

Securing clinically safe and sustainable acute hospital services
The next steps for Cork and Kerry

Health Service Executive

Securing clinically safe and sustainable acute hospital services:

A review of acute services in HSE South and a five year action plan for Cork and Kerry

FINAL REPORT

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THE KEY MESSAGES

This independent report identifies the optimum configuration of hospital based services for HSE South, in accordance with the HSE's strategies, transformation priorities and the international trends in healthcare delivery.

We address the impact of the new configuration on the interface and relationship between the acute hospital and the primary, community and continuing care (PCCC) service and propose practical next steps, set out in two phases, to establish patient-centred sustainable acute hospital and PCCC services for Cork and Kerry based upon recognised international practice.

A world class service for Cork City

Our findings and recommendations highlight that Cork City now has a unique window of opportunity to build upon the progress made to date and develop a - **fully integrated, world class service** - based upon the concept of a single, regional 'centre of excellence' for acute care and a network of local 'centres of excellence' for all other care.

However, if the long-standing divisions in medical politics and organisational history in Cork City cannot be overcome, the opportunity for the City to become a world class player in health will be missed for good, as no one provider will have sufficient critical mass.

We recognise the importance of the recent amalgamation of the two Cork City voluntary hospital providers in enabling further exploration of the opportunity for the City to take the lead in health developments in Ireland and internationally.

The importance of critical mass in the systematic delivery of high quality clinical outcomes

International evidence highlights that there is a critical mass relationship, which matches the size of the medical workforce teams with the size of the population in order to deliver the best outcomes in acute care on a 24/7 basis.

Against this evidence, the report identifies substantial shortcomings in the way core acute hospital services are presently configured.

In essence these services by and large have enough consultants, but they are dispersed across too many hospitals, while the hospitals themselves serve populations that are too small to maintain satisfactory levels of patient and staff safety. They lack the necessary critical mass of consultants and workload to sustain high quality acute care.

The solution, therefore, is not dependent upon the HSE providing more consultants. It needs nothing short of a fundamental reconfiguration of the acute care system and processes, together with redeployment of existing resources, in order to optimise care in terms of effectiveness, quality, sustainability and affordability.

The objective of reconfiguration

In principle, the objective is to provide systematic, high quality, patient-centred, integrated acute and community services, to the 620,000 population of Cork and Kerry, delivered through formal clinical networks with patient management following agreed care pathways that reflect international best practice.

It is therefore intended, within the next 5 to 6 years, that the vast majority of patients will be looked after 'at home or as close to home as possible', by local 'centres of excellence', responsible for all **non-acute care**, i.e. for dealing with all the many planned and urgent conditions that can be expertly managed without the need for complex medical care or continuous medical supervision.

Those patients who do need emergency or more complex care, continuous medical supervision and immediate access to critical care, will be managed in their designated regional 'centre of excellence', responsible for all **acute care**.

In order to deliver these objectives, we recommend a staged Transformation Programme: Phase One, to reconfigure acute services in Cork City, Bantry and Mallow in line with international standards; and Phase Two, to similarly reconfigure the acute services in Tralee.

Implementing the Transformation

To implement the proposed programme of change for Cork and Kerry within realistic timescales, nominally 5 to 6 years from project initiation, the HSE will need to establish robust project management, building upon the experiences and the lessons learnt from implementing the North East Transformation programme. The HSE agenda will need to deliver:

- A detailed, funded project plan to implement the new model of integrated acute and community care;
- An immediate programme to remove service in-efficiencies in current clinical and organisational working practices, address the variations in practice, develop integrated care pathways and generally move services, pending full reconfiguration, towards better, if not best, practice, within existing resources;
- Immediate to short term actions to specifically support patient safety in a number of front-line services: A&E; general surgery; general medicine; and critical care; pending full reconfiguration;
- A new integrated governance structure for both corporate and clinical affairs to match the concept of integrated clinical care, able to manage the organisational complexities and all the statutory, voluntary, academic and private providers;
- Effective management of clinical risk within existing services, pending full reconfiguration;

- An acute and non-acute workforce, including education and training, deployed to make current services safer and meet the future service objectives, in particular:
 - Time limited, transitional investment in additional front-line medical staff, pending the new configuration;
 - A medical workforce that meets EWTD regulations;
 - Effective Primary Care Teams;
 - A comprehensive, effective Advanced Paramedic emergency ambulance service; and
 - A nursing workforce for Urgent Care Centres;
- Robust, proactive management of the risks to success to ensure that all the anticipated service and infrastructure developments in: emergency ambulance service; PCCC (hospital interface services); Urgent Care Centres; Primary Care Teams, IT, etc., are functioning as soon as possible to enable the safe delivery of the acute hospital changes;
- A refreshed Cork and Kerry wide estate and capital investment plan, including PCCC, amended as necessary to enable the delivery of the new local and regional 'centres of excellence', in particular to ensure that there is easy patient access to an integrated family of local services: Primary Care Teams; urgent care; diagnostics; day surgery; endoscopy; out-patient clinics; rehabilitation; and step up and step down care.

Phase One – Cork City, Bantry and Mallow

The first step of transformation, to be implemented over a Year 1 to Year 5 schedule, is focused on realigning the acute services in Cork City and the community services for Cork and Kerry. The report:

- Highlights the opportunity to create a world class service for both acute and community care and challenges all Cork City health and academic providers to commit to this common goal;
- Recommends having only one regional 'centre of excellence', for acute care; based in Cork City, the centre would, eventually upon completion of Phase Two, become the sole provider of **acute care** for Cork and Kerry;
- Recommends that the regional centre is located on the Cork University Hospital site;
- Recommends that the regional centre supports a Cork and Kerry wide clinical network of up to 5 local 'centres of excellence', providing all the **non-acute care** for the population, including local access to a wide range of diagnostics;
- Recommends an integrated clinical and academic approach to planning and delivering the new service configuration;

- Emphasises that all consultants presently delivering acute care in Cork City will have rights of access to continue their acute clinical practice in the new declared centre, in line with international standards;
- Recommends that all patients needing non-acute care, presently being managed in the acute hospital setting in Cork City, will in future be managed in their local 'centres of excellence' ;
- Recommends that all the essential infrastructure is put in place across Cork and Kerry counties, to support Phase One and prepare for Phase Two;
- Recommends a pilot community midwifery and home birthing service development in County Kerry; and
- Recommends that acute services in Kerry are maintained during Phase One.

Phase Two – Acute services in Kerry

Phase Two, is scheduled to be implemented in Year 6 of the transformation programme, once the regional 'centre of excellence' is fully established, the local centres are operational and the supporting infrastructure is in place. Phase Two focuses on bringing the acute hospital service in Tralee into line with international best practice standards.

Current services need to be more efficient

Significant improvements can be made in the current use of resources. We found a wide variation in hospitalisation rates by county, even after adjusting for differences in demographic profiles.

For example, the hospitalisation rate for emergency medical admissions per 10,000 population ranged from 782 for Cork City residents to 448 for Cork County residents; indicating an equally wide variation in the criteria for admission. A recent national review of bed utilisation identified that, in Cork and Kerry, 13% of admissions were inappropriate for acute hospital services.

If acute hospital services in Cork and Kerry were to make improvements in efficiency to national and international levels, leading to reduced lengths of stay, then around 423 beds, some 29% of the current total occupied beds at 2005 could be released for other purposes. Allowing for changes in demography to 2012, the percentage reductions in beds, assuming improvements in efficiency, would be 38%. This analysis is backed by the findings of the recent national bed utilisation review which identified that 40% of patients occupying a bed were considered to be inappropriate for acute hospital services.

Services in the South East of HSE South need further study

The report:

- Identifies the need for one regional and up to five local 'centres of excellence' for the South East population of 460,000;
- Recommends further study into the clinical sustainability of the present acute services in the South East; and
- Specifically recommends reconfiguration of the current paediatric and obstetric services.

The anticipated patient and staff benefits

We recognise that the detailed changes proposed are substantial and challenge current working practices. They are designed to have a far reaching beneficial impact and create safe and sustainable local and regional services. The results will be profound:

- Patients will benefit from a real improvement upon today's services. Much more care will be local and much easier to access, with the need to travel mostly reserved for accessing specialist care. All care will be seamless and will be appropriate to their needs, not the needs of the service; and
- Staff will have more job satisfaction as they work in larger teams and operate more flexibly as members of a cohesive workforce, designed around delivering sustainable services to international standards, from pre-hospital to tertiary care.

Definitions & Abbreviations

The key terms

South West	'South West' is used to describe the HSE South services provided in Cork & Kerry, the former Southern Health Board
South East	'South East' is used to describe the HSE South services provided in the former South East Health Board
HSE South	This describes one of the administrative boundaries of the HSE, which incorporates both the South West and South East
International best practice	The international 'direction of travel': the common 'core' themes in health service modernisation, innovation and improvements in clinical and organisational working practices
Critical mass	Describes the minimum numbers of workforce, workload and population that a service needs if it is to deliver an assured level of quality care, in line with international best practice
Sustainability	A service is considered 'sustainable' if it meets the above critical mass criteria for international best practice

Acute care	Acute care refers to when the patient's clinical condition, whether for planned or emergency treatment, is sufficiently complex to warrant direct specialist medical attention and expertise, continuous medical supervision and access to critical care
Non-acute care	Non-acute care specifically refers to the many conditions, both planned and urgent, where clinical management does not need continuous medical supervision or critical care services; such patients can be safely managed by doctors and senior nurses outside of the traditional acute hospital setting
Non-acute care (PCCC)	This report does not address the numerous PCCC services delivered in the home and community that are described as non-acute care
Local 'centre of excellence'	Responsible for providing clinical and academic excellence in the delivery of non-acute care , within assured quality and governance arrangements, to a minimum catchment population of some 50,000 to 150,000
Regional 'centre of excellence'	Responsible for providing clinical and academic excellence in the delivery of acute care , within assured quality and governance arrangements, to a minimum catchment population of 350,000 to 500,000
Regional 'self-sufficiency'	An HSE concept, whereby the regional 'centre of excellence' does not need to refer patients out of the region, except for designated tertiary level care

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Clinical network	Each clinical service / specialty operate as elements of the formal clinical network, responsible for providing seamless patient care between the local and the regional 'centres of excellence'
Clinical 'Session'	A 'session' is the unit of consultant time allocated to service delivery. A consultant employed full time undertakes 11 sessions per week
Education	'Education' in the context of this report refers to the inter- and intra-disciplinary undergraduate and postgraduate teaching and learning, in both individual and collaborative settings
Research	'Research' in the context of this report refers to basic, clinical, translational, organisational (health sciences), population and epidemiological investigation of questions related to healthcare
Academic Health Sciences Centre	A concept that enables health services and the academic institutes to work in partnership towards the common goal of high quality clinical care and academic excellence

The key abbreviations

A&E	Accident & Emergency
ACAD	Ambulatory Care and Diagnostic Centre
ALoS	Average Length of Stay
ANP	Advanced Nurse Practitioner
AP	Advanced Paramedic
BAEM	British Association of Emergency Medicine
CIT	Community Intervention Team
CNS	Clinical Nurse Specialist
COPD	Chronic Obstructive Pulmonary Disease
CPD	Continuous Professional Development
COI	Continuous Quality Improvement
DRG	Diagnostic-Related Group
EL	Elective inpatient activity
EWTD	European Working Time Directive
GP	General Practitioner
HAI	Healthcare Associated Infections
HCP	Home Care Packages
HIPE	Hospital In-Patient Enquiry
HSE	Health Service Executive
ITU	Intensive Therapy Unit
LHO	Local Health Office
MAU	Medical Assessment Unit
NCHD	Non Consultant Hospital Doctor
NE	Non-Elective inpatient activity
NHO	National Hospitals Office
OT	Occupational Therapist
PCCC	Primary, Community & Continuing Care
PCN	Primary Care Network
PCT	Primary Care Team
PHN	Public Health Nurse
PSCN	Primary and Social Care Network
RCSI	Royal College of Surgeons of Ireland
UCC	University College, Cork
WTE	Whole Time Equivalent

Setting the scene

The Health Service Executive has already set out its strategies and plans for Ireland's Primary, Community & Continuing Care (PCCC) services¹, ambulance services² and acute hospital services³, and is currently developing a new programme to align laboratory medicine services with the new clinical strategies.

These strategies and plans are now proceeding to implementation through the 2007-2010 HSE Transformation Programme⁴. They aim to substantially improve the care of all citizens by aligning the health services in Ireland with recognised international best practices.

The HSE is now seeking to understand how these strategies should be rolled out across the health services in the HSE South.

The transformation of healthcare delivery in Ireland

The health strategy in Ireland⁵ set out a new vision and direction for health in 2001, focusing on a whole system approach to tackling health in Ireland beyond the traditional boundaries of health services, guided by four principles: equity; people-centredness; quality; and accountability.

This 2001 health strategy acts as the foundation for the nationwide programme of health reforms to move the current health and social services towards international standards of care. These reforms include:

- The Primary Care Strategy, which was launched in 2001⁶. There is a national implementation programme to provide, on average, one new Primary Care Team (PCT) for 7,000 of the resident population. This means putting in place 500 PCTs and 132 Primary and Social Care Networks (PSCN) by 2010.

¹ Primary Care: A New Direction. Quality and Fairness – A Health System for You, Health Strategy, Department of Health and Children, 2001

² National Service Plan 2007, Health Service Executive, January 2007

³ Improving Safety and Achieving Better Standards: An Action Plan for Health Services in the North East. A report of the Health Service Executive. Teamwork Management Services Ltd., 2006

⁴ Transformation Programme 2007–2010, Health Service Executive, 2006

⁵ Quality and Fairness: A Health System For You, Health Strategy, Department of Health and Children, 2001

⁶ Primary Care: A New Direction; Quality and Fairness – A Health System for You, Health Strategy, Department of Health and Children, 2001

- The reorganisation of the ambulance service into a national service. A new cadre of Advanced Paramedics (APs) is being developed, personnel skilled in urgent assessment and resuscitation. This overcomes the problem of the traditional 'golden hour', the time within which a patient in a critical condition needs to be transported to reach an A&E department and start the resuscitation to save their life. In future, resuscitation will start immediately, in the home, or at the roadside. Thereafter, the patient will be taken, not automatically to the nearest centre, but to the most appropriate one that has the necessary expertise to manage the emergency condition; and
- The HSE acute strategy, developed in 2006, following Teamwork's independent review of acute hospital services in the North East. The new strategy specifically uses recognised international best practice standards in acute and community care as its foundation.

The National Service Plan, 2007 ⁷, promotes the concept of a population health model, which takes a:

'... proactive approach by focusing on maximising the health and social well being of the population and providing opportunities to plan for better health'.

At the centre of this integrated health and social care system is the concept of the PSCN and PCTs.

The HSE has also described a clear pathway to implementation for these and other related strategies, through its 2007-2010 Transformation Programme. This sets out the HSE's purpose:

'... to enable people to live healthier and more fulfilled lives'.

The vision is that by 2010:

'... everybody will have easy access to high quality care and services that they have confidence in and staff are proud to provide'.

The vision is to ⁸:

- Develop integrated services across all stages of the care journey so that people can easily get into, through and out of the health and social care system;
- Configure PCCC services so that they deliver optimal and cost effective results, and in so doing make it easy for people to access a broad spectrum of services through their local primary care teams;
- Configure hospital services to deliver optimal and cost effective results so people will be able to easily and rapidly access high quality acute care through designated 'centres of excellence';
- Implement a model for the prevention and management of chronic illness so that people receive high quality care and results from comprehensive and integrated care in their communities and designated care centres;

⁷ National Service Plan, 2007, Health Service Executive

⁸ National Service Plan 2007, Health Service Executive, January 2007.

- Implement standards-based performance measurement and management throughout the HSE so that people can be confident that they will receive high quality care measured against transparent standards; and
- Ensure all staff engage in transforming health and social care in Ireland and ensure their work has a direct impact on, and contributes to, the overall transformation of health and social services.

In summary, these national transformation priorities are setting a direction of travel in which more care is provided at home or as close to home as possible, and that when patients do need acute hospital services, they will receive high quality care that is integrated with local services.

Review of acute hospital services in HSE South

The HSE commissioned Horwath Consulting Ireland Ltd and Teamwork Management Services Ltd to review acute hospital services in HSE South, using recognised international best practice as the benchmark. Our primary objectives are to:

- Identify the most appropriate model of acute hospital service provision for the HSE South area;
- Determine the optimal configuration of hospital services in Cork and Kerry in order to provide safe, sustainable, cost effective and high quality services;

- Determine the optimal supporting governance structure for these acute services; and
- Draw up an action plan to move safely from today's model of care to a model of care based upon recognised international best practice.

Review of the PCCC interface with acute care

It should be particularly noted that, in recognition of the need to ensure full integration of the acute and the community aspects of the HSE service improvement programme, our original brief has been extended to examine those elements of the PCCC services that directly relate to the interface with the acute hospital sector. We are now also tasked with:

- Estimating the future resources that PCCC will need to provide a service so that patients can safely avoid acute admission to hospital or be safely discharged from hospital at an earlier stage in their recovery; and
- Identifying the PCCC actions required for services to achieve their full potential and integrating them into the overall action plan for delivering the new strategy for acute services in HSE South.

As stated above, the additional brief is to review the PCCC interface with the acute hospital sector only. Therefore, a wide range of services provided by PCCC are not commented on in the report, in particular, the health and social services component of PCCC, including community welfare services, social inclusion etc. together with a wide range of community based health services which do not have an acute service component i.e. disability services, mental health, child health and child protection, and general community services around homeless, travellers, community work, asylum seeker and non-national population.

Our approach

Our understanding of the current position of healthcare in HSE South has been informed by familiarisation visits to all the current acute HSE, voluntary and private hospitals in HSE South, fact-finding interviews with a number of organisations, demographic and hospital discharge data for patients resident in HSE South and patients in any South hospital, published healthcare reports and policy documents provided by the HSE ⁹.

We were asked to prepare this report on an independent basis. Appendix 2 provides a list of sites visited and fact finding interviews.

We were also made aware of the HSE's policy direction to provide co-located private hospitals on public hospital sites. In HSE South, the intention is to provide co-located private hospitals at Cork University Hospital and Waterford Regional Hospital.

For the PCCC component of our review, our understanding was gained through a combination of planning meetings, workshops and visits to selected representative PCCC centres and community hospitals.

Our recommendations in this report, therefore, take account of:

- Our conclusions from our fact-finding programme, supplemented by the written submissions;
- Our latest studies into the evidence from international best practice;
- The views and comments of the Project Steering Group in relation to project direction and progress;
- Our understanding that the HSE has already adopted a new acute healthcare strategy in line with international best practice and is currently proceeding to implementation, starting in the North East;
- The need for an integrated approach to the clinical and academic dimensions of service reconfiguration; and
- The numerous assumptions and pre-conditions that need to be fulfilled with regard to pre-hospital services in order to deliver the optimal configuration of acute hospital services.

⁹ A list of these reports and publications can be obtained from the HSE Network South office

We are pleased to take this opportunity to thank everyone who took part in this review for their constructive, open approach to the task in hand. Their support and contributions to our work are much appreciated.

The best practice process

We have developed an in-depth understanding and expertise in mentoring health planners, clinicians and hospitals through the whole best practice process, from understanding, to clinical engagement, action planning, skills transfer and on into implementation.

This experience has given us insight into understanding international practices and how to take the best practice agenda forward. In essence:

- Best practice is about people, about clinical engagement and about persuading clinical staff to 'own' the change;
- Best practice is not often about bricks and mortar or the development of new estate solutions. Optimising care is about changing professional behaviour, although improving the estate can be an important signal and enabler of service change if carefully designed around new working practices;
- Best practice is a process, not a solution in itself. It is driven by the evidence of benefits of change and the patient needs, not by the needs of the service or its staff or its estate;
- Best practice is a catalyst, it enlightens and motivates the operational workforce to work differently, certainly more effectively, and in a dynamic, seriously progressive manner;
- Best practice is not necessarily a clear-cut, black and white argument. Even after considering the range of international evidence available, there often remains a professional judgement to be made;
- Best practice is dynamic. In our experience, each new programme being developed adds a new twist to the story. It is not just about reproducing developments piloted elsewhere. The HSE strategy provides the opportunity for Ireland's health services to show the way for other health systems;
- Best practice is about taking advantage of opportunities to engage with research and academic centres in optimising patient care; and
- Substantial clinical progress towards best practice can be achieved within short timescales.

The international trends in clinical practice

Across the developed countries, healthcare systems are fundamentally changing the way in which services are configured and delivered, with more care being provided at, or close to home and people only being admitted to an acute hospital where necessary and clinically appropriate.

The HSE's new strategies and its transformation programme are in line with the changes that are happening internationally.

In essence, the emerging strategy, based upon a network of local and regional 'centres of excellence', focuses on developing new standards of care through new programmes that provide alternative settings to the traditional acute hospital environment, including:

- Preventative programmes to improve well-being and self care;
- Chronic disease management programmes that minimise the need for acute care in hospital; and
- Supported care programmes that keep 'at risk' patients out of the institutional environment.

The network arrangement ensures that the clinical teams at the regional 'centre of excellence' are the same teams that provide the many 'outreach' services delivered at the local 'centres of excellence'.

The local centres meet the needs of most patients, offering safe, sustainable,

comprehensive services for primary care, urgent care, day surgery, diagnostics, outpatient services, rehabilitation and step up / step down care. Some local centres, depending upon the size of their catchment population, may offer additional services, such as day chemotherapy, community midwifery and chronic renal dialysis.

The regional centre meets all the acute specialty needs, including obstetrics and paediatrics. The centre is for patients requiring more complex in-patient medical and surgical planned care, emergency care and critical care.

The regional centre, with its concentration of workforce, clinical expertise and resources, delivers the best clinical outcomes at least risk to patients and staff, i.e. the centre is designed to provide safe, sustainable, high quality 'round the clock' acute in-patient care.

In this section, we describe the key elements of the trends in international practice and the emerging clinical model of acute and community care.

Many countries and health care systems have recognised the need for a fundamental change in the way in which services are configured and delivered, with an increased emphasis towards providing more care at home or as close to home as possible, with people being admitted to hospital only where necessary and clinically appropriate. This global trend is also reflected into the national strategy set out for Ireland in 2001¹⁰ and most recently in the HSE's Transformation Programme ¹¹.

The emerging clinical model of acute and community care

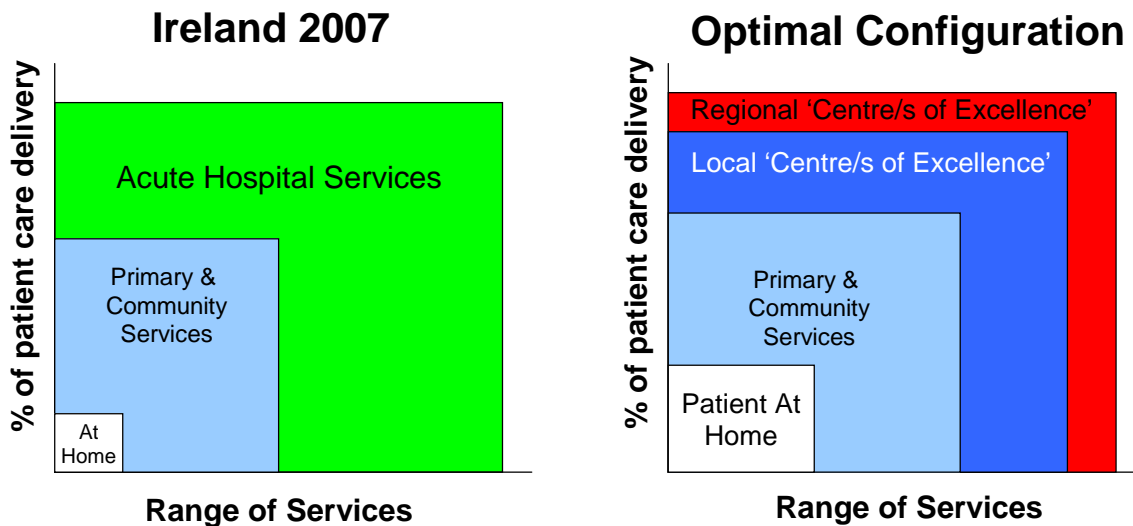
Based on international experiences and best practice, Figure 1 illustrates the current profile of service provision in Ireland with the future clinical model of care being developed as a result of the new strategies.

¹⁰ Quality and Fairness: A Health Systems for You, Health Strategy, Department of Health and Children, 2001

¹¹ Transformation Programme 2007 – 2010, Health Service, 2006

Figure 1: The emerging clinical model of acute and community care

The Changing 'Shift' in Care Settings



In essence, the emerging clinical model of acute and community care puts the patient at the centre of the service, with the model built around meeting their needs, not based upon what suits the service, its staff or use of its estate. Consistent themes arising from international health system reforms are:

- Developing a greater emphasis on preventing illness and improving the overall health and well-being of the population;
- Delivering the management of those people with straightforward conditions and chronic disease 'locally', either at home or in the community, through improved general practice, primary care and community services and specialist outreach services, substantially reducing the likelihood of an acute hospital admission and the need to travel to receive a routine level of care;
- Providing a significant proportion of care, previously traditionally provided in the acute hospital, in easily accessible local centres to meet the needs of most patients, including out-patient services, diagnostics, urgent care, day surgery, rehabilitation and step up / step down care; and

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- Concentrating the management of people who need acute specialist and more complex care in fewer, larger centres so that they receive safe, 'evidence based' high quality 'round the clock' care. This standard of care is achieved by bringing together a critical mass of expert workforce with a matching critical mass of clinical workload. In practice, that balance is best achieved by such centres looking after a minimum catchment population of 350,000 to 500,000. This enables the patients to benefit from improved patient safety and better clinical outcomes and for the staff to benefit from high levels of job satisfaction and professional development.

These different elements of the healthcare model are shown in the tables and text over the following pages and describe the range of services provided, the requirements for achievement and the supporting infrastructure needed across the spectrum of healthcare services. We have set out in detail our latest findings in relation to international best practice in Appendix 3 as a guide to understanding the strategic direction that Ireland needs to take in order to deliver care to international standards.

Element of care	Description of services	Requirements for achievement
Patient needing primary care services at home or close to home (primary care centres)	<p><u>'Services will be delivered at home or as close to home as possible'</u></p> <ul style="list-style-type: none"> - Patient self care to manage their own health care needs - Chronic disease management - Elderly support - Rehabilitation - Home care packages - Urgent care - Avoidance of hospital admission - Emergency response - Palliative care - End of Life care 	<ul style="list-style-type: none"> - Fully effective pre-hospital system <ul style="list-style-type: none"> o Further professional development of general practice, primary care and community staff and full integration of services, working to international best practice standards e.g. general practitioners with special interest, Advanced Nurse Practitioner roles etc. o PCCC services available 'round the clock' o PCCC services available to adults of all ages, not just the over 65s o Easy access to wide range of diagnostics o Access on a 24/7 basis to 'Hospital in the Home' services o Consultant community outreach services o Developing monitoring systems to enable patients at risk to stay safely at home, rather than being placed in long term care o Services provided from fully resourced primary care centre o Dedicated resources and facilities for teaching and professional development

Securing clinically safe and sustainable services across HSE South
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Element of care	Description of services	Requirements for achievement
Patient event needing an emergency response	<p><u>Advanced Paramedic and Air Ambulance Service</u></p> <p>Emergency care and resuscitation is brought to the patient at home or by the roadside. Patient safety and outcomes will be much improved, compared to current practices, due to the Advanced Paramedic:</p> <ul style="list-style-type: none"> - Undertaking emergency clinical assessment and life saving measures; - Having access to expert advice from the duty team at the regional centre, via 'real time' telemedicine; and - Having the back up of the Air Ambulance Service 	<ul style="list-style-type: none"> - Fully effective pre-hospital system <ul style="list-style-type: none"> o Dedicated phone lines providing a single point of access for patients o Triage system so patients get the most appropriate treatment - the right response in the right time from the right professional in the right setting o Ambulance Paramedic workforce is fully trained, equipped and strategically deployed throughout region o System in place for emergency transfer to the regional centre by air ambulance service o Effective partnership working across all elements of the pre-hospital system o Dedicated resources and facilities for teaching and professional development
Patient requiring non-acute care	<p><u>Local 'centres of excellence'</u></p> <p>These centres serve a population catchment of 50-150,000 providing:</p> <ul style="list-style-type: none"> - A base for primary and community teams and services - Urgent Care Centre, open 12 hours per day, 7 days a week, for both adults and children - Observation unit for clinical assessment and decision making - Wide range of diagnostics (X-ray, ultrasound, CT, cardiac tests, respiratory tests, Point-of-Care tests) - Beds for rehabilitation, step-up and step-down - Comprehensive visiting consultant services: out-patients; day surgery; endoscopy; etc - Access point for pathology laboratory tests - Day chemotherapy (dependent on population served & subject to the cancer control strategy) - Midwifery and home birth service (dependent on population served) - Chronic renal dialysis (dependent on population served) 	<ul style="list-style-type: none"> - Integrated working across the whole suite of local services - Comprehensive arrangements in place to operate consultant services at the local centre for out-patients, endoscopy and day surgery - Clinical information management across the network via IT and telemedicine / teleconsultation system - Skilled Advanced Nurse Practitioner and Clinical Nurse Specialist nursing staff, able to: <ul style="list-style-type: none"> o Manage patients with minor injuries & illness o Undertake urgent clinical assessment and patient monitoring o Carry out a range of diagnostic tests o Get expert advice from the regional centre through a dedicated 'real time' telemedicine clinical communication system o Initiate emergency resuscitation pending transfer to the regional centre - Beds are managed by senior nurse and therapy staff (no requirement of continuous medical supervision) - Dedicated resources and facilities for teaching and professional development - A phlebotomy clinic and specimen collection centre
Patient requiring access to specialist acute hospital services	<p><u>The regional 'centre of excellence'</u></p> <p>This provides specialist acute care 'round the clock' from a single site to a minimum population catchment of 350,000 to 500,000 for:</p> <ul style="list-style-type: none"> - Major A&E centre, including a helipad for emergency air transfers - Emergency medicine, including cardiology, 	<ul style="list-style-type: none"> - Optimal balance of workforce, expertise and workload demands supported by optimal physical and functional configuration, including <ul style="list-style-type: none"> o Well resourced and highly trained clinical staff o Centralisation of specialist acute services to ensure there is a sufficient

Securing clinically safe and sustainable services across HSE South
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Element of care	Description of services	Requirements for achievement
	gastro-enterology, respiratory medicine, neurology, endocrinology, rheumatology, dermatology, infectious diseases, etc - Emergency surgery, including general, trauma, urological, vascular, gynaecology, ENT, maxillo-facial, ophthalmology, etc - Complex planned surgery, applicable to all acute surgical specialties - Anaesthesia and pain management service - Level 3 critical care - Cancer services, in line with the national strategy - Obstetrics & Midwifery - Neonatology - Paediatrics - Specialist acute psychiatry, including children and young people, forensic and intensive therapy unit - Selected tertiary level specialties - 'High tech' diagnostics and laboratory medicine	concentration of a 'critical mass' of appropriate, complex workload to foster a combination of job satisfaction, high quality care and continued development of these skills and expertise o Immediate access to an available, alert, duty consultant and supporting duty team whenever necessary o The need for at least eight full time medical members on each 'layer' of the team within each speciality, to share out the workload and the time commitment in a manner that is equitable, appropriate and compliant with the European Working Time Directive o Dedicated resources and facilities for teaching and professional development

Supporting these service changes is an infrastructure which focuses on:

- Clinical networks, responsible for managing and co-ordinating care for that specialty or category of care across the region (emergency care, planned care, cancer, critical care, paediatrics, obstetrics, radiology etc.);
- Providing an assured quality of care through:
 - a system of automatic peer review as a result of individual staff operating as true members of the multi-disciplinary teams and applying clear clinical standards across the whole network through the use of integrated patient care pathways;
- Integrating the clinical and academic dimensions of service change, with all staff and students able to access state of the art undergraduate and post-graduate teaching programmes, facilities and research opportunities from any site in the network;
- Robust network wide corporate and clinical governance arrangements;
- Information and communication technology, including electronic patient records; and
- Tele-medicine acting as the key enabler of clinical networks, bringing together the clinical expertise, specialist advice and decision-making between the local and regional 'centres of excellence'.

Impact of changes on acute hospital activity, size and workforce

The impact of these international trends, together with the emerging priorities to transform the health and social care services in Ireland, represents a major change from the present configuration of acute hospital service provision across Ireland.

In summary, transposing these international trends to HSE South, means there will be:

- Improved communication and networking arrangements across the local and regional 'centres of excellence' and with the community;
- An integrated approach to academic medicine, education, teaching, training and research across both the local and regional centre services;
- An assured quality of clinical service through education, research, clinical audit, peer review and integrated technologies;
- Clearly defined governance arrangements across the local and regional 'centres of excellence', including clinical accountabilities and responsibilities;
- A redesigned workforce, one with the skills, competency and flexibility to support this spectrum of care across the clinical network;
- Improved patient outcomes from the new emergency ambulance

service and process;

- The streamlining of patient care between the local and regional 'centres of excellence', e.g., separation of out-patient and day surgery services from in-patient services; the alignment of patient acuity with access to critical care;
- Local 'centres of excellence' providing the majority of clinical activity that was previously hospital-based, including ambulatory care, day surgery, chronic disease management, more diagnostics, more rehabilitation and step up / step down care;
- Consultant services provided at local centres as an outreach service of the regional centre;
- All patients needing acute in-patient care (i.e. requiring 'round the clock' senior medical input / supervision) are admitted only to the regional 'centre of excellence';
- No patients attending the regional centre for outpatients and day case surgery, unless warranted by the clinical complexity;
- Improved clinical outcomes for patients admitted for acute care in the regional centre; and
- Patients being safely discharged earlier following their episode of acute care.

In the next section, we compare today's configuration of acute hospital services and clinical workloads with the emerging clinical model of care and the importance of critical mass in the systematic delivery of high quality clinical outcomes, namely the matching of the critical mass of medical workforce with the critical mass of the catchment population in order to achieve the optimal circumstances for producing the optimal outcomes.

This enables us to assess the 'gap', if any, between the current system and the shape that services in the future need to achieve to deliver acute care in line with recognised international quality standards.

Benefits and risks in current services

THE BENEFITS

Some good progress has already been made towards delivering best practice for acute hospital services, including regional centres for emergency trauma, elective orthopaedics, and the centralisation of obstetrics and paediatrics services across Cork city.

The phased introduction is taking place of PCTs to provide integrated general practice and PCCC services. This will give patients more convenient access to comprehensive care and a much better range of services.

THE RISKS

Many of the ten hospitals in HSE South are in a 'Catch 22' situation: their current configuration means that they are not in a position to deliver continuous, high quality, 'round the clock' acute care to international standards. The quality of the delivery of acute care is, therefore, substantially compromised.

The many services are too fragmented. They do not have enough consultants for the provision of sustainable 'round the clock' services and they look after catchment populations that are too small to generate enough workload to justify the appointment of more consultants.

At the same time, it has been shown that many patients whose admission to hospital could be avoided continue to be admitted, and that some patients stay too long in hospital. In some cases,

this is necessary given the lack of alternatives in primary and community services.

THE ACTIONS

The current configuration of hospitals in HSE South needs to change: the HSE needs to act, to move services towards satisfying the international workforce and population criteria for high quality services.

It needs to deal with the systemic flaws in today's approach to acute services, well recognised for their predisposition to:

- Leave senior staff exposed to professional isolation;
- Leave junior staff exposed to lack of consultant supervision; and therefore
- Leave patients exposed to a potentially unsafe environment, where there is an increased risk of something going wrong.

Understanding the importance of critical mass

To recap, the international evidence highlights that there is a critical mass relationship that matches the size of workforce to the size of catchment population, in order to deliver the best clinical outcomes in acute care, necessarily delivered 'round the clock'.

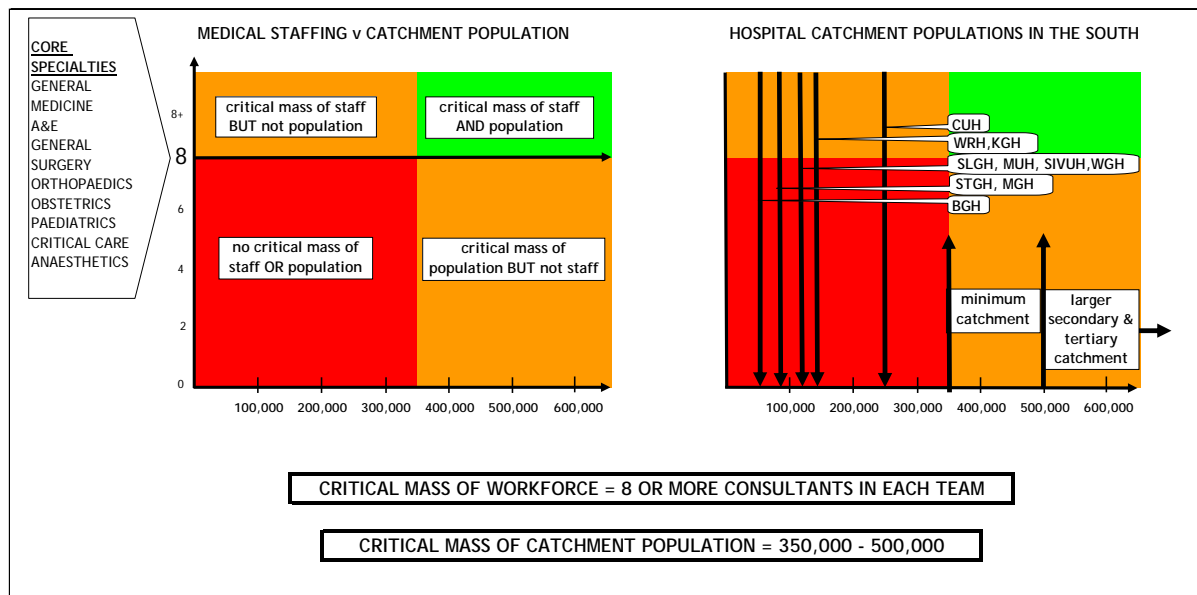
This means, in order to provide an assured quality of care:

Securing clinically safe and sustainable services across HSE South
Benefits and risks in current services

- Having a critical mass of medical workforce composed of 8 or more doctors at each level of seniority of the clinical team, in order to provide continuous patient access to timely consultant care, formal teamworking, automatic peer review, robust clinical supervision, EWTD compliance and an equitable share of emergency duties and patient workloads; and
- Having that critical mass of workforce look after a matching catchment population of at least 350,000 to 500,000, the minimum size needed to generate a sufficient concentration of patient numbers and range of acute clinical problems to establish the right professional environment, internationally recognised, to produce the best clinical outcomes in acute care.

Figure 2 displays graphically the importance of this critical mass relationship between medical workforce and the matching catchment population.

Figure 2: Medical staffing, catchment populations and hospitals in HSE South



BGH	Bantry General Hospital	MGH	Mallow General Hospital	SLGH	St Lukes General Hospital	WGH	Wexford General Hospital
CUH	Cork University Hospital	MUH	Mercy University Hospital	STGH	South Tipperary General Hospital	WRH	Waterford Regional Hospital
KGH	Kerry General Hospital	SIVUH	South Infirmary Victoria University Hospital				

Securing clinically safe and sustainable services across HSE South *Benefits and risks in current services*

The critical mass relationship between workforce and catchment population is largely directed at the core clinical specialties delivering acute care, namely general medicine, A&E, general surgery, orthopaedics, obstetrics, paediatrics and critical care and anaesthetics i.e. in those specialties where the incidence of emergencies leads to a substantial daily volume of patients needing acute in-patient care ¹².

The same principle of course applies to other, equally important specialties that, because of much lower incidence and daily frequencies, have already developed larger catchment populations, moving into tertiary or national level services.

The 'RED Zone' represents insufficient workforce and population, while the 'AMBER Zone' is a mismatch of one or other. Sustainable acute hospitals need to fall into the 'GREEN Zone' to be in accordance with delivering services to international standards.

With regard to approximate catchment populations for the ten hospitals in HSE South, they all fall into the 'RED Zone', with most clustered between the 50,000 and 150,000 population mark ¹³.

The current configuration of acute hospitals in HSE South with regard to their small catchment populations means that there are too many hospitals, each covering too small a population. The present fragmented system means that each one is not a position to develop services in line with international best practice standards. The small populations do not generate sufficient patient volumes in each hospital to ensure the best clinical outcomes, even if they had the recommended critical mass of medical workforce.

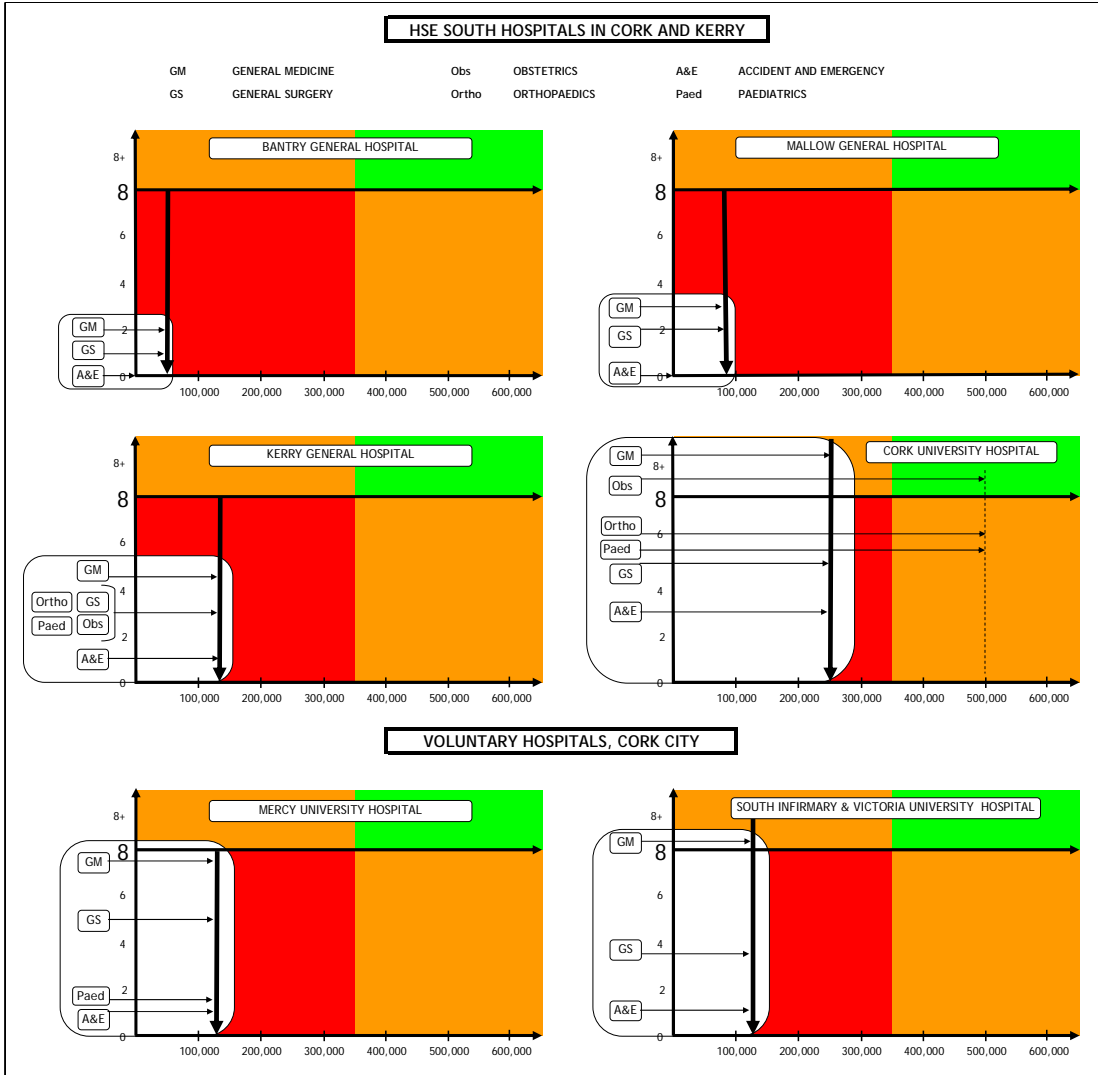
We now compare actual workforces ¹⁴ and populations of the core clinical specialties in the ten hospitals across HSE South, to the critical mass criteria for high quality standards, starting with Cork and Kerry, as illustrated in Figure 3 below.

¹³ We recognise that our calculations of hospital catchment populations are approximations, as the HSE does not yet have a policy of estimating these figures. We derived our figures from the resident county populations and the estimated patient flows in and out of the counties. Also, we divided Cork County's 480,000 population somewhat arbitrarily across its three hospitals, with 240,000 to CUH and 120,000 each to MUH and SIVUH, the apportionment working on the principle that none of the 3 can alone satisfy the recommended critical mass for a catchment population.

¹⁴ We have derived the workforce numbers from the reported consultant wtes for each site. These incorporate full time, split and part time appointments, at the same time noting that: (1) Providing acute 24/7 service means being able to offer a consultant level continuum of care; and (2) In practice, split appointments are not designed to support emergency care. (3) The wtes do not include locums.

¹² The only exception to the critical mass relationship between workforce and population is where an environment is formally declared rural or remote and is considered to have a large enough population to justify operating a small acute hospital with a small number of consultants. There is nowhere in the South that satisfies this requirement.

Figure 3: Critical Mass: Specialty Consultants v Population for Hospitals in Cork and Kerry



The key messages

Most of the acute care services are currently operating with far fewer than the recommended eight or more consultants on a team.

All the hospitals are currently serving populations smaller than the recommended minimum of 350,000 – 500,000 for a regional 'centre of excellence'.

Securing clinically safe and sustainable services across HSE South *Benefits and risks in current services*

Obstetrics falls into the 'GREEN Zone', the only specialty in HSE South to achieve the balance between workforce and population¹⁵, in line with delivering an assured quality of acute obstetric care to international standards.

Orthopaedics has a regional service to around 500,000 population, delivered by 6 consultants, with trauma based at Cork University Hospital and planned workload at St Mary's Orthopaedic Hospital, Cork. However, the service falls into the 'AMBER Zone', as they satisfy population criteria, but not workforce.

Paediatrics offers a regional service to around 500,000 population, delivered by 5 consultants and based at Cork University Hospital, although there also some paediatric services elsewhere, at the Mercy University Hospital and Kerry General Hospital. The regional service falls into the 'AMBER Zone', as they satisfy population criteria, but not workforce.

Accident & Emergency services are particularly poorly served. Five out of the six hospitals have either no consultant or one consultant and Cork University Hospital, the main centre, has three¹⁶.

Both the two voluntary hospitals, the Mercy University Hospital and South Infirmary-Victoria University Hospitals are in the 'RED Zone', except for the number of consultant physicians at the South Infirmary-Victoria University Hospital. Their current service arrangements are not sustainable, and this is already recognised by both the respective hospital boards and consultant bodies. Plans are advanced for the formal amalgamation and rationalisation of the two services.

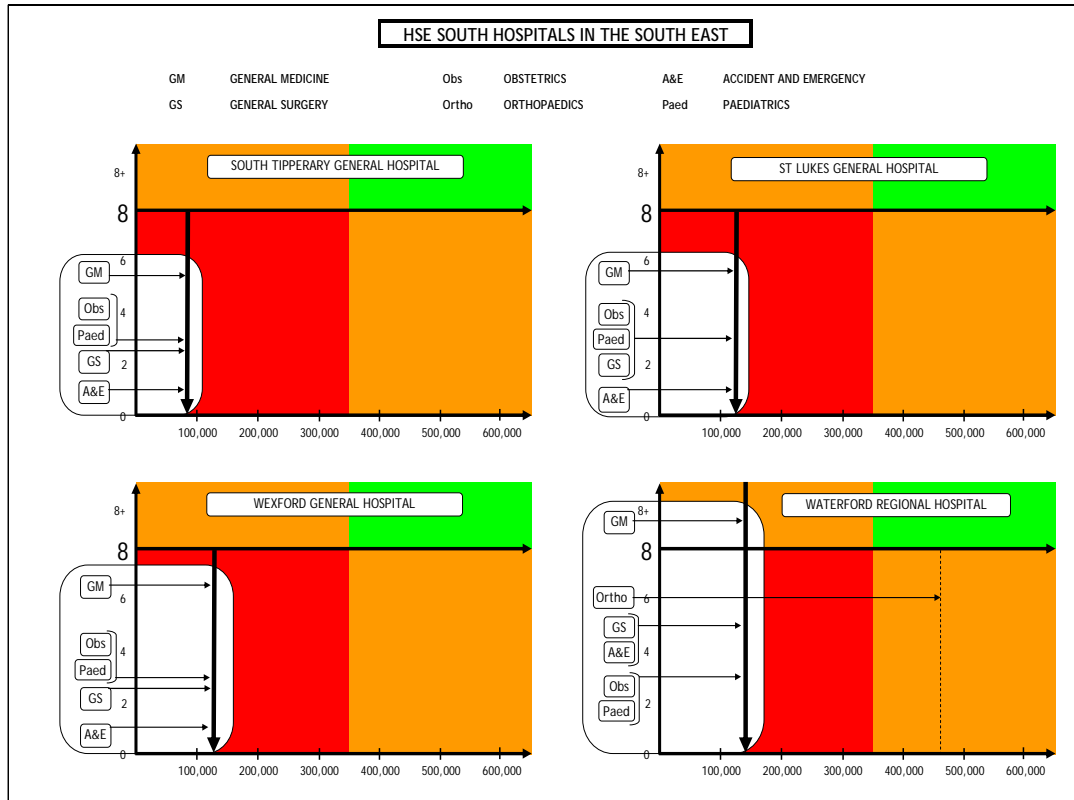
With regard to the combined workforce, general medicine and general surgery would satisfy the workforce criteria of the critical mass argument, while paediatrics and A&E would not. There remains, however, a mismatch between workforce and population, and no services would fall into the 'GREEN Zone', even after amalgamation.

We now look at the four hospitals in the South East, as illustrated in Figure 4.

¹⁵ This is the result of centralising the 3 obstetric services in Cork onto a single dedicated facility on the Cork University Hospital site. It is an excellent example of partnership working between public and private providers. It has brought together an obstetric team of 15 consultants and satisfies the international critical mass relationship for both workforce and population. Similarly, rationalisation has commenced for the future provision of cardiac and renal services, centralising 3 services into one enhanced service.

¹⁶ We note there are 5 A&E consultants in total in Cork City, with split appointments to provide input across the CUH, MUH and SIVUH A&E services.

Figure 4: Critical Mass: Specialty Consultants v Population for Hospitals in the South East



The key messages

The hospitals in the South East fall well short of providing acute care to the recommended minimum population of 350,000 to 500,000 for a regional 'centre of excellence', the actual range being from some 80,000 to 150,000, in line with population catchments for a local centre.

The number of consultant physicians meets the 8 or more workforce criteria at Waterford Regional Hospital, but falls into the 'AMBER Zone' because of the low catchment population.

There is one regional service in the South East, orthopaedics. It serves some 460,000 population, with separate trauma (at Waterford Regional Hospital) and planned work (at Kilcreene Orthopaedic Hospital, Kilkenny). It falls into the 'AMBER Zone' because the service is provided by 6 consultants.

There are a number of other specialties in the South East that operate regionally but fall into the 'AMBER Zone', including ENT, vascular surgery, nephrology, oncology, haematology, dermatology, rheumatology and a range of laboratory medicine disciplines (haematology, serology, blood transfusion, biochemistry and histopathology).

Each of the four acute hospitals provides stand-alone obstetrics and paediatrics, with each service being delivered by three consultants.

The general surgery services at St. Luke's and South Tipperary have recognised the practical difficulties in operating independently with low numbers of consultants and are exploring the establishment of a single surgery service to serve their two hospitals.

As in Cork and Kerry, A&E has very small numbers of consultants providing services, with 3 of the 4 hospitals operating with one consultant.

The consequences of small catchment populations generating small workloads

We now look in more detail at the consequences of the fragmented nature of the services, as expressed by the small and variable volumes of clinical workload that each hospital presently manages.

Variations in current clinical utilisation

We have included in Appendix 4 a review of current clinical resource indicators. Whilst it is widely understood that comparing clinical resource utilisation is not without its flaws and weaknesses, not least of which is ensuring that comparisons are being made across similarly provided services, this section has provided an initial assessment of current service provision.

The review shows that there are substantial differences in the availability and utilisation of resources across HSE South. Most notable of these differences, are hospitalisation rates and length of stay for in-patient care.

The hospitalisation rates show that the closer a resident lives to a large acute hospital, the more use that is made of that facility i.e. distance decay. In Waterford City, the hospitalisation rate for non-elective medical admissions is almost 50% higher than that in Waterford County. A similar profile is seen in Cork City where the rates of non-elective medical admissions are between 75% and 50% higher than Cork County and County Kerry respectively.

In comparison with the national average length of stay by Diagnosis Related Group (DRG), the lengths of stay across all the acute hospitals in HSE South are longer. On average, the length of stay for planned care is 0.5 days longer and for emergency care is 0.6 days. If acute hospitals in HSE South were able to achieve current national average lengths of stay then around 250 beds fewer would be required.

The profile of consultant medical workforce is different between Cork and Kerry and the South East. In Cork and Kerry, there are many more split site posts and, in some specialties, a greater concentration of staff across fewer sites. This is compared to an even spread of more full-time posts across the hospital sites in the South East e.g. paediatrics and obstetrics.

General medicine services

There are 10 hospitals across HSE South delivering general medicine and related services. The number of consultants (sessions) and workload (the daily admission rate for emergency medical admissions) is shown in Table 1.

Table 1: Average daily emergency medicine admissions, 2005

Hospital	Average Daily Admissions*	Consultant Sessions in Medicine per week*
CUH	15.3	277
MGH	6.6	35
BGH	Not reported	22
MUH	7.2	83.5
SIVUH	7.3	93
KGH	10.7	47
Total Cork and Kerry	47.1	557.5
South Tipperary	11.5	56
St Luke's	13.2	58
WRH	16.1	165.5
WGH	15.1	67
Total South East	55.9	346.5
Total HSE South	103.0	882.0

Source: HIPE data, 2005 and validated by HSE NHO South

*Includes the specialties of general medicine, geriatric medicine, cardiology, dermatology, infectious diseases, neurology, palliative medicine and respiratory medicine

As seen earlier, none of the general medicine services makes it into the 'GREEN Zone' for workforce and catchment population. The rates of daily admissions for acute medicine, range from 6 to 15.

Overall, there are substantial variations across the hospitals in both the available consultant sessions for the workload being undertaken and in the daily average rates of admissions, suggesting large variations in clinical practice and in particular, the criteria for admission.

For example, Waterford Regional Hospital and Wexford General Hospital have the same level of admissions as Cork University Hospital, suggesting differences in admission protocols and clinical practice between the three sites.

Accident & Emergency services

As seen earlier, none of the A&E services falls into the 'GREEN Zone' for workforce or catchment population. There are 11 consultants in HSE South for some 300,000 attendances each year.

In HSE South, there are 9 hospitals offering A&E services, with a wide range of attendances: from around 60,000 annual attendances at Cork University Hospital and Waterford Regional Hospital to between 13,000 and 35,000 annual attendances across the other sites.

In relation to annual attendances, the following recommendations are pertinent to determining whether a service is viable.

In 1996, the Audit Commission, UK ¹⁷, recommended that there should be fewer, larger A&E departments, each treating at least 50,000 patients each year in order to maintain quality of care. In 2004, the Royal College of Surgeons of Ireland calculated future services on the basis of an A&E department seeing 70,000 attendances each year ¹⁸.

In 2005, BAEM in their major review 'The Way Ahead' ¹⁹, categorised A&E departments according to their annual workload of new attendances:

- Small hospital = < 40,000
- Medium hospital = 40,000 - 70,000
- Large hospital = 70,000 - 100,000 +

Table 2 shows the volume of attendances and consultant levels of staffing and total sessions for each acute hospital.

[It should be noted that the table excludes the 6,000 patients who attended the 'casualty' room at Bantry General Hospital. This service is provided via the nurses on duty on the surgical wards, with back-up from the surgical team, led by the one surgeon working at this site. Patients for urgent medical assessment attend the medical team, managed by two full-time physicians.]

¹⁷ By Accident or Design - Improving A&E Services in England and Wales The Audit Commission report, 1996

¹⁸ The Future of Surgical Specialties in Ireland, Royal College of Surgeons in Ireland, April 2004

¹⁹ The Way Ahead. British Association of Emergency Medicine and The College of Emergency Medicine 2005

Table 2: Number of A&E Attendances v Consultant Staffing & Sessions

Hospital	Attendances	A&E Consultant Staff	Consultant Sessions
CUH	55,985	} 5	34
MUH	23,790		11
SIVUH	23,357		11
MGH	12,940	0	0
KGH	32,272	1	10
WRH	57,929	5	28
WGH	30,465	1	8
St Luke's	31,729	1	8
South Tipperary (*)	34,061	1	8

Source: HSE NHO South

Figures for Cork and Kerry acute hospitals based on attendances between Jan - Nov 2006

(*) Figures derived from 2006 activity in Clonmel Medical Unit (13,825) and Our Lady's Hospital, Cashel, Surgical Unit (20,236). The two hospitals were amalgamated on the Clonmel site in January 2007. Projected A&E attendances for 2007 is 26,000.

The recognised strategic direction of travel for such units is to develop them into more appropriate nurse led Urgent Care Centres, offering minor injuries & illness services and linked through the clinical network to the A&E service at the regional centre. This concept is supported by the fact that many patients self refer for minor complaints and that overall, the majority of A&E attendances, some 60 - 80%, do not need true A&E management²⁰.

Using these benchmarks, only two of the nine services meet the criteria and that is as a medium sized hospital. There are low volumes of A&E attendances in other seven, particularly at Mallow General Hospital, Mercy University Hospital, South Infirmary-Victoria University Hospital and South Tipperary General Hospital (projected for 2007).

The BAEM and College of Emergency Medicine support the development of Urgent Care Centres offering minor injuries & illness services where appropriate, staffed by non-consultant medical staff and CNSs trained in A&E.

Emergency general surgery services

As seen earlier, none of the general surgery services in HSE South falls into the 'GREEN Zone' for workforce or catchment population.

20 Building a Health Service Fit for the Future, NHS Scotland 2005

Today the HSE South has 10 hospitals operating 24/7 emergency general surgery services.

The current consultant staffing (sessions) available and the workload they are required to manage (expressed as the daily average rate of emergency general surgical admissions) is shown in Table 3.

Table 3: Average Daily Emergency Surgery Admissions, 2005

Hospital	Average Daily Admissions	Consultant Surgeon Sessions
CUH	5.8	40
Mallow	3.2	24
Bantry	Not reported	11
MUH	3.1	51
SIVUH	3.0	36
Kerry	6.7	33
Total Cork and Kerry	21.8	201
South Tipperary ²¹	6.2	30
St Luke's	6.5	33
WRH	6.5	50
WGH	7.1	30
Total South East	26.3	143
Total HSE South	48.1	333

Source: HIPE data, 2005 and validated by HSE NHO South

There are differences in these admission rates, with the acute hospitals in the South East and at Kerry having substantially higher rates, raising questions about variations in the criteria for admission across HSE South.

Today's catchment populations generates between 3 and 7 daily average patient admissions across the 9 hospitals that report their figures.

In Cork city, the total daily average admissions was 11.9 divided between three services, the CUH with 5.8 per day, the MUH with 3.1 and the SIVUH with 3.0.

Individual services, grouped together as a single 'Cork and Kerry surgical service', would satisfy the critical mass criteria for workforce and population. There would have been a total daily average rate of 21.8 admissions, served by around 18 wte consultant surgeons to cover the Cork and Kerry population. Similarly, a 'South East surgical service' would have had 13 wte consultant surgeons to manage a total daily average rate of 26 admissions.

Obstetric services

There are 6 obstetric units in HSE South, as outlined in Table 4 below, with neonatal care centred in Cork University Hospital and Waterford Regional Hospital.

Only one, the new obstetric service based at Cork University Hospital, falls into the 'GREEN Zone' for workforce and population. It is the only service in HSE South to achieve this and delivers some 6,000 births annually.

The other five are in the 'RED Zone', far short of the critical mass criteria for matching workforce to population. The service at Kerry, and all the other services, each with three consultants, had low volume workloads of between 1,000 to 2,400 deliveries last year.

²¹ Services at Cashel are now transferred to South Tipperary General Hospital

Table 4: Obstetric services, HSE South, 2006

Hospital	Births	Consultant Sessions
CUH*	6,125	115
KGH	1,607	33
Total Cork and Kerry	7,732	148
South Tipperary	1,021	33
St Luke's	1,609	33
WRH	2,469	33
WGH	2,099	33
Total South East	7,198	132
Total HSE South	14,930	280

Source: PMU (figures are inclusive of live births and stillbirths)

* Includes births recorded at Erinville and St Finbarr's Hospitals

The figures do not separate out the proportion of births delivered by the midwife as opposed to the obstetrician.

Most of the services with fewer consultant staff do not have dedicated obstetric theatre facilities.

Given the particular consequences of applying the critical mass criteria to obstetric services, it is useful at this point to summarise what is being recommended nationally and internationally for the provision of safer obstetric services.

International recommendations

The UK Royal College of Obstetricians and Gynaecologists 2005 guidelines²² suggest that annual delivery rates greater than 3,000 ensure maintenance of clinical skills and competencies of all staff and support a neonatal intensive care unit.

In its report on the future of obstetric services in Scotland, the Royal College states that, as the level of activity is the same throughout the 24 hour period, the same level of cover is required 24/7.

It recommends a staffing level in 2009 of 8 consultants for those hospitals with less than 2,500 births and 24 consultants for units in excess of 4,000 births.

There is mixed evidence internationally regarding the minimum size of an obstetric unit:

- Studies in Norway^{23 24} and Germany²⁵ have found that 'normal' birth weight babies have a much higher risk of dying in the first seven days after birth if they are born anywhere other than larger obstetric hospitals;

²² The Future of Obstetrics and Gynaecology in Scotland, Service Provision and Workforce Planning, Royal College of Obstetricians and Gynaecologists, December 2005

²³ Relation between size of delivery unit and neonatal deaths in low risk deliveries: population based study. Moster D, Lie RT, Markestad T, Arch.Dis.Child Fetal Neonatal Ed, 1999, 80: F221-F225

²⁴ Neonatal mortality rates in communities with small maternity units compared with those having large maternity units, Moster D, Lie RT, Markestad T, BJOG, 2001, 108: 904-9

²⁵ Are we regionalised enough? Early neonatal deaths in low risk births by the size of delivery units in Hesse, Germany, 1990-1999, Heller G et al, International Journal of Epidemiology, 2002, 31: 1061-8,

- Work undertaken in Australia ²⁶ found lower hospital volume was not associated with adverse outcomes for low risk women;
- In Canada, a minimum number of births is not seen as an element of any credentialing programme ²⁷; and
- A recent report produced by the Department of Health, UK, reviewed a number of studies and concluded that clinical outcomes in low risk pregnancies are not affected by the type of delivery setting. However, for those women for higher risk pregnancies, the evidence highlights improved outcomes if these women and their babies are treated in specialist centres with a fully equipped neonatal unit ²⁸.

Recommendations of the Institute of Obstetricians & Gynaecologists of Ireland

The Institute of Obstetricians & Gynaecologists recently issued a report, setting out the views of the profession on how services in Ireland should be developed over the next 10 years ²⁹.

²⁶ Does size matter? A population based study of birth in lower volume maternity hospitals for low risk women, Tracy S et al, BJOG volume 113, issue 1 page 86-96, January 2006

²⁷ Number of births to maintain competence, Joint Policy Statement by the Society of Obstetricians and Gynaecologists of Canada, The college of Family Physicians of Canada, The Society of Rural Physicians of Canada, April 2002

²⁸ Making the Clinical Case for Reconfiguration: Evidence Based Review, Department of Health, UK, February 2007

²⁹ The Future of Maternity & Gynaecology Services in Ireland 2006 – 2016, The Institute of Obstetricians & Gynaecologists, December 2006

It proposed the development of obstetric networks, which it sees as being particularly important for the future provision of services in smaller units. In addition, these smaller units should have ready access to a full range of medical specialties, critical care and advanced imaging.

These networks would consist of a referral centre for neonates and women at high risk, each supporting a number of obstetric units. In terms of staffing:

- In principle, there should be at least one consultant per 350 births with a minimum consultant staffing level of five consultants;
- For referrals centres, there needs to be 24 hour on site on-call consultant obstetric cover; and
- For obstetric units, the preferred arrangements for on-call is a team of 1 consultant, 1 registrar and 1 senior house officer, with 24 hour access to epidural cover and anaesthetic NCHDs on site 24 hours per day.

The proposed network arrangements are:

- For Cork University Hospital to be a referral centre supporting obstetric units at South Tipperary General Hospital, Waterford Regional Hospital and Kerry General Hospital; and
- For the National Maternity Hospital in Dublin to be a referral centre supporting obstetric units at Wexford General Hospital and St Luke's General Hospital.

The Institute's recommendations of a minimum of five consultants per unit and one consultant per 350 births, infer that, for a unit to be viable, there needs to be 1,750 births per annum. These recommendations appear to be at odds with the international direction of travel in that:

- They support the continuation of obstetric units with low volumes of annual births;
- They assume that these dispersed services can still give patients confidence of easy, timely access to the full range of specialist support, in particular critical care; and
- They recommend a minimum of five consultants, as opposed to international recommendations of 8 to 10.

The current status of midwifery in Ireland

The midwifery profession in Ireland has a clear professional development strategy. However, this is not driven by a clear midwifery service development strategy that is distinct from obstetric service planning.

This is against a backdrop of increasing interests and pressures in recent years to develop midwifery-led care, including: the establishment of an Expert Group in Domiciliary Births; the Women's Health Council; direct entry midwifery education; the pilot DOMINO programme to promote community midwifery and home births in Dublin, Cork, Galway and Waterford; and the establishment of two co-located midwifery led units in 2004 in the North East, (subject to on-going rigorous evaluation by the School of Nursing and Midwifery, Trinity College Dublin) ³⁰.

The HSE has no strategic plan to offer pregnant women the choice between home births or 'home from home' midwifery services or the medical obstetric experience, i.e. midwifery in Ireland trails behind international midwifery programmes ^{31 32 33}. For example, presently, there are a total of only 14 independent midwife practitioners in Ireland ³⁴.

³⁰ Childbirth policies and practices in Ireland and the journey towards midwifery-led care. Devane at al. *Midwifery* (2007) 23, 92-101

³¹ Implementing a framework for maternity services in Scotland, 2001

³² Maternity care in Ontario, expert panel, 2006

³³ Modernising maternity care. A commissioning toolkit for England, 2006

³⁴ Personal communication

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In summary:

Clearly, the debate about what constitutes a viable obstetric service will continue. Notwithstanding the issue of defining these minimum volumes for Ireland, if obstetric services are to provide safe, sustainable, 'round the clock' services in the future, with timely access to specialist support, then the configuration of current services needs to change.

Equally clearly, pregnant women currently have a very restricted choice of midwifery services, compared to the international scene. As obstetrics continues to work to resolve the present sub-optimal service arrangements in five out of its six services in HSE South, this effort needs to also address the reshaping and further development of midwifery.

Paediatric medicine services

None of the 7 paediatric services in HSE South fall into the 'GREEN Zone', although there are consolidated services, predominantly at Cork University Hospital.

All the other 6 services, in Kerry and across the South East fall well into the 'RED Zone' due the small number of consultants on a team and small catchment populations

Table 5 provides a profile of current paediatric medicine services.

The small populations generated an average range of 3 to 10 daily admissions in 2005.

Table 5: Profile of Paediatric Medicine Services, 2005

Hospital	Paediatric Medicine Discharges (0-14 years)	Paediatric Medicine Consultant Sessions	Average Daily Admissions
CUH	3,428	60	9.4
Kerry	2,133	22	5.8
MUH	1,536	17	4.2
Total Cork and Kerry	7,299	110	19.4
Sth Tipperary	1,250	33	3.4
St Luke's	1,640	33	4.5
WRH	3,564	33	9.8
WGH	1,815	33	5.0
Total South East	8,269	132	22.7
Total HSE South	15,432	242	42.1

Although the paediatric workforce is split equally across the four sites in the South East, there are substantial variations in workload per consultant session across hospital sites, with Waterford Regional Hospital having the highest rate of discharges per session across the whole of HSE South.

Workforce modelling undertaken by the Royal College of Paediatrics and Child Health³⁵ in the UK, in line with other international evidence on workforce, has identified the need for between 8 to 10 consultants for the provision of 'round the clock' emergency care.

Currently, no acute hospital site in HSE South satisfies this requirement, although there are sufficient consultant numbers to provide a single service in both Cork and Kerry and in the South East.

Also, examining how paediatric surgical services (under 14 years) are provided reveals that a significant proportion of paediatric surgical activity, 10%, is undertaken by surgeons doing fewer than 50 cases per annum. In 2005, at Cork University Hospital, there were 16 consultants recorded as undertaking fewer than 50 cases with a further 16 consultants recorded as undertaking 50 cases or more per annum. There are similar findings for individual consultants at Mercy University Hospital, South Infirmity-Victoria University Hospital, St Mary's Orthopaedic Hospital and Kerry General Hospital.

³⁵ Paediatric Medical Workforce Model, Royal College of Paediatrics and Child Health, April 2001

The development of the new national paediatric hospital in Dublin will result in changes to the provision of paediatric services across Ireland. Within the integrated provision of paediatric services, we understand that all children requiring admission to level 3 critical care will have that element of their acute episode of care delivered in the new national paediatric hospital.

Major elective surgery undertaken on an occasional basis

Using cancer surgery as an indicator, we reviewed all operations performed in 2004. These are listed in Table 6. It shows that many operations were being undertaken on an occasional basis on all sites. Overall, there were 999 cancer procedures undertaken across the acute hospital sites; less than 20 procedures a week.

It is well recognised that such patients run a greater risk of poorer clinical outcomes under these circumstances. It is considered much better practice to reduce the number of surgeons who undertake this category of surgery by establishing sub-speciality teams to manage them, as reflected in the reorganisation of cancer services that is well now under way in many countries³⁶

³⁷ ³⁸ ³⁹ ⁴⁰ ⁴¹ ⁴² ⁴³ ⁴⁴

³⁶ National Service Framework for Cancer Services. Department of Health, UK, 2001

³⁷ The NHS Cancer Plan. A plan for investment A plan for reform Department of Health, UK, 2000

³⁸ New Zealand Cancer Control Strategy. Ministry of Health and Cancer Control Trust Aug 2003

³⁹ Priorities for Action in Cancer Control, 2001 – 2003. Department of Health, Australia

⁴⁰ Cancer in Scotland. Action for change. HDL(2001)54
Executive Letter

⁴¹ Canadian Strategy for Cancer Control: Treatment Working
Group, Final Report, January 2002

⁴² Optimising Cancer Care in Australia, A consultative report
prepared by the Clinical Oncological Society of Australia, The
Cancer Council Australia and the National Cancer Control
Initiative, February 2003

⁴³ European Strategy for Breast Cancer. European
Parliament calls for breast screening and breast surgery
centres. 2003
http://www.epgbc.org/pdf/pressroom/press_2.pdf

⁴⁴ Skinner KA et al. Breast Cancer: Do specialists make a
difference? Annals of Surgical Oncology 10:606-615 2003

Table 6: Summary of Cancer Procedures in HSE South, 2004

Hospital	Breast	Cervix	Colon	Lung	Oesophagus	Ovary	Prostate	Rectum	Uterus
CUH	88		32	26		*	10	18	*
Mallow	*		10				25	*	
MUH	*		23		8	*	54	19	
SIVUH	146	*	17			6		6	13
Kerry	49		21				11	18	5
Total Cork and Kerry	*	*	103	26	8	*	100	*	*
Cashel	22		18				13	10	
Sth Tipperary									8
St Luke's	41		19			*	*	7	*
WRH	84	6	25			6	20	11	13
WGH	40	*	18		*	*		*	*
Total South East	187	*	80	0	*	*	*	*	*
Total HSE South	473	8	183	26	9	18	134	98	50

HIPE 2004 was used as the basis for this analysis given the availability of descriptions of diagnostic cancer codes using ICD-9

* Denotes 5 cases or less

Even despite the small number of surgical cancer procedures undertaken by each site for some cancers, the majority of cases at each hospital are not concentrated within individual consultants. Instead, there is a tendency for a number of consultants at each site to undertake a very small number of cases.

A possible exception to this trend is breast cancer where the majority of cases undertaken at most sites are performed by a single consultant. For these consultants, the volume of cases undertaken in 2004 ranged from 37 to 87 cases. This shows evidence that the development of the breast cancer network is working across the HSE South.

There is strong evidence for centralising breast cancer services and in 2003, the European Parliament proposed a strategy for centralisation⁴⁵ that stated: 'Each breast centre must perform a minimum of 150 primary breast cancer operations per year, and the surgeons specialising in benign and malignant diseases of the breast must perform at least 50 operations themselves and that the surgeons must only perform breast surgery'.

⁴⁵ European strategy for breast cancer. European Parliament calls for breast screening and breast surgery centres. 2003 http://www.epgbc.org/pdf/pressroom/press_2.pdf

The recent publication in Ireland on breast surgery guidelines ⁴⁶, states that individual consultant surgeons should treat a minimum of 50 and a maximum of 150 new patients with breast cancer per year, and that a breast centre needs to have at least two nominated consultant surgeons specially trained in the care of patients with breast disease.

Critical care services

There is only one full-time intensivist in HSE South, based in CUH. Critical care relies upon the services of the consultant anaesthetists for continuity of care.

The smaller hospitals have only one or two consultant anaesthetists for this service provision to critical care.

There are 6 critical care units across Cork and Kerry and 3 stand-alone coronary care units. There are 4 critical care units and 4 coronary care units across the South East.

In total across HSE South, there are 55 critical care beds dispersed across the 10 hospitals, with a capacity ranging from 3 to 10 and 34 coronary care beds, again across the 10 hospitals, with a capacity ranging from zero (3 units combine critical care and coronary care) to 6 beds.

A profile of beds and admissions is shown in Table 7.

⁴⁶ National Quality Assurance Standards for Symptomatic Breast Disease Services: Developing Quality Care for Breast Services in Ireland, Department of Health and Children, 2007

Table 7: Adult Critical Care Services

Hospital	Beds		Total Admissions (incl. CCU)	General Medical & Coronary Care Admissions
	ICU	CCU		
CUH	10(†)	5	1,668	766
MGH	4(*)		391	317
BGH	4(**)		Not reported	Not reported
MUH	8(***)	4	322	197
SIVUH	3	5	594	340
KGH	5		490	165
Total Cork and Kerry	34	14	3,465	1,780
Sth Tipperary	5	3	328	327
St Luke's	4	6	816	446
WRH	6	6	1,077	419
WGH	6	5	999	502
Total South East	21	20	3,220	1,694
Total HSE South	55	34	6,685	3,474

† There are also a further 6 cardiac ITU beds

* Designated as High Dependency Units beds

** Designated for Intensive Care, High Dependency and Coronary Care

*** One bed designated for High Dependency

There is no adult critical care retrieval team. Peripheral services are commonly left understaffed when duty doctors need to accompany critically ill patients during a transfer.

Conclusion

It is self-evident that critical care services are not sustainable in their present format.

Hospitalisation rates

A comparison of non-elective hospitalisation rates across counties for medical admissions shows that the rate in Waterford City is significantly higher than the other counties, in particular in comparison with Waterford County, Cork County and County Kerry. The rate of admissions for residents of South Tipperary and County Carlow are the next highest at around 1,000 discharges per 10,000 population, Table 8.

A similar pattern is also seen across surgical admissions with South Tipperary, Waterford City, County Wexford and County Carlow residents having the highest hospitalisation rates.

A potential factor contributing to this higher rate of admission into acute hospital services is the so called 'distance decay' effect, whereby the utilisation of services is inversely related to the distance patients live from hospitals ^{47 48}.

Table 8: Age and sex standardised non-elective hospitalisation rates (per 10,000 population) by county for medical and surgical admissions

County	Non-Elective Hospitalisation Rate (per 10,000 population)	
	Medical admissions	Surgical Admissions
Cork City	782	571
Cork County	448	352
Kerry	525	523
Carlow	971	624
Kilkenny	818	520
South Tipperary	1,005	724
Waterford City	1,035	649
Waterford County	718	509
Wexford	947	623

The recent national review of bed utilisation⁴⁹, identified that for acute hospitals in Cork and Kerry, the rate of inappropriate admissions was 13%. Across hospitals in the South East, the overall proportion of inappropriate admissions was reported as 11%.

⁴⁷ Rural Health and Healthcare: a North West Perspective, Institute of Health Research, Lancaster University, January 2004

⁴⁸ Response to Centralisation and Specialisation of Hospital Services – bigger is not necessarily better for rural and remote communities, Royal College of Physicians in Edinburgh, March 2006

⁴⁹ Acute Hospital In-Patient Bed Utilisation Review, Health Service Executive, April 2007

Table 9 provides a profile of the percentage of inappropriate admissions identified for each acute hospital. Inappropriate admissions range from 34% at Bantry General Hospital to 7% at Kerry general Hospital.

Table 9: Percentage of inappropriate admissions

Hospital	Percentage of inappropriate admissions
Bantry General Hospital	34%
Cork University Hospital	11%
Mallow General Hospital	16%
Mercy University Hospital	10%
South Infirmary-Victoria University Hospital	21%
Kerry General Hospital	7%
Southern Network average	13%
St Luke's Hospital	8%
Wexford General Hospital	19%
Waterford Regional Hospital	9%
South Eastern Network average	11%

Inadequacy of existing governance arrangements

There is no standard code of governance that applies uniformly and consistently across all the hospitals in Cork and Kerry, nor are there standardised measures for such issues as improving quality, enhancement of collaborative working, maintenance of effective accountability, or active participation by clinicians in decision-making and budget-holding.

Overall, we regard governance as being under-developed and in need of significant reform. For example:

- In Cork University Hospital, there is no effective governance structure to provide the necessary checks and balances, a common feature of good governance. Also, a number of its services, because of their origins, have different reporting and governance arrangements. This compromises the governance function and is reported by staff as a source of frustration; and
- Furthermore, whilst the voluntary hospitals in Cork have governance structures that are distinct from the HSE public hospitals, they are geared towards meeting the specific needs of each organisation.

This is required both to address current inadequacies and inconsistencies in governance and to make sure the new governance structure is shaped to meet the challenges posed by the new integrated service organisation, configuration and network arrangements.

Clinical Governance

Consultants have clinical autonomy in how they look after patients. They are not required to:

- Undertake regular clinical audit;
- Peer review the performance of their colleagues or their specialty as a whole;
- Use agreed care pathways to improve the overall quality of care; or
- Participate in clinical governance.

Presently, therefore, the health service operates by default. The system assumes that patients receive a satisfactory quality of care, it does not systematically assess the level of quality of care.

Some progress is reported, through the efforts of the Health Information and Quality Authority (HIQA). It has an ongoing programme, operating at service level, to raise staff awareness of the need to measure clinical and organisational performance in relation to the quality of service delivery and clinical outcomes and to put a system in place to encourage monitoring and reporting.

Recommendations

We recommend that the consultants are invited to set aside a regular session each month for the team to undertake internal peer review, examine the quality of care across the specialty, review compliance with agreed care pathways and agree further quality improvements in patient outcomes.

We recommend that the HSE develops a Clinical Governance strategy, designed to openly and transparently monitor that service quality and patient outcomes across both the local and regional 'centres of excellence' are satisfactory and meet international standards of best practice. The strategy also needs to accommodate the concept of networks and of integrated care being delivered in teams. It needs to work across organisations and individuals.

Effective clinical governance, ensuring that patient outcomes are optimised, depends therefore, for example, on the effective interaction between clinicians in different organisational units, some of them being HSE employees and others being GPs in private practice.

In making these recommendations, we naturally respect the need for the consultant's clinical autonomy to be protected. We also respect the need for:

- The patients to be much better informed and reassured that the service they are accessing has an effective system for measuring quality, that performance is objectively measured, that it is confirmed to be satisfactory and that any shortcomings are quickly identified and action is taken accordingly; and
- The organisation to know that clinical risk management is being effectively and proactively managed and that there is optimal use of resources.

Therefore, there is a need for consultants, at the same time as citing clinical autonomy as acting in the best interests of their patients, to also contribute to performance review, checking that the overall quality of their clinical and organisational working practices are in line with international best practice.

Primary, Community and Continuing Care services

Progress in implementing the PCCC strategy

Key elements of the strategy

Central to the HSE's Transformation Programme, is the need to integrate the individual elements of PCCC services and deliver care through community based teams of health and social care professionals, grouped into PCTs⁵⁰.

These teams will include many disciplines such as GPs, PHNs, OTs, physiotherapists, social workers and a range of other therapists and support workers. They will provide services locally that are designed to meet the majority of patient's needs.

Each LHO will comprise of a number of PCTs, each team representing a 'unit' of the PCCC workforce required to support approximately 7,000 - 10,000 people. They are the single point of contact and access for the local community, with responsibility for meeting their needs and accessing other services on behalf of patients.

Where people have complex or multiple needs, a key worker appointed from the PCT will be responsible for securing the expertise or service required to meet those particular needs.

⁵⁰ Integrated Primary, Community and Continuing Care, Leading the Transformation of Ireland's Primary, Community and Continuing Care Services, 2007 – 2010, Health Service Executive, 2007

Securing clinically safe and sustainable services across HSE South *Benefits and risks in current services*

Each PCT will be part of a PSCN, which will link a number of PCTs and have responsibility for the community based health and social care needs of populations of around 30,000 – 50,000. The health and social care needs of a particular PSCN will determine the range and type of services provided for that population.

The anticipated key benefits from these new ways of working are seen to be:

- Simpler, accessible and seamless model of service delivery;
- More convenient access to a wider range of local services;
- Comprehensive care planning;
- Increased team-working and networking;
- Improved continuity of care and quality of services; and
- More efficient use of resources.

In support of the strategy, and to ensure a uniform approach in the care of older people, a common assessment process is being developed for use across all the PCCC services. A component of this will involve the establishment of standardised placement panels which will ensure that clients receive appropriate care in the most appropriate setting. A target of January 2008 has been set for the commencement of the new common assessment process.

Since the publication of 'The Years Ahead'⁵¹, 50 beds per 1,000 of the older population (5%) had been the planning norm nationally for the number of long stay residential care beds required to meet the needs of the population of people over 65 in Ireland. Nationally, this is currently at 4.6%.

Across HSE South

Across HSE South, there are 59 public community hospitals which can accommodate in excess of 3,000 patients. The majority of the beds are designated for long stay continuing care patients although a small proportion of beds are for rehabilitation / community support (262 beds, 9% of the bed base). In the community, there is also extensive private long stay continuing care provision. There are 121 nursing homes across HSE South, with a total complement of 4,200 beds.

Implementing the strategy across HSE South means developing 139 PCTs, supported within 35 PSCNs. The phased implementation of these teams is on-going. Between 2006 and 2007, there are 63 teams in development. Achievement of fully developed teams will require both additional investment in new posts and the reconfiguring of existing primary and community staffing resources. In 2006 to 2007, there were 155 additional posts for HSE South.

⁵¹ The Years Ahead: A Policy for the Elderly, Department of Health and Children, 1988

Securing clinically safe and sustainable services across HSE South *Benefits and risks in current services*

Significant funding has been allocated to the delivery of more Home Care Packages (HCP), focused on enabling the timely discharge of older people (>65) from acute hospitals, reducing inappropriate admission, reducing pressure on A& E services and supporting older people to continue to live in their own community. The impact of this assessment has not yet been assessed, and it is likely that demand for this service will continue to grow.

Within Cork and Kerry

Within the counties of Cork and Kerry, there has also been an investment in the development of specialist palliative care services, resulting in the delivery of an improved quality of service to patients and their families. Further investments are planned, including:

- The development of consultant led multi-disciplinary palliative care services within the community and expansion of community services, in particular, the appointment of CNSs; and
- Capital development of the Specialist Palliative Care Unit in Cork; and
- The expansion of the newly opened Satellite Day Care Unit in Kerry.

The new project in Marymount (Waterfall), Cork, will include a 44 bed hospice providing a comprehensive specialist palliative care programme; to include an in-patient unit, a base for community services, a day care unit, and an education centre, and a 75 bed hospital for the care of older people, providing continuing and respite care services. These facilities will replace the existing 24 beds in Marymount Hospice and the 64 beds in St. Patrick's Hospital. The expected date for completion is 2010.

Familiarisation visits to selected community hospitals

We visited a selection of community hospitals in HSE South and were able to identify examples of good practice and innovation, including:

- The Bandon Community Hospital, which, as a practice development unit, has introduced good clinical practices;
- The dementia service at the community hospital in Clonakilty which uses recognisance therapy;
- The Phase 1 development of St John's Community Hospital at Enniscorthy;
- The use of respite care beds across community hospital sites; and
- The Aged Care Evaluation Team which is a multidisciplinary team established to assess the suitability of patients for long term care placements in either a community hospital or nursing and residential home. The team is led by a geriatrician.

Securing clinically safe and sustainable services across HSE South *Benefits and risks in current services*

Summary of the problems with present PCCC services

PCCC services are not providing to their full potential. Visits to a few exemplar community hospital sites across HSE South, highlighted the dedication and commitment of staff within these facilities but also identified particular operational and infrastructural issues in relation to:

- Criteria for admission are related to age with patients requiring to be 65 years and over to be eligible for admission. Admission needs to be more in line with clinical need for the service. Analysis of those patients with excessive lengths of stay in acute general hospitals who could be cared for in more appropriate alternative care settings, identifies that approximately 50% are under the age of 65 years;
- Ensuring patients were placed on the ward most appropriate for their needs rather than being placed in the next available bed;
- Access to community therapists, thereby limiting the rehabilitation potential for patients;
- Medical support. Although there are medical officers and geriatricians who are assigned to provide medical support to the community hospitals, in reality this support can be minimal, given their other commitments;

- The fabric of the building and the supporting infrastructure. Some of the community hospitals we visited were old, with cramped ward spaces and inadequate facilities that offered little privacy and dignity. Whilst some infrastructure investment has been made, in terms of a new build at St John's Community Hospital and in refurbishments of some existing buildings, there is a concern that these buildings are not fit to provide modern rehabilitation and continuing long term care provision. Significant future capital investment will be needed; and
- Given the current lack of community support services available outside of the community hospital environment, there is acknowledgment that some patients admitted into extended care beds could be more appropriately cared for at home if these services existed.

There are major gaps in the current portfolio of services provided by PCCC. In the main, these include services for those under 65 years, primary and community services provided outside of 9-5 weekday working, bed and home based rehabilitation services, preventative programmes and diagnostics.

There is a need to establish much closer and more effective partnership working between the acute and PCCC services. A recent analysis indicated that the acute and PCCC services need to work much more closely together in this respect. It identified a substantial proportion of inappropriate attendances and admissions to acute hospitals, and that when patients are admitted, the system results in them spending far too long in these facilities compared with care being provided elsewhere.

The bed utilisation review⁵² identified that in Cork and Kerry, 13% of admissions could have been avoided and that 40% of patients occupying an acute bed could be cared for in more appropriate care settings, if available. In the South East, 11% of admissions could have been avoided and 39% of patients occupying a bed could be cared for in more appropriate care settings.

Our overall conclusions about current services

The current configuration of the hospitals in HSE South is based around many small hospitals providing 'round the clock' emergency care without the adequate resources to do so.

The consequence is that, in practice, there are too many acute services being delivered by single-handed or small numbers of consultants.

This goes right across all the core specialties, from A&E through to critical care. The present system substantially compromises the quality of acute patient care. In particular, it has led to unsatisfactory levels of patient safety.

There are not enough consultants to deliver a service as safely and as effectively as they would wish to offer and that patients would wish to receive. The bottom line is that the hospitals simply are not serving large enough catchment populations to generate enough workload to justify the appointment of more consultants.

The patient safety problems generated by the present system are well known. They arise out of the deficiencies in the present system, creating circumstances that:

- Leave consultants exposed to professional isolation;
- Leave junior medical staff exposed to lack of consultant supervision;
- Leave patients exposed to an environment where there is an increased risk of something going wrong;
- Services operate without quality assurance. There is an assumption that the quality of care is satisfactory, there is no measurement to test that assumption; and
- Generate frustration and excessive stress to relevant health professionals and managers alike as they strive to maintain a satisfactory standard of patient safety and quality of care.

⁵² Bed Utilisation In-Patient Service Review, Health Service Executive, April 2007

Securing clinically safe and sustainable services across HSE South *Benefits and risks in current services*

This overview of the current configuration and provision of acute secondary care services across HSE South leads us to the conclusion that most services are not sustainable in their present format.

The gap between the current configuration of services and international standards is too wide to be acceptable. The acute hospital system needs to be reconfigured.

We recommend that the HSE acts promptly to:

- Support today's services pending whole system change; and
- Plan and implement whole system change, such that hospitals and services in HSE South meet the recognised critical mass criteria for matching workforce to catchment population, criteria that establish working conditions that enable the delivery of safe, high quality services to international standards.

None of the catchment populations in HSE South are officially rural or remote geographically to warrant exceptional arrangements to this recommendation.

More appropriate care should and could be provided within the service portfolio available to PCCC. There is a need for improved integration between acute and PCCC services.

The strategic plan for the development of acute hospital services in Cork City

Our conclusions and recommendations are not new. They are recognised through other acute hospital service reviews, in particular the Strategic Plan for the Development of Acute Hospital Services in Cork City⁵³, issued in 2002.

A key aspect of the Cork City plan was the closer collaboration between hospitals to improve services for patients and create a better working environment for staff, including increased provision for education and research.

The plan sets out recommendations in relation to working arrangements, staffing and infrastructure, including, under new working arrangements, the need for common practices and protocols, medical assessment services, city-wide rotas, shared quality framework, more flexibility and openness to change as services are developed.

The next section of the report shows how the future model of clinical care can be applied to the HSE South and more specifically, what the optimal configuration of clinical services in the Cork and Kerry area needs to look like if it is to be in a position to deliver an assured quality of care in line with international standards.

⁵³ A Single Service from Multiple Sites, Strategic Plan for the Development of Acute Hospital Services in Cork City, Acute Hospitals' Planning Forum, 2002

The optimal configuration of acute and community services in HSE South

Overall, the HSE South needs two regional 'centres of excellence' and up to 10 local 'centres of excellence' to enable the delivery of care in line with international quality and clinical safety standards.

We recommend, in view of the obvious synergies between local 'centres of excellence' and local PCCC services, that the HSE encourages local service and estate integration wherever possible.

THE CORK & KERRY AREA

There is sufficient catchment population to justify one regional 'centre of excellence' in Cork and Kerry, responsible for all acute care and working across a clinical network with five local 'centres of excellence', responsible for all non-acute care.

We recommend that the regional 'centre of excellence' is a single site in Cork City and that this should be located at Cork University Hospital.

To prepare for the challenge of planning and implementing this optimal configuration in line with international standards, we recommend that the HSE consults promptly with the UCC, voluntary providers and the private sector. This is with a view to agreeing an integrated clinical and academic approach to delivering service change and a common, robust, transparent governance structure that administers

to all the 'centres of excellence'.

Under this partnership umbrella, the three acute service providers in Cork City need to integrate and reshape their clinical services in line with the new model of **acute** and **non-acute** care so that, in future: all **acute** care is delivered in the one regional centre; and all **non-acute** care is provided by the five local 'centres of excellence', in North Lee, South Lee, North Cork, West Cork and Kerry. The present voluntary hospital sites could be considered for redeveloping into new local 'centres of excellence'.

It is fundamentally important that the local and regional 'centres of excellence' are supported by the Advanced Paramedic emergency ambulance service and the judicious use and further development of the Helicopter Air Ambulance Service.

We recommend that a community midwifery and home birthing service be piloted and developed for the residents of Kerry, to inform the development of a new national strategy.

THE SOUTH EAST AREA

There is sufficient catchment population to justify one regional 'centre of excellence' in HSE South East and 4-5 local 'centres of excellence'.

The terms of reference of the review does not include identifying the optimal reconfiguration of services in the South East. However, when comparing the current configuration of services in the South East with international best practice, the argument for clinical change is as great, if not greater, in the South East than in the Cork and Kerry.

The services are not configured to meet international standards: there are too many hospitals delivering acute care to too small a catchment population; it raises tough questions about the overall clinical viability and sustainability of A&E, obstetrics, paediatrics, critical care and emergency services.

We recommend further detailed study to address these shortcomings.

Given that today, many residents in HSE South East elect to go to Dublin for their clinical care, a key consideration will be how best to reconfigure or relocate the regional centre in line with the HSE's policy of regional self-sufficiency, such that patients choose not to travel outside of the region for their care.

It is clear from what has been identified that the current configuration of acute hospital services is not sustainable and does not conform to the international best practice model of care. This section of the report now identifies the optimal configuration for regional services and local health and social care in HSE South.

We describe the model, examine the changes in patient flows and activities and give examples of how it will work in clinical practice.

That description is based upon the assumption that **the implementation of the 5 to 6 year transformation plan described in later sections has gone according to plan and that services have been enabled to deliver in line with international standards.**

In essence, the achievement of optimal service configuration involves a fundamental redesign of services, which will require committed leadership, committed service providers and expert project management.

Service profiling across care settings

Figure 5 provides a description of how clinical services areas would be reconfigured under the proposed future care setting model.

We now apply the model of care, as described in the earlier section, 'The international trends in clinical practice', to derive the optimal configuration of acute and community services in HSE South.

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Figure 5: Change in care setting by service areas

Service areas	Current setting				Future setting			
	Acute hospital	Community care	Primary care		Regional centre	Local centre	Community care	Primary care
Inpatients:								
Complex planned care	Green				Red			
Complex emergency	Green				Red			
Minor emergencies	Green					Blue		
Paediatrics	Green				Red			
Obstetrics	Green				Red			
Rehabilitation	Green	Light Blue				Blue	Light Blue	Light Blue
Planned day cases	Green					Blue		Light Blue
Regular attenders	Green					Blue		
Outpatient attendances	Green					Blue		
A&E attendances	Green				Red			
Minor injuries/illness	Green					Blue		
Community care		Light Blue					Light Blue	
Primary care			Light Blue					Light Blue
General practice			Light Blue					Light Blue

The HSE South needs two regional 'centres of excellence'

To recap first of all, we have described that:

- There is a clear relationship between international best practice standards and the need for concentration of acute services; and
- The international standards of acute care relate to satisfying the critical mass relationships between the numbers of expert workforce (minimum of 8 consultants) and the catchment population that should be served (minimum of 350,000 to 500,000).

Table 10: Forecast County Populations, 2012

County	Census 2006	Forecast 2012
Cork City	119,418	125,660
Cork County	361,877	386,095
Kerry	139,835	149,652
Cork and Kerry Total	621,130	661,407
Carlow	50,349	54,221
Wexford	131,749	142,312
South Tipperary	83,221	89,860
Kilkenny	87,558	94,432
Waterford City	45,748	49,121
Waterford County	62,213	67,327
South East Total	460,838	497,273
HSE South Total	1,081,968	1,158,680

Source: Census 2006, Central Statistics Office, May 2007 and Regional Forecasts, Central Statistics Office

The current population of HSE South is around 1.08 million and by 2012, this population is forecast to increase to 1.16 million, Table 10.

A substantial proportion of residents in the counties of Carlow, Wexford and Kilkenny, between 15 and 30% across the three counties, access services in Dublin. This represents 11,500 hospital discharges across these counties out of a total of 46,600.

It is reasonable to assume that, in the future, this pattern of choice and access to services will continue. Therefore, the resident catchment population being served by the HSE South regional 'centre of excellence' component of care is around 1.09 million. Based on the international evidence of minimum catchment population for a regional centre of between 350,000 and 500,000, this suggests a requirement for **two regional 'centres of excellence'**.

Given the natural profile of the geography between Cork and Kerry and South East and the transport infrastructure, it would reasonable to assume that **there is a requirement for one regional 'centre of excellence' for the Cork and Kerry area and one based in the South East.**

In relation to the demographics in Cork and Kerry, the population of County Cork and County Kerry is 620,000 and within this, the city of Cork has a population of 120,000. By 2012, this population is forecast to increase to 661,000 with Cork city forecast to increase to 126,000.

Given the concentration of population within Cork City, there is an argument for the regional 'centre of excellence' for the Cork and Kerry area, to be located in the city. The pattern of regional hospital type referrals is already to Cork city.

The HSE South needs around ten local 'centres of excellence'

Determining the number and size of the local 'centres of excellence' will be based on ensuring that there is sufficient critical mass of patient activity to maximise its use. Reviewing what other health communities are considering through similar models^{54 55} of health care, a reasonable assumption is that a local centre typically serves a 50,000 to 150,000 catchment population.

Applying this assumption to HSE South, would identify a requirement for between **seven to ten local 'centres of excellence'**, i.e. around five each for Cork and Kerry and the South East.

The location for each would need to be determined by examining the future profile of resident populations across the counties and the transport infrastructure to optimise ease of access for the majority of residents.

The present system of community hospitals would continue to principally provide extended care services for older people. However, given the profile and geography of the localities, community hospitals may also provide a complement of non-acute care beds for rehabilitation and respite care, and potentially some out-patient clinics.

In addition, there are obvious benefits to be gained from the HSE merging this new strategy to develop the network of local 'centres of excellence' with the existing PCCC strategy to enhance their local services and estate.

The optimal model of care for the Cork and Kerry area

Using the international standards laid out in an earlier section, we now apply them to determine the characteristics of the optimal model of care for the Cork and Kerry area. In summary, these are:

- Enhanced general practice, primary care and community services;
- Five local 'centres of excellence', in North Lee, South Lee, North Cork, West Cork; and Kerry;
- One regional 'centre of excellence', located only on the CUH site for all acute services (site feasibility and options are covered in detail in a later section);
- Improved emergency services: Advanced Paramedic ambulance service; and enhanced Helicopter Air Ambulance service;
- Clinical and academic partnership;
- Community midwifery and home birth service based in Kerry; and
- A new governance structure.

⁵⁴ Gwent Clinical Futures Public Consultation Document, Gwent Local Health Board, 2006

⁵⁵ Healthcare for London, A Framework for Action, Technical Paper, 2007

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1. Enhanced general practice, primary care and community services

Today, too many patients are admitted to hospital whose admission could have been avoided if alternative services had been available and too many patients wait too long in hospital before they are discharged, because of the lack of more appropriate treatment settings.

There needs to be a much more comprehensive, integrated range of general practice, primary care and community services, which have increased capacities, skills and competences to focus on health promotion, well being, the prevention of ill health, self care, more avoidance of admission to the acute hospital and more earlier discharge from hospital. A number of work streams need to be developed to achieve these objectives, including:

- Self care, promoted through education of patients and carers;
- Much better access to diagnostics for the GP and community staff;
- Much better access to home support through Home Care Packages and other community interventions;
- Much better integration between the GPs and primary care / community services through the PCTs under development;
- Encouraging the development of GPs with special interests;

- Optimising the functions of the multi-disciplinary PCTs, with expert input and back-up from the PSCNs, so that patients can be safely and provisionally managed outside of the traditional acute hospital setting, ideally in their own home;
- Developing Hospital at Home as a mainstream community service; and
- Easier access to Primary Care Centres and community facilities based both in the local 'centre of excellence' and in satellite GP/Primary Care clinics in more isolated areas.

2. Five local 'centres of excellence'

Where will they be located?

One practical approach to determining the geographical distribution, numbers and configuration of local 'centres of excellence' would be to follow the PCCC delineation, which splits the area of Cork and Kerry into five localities, each serving a resident population of between 53,000 and 180,000.

This would make the planning for local centres 'co-terminous' with local primary, community and social care services. The resident catchment population of these five localities are:

- South Lee with a population of 180,000;
- North Lee with a population of 170,000;
- North Cork with a population of 80,000;
- West Cork with a population of 53,000; and

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- Kerry with a population of 140,000.

What will their role be?

Figure 5 emphasises that the local 'centres of excellence' have a vital future role within the community they serve, supported by comprehensive consultant outreach services from the regional 'centre of excellence' and integration with the enhanced general practice, primary and community services.

The role of the local 'centres of excellence' will be to provide all non-acute care, both planned and urgent, for its resident population.

Most conditions fall into this category, such that only a minority of the local resident population will need to be referred for acute care to the regional 'centre of excellence'.

What services will they provide?

Each of the five local 'centres of excellence' will provide:

- Outpatient clinics for the majority of specialties; some very specialist services may continue to be provided from the regional centre;
- A wide range of adult day surgery services, delivered by the outreach surgical and anaesthetic teams and covering the majority of specialties, including: general surgery; minor breast surgery procedures (if approved by the national cancer control strategy); urology; orthopaedics; gynaecology; venous surgery; ENT; and plastics⁵⁶;
- Nurse / therapy led services, including rehabilitation; intermediate care, step-up and step-down care; palliative care; and respite care;
- Minor injuries and minor illness services for adults and children, delivered in nurse led Urgent Care Centres, which will see and treat around 70% of patients that currently attend at A&E departments; and also an observation area to undertake clinical assessments to determine whether urgent referral to the regional centre is required.
- Enhanced diagnostic services, including radiology (plain X-ray, CT, Ultrasound), cardiac and respiratory function tests;
- A wide range of endoscopy investigative procedures, including: gastro-intestinal; urological; gynaecological; and respiratory;
- Medical day investigation and treatment services; and

⁵⁶ Other day surgery services, such as ophthalmology and day surgery for children, will need specific locations to be identified, as it will not be practical to deliver these services in every local centre, for reasons of small patient numbers, patient safety and complexity of procedure

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- Phlebotomy and specimen collection service for laboratory medicine tests.

A local 'centre of excellence' looking after a larger catchment population may justify delivering some additional services, such as day chemotherapy, renal dialysis and community midwifery.

What will these changes mean for the present hospital services at Bantry, Mallow and Kerry?

In an earlier section, it was made clear that none of the acute services on these sites were sustainable into the future, due to insufficient numbers of consultant staff managing insufficient workloads to justify more staff and substantially increased risks to patient safety.

The present services will continue for now, with additional transitional support, but only until all preparations have been completed to establish local 'centres of excellence' for Bantry, Mallow and Kerry and for the new regional 'centre of excellence' to take on their acute care workload.

Protectors of the status quo argue that this represents a loss of service, or downgrading of their local hospital. However, the changes should be seen and supported as representing a significant upgrading of the quality of patient care, not a downgrading of any particular site.

The priority in health care is to protect patients, not hospitals. It is to provide patients with the best possible quality of acute care, to standards that both patients and staff have a right to expect in 2007. It is not possible to deliver that level of quality of acute care in small hospitals and never will be possible.

Midwifery in Kerry is the only exception. The circumstances in Kerry present the ideal opportunity to pilot the development of a community midwifery and home birthing service, in order to develop a national strategy. The concept is described later on.

3. One regional 'centre of excellence'

To recap, the regional 'centre of excellence' needs to meet the critical mass criteria for medical workforce and catchment population. It is responsible for providing all acute care, namely in-patient emergency care and complex planned care, supported by immediate access to specialist medical expertise, continuous medical supervision and critical care services.

For the Cork and Kerry area, we recommend that the regional 'centre of excellence' is located only at the CUH site, as a single service for all acute care.

The acute services and specialties are:

- General medicine (including geriatric medicine, cardiology, respiratory medicine, gastro-enterology, endocrinology, neurology, clinical haematology, renal medicine, rheumatology and dermatology);
- General surgery (including upper GI, lower GI, breast, vascular surgery, endocrine surgery), orthopaedics, maxillo-facial surgery, urology, gynaecology, ENT, ophthalmology;
- Major A&E and trauma service;
- Obstetrics, with co-located midwifery service and level 3 neonatal unit;

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- Paediatrics, with high dependency unit;
- Cancer services, in line with national cancer control strategy;
- Anaesthesia and pain management service;
- Up to level 3 adult critical care;
- Specialist acute psychiatry, including children and young people, forensic and intensive therapy; and
- Selected tertiary specialties, in accordance with national tertiary strategies. For example, for paediatrics, all specialist care will be shared, with level 3 intensive care being the responsibility of the new national paediatric hospital in Dublin.

What needs to change?

We acknowledge the distinguished history of medical service developments in Cork City, the different organisational histories, the unique contributions of the voluntary hospitals and the importance of the Bons Secours hospital to many city residents.

However, we would argue that it is now time for Cork City service providers to move forward, to accept that:

- No one organisation is presently in a position to deliver on the regional 'centre of excellence' model;
- The only way to satisfy international best practice standards in acute care is to operate the regional 'centre of excellence' from a single site in Cork City; and

- The CUH site is the only feasible site; this does not mean that the present CUH organisation becomes responsible for the new regional 'centre of excellence'. New governance arrangements will be needed so that all stakeholders fully contribute to meeting the new challenges presented by the new model of care.

In summary, there is a unique opportunity for Cork City to become a world class clinical and academic centre for acute and community care.

Some key principles

We address the practical actions in the later section on 'Implementing the transformation plan for Cork and Kerry', but there are some important points of principle worth emphasising at this point:

- We regard the present arrangements of acute services in Cork City as excessively fragmented and overdue for collective rationalisation, notwithstanding their individual distinct origins;
- The HSE needs to develop and lead a suitable forum to bring all stakeholders together so that: there is mutual respect; partnership working; collective planning, implementation and sharing of the responsibilities and challenges of the change agenda;

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- All acute care services will progressively transfer to the regional 'centre of excellence' from all other sites. This will be managed in two phases, the first focusing on the transformation of the Cork City and Cork County services and the second on the acute services in County Kerry.
- The intention is that every consultant presently undertaking acute care in Cork City will have 'rights of access' to provide such services in the new regional 'centre of excellence'.
- All non-acute care presently being managed on acute sites will progressively transfer to the nearest local 'centre of excellence', with the present consultants providing outreach support to maintain the service. These new centres need to be identified and developed in conjunction with PCCC developments. Within Cork City, the current MUH and SIVUH sites could be redeveloped as new local centre/s (see later section for more details);
- There is an urgent need to get on with planning for a single, well resourced critical care service on the CUH site, in order to facilitate the reconfiguration of acute care;
- Any change needs to build upon achievements to date and the work in progress for further improvement; and
- The pace of change needs to be consistent with maintaining stability in current service provision.

In summary, the HSE will need to develop a collective agreement about how the three providers deliver their obligations to support and contribute to the new model, namely developing:

- One regional 'centre of excellence' located on the CUH site for all acute care; and
- Clinical network and outreach services to five local 'centres of excellence'.

4. Improved emergency ambulance services

Improved emergency ambulance services are an essential element of successfully developing the network of local and regional 'centres of excellence'.

This is particularly in relation to enabling the improvement of both urgent care and emergency care services through the rollout of local Urgent Care Centres to replace small A&E departments and the development of one regional A&E and trauma service.

The ambulance service is presently implementing its own modernisation programme to improve the capacities and competencies of the ambulance workforce.

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Developing the Advanced Paramedic workforce

Today, patients presenting with an emergency clinical event do not receive emergency treatment until conveyed to the nearest A&E department. Treatment needs to commence within the 'golden hour' after the acute incident, or lives could be at risk because of the delay in starting treatment.

The recognised solution is to develop and deploy a comprehensive Advanced Paramedic workforce, competent to undertake clinical assessment of the emergency patient and commence life saving measures **immediately**, during the transfer to hospital. The ambulance service is in the middle of developing such a workforce.

This new approach, the commencement of emergency resuscitation 'in the home, or at the roadside', is designed to triage patients better, overcome the problems of the 'golden hour' and to take patients directly to the most appropriate emergency service, i.e. to the service most able to deal with their emergency condition, not simply to convey the patient to the nearest A&E, irrespective of the actual emergency condition.

Developing the Air Ambulance service for Cork and Kerry

The travelling times and distances involved in many parts of Cork and Kerry counties to reach hospital are such that the statistics are rightly quoted as one of the arguments for the retention and continued development of the existing local emergency hospital services, even although it is also recognised that the hospital will never be in a position to provide the same level of service as larger, better staffed hospitals.

Allied to the Advanced Paramedic development programme, therefore, is the need to reduce excessive conveyance times to the regional centre through the judicious use of the Helicopter Air Ambulance service, the recognised international best practice standard for patients to access life or limb saving emergency treatment as quickly as possible.

The ultimate objective is that conveyance by the Air Ambulance service should eventually become the norm, in step with acute care becoming a regional service and the anticipation of the emergency patient often having to travel greater distances.

We therefore recommend that the HSE gives consideration to:

- Developing the necessary service relationships between the HSE ambulance service and the Helicopter Emergency Medical Service in line with international standards;

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- Making full use of the existing air ambulance contracts between the HSE, the Air Corps and the Department of Defence and the recent expansion of their helicopter fleet;
- Reviewing and establishing, as necessary, a network of strategically placed helipads to potentially link all residents of Cork and Kerry with their regional 'centre of excellence'; and
- Supporting and building upon the excellent work presently being led by the voluntary sector for the expansion of the air ambulance service.

Ensuring an enhanced local emergency response capability for people living in the more rural areas

Under the optimal configuration for acute and community services, the travelling time for the residents in County Kerry will be much longer, particularly compared to other localities. Private transport travel times from County Kerry to Cork city and Limerick city, the nearest regional centres, range from around one hour to a maximum of 2 ½ to 3 hours.

Notwithstanding that the air ambulance system will become the mainstay of urgent patient transfer in the future, where patients live in the more distant areas of County Kerry, then enhanced local urgent services are also considered necessary.

There needs to be in place a range of services including: telephone access to an emergency triage and dispatch organisation; access to local community personnel who can act as first responders and who are trained and supervised within the emergency care network; access to advanced nursing, advanced paramedic and medical expertise, developed through GPs with specialist interests; and access to diagnostic services and tele-medicine links.

The most isolated areas in County Kerry are the Dingle Peninsula with a population profile of 10,000 and Caherciveen. The largest settlement in the peninsula is Dingle with around 1,800 residents. Travel times to Cork City and Limerick City are around 2 ½ to 3 hours.

It is recommended that within this peninsula and other similar communities, enhanced community hospital services are provided by further specialist training across the clinical workforce and access to a range of diagnostic facilities in order that, when necessary, a robust and safe initial emergency response can be given to patients by staff with the appropriate skills and competencies to define the condition, stabilise the patient and arrange for urgent transfer to acute care.

This will need to include timely access to both emergency road and air ambulance.

5. *The academic dimensions of the clinical change agenda*

This review is primarily a study of how HSE South acute and community clinical services need to change if they are to be in a position to deliver according to international best practice standards.

However, we regard it as also important to acknowledge the pivotal role of the academic institutes as a key resource of clinical leaders, motivators and facilitators of service change when it comes to:

- Optimising the delivery of leading edge, high quality services;
- Planning and delivering professional development programmes to meet future workforce requirements; and
- Expediting the introduction of service innovation and new technology solutions.

Therefore, it is sensible when planning for future Cork and Kerry services to be delivered in line with international best practice standards for the HSE to consider working more closely with the University College Cork and other tertiary educational institutions in order to better integrate the clinical and academic dimensions of service change. This means considering:

- Introducing a model of unified governance that acknowledges and respects the roles and contributions of all stakeholders, whether public, academic, voluntary, private, or charitable;

- The concept that education / training and research activities being an integral element of providing high quality care, not incidental or secondary to service provision;
- Ensuring that all staff have local access to education & training programmes and research opportunities across the whole acute and community network;
- Ensuring that clinical sites are resourced to provide a complete range of educational facilities;⁵⁷
- Ensuring that any service reconfiguration also serves to enhance the international reputation of both the clinical services and the academic institutes, and, therefore, attracts the recruitment and retention of leading experts and specialists;
- Ensuring that all research programmes are based upon competition, quality of outcomes and potential benefit to patients; and
- Developing a joint approach that facilitates the HSE and University College Cork meeting their respective obligations in relation to clinical service, professional development programmes, on-going expansion of undergraduate curricula and academic excellence.

⁵⁷ A recent audit of medical education and training facilities across clinical sites in Ireland identified a lack of suitable facilities

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Of particular note, worth more detailed consideration in relation to which type of forum or partnership is appropriate for joint working between all the stakeholders, is the recent introduction of the concept of the 'Academic Medical / Health Sciences Centre' into Ireland⁵⁸.

This concept is recognised internationally to have particular merit in relation to the synergies created through the joint promotion of both the clinical and academic agendas: the approach integrates the roles, responsibilities and functions of the clinician, teacher, researcher and academic and creates a 'bench to bedside' philosophy, from conducting basic medical research through to implementing improvements in clinical practice.

Finally, in respect of identifying all stakeholders eligible to participate in joint planning, it is worth remembering the important contribution that private sector provider makes. Within Cork, there is the Bon Secours Hospital providing a range of elective care, diagnostics and GP urgent access services. Plans are also advanced to establish a co-located private hospital at the Cork University Hospital site.

6. Developing a community midwifery and home birth service for County Kerry

We have already expressed our concerns and reservations about the sustainability of five out of the six obstetric services in HSE South when compared to international standards. The numbers of consultants are too low and the annual births too low to enable these services to meet international standards.

The strategic answer internationally is generally to establish midwifery services for low risk pregnancies with centralisation of all other pregnancies to an enhanced regional service. The Institute of Obstetrics and Gynaecology of Ireland has preferred to recommend keeping these smaller units open and operate a supporting network, a solution that has not been accepted by the HSE.

We also indicated that the current approach to midwifery services in Ireland is out of step with the international development in midwifery strategy and service development.

Taking this situation into account, the current circumstances for obstetric services at Kerry General Hospital offer the ideal opportunity to add to other pilot community midwifery programmes elsewhere and further stimulate the development of a national community midwifery and home birthing strategy for Ireland, one that reflects the international direction of travel in midwifery practice.

⁵⁸ Refers to the recent public announcement of plans for two new clinical / academic enterprises: The Dublin Academic Health Centre (an alliance of University College Dublin, Mater & St. Vincent's Hospital) and the Trinity Academic Medical Centre (an alliance of Trinity College Dublin, St James & Tallaght hospitals)

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We therefore propose that the obstetric service continues to be maintained and adequately resourced to provide the local support necessary to oversee and support the development of a co-located leading edge centre for community midwifery and home birthing practice in Ireland.

In terms of basic statistics, currently there are approximately 1,600 births per annum at Kerry General Hospital. An estimated 25% would be delivered by caesarean section by the local obstetric service or the regional service. Assuming that the protocols and pathways of care developed in identifying very low risk births results in only 50% of the remaining 1,200 births being eligible for the community midwifery unit, then this assumes that the midwife led facility would deliver around 600 births per annum.

We envisage this new community service being developed in the form of a 3 to 5 year clinical services research development project, managed jointly by the HSE, the obstetric service at the new regional centre in Cork, the National Council of Nursing and Midwifery, the School of Nursing and Midwifery, University College Cork and the Institute of Obstetrics and Gynaecology of Ireland.

Operationally, we recommend the appointment of a fourth consultant to provide additional capacity so that the whole team can equitably share the obstetric contribution needed to supervise the midwifery project.

The primary objectives of the study would be to:

- Deliver a high quality local community midwifery and home birth service to optimise the safe delivery of midwife led births for the residents of County Kerry, operating as a member of the obstetric network service;
- Establish, challenge and validate the criteria for referral of midwifery patients to the local obstetric service and to the regional obstetric service;
- Conduct a detailed audit of both the patient experience and the mother and baby clinical outcomes for the local obstetric and midwifery services and if referred to the regional obstetric service for the duration of the study; and
- Thereafter, to review both the viability and the validity of continuing the local obstetric service, on the assumption that the full potential of the new community midwifery service has been realised according to expectations and is delivering in line with international best practice standards.

For that period of time while the obstetric service continues, it will continue to be supported by the paediatric and anaesthetic services.

In relation to the transformation of services in County Kerry, therefore, Phase One will focus on maintaining acute services, (with the exception of ENT, already identified for reconfiguration).

At the same time as developing the local services to meet the criteria as 'centres of excellence' and establishing the necessary infrastructure to support the new model of acute and community care.

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Phase Two will focus on the regional 'centre of excellence' finally providing all acute care for Cork and Kerry.

The current acute hospital services in the South East require further study

Whilst our terms of reference for this review do not deal with the specific arguments for reconfiguring services in the South East, the comparison with international best practice identifies that the present configuration is not sustainable into the long term. It needs to change.

In particular, urgent consideration needs to be given to detailed assessment and resolution of the risks associated with a number of services that clearly lack either clinical viability now or sustainability into the future, including:

- The A&E emergency departments, other than at Waterford Regional Hospital;
- The obstetrics services, split across four sites;
- The paediatric services split across four sites;
- The fragmented nature of critical care services;
- The emergency surgery services;

- The spread of surgical cancer workload; and
- The associated medical workforce on-call rotas.

Currently, the four acute hospitals in the South East each have between 200 to 400 beds. They each serve a county population, with some regional based services at Waterford Regional Hospital.

Also, in taking forward the development of the model for the local and regional 'centres of excellence' in the South East, a detailed study is required on how best to achieve a truly effective regional 'centre of excellence' in the South East, i.e. one that:

- Has a true minimum catchment population of 350,000 – 500,000;
- Provides patients with an alternative choice within the South East, rather than continuing to access Dublin hospitals for their care;
- Satisfies the HSE policy of regional self-sufficiency;
- Achieves equitable access to services for the residents of the South East.

In summary, we recommend that the HSE, given the service and quality of care issues identified, conducts a detailed study to define the optimal configuration of hospital services for the South East.

Understanding how the optimal configuration will improve services and practice

Optimising patient flows and activities

In this section, we forecast the change in how patients currently managed in acute hospitals services would be treated in the future, based on the proposed optimal configuration in 2012 and apply those changes across the planned regional and local 'centres of excellence'.

The analysis assumes that all residents, with the exception of some residents in County Kerry, are treated within the Cork and Kerry area, with recognition that some tertiary services may be provided outside of HSE South.

It also excludes any additional activity that the regional centre may attract from outside the counties of Cork and Kerry, assuming that the South East regional hospital is able to provide a similar level of services for its county resident population and that other regions achieve regional self sufficiency.

The methodology for modelling the anticipated volumes of patients in 2012 includes the following assumptions:

- 2005 resident based data has been used as the baseline for modelling the analysis⁵⁹;
- Population growth to 2012, based on Central Statistical Office forecasts;
- Half the population of County Kerry will elect to have acute care from the acute regional hospital in Limerick city⁶⁰; and
- Bed capacity modelling assumes 80% occupancy for emergency admissions and 90% for planned care admissions; it also takes account of peaks in demand and trends in hospital design for best practice in the management of infection control.

Within our modelling, we have made assumptions about the level of improvements that can be made in preventing avoidable admissions to hospital and achieving a safe, earlier discharge from hospital.

Improvements in acute hospital clinical efficiency to current best practice standards traditionally draw on international, national and peer group comparators. We have complemented this approach with our own evidence-informed 'best practice' template for targeted collective groups of similar care called Diagnostic Related Groups, procedures and diagnosis.

⁵⁹ ⁵⁹ The hospital data came from the Hospital Inpatient Enquiry (HIPE) system collected by the HIPE and National Perinatal Reporting System (NPRS) Unit of the Economic and Social Research Institute.

⁶⁰ Examining private transport travel times between towns in County Kerry to both Cork city and Limerick city, suggests that if patients were to access those services which were closest to them, then approximately 50% of residents would access regional hospital services in Cork city, while the other 50% would access inpatient services in Limerick.

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The best practice template, which covers a range of Diagnostic Related Groups (DRGs), is derived from published literature, experience from elsewhere, and other relevant sources. We have successfully used this in working with whole health communities and acute hospitals in changing clinical practice so that the move towards 'best practice' becomes the 'normal way of working'.

Key assumptions in this approach include:

- Admissions avoidance

Applying admission avoidance assumptions that represent the percentage of admissions that typically could be avoided if appropriate alternative care provision was provided; either within a home setting or within primary and community services. Examples focus particularly on chronic disease management conditions;

For example, an assumption is made that one third of all emergency admissions for chronic obstructive pulmonary disease can be avoided. This assumes early identification of COPD/asthma in primary care together with the development of programmes for self-care and self management, automatic recall review and reassessments in primary care, and the provision of pulmonary rehabilitation for patients earlier in the stage of the disease. One particular Primary Care Trust in the UK, which has provided its general practitioners with spirometers, has seen a reduction in admission rates for COPD of up to 50% within 2 years.

- Day surgery

Increase in day case rates, using our evidence base of increases in day case rates, the UK Audit Commission basket of day case procedures and the transfer of all planned short stay inpatient admissions of 0 and 1 day length of stay;

- Reducing delayed transfers of care

Patients who have an excess length of stay are often referred to as delayed transfers of care. Some of these long lengths of stay are due to inefficiencies within the hospital system such as delays in diagnostics, therapy assessments, or receiving senior medical opinion, whilst other delays are often associated with waiting for social services assessments and/or places within nursing and resident homes.

By ensuring that systems within hospital are streamlined and that sufficient resources are available within primary, community and social care services, then assumptions can be made regarding the potential reduction in these excess lengths of stay;

- Faster clinical throughput and shorter length of stay

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Assumptions have been made regarding improvements in length of stay. Firstly, it is assumed that where the length of stay by DRG is longer than the current national average for Ireland, then all patient lengths of stay will achieve this. If the patient length of stay is currently shorter than the national average, then no reduction is assumed. Secondly, where UK national and international best practice can be identified, a further reduction is applied for particular DRGs; and

Assumptions being applied elsewhere suggest that approximately two-thirds of out-patient attendances and 70% of those attending A&E departments could be more appropriately and conveniently dealt with in local settings.

Applying these assumptions provides a projection of activity and bed requirements for 2012 across the regional and local centres, and for out-patients and A&E attendances, as illustrated in Figure 6 below.

For example, best practice evidence for primary hip replacement indicates an acute length of stay currently being achieved for 4 days, through 'same day surgery', robust practice guidelines and clinical pathways coupled with educational sessions for patients undergoing joint replacement surgery to prepare them and manage their expectations.

Another example is fast track multimodal rehabilitation programmes (combining pain management, stress reduction, early oral nutrition and early mobilisation), safely reducing post-operative lengths of stay from 8-10 days to 2-3 days^{61 62 63 64}

- Increased number of outpatient and A&E attendances being seen and treated in local settings.

⁶¹ Rapid rehabilitation in elderly patients after laparoscopic colonic resection. *Br.J.Surg.* 2000 87(11): 1540-5

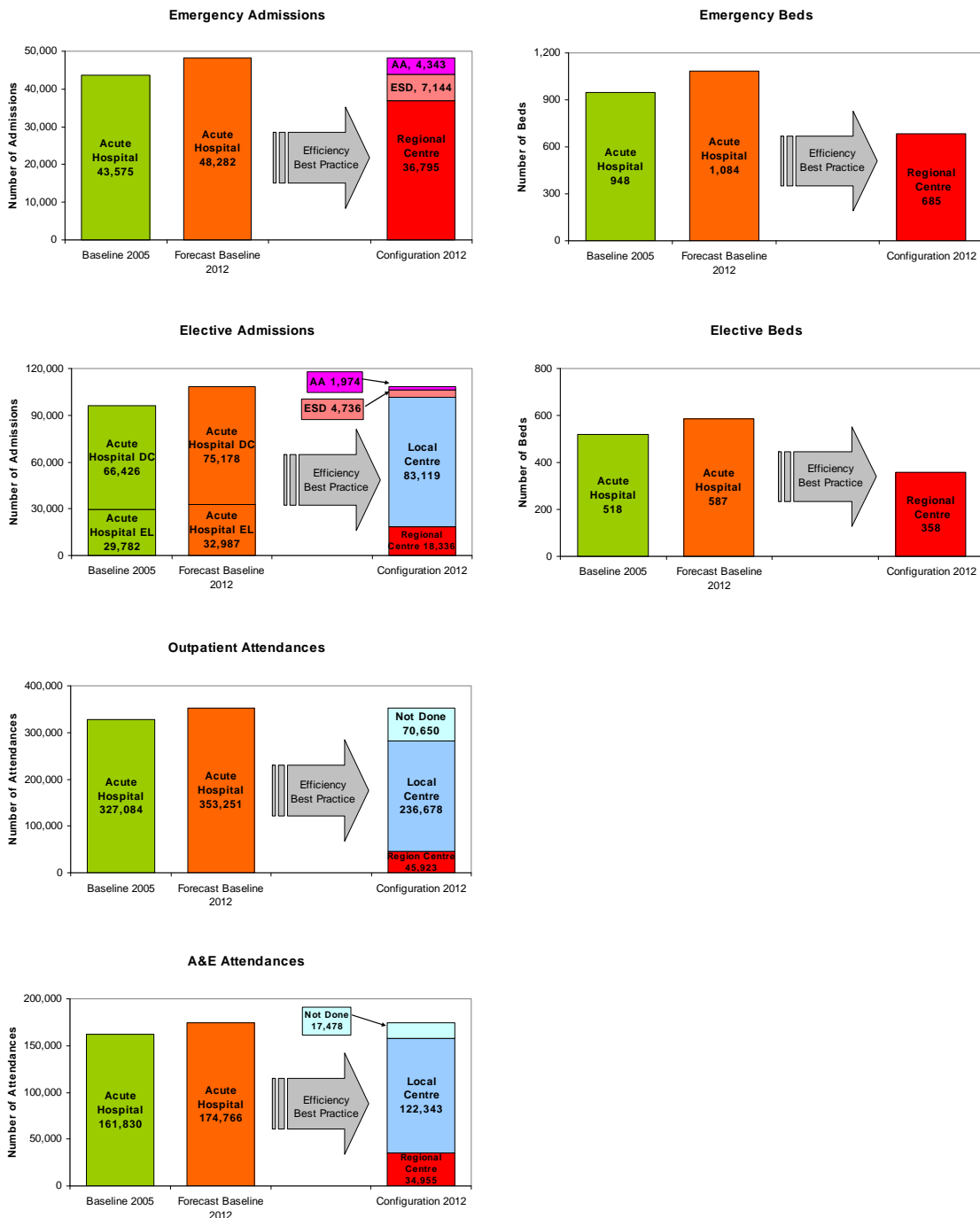
⁶² Colonic surgery with accelerated rehabilitation or conventional care. *Dis. Colon Rectum* 2004 47 (3): 271-7

⁶³ Multimodal strategies to improve surgical outcome. *Am. J. Surg.* 2002 183 (6): 630-41

⁶⁴ Multimodal analgesia for radical prostatectomy provides better analgesia and shortens length of stay. *J. Clin. Anaesth.* 2007 19 (4): 264-8

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Figure 6: Profile of projected activity volumes by care setting ⁶⁵



⁶⁵ AA = Admissions Avoidance, ESD = Earlier Supported Discharge, EL = Elective, DC = Day Case.

Source for proportional split of outpatients and A&E attendances is Healthcare for London: A Framework for Action, Technical Paper, 2007

This shows that the requirement for inpatient beds at the regional 'centre of excellence' is 1,043; 685 emergency inpatient beds and 358 elective inpatient beds. Excluding those patients resident in County Kerry who would access regional services in Limerick rather than Cork (based on transport travel times), then the regional centre in Cork city would need 928 beds.

The 83,000 day cases would be undertaken at the local centres as would two-thirds of the outpatient attendances and 70% of A&E attendances, who would use the Urgent Care Centres.

For each locality, the range of day surgery services provided may differ depending on the level of demand, for example, ophthalmic surgical services may be centralised in a fewer number of the local 'centres of excellence', given the number of cases, the level of complexity and the need to maximise the use of the specialist equipment required.

Primary and community settings

For those patients identified above who could either avoid admission (AA) to acute hospital services or who could be supported in earlier supported discharge (ESD) from hospitals, a quantification of the potential additional primary and community resource requirements needs to be undertaken for these patients.

To support this analysis, we have used the findings of the recent national review of bed utilisation⁶⁶. This review identified a substantial proportion of inpatients in acute hospitals who could have been cared for in more appropriate care settings, both at admission and during their stay in hospital, and confirmed our analysis of hospital care, identifying the scope to reduce the current acute hospital bed base by around 40%.

The national review identifies the range of appropriate alternatives to acute hospital care that would be required, both at admission and on the day of care, and the proportion of patients occupying an acute bed who would satisfy these alternatives. For Cork and Kerry, these alternatives and proportions are shown in Table 11.

Overall, the provision of alternative settings outside the acute hospital setting provides the basis of substantial bed redundancies, over 400 beds on our modelling assumptions, and a release of resources for other investment purposes.

⁶⁶ Acute Hospital In-Patient Bed Utilisation Review, Health Service Executive, April 2007

Table 11: Proportion of patients for alternative care settings in Cork and Kerry

Alternative Care Settings	Proportion of inappropriate admissions	Proportion of patients whose length of stay could have been reduced
None	22%	9%
GP	7%	14%
Home with support	11%	27%
Home Care Packages	4%	8%
Non Acute Bed	1%	8%
Non Acute Bed & Therapy	13%	22%
Hospice	2%	3%
Mental Health Bed	2%	2%
Diagnostics/assessment	38%	5%

For inappropriate admissions, this shows that:

- 22% required no alternative service;
- A further 7% required access to the normal services of a GP;
- Almost 40% of inappropriate admissions required access to diagnostics and assessment outside of the acute hospital setting; and
- The remaining patients required alternative bed based support or home care support.

For those patients whose length of stay in an acute hospital could have been reduced:

- 9% required no support and could be discharged immediately;
- 14% required access to the normal services of the GP;
- 30% required access to a non-acute bed either with or without therapy services; and
- 35% required home care support or a Home Care Package.

We have taken these findings of the alternative care settings from the bed utilisation review and applied them to the annual number of patients that we have identified for admission avoidance and earlier supported discharge, modelled for 2012.

Our analysis has identified around 6,317 patients whose admission to an acute hospital could have been avoided and 11,880 patients whose care could qualify for earlier supported discharge.

Having identified the number of patients requiring access to alternative services in primary and community settings, we have then converted this into required capacity (i.e. the additional capacity needed over and above what is available today) using the percentages of the in-patient population identified by the Acute Hospital In-patient Bed Utilisation Review as eligible for care across the variety of alternative care settings.

To do this, we have made the following assumptions, identified from workshops with PCCC clinical and managerial staff:

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- The average length of stay in a non-acute bed with therapy is 4 weeks;
- The average length of stay in a hospice bed is 4 weeks;
- The average length of stay in a mental health bed is 4 weeks; and
- Some 10 whole time equivalents (WTEs) can support 1,000 referrals a year.

Evidence is available from the UK ⁶⁷ ⁶⁸, which gives a comparison of community teams providing both rapid response and reablement services in order to avoid admissions to hospital and support earlier discharge. This shows that a multidisciplinary complement of staff of 10 WTEs can support 1,000 referrals per annum.

Table 12 and Table 13 identify the additional capacity requirement in Cork and Kerry to support the changes in acute hospital care for avoidable admissions (Table 12) and earlier supported discharge (Table 13).

⁶⁷ Southern Norfolk Primary Care Trust – Rapid Response Team Interim Evaluation Helen Ritcher, 1st Quarter Report, 2005

⁶⁸: The Rapid Response Team, NHS Grampian, Hansha Patel, May 2003

Table 12: 2010 impact on PCCC to avoid inappropriate acute hospital admissions

Resource Type	Proportion	Patients	Assumption	Resources	Resource Currency
None	22%	1,390	None	0	
GP	7%	443	None	443	Consultations
Home with support	11%	695	10 wtes supporting 1,000 referrals	6.95	WTEs
Home Care Packages	4%	252	Patients	252	Patients
Non Acute Bed	1%	63	Extended Care	63	Patients
Non Acute Bed & Therapy	13%	821	LoS of 4 weeks	63	Beds
Hospice	2%	126	LoS of 4 weeks	10	Beds
Mental Health Bed	2%	126	LoS of 4 weeks	10	Beds
Diagnostics	38%	2,401	Patients	2,401	Patients

Table 13: 2010 impact on PCCC from supported earlier discharge

Resource Type	Proportion	Patients	Assumption	Resources	Resource Currency
None	9%	1,069	None	0	
GP	14%	1,663	None	1,663	Consultations
Home with support	28%	3,326	10 wtes supporting 1,000 referrals	33.26	WTEs
Home Care Packages	8%	950	Patients	950	Patients
Non Acute Bed	8%	950	Extended Care	950	Patients
Non Acute Bed & Therapy	23%	2,733	LoS of 4 weeks	210	Beds
Hospice	3%	356	LoS of 4 weeks	27	Beds
Mental Health Bed	2%	238	LoS of 4 weeks	18	Beds
Diagnostics	5%	595	Patients	595	Patients

Overall, for the PCCC to successfully take over the care of all patients we have identified as inappropriate admissions and earlier supported discharges, we estimate, subject to further detailed study and planning, that additional resources would be needed as follows:

- A further 40 WTEs across PCTs to support patients in their own home;
- 1,202 patients requiring Home Care Packages. This will also result in additional requirements for staffing resources;
- 1,013 patients requiring access to a non-acute bed in a community hospital, residential or nursing home;
- 273 non-acute beds with therapy support (rehabilitation);

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- 37 hospice beds;
- 28 mental health beds; and
- 2,996 patients requiring access to diagnostics and assessment.

To assist the localities in determining their plans, the requirement for capacity in alternative care settings has been profiled across the five localities, based on overall population proportions, and is shown in Table 14.

Clearly, detailed planning will determine whether any new beds actually need to be put into the system to provide the estimated 273 additional rehabilitation beds. The present beds in the small acute hospitals that will be developing into local 'centres of excellence, will become available for rehabilitation.

Table 14: Additional resource requirements by locality

Local Health Office locality area	Patients requiring access to diagnostics	Additional Home Care Packages	Additional PCT Staff (WTEs)	Additional Rehabilitation bed equivalents
North Lee	809	325	11	74
South Lee	869	349	12	79
North Cork	389	156	5	35
West Cork	270	108	4	25
Kerry	659	264	9	60
Total	2,996	1,202	40	273

Seamless care through the clinical networks

This section gives an understanding of how the key clinical networks will function in practice.

There are already examples of good informal clinical networks in place, the concept of optimal configuration builds upon that experience and formalises the networks to become part of the essential infrastructure for the delivery of seamless, high quality care across traditional organisational boundaries.

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Emergency Care Network (Adult and Children)

The local elements of the network:

- The advanced paramedic workforce will be in the front line, delivering the initial emergency response 'in the home or at the roadside' for all major, life-threatening events, strategically deployed to be accessed locally by the whole population. They will immediately assess, resuscitate, stabilise, triage and transfer the patient directly to the appropriate emergency service. They will be in constant clinical communication, including real time remote physiological monitoring as necessary with the regional centre team. This approach helps solve the perennial argument about travel times to A&E and the concern about missing the 'golden hour' when lives can be saved.
 - This mobile emergency response is tailored to fit the urgency of the patient's needs. Definitive emergency management begins in the home, and if clinically safe, the patient remains at home, with arrangements for continuing care as necessary by the GP, public health nurse, local community health and social service staff;
- Experience to date from the UK national pilot sites indicates that the advanced nurse practitioners in emergency medicine already substantially reduce the rate of conveyance of emergency patients to hospital ⁶⁹.
- The mobile emergency service is complemented by the local Urgent Care Centres, commonly open for 12 hours per day, 7 days a week, providing services for:
 - The management of minor injuries and illnesses;
 - Patient observation, assessment and treatment over the extended day, to ensure that patients are only transferred to the regional service if they truly require more specialised care;
 - The Urgent Care Centres are directly managed by the network:
 - They are staffed by advanced nurse practitioners and clinical nurse specialists, professionally accountable to the regional A&E team for the quality of service;
 - The staff are supported by 'hot lab' facilities, plain X-ray, and 24/7 telemedicine and teleradiology linked to the regional A&E centre duty team;

⁶⁹ Data from Coventry & Warwickshire Ambulance Service, UK. Teamwork Management Services Ltd, Communication 2005

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- They deal definitively with a wide range of minor injuries and urgent conditions. This range of competencies will continue to expand as part of the professional nursing development programme, for example, to include the management of simple fractures;
- Both the advanced paramedic and Urgent Care Centre nurse practitioners work closely with the GP emergency service and consult routinely to optimise each individual emergency response;
- The local GPs themselves have an enhanced range of resuscitation skills, competencies and equipment to complement those of the advanced paramedics and emergency nurse practitioners; and
- All the above services are integrated with, and have 24/7 access to, local community nursing, social care, and voluntary sector teams.

The regional elements of the network:

- The regional A&E centre, with a multi-disciplinary team, is led by a group of 8 or more consultants providing 24/7 supervision, input and specialist advice across the whole network; and
- Patients being transferred from the local service for more specialised care are triaged directly to the most appropriate emergency unit in the regional centre, for example, medical assessment, coronary care, trauma unit, and critical care.

The organisational infrastructure:

- There is formal, 'real time' integration across the whole workforce on duty, i.e. GPs, paramedics, advanced nurse practitioners, A&E staff, on-call hospital consultants, emergency assessment units, coronary care units, critical care, duty community nursing, social care and voluntary sector teams;
- The smooth day-to-day running is the responsibility of the regional arm of the national ambulance service. It manages all staff deployment, and is supported by real time monitoring of status, access to care and available acute beds;
- There is a single point of entry into the emergency care system and a single assessment and triage process across the network;
- All the frontline workforce rotate regularly through all the service elements of the network for wider experience and professional development;
- The advanced paramedic workforce is strategically deployed across the network to provide a local first response service for life-threatening patient events;
- The network is technology enabled to provide:
 - A system for staff 'in the field' to communicate across the whole network, seek urgent specialist advice, use teleradiology, telemonitoring; and
 - Support for training and development through tele-education; and

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- The emergency care network liaises closely on a daily basis with its 'partner' network responsible for critical care.

Critical Care Network

The local elements of the network:

- There is no provision of acute critical care of any nature at the local level;
- However, the local centre is still a key member of the critical care network. It provides a post-acute/step down/rehabilitation programme that:
 - Enables the safe, early transfer of the patient closer to home; and
 - Optimises the patient flow through the acute regional critical care service, ensuring the most effective use of these beds.

At the regional level:

- The critical care centre is based at the regional centre, co-located with those acute specialties most likely to need immediate access;
- There is a full multi-disciplinary critical care team, reflecting the complexity of patient illness, co-morbidities and management needs, led by the consultant intensivists, with input from clinical nurse specialists, physiotherapists, respiratory technicians, clinical laboratory medicine specialists, nutritionists, pharmacists, radiographers, speech and language therapists, occupational therapists, medical physics and engineering and staff in training;

- The critical care centre synchronises all elements of its service:
 - A 24/7 system of comprehensive Level 2 and Level 3 critical care support for seriously ill patients and for patients undergoing complex planned or emergency surgery;

Today's best practice evidence confirms substantially improved surgical outcomes for all patients undergoing complex surgery if they have Level 2 care for the first 24 to 48 hours, with reduced rate of complications and shorter lengths of hospital stay ⁷⁰.

- A 24/7 system of preventative critical care outreach surveillance to identify 'at risk' patients on the acute general wards;
- A critical care rehabilitation programme, delivered across the whole network; and
- A dedicated retrieval service.

Organisational infrastructure:

- The regional critical care centre is at the heart of the regional centre;
- The service is led by a consultant team of at least 8, providing 24/7 close supervision and input across the clinical network, with some consultant intensivists working full time in critical care, others part time and supporting the hospital anaesthetic service;

⁷⁰ Modernising care for patients undergoing major surgery, Improving Surgical Outcomes Group, 2005

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- There is a dedicated operational management structure to ensure the smooth day-to-day running and organisation of the clinical network;
- There are robust triage, transfer, admission, discharge and retrieval guidelines and procedures in place; and
- The intensivist team lead a system of critical care education and training for the whole network.

Planned care network

The local elements of the network:

- The local centres would provide a broad range of routine services from most specialties, as described in earlier sections. This means most patients are able to access local management of their condition.

At the regional level:

- Planned inpatient services, for more major or serious conditions, are delivered only in the regional centre. This ensures the provision of robust and sustainable services facilitating sub-specialisation, higher clinical standards, improved clinical outcomes, clinical training, new legislation and other workforce pressures; and
- There should be separate streaming of planned inpatient and emergency admissions through the regional centre. This will minimise the potential disruption to both services, provide a ring fenced complement of elective beds and result in fewer cancellations of planned inpatient admissions.

Cancer care network

The local elements of the network:

- Day case and outpatient medical oncology services, in line with the PCCC and National Cancer Control Strategy;
- Appropriate care closer to home or at home, with access to supportive and rehabilitative services including pain management, psychosocial support and end of life care; and
- Integrated, multidisciplinary team working involving primary, community and social care services.

The national/regional elements of the network:

- Site specific cancer procedures undertaken by appropriately trained sub-specialty surgeons. The concentration of critical mass of patient volumes will ensure better clinical outcomes and quality of care for patients;
- Sufficient numbers of trained oncologists, radiologists, cancer pathologists, clinical nurse specialists, radiographers, etc. ;
- Integrated working between the regional and tertiary service and the local centre and community services;
- Ensuring each site is visited, audited for compliance with standards and confirmed to be undertaking sufficient procedures each year, at least 1 or 2 per week for breast and colorectal cancer;
- Preventing individual surgeons and hospitals undertaking occasional surgery;

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- Ensuring that the surgeon works as a key member of a multi-disciplinary team;
- Ensuring that all patients have the management regularly reviewed by case conference across the network;
- Implementing standard clinical pathways that set the standards of care; and
- Ensuring the results of all clinical outcomes are formally audited.

They are based upon applying best practice, with patients not being automatically conveyed to hospital in an emergency, where most care can safely happen outside of the acute hospital setting, and with the acute regional hospital reserved for the rapid, expert delivery of complex care.

Delivering better care in practice

To illustrate how the optimal configuration of services will benefit patients in the future, we have provided a number of different patient scenarios for a variety of common conditions.

Each scenario is in two halves:

- **BEFORE**, describing the steps and the way that patient care is delivered today; and
- **AFTER**, describing the steps and the way that patient care will be delivered in the future, once the optimal configuration of acute and community services has been fully implemented.

The scenarios assume that this new way of working, the system, workforce, networks, resources and infrastructure, are all in place to make it all happen in a fluid, seamless manner.

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SCENARIO ONE

Gretta has a fall at home

Gretta is 86. She lives alone. She has a history of dizzy turns. This time she fell soon after waking up in the morning and was unable to get up from the floor. She was found on the floor by the home help later in the morning.

BEFORE

The home help phones for the emergency ambulance. It arrives 20 minutes later. The home help packs a small suitcase, she knows Gretta is going to be in hospital again. She was in for 3 weeks the last time this happened. One hour later Gretta is in the A&E department in her local hospital, being clerked in.

Then, she settles down and waits. Crazy situation, she thinks to herself, what am I doing here, they never find anything they can treat, they can't cure me, it is just one of these 'getting old' things she has learnt to live with.

But try telling the young doctors that. She is always admitted, always investigated, inside out. She ends up in a ward and she knows that she will be mostly stuck in bed for the next two weeks, by which time she will be seized up, hardly able to walk at all!

The round of tests lasts two weeks and always the same result – reassurance and keep taking the tablets. Then, when she is ready to go home, the system isn't. She has to spend another week in hospital, waiting to get her home help restarted. "Why can they never plan ahead?" is always the question Gretta asks herself, as she finally gets back home.

AFTER

The AP arrives shortly after receiving a call from the home help and finds Gretta's condition to be stable with no evidence of serious injury. She is alert again, her vital signs and point-of-care tests are normal, her ECG is normal and she is able to walk unaided, without any pain.

The paramedic decides that Gretta can safely stay at home, but she needs home follow up and further investigations. She makes three referrals, one to the PCT to arrange a check up visit later

that day, one to the Falls clinic at the local centre for an urgent appointment and one to the home telecare service, to assess her suitability for home monitoring.

The nurse from the PCT finds Gretta stable and in a satisfactory condition. Daily visits are arranged, during which time Gretta receives advice about falls prevention and her home is checked out to make it as safe as possible for her. She attends the Falls clinic one week later. The community consultant geriatrician reviews her medication, reduces the anti-hypertensive dosage (after a tilt test for postural hypotension) and her night time sedative medication, as well as starting her on Calcium+Vit. D3 tablet.

Gretta is aware that she may still fall, but she knows that she is well supported. The home telecare service keeps an eye on her automatically and the PCT is there if she needs them. She likes to feel independent.

SCENARIO TWO

George is very short of breath

George is 52. He is an ex-factory worker known to have chronic lung disease. He still smokes a little as well, despite all the advice.

George experiences increasing dry cough and worsening of his breathlessness over 3 days since starting with cold-like symptoms. His symptoms do not seem to improve despite increasing his inhaler use.

He becomes increasingly anxious with his increasing breathlessness and rings emergency services to be taken to hospital, yet again.

BEFORE

The ambulance arrives 20 minutes later and George is taken to his A&E, a very familiar place to him, he has lost count of the number of times he has had to go to hospital. "Why can't I be admitted directly to the chest ward?" he always asks himself as he goes through the door.

He's greeted by the A&E staff on first name terms, "Not again!" they always joke with him. At least it gets him taken quickly into a cubicle and put on

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oxygen. The respiratory registrar arrives an hour later, he is examined, told he has another chest infection, gets yet another chest X-ray and gets admitted 2 hours later.

He's starts on IV antibiotics, his inhaler is changed, he gets his usual chest physiotherapy twice a day and five days later, feeling better, his treatment course completed, he's discharged, until the next time.

AFTER

George's emergency call is triaged to the AP, on the probability that patients with chronic chest problems do not always need to go to hospital any more. The AP arrives within 20 minutes. He assesses George's general condition and his lung function, including capillary blood gases.

He makes the decision that George can be managed at home, if he has the support of the new COPD team (trained to treat patients with troublesome chronic chest problems at home). After discussion George agrees to give it a try. He has also been told about the new service during his last admission to hospital.

The AP contacts the PCT to alert them to George's situation and also the COPD specialist nurse to arrange a visit to George at home later the same day. The COPD specialist nurse carries out a detailed assessment including blood tests and, after discussing George's condition with the chest specialist at the regional centre, confirms that it is safe for George to be managed at home, with chest physiotherapy, antibiotics, steroid tablets and another inhaler prescribed through his GP surgery.

The COPD specialist nurse also arranges for George to attend his local centre for a chest X-ray two days into treatment. The chest specialist looks at the film by remote imaging, is satisfied with progress and reassures George directly. The COPD specialist nurse also helps George to improve his inhaler technique and instructs him on how to record his peak expiratory flow (simple test of lung function) every morning and when to contact the community COPD team or his GP.

Four days later, George is reviewed in the COPD urgent access clinic in the local centre by the consultant chest physician. His condition remains satisfactory. George is also very satisfied. He has managed to stay out of hospital, a real success.

He understands his lung condition better. And, he has his very own team to look after him if things get out of hand again. And, he has stopped smoking, just for them.

SCENARIO THREE

Eileen has a 'funny turn'

Eileen is 41. She's had diabetes for the last 3 years. Periodically, she attends her GP for a check up or the diabetic specialist nurse (DSN) to see how she is doing. One morning, shortly after arriving in her office, her colleagues notice that she is 'not herself' and appears very drowsy, becoming almost unresponsive at one point. Not knowing what to do, they call the emergency services.

BEFORE

The call is triaged as an emergency. The ambulance arrives quickly and transports Eileen to the A&E department within 30 minutes. She is now comatose and unresponsive. She is triaged directly into the resuscitation room and the A&E registrar is attends urgently. A finger prick blood test quickly diagnoses a low blood sugar. She gets a glucagon injection and oral dextrose. Eileen quickly recovers consciousness and wonders what happened to her.

She is referred to the duty medical team for further assessment. She is seen by the medical SHO and is admitted for further investigation. She feels OK but takes his advice and some 4 hours later, she is transferred from A&E to the ward.

The next morning she is seen by the consultant on his post-take ward round (when the consultant reviews all the patients admitted the day before).

Arrangements are made for Eileen to be referred to the consultant diabetologist and the dietician. She feels fit enough to go home, but is told she might have to wait to get an out-patient appointment, "Better to stay", she is advised. She stays.

The next morning, she is seen by the Diabetic Nurse Specialist (DNS), the same one who holds a clinic periodically in the GP surgery and understood how she had got her food and insulin

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out of balance. Even so, the DSN has no authority to discharge her home, despite her blood sugar tests, several of them, being OK.

Two days later, she is seen by the diabetologist, with the DSN and the dietician in attendance. After discussion and advice about her diet and insulin dosing, she is finally able to go home, reassured, eventually, with an appointment to be seen at the Diabetic clinic in six months time.

AFTER

The emergency call is triaged to send the AP, in view of its urgency. The AP arrives within a 30 minutes. Eileen is comatose, lying on her side and her airway is clear. A finger prick blood glucose quickly reveals the cause: She is hypoglycaemic (low blood sugar). The AP gives a glucagon injection followed by oral dextrose, which results in rapid improvement of Mary's condition.

Satisfied with her rapid recovery, the AP decides it is safe to not convey her to the Urgent Care Centre at the local centre. The AP phones Mary's DSN, explains the situation and arranges for Eileen to be visited at home later in the day. Together, they work out that Eileen was rushed that morning, late for work and hardly ate any breakfast but had automatically remembered to take her usual morning Insulin dose. The DSN updates Eileen on what she needs to understand with regard to her diet, Insulin dosing and activity.

It was a timely reminder to Eileen to take more care. Being able to contact the DSN at any time is particularly reassuring. She doesn't think she will need help from now on, apart from her annual checks, but it's nice to know it is there if needed.

SCENARIO FOUR

Gerry has a stroke

Gerry is a 64 year old publican. His medical history includes being hypertensive, overweight and having an elevated cholesterol. He isn't the best at taking his heart tablets and he likes his food too much to diet sensibly. He's locked up the pub for the night and is mid-way through his favourite malt, his 'medicinal' as he calls it, when he suddenly loses the use of his left arm and his

speech becomes slurred.

BEFORE

His wife phones for an emergency ambulance. George arrives an hour later in the A&E department of his local hospital. He is triaged as an emergency and seen promptly by the A&E duty doctor, a SHO (junior member of the A&E team). George is diagnosed as hypertensive and suffering from an acute stroke.

He is made comfortable and told that he is being referred to the general medicine team. He is seen by the duty doctor (another SHO) and admitted to the general medicine ward. The consultant physician examines him the next morning on the post-take ward round and confirms the clinical diagnosis. His paralysis and loss of speech have become more obvious since admission. George has an urgent CT later that day. It confirms an embolic stroke and later that evening, nearly 24 hours after admission, George starts thrombolytic treatment to prevent further clotting in his blood.

The local hospital does not have a dedicated acute stroke unit and team to look after patients with strokes. George is unaware of this special service and that patients benefit from quicker recoveries and better outcomes. Despite this, he starts to make a good recovery, gets regular physio and is soon up and about, with help.

George's recovery is uneventful. One week after admission, he is seen by the cardiologist who adjusts his blood pressure tablets. Three weeks after admission, he has recovered enough to go home, to continue his exercises as instructed and attend physio as an out-patient.

Three months later, George feels fully recovered.

AFTER

His wife telephones the emergency number for the GP on-call team and is surprised when she gets the emergency ambulance centre, until she remembers the circular she got the previous week, saying that all emergencies are now going through the one call centre 'to give the best response' or some blurb like that. She hopes it is true as she goes on to give the details.

"We'll send an emergency ambulance and our Advanced Paramedic" was the response. The AP arrives 15 minutes later. He finds Gerry drowsy but

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responsive, clear airway, raised blood pressure at 160/100 and with signs of a stroke affecting mostly his arm and not speaking clearly. His point-of-care tests are normal. He explains to Gerry and his wife that he needs to go, right now, to the Stroke Unit at the regional centre, for urgent tests and specialist treatment.

He contacts the duty doctor for the Stroke Unit to let him know of Gerry's condition and book him in as an emergency, giving his ETA as 2.30 am.

"Fine", said the doctor, "if his condition stays stable, take him straight to X-ray for his CT, and wire him up on the way so that we can follow his vital signs, just in case he deteriorates."

The duty stroke physician examines Gerry on arrival and confirms the clinical diagnosis. The spiral CT brain scan shows that he has suffered an embolic stroke that is treatable with thrombolysis (to stop excessive clotting in the blood). Gerry finds himself in the acute stroke unit within 3 hours of his attack, on thrombolytic therapy and being carefully monitored.

The next morning he is assessed by the Speech & Language specialist, to make sure his swallowing is OK and by the stroke rehabilitation team to plan his recovery programme. The stroke specialist adjusts his blood pressure tablets.

Within 24 hours, his arm weakness and speech begin to improve and 2 days later, still stable, he is transferred to his local centre, just 20 minutes from home, to continue intensive physiotherapy in the rehabilitation unit.

Five days later he is home, making good progress, the weakness improving, doing his physiotherapy as instructed, receiving a daily phone-call from the physiotherapist on the PCT, the same one he had met in the local hospital. He has also taken the lifestyle advice he received during his recovery. No more smoking for him and he will remember to take his tablets from now on and yes, lose some weight, but that is the tough bit – he likes his food.

A week after discharge, the physiotherapist visits him at home to confirm satisfactory progress. Three months later, Gerry is fully recovered and back at the bar, telling everyone about his experience. He can't believe he got his X-ray in the middle of the night.

SCENARIO FIVE

Fionnuala gets peritonitis on holiday in Dingle

Fionnuala is 7. The family always go to the Dingle peninsula for the holidays and always stay at the same hotel. They like to get away from it all, Fionnuala included. It seems like the end of the world by the time they get there.

It's 2.00 in the morning. Fionnuala is woken up by a desperate pain in her tummy, really bad, one that she has never felt the like of before. She had reported feeling some 'cramps' in her tummy the previous week, but they had gone away very quickly. Her Mum and Dad immediately know something is wrong, she never complains. She looks pale, in pain, feels hot. She is doubled up, lying still, hugging her tummy, won't let anyone touch it. She vomits, again something she never does normally. Tonight is definitely not normal. Her Mum and Dad take in the scene, comfort her as best they can and quietly, inwardly, they panic.

Is it just Colic? Appendicitis? Obstruction? Peritonitis? What? They need help. And fast.

BEFORE

The receptionist is very helpful. She will phone the hotel GP cover and say it is an emergency. One hour later, Mum & Dad hear the worst. Fionnuala definitely has got an 'acute abdomen' but he is not sure why, possibly appendicitis, that's the commonest problem. She needs hospital straight away and more than likely an operation. Fionnuala is finally in the emergency ambulance, on her way to the nearest hospital,. She is still in agony, and vomiting, and feels dreadful.

Later, Fionnuala and family are in the A&E department. The SHO assesses her, confirms that there is something definitely wrong in her tummy. She is tender all over and there are no bowel sounds. He takes some blood tests and orders an abdominal X-ray. Fionnuala lies very still, looks really unwell and is breathing very shallowly.

Thirty minutes later, the results show a normal haemoglobin, an elevated white count, confirming an acute inflammation and the X-ray shows lots of gas, possibly an obstruction or an ileus.

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He refers Fionnuala to the general surgical team and thirty minutes later, the duty SHO repeats the history, re-examines her and arrives at the same findings, an acute abdomen, needs surgery.

Fionnuala has IV fluids established, is placed nil by mouth, given pain relief and is admitted to the ward, to be prepared for theatre. Her story is relayed to the duty surgical NCHD, who requests the duty anaesthetic SHO to see Fionnuala and escalates the problem to the duty consultant general surgeon, who asks for an emergency theatre to be booked.

Once in theatre (up to 8 hours later), the surgeon immediately finds the problem is a small bowel volvulus, deadly when untreated. Unfortunately, the bowel, trapped by adhesions, has already perforated, through a gangrenous portion. She has widespread peritonitis. He resects the dead portion, quite a lot, but hopefully not enough to give her digestion problems later on and washes out her peritoneal cavity.

Post-operatively, Fionnuala has a rough time, taking several days on 'drip and suck' to get over a severe, persistent ileus. It doesn't help when she develops a deep wound infection, despite all the precautions.

She is finally fit for discharge after two weeks, but she is still not 100%.

AFTER

The hotel receptionist reassures them. "Don't worry", she says, "The community hospital will know what to do. It has an Urgent Care Centre for emergencies, for anybody, adults and kids, and there's telemedicine help from Cork if we need it." Dad looked dubious, but knew he had no choice in the matter – Urgent Care Centre, next stop.

The receptionist calls the emergency services and the AP arrives from Dingle. It's an easy judgement to make, Fionnuala is suffering from severe abdominal pain. She has a temperature, is breathing shallowly and appears to be tender all over her tummy. "Let's get her into the Urgent Care Centre, see what we can find."

30 minutes later, Fionnuala is in the paediatric observation bay, being assessed by the Clinical Nurse Specialist. She is in obvious pain, her tummy is tender to touch and her muscles are tight, rigid. She has an elevated temperature, rapid pulse,

normal blood pressure, and normal pulse oximetry. Her haemoglobin is normal, her white blood count is normal, her plain X-ray of abdomen has lots of gas around, but in an odd distribution.

The CNS reports to Mum and Dad, "Looks as if Fionnuala has what we call an acute abdomen. We need to get expert advice". With that, the CNS goes over to a console, switches on the system and starts a real time videoconference with the paediatric High Dependency Unit in the acute regional centre in Cork. The paediatric surgeon on-call is alerted and concludes, from the story and after seeing Fionnuala on the TV, observing her abdomen being examined, seeing the X-ray, that Fionnuala has acute peritonitis. He explains to Mum and Dad that he does not know exactly what is going on, but he does know that Fionnuala needs an operation to find out what is wrong and that she needs to be transferred as an emergency.

The CNS follows the emergency protocol: IV fluids, nil by mouth, pain relief, intravenous antibiotics and oxygen, in preparation for the helicopter transfer to Cork. On arrival, Fionnuala is taken directly to the theatre reception where she is met by the duty paediatric surgeon, anaesthetist and Clinical Nurse Specialist, for final preparation for surgery.

Three hours after the onset of her dreadful pain, Fionnuala is in surgery and the paediatric surgeon finds the cause of the problem, a small bowel volvulus, deadly when untreated. Fortunately he is in time and there is no gangrene yet. The adhesions are divided, the bowel is released, confirmed to be viable and no resection is required.

Fionnuala recovers quickly from her ordeal and is very proud of her scar and is home four days later, recovering rapidly.

Dealing with the risks to successful transformation

There are a number of critical risk factors that have the potential to stop the implementation of the acute service element of HSE's transformation programme.

It is absolutely essential that the HSE acts now to make sure that these risks are definitively, robustly and transparently dealt with, operating to fixed deadlines and timescales, certainly by 2010 at the latest, and to the satisfaction of service staff, patients and other interested parties.

Specifically, unless full and effective pre-hospital services are put in place, down to the most local level, and proven to be effective by all objective measures of performance, the HSE will not achieve its intention to implement international standards of acute care, as it will find itself unable to proceed to the next step, that of implementing the acute service reconfiguration.

The risks are from: premature withdrawal of current services; lack of project management; failure to deliver related strategies; and failure to deliver the supporting infrastructures. Successfully managing these risk factors is the pre-condition to success.

DEALING WITH EXISTING SERVICE PRESSURES AND RISKS

It is important to restate at this point the HSE's over-riding principle that **existing service pressures and risks will continue to be relieved** as part of the transformation programme and that current acute services will be maintained until such time as service reconfiguration is able to provide better, safer services.

Preconditions (1): Robust, expert project management

It is self-evident that a fully resourced, carefully planned, implementation programme is required if the Cork and Kerry area is to secure international best practice quality for its acute and PCCC services in terms of clinical standards, service configuration and working relationship. Such a plan needs to take account of:

- Putting in place an effective HSE steering and oversight group for the implementation programme;
- Putting in place an effective implementation group, one that commands respect, has all round support and has the capacity to deliver;
- Taking urgent steps upfront to improve patient safety in areas where the present quality of acute care is patently not good enough;
- Reducing deficiencies in the current acute services to meet today's demands, pending implementation of the new service configuration;

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- Maintaining the current service configuration until the implementation programme has been completed;
 - Planning for a smooth, safe, transition to the new ways of working;
 - Developing integrated locality working between NHO and PCCC services;
 - Developing the recommended governance structure and appointing appropriate representatives;
 - Ensuring that all the pre-conditions to delivering the optimal configuration for acute care are in place or taking urgent remedial action as necessary; and
 - Ensuring that appropriate contingency plans are in place to manage the risks to success.
- Pre-conditions (2): As they apply to the pre-hospital services needed to support the optimal reconfiguration of acute care*
- The above assumptions for the optimal reconfiguration for acute care are based, in turn, upon the following assumptions in relation to first optimising the family of services that make up pre-hospital care:
- The PCCC service has been resourced, developed, and working to recognised international best practice standards for the management of the anticipated future demand across HSE South, both during working hours and out-of-hours, for admissions avoidance and earlier discharge;
 - The ambulance service has fully developed its mobile emergency response capabilities, by developing its emergency Advanced Paramedic workforce and by deploying them to all areas of HSE South;
 - There is an advanced nurse practitioner and clinical nurse specialist workforce in place, leading the delivery of a nurse led South network of local Urgent Care Centres, delivering minor injuries and illness services, integrated with the local Advanced Paramedic workforce and GP duty teams and the regional A&E centre;
 - There is effective partnership working across all elements of the pre-hospital and hospital systems; and
 - The Helicopter Emergency Medical Service is fully integrated into the emergency care system for HSE South.

Preconditions (3): As they apply to the essential infrastructure to support the optimal configuration for both acute and community care

As described in an earlier section, for the future clinical model of acute and community care to deliver a seamless 'continuum of care', services need to operate as clinical networks. In turn, for the networks to operate efficiently, they must be supported by a robust technology, communication and education infrastructure.

Creating the circumstances for the provision of an assured quality of care is based upon the presence of:

- Formal teamworking, operating seamlessly through the clinical networks, responsible for managing and coordinating care for that specialty or category of acute care across the Cork & Kerry area (emergency care, planned care, cancer, critical care, obstetrics, paediatrics, radiology, pathology, etc);
- An integrated network programme for education, teaching, training and research, developed in partnership with all local stakeholders, to ensure that:
 - The regional 'centre of excellence' is also a leading academic institute, charged with maintaining and continuing to develop its reputation as an international academic centre, and a major player in basic and applied health sciences education, training and research;

- There are representative staff and facilities deployed in every specialty and on every site across the network to meet the needs of all staff and students, whether undergraduate or post-graduate, in relation to formal curricula, on-going CPD and academic research, and teaching facilities and accommodation; and
 - There is a specific clinical programme established to incorporate every local 'centre of excellence' into the academic network, with responsibility for developing new levels of best practice in the delivery of local services, e.g. general practice services; chronic disease management programmes; day surgery techniques and innovations; use of telemedicine in the provision of virtual services; Hospital @ Home; home rehabilitation; etc.
- Supporting clinical care by effective management of patient information through clinically relevant information technology and telemedicine communications (unique patient identification ⁷¹, electronic records, real time telemedical assessment, teleconsultation, 'store and forward' transfer of clinical images for expert opinion, etc).

⁷¹ The lack of a unique patient ID for health purposes is a well recognised national problem that is still not resolved at government level

The current status of telemedicine

It is pertinent at this point when considering the risks presented by the technology infrastructure to summarise the current status of telemedicine solutions in the Cork and Kerry area and in Ireland as a whole.

There is no formalised telemedicine programme in the Cork and Kerry area, but there are examples of telemedicine in development (such as establishing links between A&E and peripheral services) or in operation (as in neurosurgery and teleradiology for the transmission of CT scans to inform the decision whether to transfer the patients or not).

More specifically, the A&E service at the CUH, working in conjunction with the Irish Coast Guard, is the national centre for the Irish National Emergency Radio Medical Call Centre, (Medico Cork), whereby seafarers and island dwellers can access free emergency advice on a 24 hour basis.⁷²

Nationally, a recent report⁷³ indicated that, of 157 hospitals responding to a survey, 40 of them used telemedicine in some form, notably radiology, pathology, neurosurgery, oncology and paediatrics, the main applications being teleradiology, teleconferencing and telepathology.

There is one national level HSE network, neurosurgical teleradiology and plans to implement two others, obstetrics, paediatrics, and oncology.

Overall, however, despite the level of interest in telemedicine, the report concludes that developments to date have been haphazard and largely dependent upon local champions rather than national level planning. The report recommends the development of an integrated national telemedicine strategy.

Moving to implementation

Having highlighted our concerns in relation to the critical risks to success and emphasised the need to manage them proactively and definitively, we move in the next section to describe the implementation programme itself, providing first a high level statement with regard to site feasibility, followed by an examination of resource issues and finally a summary of the actions of the implementation programme itself.

⁷² As per EC Council Directive 92/29/EEC

⁷³ A national survey of telemedicine in Ireland.
J. Telemedicine & Telecare 2007 Sept; 13 (7): 348-351

Implementing the transformation plan for Cork and Kerry

We propose a transformation programme for the next steps in the reconfiguration of services in Cork and Kerry.

The HSE needs to continue to make existing services safer for patients, pending completion of this transformation programme.

Immediate actions for the HSE include establishing a steering group, a joint planning forum, new governance arrangements and code of practice, a clinical and academic alliance, and a project management team.

At an early stage, the HSE also needs to:

- 1). Conduct a risk assessment to ensure that all the strategies for pre-hospital service and infrastructure developments, essential to successful implementation of the acute care elements of the new model, are in place in good time;
- 2). Secure substantial improvements in current operational performance; and
- 3). Develop the workforce and education plan to support the new service configuration.

The transformation programme describes the phasing of actions, over a 5 to 6 year period from the time of project initiation, designed to deliver:

- A flexible workforce with the capacity and capability to work across primary, community and

hospital based services;

- A comprehensive range of primary and community services being delivered across Cork and Kerry, responding to the need to avoid inappropriate admissions to hospital and supporting earlier discharge;
- The completion of newly developed and refurbished local 'centres of excellence';
- The completion of the required additional inpatient accommodation at the regional 'centre of excellence';
- A formalised clinical network infrastructure; and
- Appropriate performance monitoring processes.

In relation to implementation planning, this section addresses:

- Site feasibility study;
- Identifying the resources implications;
- Managing the programme;
- Improving operational efficiency;
- PCCC service planning;
- Phase One – Cork City, Bantry, Mallow;
- Phase Two – County Kerry; and
- Workforce development.

High level site feasibility for local 'centres of excellence'

In assessing how non-acute services could be configured and provided in each locality, a set of criteria need to be determined. These include:

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- Ensuring patient safety;
- Being accessible to patients and staff;
- Determining the fitness of purpose of current healthcare sites; and
- Potential for co-locating services and providing a range of care seamlessly.

For each locality, we have highlighted what acute hospital facilities exist and provided a commentary for how each locality could proceed in determining locations and sites for local 'centres of excellence', Table 15. The high level appraisal is based on our site familiarisation visits.

Further estates guidance will be required at a later stage to assess the feasibility of this estate solution.

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Table 15: High level appraisal of sites for local 'centres of excellence'

Locality	Site currently occupied by:	High level appraisal	Recommendation of site location
North and South Lee	Mercy University Hospital	<ul style="list-style-type: none"> • City centre campus (central location) • Received significant capital investment • Has a new A&E department and a refurbished Out-patients department • Issue of transport and access 	<p>Only the CUH site is feasible for development as the regional 'centre of excellence' for Cork & Kerry area. Would also need to accommodate the transfer of elective orthopaedic service from St Mary's hospital and elsewhere.</p> <p>A number of options are available for developing local centres of excellence for Cork City: The Mercy University Hospital site could be considered as a potential location to provide local 'centre of excellence' services in North Lee and possibly to the wider city centre population. Alternatively, new builds could also be considered for North and South Lee localities, possibly on the sites at South Infirmary-Victoria University Hospital or St Mary's Orthopaedic Hospital. Other sites could also be sought from which to provide Urgent Care Centre services.</p>
	St Mary's Orthopaedic Hospital	<ul style="list-style-type: none"> • Current site not fit for re-development • Issue of transport and access 	
	Cork University Hospital	<ul style="list-style-type: none"> • Very large site on edge of city centre • Had significant capital investment in developing acute in-patient services • Site for co-located hospital • New obstetric unit 	
	South Infirmary-Victoria University Hospital	<ul style="list-style-type: none"> • City centre campus (central location) • Current site not fit for re-development • Issue of transport and access 	
	St Finbarr's Hospital	<ul style="list-style-type: none"> • Current site not fit for re-development • Alternative use already identified <p>Issue of transport and access</p>	
North Cork	Mallow General Hospital	<ul style="list-style-type: none"> • Built 1935 • No infrastructural developments since it opened as a general hospital in 1960 • Mallow identified as a hub town for Cork and Kerry Region in the National Spatial Strategy and National Development Plan⁷⁴ 	<p>Mallow General Hospital could be considered as the site for a local 'centre of excellence' for the North Cork locality (size of site and location are ideal). However, the buildings and infrastructure require</p>

⁷⁴ National Development Plan 2007-2013 Transforming Ireland - A Better Quality of Life for All, Irish Government, 2007

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Locality	Site currently occupied by:	High level appraisal	Recommendation of site location
			substantial investment; alternative is a new build.
West Cork	Bantry General Hospital	<ul style="list-style-type: none"> • Small bed base • Some capital development to improve its laboratory and radiology facilities • Population catchment is small (less than that recommended for local hospital model) • Issue of rurality and access in winter months 	Bantry General Hospital could be considered as the site for a small local 'centre of excellence' for West Cork. Requires some investment to upgrade the facilities. Its small bed base could be reconfigured to provide nurse and therapy led rehabilitation services
Kerry	Kerry General Hospital	<ul style="list-style-type: none"> • Condition of building good • Based in Tralee. The combined urban and rural population of Tralee is approximately 22,000 and this conurbation is the largest in County Kerry • Works closely with local private hospital, Bons Secours 	Kerry General Hospital could be considered as the site for the future local 'centre of excellence'. Recommended to support community midwifery and home birth service development programme

High level site feasibility for regional 'centre of excellence'

A suitable site location for the regional hospital needs to be identified within Cork city. A high level feasibility review has been undertaken, examining the sites currently occupied by the city's three acute hospital sites, Table 16.

As for the local 'centres of excellence', further estates guidance will be required at a later stage.

Table 16: High level site feasibility for regional 'centre of excellence'

Site currently occupied by:	High level appraisal	Recommendation of site location
Mercy University Hospital	<ul style="list-style-type: none"> • 232 inpatient beds • City centre campus • Received significant capital investment • Has a new A&E department and a refurbished Out-patients department • Issue of transport and access • Acquired land for potential expansion 	We have stated in an earlier section that the Cork and Kerry area needs one regional 'centre of excellence' and that all acute care services need to be delivered from one site only in order to deliver a quality of care that meets international best practice standards.
Cork University	<ul style="list-style-type: none"> • 508 acute inpatient beds • 200 obstetric beds 	This means that the only solution is to locate the new regional 'centre of

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Site currently occupied by:	High level appraisal	Recommendation of site location
Hospital	<ul style="list-style-type: none"> • 46 acute psychiatric beds • Very large site on edge of city centre • Had significant capital investment in developing acute in-patient services • Regional centre for cardiothoracic and neurosurgery • Centralised obstetric services • Site for co-located hospital • Site for new cardiac and renal services • New regional obstetric service • Potential for further expansion • Potential ease of access for staff and patients 	<p>excellence' on the Cork University Hospital site.</p> <p>With the additional bed capacity generated from the development of cardiac and renal services (releasing some 39 inpatient beds at CUH) and the co-located hospital (providing an additional 183 inpatient beds), there may not be any need for additional capital investment (depending on total number of public beds that will be released through development of co-located hospital).</p>
South Infirmery-Victoria University Hospital	<ul style="list-style-type: none"> • 189 inpatient beds • City centre campus • Current site not fit for re-development • Issue of transport and access • Acquired additional land for potential expansion 	

Resourcing the plan for Cork and Kerry

The translation of the next steps in the reconfiguration of acute hospital services in Cork and Kerry through to operational implementation will need careful consideration of the resource implications. We have set out to identify the key cost 'markers' together with identifying specific issues where further careful consideration and professional advice may be required to develop a fully costed plan. We recommend that this includes:

- Additional investment in a range of primary and community services and facilities to enable patients to avoid unnecessary admission to the regional centre and to facilitate and support earlier discharge;
- High level local 'centres of excellence' business cases for the reconfigured / additional capacity required which will then form the starting point for the estate strategy. Local 'centre of excellence' business plans will set out locality based clinical specifications, workforce plans and estate requirements primarily to cover the new proposed service models. These should also recognise an integrated approach to estate planning including other HSE community hospitals and facilities;
- An estate strategy covering new investment costs (buildings and equipment), condition survey and reinvestment requirements of the existing estate, asset valuations for potential disposal, HSE policy on funding options for new build projects (own capital procurement, private sector and voluntary hospitals);
- A more detailed workforce development plan covering education and retraining as well as absolute staff numbers;
- Existing revenue expenditure, together with current and planned capital and revenue investments for the HSE and the voluntary hospitals to provide a baseline against which to measure investment / disinvestment decisions; and
- Transitional costs for taking forward the implementation, including programme management, double running costs and delivery management costs for the operational efficiency programme.

Potential resourcing requirements in PCCC

As part of the on-going transformation of services by the HSE, an investment in additional resources to provide fully functioning PCTs and PSCNs has been identified for the coming years. This shows that for Cork and Kerry, there is to be an additional 39 WTEs a year over the next 5 years to support the development of the PCTs.

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In total, there will be an additional 195 WTEs. Therefore, the first call of these additional resources should be to support the planned changes in acute hospital care. Further work will need to be undertaken by PCCC to determine whether the planned 195 WTEs in Cork and Kerry is sufficient to support the whole range of services planned to be transformed, including changes in mental health, child health and intellectual disabilities.

For Home Care Packages, it has been identified that there is a requirement nationally to provide 15,000 by 2015. This would equate to a requirement for around 2,300 Home Care Packages in Cork and Kerry by 2015. The planned requirement would appear to be in line with that required from the transformation of acute hospital services.

There is a new requirement for around 270 rehabilitation beds in the community, some of which can be provided in community hospitals and as well as in local 'centres of excellence'. Locality plans would need to identify the extent to which redundant bed capacity from the reconfiguration of acute hospital services could be used to provide this additional bed requirement in the local centres and meet the amount of new capacity required in the community. As staffing levels in primary and community services are increased over the years, the requirements for beds may be replaced with teams of staff providing more services in the patient's own home.

An assessment of need has been undertaken which has identified that an additional 2,362 long stay, 1,338 respite and 2,520 replacement beds are required in Ireland by 2011 in response to the projected increase in the 65 years and over population.

The current capital plan includes four Community Nursing Units providing 200 additional beds in the Cork City area and a 50 bed Community Nursing Unit in Tralee, County Kerry. In the HSE South, 3 new 50 bed Community Nursing Units will be developed each year over the next 5 years in line with the recommendations of the National Assessment of Need. Further work is required to assess if the additional 1,013 patients identified for this type of care setting requires a further capital investment for additional accommodation.

The analysis has identified the requirement for 37 additional hospice beds. The current investment plan in Cork and Kerry is to provide a new hospice facility with 44 beds and this will provide the necessary initial investment in this type of facility.

The requirement for mental health beds needs to be assessed against the planned investment for mental health services and the further development of team based services rather than the provision of beds.

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A significant proportion of patients a year require access to diagnostics if they are to avoid inappropriate admissions to acute hospital care. This requirement would be through further enhancing the direct access to pathology and radiological services by GPs and senior community staff. The majority of diagnostic service provision would be at the local centres.

As has been discussed earlier in the report, there is insufficient service provision for those under 65 years of age. Almost 50% of all excessively long stays are for those patients under the age of 65 years. Therefore, plans need to be developed in primary and community care to address this shortfall in service provision through the development of both bed based and team based services.

Potential scale of capital requirements for regional and local centres

Without more detailed work, a firm estimate of costs is not possible. However, where capital costs are likely to be incurred include:

- Additional build and redevelopment for the regional 'centre of excellence'⁷⁵;

⁷⁵ Bed modelling for the new regional 'centre of excellence' will need to take account of the impact on the acute bed base of the new Cardiac / Renal unit and the co-located private hospital. With this expansion, together with improved operational efficiencies, the additional beds needed on the CUH site for the new regional service may already 'be in the system'.

- New build costs for local 'centres of excellence' in Mallow and South Lee localities; and
- Limited refurbishment / redevelopment of local 'centres of excellence' at the sites currently occupied by Bantry General Hospital, Mercy University Hospital and Kerry General Hospital.

In addition, there may be some requirement for capital investment in additional bed capacity at the regional 'centre of excellence', depending on the release of beds from the development of the co-located hospital.

However, at this stage, it is assumed that sufficient capacity would be released through the co-location development not to warrant this.

Revenue costs of new service models

Without more detailed work, a firm estimate of costs is not possible. However, where revenue costs and savings are likely to be incurred include:

- Additional temporary middle grade and consultant medical staff for those existing services where patient safety needs to be improved, pending full reconfiguration, for example in A&E and anaesthetics;
- Supporting the recommended community midwifery project in Kerry General Hospital;
- New staffing models informed through the clinical specifications for the regional and local 'centres of excellence';
- Network workforce models;

- Capacity to deliver academic training plans and access to research and development;
- Additional PCCC staffing and home care costs partly covered from current HSE investment plans and redeployment of staff; and
- Expectation that fewer inpatient beds will translate into lower revenue costs;
- Net benefit to cover additional costs of population growth and growth in the elderly population.

TABLE 16 DELETED AND SUPPORTING TEXT ALSO DELETED

Managing the implementation programme

We now set out the actions the HSE needs to get on with now in preparation for implementation and an implementation plan describing a high level work programme as a basis for detailed project planning.

It summarises the major 'next steps' that are required from completion of detailed project planning to full implementation. We estimate, with commitment, leadership, funding and full clinical engagement, that transformation will need around 5 to 6 years from start to finish.

The essential first step is to get on with providing transitional support to those acute services where the level of clinical risk to patients is patently not satisfactory.

HSE preparation: the first 6 months

It is essential, based upon the experience of managing the North East Transformation programme, that the HSE promptly puts in place robust, effective, project management and partnership working arrangements, including:

- Establishing a small steering group, chaired by an HSE executive director, with responsibility for overseeing and enabling the delivery of the transformation programme, on time and on budget;
- Conducting a risk assessment and taking action as necessary to ensure that all the strategies for developing the pre-hospital services and the new service infrastructures, essential to the successful implementation of the new model of acute care, are in place in good time.

[We have already highlighted in the previous section the key actions the HSE needs to take to manage the critical risk factors to ensure that all the pre-conditions to success are fulfilled]

- Establishing a joint planning forum with all stakeholders in order to develop and implement, in preparation for proceeding to implementation:
 - Formal partnership working;
 - A new governance system and process; and
 - A clinical and academic alliance committed to excellence;

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- Establishing a transformation programme structure with comprehensive access to all the necessary expertise, covering programme management, project planning / management, clinical service / network development, workforce development, clinical support specialties, infrastructure development, procurement, estates management, finance, HR, media and communications.

The resulting improved bed utilisation is an important preparatory step to the capacity planning required for the transformation programme.

Examples of key actions and timescales are listed in the table below.

Delivering operational efficiency

Notwithstanding the changes in service configuration that need to be made, there are a number of other changes which should be pursued as a matter of priority. For example:

- This review has highlighted significant variations in hospitalisation rates and in lengths of stay compared to the national average; and
- Substantial improvements in admissions avoidance, day surgery rates, and hospital length of stay are needed to bring current operational performance into line with international best practice.

Improving operational efficiency in this manner has the potential to release some 29-40% of the existing bed capacity for other purposes.

All the existing acute hospitals need to be charged with taking steps to improve the operational efficiency of their current services.

Year	Recommended Action	Lead
Immediate actions	Examine the variation in hospitalisation rates, adjusting for known health needs within each county beyond differences in age and sex distribution	Population Health

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Year	Recommended Action	Lead
Year 1 (in line with the findings of the Bed Utilisation Review)	Work with the acute hospitals in reviewing their admission criteria	NHO / Population Health
	To develop plans to avoid unnecessary admissions, including the development of clinical decision / assessment units, improved quality of front line decision making; better access to urgent senior medical opinion and to diagnostic services	NHO
	Develop and review actions to improve clinical performance in all existing acute hospitals	NHO
	Monitor on a regular basis, and then report to the NHO, the effectiveness of assessment units, the trends in length of stay, the trends in clinically discharged patients still in hospital, the proportion of patients for whom discharge planning has been initiated and a discharge date been set	NHO
	Assess the bottlenecks in the current acute hospital system, which prevent the timely discharge of patients, including access to senior clinical opinion, waiting time for diagnostics, poor discharge planning, waiting for long term placement, theatre cancellations etc.	NHO
	Ensure that admission is linked to discharge for all elective patients and that all emergency patients have a provisional date of discharge declared on admission	NHO / PCCC
	Develop metrics for assessing the utilisation of the range of primary and community services	PCCC
Year 2	Set targets for operational efficiency in relation to lengths of stay, day case rates and the ratio of new to follow-up out-patient attendances	NHO
	Develop and implement plans to achieve the target improvements in operational efficiency	NHO
	Establish a regular data collection and monitoring programme to assess the utilisation of primary and community service provision	PCCC
Deliverables in Year 2 and beyond		
		Appropriate performance monitoring processes, with target setting where suitable
		Achievement of more efficient service provision

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*Primary, Community and Continuing
Care implementation plan*

There is already an investment strategy within PCCC to establish PCTs and PSCNs, increase Home Care Packages and provide additional extended stay residential care places.

In order to support the PCCC interface with the acute hospital sector and the development of a comprehensive programme for admission avoidance and earlier supported discharges, then specific actions need to be taken, as laid out in the Table below.

Year	Recommended Action	Lead
Year 1	Establish joint acute /PCCC project team and detailed work programme to deliver immediate and long term objectives for admissions avoidance and earlier supported discharge	NHO / PCCC
	Recruit to additional posts to have fully functioning PCTs	PCCC
	Optimise the function, capacities and competencies for the delivery of Community Intervention Programmes and Hospital at Home services, with possible integration into the PCTs	PCCC
	Provide further investment in Home Care Packages	PCCC
	Review current utilisation of community hospitals and ensure common criteria for admission based on clinical need	PCCC
	Determine replacement and additional bed capacity requirements for extended stay and rehabilitation, which need to be provided outside of the local hospital setting	PCCC
	Determine diagnostic capacity requirements in primary and community care settings	PCCC
	Recruit to additional posts to have fully functioning PCTs	PCCC
	Year 2-3	Provide further investment in Home Care Packages
Initiate build of replacement and additional community nursing units to provide adequate rehabilitation and extended care bed facilities		PCCC / Estates / Procurement
Provide primary care based diagnostic services		PCCC
Provide additional access to therapy services in community hospitals and contracted beds in nursing homes to ensure the maximum rehabilitation potential of patients		PCCC
Re-engineer work commitments and contracts of hospital based Clinical Nurse Specialist between community (PSCNs) and hospital services		PCCC / NHO
Provide appropriate medical officer support to community hospitals with regular medication reviews and multidisciplinary meetings with staff; investigate links and community sessions with local geriatricians, paediatricians, psychiatrists, etc		PCCC
Complete build of replacement and additional community nursing units to provide adequate rehabilitation and extended care bed facilities		PCCC / Estates / Procurement
Complete build of replacement and additional community		PCCC /

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Year	Recommended Action	Lead
	nursing units to provide adequate rehabilitation and extended care bed facilities	Estates / Procurement
Year 3 - 4	Complete build of replacement and additional community nursing units to provide adequate rehabilitation and extended care bed facilities	PCCC / Estates / Procurement
Deliverables in Year 5 and beyond		
	Fully developed PCTs and PSCNs with access to Clinical Nurse Specialists	
	Comprehensive Community Intervention and Hospital at Home Programmes for adults and children	
	Local access to a full range of diagnostic facilities in primary and community care	
	Community hospital and nursing unit facilities with appropriate staffing levels and access to specialist support when necessary. This should also include contracted beds in nursing homes	

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*'Centres of excellence'
implementation plan*

The development of the regional 'centre of excellence' relies on a set of actions which need to be achieved in order that it is a fully functioning establishment.

This requires a workforce development programme, review of current estate, the build up of the local 'centres of excellence', preparing the regional 'centre of excellence' to deliver all acute care services and putting the technology, IT and telemedicine infrastructure in place.

Phase One

This Year 1 to Year 5 programme focuses on establishing the regional 'centre of excellence' in Cork City and all the local 'centres of excellence' for Cork and Kerry. Kerry General Hospital continues to deliver acute emergency services during this period.

Year	Recommended Action	Lead
Year 1	Develop and implement transitional staffing plans and revised service criteria for current general hospital sites to ensure provision of safer clinical services, including A&E in Cork City, Mallow and Bantry, anaesthetics in Mallow	NHO / HR
	For Bantry General Hospital, plan for the complete cessation of inpatient surgery. Cease critical care services at this site. Equip resuscitation bay with live telemedical link to duty surgical team at Cork University Hospital for the provision of urgent surgical opinions. Expand visiting surgical consultant service to facilitate local referral patterns rather than attendance to Cork hospitals, prior to the introduction of virtual outpatient teleconsultation service where appropriate and adds value	NHO / IT / Procurement
	Develop sufficient inpatient accommodation at Cork University Hospital, through internal operational efficiencies, for the transfer of acute surgical referrals from Bantry General Hospital	NHO / Estates / Procurement
	Ensure high risk obstetric and paediatric cases at Kerry General Hospital are transferred to Cork University Hospital site	NHO
	Proceed with development of additional accommodation on the Cork University Hospital site through the co-location of the private hospital and development of cardiac and renal centre	NHO / Estates / Procurement
	Develop clinical specification and capacity plan for the regional and local 'centres of excellence'	NHO / PCCC
	Proceed with urgent planning to centralise all adult critical care on the Cork University Hospital site, as a prelude to reconfiguring specialties that have critical care dependencies	NHO / Estates / Procurement
	Commence planning for the rationalisation of A&E services within Cork City	NHO / Estates / Voluntary Hospitals / Procurement
	Establish regional 'centre of excellence' site accommodation	NHO /

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Year	Recommended Action	Lead
	schedule for emergency and planned care capacity, Need to ensure appropriate accommodation and infrastructure for education and training	Estates / Procurement
	Address outstanding regional service issues, for example, blood transfusion services, oncology, and pain management	NHO
	Fully develop capacity plans and accommodation schedules for local 'centres of excellence', ensuring sufficient capital investment for integrated service delivery and the academic infrastructure	NHO / PCCC
	Initiate building of new cardiac and renal facility at Cork University Hospital site	NHO / Estates / Procurement
	Plan for the transfer of elective orthopaedics from St Mary's Orthopaedic Hospital to the CUH campus	NHO
	Pilot the streamlining of planned care to improve access and reduce waiting times via a central booking system	NHO
	Review the number of ambulance centres in Cork and Kerry, with a view to rationalisation, in preparation for the provision of a single Emergency Care Network and the provision of seamless integrated emergency care between the pre-hospital services and the acute regional services	NHO
	<p>Review estate potential for the development of the local 'centres of excellence', including current acute hospital and community hospital sites:</p> <ul style="list-style-type: none"> - For North and South Lee locality, there should be a particular focus on developing new builds, examining site options at South Infirmary-Victoria University Hospital, Mercy University Hospital, St Mary's Orthopaedic Hospital, St Finbarr's Hospital or elsewhere in the city - For North Cork, consider the use of the Mallow General Hospital site and /or investigate a new build; - For West Cork, the refurbishment of the Bantry General Hospital should be considered alongside consideration of a total rebuild on this site; and - For Kerry, consideration given to adapting the Kerry General Hospital site as necessary for the community midwifery project and additional local services in line with the local 'centre of excellence' model. 	NHO / PCCC / Estates / Voluntary Hospitals / Procurement
	Develop business cases for new / refurbished locality 'centres of excellence' and development of minor injuries/illness services in Cork City	PCCC / NHO / Estates / Voluntary Hospitals /

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Year	Recommended Action	Lead
		Procurement
	Design layout of local 'centres of excellence', with a view to incorporating both the needs of PCCC and the services that the local centres are required to offer	PCCC / NHO / Estates / Voluntary Hospitals / Procurement
	Engage contractors to develop/refurbish local 'centres of excellence'	Estates / Procurement
	Develop, launch and monitor a clinical research based community midwifery programme, based at Kerry General Hospital	NHO / Royal Colleges / Council of Nursing & Midwifery
	Initiate discussions on partnership working in Cork City, incorporating all stakeholders, the statutory, voluntary hospitals, University College Cork, private providers, relevant charitable organisations, etc	NHO / Voluntary Hospitals / UCC
	Establish a work programme for the project groups and managers to develop the strategic clinical and academic framework for both the regional and local 'centres of excellence', the clinical networks, the optimal corporate and clinical governance arrangements and agreeing the respective roles and responsibilities of all the stakeholders	NHO / Voluntary Hospitals / PCCC
	Review the contract with the Helicopter Emergency Ambulance Service, assess its current use and develop partnership working with Emergency Care Network	NHO / Air Corps
Year 2	Continued implementation of transitional staffing programme to improve patient safety	NHO / HR
	Initiate building of new co-located private hospital on the Cork University Hospital	Estates / NHO / Procurement
	Develop refurbishment plans for the regional 'centre of excellence' once private beds and cardiac and renal services have transferred into new buildings	Estates / NHO / Procurement
	Establish the interim operational arrangements for inpatient accommodation in Cork city	NHO / Voluntary Hospitals
	Through further internal operational efficiencies being achieved across the current general hospitals, develop the phasing of the site transfer plans for the progressive consolidation of all acute emergency and complex planned care services onto the regional 'centre of excellence' site, beginning with transfer of acute services from Bantry General Hospital and Mallow General Hospital in the first instance	NHO / Voluntary Hospitals
	Develop plan for the phased transfer of outpatients, day	NHO /

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Year	Recommended Action	Lead
	surgery, day services and rehabilitation from the reconfigured regional 'centre of excellence' sites into the local 'centres of excellence'	Voluntary Hospitals
	Identify and recruit further staff required to achieve EWTID compliance	NHO / PCCC / HR
	Develop revised job plans for staff between the regional 'centre of excellence and the local 'centres of excellence'	NHO / PCCC/ HR
	Develop protocols for pre-hospital services, including air and road ambulance services	NHO / Air Corps
	Implement the governance arrangements for the regional 'centre of excellence', the local 'centres of excellence' and clinical networks	NHO / Voluntary Hospitals / PCCC / UCC
	Complete building of new co-located private hospital	Estates / NHO / Procurement
	Develop a network of Urgent Care Centres for Cork City	PCCC / NHO
Year 3	Complete the build / refurbishment of the local 'centres of excellence'	NHO / PCCC/ Estates / Voluntary Hospitals / Procurement
	Begin the phased transfer of outpatients, day surgery, day services and rehabilitation from the reconfigured regional 'centre of excellence' sites into the local 'centres of excellence'	NHO / Voluntary Hospitals
Year 4 - 5	Complete the phased transfer of acute inpatient care from Bantry General Hospital, Mallow General Hospital, South Infirmary-Victoria University Hospital and Mercy University Hospital sites to the regional 'centre of excellence' site	NHO / Voluntary Hospitals
	Review and audit of the community midwifery and home birthing programme being developed at Kerry General Hospital	NHO / Royal Colleges / Council of Nursing & Midwifery
Deliverables in Year 5 and beyond	Implemented clinical network , governance arrangements and technology infrastructure, with revised job plans for staff	
	Fully functioning local 'centres of excellence' providing day surgery, Urgent Care Centres, ambulatory care, rehabilitation and an extensive range of clinical diagnostics and endoscopy	
	Fully functioning Urgent Care Centres in Cork City alleviating the pressure at the regional 'centre of excellence' A&E service	
	Fully functioning regional 'centre of excellence' service which is fit for the future and delivering standards of care to international best practice standards	

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Year	Recommended Action	Lead
	Kerry General Hospital developing strong links with the regional 'centre of excellence'.	
	Compliance with EWTB regulations	

Phase Two

Phase Two takes place in Year 6. It is envisaged that the regional 'centre of excellence' will be fully functional by Year 5. In Year 6, it will become the sole provider of acute emergency care for Cork and Kerry. The infrastructure will be in place for the advanced paramedics to provide a comprehensive local emergency resuscitation service and have a rapid transfer capability via the air ambulance service. This will allow Kerry General Hospital to become a local 'centre of excellence'. By this time, it is anticipated that a safe, effective, community midwifery service will have been established as an exemplar for Ireland, with a leading edge risk stratification programme in place to identify 'at risk' women with pregnancies who need a regional obstetric level of service and a cadre of senior midwives with competencies in neonatal resuscitation. Deliverables in Year 7 and beyond:

- Exemplar community midwife service;
- Local 'centre of excellence'; and
- Exemplar air ambulance service.

Workforce development, education and training implementation plan

A strategic and operational workforce plan needs to be developed, which identifies the number of staff, their skills and competencies required in the future for all elements of service needs; direct care and infrastructure; and the education and training needed to prepare them.

Year	Action	Lead
Year 1	Develop and implement transitional staffing plans and revised service criteria for current general hospital sites to ensure provision of safer clinical services, including A&E in Cork City, Mallow and Bantry, anaesthetics in Mallow	NHO / HR
	Establish community midwifery and home birth programme based	NHO / Royal Colleges /

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Year	Action	Lead
	at Kerry General Hospital	Nursing & Midwifery Council
	Confirm the skills and competencies needed to deliver new and improved services, including workforce strategies for: <ul style="list-style-type: none"> - Advanced Paramedics; - Advanced Nurse Practitioners; and - Clinical Nurse Specialists Increase the capacities and accelerate the training programmes as necessary to make sure there are no delays in implementation due to workforce constraints	HR / NHO / PCCC
Year 2	Identify medical staff required to achieve EWTD compliance in the new model of acute care and recruit as necessary	NHO / PCCC / HR
Year 2 - 3	Use the clinical and academic partnership alliance to develop and commission programmes with UCC and other educational establishments in relation to supporting all health professionals across the network in having access to continuing professional development and research and development	HR / NHO / PCCC
	Develop and implement a comprehensive retraining programme to prepare current staff for work in community based services	HR / NHO / PCCC
Year 4 - 5	Review and audit of the community midwifery and home birth programme developed at Kerry General Hospital	NHO / Royal Colleges / Nursing & Midwifery Council
Deliverables in 2011 and beyond	<ul style="list-style-type: none"> • A workforce with flexible working practices and the capacity and capability to work across primary, community and hospital based services, including: <ul style="list-style-type: none"> - Fully trained cadre of Advanced Paramedics within the emergency services able to assess, resuscitate, stabilise, triage and transfer the patient directly to the appropriate emergency service; - Fully trained Clinical Nurse Specialists; - Fully trained Advanced Nurse Practitioners to lead the introduction of Urgent Care Centres; - Extended role community midwives; and - Audited review of the potential for standalone midwifery and home birth services. 	

The benefits for patients from this new system

The results for patients will be profound. They include:

- Safe, sustainable high quality local and regional services, operating to international standards, with systems in place to monitor, report and verify compliance with these standards;
- Patients accessing much more and better care at home and in their local 'centre of excellence';
- Fewer patients going to or spending unnecessary time in the regional 'centre of excellence'; and
- Receiving care from a workforce that is much better organised and supported, through improved teamworking, improved facilities and better access to education, training and research programmes.

While the service configuration changes proposed for Cork and Kerry are significant, patients should be assured by the HSE that:

- Current services will be maintained until the new system and services are in place and tried and tested; and
- The planned changes are geared towards the delivery of a high quality, safe, sustainable, locally accessible and financially sound service.

The patients are entitled to receive a number of clear, tangible benefits from the new system including:

For local (non-acute) care:

- More care provided in more locally convenient and appropriate settings, including home;
- A wide range of local services, based on international best practice, meeting the vast majority of the needs of local communities in Cork and Kerry, supported by outreach services from the regional centre;
- More development of local services, including new Primary Care Teams, Urgent Care Centres, better access to diagnostics and improved emergency ambulance services;
- More resources being available, acknowledging the transfer of patient care from the acute hospital to community and home settings;
- Many more patients being able to safely avoid admission to hospital for their care; and
- Many more patients being able to safely get home sooner from hospital, to continue their care programme in a much more suitable environment.

For regional (acute) care:

- No need to go to the regional 'centre of excellence', except for those services which cannot be safely and sustainably provided locally;
- Good communications and minimal bureaucracy: Seamless patient care and transfer procedures between local and regional centres; and
- High quality, specialist acute care, available 'round the clock' and in line with international best practice.

Appendix 1 – Terms of reference and Steering Group

The Health Service Executive commissioned a review of acute services in HSE South with the remit to determine the most appropriate model of acute hospital services for HSE South and the optimal configuration of acute hospital services for Cork and Kerry. The review has the following objectives:

1. to identify, with reference to international best practice and the national policy principle of regional self-sufficiency, the most appropriate model of acute hospital service provision for the HSE South area comprising counties Cork, Kerry, Waterford, Wexford, South Tipperary, Carlow and Kilkenny
2. To determine, based on the model identified as per item 1 above, the optimal configuration of hospital services, including the appropriate distribution of specialty services for geographic area and population of Cork and Kerry in order to provide safe, sustainable, cost effective and high quality services. This should include a risk assessment model. This should also include assessing the impact and plans for shifting care from acute to non-acute care, including any constraints within the PCCC programme.

3. To advise on the optimum governance arrangements which should operate within and between each hospital site in Cork and Kerry, reflecting the ethos / ownership of the various entities, as well as best practice in relation to hospitals operating in networks.
4. To include a high level action plan, setting out the key next steps to progress implementation of its recommendations, including the criteria for those specific recommendations and an assessment criterion to facilitate decision making where required.

The major deliverables of the review have been identified as being:

- A comprehensive description of the most appropriate model of acute hospital service provision for HSE South;
- Recommendations on the configuration of acute hospital services in Cork and Kerry and adjacent areas in order to best deliver the regional model;
- Recommendations on the optimal governance arrangements which should operate within and between hospital sites in Cork and Kerry;
- An action plan for the configuration of acute services in Cork and Kerry which can immediately commence implementation; and
- A final robust report including a high level costed action plan with financial recommendations and the key steps to progress implementation.

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Appendix 1 – Terms of reference and Steering Group

Following subsequent discussions with the Chief Executive Officer, HSE, the terms of reference of the project were extended to include a review of PCCC services in Cork and Kerry in order to provide the level of substance and assurance needed to support the changes within the acute hospital services' implementation plans.

Specific objectives of this extended brief were to:

- Describe and quantify the potential volume of the types of services required from PCCC to support patients avoiding acute hospital admission and the early safe discharge from acute hospital care to more appropriate non-acute hospital local services;
- Establish existing status of PCCC programmes including current and planned primary and community care staffing levels and existing activities, which directly support patients avoiding acute hospital admission and the early safe discharge from acute hospital care;
- Identify the current community hospital bed capacity and use, visit up to 6 exemplar community hospitals, and develop 'criteria for use' to establish minimum operating standards and utilisation; and
- Identify any gaps in resources, development, and timescales between the existing and the required PCCC types of services needed to support patients avoiding acute hospital admission and the early safe discharge from acute hospital care.

The main project report for the 'review of acute hospital services', was to include an action plan which identifies key next steps, descriptions of resource requirements, and timescales for PCCC to support the acute hospital services' implementation plan.

The review has been supported by a HSE Steering Group, whose membership comprises John O'Brien, Director of National Hospitals Office (Temporary); Liam Downey, Chairman of the HSE; and Tommy Martin, National Director, Office of the CEO.

Assigned to the Steering Group has been a Project Steering Group, which has had responsibility for monitoring project direction and progress. Members of the Project Steering Group include:

- Professor Gerard T. Wrixon, former President, University College Cork (UCC), Chairman
- Dr. Mary O'Mahony, Public Health Specialist;
- Professor George Shorten, Department of Anaesthetics, Cork University Hospital (CUH);
- Professor Geraldine McCarthy, School of Nursing and Midwifery, UCC;
- Ms. Mary Jo Biggs, Office of the CEO;
- Ms. Fionnuala Duffy, Assistant National Director of Planning and Development, National Hospitals Office;
- Mr. Pat Healy, Assistant National Director, HSE South (PCCCD);
- Mr. Gerry O' Dwyer, Network Manager, Southern Hospitals Group;

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Appendix 1 – Terms of reference and Steering Group

- Ms. Sandra Daly, Network Managers Office, Southern Hospitals Group;
- Mr. Richie Dooley, Network Manager, South Eastern Hospitals Group;
- Mr. John O' Donovan, Assistant National Director Procurement, Head of Portfolio & Category Management
- Ms. Eileen O'Donovan, Planning and Development Unit, National Hospitals Office.

Appendix 2 – Site visits and interviews

During the review, we undertook a number of site familiarisation visits and fact finding interviews. Details are below.

Site familiarisation visits to:

- Kerry General Hospital;
- Bantry General Hospital,
- South Infirmery Hospital;
- Mercy University Hospital;
- Cork University Hospital;
- St. Finbarr's Hospital;
- Mallow General Hospital,
- St. Mary's Orthopaedic Hospital;
- St. Luke's General Hospital;
- Lourdes Orthopaedic Hospital;
- South Tipperary General Hospital, Clonmel;
- Waterford Regional Hospital;
- Wexford General Hospital;
- Mount Carmel Community Hospital, Clonakilty;
- St John's Community Hospital, Enniscorthy;
- Gory Community Hospital;
- Kinsale Community Hospital;
- Bandon Community Hospital;
- Killarney Community Hospital;
- Bon Secours Hospital, Cork; and
- Bon Secours Hospital, Tralee.

Fact finding interviews included:

- Frank McClintock, Assistant Director, NHO, National Ambulance Headquarters;
- Leo Kearns, Chief Executive Officer, Royal College of Physicians of Ireland;
- Professor Gerry O'Sullivan, President, Royal College of Surgeons of Ireland and Consultant Surgeon, Mercy University Hospital;
- Professor Arthur Tanner, Director of Surgical Training, Royal College of Surgeons of Ireland;
- Dr. Ailis Quinlan, Clinical Indemnity Scheme;
- Anne Duffy, Clinical Indemnity Scheme;
- John Lamont, Registrar, Chief Officer of the Medical Council;
- Fionnuala Duffy, Assistant National Director of Planning & Development, NHO;
- Tom Finn, Assistant National Director of Contracts & Utilisation, NHO;
- Fionan Ó'Cuinneagáin, Chief Executive Officer, Irish College of General Practitioners;
- Dr Marie Laffoy, Dr Elizabeth Keane, Dr Orlaith O'Reilly, Population Health representatives;
- Mr Richie Dooley, Network Manager South East, NHO;
- Mr Pat Healy, Assistant National Director, PCCC, HSE South;
- Dr Stephen Cusack, Consultant Emergency Medicine, Cork University Hospital;
- Dr Michael Murphy, President of University College Cork and ex Dean of Medicine, University College Cork;

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Appendix 2 – Site visits and interviews

- Professor Robbie McConnell, Head of College of Medicine and Health Sciences, University College Cork;
- Professor Eamon Quigley, Head of School of Medicine, University College Cork;
- Professor John Higgins, Professor of Obstetrics and Gynaecology, University College Cork;
- Mr Aonghus O'Donnell, Cork University Hospital;
- Professor Paul Redmond, Cork University Hospital;
- Mr Charles Marks, Cork University Hospital and University College Cork;
- Mr Michael O'Shaughnessy, Cork University Hospital;
- Professor Fergus Shanahan, Cork University Hospital;
- Dr Liam Plant, Cork University Hospital;
- Dr Oonagh Gilligan, Cork University Hospital;
- Mr Ger O'Leary, South Infirmary-Victoria University Hospital;
- Dr Fergus Lyons, South Infirmary-Victoria University Hospital;
- Mr Denis Richardson, South Infirmary-Victoria University Hospital;
- Dr. Gerry Fahy, South Infirmary-Victoria University Hospital;
- Dr Martin Buckley, Mercy University Hospital;
- Mr Michael O'Riordain, Mercy University Hospital;
- Mr Kahlid Safi, Mercy University Hospital;
- Dr Neil Brennan, Mercy University Hospital;
- Dr Carl Vaughan, Mercy University Hospital;
- Dr Gerald McGreal, Mercy University Hospital;
- Dr Finbarr Allen, Head of Dental Hospital School;
- Mary Gilmartin, Risk Manager, Cork University Hospital
- Jan Moriarty, College of Anaesthetists

Appendix 3 – International best practice

Moving acute care near to or at the patient's home

Globally, many countries and health care systems have recognised the need for a fundamental change in the way in which services are configured and delivered, with an increased emphasis towards providing more care at home or as close to home as possible, with people being admitted to hospital admissions only where necessary and appropriate.

This strategic direction of health service reform has been seen occurring in countries including Australia^{76 77}, Canada^{78 79}, New Zealand⁸⁰⁸¹, and the UK^{82 83 84 85}. Consistent themes arising from these reforms are:

- Developing a greater emphasis on preventing illness and improving the overall health and well-being of the population;
- Managing those people with long term chronic conditions at home or in the community, through improved primary care services, and preventing the likelihood of hospitalisation; and
- Providing safe and high quality acute hospital services, through evidence based best practice care, with specialist and complex care being provided in fewer, larger centres in order to maximise clinical benefit and minimise clinical risks to patients.

Patient self care

This model assumes a person centred approach to the delivery of health care, providing support for patients and their carers to manage their own health care needs⁸⁶. In recent times, much work has been done to support patients to become more independent and responsible for managing their own care.

⁷⁶ Planning for the Future, New South Wales, 2025

⁷⁷ Directions for your health system, Metropolitan Health Strategy, Sate of Victoria, 2003

⁷⁸ Common vision for the Canadian Health System, 2004

⁷⁹ Commission on the Future of Health Care in Canada, 2002

⁸⁰ The New Zealand Health Strategy, New Zealand Government, December 2000

⁸¹ Implementing the New Zealand Health Strategy, 2005

⁸² Our health, our care, our say: a new direction for community services, UK Government White Paper, January 2006

⁸³ Building a Health Service Fit for the Future, NHS Scotland, 2005

⁸⁴ Designed for Life: Creating world class Health and Social Care for Wales in the 21st Century, Welsh Assembly Government, May 2005

⁸⁵ Developing Better Services: The Model for Future Health Care Services, Northern Ireland Government, February 2003

⁸⁶ Building a Health Service Fit for the Future, NHS Scotland, 2005

An example of this is the Expert Patient Programme (EPP) developed in the UK in April 2002⁸⁷. This programme provides an 'opportunity to people who live with long term conditions to develop new skills to manage their condition better on a day-to-day basis'. This programme is based on research from the USA and the UK, which shows that people living with these conditions are often best at knowing how to manage their own condition, supported with the necessary self-management skills.

The patient at home

Supporting this process of self-care management is access to a range of services provided in the patient's own home, available 24/7/52. Traditional examples of these services include primary care, community care, social care, and social housing schemes. However, new and developing services for maintaining the independence of 'at risk' elderly will include home telecare^{88 89 90 91 92 93 94 95} and 'smart' homes^{96 97}.

Where there is an acute emergency, the call for help will be triaged so that an Advanced Paramedic⁹⁸ can respond, undertake a clinical assessment, appropriate investigations, and arrange, if possible, the next steps in order to keep the patient out of hospital safely without the need for automatic hospital referral and/or admission.

The patient supported by local services

Patients will be supported by a range of locally based services. In addition to these, local 'centres of excellence' will provide urgent care centres, a wider range of planned care treatment and diagnostic investigations, and a bed base for step-down / intermediate care.

The trend is for local services to provide the following ⁹⁹:

- An emergency ambulance service, staffed by front line advanced paramedics, skilled and competent in the delivery of:

⁸⁷ Expert Patient Programme, NHS website

⁸⁸ National Telemedicine System. DOH Republic of South Africa 1998

⁸⁹ Delivering 21st Century IT support for the NHS. DOH 2002

⁹⁰ Public Sector National Report Assistive Technology. 'Independence and Well Being'. Audit Commission, February 2004

⁹¹ Assistive Technology and telecare: Forging effective solutions for independent living. Policy Press 2003

⁹² The use of ICT to support independent living for older and disabled people. DOH UK 2002

⁹³ Strategic Plan. VA Midwest Health Care Network. Department of Veterans Affairs 2006-2010

⁹⁴ National Telemedicine and Telecare Strategy. Department of Health and Children & Health Board Executive, Ireland 2005

⁹⁵ Grisby B. et al. Report on U.S. Telemedicine Activity. Association of Telehealth Service Providers. 1999

⁹⁶ Smart Homes and Beyond, Chris Nugent and Juan Carlos August, June 2006

⁹⁷ Smart Homes. In Principle and Practice of Geriatric Medicine, 4th Edition, Professor Roger Orpwood, Director of Bath Institute for Medical Engineering

⁹⁸ Defined as a health-care specialist with particular skills and knowledge in pre-hospital emergency medicine

⁹⁹ Standards of Accessibility and Guidelines for Provision of Sustainable Acute Care Services by Health Authorities, Ministries of Health Services and Health Planning, British Columbia, February 2002

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- Emergency assessments and definitive treatment in the home, with selective transfer to the regional 'centre of excellence' only as clinically necessary; and
- Immediate emergency resuscitation, stabilisation and triage to the nearest appropriate regional service.

In rural and remote locations, it should be recognised that the local first responders may not be in traditional ambulances, and may utilise other rescue services, including fire and mountain rescue teams^{100 101};

- Specialist nursing teams, based in the local 'centre of excellence', will provide:

- A minor injuries and illness service for both adults and children, based in Urgent Care Centres, and accessible at least 12 hours per day, 7 days per week. The service is likely to include an observation unit for urgent assessment and initial management, to determine whether patients can be safely sent home later, or need to be transferred to the regional centre for acute care^{102 103}. Urgent Care Centres are clinically networked to the A&E service and are progressively linking more closely with the GP out of hours service and the ambulance network. Many urban based Urgent Care Centres are co-located with an A&E department, whilst rural Centres are being established as standalone facilities or co-located with other community services^{104 105 106};

¹⁰⁰ Comments on Academy of Medical Royal Colleges Centralisation and Specialisation of Hospital Services – Bigger is not Necessarily Better for Rural and Remote Communities; Working Group of Medical Royal Colleges and Rural Forum, March 2006

¹⁰¹ The National Framework for Service Change in NHS Scotland, Rural Access Action Team, Final Report, 2005

¹⁰² West Cornwall Hospital: Urgent Assessment, Diagnostic and Treatment Hospital, Department of Health, 2003

¹⁰³ The National Framework for Service Change in NHS Scotland, Rural Access Action Team, Final Report, 2005

¹⁰⁴ Urgent Care Centres, Meeting Notes of London Workshop, October 2005

¹⁰⁵ Draft Emergency Care, September 2005, www.investinginyourhealth.org.uk

¹⁰⁶ The Future Hospital, The Progressive Case for Change, Joe Farrington-Douglas and Richard Brooks, Institute of Public Policy Research, January 2007

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- 'Hospital at Home'^{107 108 109 110 111 112 113 114} service to safely avoid admission to acute care or allow earlier discharge from acute care; and
- Admissions avoidance services for chronic disease and long term conditions including mental health liaison and outreach;
- Out-patient clinics, with all major specialties providing an outreach service from the regional 'centre of excellence'¹¹⁵; and
- Physiotherapy, occupational therapy and podiatry services;
- At the local 'centres of excellence' will be available a range of planned care services, including:
 - Minor surgery under local anaesthetic. GP trained surgeons may undertake this range of procedures;
 - Day surgery led by visiting consultants from the regional centre, for conditions suitable for local or regional anaesthesia¹¹⁶, Provision of a day surgery theatre needs to ensure that it can generate sufficient workload for appropriate and effective use. In rural localities serving larger populations, there is potential to develop General Practitioners with specialist interest, particularly, for specialties such as ENT, ophthalmology, dermatology and musculo-skeletal medicine, who can accept referrals and provide advice and support. The roles of nurses and allied health professionals can also be extended to provide and support rural service provision¹¹⁷; and
 - Ambulatory services for a range of conditions, for example, chemotherapy and blood transfusion;

¹⁰⁷ Montalto M et al. Acceptability of early discharge, hospital at home schemes. Treatments that can be safely managed at home need to be defined. *BMJ* 1998;317:111652

¹⁰⁸ Richards SH et al. Randomised controlled trial comparing effectiveness and acceptability of an early discharge hospital at home scheme with acute hospital care. *BMJ* 1998;316:1796-1801

¹⁰⁹ Shepperd S, Iliffe S. (2005). Hospital at home versus in-patient hospital care. *Cochrane Database Systematic Review*; 3.

¹¹⁰ Harris R, Ashton T, Broad J, Connolly G, Richmond D. (2005). The effectiveness, acceptability and costs of a hospital-at-home service compared with acute hospital care: a randomized controlled trial. *Journal of Health Services Research and Policy*; 10 (3): 158-166.

¹¹¹ Richards DA, Toop LJ, Epton MJ, et al. (2005). Home management of mild to moderately severe community-acquired pneumonia: a randomised controlled trial. *Medical Journal of Australia*; 183: 235-238.

¹¹² Corwin P, Toop L, McGeoch G, et al. (2005). Randomised controlled trial of intravenous antibiotic treatment for cellulitis at home compared with hospital. *British Medical Journal*; 330: 129. doi:10.1136/bmj.38309.447975.EB.

¹¹³ Schraibman IG, Milne AA, Royle EM. Home versus in-patient treatment for deep vein thrombosis. *Cochrane Database Syst Rev* 2001; CD003076.

¹¹⁴ Singh D. (2006). Making the Shift. Key Success Factors. A rapid review of best practice in shifting hospital care into the community. Health Services Management Centre, University of Birmingham. A report commissioned by the NHS Institute for Innovation and Improvement.

¹¹⁵ The Future Hospital, The Progressive Case for Change, Joe Farrington-Douglas and Richard Brooks, Institute of Public Policy Research, January 2007

¹¹⁶ Suitable procedures include superficial hernia, selected laparoscopic cholecystectomy, cataracts, and simple foot operations

¹¹⁷ The National Framework for Service Change in NHS Scotland, Rural Access Action Team, Final Report, 2005

- A wide range of diagnostics, including near patient testing, high volumes of pathology tests processed at 'cold' labs, plain X-ray, ultrasound, basic physiological measurement tests, etc. At the local 'centre of excellence' will be:
 - CT scanning, MRI (either fixed or mobile) and contrast X-ray service; and
 - Routine diagnostic endoscopy services for gastro-enterology, urology, orthopaedics, gynaecology, chest medicine, including gastroscopy, flexible sigmoidoscopy, colonoscopy, flexible cystoscopy, flexible bronchoscopy, colposcopy, hysteroscopy, etc.
- Respite care and convalescence; and
- A selected range of conditions that presently are routinely admitted to acute hospitals.

The issue is to provide rehabilitation capacity in the community wherever there is sufficient need for the services. Therefore, rehabilitation, step-down, respite care beds can be provided from a variety of locations depending upon the local circumstances, including the local 'centres of excellence', existing community hospitals and nursing homes with enhanced nursing and therapy staff support.

This range of services will lead to fewer onward referrals to the regional centre and earlier supported discharge¹¹⁹.

This guide list covers today's approach to invasive diagnosis. With the increasing trend to less invasive diagnostic modalities, it is predicted that best practice in diagnostics will change rapidly in the next 5 to 10 years; and

- A local bed base, providing short term care for:
 - Specialist rehabilitation¹¹⁸, for example, stroke and trauma management after an episode of critical care in the regional 'centre of excellence';
 - Step down, for the early transfer of patients nearer to home after receiving acute care at the regional centre;

¹¹⁸ The National Framework for Service Change in NHS Scotland, Rural Access Action Team, Final Report, 2005

¹¹⁹ The Future Hospital, The Progressive Case for Change, Joe Farrington-Douglas and Richard Brooks, Institute of Public Policy Research, January 2007

There are options for configuring these locally provided services. A popular concept in the UK and Australia, is the development of the Ambulatory Care and Diagnostic Centre, which provides a one stop shop facility for patients to receive their treatments in the seamless and coordinated manner. A recent study suggested that 75% of planned patients in general surgery and ENT could be treated in an ambulatory care facility¹²⁰. Examples of ambulatory care facilities in the UK include the Central Middlesex, which opened in 1999. Operating 9-5, Monday to Friday, it has the capacity to do about 13,000 procedures¹²¹. More recent in the UK, has been the introduction and development of Diagnostic and Treatment Centres providing both inpatient and day case in a range of surgical specialties and diagnostic endoscopy. These are provided by both NHS provider organisations and by the private sector. There was expected to have been 80 treatment centres in England by the end of 2005¹²².

Rurality

In rural and remote locations, the expanded role and function of this local centre may need to be considered to ensure appropriate, responsive and equitable access to urgent and emergency care.

¹²⁰ Assessing the impact of ambulatory care, G Mould and JA Bowers, Department of Management and Organisation, University of Stirling

¹²¹ Running on empty, Seamus Ward, Public Finance, December 2004

¹²² Department of Health, UK, 2006

Minimum standards of accessibility to services have been set in British Columbia¹²³, which identify that access to emergency services on a 24/7/52 basis should be within a one hour travel time for 98 per cent of residents and access to basic inpatient hospital services within two hours travel time for 98 per cent of residents.

The National Framework for Service Change in NHS Scotland¹²⁴, identified that rural and remote communities need enhanced diagnostic capability to support an early diagnosis and to reduce inappropriate travelling time to, and retention at, the acute hospital site. The concept of a Rural General Hospital is a hospital in an 'area which is distant from urban conurbations, which, because of compromised patient travel times, provides a locally based consultant-led service to meet the healthcare needs of a population not large enough to require a district general hospital'. This type of hospital facility is seen to provide:

- Emergency care, including triage, diagnosis, resuscitation/stabilisation, treatment where possible and transfer when necessary;
- Planned care, including diagnosis, treatment or transfer and follow-up; and
- Care for chronic illness; including care of the elderly, stroke and diabetic care and renal dialysis.

¹²³ Standards of Accessibility and Guidelines for Provision of Sustainable Acute Care Services by Health Authorities, Ministries of Health Services and Health Planning, British Columbia, February 2002

¹²⁴ Rural Access Action Team, Final Report, The National Framework for Service Change in NHS Scotland, 2005

In relation to workforce, core skills required are general physicians, general surgeons and anaesthetists. In Scotland, within the areas that have travel times greater than 2 hours from a population centre of more than 30,000, there are eight towns which have populations of 3,000. Six of these are served by Rural General Hospitals¹²⁵.

In Canada and Australia, secondary care provision is sustained in remote and rural locations by GPs with extended skills¹²⁶. In Australia, a separate college for GPs to specialise in rural medicine has been established¹²⁷.

Centralising specialist acute services at regional and tertiary 'centres of excellence'

The patient at the new regional 'centre of excellence'

- There is a clear international trend towards the centralisation of specialist acute services to ensure there is a sufficient concentration of a 'critical mass' of patient volumes to optimise the provision of safe, effective and high quality services through a well resourced and highly trained workforce¹²⁸.

Typically, acute regional centres will provide co-located 24/7 services for:

- Major A&E;
- Trauma;
- Emergency medicine, including cardiology, gastro-enterology, respiratory medicine, endocrinology, rheumatology, infectious diseases;
- Emergency surgery, including general, trauma, urological, vascular, gynaecological, ENT and ophthalmology;
- Complex planned surgery, applicable to all acute surgical specialties;
- Critical care;
- Anaesthesia and pain management;
- Cancer services;
- Obstetrics;

¹²⁵ Rural Access Action Team, Final Report, The National Framework for Service Change in NHS Scotland, 2005

¹²⁶ Remote and Rural Healthcare in Scotland, Dr James D M Douglas, Tweeddale Medical Practice, Fort William, Royal College of Physicians of Edinburgh, September 2005

¹²⁷ Rural access to healthcare: lessons from down under, David Weller, Head of General Practice, Division of Community Health Sciences, University of Edinburgh, Journal of Royal College of Physicians of Edinburgh, 2005

¹²⁸ The Future Hospital, The Progressive Case for Change, Joe Farrington-Douglas and Richard Brooks, Institute of Public Policy Research, January 2007

- Acute psychiatry;
- Paediatrics; and
- Neonatology.

These acute services will have a full range of 24/7 clinical support services, in particular, 'high tech' diagnostics and pathology services.

Planned care will be streamed separately from unscheduled care. This reduces cancellations, achieves a systematic and predictable workflow, and improves the quality of service to patients.

The European Working Time Directive is dictating the minimum number of consultants in a team needed to deliver a continuous 24/7 commitment that complies with the regulations, and the minimum workload required to justify a team of that size being grouped together in that manner.

Therefore, the acute teams in the regional hospitals of the future, for A&E, medicine, surgery, trauma, etc., will be based upon this consultant profile of 8 or more in the specialty grouping. The critical mass argument will be considered next when we come to consider regional centres and the evidence surrounding what size of catchment population they need in order to deliver best acute healthcare.

In turn, the regional centre may provide, or be supported by, tertiary, highly specialised services, with individual services including neurosurgery, cardiac surgery, transplantation surgery, plastic surgery and certain children's services.

Regional centre catchment populations

Catchment populations provide a proxy for ensuring a sufficient critical mass of patient volumes to provide safe and viable services staffed by specialist and sub-specialist consultants and medical staff working in sustainable rotas.

The Royal College of Surgeons in Ireland has identified that the minimum number of general surgeons required within a unit is 12 allowing for sub-specialty interests and suitable rota cover. Assuming a ratio of 1 general surgeon per 25,000 of the population, this derives a catchment population of 300,000 for a regional centre¹²⁹. A review of medical staffing workforce undertaken by a national task force in Ireland modelled consultant numbers on a catchment population of between 350,000 and 500,000¹³⁰.

Published literature in the United Kingdom does suggest that catchment populations for specialist acute centres should, in the future, be larger than the catchments currently being served by hospitals providing a range of inpatient acute services.

¹²⁹ The Future of Surgical Specialties in Ireland, Royal College of Surgeons in Ireland, April 2004

¹³⁰ Report of the National Task Force on Medical Staffing, June 2003

Recommendations made by the Royal College of Surgeons in England is that the preferred catchment population size for an acute general hospital providing the full range of facilities, specialist staff and expertise for both planned and emergency medical and surgical care would be 450,000-500,000. However, it recognises that the majority of acute hospitals in England are serving a catchment population of 300,000 and that this is likely to continue in the near future. For those hospitals currently serving populations of 150,000 or less, it recommends that these hospitals work in close partnership with adjacent services to make use of those services not available on site¹³¹.

NHS Scotland, in its report on the future of health care provision¹³², stated that a minimum of 10 consultants per specialty would be needed in order that high-intensity specialties such as acute medicine, general surgery or orthopaedics could be sustained on a 24/7 basis and secure compliance with the European Working Time Directive.

The framework for health services developed by the Welsh Assembly Government¹³³, identified the need to consolidate major planned and emergency services, allowing for the development of sub-specialisation, higher clinical standards and improved training opportunities. This anticipates the need for consolidation within fewer centres, which are strategically located to serve catchment populations, some of which are substantially rural. The framework identifies 10 centres which would provide acute and/or specialised and critical care services, some of which may also provide tertiary and highly specialised services. Given the projected population of Wales in 2013 of just over 3 million residents¹³⁴, this would suggest that the catchments to be served by these specialist centres are around 300,000.

A health strategy undertaken by the Norfolk, Suffolk and Cambridgeshire Strategic Health Authority defined a minimum catchment population of 250,000 for general medicine, trauma and orthopaedics, general surgery, low risk obstetrics and a minimum catchment population of between 500,000 to 1 million for A&E, vascular surgery, urology, ENT, ophthalmology, paediatrics, plastics, specialist trauma and orthopaedics, cardiology, renal and high risk obstetrics¹³⁵.

¹³¹ Delivering High-quality Surgical Services for the Future, A Consultation Document from the Royal College of Surgeons of England Reconfiguration Working Party, The Royal College of Surgeons of England, March 2006

¹³² Building a Health Service Fit for the Future, NHS Scotland, May 2005

¹³³ Designed for Life: Creating world class Health and Social Care for Wales in the 21st Century, Welsh Assembly Government, May 2005

¹³⁴ 2003 Based National and Sub-National Population Projections for Wales, National Assembly for Wales, October 2005

¹³⁵ Health Strategy 2005-2010 Technical Guidance, Norfolk, Suffolk and Cambridgeshire Strategic Health Authority, 2005

The population catchment must also be balanced with the availability of projected future medical staffing workforce. The more regional centres required in the future, the greater the requirement for medical staff.

From the available international evidence, it would appear that the minimum catchment population for a regional centre ranges from 350,000 to 500,000.

For critical care services, the European Society of Intensive Care Medicine recommends 17 critical care beds per 100,000 population with a ratio of High Dependency to Intensive Care beds of 2:1¹³⁶. This figure takes into account the fluctuations in demands for both emergency and elective admissions.

Table 17 sets out the comparison across countries of the ratio of recommended consultant staffing levels per population.

¹³⁶ European Society of Intensive Care Medicine

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Table 17: Comparison of ratio of consultant per population across countries

Specialty	British Columbia ¹³⁷	New Zealand ¹³⁸	UK Royal Colleges ¹³⁹ 140 141 142 143 144	Australia ¹⁴⁵ (range dependent on urban or rural location)	Royal College of Surgeons in Ireland ¹⁴⁶ , The Institute of Obstetricians & Gynaecologists ¹⁴⁷	National Task Force on Medical Staffing ¹⁴⁸
Emergency Medicine			1:12,000 attendances annually	1: 25 – 100,000	1:14,000	1:45,000
General Medicine	1:7,600 – 8,400	1: 14,285-20,000	1:5,200*			1:10,000
Cardiology			1:50,000	1: 40-60,000		1:78,000
General Surgery	1:9,500 – 10,500		1:25,000	1: 10-20,000	1:25,000	1:10,000
Ophthalmology	1:28,200 – 31,100		1:70,000		1:70,000	1:78,000
Trauma & Orthopaedics	1:26,100 – 28,900		1:25,000	1:22-30,000	1:25,000	1:34,000
Otolaryngology	1:43,400 – 48,000		1:50,000	1:50-60,000	1:40-70,000	1:71,000
Urology	1:49,400 – 54,500		1:50,000	1:55-100,000	1:80-100,000	1:82,000
Obstetrics & Gynaecology	1:18,100 – 20,000		1:27,000		1:20,000	1:21,900
Paediatrics	1:16,800 – 18,500		1:12,350			1:35,000
Neonatology						1:87,000

¹³⁷ Standards of Accessibility and Guidelines for Provision of Sustainable Acute Care Services by Health Authorities, Ministries of Health Services and Health Planning, British Columbia, February 2002

¹³⁸ General Physician Numbers (New Zealand), Discussion Paper prepared by the IMSANZ NZ Executive at the request of the RACP (NZ) Office

¹³⁹ Developing a Modern Surgical Workforce: A Report from the Royal College of Surgeons of England, January 2005

¹⁴⁰ The Future Role of the Consultant, A Working Party Report, Royal College of Obstetricians and Gynaecologists, December 2005

¹⁴¹ Quality Development Programme, Guidance for Clinical Governance in Ophthalmology, Royal College of Ophthalmologists, April 1999

¹⁴² Paediatric Medical Workforce Model, Royal College of Paediatrics, April 2001

¹⁴³ Way Ahead 2005, British Association for Emergency Medicine and The College of Emergency Medicine, 2005

¹⁴⁴ Consultant Physicians Working with Patients, Royal College of Physicians, 2005

¹⁴⁵ Sustainable Specialist Services: A Compendium of Requirements, Australian Medical Workforce Advisory Committee, August 2004

¹⁴⁶ The Future of Surgical Specialties in Ireland, Royal College of Surgeons in Ireland, November 2003

¹⁴⁷ The Future of Maternity & Gynaecology Services in Ireland 2006 – 2016, The Institute of Obstetricians & Gynaecologists, December 2006

¹⁴⁸ Report of the National Task Force on Medical Staffing, June 2003

* Includes all general medical sub-specialties except cardiology and geriatric medicine

Tertiary hospital catchment population

Tertiary services are highly specialised services, including, for example:

- Specialist Cancer;
- Plastic surgery and burns;
- Neurosurgery;
- Transplantations; and
- Specialist children's services.

The catchment populations for these services will be much larger than for regionally based services in order to concentrate the clinical expertise and the volumes of clinical workload in order to deliver high quality services.

In Wales, there are two Welsh centres identified for providing a range of tertiary services together with a single specialist cancer centre and additional tertiary centres based in England. Assuming that the majority of the population will access the two Welsh centres, then the catchment population for these services is 1.5 million.

As part of the National Framework for Service Change in NHS Scotland¹⁴⁹, a review was undertaken concerning the future configuration of neurosurgical services. Currently, services are provided from four sites but following an appraisal of future options against specific criteria, the preferred direction of travel was for a single centre of neurosurgical intervention, serving a population of 5 million, as part of a service model that would provide local outpatient, rehabilitation, and pre- and post-operative care and diagnosis. This intervention service would be co-located on a university teaching hospital site with other neuroscience specialties and be integrated, using a managed clinical network approach, across specialist, secondary and primary care. The review also concluded that paediatric neurosurgery should be concentrated on one site co-located with paediatric intensive care.

For these highly specialised, low volume specialties, the need to have an available and sustainable workforce dictates, to a greater or lesser extent, the catchment population they serve. Whilst additional consultant and medical staff could be employed to provide multiple service provision, the need for these services would be insufficient to support maintenance of skills and competencies of these staff.

¹⁴⁹ Building a Health Service Fit for the Future, A National Framework for Service Change in the NHS In Scotland, NHS Scotland, May 2005

Guidelines for ratios of consultant staff per population have been produced across a number of countries, and indeed, Ireland has also made recommendations regarding recommended consultant staffing levels for tertiary services.

For example, for neurosurgery, the Royal College of Surgeons in England¹⁵⁰ (RCSE) recommends 5-6 surgeons per 1,000,000 population and in Australia, a viable specialist service with a minimum of 2 consultants requires a catchment between 200-250,000¹⁵¹. In Ireland, the Royal College of Surgeons (RCSI)¹⁵² has set a target ratio of consultant to population of 1:258,000. Similarly, for paediatric surgery, the RCSE recommends a ratio of 1:250,000 and in Ireland, the RCSI has set a ratio of 1:500,000. In Australia, the population catchment for a viable service is between 250-500,000, dependant on whether the centre is serving an urban or rural population.

Table 18 compares the recommended approaches being taken across 4 countries, including Ireland, for the consultant staffing and catchment populations required in order to provide the circumstances for providing sustainable specialised services.

¹⁵⁰ Developing a Modern Surgical Workforce, A Report from the Royal College of Surgeons of England, January 2005

¹⁵¹ Sustainable Specialist Services: A Compendium of Requirements, Australian Medical Workforce Advisory Committee, August 2004

¹⁵² The Future of Surgical Specialties in Ireland, Royal College of Surgeons in Ireland, November 2003

Table 18: A comparison of specialist services across countries.

Specialty	Royal College of Surgeons of England	Australian Medical Workforce Advisory Committee	Centre for Rural and Northern Health Research, Canada ¹⁵³	Royal College of Surgeons in Ireland
Oral and Maxillofacial Surgery	1 consultant per 150,000 population			1 consultant per 148,000 population
Plastic Surgery	1 consultant per 100,000 population		1 consultant per 107,938 population	1 consultant per 103,000 population
Cardiothoracic Surgery	1 consultant per 150,000 population		1 consultant per 128,793 population	1 consultant per 258,000 population
Vascular Surgery		4 consultants per 500,000 population		3 consultants per 500,000 population
Neurosurgery	5-6 consultants per 1,000,000 population	Minimum of 2 consultants serving 200-250,000 population	1 consultant per 165,791 population	1 consultant per 258,000 population
Paediatric Surgery	1 consultant per 250,000 population	Viable service serves a catchment of between 250-500,000		1 consultant per 500,000 population

- Information and communication technology.

Infrastructure to enable healthcare delivery

To support this model requires a new infrastructure which brings together those elements of healthcare delivery identified above. This infrastructure includes:

- Clinical networks;
- Assured quality;
- Tele-medicine; and

¹⁵³ Geographic Distribution of Physicians in Canada, Centre for Rural and Northern Health Research, Laurentian University, Canada, 1999

Clinical networks

Redesigning acute services for best acute care, therefore, needs to take account of critical mass, the combination of grouping sufficient numbers of consultants together and making sure they have sufficient workload to justify that grouping. This balance is no longer achievable in the traditional small and medium sized hospital.

The international research and practice highlights the central role of managed clinical networks as key to engaging and empowering frontline staff, developing new skills and roles, providing the engine room for quality clinical improvement and the redesign of service and clinical pathways, including:

- Whole system integration of hospitals, general practitioners, community teams, social care, patients and carers;
- Whole system diagnostics and other clinical support services including more locally based diagnostics, recognising both technology advances in the tests themselves, changes in processing, and the potential to separate undertaking the test from the reporting of results;

While these requirements may appear comparatively straightforward, they provide both the opportunity through the managed clinical networks and the 'glue' through diagnostics and information and communications to support a fully integrated healthcare system, without which best practice will be unable to achieve its full potential.

Clinical networks will be developed for services, including emergency care, critical care, planned care, and cancer and more detail of how these will function will be shown later.

In addition, the regional 'centres of excellence' across the country would be part of a regional network, with each commonly providing some highly specialised services to resident catchments outside of its regional boundary, in line with national strategy.

Emergency Care Network (Adult and Children)

The emergency care network will be the primary network running the emergency element of acute care services. It will liaise formally with its close partners, the critical care network and the planned care network^{154 155 156 157 158}.

¹⁵⁴ Acute Services Review. Scottish Office 1998

¹⁵⁵ Building a Health Service Fit for the Future. A National Framework for Service Change NHS Scotland 2005

¹⁵⁶ The provision of emergency surgical services: an organisational framework, Senate of Surgery of Great Britain and Ireland, 1997

¹⁵⁷ Reconfiguration of surgery, accident and emergency and trauma services across the UK. Senate of Surgery of Great Britain and Ireland, 2004

¹⁵⁸ The future of surgical services in Ireland. Royal College of Surgeons of Ireland, 2004

There are excellent examples of emergency care networks being developed in numerous countries ¹⁵⁹ ¹⁶⁰ ¹⁶¹ ¹⁶², concentrating developments around clinical integration, networks, workforce development and expanding the role of the emergency ambulance services. The UK has 12 national pilot sites under development. For example, the Coventry & Warwickshire Ambulance Services is developing a new front-line workforce of 130 emergency care practitioners to cover its population of over 800,000, with plans for formal networking across all the acute services.

The Health Service Executive strategy for the development of ambulance services reflects innovative service developments happening internationally in the pre-hospital services. Their implementation plan includes:

- One integrated ambulance service for the whole of Ireland, controlled via 4 control centres;

- A workforce development programme for 'Advanced Paramedics', with a view to some 40 per cent of staff eventually being trained to that level. Nationally, there are now 100 staff who have completed training and there is capacity to produce 48 new trained staff per year; and
- A research and development programme to test the feasibility of closer working and formal integration between the general practitioner out-of-hours services and the emergency ambulance service.

¹⁵⁹ Taking Healthcare to the Patient – Transforming NHS Ambulance Services, DOH June 2005

¹⁶⁰ Roadside to Bedside: A 24 hour clinically integrated acute management system for New Zealand 1999

¹⁶¹ Building a Health Service Fit for the Future. A National Framework for Service Change NHS Scotland 2005

¹⁶² Improving access to emergency services: A system commitment. A report of the Hospital Emergency Department and Ambulance Effectiveness Working Group. Ministry of Health & Long Term Care, Ontario July 2005

Critical care network

- The recognised 'direction of travel' in adult critical care is towards regionalisation and development of formal clinical networks in order to concentrate the expertise and resources necessary to deliver high quality Level 3 care^{163 164 165 166 167 168}. These regional networks are now being added to, with work in progress on developing two complementary programmes designed to reduce the demand and the pressures on Level 3 care^{169 170};
- A proactive 24/7 outreach service to prevent 'at risk' patients from deteriorating to the point of needing critical care; and
- A critical care rehabilitation programme to improve recovery and the final clinical outcome.

¹⁶³ Critical to Success: The place of efficient and effective critical care services within the acute hospital. Audit Commission, UK 1999

¹⁶⁴ Comprehensive critical care: A review of adult critical care. DOH, UK May 2000

¹⁶⁵ An acute problem? A report of the National Enquiry into Patient Outcome and Deaths in relation to critical care services. 2005

¹⁶⁶ Intensive care services in New Zealand. Ministry of Health, 2005

¹⁶⁷ Standards for adult critical care in Wales: All Wales Critical Care Development Group 2003

¹⁶⁸ Final report of the Ontario critical care steering committee. Ministry of Health & Long Term Care March 2005

¹⁶⁹ Critical care outreach: Modernisation Agency, DOH, UK October 2003

¹⁷⁰ Quality Critical Care: Beyond 'Comprehensive Critical Care'. DOH, UK September 2005

Planned care network

Planned care encompasses those healthcare services where the patient is scheduled for an appointment or admission and includes day surgery, planned inpatient, endoscopy services, diagnostic testing and outpatients. Local 'centres of excellence' would serve a new role of providing a range of ambulatory care and diagnostic services^{171 172 173}.

There is international evidence for how best these services should be provided, which ensures the provision of locally accessible services and maintenance of formal networking^{174 175} and adherence to quality standards.

Assured quality

The key requirements for ensuring assured quality of future healthcare delivery are as follows:

- Sufficient and appropriately trained and accredited workforce which is able to:

¹⁷¹ Day Surgery – National and International. From the Past to the Future, L Roberts, Australian Academy of Medicine & Surgery, February 2005

¹⁷² Assessing the impact of ambulatory care, G Mould and JA Bowers, Department of Management and Organisation, University of Stirling

¹⁷³ Ambulatory surgery centres, Encyclopaedia of Surgery: A Guide for Patients and Caregivers, R Frey, 2006

¹⁷⁴ Clinical Networks, NHS Confederation, 2002

¹⁷⁵ Health Department Letter 69: Promoting the Development of Managed Clinical Networks in NHS Scotland, Scottish Executive, September 2002

- Engage in redesigning and delivering services through new, more flexible working patterns across organisations;
- Develop new extended roles for nurses and allied health professionals;
- Meet the European Working Time Directive on maximum working hours through appropriately staffed and designed rotas;
- Formal clinical teamworking to enable the establishment of a system of effective clinical governance and automatic peer review to facilitate the delivery of an assured level of quality of patient and staff safety, through a cycle of audit, feedback and improvement;
- Having access to systematic and routine horizon scanning for the impact of service and clinical developments across therapies, procedures, drugs, imaging and devices, including:
 - Diagnosis and treatment on a minimally invasive basis;
 - Surgery being replaced by drugs and other interventions;
 - Implantable devices;
 - New less invasive imaging technologies; and
 - Genetic testing supporting individual specific drug treatments.

Tele-medicine

Telemedicine has been around for a very long time and is well established, particularly in the USA where a 1999 survey recorded 132 active programmes, with activity in 48 states in over 1450 telemedicine equipped facilities¹⁷⁶. It cannot yet be considered mainstream in service delivery but it is being increasingly seen as an important tool to support the way that health services will need to change in the future in order to be sustainable.

Telemedicine and telecare is now addressed at the national level in some countries and is an element of most new regional service strategies under development ^{177 178 179 180 181 182 183}. Telemedicine and telecare are regarded as a key enabler of clinical networks, bringing together the clinical expertise, specialist advice and decision making between services delivered locally with services delivered regionally.

¹⁷⁶ Grisby B. et al. Report on U.S. Telemedicine Activity. Association of Telehealth Service Providers. 1999

¹⁷⁷ National Telemedicine System. DOH Republic of South Africa 1998

¹⁷⁸ Delivering 21st Century IT support for the NHS. DOH 2002

¹⁷⁹ Public Sector National Report Assistive Technology. 'Independence and Well Being'. Audit Commission, February 2004

¹⁸⁰ Assistive Technology and telecare: Forging effective solutions for independent living. Policy Press 2003

¹⁸¹ The use of ICT to support independent living for older and disabled people. DOH UK 2002

¹⁸² Strategic Plan. VA Midwest Health Care Network. Department of Veterans Affairs 2006-2010

¹⁸³ National Telemedicine and Telecare Strategy. Department of Health and Children & Health Board Executive, Ireland 2005

Many hospital and community services are now using telemedicine for teleconsultation, telediagnostic, telemonitoring, telecare and tele-education purposes. Most progress has been made in radiology, dermatology, pathology and ophthalmology, where the imaging aspects lend themselves to electronic transmission. Other specialties are under development, including cardiac medicine, paediatrics, neonatology, neurology, psychiatry oncology, ENT, general surgery, etc., and all specialties are now taking telemedicine on board and testing it as a mechanism to improve their current services. In Norway and Sweden, telemedicine and a well organised transport infrastructure support rural healthcare¹⁸⁴.

There is now evidence that the burden of chronic disease management on acute care services can be significantly lessened through telemonitoring to decrease the number of visits to the A&E department and admissions to hospital¹⁸⁵
^{186 187}.

¹⁸⁴ Remote and Rural Healthcare in Scotland, Dr James D M Douglas, Tweeddale Medical Practice, Fort William, Royal College of Physicians of Edinburgh, September 2005

¹⁸⁵ Meyer M et al. Virtually healthy: chronic disease management in the home. *Dis Manag* 2001;5:5-12

¹⁸⁶ Vaccaro et al. Utilisation reduction, cost savings, and return on investment for Pacificare Chronic Heart Failure Programme, 'Taking Charge of your Health' *Dis Manag* 2002;4:131-42

¹⁸⁷ Wiecha J. et al. The interdisciplinary eHealth team: chronic care in the future. *J Med Internet Res* 2004; 32:31-8

Of particular interest in this review of best practice in acute services is that there are many examples of real time telemedicine being used to support and unify the emergency response between regional A&E centres, minor injuries services and the ambulance services¹⁸⁸
^{189 190 191 192 193}.

More recently, in keeping with the global strategy of keeping patients out of hospital and transferring care closer to home, or at home, strategies have been developed to stimulate the development of home telecare services to monitor the 'at risk' elderly safely at home, thus avoiding an acute admission to hospital or to institutional care^{194 195 196 197 198}.

¹⁸⁸ Lambrecht CJ. Telemedicine in trauma care. *Telemed. J.* 1997;3:265-8

¹⁸⁹ Brennan JA et al. Telemedicine in the emergency department: a randomised controlled trial. *J Telemed Telecare* 1999;5:18-22

¹⁹⁰ Ferguson J et al. Minor injuries telemedicine *J Telemed Telecare* 2003;9 (Suppl 1):14-16

¹⁹¹ Brebner EM et al. Evaluation of an accident and emergency teleconsultation service for north east Scotland. *J Telemed Telecare* 2004;10:16-20

¹⁹² The Grampian Telemedicine Initiative links Aberdeen Royal Infirmary to 14 A&E departments across the region.

¹⁹³ Pedley DK et al. Mobile telemetry for pre-hospital thrombolysis: problems and solutions 2005;11 (Suppl 1): 78-80

¹⁹⁴ Building Telecare in England. DOH July 2005

¹⁹⁵ Telecare project: West Lothian Council, Scotland: A programme for the over 75s, the benefits of telecare so far, from 1200 homes being monitored are: reduced hospital admissions(savings equivalent to 9 acute beds), 50% reduction in the rate of delayed discharge, 50% reduction in average stay in nursing homes, and 10% of users staying at home as opposed to 'institutional' care

¹⁹⁶ Active Living Project: 'Promoting security, independence and Quality of Life'. Kent County Council. UK. The county population is 1.34 million, the largest in the UK. The home monitoring project, launched in 2004, is an initial £2.25 million investment for the over 75s targeted to reduce the rate of admission to hospital.

Information, communication & technology

Central to the development of effective systems and technology to support clinical service delivery will be the adoption of a more integrated approach to information management, including the use of a single enterprise master patient index covering acute and PCCC services.

There is a requirement for a fully wired network with an information and communications system enabling a real time, high quality, team-working approach to health care through the use of:

- Electronic patient records including prescribing, pathology, radiology and other test results;
- Clinical telemedicine, telediagnosics, telecare and smart home services;
- Picture archiving and communications (PACs);
- Electronic prescribing;
- Electronic booking;
- Patient access via broadband to their electronic patient record; and
- Official websites to develop self-care and health promotion.

197 Columba project: Surrey Primary Care Trust: Telecare is being incorporated into an overall Managed Care Framework to deliver a population wide active prevention programme. This has 3 elements, supported self care for patients with 'well-controlled' conditions, Disease management for those with 'high risk' and Case management for the 'highly complex' patients.

¹⁹⁸ Strategic Plan VA Midwest Health Care Network.
Department of Veterans Affairs 2006 - 2010

Appendix 4 – Current acute services in HSE South

To assess how this model of 'best practice' care fits with the current profile of services and what may need to change, we need to understand the demographics of the population and the delivery of current services.

Resident population

HSE South covers an area of 21,000 square kilometres and has a resident population of 1,080,999. This administrative catchment includes the counties of Cork and Kerry and the counties of Carlow, Wexford, South Tipperary and Waterford in the South East. Table 19 shows the resident population of each county.

Table 19: Resident Population by County

County	Census 2002	Census 2006	% Change
Cork City	123,062	119,418	-3.0
Cork County	324,767	361,877	11.4
Kerry	132,527	139,835	5.5
Cork and Kerry Total	580,356	621,130	7.0
Carlow	46,014	50,349	9.4
Wexford	116,596	131,749	13.0
South Tipperary	79,121	83,221	5.2
Kilkenny	80,339	87,558	9.0
Waterford City	44,594	45,748	2.6
Waterford County	56,952	62,213	9.2
South East Total	423,616	460,838	8.8
HSE South Total	1,003,972	1,081,968	7.8

Source: Census 2006 Preliminary Report, Central Statistics Office, July 2006

Securing clinically safe and sustainable services across HSE South
Appendix 4 – Current acute services in HSE South

This table shows that there has been a significant increase in population across all counties in the last four years, with the exception of Cork City, which has experienced a reduction of 3.0 per cent. County Wexford has experienced the largest growth in resident population of almost 13 per cent. The Central Statistics Office has forecast to 2021 that the national average annual growth rate in population will increase by 1.4 per cent in Ireland. However, the growth rates forecast for both the South East and Cork and Kerry are lower than this, at 1.3 per cent and 1.0 per cent respectively.

Health needs of the population

Table 20 below shows a breakdown of the population by county and age band in 2006. County Kerry has an age distribution with the highest proportion of over 65 year old and County Carlow has the highest proportion of under 30 year olds.

Table 20: Population Characteristics, 2002

County/Health Board	00-14	15-29	30-44	45-64	65+	Total
Cork	97,027	112,443	110,523	106,544	54,758	481,295
Kerry	27,248	28,252	30,034	34,953	19,348	139,835
SHB	124,275	140,695	140,557	141,497	74,106	621,130
Carlow	10,570	12,129	11,506	10,846	5,298	50,349
Kilkenny	18,853	18,646	19,776	20,291	9,992	87,558
South Tipperary	17,528	17,320	18,045	19,677	10,651	83,221
Waterford	22,417	24,272	23,698	24,400	13,174	107,961
Wexford	29,238	27,367	30,082	29,738	15,324	131,749
SEHB	98,606	99,734	103,107	104,952	54,439	460,838
Total	222,881	240,429	243,664	246,449	128,545	1,081,968
% Total Population						
County/Health Board	00-14	15-29	30-44	45-64	65+	Total
Cork	20.2%	23.4%	23.0%	22.1%	11.4%	100%
Kerry	19.5%	20.2%	21.5%	25.0%	13.8%	100%
SHB	20.0%	22.7%	22.6%	22.8%	11.9%	100%
Carlow	21.0%	24.1%	22.9%	21.5%	10.5%	100%
Kilkenny	21.5%	21.3%	22.6%	23.2%	11.4%	100%
South Tipperary	21.1%	20.8%	21.7%	23.6%	12.8%	100%
Waterford	20.8%	22.5%	22.0%	22.6%	12.2%	100%
Wexford	22.2%	20.8%	22.8%	22.6%	11.6%	100%
SEHB	21.4%	21.6%	22.4%	22.8%	11.8%	100%
Total	20.6%	22.2%	22.5%	22.8%	11.9%	100%

Source: Ireland & Northern Ireland's Population Health Observatory

Securing clinically safe and sustainable services across HSE South
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Table 21 shows a comparison of the standardised mortality ratios (SMR) across the seven counties in HSE South. The standardised mortality ratio compares the actual death rate in an area with the average death rate of the whole of Ireland. The overall SMR for all causes of mortality is 101.5, compared with the Ireland average of 100, this means that there were 1.5% more deaths than expected. Within HSE South, Cork and Kerry has a higher than average SMR at 102.7, and the South East is slightly below average at 99.8. County Carlow has the highest SMR in HSE South of 116.2, 16 per cent more deaths than expected.

For cancers the region has a below average death rate, with County Kilkenny being the lowest at an SMR of 91.1, although both County Cork and County Carlow have higher than average SMR's. For circulatory diseases (which include stroke and heart disease), there is above average mortality rates for counties Cork, Kerry, Carlow and Wexford, with Waterford having the lowest. The death rate for respiratory diseases is high in counties Waterford, Kilkenny and most significantly so in County Carlow, which has an SMR of 148. For injuries and poisoning only, County Kerry has a lower than average mortality rate, the highest is Wexford with over 20% more deaths than expected.

Table 21: Standardised Mortality Rates, All Ages, 2003

County	All Causes of Mortality		All Malignant Neoplasms		All Circulatory System Diseases		All Respiratory System Diseases		All Injuries & Poisonings	
	Deaths	SMR	Deaths	SMR	Deaths	SMR	Deaths	SMR	Deaths	SMR
Cork	18,292	103.4	4,513	102.2	7,607	108.5	2,595	95.7	1,008	112.8
Kerry	6,395	100.8	1,465	94.1	2,816	109.6	976	96.8	247	88.7
Cork and Kerry	24,687	102.7	5,978	100.1	10,423	108.8	3,571	96.0	1,255	107.1
Carlow	1,914	116.2	481	115.4	736	114.1	365	148.0	93	105.1
Kilkenny	3,015	92.5	741	91.1	1,193	92.0	536	106.9	165	104.4
Tipperary	3,394	98.9	807	94.6	1,353	98.4	505	94.6	162	101.6
South	3,922	96.6	1,020	99.5	1,476	91.8	640	103.5	203	100.6
Waterford	4,653	102.6	1,147	99.4	1,867	104.3	650	94.9	272	120.8
Wexford	16,898	99.8	4,196	98.4	6,625	98.7	2,696	104.3	895	107.5
South East	41,585	101.5	10,174	99.4	17,048	104.6	6,267	99.4	2,150	107.2
Total										

Source: Vital Statistics Data on Death from the CSO, Information Management Unit, Department of Health & Children, 2003

Overview of local service profile

Acute hospital services are provided from 13 acute sites and a profile of current activity and facilities are shown in Table 22 for Cork and Kerry and Table 23 for South East.

Cork and Kerry

Table 22: Profile of Acute Hospital Services in Cork and Kerry

Acute Hospital	Inpatient Beds	Day Case Beds	Inpatient Discharges (2005)	Day Case Discharges (2005)	A&E Attendances (2006 Jan-Nov)	Outpatient Attendances (2006 Jan-Nov)
Cork University Hospital	754	60	26,137	32,720	55,985	137,744
Mercy University Hospital	232	59	9,647	13,766	23,790	36,715
South Infirmary – Victoria University Hospital	189	79	8,605	15,447	23,357	51,126
Mallow General Hospital	76	5	4,635	1,874	12,940	8,065
St Mary's Orthopaedic Hospital	123	0	2,512	1,378	-	5,211
St Finbarr's Hospital	86	0	5,460	18	-	5,102

Securing clinically safe and sustainable services across HSE South
Appendix 4 – Current acute services in HSE South

Acute Hospital	Inpatient Beds	Day Case Beds	Inpatient Discharges (2005)	Day Case Discharges (2005)	A&E Attendances (2006 Jan-Nov)	Outpatient Attendances (2006 Jan-Nov)
Bantry General Hospital	72	6			-	11,601
Kerry General Hospital	278	31	14,706	5,865	32,272	45,381
Total	1,564	240	76,723	71,068	148,344	300,945

Sources: 1). Discharge data: HIPE 2005 2). Beds: HSE Treatment capacity, 2007

Specialist hospital services are provided at Cork University Hospital, including neurosciences and cardiothoracic services, and at Mercy University (MUH) and South Infirmar-y-Victoria University Hospital (SIVUH).

In addition to this, there are two private hospital facilities, one in Cork and the other in Tralee, operated by the Bon Secours. The hospital in Cork is the largest private hospital in Ireland. It has 343 beds and has in excess of 18,000 admissions and almost 30,000 outpatient attendances a year. In addition to its planned care activities, the hospital also takes urgent referrals from general practitioners. In Tralee, the Bon Secours hospital has 130 beds and undertakes emergency surgery in addition to its planned care activities.

In collaboration between the HSE and the National Treatment Purchase Fund (NTPF), additional private hospital sector treatments have been bought to reduce waiting times for public hospital patients.

In the community, PCCC provide a range of primary, community and social care services. In Cork and Kerry, there are 31 public community hospitals with over 1,700 beds. The majority of these beds are designated for long stay continuing care patients although a small proportion of beds are for rehabilitation / community support (159 beds, 8 per cent).

The HSE has adopted a Population Health model of health and social care, which takes a more proactive approach on maximising the health and well-being of the population. A key part of this is the development of Primary Care Teams, and this development is a primary strategic aim within PCCC. Primary Care Teams will serve resident populations of between 3,000 to 10,000, and their composition will include General Practitioners, Public Health Nurses, Community Therapists, Social Workers and Home Care Support Workers. These teams will be supported by a Primary and Social Care Network serving catchments of between 30,000 to 50,000, where a broader range of services will be available.

In the community, there is also private nursing home provision and across the 67 homes, there is a total complement of 2,300 beds.

Securing clinically safe and sustainable services across HSE South
Appendix 4 – Current acute services in HSE South

South East

Table 23: Profile of Acute Hospital Services in the South East

Acute Hospital	Inpatient Beds	Day Case Beds	Inpatient Discharges	Day Case Discharges	A&E Attendances	Outpatient Attendances
Waterford Regional Hospital	436	71	24,444	15,545	57,929	119,141
Wexford General Hospital	235	27	14,922	3,671	30,465	56,611
St Luke's General Hospital	260	12	13,111	4,469	31,729	40,843
Lourdes Orthopaedic Hospital, Kilcreene	51	0	1,155	149	-	4,336
South Tipperary General Hospital	260	12	8,262	1,423	34,061*	27,720
Cashel			3,357	2,791	-	11,837
Total	1,242	122	65,251	28,048	154,184	260,488

Source for discharge data: HIPE 2005

* Amalgamation of Clonmel Medical Unit and Our Lady's Hospital, Cashel, Surgical Unit

Acute hospital services provided at Our Lady's Hospital, Cashel were transferred and amalgamated into services provided at South Tipperary General Hospital on 12 January 2007. This transfer followed a major capital development to accommodate A&E, general surgery and oncology services from Cashel. A number of outreach outpatient clinics, radiology services and a minor injuries unit remain operational at Our Lady's Hospital, Cashel. It is planned to open PCCC services on the Cashel site in April 2007.

In the community, there are 28 public community hospitals with over 1,300 patients. As in Cork and Kerry, the majority of these beds are designated for long stay continuing care patients although a small proportion are for rehabilitation (103 beds, 11 per cent of total community beds).

In the community, there is also private nursing home provision with 54 homes providing over 1,900 nursing home places.

Current service delivery

Regional self sufficiency

Within the National Hospitals Office (NHO), there is a move towards achieving regional self sufficiency and addressing any significant gaps in acute service provision within regions to ensure geographical equity¹⁹⁹.

Examining the extent to which HSE South has achieved regional self sufficiency can be seen through an analysis of hospital discharges using HIPE 2005 data. This shows that 97 per cent of those in Cork and Kerry and 86 per cent of those in the South East access acute hospital services in HSE South. Breaking this analysis down further into county level, then it can be seen that the residents in County Carlow and Wexford are more likely to access services outside of HSE South; predominantly accessing services in Dublin and Mid West. Only 1 per cent of residents in Cork City access services outside HSE South and across Cork and Kerry, only 3 per cent of patients access services at acute hospitals outside of HSE South. Table 24 shows a profile of activity by county.

¹⁹⁹ National Service Plan, Health Service Executive, January 2007

Table 24: Residents treated within and outside HSE South

County	Outflow			
	Absolute		Percentage	
	Cork and Kerry & South East	Outside	Cork and Kerry & South East	Outside
Cork City	39,985	393	99%	1%
Cork County	68,583	2,197	97%	3%
Kerry	27,051	1,574	95%	5%
Carlow	8,108	3,542	70%	30%
Kilkenny	14,538	2,488	85%	15%
Tipperary South	20,386	2,053	91%	9%
Waterford City	11,715	296	98%	2%
Waterford County	14,127	1,495	90%	10%
Wexford	23,980	5,408	82%	18%
Total	228,473	19,446	92%	8%

There is no acute hospital in County Carlow and, therefore, patients travel outside of their county to access services. Also, given the transportation network along the east coast, patients in County Carlow and in the northern parts of County Wexford may find accessing services in Dublin and the Mid West easier than travelling south and west.

Given this profile of activity, it can also be seen that patient care in Cork and Kerry is almost exclusively provided by locally available acute hospital services, with few patients having to access services outside of the region.

For the South East, 16 per cent of patients travel outside of HSE South to access acute hospital services, particularly Dublin and the Mid West, and it is reasonable to assume, that in the future, this pattern will continue.

There is also a proportion of patient activity occurring at acute hospitals in HSE South which arise from patients who are resident outside of HSE South. The majority of these patients are resident in HSE Mid West with the majority of this patient activity being admitted into acute hospitals in Cork and Kerry. These patients are being admitted for emergency and day case surgery, day case radiotherapy and emergency medicine.

Taking into account the inflows and outflows of acute hospital activity for Cork and Kerry and South East, then there is a net gain in activity and, hence, resident catchment population for hospital services in Cork and Kerry and a net loss for acute hospital services in South East, Table 25.

Table 25: In and Out Flows of Activity, 2005

	Cork and Kerry (Discharges)	South East (Discharges)
Inflow	5,980	4,960
Outflow	4,164	15,282
Net Gain / Loss	1,816	-10,322

Hospitalisation rates

The current rates of access to acute hospital services can be examined to assess use and equity of access.

Hospitalisation rates, directly age and sex standardised against the European

standard population, have been developed, split between medical, surgical, paediatric and obstetric admissions. This is shown in Table 26.

Table 26: Age and Sex Standardised Hospitalisation Rates (per 10,000 population)

Admission Type	Region	County	Specialty Group			
			Medical	Surgery	Paediatric	Obs/Gynae
Elective	Cork and Kerry	Cork City	1,324	1,606	651	839
		Cork County	693	928	229	678
		Kerry	372	896	267	876
	South East	Carlow	641	1,117	287	883
		Kilkenny	583	828	289	748
		Tipperary South	800	1,230	371	952
		Waterford City	938	869	657	738
		Waterford County	1,027	892	362	809
	Wexford	669	817	297	751	
	Non-Elective	Cork and Kerry	Cork City	782	571	2,208
Cork County			448	352	1,004	52
Kerry			525	523	1,703	426
South East		Carlow	971	624	1,367	597
		Kilkenny	818	520	1,288	446
		Tipperary South	1,005	724	1,530	490
		Waterford City	1,035	649	2,604	613
		Waterford County	718	509	1,575	455
Wexford		947	623	1,446	688	
Total		Cork and Kerry	Cork City	2,106	2,177	2,860
	Cork County		1,141	1,280	1,233	730
	Kerry		897	1,419	1,970	1,302
	South East	Carlow	1,612	1,741	1,654	1,480
		Kilkenny	1,401	1,348	1,577	1,194
		South Tipperary	1,804	1,954	1,900	1,441
		Waterford City	1,973	1,518	3,260	1,351
		Waterford County	1,745	1,401	1,937	1,264
	Wexford	1,615	1,440	1,744	1,439	

A comparison of hospitalisation rates across counties for medical admissions shows that the rate in Cork City is significantly higher (2,106 discharges per 10,000 population) than the other counties and almost twice that of Cork County. The rate of admissions for residents of Waterford City is the next highest at almost 2,000 discharges per 10,000 population.

A similar pattern is seen across surgical and paediatric admissions with Cork City residents having the highest hospitalisation rate. Waterford City residents also have the highest rate for paediatric admissions. For obstetric and gynaecology services, the counties of Carlow, South Tipperary and Wexford are the highest.

It must be borne in mind that the hospitalisation rates are based on discharge information available from HIPE, which includes public hospital data only. A possible explanation for the low obstetric and gynaecology hospitalisation rate for Cork City and Cork County residents could be the private obstetric hospital facility available in Cork.

Given the private hospital facilities available in both Cork and Kerry, it is difficult to understand why the public hospital elective discharge hospitalisation rate for Cork City residents should be significantly higher than other counties.

A potential factor contributing to this higher rate of admission into acute hospital services is the so called 'distance decay effect', whereby the utilisation of services is inversely related to the distance of patients from hospitals^{200 201}.

Hospital Accreditation

Some of the hospital in HSE South are participating in the Irish Health Services Accreditation Board (IHSAB). The primary purpose of the IHSAB, an independent statutory body launched in October 2002, is to 'establish, continuously review and operate an Accreditation scheme for the Irish health system within a quality framework'.

Table 27 shows those hospitals which are participating in the accreditation programme and their current status²⁰².

²⁰⁰ Rural Health and Healthcare: a North West Perspective, Institute of Health Research, Lancaster University, January 2004.

²⁰¹ Response to Centralisation and Specialisation of Hospital Services – bigger is not necessarily better for rural and remote communities, Royal College of Physicians in Edinburgh, March 2006

²⁰² Irish Health Services Accreditation Board website, April 2007

Table 27: Hospital Accreditation Status

Hospital	Current Accreditation Status
Cork University Hospital	Pre-Accreditation Advanced
Mercy University Hospital	Pre-Accreditation Level 1
South Infirmary-Victoria University Hospital	Pre-Accreditation Level 1 with Report
South Tipperary General Hospital and Our Lady's Hospital Cashel	Pending
St Luke's General Hospital	Pre-Accreditation Level 1
Waterford Regional Hospital	Pre-Accreditation Level 1 with Report
Wexford General Hospital	Pre-Accreditation Early

Clinical Resource Utilisation

Day Case Rates

Based on Hospital In-Patient Enquiry (HIPE) system data for 2005, an analysis of day case rates by speciality has been undertaken. Across a range of surgical specialties, the day case rate achieved by acute hospitals is shown in Table 28.

Table 28: Day Case Rates by Specialty, 2005

Hospital	Specialty				
	General Surgery	Urology	Orthopaedics	Ophthalmology	Otolaryngology
CUH	53.3%	70.4%	65.4%	41.4%	
St Mary's			27.8%		
Mallow	67.4%				57.5%
MUH	66.4%	90.0%		69.8%	50.0%
SIVUH	77.9%				73.1%
Kerry	71.1%		44.2%		25.1%
Cashel	71.9%				
St Luke's	79.3%				
Kilcreene			11.4%		
WRH	74.8%		71.7%	85.9%	36.5%
WGH	68.7%				
Total	71.3%		39.0%		59.7%

Source: HIPE data, 2005

For general surgery, the day case rate is between 53 per cent at Cork University Hospital and almost 80 per cent at St Luke's General Hospital, Kilkenny. For orthopaedics, the main sites are St Mary's Orthopaedic Hospital, Cork and Kilcreene Orthopaedic Hospital and Waterford Regional Hospital. Across these three sites, the day case rate ranges from a low 11 per cent at Kilcreene and 28 per cent at St Mary's to a high of 72 per cent at Waterford. Similarly for ophthalmology, there is a marked difference in the day case rate between sites; from 41 per cent at Cork University Hospital to more than double this at Waterford Regional Hospital.

Between the two main centres for otolaryngology; South Infirmary and Waterford Regional Hospital; there is a twofold difference between the sites with the South Infirmary achieving a day case rate of 73 per cent.

This comparison of day case rates at a specialty level provides a useful reference point for further, more detailed analysis, since, differences in casemix may account for some of the variation observed at a specialty level. The comparison of day case rates for some surgical procedures is shown below, Table 29.

Table 29: Day Case Rates by Procedure, 2004

Hospital	Specialty				
	Excision of breast lump	Haemorrhoidectomy	Extraction of cataract	Myringotomy	Reduction of nasal fracture
CUH	71.3%	64.0%	37.1%	0.0%	7.9%
Mallow	81.3%	90.6%		89.1%	78.3%
MUH	66.7%	82.4%		88.1%	0.0%
SIVUH	93.0%	88.1%		87.5%	55.2%
Kerry	57.5%	82.9%		77.7%	30.0%
Cashel	61.0%	84.1%			
St Luke's	72.1%	89.9%			100.0%
Kilcreene					
WRH	70.6%	63.1%	85.3%	73.5%	19.5%
WGH	60.3%	81.7%			
Total					

Source: HIPE data, 2004

As reported at specialty level, there are still differences between hospital sites for individual procedures; the most significant of these (in terms of volumes between sites) being the extraction of cataract between Waterford Regional Hospital and Cork University Hospital.

Length of stay

A comparison of average length of stay for medicine, surgery and orthopaedics across the sites is shown in Table 30.

Table 30: Average length of stay, 2005

Hospital	Elective Inpatient Average Length of Stay			Non-Elective Inpatient Length of Stay		
	Medicine	Surgery	T&O	Medicine	Surgery	T&O
CUH	5.1		4.4	10.4		5.8
St Mary's			9.5			8.7
Mallow	3.9	5.2		5.2	5.3	
St Finbarr's	34.0			7.0		
MUH	6.1	6.0		10.5	6.8	
SIVUH	3.8	5.1		8.8	6.9	
Kerry	7.7	4.6	7.3	8.0	6.3	8.3
Sth Tipperary	6.5	7.2		6.0	8.5	
Cashel		4.2			3.9	
St Luke's	7.4	4.5		7.4	4.6	
Kilcreene			7.8*			
WRH	6.5	5.4	3.7	8.7	7.2	5.8
WGH	5.6	5.8		6.6	5.4	
Total	8.2	5.7	8.1	8.0	6.0	6.2

Source: HIPE data, 2005

* Based on the limited subset of data submitted to HIPE

Across these three specialties, which account for the majority of acute hospital bed use, there are differences in the average length of stay across sites. For emergency medicine, both Cork University Hospital and Mercy University Hospital have the longest lengths of stay; approximately 10.5 days; compared with an average of 8 days and 6 days or less on average at Mallow General Hospital and South Tipperary General Hospital.

Examining the average length of stay for surgery, identifies that Cork University Hospital has the highest length of stay for both elective and non-elective discharges. Both Waterford Regional Hospital and Cork University have the same average length of stay for emergency trauma discharges, while the average length of stay at Kerry General Hospital is longer by 3 days. For elective orthopaedic work, the average length of stay is almost 2 days longer at St Mary's Orthopaedic Hospital compared with Kilcreene Orthopaedic Hospital and Kerry General Hospital.

The length of stay being achieved for each hospital has been compared against that being achieved nationally. The lengths of stay have been compared at a Diagnosis Related Group level and reflect the differences in casemix across each hospital. Table 31 shows the findings of this comparison.

Table 31: Comparison of lengths of stay with the National average

Hospital	Current Average Length of Stay		Revised Average Length of Stay (based on National Averages)		Reduction in Beds (based on achievement of National Averages)	
	Elective	Emergency	Elective	Emergency	Elective	Emergency
CUH	5.5	6.3	4.9	5.6	16	36
St Mary's	9.2		7.6		13	
MGH	4.2	5.2	3.6	4.7	2	6
MUH	5.5	7.7	5.1	6.8	5	18
SIVUH	4	7.2	3.6	6.1	5	18
KGH	4.5	5.8	4.0	5.1	6	24
Cashel	4.2	4.0	3.7	3.5	2	3
Sth Tipperary	4.1	4.9	3.6	4.7	4	5
Kilcreene	7.8*		7.2		0	
WGH	4.2	4.9	3.9	4.6	2	8
WRH	4.2	6.3	3.9	5.4	7	54
Total	4.8	5.9	4.3	5.3	68	188

Based on HIPE data 2005

* Based on the limited subset of data submitted to HIPE

Overall, there are approximately 250 more beds used than would be needed if the acute hospitals could undertake their relevant inpatient casemix activity at national average lengths of stay.

The casemix classification used in Ireland is based on that used in Australia. Using national average length of stay data in Australia for 2003/04, a comparison has been made with admission in HSE South for a selected number of high volume conditions. This is shown in Table 32.

Table 32: Comparison of DRG average length of stay between HSE South and Australia (2003-04)

DRG	Average Length of Stay		
	HSE South	Ireland	Australia
103C Hip Replacement – CSCC	12.4	11.9	7.5
E65A Chronic Obstructive Airways Disease + CSCC	11.3	11.5	8.1
F62B Heart Failure & Shock – CCC	8.8	9.2	5.5
B70C Stroke – CSCC	13.1	13.7	7.0
B70B Stroke + SCC	25.7	24.9	10.8
E62B Respiratory Infection / Inflammation + SMCC	10.5	10.8	6.3
F74Z Chest Pain	2.9	3.1	1.6
E62A Respiratory Infection / Inflammation + CCC	16.4	20.5	10.9

This highlights significant lower length of stays being achieved in Australia in 2003/04 for some high volume conditions and procedures compared with clinical practices in HSE South and Ireland in 2005.

Use of theatre facilities

The profile of theatre facilities available across the acute hospital sites is shown in Table 33.

Table 33: Use of Theatre Facilities

Hospital	Theatres	Available Annual Sessions	Surgical Procedures (HIPE 2005)	Procedures per Session
CUH	11 main, 1 obstetric theatre. 2 day and 2 gynaecology (to be commissioned by end of 2007)	5,060	44,827	8.9
St Mary's	2	920	3,719	4.0
Mallow	1	460	2,891	6.3
MUH	5 main and 3 day	2,760*	13,700	4.7
SIVUH	5 main and 2 day	3,220	15,264	4.7
Kerry	5	2,300	10,288	4.5
Sth Tipperary	2 main and 1 day	1,380	3,780	2.7
St Luke's	2	920	7,494	8.1

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WRH	8	3,680	24,444	6.6
WGH	2	920	8,330	9.1
Total	47	21,620	134,316	6.2

* Based on 4 main and 2 day theatres being fully operational

Based on a 46 week year, the relative utilisation of each hospital's theatres can be assessed against the volume of surgical procedures identified in HIPE. Overall, this shows that, on average, each theatre session undertakes approximately 6 cases. The range is between nine cases at Wexford General Hospital and Cork University Hospital and less than three cases at South Tipperary General Hospital. It is important to recognise that whilst this analysis provides an initial indication of productivity, a more in-depth analysis would need to be undertaken, examining the relative casemix between sites, before any definitive conclusion could be drawn.

Diagnostic Procedures

Another useful analysis is examining the proportion of diagnostic procedures which are recorded. Potentially, these types of diagnostic tests could be performed in alternative locations; either local hospitals or in community settings. Table 34 shows the proportion of tests which are diagnostic for each site. This shows that there is considerable variation across the sites, with the highest proportion of diagnostic procedural admissions being at South Tipperary General Hospital, Mercy University Hospital and St Luke's General Hospital.

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Table 34: Diagnostic Procedures Undertaken

Hospital	Diagnostic Procedures (HIPE)	Total Procedures (HIPE)	% Diagnostic
CUH	6,783	51,610	13.1
St Mary's	5	3,724	0.1
Mallow	827	3,718	22.2
MUH	6,359	19,638	32.4
SIVUH	5,063	20,327	24.9
Kerry	3,328	13,616	24.4

Hospital	Diagnostic Procedures (HIPE)	Total Procedures (HIPE)	% Diagnostic
Sth Tipperary	2,225	6,005	37.1
St Luke's	3,667	11,161	31.6
WRH	4,537	28,981	15.7
WGH	3,108	11,438	27.2
Total	35,902	170,218	21.1

Use of A&E Facilities

Across Cork and Kerry, there are over 160,000 A&E attendances annually. Table 35 provides details of attendances in 2006 between January and November.

Table 35: A&E Attendances, January to November 2006

Hospital	Attendances	Admissions from ED	ED Admissions as % of New Attendances
CUH	55,985	14,464	29.0
Mallow	12,940	2,934	25.3
MUH	23,790	5,233	24.7
SIVUH	23,357	4,326	23.8
Kerry	32,272	8,424	30.9

As can be seen, there is significant variation in the number of attendances across sites with both Cork University Hospital having attendances in excess of 55,000 in 11 months, compared with Mallow General Hospital seeing around 12,000 patients.

The proportion of A&E attendances which are subsequently admitted also varies, from less than 25 per cent at Mercy University Hospital and South Infirmar-y-Victoria University Hospital to around 30 per cent at Kerry General Hospital and Cork University Hospital.

Care, however, may need to be taken in interpreting these proportions since each hospital has different arrangements for 'streaming' patients for assessment on arrival; particularly medical and paediatric patients and for recording patient attendances e.g. at Cork University Hospital, patients attending the eye casualty department are recorded as outpatients and not A&E attendances.

In addition to the above, there is also a casualty room at Bantry General Hospital, which treats around 6,000 attendances annually.

Use of Outpatient Department Facilities

Across HSE South, there were in excess of 500,000 outpatient attendances recorded for the first 11 months of 2006. Extrapolating this for a full year, would result in almost 600,000 attendances annually. The overall ratio between New and Return attendances is 1:3.3.

Table 36 provides details of outpatient New to Return ratios for the acute hospitals across four main specialty groups; surgery, medicine, paediatrics and obstetrics.

Table 36: Outpatient Return to New Ratios, 2006

Hospital	Outpatient Return to New Ratios			
	Surgery	Medicine	Paediatrics	Obstetrics
CUH	2.8	4.7	3.6	1.7
St Mary's	2.2			
Mallow	1.4	3.5	1.1	
Bantry	4.7	4.6	34.0	2.1
Erinville	1.2		2.8	3.3
St Finbarr's		18.0	4.0	
MUH	3.4	3.2	3.7	
SIVUH	1.6	2.5		
Kerry	2.7	3.5	6.8	3.2
Sth Tipperary	2.4	4.0	3.5	4.8
Cashel	1.8			
St Luke's	1.4	3.3	3.9	4.6
Kilcreene	1.8			
WRH	4.0	5.1	5.3	3.2
WGH	1.4	4.1	6.5	4.4
Total	2.5	3.9	4.3	3.7

Focusing on those acute hospital sites with the majority of outpatient activity for each specialty only, it would appear that there is significant variation between sites and the range of Return to New ratios is between:

- 1.6 at South Infirmar-y-Victoria University Hospital and 4.0 at Waterford Regional Hospital for surgery;
- 3.3 at St Luke's General Hospital and 5.1 at Waterford Regional Hospital for medicine;

- 2.8 at Erinville and 6.8 at Kerry General Hospital for paediatrics; and
- 3.2 at Kerry General Hospital and Waterford Regional Hospital and 4.8 at South Tipperary General Hospital for obstetrics.

Although the volumes of attendances are quite low, it should be noted that Bantry General Hospital has the highest ratio of Return to New attendances in surgery and medicine.

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Some of this variation may be a result of differences in case complexity of referrals and sub-specialisation between acute hospital sites although the degree of variation does warrant further investigation to ensure consistency of referral protocols and treatment pathways.

Primary, community and continuing care

The profile of current service provision predominantly comprises GPs, community nursing services, community hospital facilities, nursing homes and home care packages. Care is managed and organised at Local Health Office level of which there are nine in HSE South.

A comparison of the availability of GP and Public Health Nurses (PHNs) per resident population is shown in Table 37. This shows that in Cork and Kerry, there are more GPs available than in the South East; 5.8 per 10,000 population compared with 4.8 per 10,000 population but fewer PHNs; 3.5 versus 4.0. The level of provision for both GPs and PHNs is lowest in County Wexford.

Table 37: Availability of GPs in HSE South

Local Health Office Area	Population (2006)	Number of GPs	Number of PHNs	GPs per 10,000	PHNs per 10,000
West Cork	53,445	34	23.32	6.4	4.4
North Cork	80,795	50	28.96	6.2	3.6
North Lee	167,536	92	50.63	5.5	3.0
South Lee	179,133	112	57.35	6.3	3.2
Kerry	139,616	75	54.85	5.4	3.9
Cork and Kerry	620,525	363	215.11	5.8	3.5
Carlow/Kilkenny	120,671	61	73	5.1	6.0
South Tipperary	88,274	43	38	4.9	4.3
Waterford	119,914	59	43	4.9	3.6
Wexford	131,615	60	32	4.6	2.4
Total South East	460,474	223	186	4.8	4.0
Total HSE South	1,080,999	588	401.11	5.4	3.7

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In relation to bed capacity, Table 38 provides a profile of community hospital and nursing home beds in each Local Health Office. This shows a high volume of community hospital beds in West Cork

and a high volume of Nursing Home beds in South Tipperary. In comparison, the urban Local Health Offices of South Lee, North Lee have a lower level of community hospital bed provision.

Table 38: Profile of Community and Nursing Home Beds

Local Health Office Area	Community Hospital Beds	Nursing Home Beds	Community Hospital Beds per 1,000 Pop > 65 years	Nursing Home Beds per 1,000 Pop > 65 years
West Cork	338	1,766	55.3	31.9
North Cork	296		32.1	
North Lee	287		15.0	
South Lee	293		14.3	
Kerry	499	554	26.0	28.9
Cork and Kerry	1,713	2,310	23.1	31.2
Carlow/Kilkenny	455	439	33.7	32.5
South Tipperary	279	602	25.0	54.0
Waterford	339	424	23.9	29.8
Wexford	271	566	17.7	36.9
Total South East	1,344	2,031	24.8	37.5
Total HSE South	3,057	4,341	23.8	33.8

Current governance arrangements for hospitals

Statutory Hospitals

Under present circumstances, the management of the acute hospital facilities owned by the HSE (Cork University Hospital, Kerry General Hospital, Mallow General Hospital, Bantry General Hospital, and St Mary's Orthopaedic Hospital) comes under the jurisdiction of the National Hospitals Office (South).

Clinical leadership tends to operate along traditional, hierarchical lines, although this is focused mostly on clinical and patient care issues and on professional development, rather than on managerial issues.

Cork University Hospitals Group

The General Manager of Cork University Hospital has lead responsibility for operational service delivery at Cork University Hospital, St Mary's Orthopaedic Hospital, St Finbarr's Hospital and Mallow General Hospital, and is supported by locally-based managers/ administrators in each of these locations.

Cork University Hospital over the last 5 – 6 years has introduced clinical divisions (15 currently operate), an Executive Management Board, a Quality, Safety and Policy Evaluation Group, and local development of service strategies and plans. There is an ongoing debate²⁰³ regarding the need to move to the next stage of devolved governance arrangements, including greater use of delegated budgets, the creation of a Board, and the appointment of a CEO.

Services at Bantry General Hospital come under the local Hospital Manager/Area Administrator. The hospital has recently formed an Executive Management Board, although this is very much in its infancy, and the EMB is small, reflecting the size of the hospital. Work has also recently been done at Mallow General Hospital to examine the management and governance structures required to align with good practice. The relatively small size of these hospitals provides an opportunity for close interaction between the local hospital manager/administrator and senior clinical staff on various operational and service-related issues

Kerry General Hospital

Kerry General Hospital comes under the responsibility of a locally-based General Manager. Kerry General Hospital has had an Executive Management Board (EMB) in operation since 2001, and a review in mid-2006 highlighted the need to develop its role in terms of the leadership and strategic development of the hospital, to extend its membership and to revise aspects of its working practices.

Voluntary Hospitals

The Mercy University Hospital and the South Infirmary Victoria University Hospital, although majority-funded by the HSE, are independent, voluntary hospitals. The situation regarding governance is different to that of statutory organisations, reflecting their separate status and ownership.

Key features of the governance arrangements at each of these two hospitals include the following:

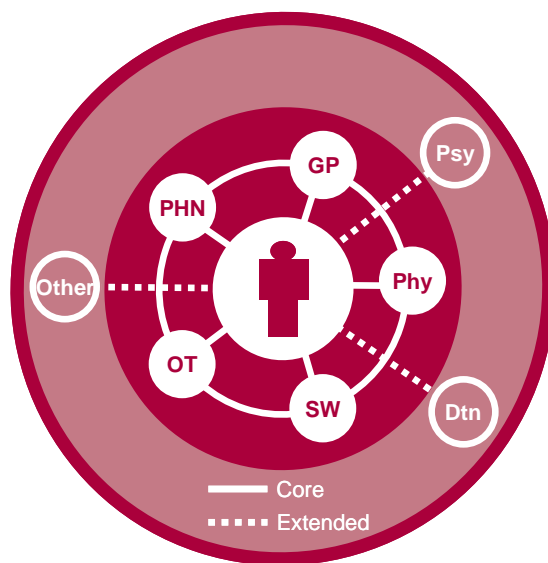
- An Independent Board of Governors reflecting the hospital's ownership;
- A Chief Executive Officer accountable for the hospital's performance and service delivery, and for providing organisational leadership; and
- An Executive Management Board providing a forum for service review, planning and cross-professional discussion involving clinicians and managers.

²⁰³ "Proposals from CUH Consultant Medical Staff on how Clinicians should be involved in the running of Cork University Hospital", January 2007.

Appendix 5: PCCC Transformation Programme

One of the HSE's Transformation Programmes is to configure PCCC services to deliver optimal and cost effective results. The objective is to ensure that, by 2010, users will be able to easily access (as close to home as possible) a broad spectrum of care services through their local primary care teams.

A single service model has been developed which is population based and puts the patient at the centre. Multidisciplinary Primary Care Teams will be developed to provide existing and enhanced services to local communities supported by Primary and Social Care Networks. Teams will comprise core members, who interact with users frequently, and extended members, who interact less frequently but who are easily accessible and fully integrated to the Primary Care Team way of working.



Primary Care Teams and Primary and Social Care Networks are integrated with hospitals, multi agencies, private providers, voluntary agencies, and support groups.

The benefits of Primary Care Teams are:

- More services available to persons in the community;
- Easier navigation of the system;
- More resources available to teams;
- Increased team working;
- Economy of time and effort; and
- Greater networking between communities and providers.

Nationally, by the end of 2007, there will be 254 Primary Care Teams covering 2.2. million of the resident population and involving 1,260 GPs.

In HSE South, there will be 63 Primary Care Teams established at the end of 2007 and when the programme of implementation is completed there will be 139 teams, supported by 35 Primary and Social Care Networks.

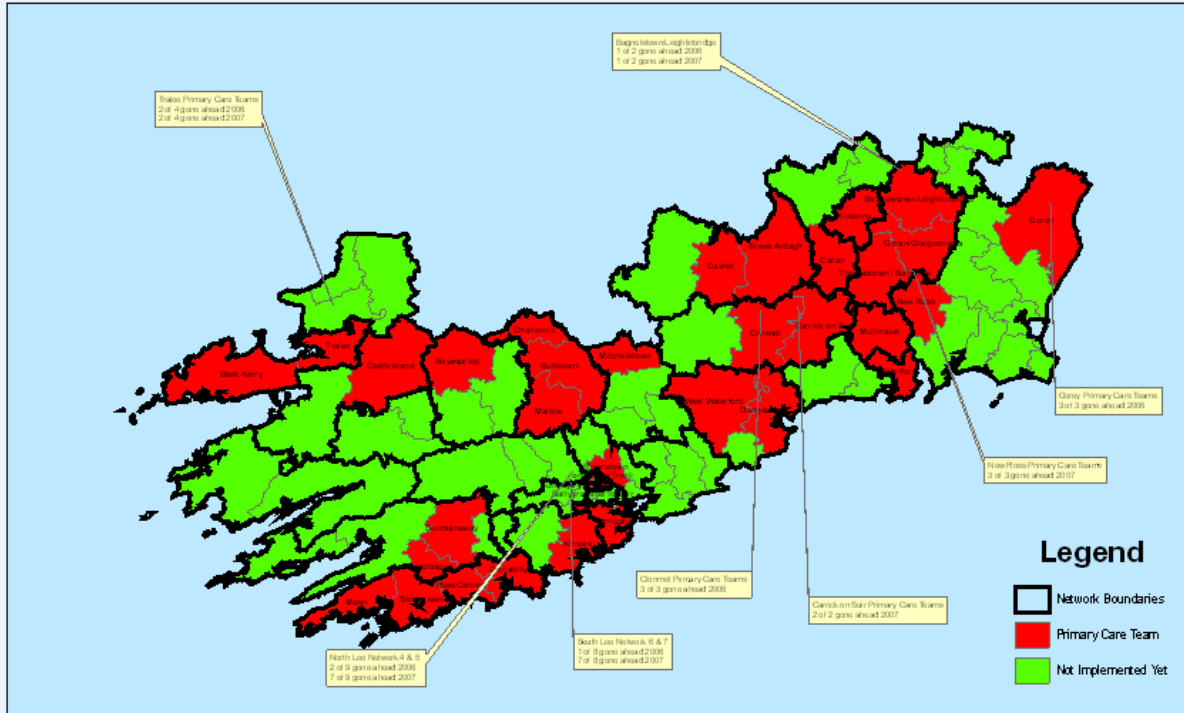
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Appendix 5: PCCC Transformation Programme

In relation to additional investment in staff to support this programme, nationally in 2006-2007, 600 new posts have been provided, of which 155 have been for HSE South.

Detailed below is the geographic profile of the current development of Primary Care Teams across HSE South in 2006-2007.

Securing clinically safe and sustainable services across HSE South
 Appendix 5: PCCC Transformation Programme

Primary Care Teams in Development 2006-2007 & Network Boundaries



Data Sources:
 Health Service Executive
 Ordnance Survey Ireland
 Central Statistics Office

Map Produced By:
 Project Office, PCCC
 Health Service Executive
 Plassey
 Limerick