma services and the way in which patients are treated will help the throughput of patients suffering trauma, helping to free beds for elective patients in those trusts where there is no ringfenced capacity.

It is recognised that patients with severe traumatic injuries require treatment at centres that have both the facilities and the expertise to deal with such injuries. This should ideally take place within managed clinical networks where there is already a natural alignment of services. However, it is also necessary for agreement to be reached locally on a set of clinical guidelines that determine those patients that should be transferred and those that can be
treated in their local hospital. The Royal College of Surgeons/British Orthopaedic Association Report (British Orthopaedic Association, 2002) also recommends that ambulances be directed straight to those units equipped for major trauma for severely injured patients.

Currently, there is wide variation in the way that trauma services are organised and delivered across Wales. Typically, trusts have planned trauma operating lists during the week and daily fracture clinics. Daily operating lists for trauma are becoming more widespread but weekend trauma lists remain uncommon. Some hospitals can only provide three trauma sessions per week, whilst others have to cancel elective operating sessions in order to carry out trauma surgery. In addition, consultant rotas for trauma vary, with some consultants undertaking a 1:3 on-call commitment. There are many constraints and these vary in each trust, however a common problem is the lack of available theatres. It has been acknowledged however that improved access to trauma theatre sessions could not only improve patient outcomes, but also impact on average length of stay, reducing demand on bed days.

The incidence and requirements of trauma continues to have a significant impact upon elective work. In order to increase elective throughput, the organisation of trauma services must be strengthened and where possible separated

It is important that the quality of trauma care provided by trusts is the same, irrespective of the time of day or day of the week that a patient sustains their injuries. It is recognised that the achievement of this is a significant challenge with the current numbers of doctors in training and the restrictions imposed by the European Working Time Directive. In this context, development of new ways of working to meet patient needs is a key approach.

Examples exist of established trauma pathways for specific conditions, particularly concentrating on the improvement of services for patients who have suffered a fractured neck of femur. Their role has included developing links between the trauma and orthopaedics department and A&E, liasing with medical staff, social services departments and primary healthcare teams, ordering routine investigations and making sure that patients are listed for theatre appropriately. An example is the fast tracking admission of fractured neck of femur patients through the multi disciplinary team and straight into a bed to avoid long and distressing trolley waits for this group of patients.

Trauma Liaison Nurses, who are now in post across Wales, have a key role in co-ordinating integrated care pathways for patients who have experienced trauma. Trauma liaison nurses play a key role in the co-ordination and management of treatment for patients, ensuring patients receive all of the components of their treatment in a timely fashion. There are key targets that trusts should aim to achieve in the care of these patients, most of whom are elderly and frail. Patients should not wait for longer than one hour in A&E before they are admitted to a more appropriate location for their care and they should receive their surgery to treat their hip fracture within 24 hours of injury.
It is also important that they are rehabilitated promptly to minimise the loss of independence that this type of injury can bring about.

In some areas, care pathways link first-time trauma admissions with investigations and treatment for osteoporosis and falls risk assessment to prevent future admissions. These proactive initiatives will begin to show benefits for readmissions in years to come.

The introduction of Trauma Liaison Nurses is key to optimising care pathways for trauma patients and reducing the impact of emergency trauma care on elective orthopaedic services

5.2.6 Solutions

Conclusion: Implementing innovative ways of working and redesigning the care pathway to ensure patient-centred integrated treatment options, will enable the patient to see the right professional, in the right place, at the right time, the first time

√ Proven good practice should be standardised across all health economies and across all stages of the care pathway.

√ Formal clinical networks should be used to ensure continuity of approach and consistency of care standards. The network should take responsibility for possible future change in clinical practices, as well as playing a role in planning for specialist tertiary services, including spinal surgeons. Consideration should be given to centralised funding for key network services.

√ Increasing emphasis should be placed upon the relative roles that each sector should play to allow a seamless model of care to develop, involving primary care, secondary care, intermediate care and social care. Each health community should develop integrated care pathways for trauma and orthopaedic conditions that cross all sectors and provide seamless patient care in the most appropriate setting. This is particularly relevant for backpain and musculo skeletal conditions and could facilitate proactive care plans, instead of reactive referral patterns.

√ Health communities should examine the potential for new ways of working, particularly for outpatient clinics and inpatient treatment. This might include, for example, non-consultant-led outpatient clinics, extended scope practitioner roles and 7-day working for therapy services.

√ Full reasons behind the high incidence of trauma compared to England and consequent high admission rates, and resultant scope for alternative patient flows should be considered within each health community.

√ Trusts should review available theatre time for trauma surgery, and plan how this can be increased, including fully staffed scheduled weekday and
weekend lists. This will not only reduce the impact on scheduled elective lists by trauma, but also reduce pre-operative lengths of stay for trauma patients. Earlier surgical intervention is also likely to reduce subsequent deterioration, and improved patient outcomes.

✓ Commissioners and providers should introduce as appropriate, specific care pathways for trauma patients, e.g. fractured neck of femur. This may include, for example, fast tracking admission through the multi disciplinary team and protocol driven treatment options. The role of trauma liaison nurse practitioners to oversee this should be more widely introduced.
5.3 Discharge and Rehabilitation

Early mobilisation and effective rehabilitation of both emergency trauma and elective orthopaedic patients can significantly improve patient outcomes and reduce average length of stay. As such, this must be a key consideration in using capacity effectively. However, substantial differences exist between the needs of elective orthopaedic patients and those of patients presenting to trauma units with hip fracture and other trauma injuries. It is sensible therefore to consider these two situations separately.

A well set up rehabilitation service can take the pressure off acute trauma and orthopaedic services, although there are differences in services required by these two groups of patients.

5.3.1 Elective Patients

Pre-operative management and discharge planning
Pre-operative assessment and management of patients awaiting hip or knee replacement is an essential part of the care pathway that can improve patient outcomes. Proactive multi-disciplinary management of patients on the inpatient waiting list enables medical problems to be identified and managed, physical needs to be met and the patient prepared for surgery physically and emotionally through treatment and education. Early consideration of patient needs on discharge can also have a significant impact, both on length of stay and on individual patient outcomes. Many examples of this approach are in place, but wider roll out would be beneficial.

Pre-operative management and early discharge planning can significantly reduce length of stay and improve patient outcomes

A number of health economies offer an acute response team who provide intense therapy and nursing support in the community setting. This approach has been proven to allow patients to return to their own home at an earlier stage whilst receiving continuing rehabilitation and therapy services. Early mobility and return to independence is in the patient's interest and speeds recovery. This in turn frees up acute orthopaedic beds earlier.

For example, Cardiff & Vale NHS Trust provides a domiciliary hip assessment service undertaken prior to admission to facilitate early discharge. Some services also offer occupational therapy and physiotherapy to plan discharge at pre-assessment clinics.

Gwent Healthcare NHS Trust provides a multi disciplinary assessment and treatment service for patients on the inpatient arthroplasty waiting list. The team consists of nurses, physiotherapists and occupational therapists who plan and provide hospital and home based care. Through this service some patients elect not to proceed to surgery, while others may be expedited on clinical grounds.
Conwy & Denbighshire NHS Trust also runs an occupational therapy pre-admission service, providing aids and equipment together with Activities for Daily Living (ADL) support and advice. This service also supports the patient through the inpatient stay and on to discharge.

As part of the preoperative assessment service, there should be a full assessment of the domiciliary aids and appliances that will be required post-operatively. The assessment team may then write a ‘prescription’ to ensure that the requisite environmental adaptations are undertaken prior to admission. This might involve, for example, raised toilet seats or hand rails. It is important that adjustments are made immediately prior to admission to avoid delayed discharge.

There are examples in England of where discharge planning is supported by a privately contracted pre-operative home aids assessment service, working in conjunction with therapy colleagues. Patients admitted for elective treatments have an environmental assessment as part of their pre-assessment. The domiciliary assessment reviews the home environment, to specify the aids that will be required post operatively and to have these installed by a private contractor before admission. Such services have proved extremely successful and have significantly reduced the incidence of delayed transfers of care awaiting installation of aids.

It is also important that pre-operative discharge planning should also focus on the requirement for intermediate care, step down or care home places. Early multi-sectoral planning will be instrumental in reducing delayed discharge.

**Care Pathway Driven Care**

Care pathway methodology is ideally suited for use in the elective setting, where standardised pathways can help co-ordinate the well-defined patterns of pre-, peri- and post-operative care. Adequately staffed and appropriately developed care pathways can avoid delays in mobilisation and rehabilitation and have the potential to release a high number of bed days for use by other trauma or orthopaedic patients. There may also be a role for an orthogeriatrician as part of this multidisciplinary team, but this will be much more limited than the need for their involvement in the more complex care of the frail elderly patients who present to trauma service with injuries such as hip fracture. This approach must be supported by adequately trained rehabilitation staff in both primary and secondary care.

As an example, Morriston Hospital Bridging Team (physiotherapist, nurse, occupational therapist) provides care pathway driven support to arthroplasty patients enabling early discharge, improved patient care and reduced readmission.

**Care pathways should be introduced as an essential driver for early mobilisation and rehabilitation for elective orthopaedic patients**
Early Supported Discharge
Providing multi-disciplinary care at home through early supported discharge arrangements can reduce length of stay, facilitate earlier discharge and improve patient outcomes. The level of care can range from intensive ‘hospital at home’ to less dependent rehabilitation and nursing services. These are intermediate care types of service facilitating the step-down approach.

Pembrokeshire & Derwen NHS Trust's Acute Care at Home (ACAH) is a community based multi-disciplinary service in Pembrokeshire, which allows the earlier discharge of mainly orthopaedic patients and can also prevent the need for hospital admission. It has the added advantage of reducing the complexity and cost of social care packages. The service aims to facilitate the earlier discharge of patients through the provision of short term intermediate care, and to provide choice for patients in their own home. The service also maximises patient independence and ensures that patients and carers are informed and confident.

This approach is also beneficial to the trust, as planned discharge releases acute beds, helping to maximise patient throughput and reducing cancellations. It also releases ward staff for clinical care and facilitates collaboration with social services to allow seamless care. Benefits for the patients too are significant. Advice and treatment are carried out on a one-to-one basis, giving patients and carers opportunity to feel more knowledgeable on the process. Recovery within their own environment allows patients to regain their independence, reduces the risk of hospital acquired infection and normally allows the patient to sleep and eat better.

Early supported discharge schemes have been found to benefit the patient and carers and free up capacity in the system

5.3.2 Hip Fracture and Elderly Trauma Patients
In the UK and other countries with similar health systems, one approach to improving trauma outcomes has been to develop specialised inpatient rehabilitation supervised by a geriatrician within a multidisciplinary team. This has taken a number of forms. A systematic review was undertaken (Cameron et al, 2000) of geriatric rehabilitation, following fractures in older people, specifically considering four different models:

- Geriatric Orthopaedic Rehabilitation Unit (GORU)
- Geriatric Hip Fracture Programmes (GHFP)
- Early Supported Discharge
- Trauma Care Pathways

Geriatric Orthopaedic Rehabilitation Unit (GORU)
In the UK, a range of rehabilitative facilities providing different mixes of care have developed in response to local pressures. Units range from geriatrician-led rehabilitation wards to GP-led units, vary in the level of orthopaedic supervision available and in location, from acute site, to off-site units or even care homes. However, since facilities are separate from the acute orthopaedic
unit they necessitate discontinuity in patient care and often transfer to another site. This discontinuity is central to mixed opinion over their usefulness.

From the perspective of the orthopaedic surgeon, the possibility of handing patients over for specialist rehabilitation is clearly attractive, and it is often claimed that this will also have benefits in releasing acute trauma beds. However, the conclusion of the Cameron review is that, as an overall strategy for rehabilitation after hip and other lower limb fractures, GORUs are unlikely to be cost-effective, though some frailer patients may benefit in respect of reduced readmission rates and need for nursing home placement.

The reason for this lies in the inherent inefficiency of moving frail and often confused patients to another ward and multidisciplinary team part way through their inpatient stay. Delays while waiting for bed availability, transfer, and reassessment by the new team mean that overall hospital length of stay appears to be increased by a dependence on use of GORUs (Parker et al, 1998).

Thus, whilst constraints on bed availability may argue for the development of off-site rehabilitation facilities, it should be recognised that this may well be at the expense of overall length of stay and hence cost.

Systematic review suggests that differing models of Geriatric Orthopaedic Rehabilitation Unit are not universally beneficial, either for improved patient outcomes, or for reduced length of stay

As part of the ongoing development of intermediate care, a number of centres have developed ‘step down’ programmes to facilitate early discharge from the acute setting. There are also examples of schemes where therapy managed rehabilitation beds release capacity on dedicated trauma and orthopaedic wards and facilitate earlier mobilisation and recovery. It is essential to the outcomes of rehabilitation that this part of the care process is appropriately and actively managed for it to be an integral part of the patient pathway. There is, however, no published evidence of the benefits of such approaches in terms of overall outcome, length of stay and costs, and the concerns voiced by the Cameron review in respect of such units seem likely to apply to such initiatives.

**Geriatric Hip Fracture Programmes (GHFP)**

The geriatric hip fracture programme appears to have more proven benefits. In this model, involvement of the geriatric team begins in the orthopaedic surgical unit early after admission. The orthogeriatrician is central to the co-ordination of multidisciplinary assessment, rehabilitation and discharge planning on the trauma ward. Frailer patients, who were previously living in the community may be transferred to a rehabilitation unit, but the majority of patients with better prognosis remain in the orthopaedic unit with a view to expedited rehabilitation and discharge planning.

The Cameron Review (Cameron et al, 2000) suggests that geriatric hip fracture programmes are cost effective, since they appear to shorten the
average length of hospital stay and are associated with significantly increased rates of return to previous residential status. Patients with a good pre-fracture level of mobility and lack of mental impairment tend to benefit most from rehabilitation schemes (Aitken et al 1998).

The geriatrician-led hip fracture programme at the University Hospital of Wales has been developed within the existing complement of beds on the acute trauma unit, with two dedicated Hip Fracture Nurses co-ordinating shared care from orthopaedic surgeons’ and geriatricians’ teams. Attention to pre-operative assessment, improved peri-operative medical care, improved nutritional support, co-ordinated multidisciplinary rehabilitation and expedited discharge planning have achieved a progressive improvement in mortality and length of stay figures.

Evidence supports the Geriatric Hip Fracture Programme model focused around the orthogeriatrician, supported by a multi disciplinary team

Early Supported Discharge/Reablement
In an attempt to reduce the tension between the need to free up acute beds and optimal rehabilitation, early supported discharge and a range of ‘hospital at home’ programmes have been introduced. Reduced length of acute hospital stay may be achieved by the planned provision of additional support in the patient’s or carer’s home in the community. Examples of early supported discharge programmes include those developed by the trust and Local Authority Social Services departments in Cardiff and Vale. The ‘acute response team’ can provide up to two weeks of intensive nursing and therapist support to relatively fitter trauma patients in order to expedite discharge from the trauma ward.

However, frailer patients, such as those who typically present with hip fracture, generally need more prolonged support. In Wales, a number of ‘reablement’ schemes, with appropriate therapist support, have been integrated with the patient’s social services home care package - providing care over a period of several weeks, until the patient has regained their maximum independence. In this context, the potential role for day hospitals in the rehabilitation process should also be firmly recognised and developed. There are many reablement schemes in place across Wales where social services and health are working collaboratively to rehabilitate patients in their own homes.

Early supported discharge and reablement schemes can provide further bed equivalent resources in the community and support rehabilitation in the home environment

Trauma Care Pathways
Clinical pathways were shown in the Cameron Review (Cameron, 2000) to reduce the total length of stay in hospital in association with geriatric hip fracture programmes and early supported discharge. Such pathways were proposed in response to experience in the USA. However, UK practice in respect of hip fracture is very different, and a number of attempts to introduce
Hip Fracture Care Pathways in the UK have proved complex. This primarily reflects the heterogeneity of hip fracture patients, many of whom are too frail to be able to conform to the demands of a generic management plan.

In response to this, Cardiff and Vale NHS Trust has developed a hip fracture assessment care pathway for patients with suspected hip fractures. This standardises the Emergency Unit care, and initial orthopaedic assessment and management of patients presenting with hip fracture. Such standardisation facilitates the collection of routine audit data in keeping with the methodology proposed for the Standardised Audit of Hip Fracture in Europe (SAHFE, 1996) dataset. This allows performance monitoring, wound infection monitoring and research to become a routine part of patient care and offers some useful insights into the rehabilitation pathways.

**Hip fracture assessment may offer an insight into a standardised approach to hip fracture patients**

### 5.3.3 Solutions

**Elective Patients**

**Conclusion:** Pre-operative management, early discharge planning and supported community discharge schemes can significantly reduce length of stay and improve patient outcomes.

- Pre-operative assessment and active management of patients on the waiting list should be emphasised to optimise patient outcomes.

- Pre-operative discharge planning, including home assessment and adaptation, should be strengthened to allow timely discharge and rehabilitation of elective patients. Support systems, such as the Cardiff domiciliary hip assessment service, should be introduced more widely.

- For elective orthopaedic patients, standardised care pathways should be encouraged to help coordinate the well defined patterns of pre-, peri- and post-operative care.

- Early Supported Discharge Schemes, such as the Hospital at Home model already in place in Pembrokeshire, should be made available within each region/health community to allow treatment and rehabilitation to occur in the most appropriate setting and to reduce delayed transfers of care.

**Hip Fracture and elderly trauma patients**

**Conclusion:** Early mobilisation and rehabilitation with adequate social support and appropriate care settings will assist the recovery of hip fracture and elderly trauma patients.
√ Development of ‘off-site’ rehabilitation for hip fracture and other elderly trauma patients may ease short term pressures on acute orthopaedic beds, although it has been suggested that this may prove more costly and less efficient in terms of patient outcome in the longer term.

√ The Geriatric Hip Fracture Service is the model for which best evidence exists in the care of fragility fracture patients, although it is recognised that different trusts may need different models. Collaboration between the geriatrician, surgeon and multidisciplinary team should be promoted leading to increased efficacy of care within the acute trauma unit, with the potential to free up acute site beds for other orthopaedic activity. A daily orthogeriatric presence will help to co-ordinate required preoperative investigations for a high number of trauma patients and to optimise these patients medically.

√ Such a scheme is well placed to promote the development of Early Supported Discharge Schemes, Care Pathways, audit, research and development.

√ Health communities and trusts should be expected to participate in the Standard Audit of Hip Fracture in Europe (SAHFE) in order to ensure a better information base to underpin service improvement.
Section 6: USING OUR STAFF EFFECTIVELY

6.1 Workforce

Securing our Future (Wanless, 2002) noted that ‘the size and composition of the workforce is one of the most important determinants of the capacity of the health service.’ It is, therefore, crucial that services are configured in such a way as to make optimal and flexible use of the limited staff resource. The Review of Health and Social Care also considers that ‘changes should be supported by more sophisticated workforce planning…’ and recognises that this is ‘…a long-term task which requires a central lead and a long-term vision for workforce development.’

Flexible use of staff available and robust workforce planning is necessary to overcome limitations in workforce size and composition

The Review of Health and Social Care indicated that there needs to be a much clearer link between service planning and workforce planning in Wales, with complementary timescales. New initiatives such as the National Service Frameworks (NSFs), for example, often have short to medium term targets, whereas effective workforce planning has to take place in the medium to long term because of the education and training implications.

The reality is that the largest determinant of success in achieving targets in the short term is the effective use of the existing workforce. In the longer term, there are sources of additional staff i.e. newly qualified professionals coming out of training, returners, and staff being attracted from outside Wales. The biggest long term impact will come from new qualifiers, but it must be recognised that, although there has been huge investment in pre-registration education and training of healthcare staff over the last five years, Wales (as with the rest of the UK) is still struggling to meet present and expanding demand, because staff such as doctors and dentists require several years of post registration training before they can fill consultant and GP posts. The numbers that can be recruited from other sources are limited because shortages exist across the UK and, in some staff groups, across Europe and globally.

Workforce planning should become an integral part of strategic/service planning with complementary timescales

New ways of working will, therefore, be a crucial factor for both the primary and secondary care sectors in capacity considerations. The key purpose of changing and extending roles, however, is to provide the most effective approach to patient care, rather than as a solution to current staffing shortages.

New ways of working and extending roles of current staff will play an important part in meeting demand in the short term
The service in Wales does carry out workforce planning to meet longer term staffing needs but historically the lack of an overall strategic vision for NHS Wales means that trusts have planned their workforce without a clear picture of their future service needs. The accuracy of the data that is used to plan the future workforce is therefore questionable. The decision to base workforce planning on a comprehensive strategic plan for the NHS has only recently been established and effective workforce planning in the future will depend on clear information as to service configuration over the next 10-15 years as well as a radical improvement in trust data provision.

The decision to base workforce planning on a comprehensive strategic plan for the NHS has now been established

6.1.1 Examining the current workforce
As part of this chapter, staffing data has been identified for the following staff groups: medical staff: trauma and orthopaedics, anaesthetics, radiology, histopathology; nursing; operating department practitioners; physiotherapists; occupational therapists; and diagnostic radiographers.

Table 17: Predicted Increases in Consultants (including long term locums) (2002-2006) Versus Number of Trainees Reaching Certificate of Completion of Specialist Training (CCST)

<table>
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<tr>
<th>Speciality</th>
<th>WTE 6 Staff in Post Sept 2002</th>
<th>Consultant Increases by 2006 as identified in WFP 7</th>
<th>Consultant Increases by 2009 as identified in WFP 8</th>
<th>Trainees Reaching CCST by 2006</th>
<th>Cumulative Deficit of SpRs By 2006</th>
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<td>Trauma and Orthopaedics</td>
<td>84</td>
<td>28</td>
<td>30.3</td>
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<td>4</td>
</tr>
<tr>
<td>Anaesthetics</td>
<td>201</td>
<td>105.93</td>
<td>131.86</td>
<td>36</td>
<td>69.93</td>
</tr>
<tr>
<td>Radiology</td>
<td>118</td>
<td>55.53</td>
<td>67.27</td>
<td>19</td>
<td>36.53</td>
</tr>
<tr>
<td>Histopathology</td>
<td>45</td>
<td>17.92</td>
<td>21.23</td>
<td>9</td>
<td>8.92</td>
</tr>
</tbody>
</table>


Table 18: Age Profile of Consultants in Post (WTE 7)

<table>
<thead>
<tr>
<th>Speciality</th>
<th>Under 50</th>
<th>50-54</th>
<th>55-59</th>
<th>60+</th>
<th>55+ %</th>
<th>60 + %</th>
<th>Total WTE 7</th>
<th>Possible Retirements By 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma &amp; Orthopaedics</td>
<td>55.63</td>
<td>10.3</td>
<td>9.85</td>
<td>1.91</td>
<td>15%</td>
<td>2%</td>
<td>77.69</td>
<td>11.76</td>
</tr>
<tr>
<td>Anaesthetics</td>
<td>151.92</td>
<td>34.29</td>
<td>31.73</td>
<td>9.83</td>
<td>18%</td>
<td>4%</td>
<td>227.77</td>
<td>41.56</td>
</tr>
<tr>
<td>Histopathology</td>
<td>28.41</td>
<td>11.65</td>
<td>3.46</td>
<td>2.55</td>
<td>13%</td>
<td>6%</td>
<td>46.07</td>
<td>6.01</td>
</tr>
<tr>
<td>Radiology</td>
<td>67.34</td>
<td>18.18</td>
<td>13.46</td>
<td>3</td>
<td>16%</td>
<td>3%</td>
<td>101.98</td>
<td>16.46</td>
</tr>
</tbody>
</table>


6 WTE - Whole time equivalent
7 WFP – Trust Workforce Plan 2003
There is a cumulative deficit of Specialist Registrars in the system to meet the required consultant growth that has been identified by trusts.

The above tables identify current staff in post for the main medical specialities involved in trauma and orthopaedic service provision. Indications show that based on trusts’ forecast staffing needs (bearing in mind issues already raised about the reliability of this data), there is already a cumulative deficit of Specialist Registrars in the system to meet required consultant growth identified by trusts. These figures do not take account of possible retirements over the same time frame. However, the age profile data on the consultant workforce indicates that between 15% and 18% of the current consultant workforce in all related specialities is aged 55 or over, and the likely retirements over the next 10 years can be estimated as identified above.

In the Capacity Chapter the number of trauma and orthopaedic surgeons in Wales by head of population has been identified, with the English average identified as a comparator. This shows that the number of consultants in Wales is not significantly different from those in England. The British Orthopaedic Association recommended standard is also identified and this does show a shortfall in provision based on this standard. For the remaining medical and non-medical specialities the necessary calculations to determine requirements are not as simple as they cannot be reliably based on speciality needs, given that these specialists do not spend 100% of their time in trauma and orthopaedics. Any forecasting therefore is based purely on workforce planning information, modified by clinical information on the ratios of trauma and orthopaedic surgeons to the other specialities and professions.

**Table 19: What the Service in Wales Needs, on the basis of Workforce Planning Information for Trauma and Orthopaedic Consultants**

<table>
<thead>
<tr>
<th></th>
<th>2006 (WTE)</th>
<th>2009 (WTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trauma and Orthopaedic Consultants</strong></td>
<td>28.0</td>
<td>30.3</td>
</tr>
<tr>
<td><strong>Anaesthetists</strong></td>
<td>14.0</td>
<td>15.0</td>
</tr>
<tr>
<td><strong>Histopathologists</strong></td>
<td>2.8</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Radiologists</strong></td>
<td>5.6</td>
<td>6.0</td>
</tr>
</tbody>
</table>

8 Based on 0.5:1 ratio with trauma and orthopaedic consultants
9 Based on 0.1:1 ratio with trauma and orthopaedic consultants
10 Based on 0.2:1 ratio with trauma and orthopaedic consultants
Table 20: Summarised Information that Trusts Should be Using to Inform their Workforce Planning

<table>
<thead>
<tr>
<th>Position</th>
<th>Information Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant radiologists</td>
<td>Based on the number of examinations per year taking account of complexity i.e. general reporting, cross-sectional imaging and barium investigations.</td>
</tr>
<tr>
<td>Consultant Histopathologists</td>
<td>Based on number of cases and area of work i.e. autopsies, cervical screening cases, and diagnostic cytology specimens.</td>
</tr>
<tr>
<td>Theatre Nurses or Operating Department Practitioners</td>
<td>1 nurse with Anaesthetist, 2 Scrub Nurses, 1 recovery nurse per session</td>
</tr>
<tr>
<td>ICU Nurses</td>
<td>1 nurse to each patient i.e. 3 for 24 hours</td>
</tr>
</tbody>
</table>

By 2006, the service in Wales needs an additional 28 T&O consultants, 14 WTE Anaesthetists, 2.8 WTE Histopathologists and 5.6 WTE Radiologists.

Forecasting is based purely on workforce planning information modified by clinical information on the ratios of trauma and orthopaedic surgeons to the other specialities and professions.

The basis of this calculation as already stated is reliant on trusts’ accuracy in developing their workforce plans. Further more detailed work would be required with individual trusts to test the accuracy of the information. However, based on current population levels, and estimated growth in population over the next ten years, the required increase in trauma and orthopaedic consultants forecast by trusts would bring the number per 100,000 population to 3.95 in 2006 and 4.01 in 2009, which is equal to the recommended levels identified by the British Orthopaedic Association.

Amended Consultant Contract in Wales

The amended consultant contract in Wales will provide for every full-time consultant to be contracted typically for 7 direct clinical care sessions each week and 3 supporting professional activity sessions. In some cases consultants will work 8 direct clinical care sessions if their rules do not require 3 professional supporting activities.

With the other professions involved in the provision of trauma and orthopaedic services (identified above) workforce planning data is currently collected as a total, by profession and by trust, and is not broken down by speciality. It is therefore not possible to disaggregate numbers to identify those specifically working in the trauma and orthopaedic field (or in the case of Allied Health Professions the percentage of a person’s time spent in this area of service provision). To provide a more accurate picture a specific exercise would need to be carried out with each trust. This is likely to be an easier exercise in some professions e.g. nursing where there are specific trauma and orthopaedic wards and where nursing workload systems can be used to measure staffing requirements.
A similar situation exists for General Medical Practitioners and their staff. GP numbers in Wales have risen over the last decade by 5%. The age distribution of GPs has also changed since 1992 with fewer GPs aged either over 60 or under 40 years old. The whole-time equivalent number of support staff employed by GPs has increased by 32% over the last ten years to reach 3,973 in September 2002. As with hospital based staff referred to above it is not possible to disaggregate the percentage of a GP's time spent in this area of service provision.

Recruitment and Retention
The workforce planning process has been developed considerably in recent year, to become a far more sophisticated process of collecting data for all staff in NHS Wales. This is already enabling the identification of trends around the movement of staff in and out of the NHS, as well as consideration of future staffing needs.

The human resources strategy for Wales, Delivering for Patients (Welsh Assembly Government, 2000) required each health organisation and each profession experiencing shortages, to produce local recruitment and retention strategies, with action plans to support them. A return to practice campaign for Allied Health Professionals is also underway, targeted at speech and language therapists, physiotherapists, occupational therapists, audiologists, radiologists and dieticians. Additionally, work is ongoing with the existing workforce to ensure that the talents of staff are fully maximised.

6.1.2 Quality of Staffing Data
There are currently two staffing data collection systems in Wales - National Assembly statistical information, taken annually at 30 September, which provide a snapshot of staff in post; and NHS Wales workforce plans, which are provided to the Welsh Assembly Government by individual trusts and used to identify numbers for commissioning education and training and to inform recruitment and retention policy.

Neither of these processes currently breaks down staff to individual service delivery levels and as a result, in most cases, it is impossible centrally to plan the staffing needs for individual services except for medicine and dentistry. Capacity in trusts does not currently exist to break the data down in a meaningful way. Most trusts develop workforce plans by directorate for nursing, whilst plans for clinical scientists, Allied Health Professions etc are usually completed on a whole trust basis. Data is provided to the Welsh Assembly Government as staffing requirements by profession.

The Electronic Staff Record (ESR) system will improve the availability of accurate data and implementation is anticipated by mid 2005. This human
resources system will introduce a new coding process, which will enable
trusts to identify which specialities staff work in, even where only part of a post
is in a specific care area.

Since workforce planning has to be carried out in a longer time frame than
current service planning, assumptions have to be made about future service
provision. Trusts have to plan the workforce with a clear picture of future
financial and other resource provision (previous experience suggests that
planning on current known funding levels leads to underplanning).

6.1.3 Effective Use of Current Workforce
Additional consultant appointments not only cater for rising need for care, but
also support the planned reductions in the working hours of junior doctors as
well as to improve consultant compliance with the European Working Time
Directive (EWTD). The EWTD already applies to all NHS staff, except junior
doctors, for whom it becomes law in August 2004.

The EWTD has great potential to affect the ability to provide services in the
future. Maintaining current junior medical staffing levels will reduce the
capacity to deliver existing workloads as the EWTD will reduce day time
availability of trainees by 20-30%, with inevitable service implications.
Consultants and non-consultant career grades are expected to be compliant
to a 48-hour week now but they are permitted by derogation to opt out of this.
If the EC withdraws that derogation it would immediately affect some trusts’
ability to provide some services. It is recognised that service reconfiguration
will be required to ensure compliance with the Directive. Consideration of
splitting elective and emergency work and negotiating consultant shift work
will be required. Even so, without significant investment, it is unlikely that
Wales will be EWTD compliant by August 2004.

6.1.4 Workload Measurement
Consultant workload issues in trauma and orthopaedics are being examined
as a separate issue.

There are many workload measurement systems currently available to assess
nursing. These systems are either activity based or dependency based.
As part of the workforce planning process, trusts are advised that they should calculate their current and future staffing requirement, as well as addressing skill mix issues by using a recognised system.

However, not all trusts in Wales currently use these systems – latest surveys indicate that there are nine trusts currently using a workload measurement system to calculate their nursing workforce requirements.

There is no reported use of systems currently being used in Wales to determine the Allied Health Profession workforce.

6.1.5 Changing Workforce

Delivering for patients confirms that ‘one of the key ways of improving the service to patients and of retraining and recruiting staff is to look at the ways we do things and challenge the traditional methods of working’.

This report refers to the roles of diagnostic and therapy staff, suggesting approaches to new ways of working both in primary and secondary care. Examples of where this has been trialled successfully are identified. However, to extend these new ways of working more widely across the NHS, an assessment of the numbers involved will be required. Some staff would come from existing services and would have their roles redefined. Such developments will necessitate an assessment of the overall numbers required in these professions to support all roles.

The issues about the overall availability of staff remain, recognising that although education and training commissioning has increased considerably in the last five years, there is a time lag between recognising the need for staff and for qualified staff to come through the education process. This means that there needs to be an element of long term planning not only at an all Wales, all staff level, but particularly when specific initiatives are being considered and developed on a fast track basis.

Local diversity and local initiatives are extremely important and examples of local innovation are identified throughout the report. In considering the development of new roles, however, there needs to be an element of consistency across Wales, to ensure that skills gained are recognised and transferable between various health service providers i.e. from trust to trust. The Welsh Assembly Government is investing in the development of national occupational standards in many areas of healthcare delivery. This will assist in the design of roles and the development of appropriate training to ensure that all staff, professional and support workers, are able to gain the necessary skills and knowledge. The Agenda for Change initiative will support the introduction and implementation of extended roles and new types of support workers.

Within primary care, the introduction of GPs with a special interest might allow more point of contact treatment to take place within the community setting. Furthermore, increased access to therapy services in primary care would free
up general practitioner’s time, and facilitate different referral routes and patient pathways.

Within secondary care, working differently might for example include the use of members of the multidisciplinary team to triage waiting lists and extend non-surgical treatment pathways. Increasing use of non-consultant lead clinics might facilitate this.

There is work to be done in Wales to co-ordinate the issue of changing and extending roles and this is being taken forward by the All Wales Workforce Development Steering Group and its Sub Groups. Extended roles are also being developed through the work of the Innovations in Care team. This work, however, requires a medium term approach, particularly where new education and training packages need to be developed to support new roles.

Changing roles requires a medium term approach, particularly where new education and training packages need to be developed to support new roles

In terms of working differently, there are some measures that can be introduced almost immediately e.g. increasing clerical/administrative support in clinical teams to release the burden on health care professionals. Re-examining the ratio of Operating Department Practitioners (ODPs) to theatre nurses is a further example where it may be possible to release qualified nursing time to other areas (ODP training is shorter than nurse training, so there is potential to produce newly qualified ODPs more quickly.

Some workforce restructuring options can be implemented almost immediately and detailed examination is needed to identify where these immediate/short timeframe actions could be implemented

6.1.6 Solutions

**Conclusion:** Additional activity required to reduce waiting times will be reliant upon an adequate workforce to deliver these improvements. All workforce planning must, therefore, be closely linked to existing service models and future strategy. As a result, particularly for the shortage professions, the solution is likely to involve new ways of working, with associated skills training

Workforce planning must be an integral part of all future strategic and service planning. This should be undertaken for each professional group, by geographical area. Systems should be developed to allow analysis of staff required to deliver specific activity levels in order that this may be factored into workforce planning systems. Increased numbers in training should be continuously recalculated and this should be closely linked to the national workforce strategy.
Workforce planning should also take into account suitable service models for tertiary cases (e.g. spines) and take into consideration issues of casemix and succession planning.

Given anomalies in medical workforce planning information and possible over forecasting by trusts of their medical workforce planning needs in terms of trauma and orthopaedic consultants, more detailed work should be carried out to test the accuracy of information with individual trusts.

As part of the education and training commissioning process, links are made between consultant requirements and the allocation of new Specialist Registrar posts between specialities. Financial support for specific SpR posts in trauma and orthopaedics should be incorporated.

With the other professions involved in the provision of trauma and orthopaedic service provision (identified above), workforce planning data is currently collected as a total, by profession and by trust, and is not broken down by speciality. It is therefore not possible to disaggregate numbers to identify those specifically working in the trauma and orthopaedic field. To provide a more accurate picture, a specific exercise would need to be carried out with each trust.

Trusts should ensure that they are using recognised workload measurements systems for nursing to identify current and future staffing requirements.

Trusts should explore the introduction of workload measurement systems for Allied Health professions.

The all Wales recruitment and retention strategy should be extended and rolled out.

Detailed examination is needed to identify where immediate actions could be implemented, e.g. provision of administrative support, including a measure of the impact on productivity. Consideration should be given to funding these immediate actions.

Extended roles, for many members of the care team, should be developed further to increase professional specialists (e.g. specialist nurse practitioner, extended scope physiotherapy, general practitioner with a special interest).

In order for staff to deliver an optimal service, they need to be equipped with the right skills. Accredited higher training courses must be made available to facilitate the supply of an adequate number of trained professionals required to undertake basic and extended roles.
6.2 Education, Training and Research

The Review of Health and Social Care confirms that ‘enhanced training is required for all staff.’ It also notes that ‘the need to train, and enhance the skills of the health service workforce of tomorrow highlights the important role of education providers and academic medicine in Wales.’

A Life Long Learning Strategy for all staff in NHS Wales is currently under development.

Enhanced education training and research opportunities for all professions at all levels are fundamental to the provision of high quality patient care

6.2.1 Training Places

Workforce planning identifies a current and future shortage of practitioners in key professions. One way around this is to increase the number of training places in Wales. This is already taking place with the advent of the clinical schools in Wales and a net increase in medical school intake. Places in Schools of Nursing and in the therapies are also set to increase.

Medical

The number of graduates to complete medical studies at University of Wales Colleagues of Medicine (UWCM) is predicted to increase, as shown in Table 21.

<table>
<thead>
<tr>
<th>Date</th>
<th>Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2003</td>
<td>171</td>
</tr>
<tr>
<td>July 2004</td>
<td>192</td>
</tr>
<tr>
<td>July 2005</td>
<td>235</td>
</tr>
<tr>
<td>July 2006</td>
<td>259</td>
</tr>
<tr>
<td>July 2007</td>
<td>267</td>
</tr>
<tr>
<td>July 2008</td>
<td>302</td>
</tr>
<tr>
<td>July 2009</td>
<td>337</td>
</tr>
</tbody>
</table>

The increased output from UWCM will eventually have an impact on the capacity available to meet future consultant requirements. Initially however it will have an impact upon the number of postgraduate training grade posts needed in Wales. Furthermore this increased output must be accommodated in conjunction with achieving the outcomes of Modernising Medical Careers (MMC). MMC introduces a new structure of postgraduate medical education that will be made up of a two year foundation programme (incorporating the current Pre-Registration House Officer year and first year Senior House Officer) followed by Basic Specialist Training (BST), replacing current Senior House Officer years.

The number of Foundation Programme posts will have to be sufficient to accommodate the output of medical graduates from UWCM. Likewise, the
number of BST posts will have to be sufficient to meet this output, whilst, at
the same time ensuring that there are sufficient posts to feed into the
Specialist Registrar higher training programmes - which in turn is influenced
by the consultant workforce needs.

To date the number of training grade posts required as a result of MMC has
not been determined. Implementation of the modernisation of postgraduate
medical education is being carefully managed by the Assembly and UWCM.

Nursing
The total number of contracted nurse training places in Wales in 1999/2000
was 2,664. This was increased to 3,450 in 2002/03. More than 4,300 nurses
midwives and health visitors will have come out of training between 2000 and
2004. Currently, about 10.5% of trainee nurses leave during a three-year
nursing course. Whilst the completion rate compares favourably with the
Higher Education sector as a whole, the Assembly is continuing its efforts to
decrease attrition rates.

More than 4,300 nurses, midwives and health visitors will have completed
training between 2000 and 2004

Waiting lists at Higher Education Institutions (HEIs) are oversubscribed. A
problem is that 50% of nurse training involves practical clinical placement, in
line with UK and EU requirements, and this is a barrier to increasing numbers.
In addition, the increase in nurse student numbers is putting pressure on the
ability of trusts to provide enough placements at the appropriate standard.
Alternative options are being explored.

Part-time nursing programmes are to be developed to increase opportunities
for healthcare support workers to train as nurses

The first programme, run by Bangor University in conjunction with Conwy and
Denbighshire NHS Trust, began in September 2002. Other trusts and HEIs
are being encouraged to pursue this route.

Allied Health Professions
The number of training places for the Allied Health Professions has been
increased from 494 in 1999/2000 to 649 in 2003/04. Within this increase,
occupational therapy places have increased from 47 in 1999 to 112 in 2003;
physiotherapy from 73 in 1999 to 140 in 2003; and radiography from 15 in
1999 to 98 in 2003. Students can access physiotherapy and occupational
therapy training on a full time, part time or accelerated route basis, which
widens access.

Support Workers
Support workers work with, or under the supervision of, professional staff.
The roles of these staff are varied, ranging from direct involvement in patient
care, through to administrative and portering tasks. Whatever the role they
undertake support workers contribute to the quality of care of patients. In
order to ensure high quality service delivery, it is important that this group
have access to appropriate opportunities for developing the knowledge and skills required.

There are some initiatives in place for the education and training of support workers in the NHS. These are:

- Health care support worker programme (for those working alongside nurses: each trust in Wales is provided with financial support to fund 2 support workers per year to undertake the 3-year nurse education programme.
- A pilot scheme offering a part-time nursing programme for support workers has commenced in North Wales.
- NVQ standards for healthcare support workers exist for support workers in most professional areas. Many trusts in Wales support staff through NVQ development.
- Many professional groups are currently working with education providers in developing appropriate training programmes for their own support workers.
- Health Professions Wales is a new body which has a remit to support continuous professional development for nurses, midwives, health visitors, allied health professions, healthcare scientists and support workers in Wales. They are currently carrying out a scoping exercise to identify the needs of all support workers in NHS Wales prior to developing appropriate support mechanisms.

_Improving Health in Wales_ has made a commitment to introduce individual learning accounts for support workers in 2004. The process for implementing this will be guided by the work of Health Professions Wales.

### 6.2.2 Continuing Professional Development

As well as ensuring appropriate numbers are receiving the right sorts of basic training and education, there is a need to train, and use to full effect, those staff already working in the service.

If the service is to pursue new ways of working, then different professionals will need to adopt extended roles, e.g. Extended Scope Practitioners. This will require substantial training input and possible extension to the core syllabus in a number of training programmes.

Whilst substantial opportunities exist within Wales for Continuing Professional Development, there is limited co-ordination and needs assessment to guide this. The concept of life long learning is essential for all practitioners if they are to offer their patients the most appropriate and effective form of care. Much medical education is portfolio based, and practitioners tend to focus on things they are interested in or things that they already know about. This applies to both primary care and hospital based practitioners of all disciplines.

If the vision of a primary care service is to prevail, then GPs' orthopaedic education needs to be improved with regular training. Some GPs have developed a special interest in trauma or orthopaedics and have undertaken further training in orthopaedic surgery, manipulative therapy, sports medicine, musculoskeletal medicine and sometimes in osteopathy or acupuncture.
Further consolidation is needed to expose GPs to targeted specific training on orthopaedic conditions and how these should be treated. The concept of clinical effectiveness for the benefit of the patient must also be a major consideration.

Life long learning and Continuing Professional Development in trauma and orthopaedic conditions and treatment options is essential to the delivery of the service.

Also there is limited opportunity for focused multi disciplinary learning within, say, the primary care team. In this way, practitioners who work together may have differing approaches to practice that must be addressed.

### 6.2.3 Higher Training

The need for higher training for GPs is considered in *The Future of Primary Care* strategy (2001).

There is undoubtedly a place for the role of a specialist GP, as identified in *Improving Health in Wales*, to enhance the role of primary care in the treatment of patients, by improving access to services and demand managing which patients should be referred to a consultant. A recognised diploma course to train specialist GPs is under development in Wales, accredited by the UWCM. Further training opportunities and uptake of training in joint injections and minor surgery should also be encouraged.

The UWCM also offers a diploma in Sports Medicine. Preliminary discussions have been held regarding the broadening, and funding, of this approach, to train community physicians with an emphasis on rehabilitation and musculoskeletal care. Conclusions and the way forward have yet to be agreed, although the development of a Sports Institute may also be a consideration.

### 6.2.4 Research & Development

There is evidence to suggest that provision of a strong academic research base can lead to considerable benefits to the general economy of an area and to the specific services involved in them. This is of particular relevance in Wales, where there is a need to improve recruitment and retention amongst the medical workforce, in particular. Strong academic research activity has been shown to do so.

*The Review of Health and Social Care* explains that ‘actions should be based on evidence from enhanced research.’ Despite current national and international developments, trauma and orthopaedics in Wales has a limited research base of its own, relying rather on the UK dimension. The recent appointment to the Chair in Orthopaedics and the extension of the academic department at the UWCM will facilitate increased emphasis on both teaching and research within the academic environment.

There is an opportunity to branch into wider research through pursuit of stronger links with the private sector and their research programmes. This is
already pursued to some extent via the UWCM but a wider approach and wider industry application could be beneficial.

The UWCM has already established an academic research department in pre-hospital emergency care and is seeking to establish a chair for this activity. There are obvious links with trauma and advantage should be taken of joint working between trauma and orthopaedic research and this department. This could provide a significant evidence base for trauma service delivery.

6.2.5 Solutions

**Conclusion:** Strengthening of the academic base will bring major benefits for teaching and research, recruitment and retention of a skilled trauma and orthopaedic workforce

- Opportunities to strengthen the academic teaching and research base for trauma and orthopaedic services in Wales should be pursued, following the appointment of the chair. SpR input into academic lecturer posts might be encouraged. Consideration of wider research opportunities with private sector partners, possibly following the gene park model, may also be usefully explored.

- The training and teaching environment should be strengthened, possibly by the introduction of an institute of sports medicine, focusing on musculo skeletal conditions and community rehabilitation.

- The number of vocational training places across all professions should be expanded to meet demand highlighted in workforce plans. This should include an increase in the number of Specialist /Registrars in trauma and orthopaedics, and consider training need in other clinical specialities of anaesthetics and radiology.

- In order to facilitate extended roles, appropriate higher training programmes must be provided. Development opportunities for all professions wishing to update their orthopaedic skills must be available in each area.

- Develop a basic orthopaedic continuing professional development programme aimed specifically at GPs to enhance their core skills. Extended training opportunities should also be made available, in particular, a diploma course for Specialist GPs (Orthopaedics) should be established in Wales.
6.3 Diagnostic and Therapy Services

6.3.1 Diagnostic Services
The Diagnostic Service in Wales has completed a scoping study to establish current provision and a draft strategy is now being developed in partnership with key players. The project report highlights the major issues relating to facilities, equipment and new technologies and the difficulties of ensuring that Diagnostic Services make the best use of the equipment and facilities available to them.

Presently, GP direct access to certain diagnostic services is limited or non-existent. Those GPs who can arrange diagnostics prior to their patient’s outpatient referral, are finding that the long waiting time prior to the patient’s appointment can mean that tests are no longer current and therefore have to be reordered.

6.3.2 Therapy Services
There are five key therapy professions that impact upon trauma and orthopaedic services: physiotherapy, occupational therapy, podiatry, orthotics and dietetics. These staff groups operate across all care sectors from health promotion, through primary, secondary and tertiary care, to long term management in the community.

However, the traditional models of therapy service provision are not uniform across Wales. Direct GP access to therapy services and the level and scope of service provision in both primary and secondary care, varies considerably. Limited or restricted access in primary care can consequently result in inappropriate referral to orthopaedic outpatients, and limited provision in secondary care can lead to extended waits for treatment and rehabilitation and longer inpatient lengths of stay.

Therapists, however, clearly have the potential to reduce demand on secondary care orthopaedic services, through enhanced primary care working and health promotion, and to contribute to the management of demand through collaborative working within secondary care at all stages of the patient journey.

As a foundation, LHBs and trusts should ensure that adequate provision of traditional therapy services are consolidated into their overall strategy and commissioning arrangements.

Traditional therapy services can contribute significantly to trauma and orthopaedic services across all sectors of the care spectrum.

6.3.3 Therapies in Service Development and Redesign
In addition to the traditional and well-established services that the therapies provide, many examples of new and innovative ways of working have been developed, tested and introduced in Wales across all care sectors.
However, while the orthopaedic collaborative in Wales has enabled services to share innovation, the lack of permanent funding has prevented some schemes being consolidated into mainstream services. There is a need to continue to share innovative practice across Wales and to consolidate proven new ways of working into the mainstream.

**Existing pockets of innovation must be optimised and consolidated into mainstream good practice.**

**Primary Care**

*The Wanless Review of Health and Social Care in Wales* (Wanless, 2002) advocates prevention and early intervention and recognises that self-management is an important aspect of reducing inappropriate or avoidable referral to secondary care services.

Early intervention in acute disorders can facilitate early resolution, avoid deterioration, prevent the development of chronic conditions, and reduce the subsequent need for secondary care referral.

Timely access to primary care focused therapy services facilitates prevention and enables early assessment, intervention and management of a wide range of musculo-skeletal disorders.

To further facilitate early intervention and to reduce pressure on GPs, consideration should be given to the development of physiotherapy, as the first point of access to primary musculo-skeletal healthcare.

**Therapists provide services in primary care which, if developed further, could contribute to prevention, early management and reduction in demand for secondary care referral.**

Therapy services can have a major impact on GP consultation, onward referral to secondary care and prevention of avoidable admissions, through the identification and management of at-risk groups within primary and social care. For example, therapists could play a lead role in falls clinics and gait assessment clinics, providing aids and equipment, orthotics and early advice on suitable environments and adaptations. (The management of falls is addressed in detail in the Older Person’s Strategy).

**Therapists co-ordinate a range of services which, if developed further, could positively impact on demand. These include falls and gait clinics and the provision of aids and adaptations.**

**Interface between primary and secondary care**

An orthopaedic outpatient conversion rate of approximately 25% suggests that some patients are on the wrong waiting list. This has meant, for many patients, a long wait for a consultant appointment, where early therapy management may have been more clinically appropriate.
Consolidation of adequate provision of therapy services in primary care will reduce demand for secondary care referral and provide a platform for further development of alternative management pathways. This could include primary care focused triage and treatment services provided by specialist and extended scope therapy practitioners in partnership with GPs with a special interest in orthopaedics. The potential for consultant therapists in primary care musculo-skeletal services is also recognised and being developed in some localities.

To support specialist and extended therapy roles, access to diagnostics - particularly radiological investigation, must be facilitated. The Welsh Therapies Advisory Committee is currently working with the Medical Imaging Sub Group of the Welsh Scientific Advisory Committee to develop best practice for non-medical referrals to diagnostic imaging.

Therapies can play a significant role in overseeing patient flows, by being empowered to re-route patients to the most appropriate care pathway in primary or secondary care.

Therapists working in Accident & Emergency can contribute to shorter waiting times and to the streamlining of processes through the provision of triage and treatment of minor injuries. They can also contribute, through the provision of appropriate support and equipment, to the avoidance of unnecessary admission of patients who would otherwise be unable to cope at home e.g. wrist fractures in the elderly.

Secondary Care

Therapy Triage of Outpatient Waiting Lists
Where patients have already been referred to orthopaedic outpatients, diversion of selected cases from consultant lists to therapy and nurse-led clinics will reduce waiting times and provide more appropriate and timely packages of care. This can be achieved through protocol driven triage of waiting lists and subsequent transfer of patients to non-medical clinics. Clinic staff will then directly manage patients, or refer them on to mainstream therapy services or for medical intervention. The establishment of generic referrals to a multi disciplinary orthopaedic team would facilitate this approach of offering alternative secondary care management routes.

Core skills training should be extended in order to promote the availability of increased numbers of extended scope therapy practitioners.

Therapy support to orthopaedic consultants – elective outpatients
Therapists also have a role in supporting orthopaedic consultants in the delivery of specialist care. Clinical specialists/ extended scope practitioners are able to undertake protocol driven diagnostic procedures and to provide routine follow-up and long term monitoring of post operative cases. Appropriately developed, this level of support not only releases consultant time but can also provide data for audit and research.
**Therapy support to orthopaedic consultants – trauma outpatients**

Therapist input to fracture clinic has the potential to improve efficiency by therapists managing the follow up and onward referral to minor injuries. Patient outcomes could also be improved through the provision of early rehabilitation, advice and treatment.

**Early pre-admission management**

Early pre-admission management by a team of nurses and therapists has an important role in the patient care pathway. For total hip and knee replacement patients, this approach has been used to assess whether patients are fit for surgery, to inform and prepare them for admission, surgery and rehabilitation and to oversee suspensions and removals from the list. This approach has been proven to reduce DNAs and late cancellations.

Evidenced good practice in major joint replacement suggests that there is scope to extend this approach to other client groups. This potential should be explored and, as waiting times reduce, these services need to evolve to meet the changing needs of the patient population.

**Inpatient stay**

Adequate therapy input is critical to maximising patient outcomes from orthopaedic intervention and to minimising length of stay. Adequate nutritional support, early mobilisation and the provision of aids and equipment are all components of care pathways in elective and trauma services. Trusts and LHBs should therefore ensure that adequate provision of inpatient therapy services is consolidated into their overall trauma and orthopaedic strategy and commissioning arrangements.

From a foundation of adequate routine therapy services, trusts should explore the provision of seven-day therapy support to orthopaedic wards. In some trusts in Wales, seven-day physiotherapy services are in place and have been shown to facilitate early mobilisation and to reduce length of stay. Weekend therapy cover also allows more flexibility in scheduling surgical lists, when the availability of rehabilitation is not governed by the five-day week.

**Assisted discharge**

The potential to reduce length of stay for orthopaedic cases can be realised through the provision of assisted discharge schemes, designed to provide ongoing support in the patient’s own home. These can range from full hospital at home services to rehabilitation at home for less dependent cases. Physiotherapists and occupational therapists, and their support staff, have a role to play across this continuum. Comprehensive multi-disciplinary discharge planning, with adequate ward-based outreach support, could result in better and earlier discharge arrangements.

Where discharge home is not an option, the provision of transfer to alternative rehabilitation, or step down beds, should be explored. Adequate rehabilitation must be included.
Solutions

Diagnostic Services

**Conclusion:** Access problems for a range of diagnostic services frequently result in bottlenecks in the patient pathway, leading to longer waiting times and some duplication

- Long waiting times for some imaging procedures must be addressed. Robust information about waiting times at different sites and adherence to waiting list management systems are important to optimising use of available resources and to providing the ability to consider redirection of work as appropriate.

- Levels of demand for diagnostic services should be addressed further, with consideration of how this may be influenced. Current working patterns and waiting times can result in duplication of some tests, at the time of referral and again at the outpatient appointment. This could be managed under protocols that cover primary care and pre-assessment diagnostic work-ups.

- GPs should have direct access to key diagnostic services. Royal College guidelines could be promoted to ensure appropriate onward referral. This could impact on waiting times and might reduce referrals to secondary care.

- A *Strategy for Diagnostic Services in Wales* is currently in preparation and should allow increased access points to diagnostic services in support of the orthopaedic strategy. This might usefully include a new focus on community based facilities. Additionally, there is a need to ensure that primary, secondary and tertiary systems are linked, allowing access to images acquired by other primary or secondary care providers.

Therapy Services

**Conclusion:** Therapists have the potential to reduce demand on secondary care orthopaedic services through enhanced health promotion and primary care working, and to contribute to the management of demand through collaborative working within secondary care at all stages of the patient journey

- Good practice and new ways of working should be extended and therapists are well placed to promote such developments through their work within the multi disciplinary arena.

- As a minimum, every GP should have direct access to mainstream podiatry and physiotherapy services within primary care. The primary care team would also benefit from access to extended scope practitioners and a
specialist physiotherapist service, where necessary, possibly based within primary care resource centres.

√ Increased therapist support should be made available in primary care and may play an important role in reducing inappropriate referrals to secondary care. Other advantages of this approach will cover health promotion and surveillance and secondary prevention, as well as increasing treatment options within the community setting. This will also release an element of general practitioner time to facilitate new ways of working within the practice team

√ Physiotherapy triage of referrals to the outpatient waiting lists should become standard practice in order to reduce the number of inappropriate referrals on a consultant outpatient waiting list and to offer alternative access points to ensure that patients receive the most appropriate treatment option at the earliest opportunity. There are varying models that may be adopted, although this will normally involve extended scope practitioners and diagnostic access.

√ Trusts should also undertake multidisciplinary triage of existing long waiting patients in order to reduce waiting times through alternative treatment methods and care pathways.

√ Trusts should ensure that they have adequate substantive therapy positions to support inpatient post surgical care and rehabilitation, to optimise patient outcomes.

√ Appropriate access for members of the primary care team, to appliances and orthotic services, should be addressed.

√ Therapies can play a significant role in overseeing patient flows by being empowered to re-route patients to the most appropriate care pathway in primary or secondary care.
Section 7: ADDING CAPACITY

7.1 Protected Elective Capacity

From the evidence considered, it is apparent that, through a combination of tighter management, and service improvement and innovation, including strong demand management, there is significant scope for increasing activity throughput within the existing resource envelope. However, given long waiting times, increasing levels of demand, plus latent demand, the current capacity for providing trauma and orthopaedic services in Wales is insufficient. Consequently, long term sustainable solutions must inevitably involve provision of additional physical capacity, probably adopting differing models in each region dependent upon local circumstances.

Additional trauma and orthopaedic capacity is needed to assure long term sustainable solutions, in addition to increasing activity through a combination of tighter management and service improvement.

7.1.1 Accessing Capacity

In the context of accessing existing NHS capacity, the importance of proactive bed management and patient flows must be recognised. This will enable allocated trauma and orthopaedic bed use to be optimised:

- firstly, through minimising the number of outliers from other specialities;
- secondly, by ensuring optimal occupancy of the allocated beds (85%);
- thirdly, by introducing further efficiencies to improve average length of stay, reduce delayed transfers etc;
- and, finally, by adding more protected capacity.

This will, in effect provide an additional number of bed equivalents for use within the speciality. This can be illustrated in the context of a 28-bedded ward as illustrated in Figure 34 below:

**Figure 34: Bed Management Processes in a 28 bed Trauma and Orthopaedic Ward**

<table>
<thead>
<tr>
<th>Ward houses outliers/ delayed transfers (say 3) = 25 beds</th>
<th>Ward running at optimum occupancy for T&amp;O patients = 28 beds</th>
<th>Bed equivalents released through efficiencies (say 2) = 30 beds</th>
<th>Additional protected capacity added (say 5 beds) = 35 beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>Best Practice</td>
<td>Capacity</td>
<td></td>
</tr>
</tbody>
</table>

The elements of the strategic approach already support achievement of the first three stages. Beyond this, proposals to increase capacity are endorsed.
7.1.2 Treatment Centre Approach in Wales

Treatment Centres (formerly known as diagnostic and treatment centres) used in England offer a good model for providing additional protected elective capacity. In England, the Treatment Centres have been introduced to help shorten waiting lists and are playing an increasingly important part in the modernised NHS. Many of these are entirely NHS-run. This approach is supported in Wales, and there are already a number of protected facilities in Wales that comply with the treatment centre philosophy, such as the Cardiff and Vale Ambulatory Care and Diagnostic Unit (ACAD) and the Bridgend Eye Unit. These units are NHS provided/staffed and NHS funded; this is Wales’ preferred approach.

One of the overriding messages is that the success of a Treatment Centre depends not so much on the building but the way the services are provided within it. Treatment Centres offer a proven model for protected elective (planned) capacity. Currently, acute hospitals’ cold surgery performance is undermined by unplanned work. At a Treatment Centre, elective surgery is separate from, and unaffected by, emergency surgery and the seasonal demands that affect other parts of the NHS. That means they virtually never have to cancel operations at the last minute for non-clinical reasons. Under the current system in Wales, operations are frequently cancelled or delayed because an emergency case has to take precedence. Development of an elective centre would free up capacity within acute hospitals to better accommodate emergency trauma and more complex cases.

There is no single model for a Treatment Centre. Instead, the services are designed to treat a high volume of patients, using standardised procedures. It is an approach to care that rethinks the way in which services are delivered, in order to streamline systems and processes for the care and treatment of the patient. Much of this redesign focuses upon integrated care pathways at all stages of the patient journey and the move towards ‘one stop shops.’

Treatment Centres have been designed to give high-quality treatment for ‘routine’ patients, making the most efficient use of resources, including beds, operating theatres, diagnostic equipment and staff. The Department of Health’s definition explains that “Treatment Centres provide safe, fast, pre-booked surgery and diagnostic tests for patients, by separating scheduled treatment from emergency pressures, in some of the specialities with the highest waiting times (for example, orthopaedics).”

7.1.3 Treatment Centres: A Continuum

Different types of Treatment Centres may be viewed as a continuum in respect of the way they are established and funded. The options range from being solely NHS run, a combination of public/private partnership for mutual benefit or, in some instances, privately run.

In England, in order to make an effective and rapid impact on waiting times, Treatment Centres have been established in a number of different ways, using a range of settings. These include:
- using existing NHS acute (hospital) facilities;
• using community hospitals;
• adding new NHS protected facilities;
• leasing facilities from the independent sector;
• using the independent sector as providers.

The Treatment Centre is not just a building and although the design of the building is important, it should serve the philosophy, not drive it. Some Treatment Centres are 'virtual' centres, making use of existing facilities in a new way, not necessarily all in the same location.

In Wales, there is a commitment to use NHS resources to extend capacity wherever possible. This embraces the following options:

• reconfiguring existing capacity;
• expanding capacity under the Treatment Centre approach;
• building Treatment Centres: public capital and publicly run.

Beyond this, it is recognised that although a number of LHBs have contracts with private sector companies for inpatient treatments, in order to manage long waiting times, this is not current Welsh Assembly Government policy. That is to say, the service is not in a position to commit income to private providers on a recurrent/contractual basis as part of their business plan. However, given the validity of the private sector’s contribution to capacity shortfalls, central policy will not stand in the way of use of this capacity at local level, should local health bodies wish to support it. Emphasis is focused upon deriving sustainable solutions within the NHS from current funding allocations.

7.1.4 The Defining Characteristics of a Treatment Centre

For some, the concept of a Treatment Centre is hard to conceptualise. The Department of Health, therefore, clarified the defining characteristics as follows:

• it embodies, throughout its life, the very best and most forward thinking practice in the design and delivery of the services it provides;
• it delivers a high volume of activity in a pre-defined range of routine treatments and/or diagnostics;
• it delivers scheduled care that is not affected by demand for, or provision of, unscheduled care either on the same site or elsewhere;
• its services are streamlined and modern, using defined patient pathways;
• its services are planned and booked, with an emphasis on patient choice and convenience, together with organisational ability to deliver;
• it has a clear and trusted identity that is valued by its patients and by its other stakeholders;
• it provides a high quality, positive patient experience;
• it creates a positive environment that enhances the working lives of the people who work in it;
• it adds significantly to the capacity of the NHS to treat its patients successfully.
Defining characteristics of a Treatment Centre:

- separates out scheduled care;
- high volume of activity and productivity;
- services designed around the patient;
- streamlined – defined pathways;
- modern practices;
- positive patient and staff experience;
- clear and trusted identify.

Treatment Centres provide protected elective capacity for a range of treatments including, for example, orthopaedic hip and knee replacements. The model is not simply about adding capacity, but promotes service redesign to optimise service efficiency, clinical outcomes, and maximise patient satisfaction.

Treatment Centres are high volume elective units designed to boost throughput, partly through adding to NHS capacity and partly through rethinking the patient care process.

Some Treatment Centres have been set up to carry out diagnostic procedures such as endoscopy and ultrasound, rather than elective surgery. As they become more established, these Centres will expand the range of tests and operations they offer. Increasingly, this will include primary care Treatment Centres, whose main focus is likely to be diagnosis and some minor surgical procedures. In Wales, this will be similar to the Primary Care Resource Centres, which are a key part of the Primary Care Strategy. Their precise configuration will be based on local needs and circumstances. The types of services that may be present in a Treatment Centre are illustrated in Figure 35.

**Figure 35: Comprehensive Diagnostic and Treatment Centre**

Source: *Diagnostic and Treatment Centres: The Way Forward* (2001)
7.1.5 Adding Capacity In Wales

In Wales, wherever possible, capacity will be developed as an integral part of the NHS. National policy dictates a move away from costly waiting list initiatives and private sector contracts. There are already a number of protected facilities in Wales which follow the Treatment Centre model as described and these shall be known as such. These range from the protected orthopaedic facility that was provided on the former Rhydlafar site to the ambulatory care facility at the University Hospital of Wales, and encompasses other models of protected streamlined care, such as those used by the Cardiff Eye Unit and the Bro Morgannwg surgical treatment centre. This approach is supported by the British Orthopaedic Association, who confirms that provision of local capacity and resources, using local expertise, is the preferred option.

Any further capacity developments in Wales will follow the Treatment Centre design and philosophy, as have the new facilities in Cardiff and Vale and Gwent Healthcare NHS Trusts, which contribute to the orthopaedic strategy.

To achieve success, there is a need for a culture change within the NHS. The focus for delivery of services will be on:
- protocol-driven care;
- careful patient selection;
- tight process-based approach;
- sophisticated scheduling;
- multi-skilled and highly specialised staff;
- patient-driven service pathway;
- joined up thinking at all levels and between all agencies.

7.1.6 Solutions

**Conclusion:** Additional protected elective capacity is needed to provide sufficient orthopaedic procedures to meet incident and latent demand and to reduce current long waiting times.

- Additional inpatient/daycase activity is needed to sustain maximum 18 month waiting times, to address the imminent cliffs in 15 – 18 month waits and to cope with the additional conversions that will result from reducing the outpatient waiting times. This will require additional capacity in secondary care. The impact of future increased demand and national policy to reduce waiting times must also be taken into consideration.

- Additional protected elective capacity should be developed in each of the three regions. Each health community is likely to identify a different delivery model, but each should involve protected elective capacity encompassing the 9 core defining characteristics of the Treatment Centre model.

- Implementation of the Treatment Centre model(s) should incorporate the English philosophy of service redesign to optimise service efficiency, clinical outcomes and maximise patient satisfaction.
√ Development of an elective centre would free up capacity within acute hospitals to better accommodate emergency trauma and more complex cases.
Section 8: INFORMING THE PROCESS

8.1 Management Information and Data Sources

Improving Health in Wales stated that ‘good information is essential if we are to evaluate our progress and demonstrate improvements.’ However, the Review of Health and Social Care considers that ‘data quality is poor and there is a lack of robust evidence.’ This affects service delivery and planning for trauma and orthopaedic services, and further development of meaningful management information and underlying data collection is fundamental to future development.

Robust management information is fundamental to trauma and orthopaedic service delivery and planning, and current systems require substantial strengthening to facilitate this

8.1.1 Information Requirements

Trauma and orthopaedic data and the information that it provides is essential for a number of reasons. It offers management information about referral patterns, including casemix and prioritisation; it provides details of activity particularly planned against actual throughput; and it provides details on capacity including alternative approaches, and requirement for additional beds/bed equivalents. All this information provides an important basis for service and capacity planning, as well as for research and development and audit purposes. Robust evidence is essential in order to inform day to day management for clinicians and managers, as well as to support and develop strategic intent for orthopaedic services.

There is a pressing need for relevant and reliable information on trauma and orthopaedics practice to inform the management and future development of the service

It has also been suggested that ‘there is a risk that the [health] service collects too much data and not enough information.’ (Audit Commission in Wales quoted in Wanless, 2002). Currently, key issues to be resolved include problems in data flows, and variable quality and value. Further suggestions for data not currently collected include, for example, improved referral data, separation of trauma from orthopaedics, removal for reasons other than treatment, impact of consultant specialisms and casemix. In addition separate recording of waiting list initiative activity, out of hours work and private patients may be useful in building up an accurate picture of activity patterns.

Significant difficulties remain regarding what we measure, as in regard of activity for example, it has been suggested that we measure old ways and not modern practice. As a result of issues over consultant named clinics, nurse-led clinics and therapy-led clinics, the official consultant-led activity statistics
have been suspended whilst an ongoing project is conducted surrounding the coverage, with a view to reinstating the statistics at the earliest opportunity.

**8.1.2 Data Quality**

Currently however, it is widely considered that the data sources available do not adequately provide the management support that is required. Data sources available cover referral data, which is not sufficiently complete, QS1 data, which covers outpatient and inpatient data, and PEDW data which provides details of all inpatient and daycase patient episodes in Wales. There is a significant amount of data on PEDW but it requires manipulation and some expertise. This is supported by regular waiting times releases, emergency pressures situation reports (SITREPS) and data on cancelled operations by speciality.

The National Statistics Quality Framework considers that data should be relevant; coherent; comparable; valid; accurate; timely. However, some of the data available is incomplete, unreliable or gathered too infrequently. At present there is an ongoing debate regarding the quality of data collected, rather than focusing on the information that it provides. One of the recommendations of the *Review of Health and Social Care* is for ‘an urgent overhaul of information systems, to improve quality, timeliness and coverage.’

Responsibility for data collection is split between Health Solutions Wales (data resource) Welsh Assembly Government Health Information and Facilities (information gatekeepers) and Health Statistics Analysis Unit (resource for publishing official statistics and analyses of those statistics). Further considerations for secondary analysis could be an important factor in optimising the use of management information available. This could include modelling orthopaedics against other specialities, mapping the impact of outpatients on inpatients, mapping the impact of daycases on inpatients, and conversion factors.

Further development of the management information and collection of the data required is very important. Minimum requirements should include data on referrals, outpatient casemix, diagnostic and therapy waits, activity, capacity, list management, and value for money.

Minimum data collection requirements and methodologies should be agreed to underpin future data collection and manipulation, emanating from a common data pathway

This should be regarded as an iterative process and data sets should derive from a common pathway: the clinical experience. Increasingly, the information collected to measure performance should be the by-product of arrangements in the service that enable managers to perform better. The data collected must respond to changing patterns of service.

**8.1.3 Information Improvement**

*Informing Healthcare*, Wales’ strategy for the delivery of effective information management and technology in the NHS, offers the basis for information
modernisation which ‘will raise the status, quality and relevance of information services within NHS Trusts.’ The strategy addresses a range of information and communications technology issues including the better use of information such as accountability for clinical data, access to local information support, and management of routine information flows.

Other considerations include the Healthcare Activity Measurement Focus Group who are considering what activity is currently measured in Wales, what should be measured and what action is needed to achieve this.

The Balanced Scorecard approach to performance management will also be instrumental in developing data collection methodologies and the availability and use of routine management information. The scorecards, once developed will draw upon a common data set that will be utilised at the micro and macro level. Information will be applied to standard performance measurement systems and targets, focusing on four quadrants of stakeholders, management processes, resource utilisation and innovation and learning.

Some further work is also being addressed through the Innovations in Care team which is looking at data flows, validation and cleansing of lists and the use of software for management and scheduling of waiting lists.

**8.1.4 Solutions**

**Conclusion:** Available data sources and management information is of variable quality and value and must be considerably strengthened in order to provide a robust basis for service and strategic planning.

- Quality assurance in data collection and information processing is fundamentally important, as is consistency in data collection methodologies. Robust data and information systems should be standardised as a basis for service and capacity planning.

- Data should be derived from clinical processes and be used for the basis of a common management information system that is of use to both clinicians and general managers.

- Routine and targeted secondary analysis is fundamental to the development of sustainable trauma and orthopaedic services and should be available as a matter of course to aid service development.

- The Health Care Activity Measurement Group based in the Welsh Assembly Government, should devise and develop methodologies for measuring non-consultant activity (e.g. nurse-led clinics)
Implementation of *Informing Healthcare* should be regarded as a key priority. Amongst other elements of this strategy there should be a focus on the better use of information, accountability for clinical data, access to local information support and management of routine information flows.
Section 9: CONCLUSIONS

- This strategy is designed to ensure sustainable delivery of a high quality and timely orthopaedics service for Wales. This will allow improved patient access and continuous reduction in waiting times.

- This strategy considers current evidence in respect of levels of demand, activity and capacity for trauma and orthopaedic services in Wales. It recognises that the elderly population is increasing and demand is therefore also increasing.

- It covers a ten year period, and will be delivered incrementally, depending upon different starting points in each health community. This will require carefully planned and phased action.

- Successful delivery is reliant upon a whole systems approach, and a combination of concerted health community management action with central policy direction. This must revolve around:
  - Tighter management processes and good practice;
  - Service improvement and innovation;
  - Adding capacity where necessary, with an associated culture of working differently.

- Within the strategic context, there is no one size fits all solution. Approaches will vary across the regions, depending on current activity, service configuration and capacity available.

- Implementation will be overseen and facilitated by a central ‘implementation group’ who will meet quarterly and provide a focus for achieving change. Local delivery will be performance managed by the regional offices as part of the continuous improvement framework.

- Capital and revenue commitments have been made in support of initial elements of the strategy. Not all elements will require funding input but some further contribution will inevitably be required for aspects of the strategy. Capital provision is managed through the capital investment programme, whilst revenue forms part of the commissioning process.
Section 10: APPENDICES

Appendix 1

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# Figures and Tables

## Figures

**Figure 1:** Projected Population in Wales by Age 2001 - 2013  
**Figure 2:** Local Authority Population Density  
**Figure 3:** Projected Change in Population by Broad Age Bands  
**Figure 4:** Population aged 55+ Within Regions in Wales 2002  
**Figure 5:** Emergency Trauma and Orthopaedic Inpatient Activity Rates per 100,000 Resident  
**Figure 6:** Crude Primary Hip Replacement Rate by Country  
**Figure 7:** Crude Primary Hip Replacement Rate by Region  
**Figure 8:** European Age Standardised Primary Hip Replacement by LHB  
**Figure 9:** Primary Hips - Incident Need v Actual Activity in 35-85 Age Band  
**Figure 10:** Primary Hips - Estimates / Projections of Need in those Aged 35-85  
**Figure 11:** Total Inpatient and Daycase spells in Wales  
**Figure 12:** Inpatient and Daycases Spells: Wales Total per Consultant  
**Figure 13:** Regional Inpatient and Daycase Spells  
**Figure 14:** All Wales Total Outpatients and New Outpatients  
**Figure 15:** New Outpatient activity: Wales Totals per Consultant  
**Figure 16:** Regional Outpatient Activity  
**Figure 17:** General Practitioners per 10,000 Population by LHB  
**Figure 18:** Trauma and Orthopaedic Services in Wales  
**Figure 19:** Trusts Average Length of Stay for Emergency Inpatients  
**Figure 20:** Welsh Trust Average Length of Elective Orthopaedic Inpatients  
**Figure 21:** Orthopaedic Daycase Rate as a proportion of All Orthopaedic Electives  
**Figure 22:** Outpatient Attendances  
**Figure 23:** Outpatient Attendance Record  
**Figure 24:** Percentage of Clinic Sessions Cancelled  
**Figure 25:** Patients Waiting for Inpatient/Daycase Treatment  
**Figure 26:** Patients Waiting for First Outpatient Appointment  
**Figure 27:** Number of Referrals by Region  
**Figure 28:** Overall Incidence of Fracture  
**Figure 29:** Incidence of Hip Fracture  
**Figure 30:** Total Stay after Hip Fracture  
**Figure 31:** Place of Residence of People Presenting with Hip Fracture  
**Figure 32:** Risk of Hip Fracture in Care Home Residents, Compared with the General Population, in People Aged 65+  
**Figure 33:** A Snapshot of a Week in a Merthyr GP Surgery  
**Figure 34:** Bed Management Processes in a 28 bed Trauma and Orthopaedic Ward  
**Figure 35:** Comprehensive Diagnostic and Treatment Centre
Tables

Table 1: Estimate of Prevalent Pool Requiring Hip Replacement
Table 2: Trauma and Orthopaedic Admission Rates
Table 3: Inpatient Bed Days in Welsh NHS Trusts
Table 4: Trauma and Orthopaedic Outpatient Activity Rates
Table 5: All Wales Trauma and Orthopaedic Bed Allocations
Table 6: Use of Trauma and Orthopaedics Beds by Trust
Table 7: Number of Trauma and Orthopaedic Consultants per 100,000 Population
Table 8: Consultant Staff Involved in Trauma and Orthopaedic
Table 9: Current Qualified Nursing Workforce in Wales
Table 10: Allied Health Professionals Present and Future Workforce
Table 11: Potential Daycase Rates – an Illustration
Table 12: Potential Daycase Rates by Region – an Illustration
Table 13: Potential Average Lengths of Stay – an Illustration
Table 14: Potential Beds Released by Region – an Illustration
Table 15: Current and Projected Bed Requirements for Trauma and Orthopaedic
Table 16: Available Beds per 1,000 Population
Table 17: Predicted Increases in Consultants (including long term locums) 2002-2006 Versus Number of Trainees Reaching Certificate of Completion of Specialist
Table 18: Age Profile of Consultants in Post
Table 19: What the Service in Wales Needs, on the basis of Workforce Planning Information for Trauma and Orthopaedic Consultants
Table 20: Information that Trusts Should be Using to Inform their Workforce Planning
Table 21: Number Of Graduates to Complete Medical Studies at University Of Wales Colleges Of Medicine (UWCM)
Appendix 3

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Further copies of this document can be obtained from:

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