Improving the Patient Journey: Understanding Integrated Care Pathways

A guide to inform nurses and midwives on the process of implementation of integrated care pathways.

National Council for the
Professional Development
of Nursing *and* Midwifery

An Chomhairle Náisiúnta d'Fhorbairt Ghairmiúil an Altranais agus an Chnáimhseachais

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Mission Statement of the National Council

The Council exists to promote and develop the professional role of nurses and midwives in order to ensure the delivery of quality nursing and midwifery care to patients/clients in a changing healthcare environment.

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Foreword

Integrated care pathway development and implementation is about making a positive difference for patients receiving healthcare. It involves harnessing professional capacity to make services more patient-focused, consequently improving health and well-being, developing clinical effectiveness and delivering better outcomes for patients. The National Council for the Professional Development of Nursing and Midwifery supports nurses and midwives in developing and implementing new ways of working which best deliver the range and quality of services required, in the most efficient and effective way to meet the needs of patient and service demands. Integrated care pathway development builds on what has already been achieved and offers new opportunities for patients, professionals and services.

Services throughout Ireland are being encouraged to look at their capacity to deliver quality care by reviewing skill mix and creating opportunities for role development. This guidance for integrated care pathway development will assist patients, nurses and midwives, and services as they review their needs and systems to map out new ways of working and delivering healthcare. The themes and principles identified in this framework complement key areas of the Health Service Executive Reform Policy in Ireland that has been based on a wide national consultation. Consequently, developing and implementing integrated care pathways will make a significant contribution to moving forward the redesign of the health system in Ireland.

These are challenging times, not only for nurses and midwives, but for all who work in the Irish health system, as the changes brought about by service redesign and modernisation impact on traditional ways of working. However, they are also exciting times in which healthcare professionals, supported by appropriate education, management and research, can expand and develop their roles in response to patient needs and service demands; strengthen their influence on the design, delivery and evaluation of services; and increase their impact on improving the health and well-being of the people of Ireland.

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Chief Executive Officer
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Introduction

The National Council for the Professional Development of Nursing and Midwifery developed this publication to investigate the possibility and benefits of using the concept of integrated care pathways where appropriate in health services. The publication aims to inform nurses and midwives on the process of implementation of integrated care pathways. A considerable body of international literature on the concept was examined to identify the best evidence and the most effective and efficient approaches to integrated care pathways. The development of the document was informed by consultation with key professionals with expertise and/or experience of this concept in Ireland. National standardised terms and definitions have been incorporated into the document where possible to promote and build on the current body of knowledge and practice in the Irish healthcare system.

Health systems throughout the world have been under significant pressure in recent years to balance increasing service demands within the resources available. Whilst aspiring to deliver high performing health systems, most Western democracies are confronted by an ageing and growing population, widening gaps in health status, escalating demands on hospital care, increasing cost of technology and projected workforce shortages (Organisation for Economic Co-operation and Development 2004). Many countries are exploring innovative ways to deliver high quality healthcare and maintain a balance between affordability and principles of equitable and universal access (Hensen *et al.* 2005). There is evidence that integrated disease management, such as care or clinical (whole system) pathways has many benefits for healthcare delivery and the service user (The EU Health Property Network 2004).

Integrated care pathways are a recent trend in healthcare delivery through which inter/multi-disciplinary guidelines are developed for use in a specific patient population. An integrated care pathway has been defined as *"an interdisciplinary plan of care that delineates assessment, interventions, treatments and outcomes for a specific health related condition"* (Beyea 1996, p4). These pathways are designed and developed by healthcare providers to systematically standardise care, improve quality and provide effective use of resources (Dickerson *et al.* 2001). They have been promoted as a means of implementing evidence-based practice (Kinsman 2001). However, the literature suggests that compliance with integrated care pathways and other tools (for example, clinical guidelines) for directing evidence-based practice is low (Dickerson *et al.* 2001). The integrated care pathway approach provides a framework for which treatment decisions are established on the best available evidence (Kinsman 2001, Mynors-Wallis *et al.* 2004).

Integrated care pathway development should be in partnership and collaboration with the inter/multi-disciplinary team across the continuum of care facilities. The aim of the integrated care pathway is to provide optimal patient care through uniting professionals across the spectrum of care, providing a cohesive approach to promoting quality and minimising duplication of services (Dickerson *et al.* 2001). The concept is particularly relevant to groups with co-morbidities such as the elderly, patients with chronic illness and the facilitation of a move to refocusing care towards earlier community-based support. Integrated care pathways can have a profound influence on reshaping the structure of health service delivery, placing greater emphasis on the provision of more diverse health facilities in local communities and thereby placing less reliance on the traditional acute health sector. These pathways are also used effectively to improve internal hospital efficiency and effectiveness (The EU Health Property Network 2004, Vanhaecht *et al.* 2006).

The methodology used to explore and support their development and implementation in appropriate healthcare settings was underpinned by a number of terms of reference . The terms of reference for the *Integrated Care Pathways Project* were achieved over a three-month period and are outlined in Table 1.

TABLE 1: TERMS OF REFERENCE FOR THE INTEGRATED CARE PATHWAYS PROJECT

Purpose

The purpose of the *Integrated Care Pathways Project* is to investigate the use of integrated care pathways in order to support the aim of the Health Services Executive to improve the patient journey and support the nursing and midwifery change envisioned by the health reform agenda to achieve a world-class health service for the population of Ireland.

Objectives

1. To define the term 'integrated care pathways' within the Irish healthcare system.
2. To identify best practice examples of integrated care pathways in Ireland to inform the development of a resource pack.
3. To review the national and international literature to identify evidence-based approaches to development.
4. To identify the benefits and barriers of using integrated care pathways to improve the patient journey in the Irish healthcare system.
5. To identify key patient populations and health services that would benefit most from developing integrated care pathways.
6. To develop a resource pack to support the systematic development of integrated care pathways based on the best evidence for the Irish health system.

This document is divided into five sections. The following briefly outlines the concepts and themes addressed in each:

- **Section One** provides the policy context and background information including definitions, advantages and barriers of integrated care pathways. In addition, the main components of integrated care pathways and clinical governance are addressed.
- **Section Two** identifies the key considerations for developing integrated pathways including the factors that influence their successful introduction and inter/multi-disciplinary teamwork, selecting the appropriate topic and activities that support development.
- **Section Three** outlines the skills and tools required to analyse the patient journey. It addresses the principles involved in establishing a process map to provide a structured approach and foundation to analyse care processes and service delivery from both the patient and service perspective across demand, activity and capacity. The stages in process mapping are detailed and tools to ensure patient and/or carer participation are identified. The preparation and resources required to carry out a high-level and/or detailed process map and analysis are provided.
- **Section Four** details integrated care pathway variation and possible approaches to analysing variation. In addition, the importance of professional clinical judgement and the use of integrated care pathways are outlined.
- **Section Five** provides a brief summary of key factors and steps to developing and introducing integrated care pathways. A five-step summary identifies the key elements identified in Section One to Four.
- In addition, a list of helpful internet websites is provided as a resource for nurses and midwives and to assist with the development of integrated care pathways for patients with specific health care needs.
- Finally, **Appendix 1** provides a sample integrated care pathway. It is an outline of a chest pain integrated care pathway as developed by the Emergency Department in St. James' Hospital, Dublin.

SECTION 1

Integrated Care Pathways

POLICY CONTEXT

Over past decades, multifaceted demographic, economic, political and social transformations have had a significant impact on the patterns and dynamics of delivering healthcare in Ireland. Healthcare providers throughout the country have been under mounting pressure to balance increasing service demands within the resources available while ensuring patient safety and quality of care. The government and health services have developed policies, made structural and resource adjustments, and actively developed strategies to meet the challenges of a complex health system and provide a strategic direction and vision for the future delivery of healthcare.

The health strategy, *Quality and Fairness: A Health System for You* (Department of Health and Children 2001) established a vision for the future and the principles to guide everyone working in the healthcare system. This strategy for the healthcare system has four national goals:

- better health for everyone
- fair access
- responsive and appropriate care delivery
- high performance.

Since the Commission on Nursing in 1998, nursing and midwifery have been in a state of rapid change. Perhaps now, as never before, the scope exists for nurses and midwives to develop their careers in response to service demands, professional aspirations, policy drivers and, most importantly, patient need. The National Council for the Professional Development of Nursing and Midwifery was recommended by the Commission on Nursing and created by a Statutory Instrument from the Minister of Health and Children (SI Number 376 of 1999). The mission of the National Council is *"to promote and develop the professional role of nurses and midwives in order to ensure the delivery of quality nursing and midwifery care to patients/clients in a changing healthcare environment"*.

The National Council for the Professional Development of Nursing and Midwifery firmly believes that integrated care pathway development has enormous potential across every aspect of service delivery to contribute to driving and achieving the four national goals of the health strategy. Some of the principles that underpin the concept of integrated care pathway development, and thereby support the four national goals of better health for everyone, fair access, responsive and appropriate care delivery, and high performance across a number of dimensions, include:

- **Patient-centerdness** – integrated care pathways focus on the individual patient, respecting the patient's choices, culture, social context and specific needs.
- **Safety and Quality** – integrated care pathways drive safety and quality by promoting evidence-based practice and factoring in continuous quality improvement at every point of healthcare delivery.
- **Effectiveness** – integrated care pathways match care to science, identify ineffective care and provide the most reliable and up-to-date evidence to sustain effective healthcare.
- **Timeliness** – integrated care pathways continually reduce waiting times and delays for both patients and those who provide healthcare.
- **Efficiency** – integrated care pathways reduce inefficiency and thereby reduce waste and the total cost of healthcare; for example, waste of supplies, equipment, space, capital, ideas, and human resources.
- **Equity** – integrated care pathways, because they are patient-focused, provide opportunities to address and close socio-economic gaps in health status.

BACKGROUND

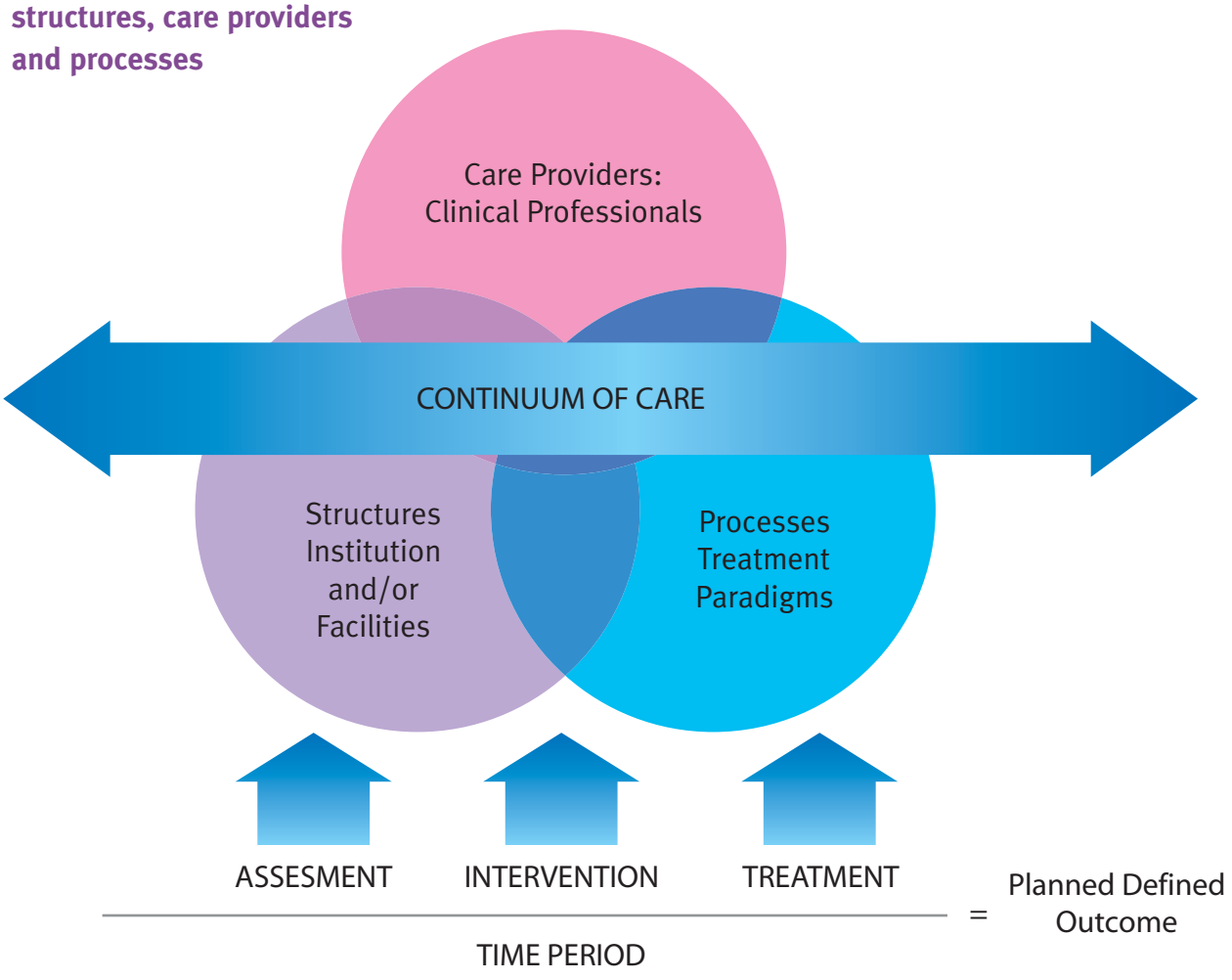
The original concept of the integrated care pathway can be traced back to World War II, where they were developed as a planning tool for the United States of America Navy (Interhospital and Agency Clinical Pathway Group 2002). Over time they evolved and were incorporated into different settings, for example, they were adopted as a method, for guiding complex engineering and construction projects. This flowchart format was first applied to healthcare in the 1980s when clinical pathways were used as

tools to map the care of inpatients (Douglas 2002). Common reasons for developing integrated care pathways in healthcare have been due to costs, enhancing quality, standardising care delivery, ensuring best practice, and connecting the care planning among all involved in care delivery (Sabo *et al.* 2004). Integrated care pathways were introduced in the early 1990's in the United Kingdom and the United States of America, and are being increasingly used throughout the developed world (Interhospital and Agency Clinical Pathway Group 2002).

Integrated care pathways also have been described as a variation of total quality management, as both share the premise that quality improvement can be achieved through the reduction in process variation. Pathway development has become an increasingly recognised strategic plan to identify and track outcomes, resource utilisation, and patient satisfaction in the healthcare setting. Integrated care pathways require that healthcare providers question all aspects of their practices and make a commitment to behavioural changes. They establish a standardised, concise and streamlined plan of care, as well as a tracking mechanism for specific patient populations. It is important to note that not all patients are suitable candidates for the integrated care pathway model. Even patients initially placed on the pathway may have to deviate from the predetermined integrated care pathway due to unique or unexpected circumstances.

Integrated care pathways are structured multi-disciplinary plans of care designed to support the implementation of clinical guidelines and protocols, such as clinical management, clinical and non-clinical resource management, clinical audit and also financial management. They represent a continuum of care that identifies structures (institutions, facilities, etc.), care providers (clinical professionals) and processes (treatment paradigms) that intervene at critical points to efficiently treat the patient and achieve a defined outcome. Therefore, they provide detailed guidance for each stage in the management of a patient (assessment, intervention and treatment) with a specific condition over a given time period, and include progress and outcome details. In particular, integrated care pathways aim to improve the continuity and coordination of care across different disciplines and sectors. Figure 1 diagrammatically identifies the continuum of care and the various factors involved to achieve the planned defined patient outcome.

Figure 1: Continuum of care: structures, care providers and processes



DEFINITION

The Irish Health Services Accreditation Board defines integrated care pathways as:

service flows that outline the sequence and timing of clinical interventions for professional staff caring for a specific patient group. Inter/multi-disciplinary paths of care, known as integrated care pathways (ICPs), may contain both clinical and non-clinical interventions. The four essential components of a clinical pathway are as follows:

- a timeline
- the categories of care activities and their interventions
- intermediate and long-term outcome criteria
- the variance record.

A care pathway is documented either as a flowchart or protocol, which maps the movement of a generic patient through a care plan, from diagnosis through to final treatment, discharge and follow up (Irish Health Services Accreditation Board 2004, p218).

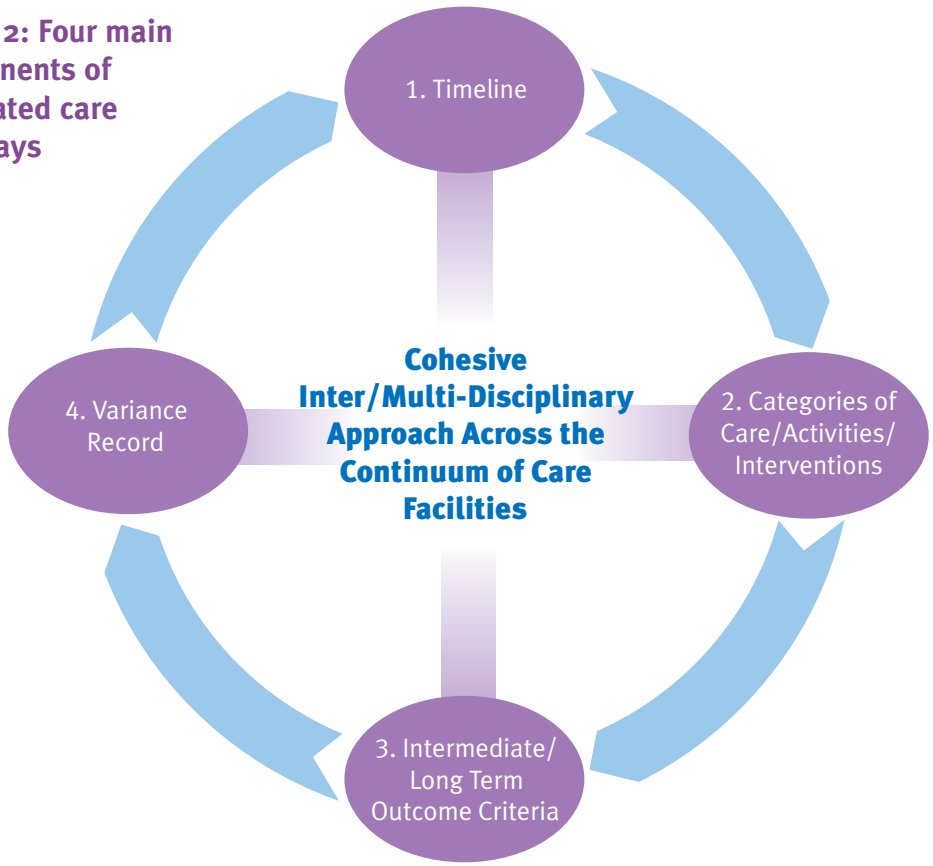
CLARIFICATION OF TERMINOLOGY

Integrated care pathways are known by a variety of terms, such as practice guidelines, clinical protocols, parameters and benchmarks. However, they differ from the more traditionally understood practice parameters/guidelines in the context of timelines and collaborative relationships among professionals and settings. For example, practice guidelines may not address timeliness of service, whereas pathways typically establish critical points along the treatment continuum in which interventions occur. In addition, since guidelines generally focus only on selected segments of the treatment paradigm, the ability to link diverse caregivers and settings and their impacts on outcomes become more problematic. In summary, integrated care pathways differ from practice guidelines, protocols and algorithms, as they are used by an inter/multi-disciplinary team and have a focus on the quality and co-ordination of care. In essence, pathways reinforce the concept of collaboration among professionals and permit the evaluation of outcomes according to the impact of each provider and setting of service (Middleton & Roberts 2002).

MAIN COMPONENTS OF INTEGRATED CARE PATHWAYS

Integrated care pathways can be viewed as algorithms in as much as they offer a flowchart format of the decisions to be made and the care to be provided for a given patient or patient group for a given condition in a systematic sequence. Integrated care pathways have four main components: a timeline, the categories of care or activities and their interventions, intermediate and long-term outcome criteria, and the variance record (to allow deviations to be documented and analysed). See Figure 2.

Figure 2: Four main components of integrated care pathways



ADVANTAGES OF INTEGRATED CARE PATHWAYS

Integrated care pathways are patient-focused with an aim to improve the co-ordination and consistency of care of each individual patient journey. In addition to being evidence-based and/or consensus of best practice, they act as a single record of care from the inter/multi-disciplinary team (Atwal & Caldwell 2002). By providing individual patient information and agreed explicit standards, they support healthcare professionals in their decision-making process and provide a standardised system for progress and monitoring of care (Middleton *et al.* 2001). The development and implementation of integrated care pathways has numerous documented benefits, including:

- The development of explicit standards that streamline processes and reduce the variation in the treatment received and the outcome for patients. As a result, there is potential improvement in quality of care and the reduction in duplication and repetition, thereby optimising cost efficiency.
- Communication of protocol and interventions through clear documentation available for all professionals, leading to enhanced confidence, empowerment and teamwork.
- Documentation is by variance therefore time is reduced, facilitating increased patient contact and providing the opportunity to examine actual care given with associated outcomes.
- Potential reduction in length of stay for the patient without reduction in effectiveness of care.
- Clarification and transparency for the patient and family on expected outcomes, enabling the patient to participate in their own care and outcome achievement.
- Promotion of the continuum of care across the delivery of healthcare and facilitates discharge co-ordination between patient, family and care providers to ensure a smooth transition to optimal health and independence as appropriate.
- Professional satisfaction is increased as care requirements are clearly communicated, facilitating consistency in care delivery. In addition, provides the opportunity to establish a benchmark for the inter/multi-disciplinary team.
- Provision of a legal record of duty of care which acts as a guide for all professionals in the delivery of evidence-based care.
- Allows clinical analysis of care practices and results through monitoring of progress according to pre-established outcomes, thereby optimising professional accountability and ensuring an opportunity for continuous quality improvement of patient outcomes (Middleton *et al.* 2002, Clark 2003, Dooley & White 2003, Buxton *et al.* 2004, McManus *et al.* 2005).

Table 2 summarises the benefits identified in the literature.

TABLE 2: SUMMARY OF REPORTED BENEFITS OF INTEGRATED CARE PATHWAYS

- Promote the introduction of evidence-based care and the use of clinical guidelines.
- Support clinical effectiveness, risk management and clinical audit.
- Improve inter/multi-disciplinary communication, teamwork and care planning.
- Sustain continuity and co-ordination of care across different clinical disciplines and sectors.
- Provide explicit and well-defined standards for care.
- Reduce variations in patient care (by promoting standardisation).
- Improve clinical outcomes.
- Reduce and improve patient documentation.
- Support education and training.
- Optimise the management of resources.
- Drive optimal quality of care and provide a means of continuous quality improvement.
- Support the use of guidelines in clinical practice.
- Foster communications between different care sectors.
- Disseminate accepted standards of care.
- Provide a baseline for future initiatives.
- Provide support for clinical judgement.
- Assist in the management of and reduction of clinical risk.
- Reduce costs by shortening hospital stays.

Source: Adapted from NHS Integrated Care Pathway Users Scotland. *Introducing Integrated Care Pathways: Benefits of ICP's.* Available from: http://www.icpus.ukprofessionals.com/leaflet2.html [Accessed 27 April 2006].

ISSUES, POTENTIAL PROBLEMS AND BARRIERS TO INTRODUCTION

A number of potential problems and barriers to the introduction of integrated care pathways have been identified. Difficulties that need to be considered include those associated with accountability, development and implementation.

- ***Accountability*** – accountable individuals need to accept responsibility for the process, development and implementation.
- ***Development*** – consideration needs to be given to possible difficulties such as defining patient outcomes, minimal support from team members, limited resources, lack of a collaborative culture within and across departments and services, length of time for development and implementation, legal issues, duplicate documentation and a lack of a standardised process.
- ***Implementation*** – difficulties that may occur include measuring variances and limited resources (Ibarra *et al.* 1998).

Different inter/multi-disciplinary healthcare delivery teams and organisations will encounter issues relevant to the development and implementation of their specific integrated care pathway (Chilcott & Hunt 2001, Jones 2004, Taylor 2005). Therefore, the following list of potential problems and barriers is not exhaustive, nor will the following issues necessarily be encountered:

- may appear to discourage personalised care
- response to unexpected changes in a patient's condition may be poor
- suit standard conditions better than unusual or unpredictable ones
- may take time to be accepted in the workplace
- need to ensure variance and outcomes are properly recorded, audited and acted upon
- difficulty in providing the appropriate time and resources.

Peter and Fazakerley (2004, p.34) state that *"the process of developing and implementing an integrated care pathway is lengthy and time is required to search the evidence, achieve consensus in formulating the document, and for education of staff and evaluation"*.

CLINICAL GOVERNANCE AND INTEGRATED CARE PATHWAYS

Managing the continuum of care with integrated care pathways has more potential to be successful if incorporated into a comprehensive, performance improvement process (Edick & Whipple 2001). The Irish Health Services Accreditation Board (2004, p216) defines governance as *"the function of determining the organisation's direction, setting objectives and developing policy to guide an organisation in achieving its mission"*. Clinical governance is a framework through which health services and organisations are accountable for continuously improving the quality of services and upholding high standards of clinical care to ensure patient safety. It focuses on the safe and effective delivery of patient care. To achieve this, clinical governance defines the values, culture, behaviours, processes and procedures that are essential for the provision of safe, sustainable quality services (Scottish Executive 2005).

The central purpose of clinical governance is to improve the patient's experience of healthcare. This philosophy forms a foundation that supports the development of integrated care pathways. According to Clark (2003, p694) integrated care pathways *"provide an ideal tool for health professionals to meet the requirements of clinical governance"*. Developing robust clinical governance systems that include integrated care pathways, risk management, clinical audit, benchmarking, accountability, research, effectiveness and clinical guideline development will create an environment in which role development and innovation can flourish. Developing protocols and guidelines in tandem with integrated care pathways will enable the delivery of consistent, high quality clinical standards, while allowing professionals to exercise clinical judgement in response to patient need and the patient journey.

Complexity and misconceptions around accountability have the potential to be significant barriers to the pursuit of changes in practice and patient care. Incorporating effective clinical governance into the process of developing integrated care pathways will strengthen accountability for individuals, teams and organisations and provide the necessary assurance on safety and quality for patients and key stakeholders. Transparency in all aspects of service and clinical delivery is critical.

Organisational and clinical leaders have a key role in applying a clinical governance framework as a strategy for supporting innovation, change and the development of integrated care pathways. Adopting this approach will ensure that the patient is placed at the centre of all decisions about care and that clinical governance is seen as a process that underpins innovation and change such as the introduction of integrated care pathways. Clinical governance should be integral to the planning, development and implementation of integrated care pathways.

SECTION 2

Key Considerations for Developing Integrated Care Pathways

ASPECTS TO CONSIDER

In order for integrated care pathways to improve effectiveness and efficiency in healthcare delivery, they must be clearly driven, highly focused, collaborative and involve inter/multi-disciplinary planning and evaluation. In addition, they need to reflect the organisation's philosophy and have administrative support. Integrated care pathways are reported to have the most potential for success if the decision to embrace and develop them is taken on an organisational basis. Organisational commitment and support to the principles of integrated care pathway development allows the process to be aligned with the organisation's philosophy, aims and objectives and develop within the framework of the strategic plan and business case. Another key feature to success is the appointment of a facilitator to manage the process. This role provides ongoing education and support, facilitates collaboration and communication between professional groups, and leads and motivates the team to meet deadlines and achieve goals.

FACTORS THAT INFLUENCE THE SUCCESSFUL INTRODUCTION OF INTEGRATED CARE PATHWAYS

The success of initiating change or introducing a different way of working may be subject to number of conditions. When introducing the concept of developing integrated care pathways, the receptiveness by the inter/multi-disciplinary team may be influenced by:

- recognition that things are not working well enough, or could be done differently, with better outcomes for patients
- leadership demonstrating genuine commitment to aspirational goals, visible behaviour change and a genuine commitment to integrated care pathway development
- reconfiguration of relations/creation of new relations
- culture of experimentation that supports innovation and creativity
- awareness of the possibility that different ways of working and thinking will improve patient outcomes and quality of their experience
- genuine and meaningful patient involvement
- commitment to improve communication between and within organisations, departments and across professional groups
- acceptance of integrated care pathways developed by the inter/multi-disciplinary team as a way of working (Edick & Whipple 2001).

The literature also identifies that the benefits of these pathways are reliant on compliance with a number of critical factors, including:

- a project facilitator is appointed with the appropriate skills to support and drive the process
- the integrated care pathway is included as part of the organisational quality programme
- collaboration and partnership exists between professionals
- integrated care pathways are developed for appropriate topics and based on available evidence/best practice and include goals and outcomes
- variations from the integrated care pathway are collected and analysed, and feedback is given to ensure continuous quality improvement
- everyone involved, including the patient and/or carer, must be included in the development of the integrated care pathway and have ownership of the final product (Dooley & White 2003, Middleton *et al.* 2001).

PRELIMINARY ACTIVITIES THAT SUPPORT CLINICAL PATHWAY DEVELOPMENT

A number of activities may occur before or during the development of an integrated care pathway, including:

- ***Team member education and involvement.*** The team should be informed of: what integrated care pathways are, how they are developed, who develops them, the objective behind their evolution, how they will affect practice and how the

team can contribute to the process. The inter/multi-disciplinary teams' active participation in the development of integrated care pathway development leads to increased empowerment and ownership of the product.

- ***Development of support systems.*** Prior to implementing the integrated care pathway, generic pathway support systems should be in place. These include policies for the use of standards, generic protocols and procedures, documentation tools and the integrated care pathway.
- ***Standardisation.*** Reducing variation in the process of providing a service is an effective way of improving quality. The process of standardising procedures, regardless of the discipline in question, is not simple, quick, or ever fully completed.

SELECTING AN APPROPRIATE TOPIC

When choosing an area for the development of an integrated care pathway, it is generally recommended to consider those associated with high cost, high volume, predictable length of stay, clear treatment course and specific clinical outcomes. However, healthcare providers also have to consider other variables such as motivated inter/multi-disciplinary teams and projected success. However, in the initial development with a novice inter/multi-disciplinary team, it is essential to work on common, familiar conditions with fairly predictable outcomes. This maximises the return on investment of staff and minimises problems of variance at a later stage (Walsh 1997). The following criteria should be considered when identifying a topic:

- common condition (high percentage of patients)
- high-risk condition
- problem area (with opportunities for improvement) or
- preference expressed by the team (commitment is high).

Integrated care pathways developed for a specific patient population will only ever be suitable for the majority. There will be a proportion of patients within a group with specific needs that will not be met by commencing on the integrated care pathway (Panella *et al.* 2005).

INTER/MULTI-DISCIPLINARY WORKGROUP FORMATION

A collaborative practice team is essential to developing a successful integrated care pathway (Ahmed & Harding 2005, Chilcott & Hunt 2001, Dooley & White 2003). Integrated care pathways are patient population driven, therefore, barriers between professional groups and departments do not reflect the holistic approach to healthcare delivery. All team members who are involved in the care of a particular patient population must be included in the development of the integrated care pathway. This includes all providers of care, nurses, midwives, medical and allied staff involved in the treatment of a particular patient group. Hussein (1998) emphasises the importance of the inter/multi-disciplinary nature of integrated care pathways and suggests that buy-in from various disciplines involved directly and indirectly will be enhanced by taking into consideration the following points:

- every discipline is equally important, regardless of the degree of involvement
- team membership should be reflective of all disciplines involved in the care delivery
- team members should be empowered as champions to advocate integrated care pathways in their environment
- communication on all levels is essential
- standards, policies, guidelines or protocols that govern integrated care pathways must be clear and concise, outlining the process for development, implementation and evaluation
- availability of various sources of data is integral for inter/multi-disciplinary team decision-making
- documentation in the integrated care pathway must be inclusive to all disciplines and not limited to nursing and midwifery
- assuring compliance with standards of regulatory agencies is essential
- an important element for success is the inclusion of ancillary departments (support services)
- sharing and exchanging resources across departments and services will maximise cost effectiveness, and reduce duplication and fragmentation.

It is also essential to incorporate patients and/or their carers into the process. The Irish Society for Quality and Safety in Healthcare (2004) promotes that healthcare organisations work in partnership with consumers and the community to successfully improve quality and build safer healthcare systems. The benefits of involving patients and/or carers are significant and include:

- better quality services that are more responsive to the needs of patients, leading to improved outcomes of care
- elimination of waste by designing services in advance and thereby identifying exact requirements
- policy and planning decisions that are more patient-focused
- improved communication between organisations and the communities they serve
- greater ownership of local health and social care services and a stronger understanding of why and how they need to change and develop.

Once the inter/multi-disciplinary team is identified, it should be educated on the concept of integrated care pathways and the specific purpose and objectives of the process (Emery 2004).

INTEGRATED CARE PATHWAY DESIGN

Designing an integrated care pathway for a specific patient group depends on organisational capacity for achieving an inter/multi-disciplinary consensus about the process, quality and outcome of care (Walsh 1997). Agreement about who is responsible for ensuring the care is delivered is essential to the process. The integrated care pathway acts as a forward diary, sets targets and identifies problems. The integrated care pathway tool may be designed in a flowchart style (see Table 3). The common predictable events are identified and arranged on two axes. The vertical axis represents categories of care (for example, clinical assessment, consultation, pain management, medications, diagnostics, tests, activities, treatments, nutrition, education, discharge planning). The horizontal axis displays the standard timeframes associated with the particular patient population. The integrated care pathway document may incorporate multi-disciplinary care standards, format for charting and a section to record variances. The inter/multi-disciplinary team may chart by exception when standards and outcomes are incorporated in the integrated care pathway. By incorporating multi-disciplinary standardised protocols, the integrated care pathway is more encompassing than the traditional care plan (Fujihara & Fahndrick 1998).

TABLE 3: SAMPLE INTEGRATED CARE PATHWAY MATRIX

Patient's Name: **Expected Length of Stay:**

Objective:

Timeframe:

Intervention	Pre-admission	Day 0 Admission	Day 1	Day 2 Discharge
Clinical assessment				
Consultation				
Pain management				
Medications				
Diagnostics				
Tests				
Activities				
Treatments				
Nutrition				
Education				
Discharge planning				
Variations				

Source: Adapted from Middleton *et al.* (2001). *What is an Integrated Care Pathway?* Available from: http://www.evidence-based-medicine.co.uk.

The final documented integrated care pathway should include current evidence-based standards of practice and allow for regular analysis of variances. The documentation should form one single record for use by the whole inter/multi-disciplinary team and be easily accessible. Ideally each item of data should be collected and recorded only once. Integrated care pathways should abolish the need to record routine material for every patient and release time to deal with individual problems or variances. Recording exceptions to the planned care is essential. The documentation of these variances provides a powerful tool to monitor the quality of care (Clark 2003). Integrated care pathways are dynamic documents that need revising as new evidence and approaches to working are introduced (Cavanagh 2002).

SECTION 3

Analysing the Patient Journey

The first step in developing an integrated care pathway is to map the patient journey and the process involved in managing the clinical condition (Bryan *et al.* 2002). Establishing a process map of the patient journey provides a structured approach and foundation to analyse care processes and service delivery from both a patient and service perspective (Centre for Change and Innovation NHS Scotland 2005). Therefore, in addition to providing an analysis of the patient journey, the process map can provide a clear picture of demand, activity and capacity.

PROCESS MAPPING

Process mapping is a tool to capture the delivery of care at every stage of the patient journey. It focuses on care and service delivery from the patient's perspective. Process mapping provides a detailed end-to-end view of the process and outcome of the patient journey based on one person, one place, one time regardless of whether the focus is on the patient condition group (e.g. asthma), procedure (e.g. knee replacement), or state or issue (e.g. falls in older people). Although it is a simple technique, it has the capability to identify the strengths and weaknesses in both the service and delivery of care, while also providing evidence supporting the need to review and develop solutions for change. For example, process mapping may identify delays, duplication of care and/or tasks, gaps in the patient journey, deviations from best practice, and quality and safety issues. Alternatively, it may highlight areas of the patient's journey that provide optimal efficient, effective and safe quality healthcare delivery that should be recognised, reproduced and promoted throughout the continuum of care delivery.

When developing integrated care pathways, it is important to establish how patients flow through the care delivery system in order to analyse the journey from their perspective (Ellis & Johnson 1999). Professional groups are often unaware of the experiences of patients and care delivered outside their own area of expertise or work environment. Professional groups working on specific aspects of patient care delivery have extensive knowledge of their piece of the jigsaw. However, how each piece of the jigsaw fits together within the service and the importance and impact that one piece can have on the overall picture is often not clearly understood by all involved. Without a strategic view of each stage of the care continuum there is a risk that changing one part of the patient journey may not improve the service from the patient's perspective, but unintentionally have a negative impact on other aspects of the care delivered. Therefore, process mapping is an excellent diagnostic tool to assist in determining where barriers and blockages occur in the patient's flow through the care delivery system and where there are opportunities for improvement. Once the opportunities for improvement are identified and possible solutions developed, the process mapping approach can be used to test the possible impact of the proposed solution on the whole continuum of care delivery. The Centre for Change Innovation NHS Scotland (2005, p3) states that *"process mapping should underpin all service redesign, demand, capacity, activity and queue management, patient flow modelling and service planning. Process mapping, along with measurement of demand, capacity, activity and backlog, provides the evidence base for service improvement"*.

STAGES OF PROCESS MAPPING

There are a number of stages of processing mapping, including:

- identifying what occurs along the patient journey from their experience
- analysing the process map to determine problems such as errors, duplication, waste, unnecessary steps that do not add value and blockages to the flow of healthcare delivery
- developing possible solutions to issues identified
- testing the possible solutions and the impact on the whole continuum of care using the process map
- implementing the change to improve the patient journey
- evaluating the impact of the change on the care continuum
- re-evaluating on a regular basis using the process map as a diagnostic tool to evaluate continuous quality improvement (Ellis & Johnson 1999).

TOOLS TO IDENTIFY WHAT OCCURS ALONG THE PATIENT JOURNEY

Patients and/or their carers' participation is a significant part of identifying exactly what occurs along the patient journey. A number of approaches may be considered to assist in identifying with the patient the issues that require re-design and service re-structure from their experience. As well as involvement as a full integrated care pathway team member, there are a number of other ways that patients and/or carers and service users may be involved, such as:

- ***Critical incident technique*** – a fairly unstructured way of listening to a patient's experience, during which the interviewer identifies any 'critical incidents' (for example, actions/in-actions, environmental or other factors that impact on the patient journey). Themes can be drawn from a series of interviews, which can be used as a basis for further enquiry.
- ***Focus groups*** – an informal group that shares common characteristics, includes possible candidates to commence on the specific integrated care pathway (for example, have the same clinical condition, or have recently attended an emergency department), and meets to discuss and share experiences about a specific topic or problem. A focus group normally lasts one to two hours, is facilitated and uses prepared questions and themes relating to the discussion topic.
- ***Patient shadowing*** – where a patient or member of staff accompanies the patient on their journey through the health system. The technique can provide qualitative, observational feedback on flow through the system and on perceptions of the service. The 'shadower' may use interview techniques and observation to support information provided by the patient. The approach is often combined with other techniques such as staff interviews and patient diaries.
- ***Patient diaries*** – a patient's record of their healthcare experience, including events, timings and actions, together with comments and feelings about the experience, environment, staff attitudes and critical incidents. The diary may focus on the whole or one section of the journey, depending on the objectives relating to the project.
- ***Discovery interviews*** – semi-structured interviews with patients and their carers, usually undertaken separately and recorded. They use a framework based on the key stages of the patient journey and designed specifically for the condition of the patient group involved. The technique guides patients through the story of their progression through illness and can provide powerful insight into their experiences and the impact of the condition on their lives (Centre for Change Innovation NHS Scotland 2005).

PREPARATION AND RESOURCES REQUIRED FOR PROCESS MAPPING

Planning the process mapping exercise in advance is essential to ensuring the most effective and efficient outcome. The following list of items should be considered prior to commencing the mapping process:

- define what you are trying to achieve
- establish the start point, end point and scope of the exercise including the level of detail required
- consider the measures that will demonstrate that the changes introduced will actually improve the service
- identify all the staff that need to be involved in the process
- ensure patient and/or carer involvement
- focus on capturing the journey as the patient experiences it (at the level of one person, one place and one time).

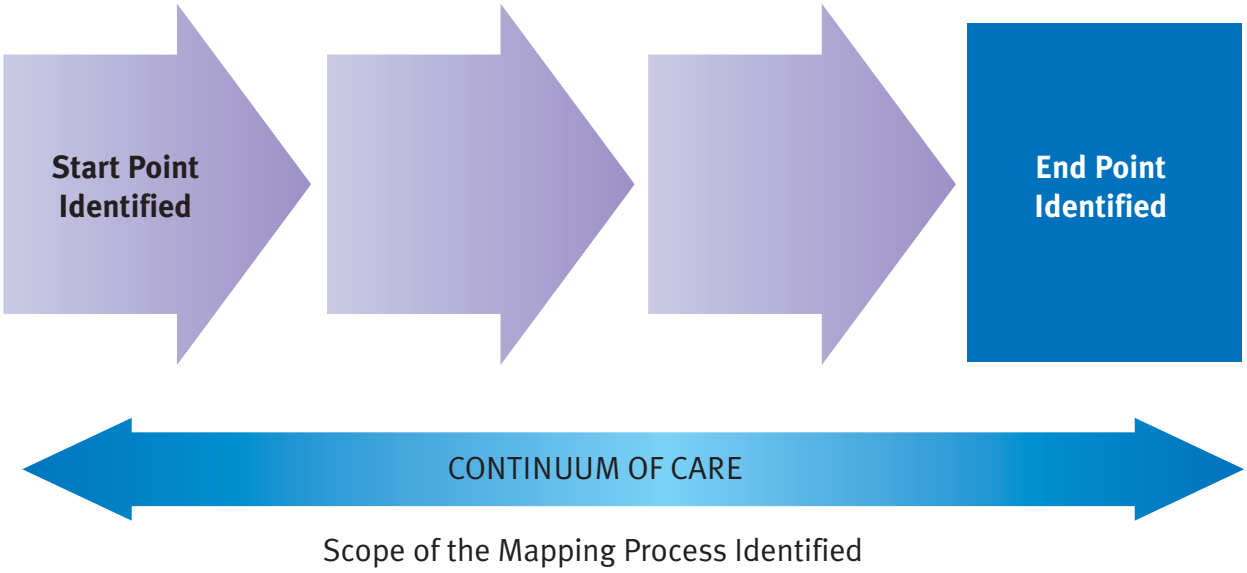
Resources required will depend on the detail and complexity of the process map planned. However, there are a number of key resources that should be considered, including:

- The time required not only to undertake the process mapping exercise, but also to ensure that all involved understand, participate and have ownership of the process. In addition, a strategy should be developed with support from management to allow all individuals who need to be involved in the process the opportunity to participate.
- A suitable venue that is convenient for participants can also accommodate the group's activities. For example, very complex process mapping exercises may have a large number of participants involved, requiring break-out rooms to work on the various aspects of the care continuum and a large space for when participants come together as a single group to piece together the whole map.
- Materials to capture the process map are required such as post-it notes that can be re-arranged as the journey develops and the outline becomes apparent. In addition, paper, flip charts, coloured pens and other materials should be considered to ensure the process mapping group has the tools to do the job.

COMMENCING PROCESS PLANNING

To initiate the task of process mapping it may be helpful to commence with a high-level map, which identifies the broad stages in the patient journey. This will assist the process mapping group to clearly define the start point, end point and scope of the exercise.

Figure 3: Example of a high-level process map



Source: Adapted from Centre for Change Innovation NHS Scotland (2005, p8). *A Guide to Service Improvement – Measurement Analysis Techniques and Solutions.* Edinburgh.

Suman & Lockington (2003, p76) outlines five main components that will assist in identifying the patients journey beginning from home to a the final appropriate discharge from the health service:

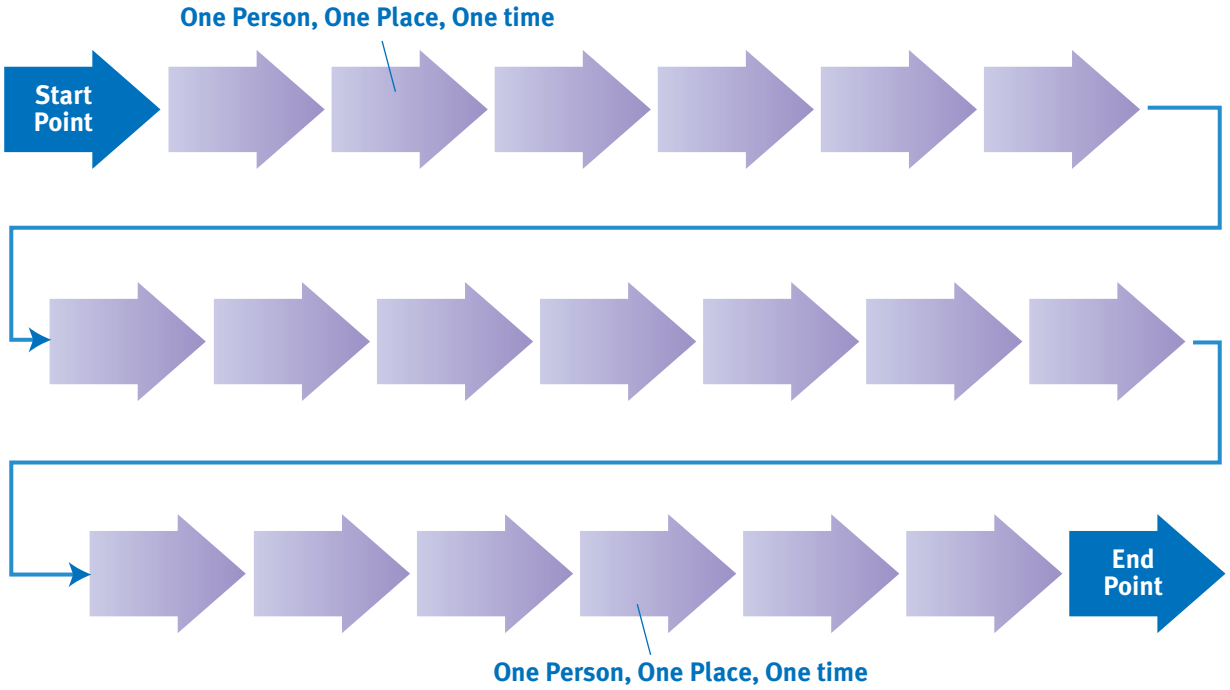
- *Where did the patient come from?*
- *What are the problem areas?*
- *Where are we going?*
- *How will we get there?*
- *When will we arrive?*

Once the start point, end point and scope of the mapping process is identified and agreed upon by all participants involved, a detailed map of the patient journey needs to be developed at the most basic level of one person, one place and one time. Developing a detailed process map will provide evidence of duplication, blockages, delays, variations, service shortfalls, gaps, service/resource re-design, staff competencies, skills, training and experience. It should be noted that patient journey blockages may be due to process barriers or functional barriers.

- ***Process barriers*** may result from essential services not being open outside office hours.
- ***Functional barriers*** may arise due to high demand on resources from several sources; for example, lack of equipment to do the job at the right time.

Figure 4 diagrammatically represents how a detailed process map may look.

Figure 4: Example of a detailed process map



Source: Adapted from Centre for Change Innovation NHS Scotland (2005, p9). *A Guide to Service Improvement – Measurement Analysis Techniques and Solutions.* Edinburgh.

ANALYSIS OF THE PROCESS MAP

The process map is a powerful diagnostic tool and once analysed it provides evidence for change and a sound foundation for the development of integrated care pathway. To analyse the process map the following issues should be reviewed:

- number of times the patient is passed from one person to another
- number of times the patient is passed from one department to another
- delays and barriers that slow down or stop the patient journey
- time taken between each step on the patient journey (wait time)
- time taken for each step (task time)
- time between the first and last step in the patient journey
- number of steps in the patient journey
- number of steps that add no value
- duplication of care or tasks (for example, does more than one professional document the same procedure?)
- problems identified by the patient
- problems for the staff regarding the patient journey, such as skills and resources.

Analysis of the process map will identify if the patient is receiving the most efficient and effective care in the right place by the right people within an appropriate timeframe. In addition it is particularly effective for identifying problem areas such as duplication, blockages, delays, variations, service shortfalls, gaps, service/resource re-design, staff competencies, skills, training and experience. Analysis of the process map can identify opportunities for improvements in current practice as it is a whole system picture of the care delivered to a chosen patient group, detailing:

- the sequence of care and activities performed
- those responsible for specific aspects of care
- the relationships between different individuals, departments and organisations in the process
- the potential problem areas and opportunities for improvement.

The completed process map is the foundation for the final integrated care pathway document (Middleton *et al.* 2001).

SECTION 4

Variation from Integrated Care Pathway

Healthcare delivery is a human endeavour; therefore, variation is part of the process. Variation can be natural or artificial. Natural variation is an inevitable part of the healthcare system and cannot be eliminated. Therefore, natural variation must be understood and managed. Some examples of natural variation include:

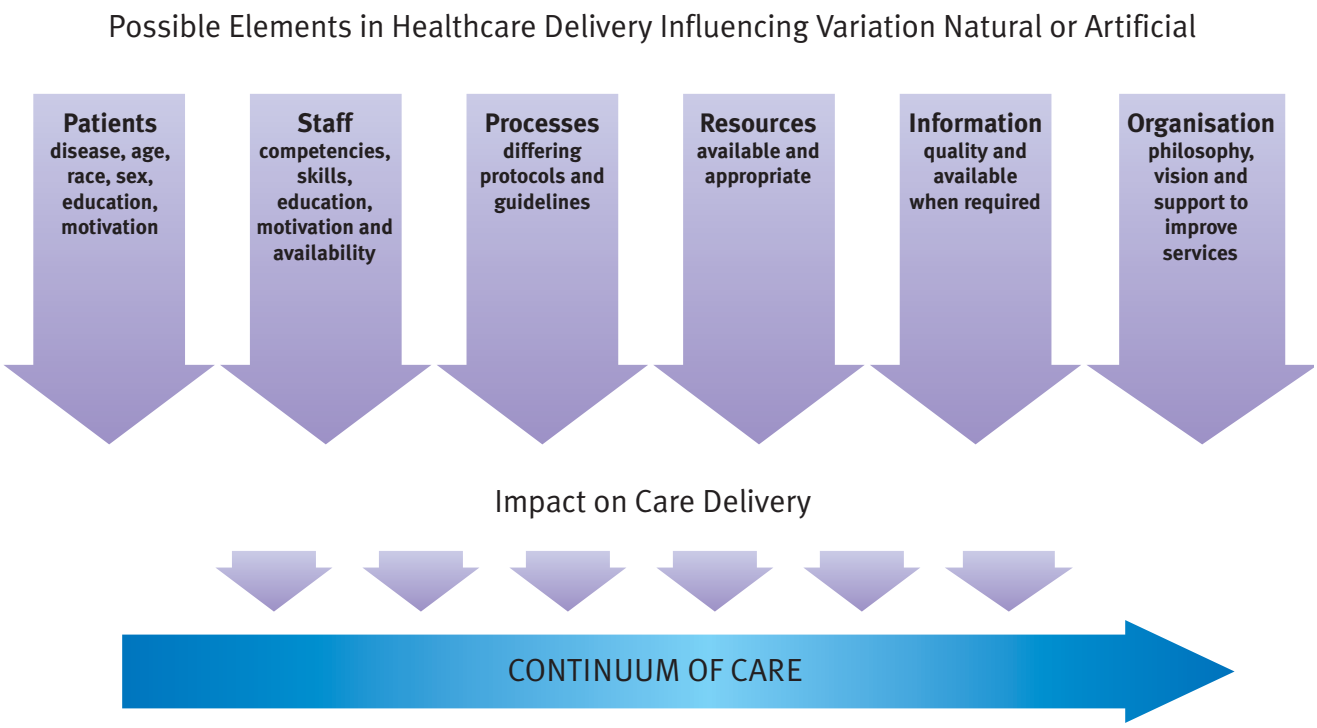
- differences in patients, such as socio-economic background
- complexity of symptoms and disease presentation
- emergency admission.

Artificial variation is caused by the structure and management of the healthcare system. It is often driven by personal preferences and priorities of staff, rather than patient need. Some examples of artificial variation may include:

- rostering and availability of the appropriate staff
- availability of expertise at weekends
- restrictive opening times of essential services or limited service outside office hours
- availability of resources, for example clinical equipment
- multiple point-of-entry into the service (Centre for Change and Innovation NHS Scotland 2005).

Measuring, understanding and reducing variation in healthcare is a key to improving the effectiveness, efficiency and safe delivery of quality healthcare (Panella *et al.* 2005). Variation can occur between and across structures (institutions, facilities, etc.), care providers (clinical professionals) and processes (treatment paradigms). In addition variation in delivery can be hourly, daily, weekly, monthly or seasonal. According the Centre for Change and Innovation NHS Scotland (2005, p12) *"much of the variation in clinical systems is within our control"*. Figure 5 outlines some of the possible variation in a clinical system.

Figure 5: Possible causes of variation in healthcare delivery



CLINICAL JUDGEMENT AND VARIATION

Professional clinical judgement is an essential element of safe and effective healthcare delivery and provides the opportunity for optimal outcomes for individual patients. Although clinical pathways act as a template of care for a specific group of patients, they must be developed to be flexible and adaptable and allow for expert clinical judgement. To promote clinical judgement in the use of an integrated care pathway, each clinician should evaluate and determine if the defined intervention indicated by the pathway is appropriate for the patient's individual needs. Therefore, any member of the clinical team may deviate from the integrated care pathway once a valid reason is identified as to why it will ensure the best possible outcome for the individual patient (The Chartered Society of Physiotherapy 2002).

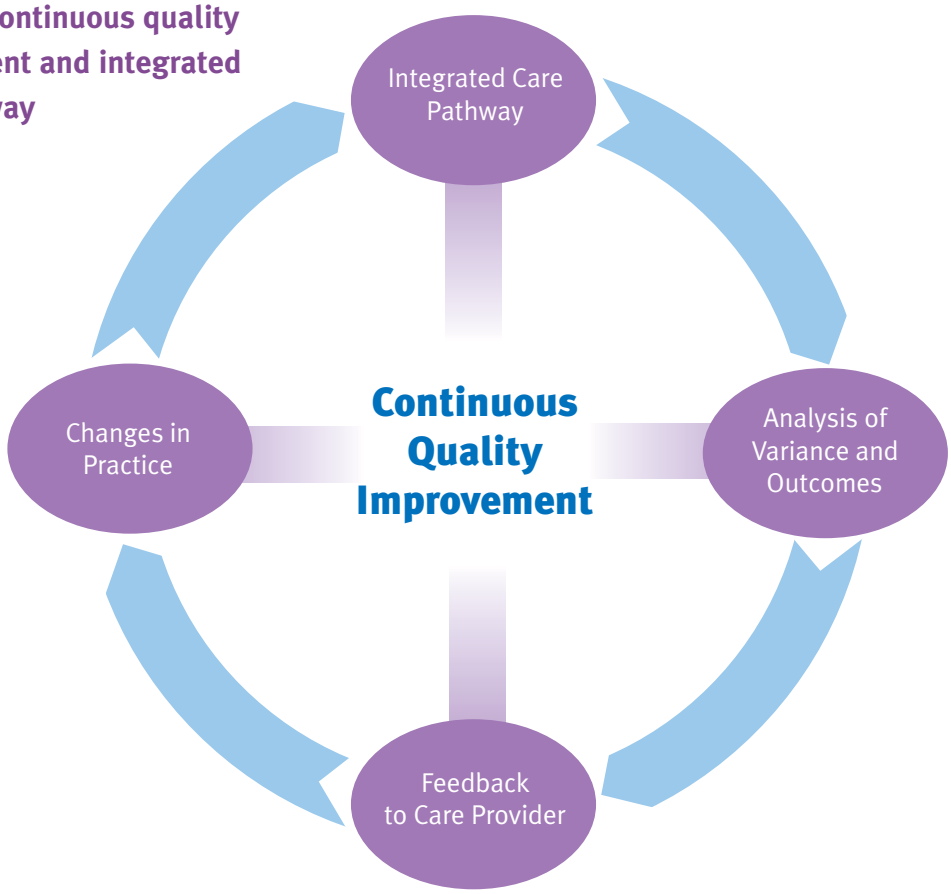
ANALYSING VARIATIONS

Integrated care pathways are designed to be dynamic multi-disciplinary plans of care that alter in response to new evidence, demographic diversity, patient needs and system re-design (Atwal & Caldwell 2002). Monitoring and analysing variations from the integrated care pathway is a powerful tool to assist in ensuring quality of care and identifying patterns and trends that require further examination. Therefore there are a number of reasons to analyse an integrated care pathway, such as:

- identifying variances from the planned care
- establishing common variances
- identifying areas for specific or continuous audit
- enhancing communication and discussion among the inter/multi-disciplinary team
- reviewing the pathway as required from the analysis (Docherty & McCombe 2003, Panella *et al.* 2005).

In addition, the management of clinical risk is enhanced by the analysis of variations from a defined pathway, as it affords an opportunity to evaluate pathways within systems and throughout intended processes, and review any differences between actual and planned outcomes. The analysis of variations provides the information to identify modifications and improvements required to ensure continuous quality improvement (Clark 2003, Hensen *et al.* 2005). Figure 6 outlines the integrated care pathway within the continuous quality improvement cycle.

Figure 6: Continuous quality improvement and integrated care pathway



SECTION 5

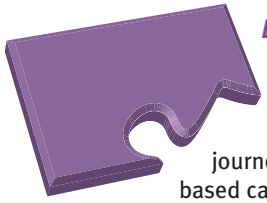
Summary of Key Factors and Steps to Developing and Introducing Integrated Care Pathways

SUMMARY OVERVIEW

An integrated care pathway is a map of the process involved in managing a clinical condition or situation. It should include detail on what to do, when to do it, who performs the action and where. One of the strengths of the process is that it will challenge the effectiveness of the conventional care delivered and, therefore, improve the quality of care (Bryan *et al.* 2002). A sample integrated care pathway is provided in Appendix 1. This is a chest pain integrated care pathway as developed for the emergency department in St James's Hospital, Dublin.

Following the establishment of the inter/multi-disciplinary team, which incorporates the patient and/or their carer (see Section 2), the next step is to examine and map the existing patient journey (see Section 3). The mapping process needs to be followed through General Practitioner referral, clinical attendance, in-patient treatment, discharge from care and aftercare. Once the mapping process has been developed, it can be analysed and modified to produce the ideal patient journey. The integrated care pathway should be continuously monitored by the facilitator. If variances occur they will need to be analysed. Modifications, once tested, should be included based on the evidence (see Section 4).

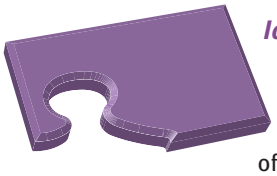
STEPS TO DEVELOPING AN INTEGRATED CARE PATHWAY



Baseline assessment

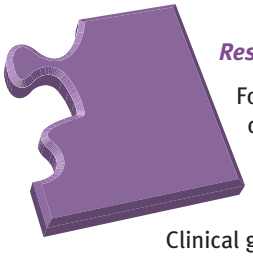
Determine the baseline current performance to help the team to analyse services and identify opportunities for improvements. The target populations are identified and existing baseline outcomes including timeframes are measured using data including demographics, co-morbidities, patient journey, length of stay, clinical interventions and services involved in care delivery including community based care. When evaluating both internal and external processes that contribute to and represent the existing treatment parameters the following questions should be considered:

- What is done and why?
- What is the value of the process?
- How could the care delivery be modified, re-defined or administered more efficiently or effectively?
- What are the barriers (for example, access, availability, resources, etc.) to effective treatment?



Identify the optimum outcomes

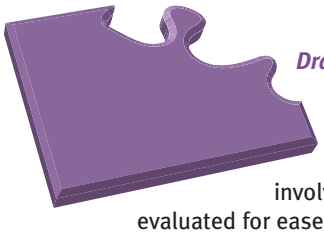
Research the best practice guidelines for the particular topic (for example, national standards, published evidence of good practice, literature searches, protocols, research studies, evidence-based practice guidelines, systematic reviews of other organisation's experiences, expert opinion and views of patients and service users).



Research and agree upon clinical guidelines

Following the process mapping exercise and the development of an agreed optimal patient journey, clinical guidelines/protocols and standards to support and guide the care delivered need to be developed or reviewed if already established. Clinical guidelines/protocols are systematically developed statements to assist practitioner decisions about appropriate healthcare for specific clinical circumstances. They are outcome-focused and have the highest level of evidence available. Clinical guidelines/protocols must be:

- underpinned by robust methods for evaluating research evidence to support practice
- based upon evidence linked to practice
- developed by inter/multi-disciplinary teams with patient consultation
- flexible enough to adapt to local conditions
- evaluated and updated regularly.

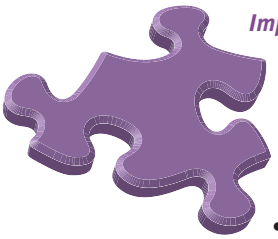


Draft and pilot the integrated care pathway

Create and authorise a draft pathway. The timeframe, variance analysis and evaluation tools to pilot are established ensuring compliance with the organisational philosophy and objectives. Suitable educational support materials and resources must be available to support all those involved in the process. At the end of the pilot phase, the integrated care pathway will need to be evaluated for ease of use, effectiveness and its impact on:

- patients and service users
- all involved in providing the healthcare service
- supporting departments
- clinical governance and clinical audit.

Once the pilot phase is completed and the integrated care plan amended it should be submitted for external review and comment by other relevant practitioners and stakeholders. Finally, it must be submitted for approval and signed-off by the inter/multi-disciplinary team and official endorsement and adoption by the organisation (Graham & Harrison 2005).

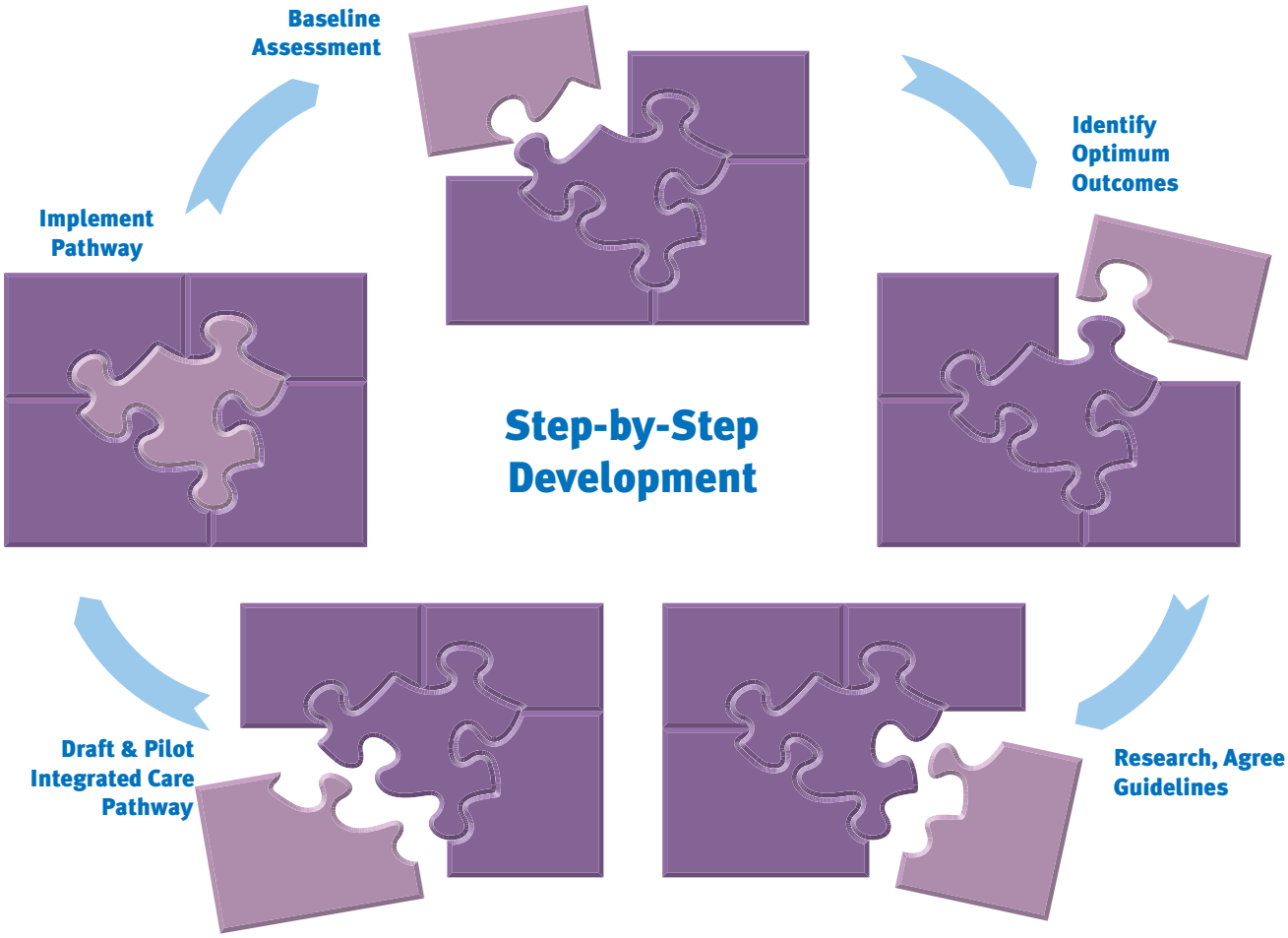


Implementing the integrated care pathway

- Set specific measurable goals to be achieved by the introduction of the integrated care pathway, aligned with individual organisational culture, systems and goals.
- Introduce the integrated care pathway for the target population with educational support.
- Analyse variation and feedback results to the inter/multi-disciplinary team members.
- Review the integrated care pathway and modify to improve and/or maintain outcomes.
- Re-introduce and refine the integrated care pathway.
- Continue the cyclical process of introducing, analysing, modifying and re-introducing on a regular basis (Interhospital and Agency Clinical Pathway Group 2002 and NHS Modernisation Agency and the National Institute for Clinical Excellence).

Figure 7 provides a graphical overview of the step-by-step development of an integrated care pathway.

Figure 7: Integrated care pathway development



Source: Adapted from Interhospital and Agency Clinical Pathway Group (2002). *Clinical Pathways Educational Package – Putting the Pieces Together*. Perth: Department of Health Western Australia and NHS Modernisation Agency and National Institute for Clinical Excellence. *A step-by-step guide to developing protocols.* Available from: http://www.modern.nhs.uk/protocolbasedcare [Accessed 27 April 2006].

SUMMARY OF POINTERS TO SUCCESS

- Establish commitment within the organisation to support and drive the development of integrated care pathways. Top-down commitment and bottom-up ownership is fundamental to the philosophy of the process.
- Appoint a project facilitator with specific skills to drive the process.
- Identify a specific group of patients with a common health problem. For the first integrated care pathway, pick the most straightforward/predictable condition.
- Convene an inclusive inter/multi-disciplinary team of all involved in the care delivery including the patient and/or carer.
- Ensure that everyone that should be involved or could be affected by the introduction of pathways is consulted.
- Develop collaboration and partnership between professionals and across facilities and departments through inclusion and communication.
- Conduct a process mapping exercise and identify problem areas in the patient pathway.
- Review the literature and seek expert advice on the most up-to-date evidence-based practice.
- Set a timeframe by agreeing the length and scope of the integrated care pathway.
- Develop clear guidelines to determine inclusion and exclusion criteria to identify suitable patients to commence on the integrated care pathway.
- Agree interventions and outcomes for each unit of time.
- Ensure documentation is outcome-focused as opposed to process-based where possible.
- Decide how variances will be monitored, recorded and actioned.
- Establish who is accountable and responsible for ensuring the care planned is delivered and the variance managed.
- Develop a version of the integrated care pathway for patient information, education and use.
- Organise in-service education for all staff involved and develop a booklet outlining how the integrated care pathways should be used.
- Establish a process to audit variances after an agreed period of time.
- Evaluate the effects on patient satisfaction, length of stay and costs.
- Amend the integrated care pathway with inter/multi-disciplinary consensus as problems are identified and evidence for improvement becomes apparent.
- Ensure official endorsement and adoption by the organisation is sought (Bookbinder *et al.* 2004, Graham & Harrison 2005, Hotchkiss 1997, Todd *et al.* 2001).

Conclusion

One of the many challenges facing healthcare professionals, managers and administrators is making the best use of limited resources while delivering high quality, timely and evidence-based care. Therefore understanding the components of patient care and the process for care delivery are essential in this complex, resource intensive and high-cost service. Internationally, integrated care pathways have been implemented in many healthcare settings as a link between evidence and practice and to reform inconsistent healthcare delivery and reduce costs (Sexauer & Hogan 1998). Integrated care pathways should be the quality-assessed and evidence-based way of consistently delivering high quality care (Bandolier 2003). They provide a systematic framework to assist professional and patient decisions about appropriate healthcare. Evidence exists to demonstrate that their use improves patient outcomes and staff satisfaction (Graham & Harrison 2005). They have also been shown to provide the tools through which the agreed inter/mutli-disciplinary care plan is delivered in line with cost, quality and timeframe. However, the literature reports that the translation from concept to reality is predictably difficult (Furaker *et al.* 2004). If development and implementation barriers can be overcome, integrated care pathways can improve patient outcomes, provide a standard system for progressing and monitoring safe, appropriate and effective care within an appropriate timeframe. There are numerous benefits including that they allow professionals to clarify roles, responsibilities, interventions and the use of resources for specific patient groups. For organisations, integrated care pathways reportedly increase efficiency and reduce length of stay for some conditions, duplication of services, consultations, investigations and interventions and costs (Hall 2001).

The process of building integrated care pathways often requires examination, evaluation, articulation and communication of previously unstated care delivery processes. In addition, their use is influenced by the process of design and implementation (Kinsman 2004). There is no one approach that will work for all integrated care pathway development and implementation. However, the successful development of integrated care pathways requires a number of pre-conditions including that the outcomes must be known, there must be inter/multi-disciplinary team collaboration and clear accountability.

When introducing and designing integrated care pathways it is essential to choose the area of practice and an appropriate topic that will provide opportunities to improve patient outcomes (Panella *et al.* 2003). Once the integrated care pathway is developed, strong leadership and ownership is paramount to ensure successful use. In addition, their incorporation into the organisational strategy is essential to ensuring long-term sustainability. It is also important to identify champions to drive and promote use (Bookbinder *et al.* 2004). Collaboration, consensus and compromise are fundamental to the effectiveness of the integrated care pathway.

In summary, integrated care pathways are a complex organisational intervention with many components which are inter-dependent in their functions and effects (Kwan 2004). As a tool they support and empower nurses and midwives to deliver high quality, appropriate and holistic care to patients. They facilitate and focus multi-professional communication, practice and documentation, integrating evidence-based practice into health care delivery. In addition, they can achieve specific patient outcomes in an agreed time, monitor the effectiveness of interventions, make effective use of appropriate resources and integrate care delivery from across and within services.

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Helpful Internet Websites

The following is a suggested list of interesting internet sites to assist with the development of integrated care pathways. This list is by no means exhaustive and reading widely on the subject is encouraged. Terms used to describe integrated clinical pathways include: clinical practice guidelines, clinical pathway, mapping care, care maps, care paths, critical paths, critical pathways, algorithms of care, clinical protocols.

http://www.aafp.org/x19449.xml
Index to algorithms published in the American Family Physician.

http://www.aetna.com/about/cov_det_policies.html
Aetna clinical policy bulletins.

http://www.ahrq.gov/clinic/index.html#online
Agency for Health Care Research and Quality (AHRQ).

http://www.agreecollaboration.org/
Agree is an international collaboration of researchers and policy makers who seek to improve the quality and effectiveness of clinical practice guidelines by establishing a shared framework for their development, reporting and assessment. The group includes core European countries, Canada, New Zealand and the USA.

http://www.asahq.org
American Society of Anaesthesiologists – Newsletters.

http://www.cchsa.ca
Canadian Council on Health Services Accreditation.

http://www.cochranelibrary.com/clibhome/clib.htm
Cochrane Collaboration – evidence-based medicine databases.

http://www.cma.ca
The Canadian Medical Association publishes a number of guidelines.

http://www.ebmny.org/cpg.html
Evidence-based Medicine Resource Center with a link to a National Guideline Clearinghouse, an alphabetical listing of clinical guidelines by agency and subjects.

http://www.eguidelines.co.uk
The eGuidelines website contains comprehensive and practical information for clinical effectiveness.

http://www.e-p-a.org/
European Pathway Association is an international network of clinical pathway/ care pathway networks, user groups, academic institutions, supporting organisations and individuals who want to support the development, implementation and evaluation of clinical / care pathways.

http://www.esqh.net/
European Society for Quality in Healthcare is a not-for-profit organisation dedicated to the improvement of quality in European healthcare. It consists of European members, all of whom are National Societies for Quality in Healthcare.

http://www.fnrh.freeserve.co.uk/
Forensic nursing resource homepage.

http://www.guideline.gov
The National Guideline Clearinghouse – American site for guideline distribution.

http://health.nih.gov/
National Institutes of Health (NIH) – health information index, United Kingdom Department of Health and Human Services.

http://healthweb.org/browse.cfm?categoryid=309
Health Web – providing health information and clinical guidelines.

http://www.icpus.org.uk/
NHS Integrated Care Pathway Users, Scotland provides information and networking opportunities for those involved with developing and using integrated care pathways.

http://www.ihsab.ie
Irish Health Services Accreditation Board.

http://www.isqh.net/
Irish Society for Quality in Healthcare is a not-for-profit, charitable, non-governmental organisation. Dedicated to improving the quality and safety of healthcare, and to supporting the development of professionals in healthcare quality.

http://www.isqua.org/
The International Society for Quality in Health Care, is a non-profit, independent organisation with members in more than 70 countries. ISQua works to provide services to guide health professionals, providers, researchers, agencies, policy makers and consumers to achieve excellence in healthcare delivery to all people, and to continuously improve the quality and safety of care.

http://www.joannabriggs.edu.au/
The Joanna Briggs Institute brings together a range of practice-orientated research activities to improve the effectiveness of clinical practice and healthcare outcomes.

http://www.journals.uchicago.edu/IDSA/guidelines/
Practice guidelines from the Infectious Diseases Society of America.

http://www.library.nhs.uk/pathways/
NHS National Library for Health – protocols and care pathways specialist library.

http://www.medic8.com/ClinicalGuidelines.htm
United Kingdom medical search engine and health website directory.

http://mdm.ca/cpgsnew/cpgs/index.asp
The Clinical Practice Guidelines, Canadian Medical Association InfoBase has a list of clinical practice guidelines and developers providing full-text access to guidelines. Examples of links: Alberta Clinical Practice Program, Canadian Asthma Consensus Group, Canadian Paediatric Society, Canadian Society of Nephrology, Guidelines and Protocols Advisory Committee and Health Canada.

http://www.mja.com.au/public/guides/guides.html
Clinical guidelines published by the Medical Journal of Australia represent the consensus opinion of experts based on review of scientific literature. Topics include: Cardiology, Endocrinology, General Medicine, Geriatrics, Haematology, Immunology and Allergy, Infectious Diseases, Nutrition, Obstetrics and Gynaecology and Women's Health Paediatrics, Psychiatry, Respiratory Medicine and Rheumatology.

http://www.nelh.nhs.uk
NHS National Electronic Library for Health, with a full text guideline collection.

http://www.nhmrc.gov.au
Australian Government National Health and Medical Research Council has a guide to the development, implementation and evaluation of clinical practice guidelines.

http://www.nice.org.uk
National Institute for Health and Clinical Excellence, United Kingdom.

http://www.nkp.be/00000095de0808c10/index.html
Netwerk Klinische Paden (NKP) – Belguim Dutch Clinical Pathway Network.

http://www.nmap.ac.uk/
A guide to Internet resources in nursing, midwifery and allied health professionals.

http://nurseweb.ucsf.edu/www/arwwebpg.htm
Internet resources for nurse practitioners including health information gateways, clinical practice guidelines and evidence-based healthcare.

http://www.nzgg.org.nz
New Zealand Guidelines Group provides access to guidelines and tools for development.

http://www.ottawahospital.on.ca/hp/dept/nursing/pathways/index-e.asp
Clinical Pathways – Ottawa General Hospital.

http://www.psychguides.com/
Expert consensus guidelines series presents practical clinical recommendations based on a wide survey of expert opinion.

http://www.rcn.org.uk
The Royal College of Nursing United Kingdom.

http://www.rmlibrary.com/sites/medclini.htm
Resource library with medical clinical guidelines.

http://www.rsm.ac.uk/pub/jcp.htm
The Journal of Integrated Care Pathways.

http://www.rsmpress.co.uk/jicp.htm
The Royal Society of Medicine Press Limited, link to the Journal of Integrated Care Pathways.

http://www.shef.ac.uk/~scharr/ir/guidelin.html
Links with a number of sites that provide examples of guidelines or a description of guideline development methodologies.

http://www.show.scot.nhs.uk/
Scottish Intercollegiate Guidelines Network was set up to encourage the development and dissemination of clinical guidelines.

http://text.nlm.nih.gov
HSTAT – Health Services / Technology Assessment Text.

http://www.tg.com.au/home/index.html
Therapeutic Guidelines Limited derives guidelines for therapy from the latest worldwide literature, interpreted by Australian experts. All therapeutic guidelines are available on a subscription basis.

http://www.the-npa.org.uk/
The National Pathways Association –Northgate Information Solutions, providing members with a network of professionals interested in developing, sharing and promoting the use of care pathways.

http://www.uic.edu/depts/lib/lhsp/resources/guidelines.shtml
Provides links for clinical practice and prevention guidelines.

Disclaimer

APPENDIX 1

Sample Integrated Care Pathway

ST JAMES'S HOSPITAL, DUBLIN

The Chest Pain Assessment Unit[1]

Integrated Care Pathway

Patients Name:……	**Consultant:** ……
Medical Record Number:……..	
Date of Birth:……..	**Height:** ……
Age:……..	**Weight:** ……
	BMI: ……
Date of Admission:……..	
Time of Admission:……	**Known Allergies:** ……
	……
Date of Discharge:……..	……

[1] Developed by Dr Geraldine McMahon Consultant Emergency Medicine, Dr Peter Crean, Cardiology lead, Elizabeth Curtin ANP and Chest Pain Assessment Unit Staff

1

Chest Pain Assessment Unit Operational Overview

All patients presenting to the Emergency Department with acute chest pain of possible cardiac origin should be considered for admission to the Chest Pain Assessment Unit.

Stage 1
Emergency Department Assessment

Focused clinical assessment in the Emergency Department to be carried out by the Emergency Department doctor +/- cardiac nurse practitioner.
Provided there are no exclusion factors identified then the CPAU documentation should be completed and the patient transferred to CPAU without further delay.

Stage 2
Resting Phase Assessment

During this phase the patient is undergoes 3 aspects of assessment

- Continuous ST-segment and dysrhythmias monitoring
- Serial CKMBmass as an early marker for rule in acute myocardial injury
- Symptom observation

Review by the Cardiology Registrar on Duty is required when patients develop significant ECG changes or Cardiac Marker abnormalities.

At 12 hours following the episode of chest pain a Troponin T level is checked. Provided the Troponin T level is negative and the patient is symptom free with no contraindications for Exercise Stress testing (EST) they will then be ready for EST.

Patients with contraindications for stress testing should be referred to the Cardiology Registrar prior to discharge.

Stage 3
Functional Assessment

A positive EST will require referral to the duty Cardiology registrar.
Following a negative EST the patient can be discharged and will be reviewed at 48 hours in the CPAU review clinic.

Stage 4
CPAU Review

At 48 hours the following are reviewed and appropriate interventions organised:

- Symptom review
- Troponin T
- Cardiovascular risk factors: Smoking and lifestyle
  Diet and cholesterol
  Blood pressure and diabetes

2

Emergency Department Assessment

Name: Hospital Number: Date:

Patients are suitable for admission to the CPAU only if:

1. Inclusion criteria are met and
2. NONE of the exclusion criteria are present

Inclusion Criteria
Patients presenting with chest pain suggestive of acute coronary ischaemia

Exclusion Criteria		**Yes**	**No**
1	Age < 20years		
2	Definite Acute Myocardial Infarction		
3	Ischaemic 12-Lead ECG		
4	New onset Left Bundle Branch Block (LBBB)		
5	Dysrhythmia		
6	Hypotension		
7	Coronary Artery Revascularisation Procedure within Past 6 Weeks		
8	Definite Non-Cardiac Cause		
9	Other Reason Mandating Formal Admission (Medical Or Social)		
10	Chest Pain > 12hrs AND Troponin T Positive*		

12 lead ECG on Arrival	
Normal/Abnormal	**Comment**

*Check Troponin T only if Chest Pain has been present for more than 12 hours.

CPAU Admission checklist		**Yes**	**No**
1	Aspirin 300mg given orally		
2	Clopidogrel 300mg given orally		
3	Clinical Evaluation Complete		
4	ED Documentation Complete		
5	CPAU Informed and Transfer Organised		

Signature Date

3

Emergency Department Assessment

Name:________________________ Hospital Number:____________________ Date:______

History of presenting complaint

Date and Time of onset of symptoms:

Current Medication

Allergies

Signature______________________ Date_____________ 4

Emergency Department Assessment – Clinical Evaluation

Name: Hospital Number: Date:

Social History			
Smoker			
Yes		Number per day:	No.of years smoked:
Ex-smoker		Number of Years Stopped:	
Non-smoker			
Alcohol			
Yes		Units per week:	No.of years drinking:
Ex-drinker		Number of Years Stopped:	
Non-drinker			

Past Medical History		
Condition	**Duration (yrs)**	**Additional Information**
Ischaemic Heart Disease		
Diabetes		
Hypertension		
Hypercholesterolemia		
Peptic Ulcer Disease		
Other		

Family History – of Ischaemic Heart Disease

Clinical Examination				
Temp:	HR:	BP: Right arm	BP: Left arm	RR:
Cardiovascular				
Respiratory				
GI				
Other				

Signature Date

5

APPENDIX 1: Sample Integrated Care Pathway

	Name	**MRN**
	Date	
	Time	
Temperature	40	
	39.5	
	39	
	38.5	
	38	
	37.5	
	37	
	36.5	
	36	
	35.5	
	35	
Blood Pressure	220	
	210	
	200	
	190	
	180	
	170	
	160	
	150	
	140	
	130	
	120	
	110	
	100	
	90	
	80	
	70	
	60	
	50	
Respiration	40	
	30	
	20	
	10	
	0	
Pain Scale 0—10	10	
	9	
	8	
	7	
Treatment given:	6	
G = GTN Spray	5	
D = Doctor	4	
O = O_2	3	
C = Cyclomorph	2	
B = Buccal Suscard	1	
	0	
Rhythm		
Ectopics		
O_2 Sats		
BM		

SR = Sinus Rhythm; **ST** = Sinus Tachycardia; **1HB** = 1° Heart Block; **P** = Pacing; **AF** = Atrial Fibrillation; **AFL** = Atrial Flutter

PACS = Premature Atrial Contractions; **PVCS** = Premature Ventricular Contractions; **VT** = Ventricular Tachycardia

CPAU – Investigation Sheet

Name: Hospital Number: Date:

CK Mass Measurement
Please fill in (A) or (B) as appropriate.

(A) Patient admitted to CPAU ***less than 3 hours*** after onset of Pain				
Blood	To be taken	Time taken	Result	Signature
1	3 hours after onset of pain			
2	6 hours after onset of pain			
3	After 6 hours in CPAU			

(B) Patient admitted to CPAU ***more than 3 hours*** after onset of Pain				
Blood	To be taken	Time taken	Result	Signature
1	On admission to CPAU			
2	3 hours after admission to CPAU			
3	6 hours after admission to CPAU			

Troponin – 12 hours post onset of chest pain					Time taken:
Result:	Positive		Negative		Signature:

Other Blood Test Results			
	Date	Results	Signature
FBC			
RP			
LP			
Coag			
Glucose			
Other			

7

CPAU – Exercise Stress Test

Name: _____ Hospital Number: _____ Date: _____

Exercise Stress Test

Indications	
	Normal resting phase analysis No residual chest pain
	Negative Troponin T at 12hours post onset of Chest pain

Contraindications	
Absolute	Recent Myocardial Infarction Myocarditis / Pericarditis Acute infectious Illness Unstable angina Known stenosis of the main-stem of the left coronary artery Severe aortic stenosis Recent thromboembolism Untreated cardiac failure Hypertrophic Obstructive Cardiomyopathy (HOCM) Uncontrolled Arrhythmias Left Bundle Branch Block (LBBB)
Relative	Slow complete heart block Atrial fibrillation Digoxin

Exercise Test	
Max. Predicted Heart Rate:	
Heart Rate Achieved:	
M.E.T.S. Achieved:	

Exercise Terminated Because:

Result

Signature_____ Date_____ 8

CPAU – Communication Sheet

Name: ______________________ Hospital Number: ______________________ Date: ______

Staff Communications Sheet

Date		Signature

9

CPAU – Communication Sheet

Name: Hospital Number: Date: ______

Staff Communications Sheet

Date		Signature

10

CPAU – ECG Sheet

Name: Hospital Number: Date:

Insert Strips Horizontally

Insert Strips Horizontally

Insert Strips Horizontally

Insert Strips Horizontally

Insert Strips Horizontally

11

CPAU – Review Clinic - 48 Hours

Name:____________________ Hospital Number:____________________ Date:______

Clinical Assessment

Date	
	Blood Pressure: / Heart Rate: bpm
	Troponin T: Negative ☐ Positive ☐

CAGE questionnaire (Score 1 for each positive answer. Total score >1is significant)		**Y/N**
	Have you ever felt you ought to **C**ut down your drinking?	
	Have people **A**nnoyed you by criticising your drinking?	
	Have you ever felt **G**uilty about your drinking?	
	Have you ever had a drink first thing in the morning - an "**E**ye opener"?	

Signature____________________ Date____________ 13

CPAU – Review Clinic - 48 Hours

Name: Hospital Number: Date:

Risk	Risk Factors						Action	
Past history	MI		Angina		C.A.B.G.			
	PTCA		Other					
Family history								
Diabetes	NIDDM		IDDM				Refer Diabetic Day Centre	
Elevated Serum Cholesterol	Total Cholesterol…… LDL…… HDL…… Triglycerides……..						Advise given on reducing saturated fat intake	
							Advice given on healthy eating	
							Alcohol reduction advice given	
							Repeat fasting lipids with GP in three months	
							Referred medically for lipid management	
Smoking	Smoking		No. years smoking				Refer to smoking cessation	
	Ex-Smoker		No. years stopped					
Hypertension	Diagnosed/Treated Hypertension						Referred to GP	
	For investigation of hypertension						Referred medically	
BMI	Normal		Overweight		Obese		Lose weight	
	18-25		25.1-30		>30		Dietetic referral	
Exercise	< 30 mins/day x 5 days						Increase level of exercise	
Stress	Identified stressors						Relaxation methods	
							Refer Medical S.W.	
Alcohol	CAGE > 1…….. Male: 21ius/week…….. Female: 14ius/week……						Advised to reduce alcohol consumption	
							Referred for alcohol management	

Discharge Arrangements	Y/N	Appointment Made
To General Practitioner		
To Cardiology		/ /
To other Medical Team		/ /
CPAU discharge summary sent to GP		

Signature Date

14

Notes

National Council for the
Professional Development
***of* Nursing *and* Midwifery**

An Chomhairle Náisiúnta d'Fhorbairt
Ghairmiúil an Altranais agus
an Chnáimhseachais

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