

1 Introduction

1.1 A Modern Trend

- 1.1.1 Managing increasing demand for emergency and elective procedures, whilst maintaining financial balance and quality in the care delivery process is a focus for most health systems and organisations across Europe and the rest of the world. We are all living longer, medical technology and advancement enables us to intervene and support longevity much more systematically. Populations are changing and are much more mobile. These changes place new demands upon health services. One of the areas which has evidenced these changes most acutely is the emergency department, known traditionally as Accident & Emergency (A&E).
- 1.1.2 This trend has been recognised as a growing problem throughout the developed world (Graff, 1999¹; Schafermeyer and Brent, 2003²; McManus, 2001³; Derlet et al., 2001⁴). In 2001, over a third of hospital emergency departments in the USA were forced to divert patients because of overcrowding and 85% of state emergency medicine chapters described overcrowding of emergency departments as a serious threat to their emergency departments (Franaszek et al., 2002⁵). Boyle et al. (1992⁶) reported that emergency departments in Quebec, Canada, frequently experienced overcrowding, resulting in long patient waiting times, ambulance diversions, and both patient and physician dissatisfaction. More than 15 million patients attend emergency departments in England and Wales every year, prompting the Department of Health to develop specific performance targets to reduce waiting in emergency departments and for patients waiting from the decision to admit to arriving at a bed.
- 1.1.3 More people attending emergency departments, both for treatment and/or requiring admission, obviously cause increases in waiting times within departments. More presentations can also create bottlenecks in the department, giving rise to some patients being diverted and can have huge knock on effects for other areas of the hospital, creating cancellations and delays in other, planned, areas of work.

¹ Graff, L. 1999. 'Overcrowding in the ED: an international symptom of health care system failure', *American Journal of Emergency Medicine* 17:208-209.

² Schafermeyer, R.W. and Brent, R.A. 2003. 'Hospital and emergency department crowding in the United States', *Emergency Medicine* 15:22-27.

³ McManus, M. 2001. Emergency department overcrowding in Massachusetts: making room in our hospitals. Waltham, MA: The Massachusetts Health Policy Forum.

⁴ Derlet, R., Richards, J. and Kravitz, R. 2001. 'Frequent overcrowding in U.S. emergency departments', *Academic Emergency Medicine* 8:151-155.

⁵ Franaszek, J.B., et al 2002. *Responding to emergency department crowding: A guidebook for chapters*. Dallas: American College of Emergency Physicians.

⁶ Boyle, P., Pineault, R. and Roberge, D. 1992. 'Assessing Quebec's multicomponent program to reduce emergency room overcrowding', *Canadian Public Policy* 1992;18:189-202.

- 1.1.4 On any given day across Irish hospitals nationally up to 300 patients can be waiting on trolleys for admission via the emergency department. This position is in the context of approximately 3,400 attendances per day to A&E in 2004. On average between 20-25% of those attending emergency departments will require emergency admission.⁷ Although Ireland is not alone in experiencing these kind of figures, this is not to underestimate the sometimes catastrophic consequences this situation has on patients, carers, staff and organisations across the State. Indeed, the waiting situation in national emergency departments has been dubbed an A&E 'crisis' in national reporting.
- 1.1.5 Recent analysis of the problem by the HSE and other organisations has confirmed that gaps and under-provision in the non-acute sectors, such as primary care and community support services, out of hour's services, rehabilitation and continuing care are contributing to the increase in the demands on emergency departments and acute admissions. This marries with international thinking on improving emergency waits and flows, which has converged around, for example, improvements in the management of demand to departments, effective patient flow and management whilst in the department, appropriate staffing and interventions, reducing duplication and employing lean thinking in care process redesign.

1.2 Impact of Public Spending Cuts

- 1.2.1 Medical patients account for almost three-quarters of all patients treated and inpatient bed days used in acute hospitals across Ireland. The proportion increased from 72% in 1995 to 74% in 2000. Although this rise in emergency medical admissions is common in other countries and is something of a modern phenomenon, the impact of spending cuts, although not exclusive to the Irish system, have played a significant part in the manifestation of waits in the emergency department.
- 1.2.2 In direct correlation with Ireland's increasing prosperity, there has been a large and rapid investment in health spending, accounting, in real terms, for the highest average growth rate across all OECD countries, at 11.4% in 2002⁸. However, this was not always the case. On the contrary, health spending, along with other public services in the 1980's was significantly lower around 6-7% of national income⁹. The 1980's also saw significant cuts in spending, both in terms of health service provision and bed closures, in an attempt to return to financial stability. At the start of the eighties, inpatient bed numbers stood at 17,665 beds, to deal with 543,698 inpatient episodes and relatively few day case procedures. In 2000, the bed numbers were 11, 832 to deal with 548,834 inpatient episodes and a vastly increased number of day case procedures.¹⁰ The National Bed Review, carried out by the Department of Health and Children in 2002 is the first attempt to review the required baseline position following new investment to the health service.

⁷ HSE Submitted statistics

⁸ OECD Health Data 2005 www.oecd.org/health/healthdata.

⁹ Wren M. Unhealthy State - Anatomy of a Sick Society. New Island 2003

¹⁰ Irish Medical Organisation – A Position Paper on Accident & Emergency 2005

- 1.2.3 The cuts undoubtedly had a number of operational consequences on the health service. The first was obvious capacity shortages across the system, which, when combined with changes in social and demographic trends began to place pressure upon providers to effectively predict and balance capacity with rising demand. Second, prior to the cuts and other system changes, the direct contact/referral relationship between GPs and hospital consultants was a much stronger one. Access to consultant opinion was more straightforward. Importantly, referrals were more commonly accepted direct to named specialists and to wards. But, as capacity pressure upon hospitals increased, open access to in-patient care and opinion become necessarily more limited.
- 1.2.4 Correspondingly, attendances to the emergency departments – the *available* route to the acute system began to rise. The overall numbers of patients admitted to hospital as an emergency increased from 67% to 72% from 1995 to 2000. Similarly, rates of out-patient attendances within the acute sector also rose. In 1980, there were 1.46 million visits to the outpatient departments of acute hospitals. In 2000 this rose to approximately 2 million, an overall increase of 37%¹¹.
- 1.2.5 There was therefore a significant element of ‘overheating’ within the health care system for a number of years, which, when married with other contextual factors described in detail in Section 5 of this report has significantly contributed to a disproportionate channelling of activity to and through overstretched A&E departments across the country. In many ways, the emergency department in Ireland, as experienced elsewhere in the world, has incrementally begun to act as a ‘buffer’ between competing pressures within the system. This has therefore led to long waiting times in busy departments and significant numbers of patients waiting, often on trolleys for urgent admission to hospital – culminating in the representation and presentation of an A&E *crisis*.
- 1.2.6 This however is an over simplification. The ‘A&E crisis’ in Ireland, as with other countries around the world, is not uni-factorial. The causes of increased attendances and waits around the Country are rather multi-factorial, taking into account forces and drivers in a wide range of areas from finance, demographics, social and medical change, health system operation and workforce, to changing expectations from ourselves as consumers on all aspects of service delivery.
- 1.2.7 Although greater efficiency can undoubtedly be applied to the emergency department, as this report will go on to discuss; it is only by addressing the challenges faced by the emergency department within the context of a wider health and social care system, that the problem of waiting will be satisfactorily addressed in the longer term.

1.3 System Reform

- 1.3.1 This has been fully acknowledged by the system reform agenda. The A&E Mapping and Efficiency Project takes place at a time of massive reform for the Irish health system to look at the multi-factorial improvements necessary. The 10-year Health Strategy ‘Quality and Fairness - A Health System for All’, released by the Department of Health and Children clearly recognises the important inter-relationship between the hospital, community and primary care sectors in delivering whole system improvement.

¹¹ Irish Medical Organisation – A Position Paper on Accident & Emergency 2005

Only when people can access the right care, at the right time and in the right place (which is frequently not the emergency department), will person centred care become the reality.

1.3.2 The HSE Service Plan 2005 identified four shared objectives across both PCCC and the National Hospitals Office, to bring this aim to the forefront by:

- Delivering health and social care services to an existing funded level at a minimum and to a standard that maximises quality and safety;
- Promote the harmonisation and equity of all services nationally whilst demonstrating an improvement in access to services.
- Providing person-centred, needs led services, which are responsive to user preferences and choices and reflect best practice;
- Develop and deliver services in accordance with a population health approach;

1.3.3 A critical focus for reform and a first priority for a shared agenda was improvement to relieve the waiting situation in national emergency departments.

1.4 The A&E 10 Point Plan

1.4.1 As a consequence, the Tanaiste and Minister for Health & Children, Mary Harney, issued the A&E 10 Point Action Plan. The Plan recognises the need to look at improvement at a system wide level, taking capacity issues into account with the practice of quality and efficient clinical and organisational processes, applicable across a whole health system.

1.4.2 As a priority the plan set out to improve patient flow and waiting times across the acute sector through a range of whole system initiatives shown next in Figure 1.

Figure 1 - A&E 10 Point Plan

A&E 10 Point Plan
<p>Greater developments of schemes to manage minor injuries.</p> <p>This supports increased access for people with lower acuity conditions, whose treatment priority can be lowered when higher acuity patients present requiring immediate attention, causing queues.</p>
<p>Enhanced access for GP diagnostic services</p> <p>Wider availability of acute diagnostic services (particularly MRI)</p> <p>These two initiatives support greater access to important diagnostic capacity, to prevent a GP referral to the emergency department and to prevent bottlenecks and speed up treatment in the hospital setting.</p>
<p>Provision of acute medical units for non-surgical patients</p> <p>This supports a return to GP direct admissions for patients assessed as requiring urgent medical admission, but not requiring the services of an emergency department, reducing trolley waits in emergency departments.</p>
<p>Transfer of suitable cases to private nursing home care</p> <p>Greater intermediate provision within the private sector, to facilitate discharge arrangements</p> <p>Expansion of home care packages to support older people at home</p> <p>Expansion of palliative care facilities</p> <p>These four initiatives are to support appropriate and timely discharge from hospital to free acute capacity and provide more person centred care.</p>
<p>Expansion of GP out of hours services, to provide alternatives to presentation at A&E</p>
<p>Improved cleaning and security measures for A&E</p>

2 A&E Mapping and Efficiency Project

2.1 Overall Aim

2.1.1 The system reform agenda, of which the A&E 10 Point Plan is a part, correctly establishes the management of increasing emergency flows in Ireland to wider system developments, such as:

- The provision of overall capacity across a health and social care system (i.e. the physical number of beds and facilities available to the system, as well as the number of people available to deliver care).
- The development of primary and community care services, championed in Ireland by the National Primary Care Strategy, '*Primary Care: A New Direction*'.
- The interrelationships and processes between different parts of the system, particularly between acute care, primary and community services, ambulance services, intermediate and palliative care, as well as residential and nursing home services.
- The relationship with the general public about the use and role of emergency services, which are preserved for acute and urgent emergencies, but increasingly are being used as a first line of care delivery, for all situations and/or a route into hospital.

2.1.2 As one part of this whole system focus, the National Hospitals Office wanted to look at what part improving the patient management process within emergency departments and the hospital more generally, had to play on relieving emergency waits.

2.1.3 Tribal Secta was commissioned by the National Hospitals Office to carry out a mapping and efficiency exercise across 10 national hospitals, to identify blockages, causes and potential solutions in the patient's journey from the decision to admit from the emergency department to discharge. The focus of the project was on the appropriate utilisation of *existing* acute capacity and the application of best practice, to improve the pathway of patients through efficiency and innovation.

2.2 Project Objectives

2.2.1 Although cognisant of the whole system, the A&E Mapping and Efficiency Project had the following objectives:

- Track the patient journey from presentation in the emergency department, through the hospital system, from admission to discharge;
- Identify gaps and deficits in the management of patient flow and make recommendations where opportunities exist for improvement;
- Highlight practice which adds either value or waste to the management of patient flow from A&E, through admission and discharge and make recommendations for realistic improvements;
- Make recommendations, where appropriate, on the extent to which potential alternative settings to hospital might be considered;
- Advise individual hospitals on the use of on-going monitoring measures to demonstrate that changes have made an improvement in the care and experience of patients;

- Draw up an individual action plan for each hospital, identifying diagnosis and a prioritised set of actions for implementation, as well as issues outside the organisation impacting upon efficiency;
- Provide an evaluation report (this report) for the National Hospitals Office across the whole process, identifying best practice and wider lessons and/or implications for the health system as a whole to manage the increase of A&E admissions over time.

2.3 Format of the Report

2.3.1 This overview report brings together the findings and the learning across the A&E Mapping and Efficiency Project in the following sections:

- Gathering the Learning– this section brings together other recent work across the State on, or related to, the subject of emergency care. It also gives an overview of recent initiatives and learning on best practice on the effective management of emergency waits and flow, based on evidence gathered from elsewhere;
- Approach – outlining how the A&E Mapping and Efficiency Project was conducted in the participating organisations;
- System Wide Findings – this section presents the learning from the mapping exercise for the health care system as a whole;
- Organisation of Emergency Departments and Flow – here we summarise the main delivery models across the organisations and how emergency waits and flow could be improved.
- The Way Forward – in the final section, we set out, what we consider to be the priority actions required across the system to improve the future management of waiting and patient flow in emergency departments and across the health system more generally across Ireland.

3 Gathering the Learning

3.1 Related Earlier Work in Ireland

3.1.1 The A&E Mapping and Efficiency Project takes place against a backdrop of earlier and important reports, on aspects of the emergency situation, namely:

- **Acute Hospital Bed Capacity – A National Review – DoHC 2002** – Already mentioned, this review was carried out to examine the need for change to the acute bed capacity across the State. The review attempted to predict need over time, taking into account factors which would impact upon demand, such as demographic changes, primary care provision and shift from in-patient elective surgery with day surgery. Using nationally available hospital inpatient episode statistics (HIPE) up to the year 2000 and comparisons of capacity against OECD countries, the report recommended the addition of 2,840 inpatient beds across the acute system by 2011. The report also recommended that further examination should be given to improving the use and efficiency of capacity, concluding that the provision of more beds is only part of a solution of difficulties experienced by acute organisations.

- **Report of the Committee on Accident & Emergency Services – Comhairle na nOspidéal, 2002** – This report was undertaken to review the structure, operation and staffing of Accident and Emergency Services and Departments across the State. The report highlighted significant operational challenges to departments including, access to, and management of, inpatient beds, increased and more timely access to diagnostics and better use of care pathways. The report set out a set of recommendations for the effective operation of emergency departments, within three distinct but interdependent streams in the hospital – emergency care, in-patient elective care and day and outpatient care. Each stream required significant input and set up.

- **Report of the National Task Force on Medical Staffing, 2003 (The Hanly Report)** – the National Task Force was asked to devise an implementation plan for the implication of the European Working Time Directive (EWTd) and the requisite requirement to substantially reduce the working hours of non-consultant hospital doctors (NCHDs), who deliver the lion's share of public patient care across hospitals in Ireland. The committee acknowledged that its recommendations would implicate radical reform of the organisation of acute hospital services and particularly on the organisation of emergency care (including location of departments). Its recommendations centred on three key elements:
 - Reducing NCHD hours in line with the European Working Time Directive;
 - Introducing a consultant-provided service;
 - Reforming medical education and training structures.

- **Admissions & Discharge Guidelines – Health Strategy Implementation Project 2003 – The Health Boards Executive 2003** – this report aimed to set national standards for the management of admissions and discharge processes across the country, to support the efficient and effective management of both

emergency and elective patients. The guidelines set out the aspects of a whole system approach for admissions and discharges incorporating:

- Strategic and timely service planning (e.g. regular annual review).
 - Uniformity of structures and processes (i.e. following national guidelines where they exist).
 - Linked protocols and pathways (e.g. shared between primary and secondary care and based on international best practice, so that objective measures of performance are readily available).
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- **National Review of Bed Management Function – Capita Report to the Employers and Unions 2003** – This report commissioned by the health service employers and nursing unions to undertake a comprehensive review of the bed management function and grading system on a national basis. The report concluded that in a good number of hospitals bed management was well developed and had contributed to good admission and discharge practices. However the report found that there were a number of issues which impacted upon the bed management function within hospitals which were outside the direct control of the hospitals including:
 - Lack of long term care placements;
 - Operating hours for community care services;
 - Proactive changes in consultant practice to encourage prompt discharge of patients;
 - Funding for initiatives to support patient throughput;
 - Diagnostic services working hours were inadequate to support effective bed management;
 - Underdevelopment nationally for the provision of urgent/ambulatory care and same day surgery.

 - **Acute Medical Units - Comhairle nan Ospidéal, 2004** – A Committee was established to examine the role, organisation and staffing of Acute Medical Admissions/Assessment Units and other initiatives to make appropriate recommendations about how such units could be best organised within the acute hospital system. The report concluded that the development of Acute Medical Units, under clear criteria outlined by the Committee's consultation process, in all general hospitals receiving acutely ill medical patients would significantly contribute to a better and safer service for patients and reduce the need for trolley waits. To be optimally effective, such units however needed to adopt a resource-focussed approach to acute medical patients, operate to clear evidence-based protocols and be led by a consultant physicians dedicated to acute medicine.

3.1.2 The A&E Mapping and Efficiency Project found that many of the findings of these earlier reports are still pertinent to the understanding and management of the emergency and in-patient waiting situation going forward. Although we have not formally linked the recommendations in the final section of this report to these areas, we would commend their integration in the HSE strategic planning process.

4 Best Practice

4.1.1 As well as looking at previous work carried out across the Country, the A&E Mapping and Efficiency project has integrated learning from evidence-based practice to improve patient flows. In particular, the project used findings from three main sources to assess areas of possible efficiency in emergency flow in the 10 participating organisations as follows:

- The Reforming Emergency Care Initiative, designed to look at factors to reduce waiting in emergency departments in the U.K.
- 10 High Impact Changes, the result of clinical solutions to improving patient flow through hospitals, based on the Modernisation Agency work in the U.K.
- Systematic Review on Reducing Attendances and Waiting Time in Emergency Departments, conducted by Dr Mathew Cooke et al from Warwick University. This systematic review looks at global evidence on what does and does not work in reducing presentation and waiting in emergency departments.

4.1.2 These learning from these three sources are described in more detail next.

4.2 Reforming Emergency Care

4.2.1 A specific focus of the reform agenda in the UK, as in Ireland, is on the improvement of the general performance and waiting times within emergency departments. As part of the work of the Modernisation Agency (an internal NHS improvement agency), a national collaborative was set up, led by Professor George Alberti, on reforming emergency care. This work, undertaken with several hundred clinical teams and using evidence based practice, underlined areas of particular focus for the improvement of patient flow and experience within the emergency department and beyond.

4.2.2 Based on their evidence-based work, the collaborative published an emergency care checklist, which gathered together the relevant improvement areas. In this checklist 10 priority actions were identified, shown in Figure 2 which were considered fundamental to the improvement of emergency care and therefore should be given priority by any organisation and/or network. More information about the work and findings of the Emergency Collaborative can be found at:

www.doh.gov.uk/emergencycare/reportsguidance.htm

4.2.3 These emergency initiatives, along with others to reduce waits and attendances in emergency departments, have recently been the subject of a systematic review, which is discussed in more detail in section 4.4.

The emergency checklist formed part of the evaluation of all 10 participating hospitals, as part of the A&E Mapping and Efficiency project:

Figure 2 - Emergency Collaborative Priority Areas

<p>Utilising of local networks to determine optimal patient flows for the locality, to avoid unnecessary duplication.</p> <p>Planning across networks around emergency service configuration will avoid unnecessary duplication. It is emphasised that this planning should be based upon patients' access and their clinical needs, rather than upon traditional boundaries.</p>
<p>Balancing the daily demand for beds (all admissions) with the daily capacity for beds (discharges)</p> <p>It is impossible to plan either the emergency or elective flow if the variation in capacity (i.e. daily discharges) is more variable than the admissions.</p>
<p>Ensuring all patients have a clear plan for their length of stay and expected date of discharge.</p> <p>The system has to be designed so that the variability in the numbers of patients discharged in all categories (emergency and elective) is reduced - The collaborative found that the main reasons for variability in the U.K. system were the availability of diagnostics and the frequency of discharge rounds.</p>
<p>Planning staffing levels to reflect arrival times of patient & case mix.</p> <p>Arrival times and presenting conditions in the emergency department should be routinely monitored, to ensure that the right number and the right type of staff are available in the department to process patients as quickly and as effectively as possible.</p>
<p>Avoiding delays in patients being seen by admitting teams and avoiding duplication between the emergency department and admitting teams</p> <p>If emergency doctors do not have direct admitting rights to clinical observation and/or specialty beds, all delay in accessing admitting teams needs to be reduced. In addition the potential for duplication in processing and/or work up carried out in the emergency department, by the emergency team with subsequent admitting teams should be eradicated, to avoid unnecessary delays for patients awaiting admission.</p>
<p>Planning for senior clinical decision makers (consultants) to be available to see patients in a timely manner to make admission and discharge decisions.</p> <p>Research has shown that availability of senior decision makers who can make things happen in the emergency department and who 'own' admission and/or discharge processes within the hospital can improve the waiting situation for patients.</p>
<p>Introduce systems and processes to reduce delays and inconsistencies in diagnostics. Most investigations for in-patients should be available on the day the request is made.</p>

4.2.4 In addition to the priority areas, we also included the following items from the Emergency Collaborative's work, based on positive evaluation, as follows

Figure 3 - Emergency Department Activities:

<p>Introducing 'See & Treat' principle for minors, ensuring where it cannot operate continuously, it covers peak hours.</p> <p>This is to avoid queuing within the emergency department, whereby experienced members of staff are available to treat presenting conditions and particularly minor conditions to avoid excessive waiting and bottlenecks occurring in the emergency department.</p>
<p>Ensuring cubicle capacity in the emergency department is maintained to avoid delays in the transfer of ambulance cases.</p> <p>Cubicles which are used for treatment within emergency departments should have rapid turnover rates and space should be kept for emergency arrivals.</p>
<p>Introducing systems & processes to reduce delays in diagnostics (in particular near patient testing in the emergency department and agreed turnaround times for agreed list of laboratory tests).</p>
<p>Organising rapid access for radiology with agreement that all designated staff (including nurses, physiotherapists and other allied health professionals) can request tests according to protocols. CT, USS, endoscopy and ETT;</p>

4.3 High Impact Changes

- 4.3.1 The Modernisation Agency in the U.K. has spent a number of years developing and testing interventions to improve patient flow through the health and social care system more generally, to relieve bottlenecks in hospitals, to speed up the care delivery process and generally improve the patient experience. In 2004, they launched the '10 High Impact Changes', a set of initiatives developed with the everyday experience and achievements of thousands of frontline clinical teams, to improve patient management in hospitals.
- 4.3.2 The 10 High Impact Changes had three underlying principles. Firstly, the changes were patient-centred – seeing the service through the eyes of the patient. Secondly, the changes were evidence-based, drawing on the best available learning in how to make organisations work effectively (whether in the public or private sector). Thirdly, the changes took a 'systems' view of healthcare improvement, looking at every aspect of delivery and team input.
- 4.3.3 These principles are all important for the management of emergency care, but particularly in terms of the relationship between emergency medicine and other specialties in the management of the full patient journey from admission to discharge. The ten areas of focus are shown next in Figure 3:

Figure 3 - 10 High Impact Changes

<p>Change No1:</p> <p>Treat day surgery (rather than inpatient surgery) as the norm for elective surgery, for those procedures clinically appropriate to be undertaken on a day case basis.</p> <p><i>The British Association of Day Surgery has produced different lists of procedures which are clinically appropriate to be delivered as a day procedure and the performance benefits of conducting day surgery are well known. However, take up of day surgery is still low and research by the Modernisation Agency suggests that this is because hospitals predominantly still organise themselves as providers of inpatient care, not adopting a ‘day case mindset’ and designing systems accordingly. Treating day surgery as the norm for elective surgery suggests a change in the way we think about elective care within hospitals. Senior clinical and managerial leaders and Boards need to help their organisations make a ‘switch’ in thinking. So rather than asking “is this patient suitable for day case?” organisations should ask “what is the justification for admitting this patient?”</i></p>
<p>Change No2:</p> <p>Improve patient flow across the whole system by improving access to key diagnostic tests</p> <p><i>Evidence shows that waiting for diagnostic tests, or the results of tests, is often a major bottleneck in care for patients. In addition to long waits, it creates communication problems and leads to a lack of certainty and choice for patients. Often we think that the problem is a lack of available diagnostic capacity. However, in the majority of cases, the root cause is the mismatch between the variation in demand and the variation in capacity. It is therefore possible to sort this out by applying redesign methods to diagnostic tests and reporting.</i></p>
<p>Change No3 & No 4:</p> <p>Manage variation in patient discharge thereby reducing length of stay and</p> <p>Manage variation in the patient admission process</p> <p><i>One of the most effective strategies for reducing total patient journey time is to focus on the bottlenecks in both the admission and the discharge process. A mismatch between variation in demand (admissions) and the variation in capacity (discharges) gives rise to queues and waiting lists. Traditionally, it has been assumed that it is emergency admissions that impact on elective planned admissions because it is assumed that emergency admissions are highly variable and more unpredictable. However, repeated case studies have shown that elective admissions are often the major cause of variation across the system, being far more variable and unpredictable than emergency admissions in many organisations.</i></p> <p><i>However, the greatest variation is typically in the number of discharges carried out and efforts therefore to reduce all variation should start with the discharge process not the admission process. The main cause of this variation have been identified as the way hospitals manage things like ward rounds, ward processes, inpatient tests and results, pharmacy, etc. The result of this is a highly variable and unpredictable patient length of stay. There is generally a peak in discharges on Fridays, with a trough over the weekend. Patients are admitted seven days a week (emergencies), but typically only discharged five days a week. Smoothing variation in real time on a daily and hourly basis can result in less capacity being required than is dictated by the large fluctuations in demand and capacity. Both discharges and planned elective admissions are within an organisation’s control and, therefore, efforts should be focused on these processes.</i></p>

Change No5:**Avoid unnecessary follow-ups for patients and provide necessary follow-ups in the right care setting**

Common practice across hospitals can be to invite patients for a follow-up appointment 'just in case'. This can tie up significant time and financial resources, particularly in the case of patients failing to attend (DNAs). It is proposed to change this practice to one which is based upon, 'no follow up unless there is a specific reason', i.e. clinical need or patient-led request, undoubtedly reducing the number of unnecessary follow-ups and DNAs. The first aspect of this High Impact Change is to streamline the patient's journey to create a 'one-stop' approach where all relevant tests are planned, scheduled and booked to occur in one visit. This requires the visit process to be carefully co-ordinated to ensure access to relevant tests occurs in sequence and results are available within a timescale that allows health professionals to make the appropriate clinical decisions.

The second aspect to this is that follow-up appointments after treatment should take place in the right healthcare setting and be delivered by the appropriate healthcare professional. The first question should be "is a follow-up visit really necessary?" If it is, the assumption should be that the follow-up can be performed in a primary care setting and should be instigated by the patient. Automatic secondary care follow-up should be used only where necessary.

Change No6:**Increase the reliability of performing therapeutic interventions through a Care Bundle approach.**

This change is about making sure clinical processes are delivered to the patient consistently. A recent series of articles in The Lancet (Inpatient Safety, March to April 2004) argued that improving patient safety is a common goal of clinicians and managers, and that giving appropriate therapy in a reliable manner can improve patient outcomes by improving the quality of care. The 'Care Bundle' approach, which encourages clinical teams to examine the way they deliver therapeutic interventions, is a direct way of improving the delivery of clinical care to achieve better clinical and organisational outcomes.

'Improvement' is often discussed in terms that fail to connect with clinical teams. It is framed in terms of projects or targets that may seem inconsistent with the ethos of frontline staff. This High Impact Change is about using clinical governance, at the heart of care delivery, to reduce, in Wennberg's phrase, "unwarranted variation in clinical care" (Fisher 2003). At the same time, equity of care is improved by ensuring that patients with the same clinical condition are managed consistently.

Change No7:**Apply a systematic approach to care for people with long-term conditions**

- *There has been a growing acceptance in the U.K and elsewhere that the current focus on managing acute episodes of care is no longer appropriate, either in terms of the type of care offered, or in terms of managing large and increasing numbers of people who suffer from one or more long-term conditions, such as arthritis, diabetes, asthma, heart disease and depression. 17.5 million adults may be living with chronic disease. About 45% of these people have more than one condition. By 2030, estimates for the U.K. are that the incidence of long-term disease in those who are over 65 will more than double (statistics similar to Irish projections, relative to population size)*

A more systematic approach to managing patients with long-term conditions underpinned by good prevention is being strengthened by recent learning from US models of care.

Change No8:**Improve patient access by reducing the number of queues**

Multiple queues are an endemic feature of how patient waiting is managed in many health systems. Patients may be split into separate queues by degree of urgency (urgent, soon, routine), by 'location' (inpatient, outpatient, emergency), by clinical condition or by clinician. This queue separation is called 'carve-out', because chunks of capacity are carved-out or ring-fenced for particular queues of patients. The mathematics of queuing tells us that the greater the number of queues and the level of carve-out, the greater the propensity for delays, variation in care, and waste in the system. Multiple queues make it impossible to match the capacity to demand. Therefore reducing the number of queues (wherever possible and clinically appropriate) can result in a dramatic improvement in waiting times. This may even reach the point when splitting the queue into degrees of priority becomes unnecessary, because everyone gets seen quickly.

Change No9:**Optimise patient flow through service bottlenecks using process templates**

Process templates are used extensively in the manufacturing sector but their utilisation in healthcare is relatively new. Results from pilots with the NHS in the U.K. have produced significant results, with NHS teams reporting ability to free up around 30% of additional capacity within existing resources. Process templates (which detail the sequencing of events within a pathway, with times, interactions and identified bottlenecks, as with a 'production line') have the potential to make a major contribution to the effective management of patient care, by identifying and reducing the effect of variation in demand and capacity at the bottlenecks to improve scheduling of patient care. Process templates can be applied to any clinical process, as well as being applied to whole hospital areas, such as planning elective admissions.

Change No10:**Redesign and extend roles in line with efficient patient pathways to attract and retain an effective workforce**

Optimising and redesigning roles can improve efficiency. By matching roles against skills and competencies, patient care can be improved, waste reduced, working lives improved and errors and mistakes reduced. Role redesign is also a significant factor in achieving new working targets such as the European Working Time Directive. In the U.K. the MA identify three role areas in particular, the redesign of which could significantly improve overall efficiency as follows:

- **Administrative and clerical** – extension can release care givers from administrative duties;
- **Assistant practitioners** - are healthcare workers with a level of knowledge and skill beyond that of the traditional healthcare assistant or support worker. They can deliver care and undertake tasks that previously have been within the remit of registered professional staff;
- **Advanced practitioners** - are clinical professionals who have developed their theoretical knowledge and skill to a very high standard, to carry their own caseload. They are able to undertake tasks that would previously have been performed by another professional, for example nurses undertaking tasks previously assigned to doctors.

4.4 Systematic Review on Reducing Attendances and Waiting Time in Emergency Departments

4.4.1 Given the challenge of rising attendances at emergency departments and also the level of investment of time and funding into various improvement initiatives, a national review was commissioned for the NHS on what evidence was available on what interventions were effective.

4.4.2 This systematic review on attendance and waiting reduction was carried out by Dr. Matthew Cooke and others, from the Warwick Medical School, The University of Warwick in 2004 was commissioned to address the following main questions:

- What initiatives in emergency departments have been demonstrated to reduce waiting times and attendances?
- What initiatives outside emergency departments have been shown to reduce waiting times and attendances?
- What evidence is there of the clinical and cost-effectiveness of such interventions?

4.4.3 Although this research was commissioned to provide answers to the NHS in the U.K., which has some fundamental differences in organisation and operation to the Irish health care system, the review took into account research from around the world. It is therefore one of the most comprehensive and relevant documents on evaluating emergency care initiatives currently available. The full report 'Reducing Attendance and Waits in A&E departments: A Review and Survey of Present Innovations' is available to download from www.sdo.lshtm.ac.uk/evaluatingmodels.htm.

4.4.4 In summary the findings and key points of evidence, applicable to the Irish system are as follows:

- There is no evidence around the effects on waiting times of general practitioners (GPs) working in emergency departments.
- Primary care gate keeping can reduce emergency department attendance but its safety is unknown.
- Walk-in centres and telephone advice lines (in the U.K. centrally provided through NHS Direct) have not been demonstrated to reduce attendances at emergency departments.
- However, phoning for advice before going to the emergency department may reduce attendances.
- Triage is a risk management tool for busy periods; it may however cause delays in care.
- Triaging out of the emergency department can reduce numbers but more work is required to assess the safety of such systems.
- Co-payment systems reduce attendances but may equally reduce attendances by those requiring emergency care.
- Fast track systems for minor injuries reduce waits, ideal configurations include senior staff.

- Attendance by the elderly, those with chronic disease and those with multiple attendances may be reduced by various interventions. Trials are needed in this area, including the role of social workers.
- The benefit of patient education is unproven in most areas except chronic disease management.
- Specialist nurse care in heart failure, chronic obstructive pulmonary disease (COPD) and deep vein thrombosis (DVT) can reduce hospital admissions.
- Home support (medical and social) can reduce hospital admissions.
- Observation wards may reduce length of stay and avoid admission.
- There is a lack of evidence of innovations in bed management and is therefore considered a priority area of further research and investigation.
- Allowing emergency department staff to admit patients to wards will reduce delays.
- There is a lack of evidence about innovations to reduce delayed discharges from hospital.
- Most evidence looks at the causes of delays rather than solutions.
- Teams of staff available for unpredicted surges in activity may reduce delays.
- Senior staff may reduce admissions and delays.
- Nurse practitioners are safe and effective but their effect on waits is unknown.

5 Approach

5.1 Participating Organisations

5.1.1 Ten hospitals were identified by the National Hospitals Office to take part in the Mapping & Efficiency Project. The participating hospitals, which included most of the large hospitals across the State and all the five Dublin Academic Teaching Hospitals, were identified because of the extent of waiting pressures. The participating hospitals were as follows:

- The Adelaide Hospital, incorporating the Mental Hospital and the National Children's Hospital (AMNCH)
- St Vincent's University Hospital, Dublin
- Beaumont Hospital, Dublin
- The Mater Misericordiae Hospital, Dublin
- St James' Hospital, Dublin
- Our Lady of Lourdes, Drogheda
- Cork University Hospital, Cork
- University College Hospital, Galway
- Leterkenny General Hospital, Leterkenny
- Wexford General Hospital, Wexford

5.2 Methodology

5.2.1 Each individual organisation within the A&E Mapping and Efficiency Project underwent the same inductive process including:

- A mobilisation meeting with members of the hospital's organisational and clinical team, exploring the operating context of the organisation and the application of the high impact areas, as outlined in Section 4;
- Analysis of A&E and HIPE data extracts on both the management of emergency and in-patient activity. (The data request is included in Appendix 1);
- A two day clinical observation visit; with a member of the Tribal Secta clinical team. The clinical visit involved observation of the emergency department and patient pathway, observation of nurse handover within the emergency department. It also took into account the emergency department's relationship with other departments, observation of a ward round and patient management and discharge on a general ward.
- Completion of a patient pathway record on 10 randomly selected patients with Chronic Obstructive Pulmonary Disease (COPD) in patients over 65, without complications. Each organisation pulled notes for the same disease category for consistency and comparison (although one organisation used a random sample of general medical patients and one organisation did not complete the exercise). The pathway covered the complete stay from admission to discharge.

5.3 Outputs

5.3.1 All the information from the A&E Mapping & Efficiency process was then consolidated and presented to each hospital in a Framework for Action report, based around five main focus areas:

- **Operating Context** – examining surrounding services and impact upon the hospital and its process;
- **Demand Management** – exploring the management of the flow into the organisation and in particular, the A&E front door;
- **Emergency Department & Flow** – exploring the flow and management of the A&E department as a whole, as well as the relationship with other areas of the organisation in the case of admission from A&E;
- **Care Process & Management of Throughput** – examining the management of the care pathway through the organisation, including length of stay management;
- **Discharge** – exploring how the discharge process is managed and integrated with other care services.

5.3.2 The final section of each organisation's report set out areas for action for the organisation, as an individual hospital and, as part of a wide health care system, to improve the management of emergency admissions through the system. Each of these action plans for the 10 organisations is included for information in a separate Appendix to this report.

5.3.3 The report will now turn to discussion of the findings from the A&E Mapping & Efficiency Project. We will start with those areas, common to most, if not all of the participating organisations which were found to be impacting significantly upon the management of emergency patient flow. These issues were uncovered during the mapping process with the ten organisations and considered fundamental to the long-term resolution of operational pressures within the emergency department. However these things, which we have grouped under the heading of 'whole system findings', in the next section, were largely outside the individual control of the hospitals and therefore require input and action at a national and co-ordinated level.

5.3.4 The areas where the individual organisation did have more control to improve efficiency of patient flow are then discussed in Section 7.

6 System Wide Findings

6.1 Precursor

- 6.1.1 Before detailing the findings on the whole system issues required to effectively manage the emergency waiting system in the longer term, it is to be noted that the A&E Mapping and Efficiency review did not find evidence of an A&E 'crisis'. For the majority of cases, we observed the impact of a range of dysfunctions and bottlenecks within the wider health system and the hospital environment as a whole, manifesting in significant and inappropriate waiting within emergency departments. In other words, those waiting on trolleys in A&E departments up and down the country are a consequence of wider system failure, rather than the simple result of inefficiency within the emergency department itself.
- 6.1.2 This is not to underestimate the scale of the problem, the impact for patients and the part of the emergency department in resolving the problem. If there is a crisis in the Irish healthcare system, it is one of patient access to appropriate care, at the right time and in the right place. Without the appropriate levels of access to advice, diagnostics and treatment across all care settings (primary, community, continuing and acute care), the emergency department will continue to be inappropriately acting as the 'safety valve' for the whole system, rather than, as designed, a true emergency service.
- 6.1.3 There was strong evidence throughout the project that this indeed was the case, with large numbers of patients both presenting to, and waiting in, emergency departments who should not have been there in the first place, had other routes and facilities been open and accessible to them. If not addressed, this limits the amount of efficiency, which can be extracted from the emergency department and the hospital alone. It also has serious consequences for the long-term focus, role and function of the emergency department across Ireland.
- 6.1.4 Yet despite these pressures, a substantial amount of negative press coverage and in some instances woefully inadequate facilities, it should be acknowledged that the A&E Mapping and Efficiency Project found committed and hard working staff across all of the departments in the review.
- 6.1.5 Having established that the management of emergency presentations and waiting is not simply an issue for emergency departments and hospitals in isolation, this section will now go on to present the themes which arose which apply and therefore need to be addressed by the whole system.

6.2 Bed Capacity

- 6.2.1 Almost without fail, every single organisation reported that they did not have enough beds to deal with their changing levels of demand and operational challenges. Likewise, all reported that an increase in bed numbers would help resolve current trolley waits and pressures on the emergency department. The project dealt with organisations of various sizes, bed capacity ranging from 800 beds to 200 beds.
- 6.2.2 Part of this view is understandable, given that the national bed review carried out for the Department of Health and Children in 2002 underlined the need for approximately 2,800 more in-patient beds to be introduced incrementally across the system. It is fair

to say that there has been some dissatisfaction, rehearsed in the national and medical press about the lack of progress in bringing new capacity on stream. There would seem also strong case in certain areas for beds to support elderly care and longer term rehabilitation.

- 6.2.3 However, The Health Service Executive (HSE) formally established in 2005 has already begun that process and introduced an additional 797 acute beds into the system and is expected to bring a further 103 acute beds by the end of 2005.
- 6.2.4 The remit of this review did not cover assessment of physical capacity within the system. This exercise has been carried out and has been accepted at Department level. However, we would make three observations regarding capacity, which we would consider important, particularly given that new capacity will continue to come on stream throughout the next few years.
- 6.2.5 First, overall efficiency needs appropriately to be assessed with regard to the overall capacity available, both to the individual hospital and to the surrounding health care system. A hospital can only improve its management of patient throughput up to the capacity available to it to manage and balance supply and demand (in a variety of ways, not exclusively dependent upon the number of beds within a single organisation). It was clear that the majority of organisations within the review were operating at extremely high occupancy levels, consistently at the 90's, which although manageable in the short term is not sustainable in the medium to long term. Solutions to this occupancy situation however have to be multi-level.
- 6.2.6 Second, although organisations were clear about their need for additional capacity, in all but two cases, we did not find a robust and quantified projection of such requirements, or the gap with existing capacity. It is difficult to judge the need for, or estimate the size of, additional capacity without such projections. In one organisation, significant additional capacity had been brought on stream without noticeable improvements in operational efficiency. It is doubtful that additional bed capacity within the system alone, will address the requirements for change which are needed. This has been underlined by previous work across the State. Whilst accepting that bed capacity is an important consideration across the system to manage the emergency waiting situation, it needs to be based on a much more robust footing than currently.
- 6.2.7 Third, any capacity planning exercise has also to take into account, where capacity is required, not simply for today's challenges within the Irish health system, but also for the challenges of tomorrow. It is well rehearsed both in Ireland and the rest of Europe that rising demands on the service both now and in the future will come from rising numbers of elderly patients and those with long term and chronic conditions. Increasing acute capacity in centralised hospitals is not necessarily the right response to managing this changing profile. Thought in capacity planning needs to be given to what capacity is required in what settings to support the needs of the population and reduce the likelihood of people requiring admission through an emergency department.

6.3 Location of Emergency Departments

- 6.3.1 The departments reviewed as part of the A&E Mapping and Efficiency Review ranged in size, scale and operation. It was clear that many emergency departments, as with hospitals in general, had grown up incrementally, providing services for local communities. There had not therefore been a clear plan of patient flows and requirements for departments, providing specialist and basic emergency services.

6.3.2 The incremental development of hospital specialties, including emergency medicine and their future sustainability was a point noted in both Comhairle na nOspidéal's Report of the Committee on Accident & Emergency Services and in the Report of the National Task Force on Medical Staffing, 2003 (The Hanly Report). The development of new hospital networks across the country arguably now provides a mechanism to oversee the configuration and relationship of the acute sector across the country.

6.3.3 Such networks may also support a better degree of regional specialist self-sufficiency provided in hospital networks working collaboratively, to smooth capacity shortages and ease national waiting.

6.4 Physical Infrastructure of Emergency Departments

6.4.1 In some situations, the demography and requirements had changed substantially, beyond the physical and human resources of the departments themselves. As a consequence a number of emergency departments within the review were not equipped to deliver a modern emergency service and required significant change and/or investment, to create modern departments able to cope with demand for emergency services. This should be managed through a national capital planning process. However, in two or three instances, the physical infrastructure of the department is so inadequate, that interim solutions will undoubtedly be required as a matter of urgency to support appropriate patient emergency care.

6.5 Operational Efficiency across Emergency Departments

6.5.1 Equally there were other situations where emergency departments were located in close physical proximity and yet did not have mechanisms in place to share resources, to relieve pressures, such as sharing on-take arrangements and/or bed pooling at times of crisis. This meant that resources were often stretched to the limit and the potential benefits and efficiencies gained by better integration and cross-working were not maximised.

6.6 Role of the Ambulance Service

6.6.1 The ambulance service in Ireland, including that provided by the fire brigade in Dublin does not seem to play an integrated part in the management of emergency care, other than transporting patients, of all acuity levels, to an emergency department. The role of the paramedic, who is a highly trained emergency professional, able to administer treatment to patients at the scene of an accident or within the community is not yet developed. This role, combined with other emergency practitioners working in the community, would provide an important resource to stabilising patients in the community, averting in some cases, their requirement to attend a hospital emergency department.

6.7 A System Wide Focus

6.7.1 The HSE was established as an executive agency to run the health service and enable the Department of Health and Children to develop the policy agenda. The HSE therefore provides an excellent opportunity to see the interrelated functions of the health service either as a single system, or as separate entities, according to requirements. The HSE executes its duties through two main delivery arms - the National Hospitals Office and the Primary, Community and Continuing Care (PCCC) Office.

- 6.7.2 The changes required to address the management of emergency presentations and waiting in the longer term require a focus across the whole care continuum – primary, community, hospital, specialist and continuing care. If solutions are only sought at emergency department and/or hospital level, it is almost guaranteed that these will fail. The problem solving focus therefore needs to be sustained at the health system level, with each individual sector doing its part to reduce waiting across the system and improve access in a co-ordinated effort.
- 6.7.3 The importance of the care continuum in the management of emergency care has been well rehearsed:
- 6.7.4 *“In order to reduce waits the whole system must be considered. The flow of patients before arrival at the emergency department determines the workload of the department. The staffing, resources and systems within the emergency department are key to providing high quality timely care. The flow of patients after leaving the emergency department until their return home will determine whether they can be discharged from the department in a timely manner.”¹²*
- 6.7.5 The commitment to deliver an integrated service, enshrined in the notion of person centred care is at the heart of every clinician and professional working in the health system in Ireland and yet changes to ‘systematise’ this personal commitment are still in their infancy. Despite improvement initiatives over the years on delivery structures, staffing, primary and acute care improvements, the delivery of health and social care in Ireland remains an unnecessarily fragmented process. This was a situation fully acknowledged and targeted by the national health strategy, ‘Quality and Fairness – Health System for All and the subsequent Primary Care Strategy; *A New Direction*.
- 6.7.6 Such fragmentation is understandable when one considers the development of health services and particularly, primary care in Ireland, with many different providers and motivations – independent business people and organisations; voluntary organisations; State funded and managed organisations; religious organisations. Such plurality of provision is not in itself problematic – on the contrary, many European and global health care systems positively use plurality of provision and user choice to drive up the standard and quality of the care system overall. The problem is introduced when there are no uniting frameworks or standardisation across the various provider organisations, particularly in terms of clinical, information, business and management processes.
- 6.8 Lack of focus upon primary care**
- 6.8.1 To compound this, until relatively recently, with the publication of the National Primary Care Strategy, with dedicated funding for additional resources and models for primary care teams, there has been limited recognition of, or support to, the primary and community care sectors across Ireland.
- The Patient Journey Should Start at Home***
- 6.8.2 The National Primary Care Strategy and many subsequent publications, have clearly reiterated that the majority of care begins and should be kept within a primary care

¹² Cooke M. et al Reducing Attendances and Waits in Emergency Departments A systematic review of present innovations. NCCSDO January 2004

setting. However, very often, the systems and processes are not in place to make this a reality in the modern environment, contrary to previous eras in Ireland and other countries. Without practical resourcing to, and development of, the PCCC sector, the aim of the National Primary Care Strategy will remain unfulfilled and the emergency medical admissions will likely continue to rise.

- 6.8.3 Many primary care services across the State are still offered by single handed practitioners, without the requisite back up of other primary care professionals working in teams to offer extended services to the community, for both public and private patients. Although this is no reflection upon the quality of the care provided by practitioners working alone, it does have significant implications for cover arrangements, particularly out of hours, and the extent of the range of services which can be offered to the public in a general practice setting. Although out of hours GP co-operative models are up and running in many parts of the country, there has been some criticism here, as in the U.K. that these arrangements are unable to offer the same levels of continuity and consistency to the patient, contributing, in some cases, to an overall increase in emergency presentations.
- 6.8.4 There is also an identified lack of GPs across the country and lower numbers going into training.¹³ In many review areas, lack of both GP numbers and services was consistently identified as a factor in the increasing number of patients presenting to the emergency department, with a range of problems, which may have required attention, but not necessarily from an emergency department (the financial differential between settings must also be acknowledged here).
- 6.8.5 There are a number of other factors which militate against GPs and community professionals being able to treat and maintain patients in the community, which for a large proportion of care is the best care setting. The most important of these is access to diagnostic capacity and results, discussed later in this section. However, there are other issues, such as the underdevelopment of multi-disciplinary or 'one stop' centres in the community, to combine doctor's services with those of other professionals in a single visit. Interventions, such as treatment of minor injuries, minor surgery and procedures, in primary care are also undeveloped, particularly in the public health system.
- 6.8.6 It was clear that there is also little incentive currently for GPs to screen or manage chronic or long-term conditions within current contractual arrangements for public patients. There is then the danger within the system that patients may need admission and/or treatment in a hospital setting, who may have been adequately managed further downstream. The commitment to develop multidisciplinary Primary Care Teams and Networks is a welcome development in this regard.
- 6.8.7 Almost in every organisation we reviewed, 'GP with a letter' was always in the top three referral routes to the emergency department. Self referral was consistently the highest category. Without the ability, facilities and incentives to maintain patients in the community, who can appropriately be treated there, there is an in built mechanism within the system, both for GPs, and increasingly patients themselves, to defer to the hospital as the default option for assessment and care, irrespective of acuity, as this, by default, is where the majority of diagnostic and treatment resources are located.

¹³ Irish Medical Organisation- Position Paper on Accident & Emergency 2005

6.8.8 Another factor in referral behaviour from the community (and within hospitals themselves) identified, but not verified, was the rise in medico-legal issues across Ireland and a consequential rise in defensive practice across the system. That is community practitioners not wanting to offer extended services, such as minor surgery which might attract a higher litigation risk and therefore 'referring on', to larger institutions. Likewise, less experienced hospital doctors, particularly in out of hour's situations, admitting patients to hospital beds in case something goes wrong and there is a potential claim.

6.9 Disproportionate focus on the acute hospital sector

6.9.1 The lack of consistent development of services outside of hospitals is a primary cause of the volumes being experienced by the acute sector. International experience indicates improvements in primary care services, (as planned as part of the health reforms), reduces A&E attendances, hospital admissions, occupied bed days and delayed discharges. We experienced in many areas within the review an over focus and emphasis on the acute sector as providers of *all* services to local populations, from highly specialised interventions to very routine out-patient services, such as phlebotomy, monitoring and dressing clinics, all of which should have been more appropriately happening within a community setting, both as a first line service and/or follow-up.

6.9.2 This trend is worrying in terms of the messages which is sends out to the general public, creating a cultural expectation and practice along the lines of 'if you need anything, other than an opinion or prescription, get a referral to hospital and more likely present to your local emergency department'. There is good evidence that where access is blocked or differential (e.g. charging system) the public will vote with their feet and source alternative access points. For example, in the U.K. prior to the introduction of waiting time targets for GP appointments, there were increases in the number of patients attending the A&E department, who could not access GP services in a timely manner.

6.9.3 The disproportionate focus on the acute sector however is not just an issue of primary care access and facilities. It is also intimately linked with the historic development and perception of health services in Ireland and, to a certain extent, the behaviour of acute institutions themselves. Rightly or wrongly, there is a general perception that acute care somehow equates to the 'best' care and primary care equates to some kind of 'lower standard' of care. This is an obvious generalisation and will not be uniformly held by all members of the public. However, it is in evidence enough in the public's choice to attend hospital, often at significant distance, for relatively minor issues.

6.9.4 There would also appear to be taxonomies of quality within the acute providers, ranging from adequate to 'centres of excellence', which significantly affect patient flows and waiting across the State. Some of this is correctly associated with the designation of national specialities, however much of it would appear spurious and not based on any objective measurement of outcome. This of course is not a situation which is exclusive to Ireland.

6.9.5 However, there did appear to be a contradictory response from some hospitals in the review who, on the one hand, were struggling to cope with increasing demand, but on the other, were extending specialties and mixing services, without it appeared, adequate attention to their long term business strategy and sustainability. For

example, it was not uncommon in highly specialised hospitals, to also provide a host of very routine services, both to their local and other national patients.

- 6.9.6 Undoubtedly, specialist services need to provide services for local populations, but it did not appear throughout the review that there was clear planning about where specialist and regional services would be provided (beyond national designation) and how these services, within organisations would be streamed to separate hot (highly specialised) and cold (more routine) activity to maximise access and delivery. This is perhaps a predictable consequence of incremental, rather than planned development within the hospital sector in Ireland. However, recent reviews carried out by Comhairle na nOspidéal begin now to support robust analysis about ideal configurations for local populations and general and specialist provision.
- 6.9.7 To regain more balanced patient flows, the new system and particularly the regional and network structures need to promote a more robust 'regional collaborative of excellence model', whereby primary, community and acute providers can better engage with each other to address the bottlenecks and deliver integrated services across the care continuum, rather than isolated islands of practice. Such networks would also reduce the duplication of services across areas and support a more appropriate utilisation of resources, both physical and human.
- 6.9.8 This is not to advocate the closure of local facilities, quite the opposite; there is arguably already too concentrated a focus for service focus in the capital City, at the expense of the development of more integrated regional services. The suggestion is rather to develop a more comprehensive pattern of service configuration, both for acute and primary provision, as advocated in earlier reviews, in various different forms, which supports more even patient flows. The situation where several institutions in the same geographical locale offer the same specialties is probably not supportable in the long term, given the corresponding issues of workforce availability, accreditation and clinical governance.

6.10 Diagnostics

- 6.10.1 A significant challenge for all providers was the availability of diagnostics, which had significant impact both on the number of presentations to the emergency department/hospital and to the management of patient flow within the hospital itself. In particular there were a number of issues causing bottlenecks and thus waiting within the system. These are detailed next.

Primary Care Access to Diagnostic Capacity

- 6.10.2 The first, as already highlighted was the availability of both routine and complex diagnostics within PCCC. There is still very little direct access to routine diagnostics, for example blood and specimen results and simple x-rays within the community. This is both in terms of machine availability and reporting. Access to more specialist diagnostics, such as computerised tomography (CT) scanning or magnetic resonance imaging (MRI) scanning is extremely scarce.
- 6.10.3 Given that the majority of medical practice is now reliant on diagnostic support, the lack of facilities and access in PCCC, often leaves no option for the care professional but to refer the patient to the hospital to access diagnostic and complete the care journey. This undoubtedly contributes to the value perceptions of the various sectors raised earlier. Although direct access schemes for GPs are coming on stream, they are still

limited, meaning that a significant number of referrals to the hospital are instigated as the *only* means to avail of necessary diagnostics and provide person centred care.

- 6.10.4 Given that waiting for out-patient appointments can be months, the only way to get an urgent scan or test is to send a patient to the emergency department or attempt to get the patient admitted to an in-patient bed, a scarce and entirely inappropriate resource.

Diagnostics Capacity in Hospitals

- 6.10.5 This is not to in any way to suggest that the hospital sector is overflowing with diagnostic capacity itself. Some hospitals within the review did not have routine facilities such as CT scanners, endoscopy suites etc. There was also limited availability to MRI scanners. This then contributed to additional waits and travelling, either in hospital, or as an outpatient, in order to access the requisite tests in alternative settings. The levelling of diagnostic capacity is a priority in the A&E 10 Point Plan.

- 6.10.6 However, it was also the exception in the review for the emergency department to have dedicated diagnostic facilities and near patient-testing, proven to reducing waiting within department, requiring the department to compete with other areas for diagnostic slots.

Operating Hours within Diagnostic Services

- 6.10.7 There are also challenges presented by working practices and times within diagnostic departments in many organisations around the Country, which is less a problem of capacity, but more one of evenness in supply. In all organisations reviewed, the predominant pattern was that the hospital was open and admitting patients on a largely 24 hour, seven day a week pattern, where as diagnostic support, labs, radiology and pathology were usually operating on a much more restricted timetable, around 8 hours, five days a week. Although there was emergency cover provided outside of these times, we found a large degree of variability across the organisations in the range of this cover and considerable differences in local agreements.

- 6.10.8 Also, out of hours cover is then understandably restricted to emergency patients. This can mean in some instances, that the patient waiting in an in-patient bed has lower priority than the emergency patient – extending length of stay in hospital. There were instances in the review, where patients could wait 2-3 days in an in-patient bed for the results of tests to be taken, because of the operating pressures and fluctuating demands within the hospital.

- 6.10.9 It is obviously impossible to have round the clock diagnostic cover for all procedures in a hospital, due to basic human resources and cost constraints. However, given the primacy of diagnostics in the delivery of 21st century medical practice, the obvious mismatch between clinical and diagnostic operation has massive implications for the effective management of patient flow through emergency departments and hospitals more generally.

- 6.10.10 The reasons for the mismatch are numerous. The lack of machine and equipment capacity has been mentioned. There is discrepancy in funding arrangements for machines, so although an important diagnostic resource, like a CT or MRI scanner may be physically in the hospital around the clock, it might only be funded to operate for part of that time, around 40 hours. Like other professions, there are national

shortages of diagnostic specialists - radiologists, pathologists, bio-chemists etc. There are also disputes at national level for some diagnostic disciplines about contracts and extended working hours.

- 6.10.11 In combination, these issues are disastrous for efficient and patient centred care. The importance of removing diagnostic bottlenecks is a fundamental underpinning of emergency and in-patient care redesign, around the world. As long as the significant variability exists between clinical and diagnostic availability, it is difficult to see how waiting can be significantly improved.

Operational Efficiency

- 6.10.12 One of the areas which becomes increasingly important when there are resources shortages and/or constraints is operational efficiency. How well are the limited resources, in this case diagnostics, currently being used? There were a number of factors within operational efficiency which the A&E Mapping and Efficiency review found:

- Limited availability to GP direct access to diagnostics and the consequent increased demand for the hospital sector. However, where direct access schemes exist, conflicts arose between balancing community and in-patient workloads within the hospital within hours;
- Limited protocols in place for diagnostic sequencing according to care protocols/pathways. There were instances where tests/scans were ordered (commonly by less experienced members of staff) which did not add significant information and/or value to the treatment of the patient, but consumed time and effort.
- Restrictive practices – on the other hand, we also found in place some restrictive blocks placed on ordering by diagnostic departments, for example, only accepting requests from specific consultants for particular tests/procedures. Although in line with protecting resources, these blocks were often not founded on the overview of the patient's and/or organisations needs, if an extremely experienced registrar and/or nurse in the emergency department could not access tests in a timely manner.
- Team communication – there were also instances reported whereby there was not a clear process of communication between various clinical staff involved in a patient's care, for co-ordinating diagnostic requests and interventions. This is obviously exacerbated by poor information systems in most hospitals for capturing quickly and easily the patient's status and journey. However, in one instance, we heard about a radiology department getting several requests for the same test, for the same patient, in the same day, from several different people. The time and energy involved in resolving the communication 'loop' could have been better channelled into the needs of other patients waiting.

Hot Reporting

- 6.10.13 The limited availability of hot reporting in most hospitals across the State obviously has an impact on the efficiency and speed with which diagnostic requests and results can be processed. With electronic reporting for images, incrementally coming on board through the rolling out of the Picture Archiving System (PACs) radiology reporting is being improved, both in and out of hospitals. However, there is still significant delay built into the system for manually ordering, chasing and reporting a range of tests and

impact of poor ICT for such a central function as diagnostics cannot be underestimated. .

6.11 Workforce Planning & Flexibility

- 6.11.1 Some of the issues around cover arrangements for clinical and support staff are obviously the subject of national negotiation and review. However, it was clear that in many organisations the flexibility to match shift patterns with busy periods, in the early evenings and at weekends particularly was problematic. There were not consistent working agreements and practices across all clinical and professional groups, which ensured that a multi-disciplinary environment, such as an emergency department could operate efficiently throughout an extended working day across a seven day week.
- 6.11.2 It is recognised that alongside GPs and diagnostic specialists, basic numbers in other clinical and support professions are lower than required. This is a national priority. However as well as attention to basic numbers and training in the medium to longer term, thinking in other European countries is also focusing on extended and flexible roles to manage waiting challenges in more lateral and innovative ways.
- 6.11.3 For example, evidence is emerging about the use of extended roles in emergency care, chronic disease management and community care, to support greater flexibility in working practices and patient care. The role of the Advanced Nurse Practitioner, for example, is a valuable contribution to increasing the availability of senior decision makers in busy emergency departments to process patients as rapidly as possible, without the need for different sets of queues. Although there are examples of the ANP across the State, these are few and far between and national negotiation is still required to confirm full scope of practice.
- 6.11.4 To be fully effective, extended roles also have to be built into a coherent and strong team structure, rather than in isolation. The development of increasing numbers of specialties and titles which do not interact with each other to deliver integrated patient care is a patent nonsense and actually militates against the possibility of extended service. Where a significant contribution can be made to introducing flexibility into a pressurised system is where new roles are underpinned by clear expectations, protocols and team environment.
- 6.11.5 It is clear that models of delivery of healthcare have changed, along with our own use of services. To cope with these changes, as well as others introduced to support professionals working in the service (such as the European Working Time Directive placing maximum working time limits upon the workplace) robust workforce planning and implementation is required for all organisations, which requires a combination of resources, flexibility, governance frameworks and a willingness to think differently about healthcare delivery.
- 6.11.6 An obvious challenge to current working flexibility is the public sector employment ceilings placed on organisations, limiting the numbers of full time public sector staff that can be employed. Although understandable as an economic policy, in terms of predictable levels of economic commitments by the State, this does appear to be reducing organisation's capacity to manage their own requirements to recruit and retain the right staff. There must be large financial commitments to agency staff to provide additional services, which is also financially burdensome and does not contribute to the levels of continuity of patient management which would be required in emergency departments and other areas of care.

6.12 Emergency and Elective Mix

- 6.12.1 Given some of the earlier system challenges and incentives to channel patients to in-patient care, usually as an emergency, it is therefore not surprising that the balance between the elective and emergency workloads across the majority of Irish hospitals is seriously out of kilter. Almost without fail, the review found that day wards and surgery wards, designed for planned procedures (elective) were overrun with emergency medical patients admitted, from the emergency department, to appropriately reduce the requirement for patients to be on trolleys, but inappropriately causing cancellations for other patients requiring planned and urgent procedures. It was quite common to hear that patients had had their planned procedures three to four times. If there is *no reliability* in the system for delivery of important procedures on a planned basis, then the incentive to force the issue through an emergency route grows. Indeed, the National Treatment Purchase Fund was established in this context to support public patients, on waiting lists, who had waited long periods of time to be treated.
- 6.12.2 During feedback discussions for the Project, the term 'elective' was almost seen as a pejorative term and frequently replaced by 'urgent'. However, the fact that a procedure, whether medical, or surgical, happens on a planned, rather than unplanned basis, has no correlation to the level of acuity or importance of that procedure for the patient. For example, if a patient assessed as needing a coronary artery bypass graft (CABG), to reroute, or 'bypass' blood around clogged arteries, does not receive this often elective procedure in a timely manner, then the problem increases and could result in an emergency admission to hospital with an acute heart attack. Therefore continuous cancellation of elective procedures can only exacerbate the emergency presentation and waiting situation in the long term.
- 6.12.3 Work in the U.K. has shown that organisations need to be more predictive in their elective caseloads and reduce manageable variability wherever possible. This requires clear separation of services and facilities for planned procedures, to avoid repeated cancellations and the appropriate utilisation of theatre time and facilities, which, like some diagnostic machinery, are hugely expensive and can be lying dormant during many hours of the day and weekend, contributing to the waiting and overcrowding pressures during the week days.
- 6.12.4 Given the national outcry about trolley waits in emergency departments, the Department of Health and Children and now the HSE, placed an understandable emphasis upon organisations placing priority on emergency admissions. However, the balance between elective and emergency workloads has to be regained across many of the national hospitals, to avoid building up increasing emergency admissions due to the condition of cancelled elective patients deteriorating and then requiring a rushed admission. The balance is also required for the appropriate utilisation of expensive theatre time and resources, particularly where organisations have training responsibilities. Returning to an appropriate balance, over time, will also help correct the dominant mentality or culture, for both patients and referrers, that the only way to access a predictable bed and procedure is through the emergency department of a hospital.

6.13 Finance and the Possibility of Perverse Incentives

- 6.13.1 Another similar imbalance which affects waiting is how money is distributed around the health system. The current financial arrangements for hospitals across the State are through block contracts and roll-over budgets. The arrangements, based on historical

patterns, appear inequitable and are poor at adjusting for change, such as population growth in an area. This can mean that services in areas of population growth (which are common and dramatic in some parts of Ireland) are under-funded and struggle to provide the quantity or quality of services that are the norm in other areas. Under funding can also result in bed or service closure, where the problem is not lack of physical capacity per se, but insufficient resources to run the facilities.

- 6.13.2 There is a small percentage of the budget which is notionally attached to performance efficiency, although in practice this was reported to be little and rarely levied off under performing organisations. One could argue that such a system, where it does not matter how well you do, or manage your challenges and/or caseload, incentivises inefficiency, or at least, stasis. At the extreme, one could argue that the current financial arrangements give rise to lobbying and even the creation of crises, or the perception of crises, in order to attract additional resources. The National Treatment Purchase Fund could be seen as one of the only sources of additional income to an over-stretched organisation through the public sector and so creates an incentive to build up waiting lists, both for public and private practice. This has been a well observed phenomenon in both the U.K and in Canada, where waiting list initiatives have been dropped.¹⁴
- 6.13.3 Similarly, there is no straightforward way for organisations to share funding across the acute and primary care sectors. There was clear advice from national reviews, such as the Brennan Report on financial structures across the health service, that in order to support the appropriate development of sectors such as PCCC, individual funds were probably necessary. However, there are clear areas of shared care between the care sectors which impact on the management of emergency admissions, particularly demand management and influencing the number of patients presenting to emergency departments, joint treatment of long term conditions and supported discharge initiatives.
- 6.13.4 Currently, there is no simple way for money to follow the patient and therefore arguably, little incentive for PCCC practitioners to do more in the community for public patients for which they do not get sufficiently reimbursed. Given some of the challenges for acute organisations in managing 'delayed discharges' – or the numbers of people who no longer require acute medical intervention, but who still require some form of care input, or support, either in the home or other residential or care setting; lack of incentivisation for shared care areas creates waiting and bottlenecks.

6.14 Delayed Discharges

- 6.14.1 One aspect of shared care is the management of discharges. Over three quarters of the organisations with whom we worked in the Project reported a challenge for appropriately discharging two cohort of patients from acute hospitals, either home or to other care settings. The first group were arrangements for appropriate discharge for the frail elderly.

¹⁴ Light D 'The Two Tier System behind Waiting Lists' BMJ 2000:320 p.1349

Shortage of Nursing Home Places and Home Care Packages

- 6.14.2 There is a shortage of appropriate care and convalescence facilities for older people, often with complex needs in the community. There are also shortages in financial and care packages to support older people in their own homes, post hospital discharge. As a direct consequence of the lack of suitable alternative settings for care of the elderly, the acute hospital is becoming disproportionately focused on providing long term care for a range of complex and elderly patients, well beyond, in many cases, their requirement for acute intervention.
- 6.14.3 It was not unusual within the review, to find lengths of stay well over a year in an acute hospital because of lack of appropriate alternative settings. This is not appropriate for the older person, who often wants to be cared for at home and whose risk of secondary infection and/or morbidity increases with a prolonged hospital stay. Also if supportive equipment or services cannot be arranged, in a timely manner, there is a risk that the discharge 'window', when the individual is in a good state of recuperation and rehabilitation will close, requiring an extended hospital stay. Lack of co-ordination between sectors can therefore increase waiting pressures for beds
- 6.14.4 This is problematic for the hospital. When there are a number of patients requiring long term care, who are unable to be discharged, a significant amount of acute capacity is tied up or 'blocked'. A hospital can only admit new patients to available beds and where these are blocked for significant lengths of time; this causes backlogs throughout the whole hospital and is then directly correlated with trolley waits in the emergency department. Many organisations within the review were regularly managing with up to 90 patients, who had completed their acute episode of care, but could not be moved to another, more appropriate setting, or home, because of a wide range of reasons, which had little to do with their first presenting condition to hospital.

Introduction of charging for long-term care

- 6.14.5 The recent charging and subvention system for long-term and home care has further complicated the situation, with many people resisting the new system, either by refusing to pay for long term support, or to apply for State assistance through the subvention system. There are also instances where the subvention system does not cover all the costs of caring for an older person, either at home, or in a residential setting. Against this backdrop the acute hospital is considered a 'free' resource.
- 6.14.6 Given some of the new financial changes around the organisation of long term care, there appears to be a drift in public expectation that the acute hospital should provide long term care and/or significant periods of convalescence. (Another contributory factor in this maybe concerns about standards within nursing homes, attracting adverse press coverage recently, particularly in the City). There are also challenges in the bureaucracy and lack of consistency tied up with the subvention application and assessment process, with no single assessment process. This can mean that patients are waiting in hospital beds for months until paperwork and various communication processes are completed. Waiting in these instances may close a rehabilitation possibility for the older person.
- 6.14.7 The lack of appropriate long term care facilities, the operational difficulties of the subvention system and the changed expectation of the acute sector, all raise significant operational problem for the acute sector in terms of managing effective discharges and coping with delays.

Long Term Care for Younger People

- 6.14.8 The second patient cohort who experienced long stays in general acute facilities were younger patients who were chronically sick, or who had incurred long-term injury. There is one national centre for the care of these patients and places are limited. Many hospitals did not have the appropriate facilities to care for younger patients with strokes, head injuries etc, but could not enable the patient transfer to national tertiary services, thereby blocking capacity and not providing the right care, in the right place for the individual. The lack of development of regional centres for rehabilitation for this patient group exacerbated the waiting problem and lack of bed availability.

6.15 Governance Mechanisms

- 6.15.1 There are also internal factors in the reduction of waiting and appropriate management of beds within the hospital environment. The most important of these is robust governance systems within hospitals – both clinical and corporate, referred to as ‘healthcare governance’. The current clinical governance systems and regulation of clinical quality across organisations appear to be weak. Decision making processes and systems between management and clinicians were frequently not clear. Few organisations had developed clinical directorate structures, whereby decision making and organisational responsibility is devolved to clinical teams. Some hospitals who were arguably too small to operate an effective divisional structure, had not developed alternative mechanisms to ensure standards of care were maintained and improved, or whereby challenges in one part of the hospital (in this case the emergency department) could be supported by changes in other areas (such as medicine or surgery) were still not clear.

- 6.15.2 In many cases, it was not clear how significant operational challenges would be systematically handled, particularly at times of significant operational pressures. Pretty much every organisation had individual committees to oversee bed management and pressures, but there did not appear to be more systematic clinical and operational for a in place. For this purpose most organisations relied on the Medical Board to progress clinical and operational matters. It was considered throughout the review that this mechanism was no longer adequate as the single vehicle to oversee clinical governance within organisations, particularly given some of the points raised in Section 7 of this report around standardising practice (such as discharge arrangements) and length of stay management. Without strong accountability structures within the hospital environment, it is difficult to see how all aspects of governance – delivering best patient care and safe outcomes, developing staff and maintaining financial balance, can be assured.

- 6.15.3 The variable development of healthcare governance across the State is no doubt a consequence of the different evolutionary models for hospitals nationally. However the opportunity for more consistent governance arrangements now that the HSE and particularly the National Hospital’s Office is established, should be seized and developed across regional networks.

6.16 Information and ICT

- 6.16.1 A cornerstone of any governance system is good information. Many organisations within the A&E Mapping and Efficiency Project did not have adequate information and technology to support effective patient management. It was rare for the patient administration system to be able to ‘track’ patients through the system and provide, for

example, live bed status, to support hourly planning. When organisations experience significant surges in patient admissions, only being able to follow the patient physically throughout the hospital is not supportive to modern health care delivery and exacerbates chaotic conditions for ward rounds, bed and patient management.

- 6.16.2 Communication systems between the acute sector and PCCC were practically non-existent, which is a concern for the required levels of shared care to significantly relieve operational pressures within the hospital and deliver person-centred care. The lack of diagnostic communication to the community has already been raised.
- 6.16.3 It was rare in the review to find good systems in place in hospitals to order and process tests, delaying patient care and placing pressure on clinical staff. Where organisations did have direct ordering and reporting systems (though limited) there seemed a direct correlation in reducing overall treatment times. Also, the majority of emergency departments reviewed did not have strong information systems to record and measure performance. In some instances, triage categories needed to be returned manually. It was difficult to extract information on waiting times from presentation to treatment in departments, as well as time of day of presentation, all important data items for clinical audit and planning.
- 6.16.4 Often the full length of stay in emergency departments on trolleys was not available, other than 'point in time' studies supplied centrally by the HSE. The ability to quantify performance and provide clinical teams with important operational information, for the purposes of clinical audit and clinical governance is central to understanding and resolving bottlenecks within the patient pathway. Without the ability to capture this hard data, organisations are encouraged to work on assumptions and hunches, rather than facts.

6.17 Data Consistency & Quality

- 6.17.1 Given a low information base, it is perhaps not surprising therefore that the review encountered significant data quality issues, working both with A&E information and submitted HIPE data extracts. Over a quarter of the organisations queried the representation of their own submitted data and in many cases, significant errors were found during the review phase, for activity levels across the submitted periods. In some instances we needed to 'patch' inpatient information from the patient information system, rather than from the HIPE system.
- 6.17.2 It did not appear that there were clear and consistent data definitions in place across the acute sector on important classifications, such as when the care episode began (trolley waits were not classified) bed allocation (how day beds were designated), in patient spells and the classification period for a delayed discharges. Without consistent data definitions and quality assurance, each organisation is impeded in understanding its operational performance and importantly, comparing that to similar organisations. Only a tiny proportion of the organisations reviewed appeared to use their own performance data regularly to inform corporate and clinical planning.
- 6.17.3 However, without better formulation and standardisation of minimum data sets for emergency and inpatient care, it is impossible to compare and contrast like with like. This should be an area of concern and priority for the HSE, particularly in the light of current capacity debates.