



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

MODEL OF CARE FOR PRE-ADMISSION UNITS



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Health Service Executive



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College of Anaesthetists of Ireland



NATIONAL CLINICAL PROGRAMME FOR ANAESTHESIA

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1.0 FOREWORD

When the National Clinical Programme of Anaesthesia was set up almost three years ago, we decided to focus on projects that delivered on our top three goals:

- Better patient safety
- Better patient care
- Better collegiate support

The Pre-Admission Programme which led to the publication of this Pre-Admission Unit Model of Care document encompasses all three aims.

It was gratifying to lead and be part of a group of professionals who all gave of their time for free and contributed so much effort to this project. All concerned were highly motivated and dedicated and brought years of experience to the table. Whilst much discussion and debate took place during the drafting of this document, consensus was ultimately achieved and all parties have taken ownership and signed off on the final draft. The high standard of the final document is a fitting testament to their professionalism and enthusiasm.

This Model of Care is intended to be a straight forward 'how-to' toolkit for hospitals without any Pre-Admission Units (PAUs). It describes the rationale for these units as well as the key components essential for a successful implementation. It encompasses the requirements of a wide selection -range of facilities – from small, stand-alone Model 2 day care hospitals to multifunctional, highly complex Model 4 hospitals and the full range in between. Suggestions are outlined on the advantages of networking within the new Hospital Group structures.

For PAUs that are already in place or once established de novo, we set out opportunities for collaboration within the multidisciplinary team which will serve to improve service delivery while allowing for an audit of outcome and success of the clinical services provided.

No single service should work in isolation within the healthcare system. In order to maximise peri-operative service delivery and improved patient experience, PAUs should work in collaboration with their multidisciplinary colleagues within the peri-operative clinical governance structures locally. This arrangement will achieve better patient safety, better patient care and better collegiate support.

The Pre-Admission Unit Model of Care should be used in collaboration with the Productive Operating Theatre and the Acute Surgery and Elective Surgery Models of Care to achieve best patient outcome and value for money in service delivery.

My thanks to all my colleagues who contributed to this project. I was proud to work alongside such dedicated team players and am happy that our work will make a positive contribution to the Irish health services for years to come.

Dr. Bairbre Golden

**Director, National Clinical Programme of Anaesthesia,
Clinical Strategy & Programmes Division, Health Service
Executive.**

MESSAGE FROM NATIONAL DIRECTORS

Modernisation of our health service demands changes in long established practice to optimise utilisation of increasingly scarce resources. From the outset, it is clear that the Pre-Admission Unit Model of Care establishes best practice in the establishment, implementation, delivery and continuous quality improvement for Pre-Admission Units, both locally in individual hospital units and across hospitals within a Hospital Group.

Our national policy is to achieve a 75% target of same day surgery for patients. In addition, there is a strong drive to ensure the vast majority of elective surgery admissions are on the day of surgery. Both of these goals require a robust pre-admission process.

The contribution by anaesthesia and the multidisciplinary team to optimising patient flow and throughput starts with pre-assessment and the pre-operative preparation of the patient. However, no one speciality should work in isolation and a successful Pre-Admission Unit, as outlined in this model of care, encourages multi-disciplinary teams to work together to stream line services for enhanced patient safety and greater efficiency. Every member of the extended multidisciplinary team has an important role to play in this quality improvement initiative, clinical and non clinical alike.

The Pre-Admission Unit Model of Care builds on other models of care and should be used in conjunction with The Productive Operating Theatre and the Elective Surgery and Acute Surgery Models of Care when designing improvements in the management of the peri-operative patient journey.

The development of new services is challenging in the current economic climate but it is clear that the development of Pre-Admission Units with a continuous quality improvement ethos will have positive benefits for all service users, long into the future.

We commend the National Clinical Programme for Anesthesia on their collaborative working style involving all their multi-disciplinary colleagues. This document is a fine example of what can be achieved working with patients and the healthcare community. It is a welcome addition to the suite of supportive Models of Care from the National Clinical Programmes Division within the HSE.

Aine Carroll

National Director of Clinical Strategy and Programmes

Tony O'Connell

National Director of Acute Hospitals

2.0 EXECUTIVE SUMMARY

Modernisation of our health service demands changes in long established practice, in order to optimise utilisation of increasingly scarce resources. The goal of this model of care is to establish best practice in the establishment, implementation, ongoing delivery and continuous quality improvement in the workings of a successful pre-admission unit, both locally within individual hospital units and more recently across all hospitals within a hospital group.

The contribution by anaesthesia and the multidisciplinary team to optimising patient flow and throughput starts with pre-assessment and the pre-operative preparation of the patient. The target of 75 per cent of patients having surgery as day cases requires a robust pre-assessment service, as does the move to day of surgery admissions.

Pre-assessment does not abolish the need for patients to be seen by the anaesthetist providing anaesthesia. The responsible anaesthetist must ensure that the patient has been adequately assessed and is fit for surgery on the day. Chapter 2 of the Elective Surgery Model of Care laid the foundation for the development of this model of care (Model of Care for Elective Surgery 2011). The two documents are designed to be complementary and will be found to be interdependent when designing improvements in the management of the peri-operative patient journey.

Operational Management

Strong management of a pre-admission unit is vital at both clinical and managerial level to ensure successful implementation of operational policy and day-to-day running of the unit. Effective management requires input and support from all relevant stakeholders within the hospital/ hospital group and community services. Effective governance arrangements recognise the interdependencies between corporate, financial and clinical governance across the service.

Executive accountability for resources, ownership, leadership, peri-operative quality and safety, management and monitoring of the pre admission unit should be set out in the terms of reference of the peri-operative quality and safety group. As hospitals become networked, it may be more productive and appropriate to develop a single pre-admission unit service to meet the needs of the local group.

Performance Measures

Pre-admission units/processes need easily measurable, consistent and definable clinical and non-clinical outcomes. By examining and interpreting these outcomes we can ensure ongoing quality improvement measures. The National Clinical Programme for Anaesthesia will develop an agreed set of standard KPIs in partnership with the Acute Hospitals Division within the HSE, which will include the quality of clinical care indicators that each unit should incorporate into its performance management approach.

Capacity Planning

Standardising and centralising the pre-operative assessment process has repeatedly been shown to improve efficiency and cost-effectiveness through the reduction of theatre delays, cancellations and minimising redundancy. The aim of this model of care document is to provide a framework for the delivery of pre-operative assessment services. However, it should be noted that a Model 2 hospital, will have very different requirements to a Model 4 hospital, and local factors should be considered when applying these recommendations in the development of a pre-operative assessment service.

Operation of a Pre-admission Unit

Section 6 of the Model of Care outlines the patient pathway through a pre-admission unit. This serves to act as an input into the design, establishment, delivery and evaluation of a successful pre-admission unit. Our model of care aims to be generic rather than prescriptive. While recognising that

no two implementation sites are the same, it includes key design principles that need to be present in all local versions of the model. This allows for local variations in patient volume, types of surgery, variations in ratio of elective to emergency cases and availability of resources.

Stand-alone Day Surgery Units

In Ireland, the classification of hospitals into Models 2, 3 or 4, within the context of Hospital Groups, has seen Model 2 hospitals designated as stand-alone day surgery units. These are defined as sites that are geographically separate from the main acute hospital. Section 7 outlines the key issues involved in the provision of services in a stand-alone unit.

Pre-assessment of the Emergency Patient

Assessment of the patient with emergent conditions requiring acute surgery is not suitable for the pre-admission unit. However, the principles of risk stratification, optimisation of the patient's condition prior to surgery and anticipation of peri-operative events, with planning for mitigation of the risk of medical complications peri-operatively, remain unaltered in the pre-operative assessment of the patient scheduled for emergency surgery.

In conclusion, it should be noted that the most important objective in establishing a unit is to ensure its sustainability over time. While there are a number of key issues to consider in this regard, it is recommended that a unit commence with a defined and safe scope on an initial basis. Over time, as the experience and efficiency of the service grows, the scope and range of specialties served, patients referred, and services offered can be expanded.

3.0 LITERATURE REVIEW

Pre-operative Assessment

Modernisation of our health service demands changes in long-established practice, in order to optimise utilisation of increasingly scarce resources. The National Clinical Programmes, under the governance of the Clinical Strategy and Programmes Division, have been established to implement best evidence-based practice.

As part of overall reform of the acute healthcare system, the Health Service National Clinical Programmes initiative was developed with three main aims:

- To improve the quality of care delivery to all
- To improve access to all services
- To improve value and cost-effectiveness

The National Anaesthesia and National Surgery Programmes have collaborated on defining and implementing best practice in the management of surgical patients. The traditional pathway of pre-operative admissions days in advance of major surgery, and the day before intermediate and minor surgery, has changed to the use of ambulatory surgery for minor and some intermediate procedures, day of surgery admission (DOSA) for major procedure, and the use of the enhanced recovery pathway. The advantages of these changes include the reduction of average length of stay in the acute hospital, reduce healthcare associated infections, and increase patient experience and outcome, while maximising value for money. The developments outlined in this document will also significantly contribute to the optimal organisation and deployment of pre-operative admissions in the development of hospital groups.

The contribution by anaesthesia and the multidisciplinary team to optimising patient flow and throughput starts with pre-assessment and the pre-operative preparation of the patient. The Association of Anaesthetists of Great Britain and Ireland (2010), American Society of Anaesthesiologists

(2010) and Australian New Zealand College of Anaesthetists (2008) all give clear guidelines on the role of the anaesthetist in pre-operative assessment and preparation of the surgical patient. The European Society of Anaesthesiology (ESA) and other national and international societies have also produced guidelines for pre-anaesthesia assessment and investigation (Poldermans et al., 2009).

The authors of the ESA guideline on pre-operative testing for non-cardiac surgery state that there are very few randomised trials on pre-operative assessment (Poldermans et al., 2009). Notwithstanding this, there is a considerable body of literature around pre-operative testing for patients undergoing surgery, including a guidance document on the use of routine pre-operative tests by the National Institute for Clinical Excellence (NICE) (National Institute for Clinical Excellence, 2003). A simplified version has been published by the Ontario Guidelines Advisory Committee.

Pre-operative assessment of patients by anaesthetists is a key component of the Helsinki Declaration on Improving Patient Safety (2010), which is a collaboration between the European Board of Anaesthesiology, the Union of European Medical Specialties and the European Society of Anaesthesiologists.

Hepner (2009) outlines the goals of pre-operative evaluation, which are:

- To evaluate patient readiness for anaesthesia and surgery
- Optimise patient health before surgery
- Enhance the quality of peri-operative care
- Reduce the morbidity of surgery and length of stay
- Return the patient to normal functioning.

Furthermore, he posits that the real issues to be considered in a consultation are the assessment of risk of complications,

whether further risk stratification would alter patient management and whether anything can be done to reduce the risk to the patient.

In addition, the Association of Anaesthetists of Great Britain and Ireland states that the anaesthetist should ensure that patients are confident they want surgery, and have balanced the benefits and risks of different surgical and non-surgical alternatives. The basic tenet of all guidelines reviewed is reduction of risk to patients in a focused and cost-effective manner.

Communication between the anaesthetist and the surgeon is an essential component of pre-admission assessment. The team should include nurses trained in assessment of the pre-operative patient. The literature supports a move from pro forma testing to patient-focused testing following a full history and examination. Barriers to this approach include habit as well as fear of litigation. There is increasing recognition that unnecessary tests may do more harm than good while also using resources inappropriately. (Hepner, 2009).

The pre-admission unit offers an opportunity to educate patients on their risk factors and how to manage and reduce them. This includes advice on weight management/nutritional status, smoking cessation and alcohol abuse. Acute interventions in relation to smoking cessation and abstinence or reduction in alcohol use have been shown to be effective, at least in the short term. Pre-operative alcohol cessation has been the subject of a Cochrane Collaboration review (Oppedal et al., 2012). The authors concluded that intensive pre-operative alcohol cessation interventions may significantly reduce post-operative complications but did not appear, in the limited number of studies, to reduce mortality. Further studies are required in this area. According to the European Society of Anaesthesiology, written and verbal advice should be given on fasting requirements

(Smith et al., 2011) and the management of peri-operative medication. The educational value of the pre-admission unit for medical students, trainee doctors and nurses is an important facet of this service.

The interaction with primary care is essential in developing pre-admission services. Primary care physicians are in an ideal position to start pre-operative optimisation from the time they refer their patients for surgery.

The resources and funding required are outlined in the Association of Anaesthetists of Great Britain and Ireland (AAGBI) Safety Guideline on Pre-Operative Assessment and Patient Preparation (AAGBI, 2010).

The pre-admission unit must be led by a consultant anaesthetist with a dedicated sessional commitment, coupled with appropriate nursing, health and social care professionals and administrative support.

The 75 per cent target of all surgery as day case procedures requires a robust pre-assessment service, as does the move to DOSA.

Pre-assessment does not eliminate the need for patients to be seen by the anaesthetist providing anaesthesia. The responsible anaesthetist must ensure that the patient has been adequately assessed and is fit for surgery on the day.

4.0 GOVERNANCE AND MANAGEMENT OF LOCAL PRE-ADMISSION UNITS

4.1 Management of Local Pre-admission Units

Strong management of a pre-admission unit is vital at both clinical and managerial level, in order to ensure successful implementation of operational policy and day-to-day running of the unit. Effective management requires input and support from all relevant stakeholders within the hospital/hospital group and community services.

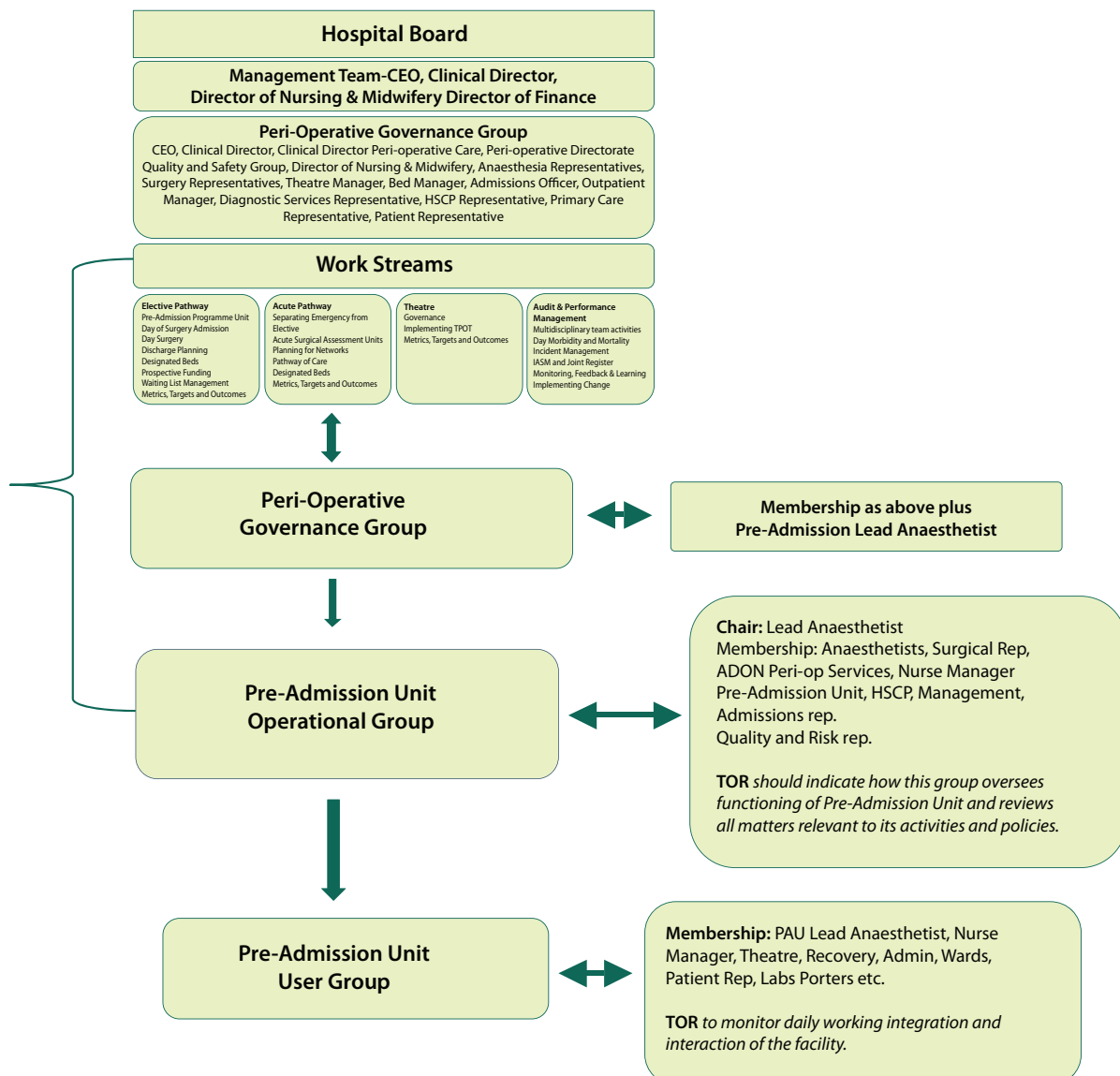
4.2 Overall Quality and Safety Structure

Effective governance arrangements recognise the interdependencies between corporate, financial and clinical

governance across the service.

The governance for quality and safety of the pre-admission unit within a hospital/hospital group should be clearly set out in the context of the overall peri-operative governance group (see below for sample peri-operative governance structure) and its interface with the hospital executive. If clinical directorates are in place, appropriate connections with relevant clinical leads and specialities should be unambiguous.

Table 1: A model for Governance of Peri-operative Care at Hospital Level



Developed from the Peri-operative governance Model outlined in the Acute Surgery Model of Care document

Executive accountability for resources, ownership, leadership, peri-operative, management and monitoring of the pre admission unit should be set out in the terms of reference of the peri-operative quality and safety group. The peri-operative quality and safety group itself should be integrated into the clinical and managerial infrastructure with the rest of the hospital (e.g., directorates, where in place). There will be a need to communicate the quality and safety structures and processes and appropriate referral mechanisms both within the hospital and to key external partners such as primary care teams or other major referring agents.

4.3 Governance for Quality and Safety of the Local Pre-admission Unit

Governance for quality and safety incorporates accountability for clinical performance. The aim is to create and support an environment where all staff understand their role within the programme, recognise their accountability and are committed to the guiding principles for quality and safety.

Each unit should have a multidisciplinary operational group that oversees the organisation and day-to-day running of the pre-admission unit, agrees policies, protocols and guidelines (PPGs), timetables, plans the service, manages the resources, reviews operational problems and organises audit strategies. Individual units should formulate a staffing structure that takes local needs into consideration.

As hospitals become networked in groups, it may be more productive and appropriate to develop a single pre-admission unit to meet the needs of the local network. This could have a single leadership and management structure, with local on-site hospital units as required reflecting the needs of individual hospital clinical caseloads.

Pre-admission services and processes need to be adapted

to suit individual hospital needs, as reflected by surgical case mix and patient complexity. The American Society of Anaesthesiologists (ASA) classify patients by status as set out in 4.4 below.

4.4 ASA Physical Status Classification System

ASA Physical Status 1	– A normal healthy patient
ASA Physical Status 2	– A patient with mild systemic disease
ASA Physical Status 3	– A patient with severe systemic disease
ASA Physical Status 4	– A patient with severe systemic disease that is a constant threat to life
ASA Physical Status 5	– A moribund patient who is not expected to survive without the operation
ASA Physical Status 6	– A declared brain-dead patient whose organs are being removed for donor purposes

This guideline provides a flexible framework for pre-admission unit clinical governance, thus enabling different levels of hospital to be responsive to individual local needs.

The purpose of the pre-admission visit prior to hospitalisation remains the same, regardless of hospital level:

- To streamline the patient's journey along the care pathway by offering a more accessible, coherent, effective and efficient service. Ultimately, this will improve the patient's experience and increase patient satisfaction levels.
- To assess the patient's health status, identify anaesthetic risk factors, optimise the patient's medical co-morbidities pre-operatively and organise

access to health promotion programmes such as smoking cessation or nutritional screening – perhaps using the Malnutrition Universal Screening Tool (MUST) – with implementation of a care plan based on findings as required.

- To perform pre-operative investigations and screening as per agreed PPGs and have a clear process for the management of abnormal results in advance of admission (National Health Service (NHS) and NICE, 2003)
- To provide patient education and information in relation to the pre-operative, peri-operative and post-operative care plan, as their care progresses through the hospital system.
- Link in with the patient's GP if there are outstanding clinical issues or a need to consider other information.
- Enable early assessment and patient education by health and social care professionals (e.g., physiotherapy, clinical nutrition, occupational therapy).
- Plan for discharge including rehabilitation needs, analgesia options, delivery of community services if required and follow-up information.
- To facilitate day of surgery admission and early discharge.
- To facilitate better capacity planning within the hospital.

Every pre-admission unit should operate under the leadership of a consultant anaesthetist with a specific interest in pre-operative assessment and day surgery/ DOSA.

The lead clinician for the pre-admission unit will oversee the quality and safety of the unit within the context of the hospital quality and safety structure. Their remit will include the development of local PPGs and clinical governance. The lead clinician will lead on innovations and development

in pre-operative assessment, day surgery practice and clinical governance, with particular emphasis on clinical risk management and clinical audit.

The operational group overseeing all aspects of the pre-admission unit should be chaired by a lead anaesthetic clinician, and should include representation from surgery, senior nurse management, health and social care professionals (such as physiotherapy, occupational therapy, dietetics and nutrition), hospital administration, hospital management and finance. It is important that the required staff for the unit have clear and dedicated slots to the unit, in order to ensure that it functions appropriately.

The maximum value of a pre-admission unit is derived from the team working as a complete unit, so as to ensure appropriate screening, preparation and flow of patients for surgery. Additionally, a user group, comprising representation from all specialties using the pre-admission unit, should be established to allow discussion of wider issues relating to the operational function of the individual unit. As the number of units expands nationally, units should endeavour to develop learning networks, in order to ensure the transfer of skills, expertise, information and evaluations. Units should also share locally developed PPG algorithms, which not only reduce duplication of effort but also encourage peer review of such algorithms.

4.5 Roles and responsibilities

4.5.1 Lead Clinician: Anaesthetic Consultant

The following role will only be possible if there is an adequate resource, including designated time allocated to the respective department of anaesthesia (AAGBI, 2010).

- The lead clinician for the pre-admission service should be an anaesthetist who acts as the key point of contact with surgical and anaesthetic departments.
- The lead acts as Chairperson of the Pre-Admission Unit Operational Group.

- The lead oversees the implementation of the operational PPGs for the pre-admission unit.
- The lead is responsible for establishing evidence-based PPGs for pre-operative assessment, investigations and patient selection criteria for day surgery (AAGBI/British Association of Day Surgery, 2011); AAGBI, 2005; Department of Health (NHS), 2002); the development of pre-operative screening questionnaires and pre-operative protocols (e.g., fasting, medication administration, discharge criteria and advice for patients); data collection for clinical audit and the establishment of a risk register/reporting system for risk management which are reported to the Peri-operative Quality and Safety Group and from there to the overall Quality and Safety Executive Committee for the hospital(s).
- Arrange executive and clinical ratification and circulation of protocols.
- The lead will ensure that risk assessment, key performance indicators (KPIs) and audits on the pre-admission unit are conducted as appropriate, and outputs monitored and reviewed.
- The lead will ensure that the pre-admission clinic is a consultant-led service and that clinics are adequately staffed by anaesthetists and other clinical staff as appropriate.
- The nurse-delivered pre-admission service must operate in collaboration with, and under the supervision of, and with immediate access to consultant anaesthetic support.
- As the pre-admission unit is predominantly an anaesthetic consultant-led service, it is imperative that the lead pre-admission nurse and all nurses involved in patient assessment receive adequate education and training, in order to deliver this service safely.
- Common referral pathways to patients' GPs (for stabilisation of blood pressure, asthma or other pre-

existing medical conditions) and to other medical or surgical specialties for further review, so as to ensure patient optimisation, should be established as part of the pre-admission unit procedures.

- Link in with other lead clinicians for pre-admission nationally to form a network of learning.

4.5.2 Consultant Surgeon and Surgical Team

- Following the entry of patients into the pre-admission unit service and a decision to proceed with surgery, patients should be appropriately selected for day surgery or DOSA as per agreed PPGs developed jointly by anaesthesia and surgical departments based on the hospital model and best practice.
- Decision to refer patients to the pre-admission unit for anaesthesia review should be guided by local PPGs.
- Informed consent (verbal and written) obtained during the pre-admission process must be confirmed on the day of surgery:
<http://www.hse.ie/eng/about/Who/qualityandpatientsafety/safepatientcare/safesurgerychecklist.pdf>
- Further information on the HSE National Consent Policy may be found at: http://www.hse.ie/eng/services/list/3/nas/news/National_Consent_Policy.pdf
- Patients should be provided with general as well as procedure-specific information (both written and verbal) in advance of admission. Specific arrangements should be made for the management of more vulnerable patients e.g., children, those with physical or intellectual disability, elderly and non-English speakers. Procedure-specific information should include clinical information about the patient's condition, specific surgical procedure, risks, post-operative recovery, wound care and follow-up.
- General information pertaining to the local pre-

admission unit should include practical details such as pre-assessment visits, referral for investigations and the admission process in the day surgery unit, or for DOSA, should also be provided.

- Letters to primary care providers regarding surgical procedure undertaken, hospital stay and follow-up should be a priority on discharge of the patient from the surgical service.

4.5.3 Nurse Management

The pre-admission unit should be supported by a nursing framework of governance for quality and safety as delineated by local service decision-makers. The agreed nurse management structure should support the development of a clinical governance structure through PPGs, strategic planning of the unit and implementation of the recommendations of the pre-admission unit leadership team.

It is likely that the nurse manager will take on the leadership role for the Pre-Admission Unit User Group.

4.5.4 Pre-admission Unit Nursing Staff

The objective of the following section is to broadly outline the duties of nursing staff involved in the clinical delivery of nursing care in the pre-admission unit. It is not intended to be a comprehensive list of all duties involved and, consequently, the content is subject to change and development as determined by local service needs and line manager discretion; it is not intended to be prescriptive or restrictive.

The National Council for the Professional Development of Nursing and Midwifery offers a valuable toolkit to assist in clinical competency determination and development planning, which may be of benefit to individual units.

- Nurse-delivered pre-admission assessment is carried

out within the structure of agreed PPG algorithms, under the supervision of, and with immediate access to, consultant anaesthetic support. Where national PPG algorithms have been developed, these should be utilised. The nurse should have readily available communication channels with a consultant anaesthetist to discuss specific cases and receive feedback.

- The nurse in the pre-admission unit plays an important role in the pre-operative assessment of the patient.

This encompasses identification of the patient with a high peri-operative risk using mutually agreed PPGs (e.g., screening questionnaire completed by patient or phone interview) with referral to the consultant anaesthetist as appropriate, instituting routine pre-operative investigations as set out by local PPGs, and assessing patient suitability for day surgery/DOSA.

- The nurse's role may also include implementation of the various pre-operative PPGs (e.g., fasting guideline, administration of regular medication) in addition to patient/family education with particular reference to general anaesthesia, regional anaesthesia and post-anaesthesia recovery and health promotion. Information should be provided in both verbal and written format.
- The nurse should be supported to attain competence in core clinical skills such as phlebotomy and ECG. This remit may be expanded as determined by local service needs to develop competencies such as spirometry, nurse prescribing of medicinal products and nurse prescribing of ionising radiation.
- Pre-admission unit nurses should co-operate closely with primary care services, particularly when administration of specific medication such as subcutaneous anticoagulation is required, or in the case of patients referred for medical optimisation.

- Mindful of best practice, the nurse, as part of the multidisciplinary team, should identify, critically analyse, disseminate and integrate nursing and other research evidence into the pre-admission nursing care plan as appropriate. In order to ensure that clinical care reflects best practice standards, the unit should engage in a continuous cycle of audit, implementation and evaluation (Health Information and Quality Authority (HIQA), 2012).
- The pre-admission nurse should contribute to service review and development by gathering, populating, collating and reporting on data generated from pre-admission activity as requested. This may be completed in conjunction with unit colleagues.

4.5.5 Clinical Nurse Specialist (CNS)

A clinical nurse specialist (CNS) may be appointed to provide clinical leadership and management in the pre-admission unit as determined by local service needs/governance, and may be guided by factors including hospital model, patient complexity, individual hospital size and numbers to be treated.

4.5.6 Surgical Access Co-ordinator

This role can prove to be an intrinsic part of the overall stand-alone day unit service, as co-ordination of lists, surgeons and support staff is required if staff are visiting from other hospitals within the group. The skillset and role of a surgical access co-ordinator are distinct from those of a waiting list manager, and it is important that the roles and responsibilities are not confused.

4.5.7 Health and Social Care Professions

There is substantial evidence that health and social care professionals (HSCPs) have a significant role within the multidisciplinary team involved in pre-operative assessment of patients prior to surgery. Inclusion of these professionals supports the appropriate pre-operative

assessment, e.g., maximising respiratory function, conducting patient education, working to prevent post-operative complications, agreeing post-operative goals and facilitating patient compliance with treatment (Walker, 2007; Bandis, Murtagh and Solia, 1998). The impact of these services from an early stage can also effect a speedier discharge post-operatively through establishment of, for example, mobility status, equipment needs, dietary/nutritional support and the resolution of social needs that may be identified.

- The success of a co-ordinated team approach is dependent on respect and communication among all team members directed toward the individual patient's care (McCann, Philips and Quigley, 1975).
- Physiotherapy, dietetic/clinical nutrition, occupational therapy, speech and language therapy, podiatry, orthoptics and medical social work each have a role in the pre-operative stage of a patient pathway, depending on the nature of the surgery, the clinical findings of the pre-operative assessment of the patient and the impact of that surgery on the physical and social circumstances of the patient.
- Standardised forms can be developed by each discipline and used as a formal mode of communication.
- HSCPs staff resources must be appropriate in order to allow comprehensive input to pre-assessment services as indicated.

4.5.8 Physiotherapy

Physiotherapy is indicated in some pre-operative assessment in order to facilitate speedier recovery, thus minimising length of hospital stay. The role of the physiotherapist is to assess the patient's fitness for rehabilitation after their surgery and to optimise their physical status before surgery – a concept referred to as “pre-habilitation”. In the following circumstances, pre-operative physiotherapy intervention

would have a beneficial impact:

- The patient has respiratory issues, chronic/acute, and is likely to be further affected by surgery.
- If the surgery will result in moderate to major mobility issues e.g., orthopaedic surgery – adult and paediatric. There is research evidence of the benefits to patients of undergoing a targeted exercise programme in advance of knee arthroplasty surgery, as they have a better outcome (McDonald, Hetrick and Green, 2004; McHugh, 2008; Walls, McHugh, Moyna and O’Byrne, 2008; Brandis, 1998; British Association for Parenteral and Enteral Nutrition, (BAPEN), 2011).
- If the surgery will impact on patient posture e.g., plastic surgery, breast reconstruction, tendon release – adult and paediatric.
- If the surgery will have consequential impact on lymphatic drainage e.g., axillary node clearance, inguinal node clearance, post-breast or pelvic surgery, or removal of melanoma.
- If the surgery will result in continence issues for the patient e.g., gynaecological or prostate surgery
- If the patient is at risk of rapid debilitation post-surgery e.g., frail elderly.
- If the surgery will have an impact on the neurological status of the patient e.g., spinal, nerve repair.

Additional resources are needed to support all of the above.

4.5.9 Occupational Therapy

Involvement of occupational therapy in pre-admission clinics has been shown to be effective in facilitating better outcomes and shorter lengths of stay for patients who require the following:

- The provision of essential enabling assistive technology, such as seating, environmental systems and housing adaptations where indicated.
- The customised fabrication of splints/orthosis

for upper and/or lower extremities to prevent contractures positioning, facilitate or enable function, improve range of motion (e.g., for Dupuytren’s release and carpal tunnel decompression).

- Assessment of cognitive, perceptual, physical and emotional ability to cope with planned surgery and subsequent rehabilitation.
- The occupational therapist is trained in analysing activity and, by combining this with their knowledge of the patient, anatomy, psychology and the environment, they are ideally suited to determine the likelihood of the patient to benefit from scheduled care. Early screening enables the occupational therapist to liaise with the patient/family/caregiver to address potential difficulties which could lengthen hospital length of stay. The occupational therapist is in a powerful position to generate efficiencies in the health service by supporting early discharges and by improving throughput, prevention and re-admission.
- Determination of the most suitable location for the patient post-surgery. The occupational therapist determines if the patient is likely to be suitable for discharge to their current living environment, or if alternative housing supports will be required post-operatively. The occupational therapist is the clinician who determines the level of assistance that will be required by the patient in order to function safely.
- Immediate follow-up for intensive occupational therapy post-operatively for procedures following orthopaedic/plastic surgery interventions. Such clinical follow-up enables the occupational therapist to triage patients with upper limb complaints, and refer to their surgical colleagues those who require surgery, thereby facilitating greater efficiencies in triaging patients through the system.
- Ongoing discharge planning which commences at the start of a scheduled care episode.

Resources will be required to address the above best practice standard of care.

4.5.10 Dietetics

All patients should undergo basic nutritional screening, and at-risk patients should be referred for advice/nutritional support. This would reduce risks of refeeding syndrome, and would improve wound healing and recovery times.

The MUST screening tool is a validated tool for pre-admission units to screen patients and take steps depending on the result, i.e., patient not at risk/at risk/is malnourished. Malnourished patients are referred directly to a dietician. In theory, at least some of these patients could attend community nutrition services – but the waiting time issue needs to be addressed.

4.5.11 Medical Social Work

A pre-operative assessment carried out by a medical social worker will identify any issues that may inhibit the patient from discharge home following a surgical procedure. Community services and resources required to support the patient's transition from hospital to home can be mobilised in a timely manner in order to avoid delay in discharge.

4.5.12 Healthcare Assistant/Support Staff

There may be a role for healthcare assistants/support staff in individual pre-admission units. Such roles will be guided by the current service delivery system, regional and local demographics and epidemiology, including case mix, service gaps, waiting lists and waiting times.

4.5.13 Hospital administration/clerical officer/secretarial staff

Dedicated administration staff are responsible for:

- Booking date for pre-admission unit attendance and surgery date for theatre.
- Ensuring that charts are available for both anaesthesia and surgery teams in advance of the

planned admission date at a defined location.

- Obtaining and collating information and notes for medical review (including old notes, letters of correspondence and test results from other institutions) prior to the pre-operative assessment and before the day of surgery.
- Arranging timely outpatient hospital appointments for pre-operative assessment, allied health professional assessment and investigations (e.g., radiology, echocardiography).
- Performing the administrative admissions procedure at the time of attendance at the pre-admission clinic.
- Confirming that the patient is able to attend for surgery on the planned date.
- Admission and discharge of patients on the hospital information system.
- Preparation of operating lists in conjunction with the surgical and anaesthesia staff.
- Collecting and collating of data for audit.
- Role in gathering, populating and collating data on pre-admission unit activity as requested.

4.6 Chaplaincy, Psychology and Counselling

Patients with specific spiritual needs may wish to be informed about chaplaincy services within the hospital and how to access these during their hospital stay. The unit needs to have appropriate information on guiding patients who wish to access such services. In addition, equivalent links with psychology and/or counselling services should be established in advance.

4.7 Management of a pre-admission unit

4.7.1 Meetings

- Weekly meetings to plan service delivery, workload.
- Monthly meetings to review quality and efficiency of the day surgery pathway.
- Regular scheduled meetings of the Pre-Admission Service Operational Group allows for ongoing

pre-admission programme unit assessment.

This group should refer wider hospital issues to the peri-operative governance group as per the aforementioned governance structure and reporting relationships. Typical issues to be reviewed by the pre-admission unit operational group might include:

- Utilisation of theatre time, waiting list management, bed capacity, case mix, staffing levels and expenditure.
- Auditing of cancellations, did not attend (DNA) rates, unplanned admissions/re-admissions and quality of service as reviewed by the patient.

4.8. Links with other Pre-admission Units within the wider Hospital Groups

Ideally, as the hospital groups develop into collaborative integrated networks, it would be hoped that the pre-admission units on individual hospital sites would have common governance policies and procedures across the group. This would allow for considerable economies of scale and full utilisation of scarce resources, while balancing the needs of patients to receive as much of the care locally as is both possible and appropriate.

5.0 PERFORMANCE MEASURES

5.1 Outcome Measurement in the Setting up of a Pre-admission Unit

5.1.1 Why Measure Outcomes?

The healthcare environment is driven by cost rationalisation and evidence-based funding. Appropriate measures of outcome to justify and focus spending are vital. Pre-admission units need easily measurable, consistent and definable clinical and non-clinical outcomes.

By examining and interpreting these outcomes, we can ensure ongoing quality improvement measures. Meaningful reporting of outcomes allows the consumers and providers of the pre-admission unit services to make informed decisions. Consistent reporting of outcomes informs clinicians and managers in their efforts to drive quality improvement in terms of identifying the potential for improvement and monitoring the results of new initiatives.

Systems should be in place to ensure the routine collection of data regarding patient throughput and outcomes. The most robust data collection would involve electronic collection at all stages of the peri-operative journey. Monthly graphs and figures detailing all outcomes and trends would then be accessible and available to the key stakeholders.

The National Clinical Programme for Anaesthesia will be developing an agreed set of standard KPIs that each unit should incorporate into its performance management approach. These KPIs will be supported by specific metadata sheets which specify the way standard information should be collected and analysed across units. Units can develop other indicators in addition to these standard KPIs. It is important that all units develop a mechanism for reporting this information on a continuous basis to the senior management team and that there is a documented meeting to review the performance information on a regular basis.

This will become particularly important when units are operating in a multi-site hospital group context.

5.1.2 Which Outcomes should we Measure?

In reality, there are infinite choices of outcome measures. A vital focus is on the continuous re-appraisal of current outcomes being measured, on quality initiatives implemented based on these measurements, and on novel outcomes to measure.

5.1.3 Existing National Targets

- Surgical average length of stay (AvLOS) target 4.5 per cent improvement over 2013 (baseline end of 2012).
- Day of surgery rate improvement of plus 15 per cent by end of 2013 (baseline end of 2011).
- Re-admission rates to remain under 3 per cent (inpatient and day case)
- Number of adults on waiting list over eight months.
- Number of children on waiting list over 20 weeks.
- Number of surgical day cases.

5.1.4 Percentage of Patients who are Pre-assessed

This may ultimately become a national target and should certainly be collected locally. The target would be that in excess of 80 per cent of patients would be pre-assessed. Locally, metrics should include the numbers, age and ASA scores of the patients pre-assessed.

5.1.5 Day of surgery cancellation

This is a vital local outcome metric. Day of surgery cancellation poses enormous opportunity cost to the hospital and significant annoyance to patients and families. Ideally, with rigorous pre-assessment processes, anaesthesia-related day of surgery cancellations can be virtually eliminated. Cancellation measures need to be broken down into cancellations by the patient versus hospital cancellations for clinical or capacity reasons.

There will be a small inevitable contribution from unanticipated occurrences on the day of surgery (for example, intercurrent respiratory tract infection, new atrial fibrillation) from patient DNA and from lack of availability of beds or theatre capacity. Day of surgery cancellation is a vital parameter to assess both the quality of pre-operative patient care and the overall peri-operative processes. It is imperative to record the exact anaesthesia issue that led to the cancellation.

Occasionally, a situation can arise where the covering anaesthetist on the day cancels a patient who has been pre-assessed as fit at the pre-admission clinic. Differences of opinion should be discussed within a department with the aim of avoiding future cancellations, and protocols modified so as to reflect agreed changes.

5.1.6 Average Length of Stay (AvLOS)

Average Length of Stay (AvLOS) is a process measure often reported in the literature as a clinical and economic outcome measure. Average length of stay is an obvious and tangible outcome measurement for a pre-admission unit. Pre-existing national targets for AvLOS include a surgical AvLOS improvement of 4.5 per cent over 2013 (baseline end of 2012).

AvLOS is easy to define and capture with even the most basic data collection systems. However, by using AvLOS as a clinical outcome measure, we presume incorrectly that all patients are discharged at the same level of wellness and that once this wellness is achieved, there are no other barriers to discharge. These issues have been consistently debated in the critical care literature where ICU length of stay (LOS) is commonly used as a secondary clinical end point.

5.1.7 Referral to Treatment Time (RTT)

We need to ensure that the design of the pre-admission unit

delivers on the pre-delineated referral to treatment time (RTT), as locally agreed. It may be that as the pre-admission service, infrastructure and expertise expand, the RTT will naturally decrease.

There may need to be agreed shorter waiting timeframe initiatives for surgical oncology patients. Any delays beyond pre-agreed limits should be documented, audited and discussed in the appropriate forum. It is imperative that the anaesthesia pre-admission process does not become a bottleneck in the overall referral to treatment journey.

5.1.8. Deviation from Level of Care Planning

It is vital to identify patients with a high risk of complications in the peri-operative period, and to define the most appropriate post-operative level of care (day stay, inpatient, ward, high dependency unit, intensive care). It is then imperative that we examine and audit any deviations from this planned care pathway as a quality initiative.

- Unanticipated day case admission
Commonly due to protracted surgery/anaesthesia, nausea, pain and other miscellaneous causes.

Pre-admission units can play a critical role in assessing the risks for post-operative nausea/vomiting and pain, and in planning a management of each patient. PPGs should exist for the management of patients who require unscheduled admission, especially in a stand-alone unit.

- Unanticipated intensive care admission (UICA)
Most commonly seems to reflect either a need for increased post-operative monitoring or an adverse respiratory event (failed extubation, slow ventilatory wean). It is debatable whether UICA is always a preventable phenomenon.

Unplanned admissions to intensive care units and high dependency units may be more reflective of peri-operative

clinical factors, rather than an anaesthetic outcome.

- Re-admission rates

There are pre-existing national targets that re-admission rates should remain under 3 per cent for both day case and inpatient post-operative discharges.

5.1.9 Unanticipated Mortality

In most of the surgical population, mortality is a relatively rare event. Mortality is variably reported as anaesthesia related (usually within 24 hours) or peri-operative (up to 30 days). However, there can be issues in longer-term follow-up because of the background attrition rate for that population and because of so-called competing causes of death. When using mortality as an outcome measure, the denominator number needs to be very large in order to detect statistically significant differences, and therefore the timeframe of data collection can be very protracted.

5.1.10 Clinical Outcomes/Peri-operative Morbidity

Peri-operative morbidity is taken to mean clinically significant, but non-fatal, adverse outcomes e.g., peri-operative myocardial ischaemia, surgical site infection, wound dehiscence, venous thromboembolism or any nosocomial infection. There have been major difficulties in standardising definitions and reporting for even the more common post-operative morbidities.

Other local clinical metrics could include nurse prescribing, effective pain management, effective bowel preparation, cross-matching on time, physiotherapy review pre-operatively, identification of risk of malnutrition and dietetic advice to arrest/revise this prior to surgery.

5.1.11 Peri-operative Risk Calculation

Morbidity and mortality figures must be continuously measured and interpreted in the context of the predicted operative risk. A system that uses risk-adjusted prediction

is an essential tool for clinical governance reviews to 'prove' a unit's performance. There are many approaches to estimating peri-operative risk depending on the co-morbidity and the operative procedure. The more commonly used and referenced methods include the p-POSSUM (Physiological and Operative Severity Score), the Lee or RCRI Index (Revised Cardiac Risk Index) for cardiac morbidity for patients undergoing non-cardiac surgery, the EURO score (European System for Cardiac Operative Risk Evaluation) for predicting operative mortality for patients undergoing cardiac surgery. Other utilised risk predictors include the Goldman and Detsky cardiac risk index scores. The RCRI index is widely used in clinical practice, the anaesthesia and surgical literature, and was incorporated into the 2007 pre-operative cardiac risk evaluation guideline from the American Heart Association and the American College of Cardiology. It is vital that pre-admission units become au fait with the most appropriate predictive tools for calculating risk for the patient population.

5.1.12 Appropriateness of Investigations

Most tests/investigations performed should be limited to those suggested by both local PPGs and accepted best practice/consensus documents (see NICE pre-operative testing recommendations). This should be regularly re-appraised by local audit and evidence-based review.

5.1.13 Cost Savings

Direct cost savings, expressed in ways such as:

- Cost per bed day savings (this can be calculated from local metrics for improved AvLOS).
- Cost per day of surgery cancellation savings.
- Cost per hour of operating theatre time saved.

Indirect cost savings

- These are considerably more difficult to measure. They include early return to employment of the patient and the caregivers, transport/meal cost savings for family/

patient with day of surgery admission/early discharge home.

5.1.14 Patient and Caregiver Experience and Outcome

This is usually measured by a detailed questionnaire. It can be administered in person, via phone interview or via e-mail. This has the potential to provide a balanced perspective of the structure, process and outcome of a pre-admission unit. Key factors in patient satisfaction seem to include structured information delivery in the pre-admission unit setting and establishing a good rapport at the initial visit. Complications and malpractice lawsuits are often attributable to poor preparation and failures in communication. Thus, a rewarding and structured pre-admission unit visit is an imperative first step.

Patient-related outcome measures (PROMs) are perceived health outcomes from the perspective of the patient. These outcomes are subjective to the variation of expectations of each patient. Despite the potential for reporting confounding, perceived return to physical and psychological baseline after surgery should be monitored.

5.2 Suggested Metrics for Use

In reality, decisions on which metric to use to measure performance will depend on local issues, phase of development of the individual pre-admission unit, and national requirements for information to drive service delivery.

The following metrics reflect different phases of service development, implementation and national requirements.

5.2.1 Phase 1: Set-up and Launch

- Champion for the establishment, development and implementation of pre-admission unit clearly identified. This has been identified as a key critical success factor for successful operation.

- Proposal for launch in place
- Steering group in place (chair defined, meetings in place, objectives and timelines set)
- Business case developed and approved, including project plan
- Stakeholder assessment and engagement
- Pilot team identification – proof of significant buy-in
- Resources required defined and in place – phased roll-out according to fit/gap analysis; manpower required
- Informatics and diagnostics
- Workforce – dedicated and trained
- Infrastructure in place (including location and ICT)
- Ring fence dedicated administrative support
- Training defined and delivered
- Pro forma for pre-assessment in place
- Roll-out priorities based on resources
- Protocol guidelines and procedures defined and documented
- Discharge plans in place
- Wider communications links (e.g., website)
- Risk assessment plan
- Hours of operation of pre-admission unit identified
- Assignment of pre-admission unit rosters
- Pre-admission unit steering group clearly defined – link into Peri-operative Theatre Governance Group
- Steering group in place (based on stakeholder and CEO engagement)
- Protected resources
- IT systems support
- Geographical/physical space
- Communications and engagement in place – all cohorts
- Agreed mechanism for patient referral to PAU – administration and clinical
- Patient flagged in Hospital IT system, as assessed
- Check and review the overall service delivery model design

It may not be possible to measure all of these metrics, but key drivers of change need to be identified locally and progress should be paused until a minimum set of parameters and key requirements are in place. This is to avoid attempting to set up a pre-admission unit without critical success factors in place, such as a project champion, management buy-in and support.

5.2.2 Phase 2: Stabilise

These metrics should be measured once the unit has been set up and is trying to establish the service locally and streamline its service offering.

- Access
- Waiting time
- Target for throughput/pre-assessment by ASA grading
- DNA for clinic appointment
- DNA for surgery
- Not fit to proceed
- Cancelled appointment – seen
- Cancelled appointment – not seen
- Same day cancellation
- Number of surgical patients not pre-assessed by ASA grade
- Number of patients requiring intervention identified by pre-assessment
- Patients delayed or deferred
- DOSA rate (patients who were assessed)
- Patient satisfaction
- Staff satisfaction
- Morbidity and mortality
- AVLOS
- Number of specialist consultations
- Number returned to GP
- Duplication of tests
- Duplication of consultations
- Unanticipated outcome
- Unanticipated death in theatre or within 24 hours of surgery

- Unplanned admission of day case patients
- Investigations, where necessary, carried out, reported and followed up in a timely manner, according to PPGs

5.2.3 Phase 3: 'Steady State'

These metrics are required when the pre-admission unit has reached 'steady state' for service delivery and is trying to focus on quality and performance improvement over the medium to long term.

- Deliver a high-reliability organisation (HRO) – regular audit of metrics
- Ongoing investment in service (career progression, succession planning, new technology)
- Communication to all staff, including staff working on the front line
- Opportunities for national/local research (outcomes)
- Quality improvement (continuous cycle)
- Bed days saved
- Direct cost savings
- Clinical decisions not to proceed
- Deferrals
- Audits
- Satisfaction surveys
- Following guidelines
- Audits of guidelines

5.2.4 National Outcome Measures – 'Future State'

Measures should allow one to quantify the availability of pre-admission units nationally and reflect on the performance of their services and how that transforms into improved service delivery and clinical outcomes.

- Percentage assessed by ASA grade
- DOSA for pre-admission unit patient
- Bed day reduction
- Wait time for appointment
- AVLOS of pre-admission unit patient
- Number/percentage not pre-assessed
- Not fit to proceed percentage

- Patient satisfaction
- Same day cancellation of pre-admission unit patient
- Overall DNA for pre-assessment
- Number returned to GP
- Number requiring intervention
- Morbidity and mortality from surgery

Of these national measures, the following were identified as the three top priorities for measurement, with the number of patients seen within the pre-admission unit pre-operatively. Patient throughput is seen as the single biggest measure of pre-admission unit effectiveness.

- Percentage assessed by ASA grade
- DOSA for pre-admission unit
- Bed day reduction

ASA grading of surgical patients is currently being investigated by the Hospital In-Patient Enquiry (HIPE) through a joint initiative between the National Clinical Programme for Anaesthesia and the and the College of Anaesthesia of Ireland, to see if we can increase capture of these data for all surgical patients in Ireland.

The following were also identified as important national measures:

- Wait for appointment
- AVLOS of pre-admission unit patients
- Numbers/percentage not pre-assessed
- Not fit to proceed percentage

Other potential national measures included:

- Patient satisfaction
- Same day cancellation of pre-admission unit patient
- Overall DNA for pre-assessment
- Number returned to GP
- Number requiring intervention
- Morbidity and mortality from surgery

At a national level, consideration could be given to the following projects to support these measures:

- Regional roll-up to a national level of set-up dashboards
- Quality approval nationally
- Defining waiting time (what is time zero)
- Definition of cancellation
- Standardise overall definitions

5.3 Conclusion

Each pre-admission unit must establish a clinical lead and a system for audit of the outcomes attributable to the peri-operative process. These include outcomes in quality improvement and in peer review processes. It is imperative to record the number of meetings held by the peri-operative group/pre-admission team to plan and review performance.

Meaningful evaluation of the pre-admission unit's outcomes involves comparison of pre-existing national metrics and local metrics adjusted for patient risk factors, functional status, surgical case mix and anaesthesia.

Risk adjustment (or case mix adjustment) allows separation of the effects of patient factors and effectiveness of care. In reality, residual confounding will always remain, due to the effect of unmeasured but influential patient factors.

There is a necessity to rigorously document ASA physical status scoring, calculated cardiovascular risk scores, degree of planned operative procedure (minor/moderate/major) and the timing (emergent/urgent/elective). Patient outcomes are a complex function of not only the patient's clinical attributes and other factors, but also the effectiveness and quality of services provided.

6.0 CAPACITY PLANNING FOR A PRE-ADMISSION UNIT

Pre-operative assessment enables the delivery of safe, high-quality anaesthesia and ensures a better patient experience by giving patients the opportunity to participate in decisions pertaining to their care. Furthermore, standardising and centralising the pre-admission process has been clearly demonstrated by the productive operating theatre (TPOT) team to improve efficiency and cost-effectiveness through the reduction of theatre delays, cancellations and minimising downtime. It is essential that the pre-admission unit and the TPOT group collaborate along the surgical patient pathway to ensure a safe, efficient and patient-centred approach.

This document aims to provide a framework for the delivery of pre-operative assessment services. However, it should be noted that a Model 2 hospital will have very different requirements from a Model 4 hospital, and local factors should be considered when applying these recommendations in the development of a pre-admission unit.

The Royal College of Anaesthetists and the AAGBI recommend that all patients who require the services of an anaesthetist should undergo appropriate pre-operative assessment. The pre-admission unit must therefore be able to accommodate both patients undergoing elective procedures that are scheduled weeks in advance, and patients undergoing more urgent surgery.

Patients should undergo pre-operative assessment as early as possible, so as to allow timely identification of potential problems and ensure medical optimisation of the patient. Once a surgical procedure has been deemed necessary, patients need to be risk assessed to determine what level of pre-operative assessment is required – from assessment by a nurse over the telephone for low-risk patients to consultation with an anaesthetist for high-risk patients.

Careful triage using appropriate screening processes can improve efficiency and avoid waste of scarce resources. Patients can be triaged by completing a health questionnaire that may be computer based, whereby patients are triaged electronically according to pre-defined algorithms. Alternatively, it may be paper based, whereby a staff member familiar with pre-operative assessment triages the patient according to pre-defined algorithms. This can raise complicated medico-legal issues which would need to be addressed locally. There will be a need for units to develop a mechanism for referring back patients who have been referred inappropriately.

Patients are risk stratified and triaged for different levels of pre-operative preparation as follows:

1. By a nurse over the telephone (low-risk patients undergoing low-risk surgery)
2. By a nurse or supervised trainee anaesthetist, face to face (medium-risk patient undergoing medium/high-risk surgery)
3. By a consultant anaesthetist who has access to more sophisticated testing e.g., cardio/pulmonary exercise testing (CPX) (high-risk patients)

6.1 Staffing Levels

There are several models of pre-operative admission clinics available, which involve senior anaesthetists and skilled nurse practitioners.

Consultant anaesthetists must be involved in the pre-admission unit and are responsible for:

- Reviewing abnormal investigation results and instigating appropriate actions
- Addressing concerns raised by pre-admission unit nurses
- Training pre-admission unit nurses and non-consultant hospital doctors (NCHDs)
- Developing PPGs and templates to standardise

patient management. Standardised PPGs are needed to minimise unnecessary investigations and eliminate variability in the peri-operative management of diabetes, anticoagulants, thromboprophylaxis etc., thereby avoiding discord between the assessor and the procedural anaesthetist.

- Liaising with surgeons, GPs, cardiologists, respiratory physicians and other health professionals to make decisions regarding patient management.

A lead consultant anaesthetist should be identified to direct PPG development, quality improvement and governance.

Pre-operative assessment by skilled nurses in a nurse-delivered clinic is safe and cost-effective when administered in accordance with locally agreed PPGs, in collaboration with, and under the supervision of, consultant anaesthetists. The minimum time allocated to a pre-admission unit can be calculated for each institution using the table below:

Table 2 Minimum Guidelines on Staffing Levels

	Consultant anaesthetist WTE	Nurse WTE
Inpatient surgery	15 hours/week per 1,000 adult inpatients/year requiring services of an anaesthetist*	0.9 WTE per 1,000 adult inpatients/year requiring services of an anaesthetist
Day case surgery	5 hours/week per 1,000 adult day cases/year requiring services of an anaesthetist **	0.6 WTE per 1,000 adult inpatients/year requiring services of an anaesthetist ***

* Includes time for non-clinical duties (service development etc.) as per RCOA but does not include backfill for leave

** Does not include time for non-clinical duties, as day case pre-assessment clinics are usually affiliated with inpatient pre-assessment units. However, institutions with only day case pre-assessment clinics should be allowed one hour/week extra for non-clinical duties.

*** Institutions that do not have facilities/clinical services to support inpatient admissions should factor a local attrition rate into their calculations to account for those patients who are initially pre-assessed as day cases, but deemed unsuitable for day case surgery at that institution.

• Other Staff

Secretarial/clerical support is crucial to the efficient and cost-effective administration of a pre-admission unit.

Secretarial staff are responsible for scheduling appointments, retrieving medical charts and collating information for medical review and admission/discharge of patients on the hospital information system. The importance of clerical staff dedicated to, and invested in, the administration of a pre-operative assessment service cannot be over emphasised, and sufficient WTE (approximately 0.5 WTE per 1,000 patients) must be provided.

As the proportion of patients attending pre-operative admission clinics increases and more patients are admitted

on the day of surgery, the opportunity for NCHDs to undertake comprehensive pre-operative assessment of patients has declined. The pre-admission unit is a valuable source of experience and NCHDs should be encouraged to attend the unit.

6.3 Health and Social Care Professionals

The availability of a pharmacist in the pre-operative admission clinic assists in the reconciliation of patients' medication, implementation of PPGs for thromboprophylaxis, management of peri-operative anticoagulation etc.

Physiotherapists and occupational therapists can facilitate discharge planning, particularly of orthopaedic patients.

Dieticians and smoking cessation officers also have an important role to play in preparing the patient for scheduled surgery. Laboratory technician support may be required for maintenance of cardiopulmonary exercise equipment or echocardiography.

6.4 Matching Throughput and Surgical Capacity

The unit needs to be sufficiently flexible to meet changes to surgical capacity, particularly demands due to surges in patient numbers. Local PPGs should include mechanisms to match surgical capability and service delivery within the pre-admission unit. The individual hospital surgical capacity should be reflected in the anticipated workload for the pre-admission unit. Ultimately, units may be sub-divided into three categories:

- High throughput
- Medium throughput
- Low throughput units.

6.5 Infrastructure

Pre-operative assessment should take place in a defined area with a central waiting room, appropriate number of examination rooms, and sufficient space for clerical staff and chart organisation. A centralised service provides opportunity for education, backfill for annual leave, increased support for staff, more efficient use of clerical services, and secure storage for patient medical records; it also facilitates governance.

Face-to-face consultations with either a nurse or anaesthetist can be organised using either a walk-in service or a scheduled appointment system. A walk-in service offers the patient a one-stop shop and avoids the patient having to attend the hospital on two different occasions. However, if the preference is for a walk-in service, demands on the pre-admission unit can be unpredictable and could result in long patient waits. Furthermore, medical records may not always be available to the assessor. A scheduled

appointment system, on the other hand, avoids long delays, as demand is predictable, and ensures availability of the patient's medical record, but necessitates a second visit to the hospital by the patient.

Careful consideration should be given to location of new units, so that they are near services which would need to be accessed and delivered. Dedicated location for clerical support should be found within the unit itself.

6.6 Hours of Operation

Patient assessments should take place during regular working hours. Evening or weekend hours, although facilitating patients who work irregular hours, are not conducive to a cost-effective, efficient service due to the difficulty of contacting primary care physicians, surgeons and other clerical staff out of hours when an issue arises.

6.7 Health Information Technology

Access to accurate, up-to-date information is essential when making decisions pertaining to patient health. By facilitating rapid access to accurate, real-time patient information at any time of the day or night, health information technology has the potential to enhance the co-ordination of care of complex patients, thereby improving the efficiency and effectiveness of a pre-operative assessment service, and preventing errors. Electronic systems can contribute to data collection, audit and research. Investment in electronic resources and networking systems enable the sharing of information between the primary care physician, surgeon, surgical admissions unit/wards and the pre-admission unit, thereby facilitating the timely scheduling of appointments, supporting risk identification and enhancing the decision-making process. Installation of electronic information systems is costly and technically challenging; adequate funding is crucial to ensure that a system is fit for purpose. Given the importance of the unit to patient flow, the units should consider the employment of mobile technologies

to facilitate a flexible assessment process with a rapid turnaround of information on patient requirements and planned next steps.

- Special Cases

6.8.1 Children

It has been estimated that at least 90 per cent of surgery on children can be performed on a day-stay basis. The majority of children do not have major co-morbidities and are unlikely to require extensive pre-operative investigations. Generally, the pre-operative assessment of children is less complicated and time consuming than for adults, and the calculations above for staffing levels are not applicable.

There are several different styles of pre-admission units, and a model that suits one hospital may not suit another. However, they all have the common purpose of improving theatre efficiency, clinical outcomes and patient satisfaction.

7.0 PATIENT PATHWAY THROUGH A PRE-ADMISSION UNIT

• Operation of a Pre-admission Unit

The objective of this section is to act as an input into the design of a generic model of care for the design, establishment, delivery and evaluation of a successful pre-admission unit.

All clinical programme models of care are generic rather than prescriptive. They include key design principles that need to be present in all local versions of the model. It is important that the model is not overly prescriptive because no two implementation sites are the same. This allows for local variations in patient volume, types of surgery, variations in ratio of elective to emergency cases and availability of resources.

• Objective of the Pathway of Care within a Pre-admission Unit

The key objectives of a pre-admission unit are to:

- Reduce patient risk by ensuring that patients are medically optimised before their operation
- Reduce the level of same day cancellations – cases cancelled on the day of surgery, due to either patient or hospital issues
- Optimise patient flow throughout the peri-operative journey
- High-level view of pre-admission process



Table 3: Outline of Typical Steps involved in Patient Journey through a Pre-admission Unit Programme

No	Step	Objective	Key input/output	Responsibility
1	Surgical outpatient review	<ul style="list-style-type: none"> • To determine if a patient requires surgery • Decide if suitable for day surgery • For inpatients, decide if suitable for same day admission 	<ul style="list-style-type: none"> • GP or other referral • Patient record • Diagnostic results • Consent process commenced in surgical outpatient clinic 	Surgeon Anaesthetist: for day surgery and same day admission protocols
2	Schedule patient	To confirm a date for surgery and for pre-assessment	<ul style="list-style-type: none"> • Surgeon schedule • Surgery list • Patient details • Agreed dates • Refer to pre-admission unit as per local referral guidelines 	Scheduler
3	Pre-operative assessment	To identify any patient issues that need to be addressed in order to optimise their clinical condition before surgery, and communicate to the relevant clinician involved in the patient's care Confirm patient education <ul style="list-style-type: none"> • Group education classes (procedure specific) • Booklet or pathway manual Commence discharge planning	<ul style="list-style-type: none"> • Patient record • Pre-admission protocol • Appropriate lab, diagnostic tests (as per local/ international guidelines) • Appropriate specialty consultation e.g., cardiology • Individual surgeon preferences • Decision to proceed, defer or cancel 	Pre-admission nursing team Administration staff (to locate all relevant documents/ charts) Anaesthesia lead – protocol development and leadership support Health and social care professionals

No	Step	Objective	Key input/output	Responsibility
4	Day of surgery registration and assessment	To check patient, review paperwork and ensure all pre-operative checks completed	<ul style="list-style-type: none"> • Patient record • Day of surgery assessment checklist • Surgical consent process finalised 	Ward nurse Anaesthetist
5	Surgery and recovery	To complete procedure and monitor post-operative recovery	<ul style="list-style-type: none"> • Patient record • Safe surgery theatre checklist • Guidelines/protocols for peri-operative care 	Ward nurse Theatre check-in Anaesthetist Nurses – ward and theatre Surgeon
6	Discharge or admit	To determine if patient is suitable for same day discharge or should be admitted	<ul style="list-style-type: none"> • Discharge assessment criteria 	Anaesthetist Ward nurse Surgeon Health and social care professionals
7	Post-discharge care	To ensure the patient has a clear care plan at time of discharge	<ul style="list-style-type: none"> • Patient information • GP discharge letter • Care plan 	Ward nurse Surgeon Health and social care professionals

- **Critical Success Factors for an Effective Pre-admission Unit**

There are a number of key factors that need to be present if a pre-admission unit is to be effective. These factors cannot be illustrated in an algorithm or flow chart, and so they are described in more detail below. Some of these factors are common to any patient pathway and some are specific to the pre-admission unit pathway.

- **Engage Everyone in the Design and Implementation of the Pathway**

If the implementation of the practices set out in this pathway present a shift in current practice, it is critical that prior to implementation, all parties impacted by the changes (key stakeholders) are engaged, and their understanding and cooperation sought. This is particularly important when you are moving from an old-style model where surgeons assessed the patients themselves and their secretaries scheduled patient appointments. In a pre-admission unit, scheduling is completed by a centralised team and the patients are pre-assessed by nurses and anaesthetists. It is a significant change in practice to move to a place where

surgeons trust the peri-operative team to pre-assess their patients.

Transition will take time and stakeholders will need to be consulted and their concerns addressed, allowing for a gradual build-up in trust in the process over time. Briefing and communication during the implementation and first months of operation is critically important.

- **Communication, Trust and Teamwork**

A patient pathway can follow the appropriate steps as outlined in the flow diagrams within this document, but if the multidisciplinary team operating that pathway does not behave as a team, communicating effectively and trusting each other, there is likely to be variation in the pathway and the patient experience.

These factors should not be left to chance. The level of trust, communication and teamwork should be regularly assessed by the team. These factors can be integrated into the pathway using the type of regular meetings outlined in the following governance section.

In addition, the induction of new team members into the team is of critical importance. There should be no ambiguity as to their role, the role of other team members and the performance expectations for the pathway and the patient experience. A structured induction and pathway training programme should be in place.

- **Understanding and Allowing for Individual Clinician Preference**

The pathway should be standardised as far as possible. Pre-admission checklists and PPGs should be applied. Some anaesthetists and surgeons will have personal preferences as to how they assess patients and manage their peri-operative care. The pathway and team should allow for these preferences, assuming they do not interfere with the safety and efficiency of the pathway.

For example, a surgeon or anaesthetist may have a particular preference as to how soon or late a patient should be taken from the day ward and queued for admission to the theatre suite.

Some may have particular tests beyond the assessment checklist that they require for their patients, depending on the nature of surgery/procedure etc. These variations in clinical requirements may present an opportunity for learning and further improvement of the pathway. The discipline by which the pathway is managed should not constrict the opportunity for individual practices to enhance the pathway.

Assessment, theatre and ward staff should document and share individual clinician preferences, so that new staff can be made aware of these preferences from day one.

- **Flexibility in Scheduling**

While it is important that there is a discipline to scheduling and that theatre time is optimised, it remains important

that some flexibility is allowed around scheduling. This is to facilitate the inevitable late referral of patients whose clinical condition has deteriorated to such a point that they now require their operation earlier than planned. While allowing for flexibility, the scheduling process should not be abused. The team should agree under what circumstances late scheduling is appropriate and track the frequency of its occurrence.

- **Hours of Operation of Support Services**

When scheduling theatre lists, the availability of additional support services that may be required e.g., health and social care professionals, administration etc. should be considered. The pre-admission team should work with other services to ensure that work schedules and rosters are complementary to the pre-admission.

- **Clarity of Targets and Continuous Improvement**

All members of the team should understand the key safety, quality, access and efficiency targets for their pathway. These should be visible to the team and, where appropriate, to patients. The team's performance against national benchmarks should be visible also. The team should review performance against these targets as a team, and identify reasons for variation from the norm. The development of quality improvement skills and leadership among the team should be encouraged. Projects to address variation in performance should be supported, and project progress and outcomes made visible. The team should schedule learning and team-building events.

- **Individual Performance Management**

Once a team member's role, accountability and expected performance are made clear to them, they should be provided in a structured way with feedback on how they perform against expectations. The purpose of this feedback is to enhance their learning and personal development. This process may also assist individuals in reviewing their career

progression and evaluating future roles. The performance management process should be agreed between the

pre-admission unit director, the director of nursing and midwifery and the senior operational manager.

Table 4: Outline of Typical Meeting Schedule behind the Management of a Pre-admission Unit

	Meeting	Time	Frequency	Purpose
(a)	Bed management – nurses and operations manager	9.30	Daily	<ul style="list-style-type: none"> Plan availability of day ward beds for following day
	Scheduling – clinical coordinator, pre-admission nurse, theatre manager, surgical services manager, scheduler, radiology, central sterile supplies department (equipment) manager	10.30	Daily	<ul style="list-style-type: none"> Review following day's initial list Assess time to complete procedures Update list to reflect late patient preferences and late additions Update consultant on changes
(c)	Daily review call – operations manager, anaesthesia daily lead, ward and theatre nurse managers	16.30	Daily	<ul style="list-style-type: none"> Conference call to review day's performance and identify any problems that occurred in the schedule That evening, operations manager calls any surgeon impacted by problems, and communicates what action is being taken to address the issue.
(d)	Discharge planning	Mon	Weekly	<ul style="list-style-type: none"> Review length of stay of patients admitted
(e)	Breakdown review/risk management meetings		As required	<ul style="list-style-type: none"> To analyse the root cause of a significant or recurring breakdown in patient flow, or to address a safety issue No blame culture applies to these meetings
(f)	Quality and safety review meeting		Monthly	<ul style="list-style-type: none"> Monthly formal review of pathway performance against agreed targets by team
(g)	Quality and safety committee		Two Months	<ul style="list-style-type: none"> Meeting of anaesthesia, surgery, nursing leads to address ongoing audit results and any concerns. On occasion, leads from the laboratory, radiology, IT, management etc. will be invited to attend

7.5 Pathway Governance

As previously discussed, properly structured governance will contribute towards building effective communication, team work and trust among the team. In the following table we outline a suggested series of daily and weekly meetings designed to ensure that issues with pathway flow are addressed in a timely way.

7.5 Sample Patient Flow Pathway through a Pre-admission Unit

Sample key steps in the patient pathway are illustrated in the following diagrams.

There are three flow charts

- Scheduling steps
- Pre-assessment steps

- Management of patent anomalies

These three diagrams are intended to be a sample guide of steps that might be involved in different units within different hospital types: Models 2-4. These steps are not intended to be prescriptive; rather, they are provided to highlight the types of steps and pathways that individual units might consider, depending on their hospital type, case mix, patient complexity and numbers of patients who need

to be treated.

Ultimately, three different patient cohorts may need to be considered within the pre-admission unit:

- Day case patients only
- The pre-operative assessment and work-up of high-risk cases
- Patients for day of surgery admission.

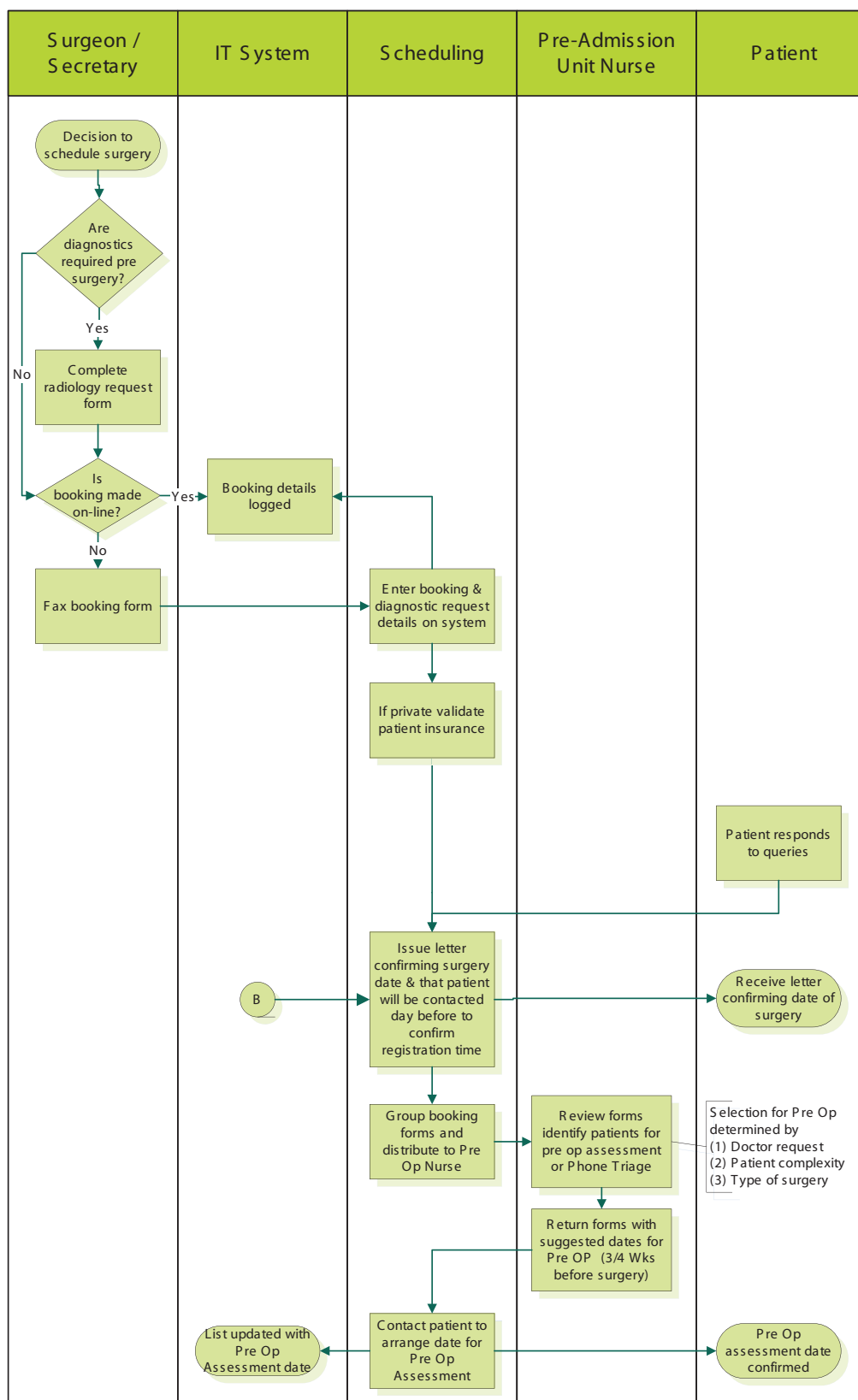
Table 5: Sample Patient Flow Pathway through a Pre-admission Unit: Scheduling Steps**1. Scheduling**

Table 6: Sample Patient Flow Pathway through a Pre-admission Unit: Pre-assessment Steps

1. Scheduling

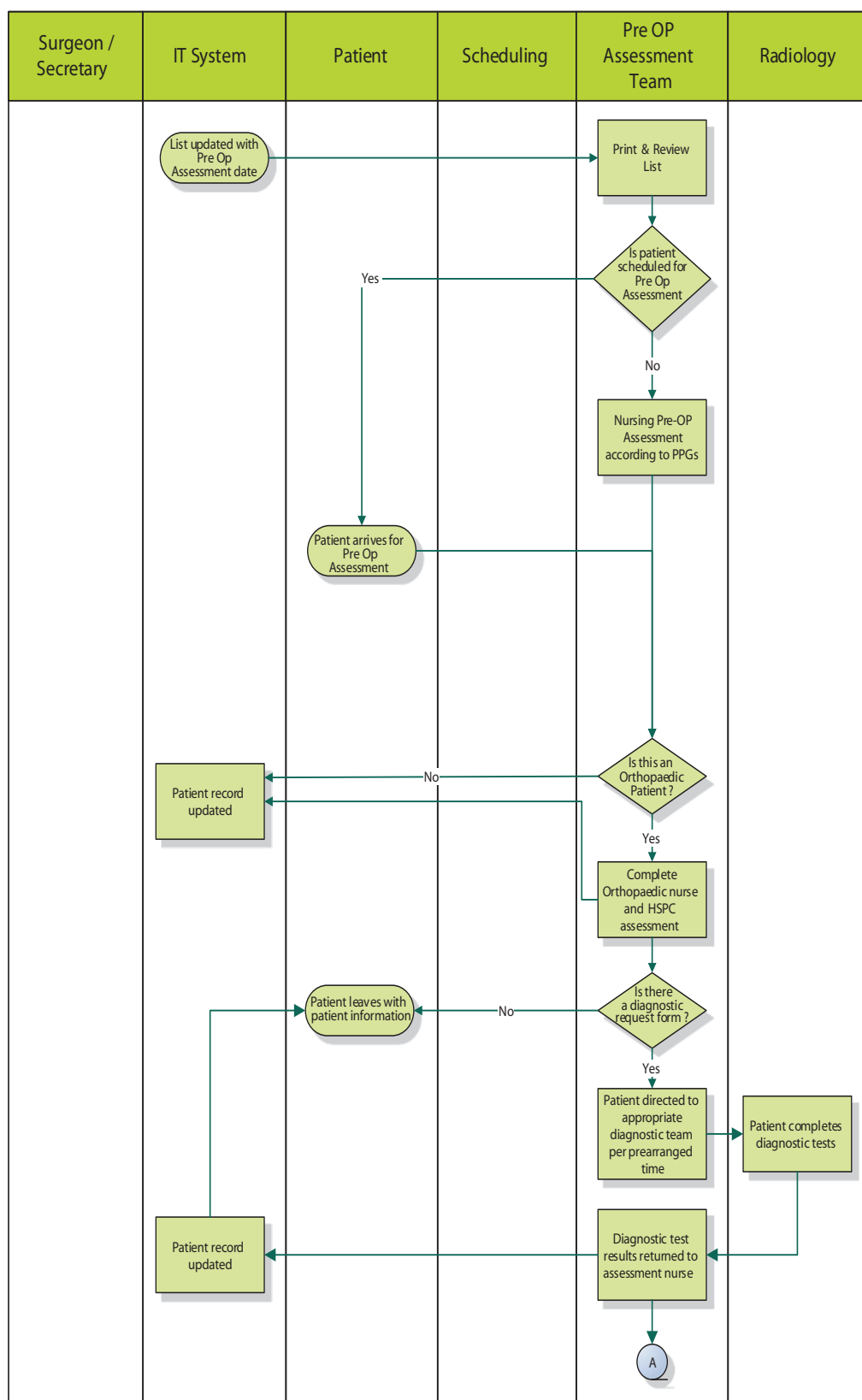
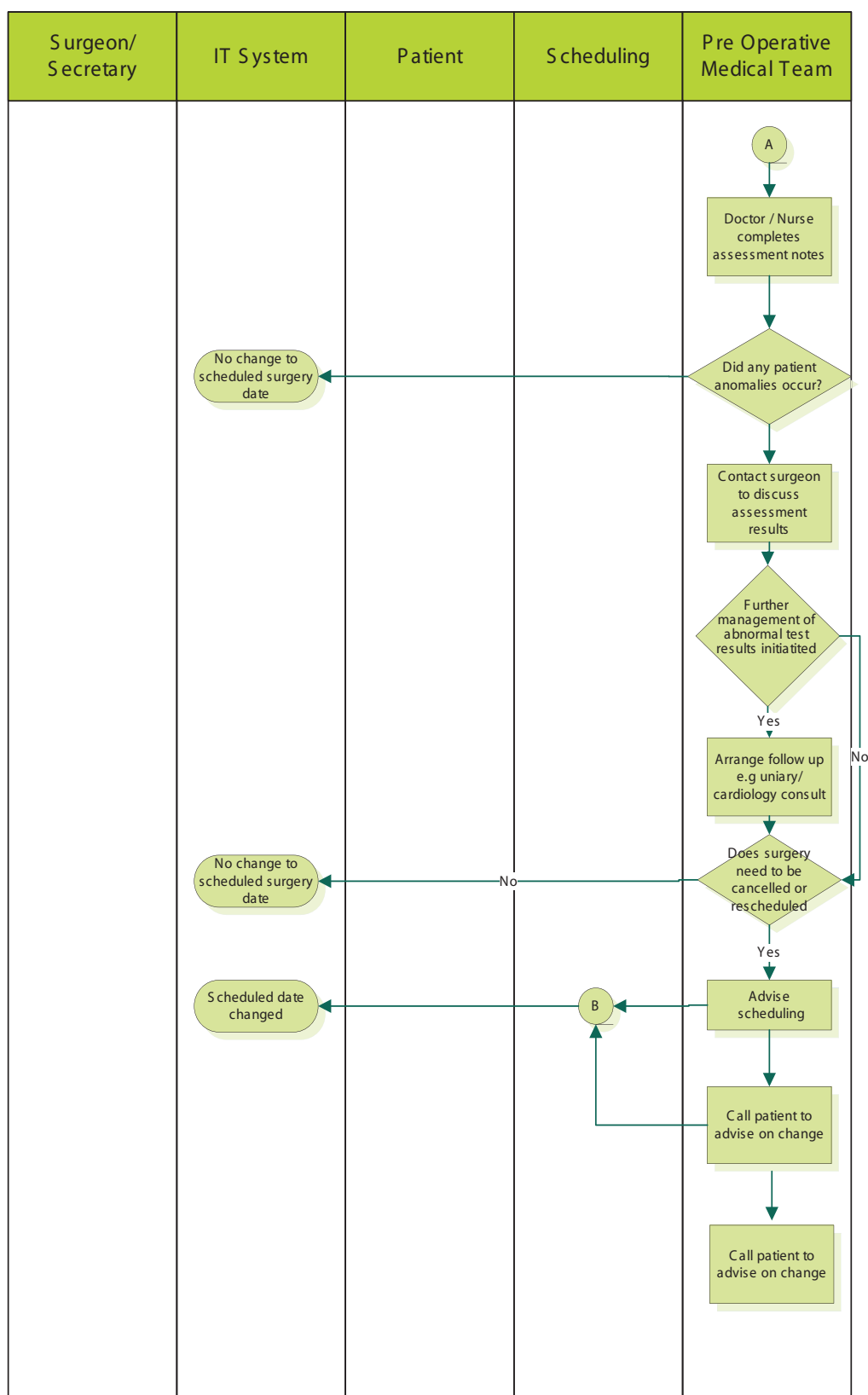


Table7: Sample Patient Flow Pathway through a Pre-admission Unit: Management of Patient Anomalies**1. Scheduling**



8.0 STAND-ALONE DAY SURGERY UNITS

In Ireland, the formation of Hospital Groups into Model 2, 3, and 4 hospitals has designated Model hospitals as stand-alone day surgery units.

A stand-alone day surgery unit is defined as a site that is isolated from the main acute hospital. There is no absolute minimum distance, but remoteness will define the type of procedures done in order to deliver a safe and efficient service. The Irish experience to date is that a distance of 50km from the nearest acute hospital meets these needs (Bourke and Hooker, 2013).

A stand-alone unit requires analysis of its suitability for the provision of intended services.

Within each hospital group the distance between the stand-alone unit and the nearest acute hospital may be considerable (e.g., Bantry, Mallow, Ennis, Nenagh, Roscommon, Monaghan, Dundalk). While there may be efficiency to be gained from operating away from theatres under pressure from the requirements of emergency surgery, logistical issues need to be considered in relation to clinicians travelling between sites (Smith, McWhinnie, Jackson, 2012).

8.1. Operational Policy

Clear management and operational PPGs should be agreed at a local level. This should cover issues such as:

- Patients who cannot be discharged home post-operatively.
- Patients with difficulty after discharge: clinical, medical or social.
- Effective pre-operative screening and selection.
- Good multidisciplinary team communication.
- Management of emergencies.
- Appropriate staff mix to deal with complications: clinical, managerial etc., e.g., aspiration, malignant hyperthermia, suxamethonium apnoea, and

haemorrhage.

- tested communications between the stand-alone unit, the acute hospital hub of the Group Hospital Network and the ambulance services.

8.2. Patient Screening

Personnel involved in patient screening should have intimate knowledge of the skills and capacity of the Model 2 hospital services.

Triage telephone screening is an effective screening tool for screening large numbers of patients who do not need face-to-face interviews (Bourke and Hooker, 2013).

8.3. Short Notice List/Replacement Cases

In order to avoid under-utilisation of theatres due to late cancellations, a short notice list should be available (Bourke and Hooker, 2013).

An ability to use this short notice waiting list as a source of replacement cases which have been screened in advance will improve theatre utilisation and productivity. Consideration should be given to the introduction of short notice waiting lists throughout Hospital Groups, particularly in hospitals concentrating on elective surgery.

8.4. Surgical Access Co-ordinator

This role can prove to be an intrinsic part of the overall stand-alone day unit service as co-ordination of lists, surgeons and support staff is required if staff are visiting from other hospitals within the group.

Isolation is a factor to be considered in the delivery of a safe and efficient service (Ni and Watts, 2001). On-call must be taken into account in order to avoid accidents and tiredness in theatre or when travelling.

Problems managing peri-operative complications safely at a stand-alone unit need to be addressed. Unanticipated

admission will require transfer to an inpatient facility. The above factors can severely limit the type of work undertaken.

8.5. Staffing

Nurse-delivered pre-admission units are essential to this service, with immediate and ongoing access to consultant anaesthetist leadership and multidisciplinary support.

8.6. Teaching

Teaching modules should be developed in conjunction with the appropriate colleges for nursing, anaesthesia and surgical trainees, in addition to undergraduate medical and nursing students, as increasing amounts of day surgery will be transferred to the Model 2 type hospitals.

8.7. Discharge Planning

All patients should receive verbal and written instructions on discharge. Appropriate analgesia protocols should be agreed with the pharmacist. Patients should be given a copy of the discharge summary in case they require medical assistance overnight.

If post-operative problems arise, there should be a local protocol in place to manage them. A helpline for the first 24 hours after discharge should be developed. Telephone follow-up of all day surgery patients provides support in the event of any immediate complications.

Records of telephone follow-up may be used for auditing post-operative symptoms and patient satisfaction (AAGBI and British Association of Day Surgery, 2011).

8.8. Geographical Issues

Isolation is a factor to be considered in the delivery of a safe and efficient service (Ni and Watts, 2001). On-call must be taken into account in order to ensure a quality service for the patient and a safe working environment for staff.

Problems managing peri-operative complications safely at a stand-alone unit need to be addressed. Unanticipated admission will require transfer to an inpatient facility. The above factors can limit the type of work undertaken (HIQA, 2012).

9.0 PRE-ASSESSMENT OF THE EMERGENCY PATIENT

Assessment of the patient with emergent conditions requiring acute surgery is not a suitable role for the pre-admission unit. However, the principles of risk stratification, optimisation of the patient's condition prior to surgery and anticipation of peri-operative events, with planning for mitigation of the risk of medical complications peri-operatively, remain unaltered in the pre-operative assessment of a patient scheduled for emergency surgery. That said, many of the means to assess operative risk are unfeasible and redundant in emergency major surgery e.g., cardiopulmonary exercise testing. There is very little literature on the subject of assessment of such patients, and no data on the effect of pre-operative assessment and optimisation on outcome in such patient groups.

Clear clinical pathways for such unplanned admissions are essential and should include departments of surgery, emergency medicine and theatre departments. Guidance is provided in the document *Acute Surgery Model of Care* (2013). The purpose of these pathways should be to facilitate a high standard of care, avoid omissions and prevent avoidable prolonged fasting and fluid deprivation – especially in vulnerable patient groups such as the elderly (AAGBI Safety Guideline 2010, www.aagbi.org).

There is a requirement for clear communication between surgeons, anaesthetists and intensivists, with the common goal being the welfare and best interests of the patient.

For proposed planned surgery which has an urgent nature (e.g. vascular pathology/breast cancer), the benefits of optimising medical conditions pre-operatively must be weighed against the risks of patient deterioration due to delaying surgery (Faiz et al., 2013; Gawande et al., 2003; Pearse et al., 2012).

Where possible, the patient and/or their next of kin should be included in these discussions. Risks and benefits of surgery should be outlined clearly (Saunders et al., 2012).

All discussions should be clearly documented in the patient's medical notes. Details of any decisions to proceed with surgery when the patient's condition has not been optimised, or where a decision is taken not to proceed with surgery when there is correctable surgical condition, should be well documented and agreed by the team, patient and his/her family (Royal College of Surgeons of England, 2011).

10.0 PITFALLS AND CRITICAL SUCCESS FACTORS – LEARNING FROM NATIONAL EXPERIENCE

The most important objective in establishing a unit is to ensure its sustainability over time. While this section outlines a number of relevant considerations, it is recommended that a unit commence with a defined and safe scope on an initial basis. Over time, as the experience and efficiency of the service grows, the scope and range of specialties provided, patients referred, and services offered can be expanded.

- Common Difficulties and Critical Successes with Pre-admission Units
- Failure to establish what it is you are about to set up
- Are you simply responding to a directive by the HSE/hospital/organisation, or have you identified a specific need?
- Is your ambition to ensure that patients attending for major surgical procedures are in optimal medical condition in advance of surgery, or is your principal objective to ensure that no day case patient is cancelled on the morning of surgery? Perhaps both categories of patients are of interest to you.
- It is essential that the type of clinic you set up is tailor-made for your organisation and not simply modelled on what you might perceive as working well in a similar organisation.
- Is your need, a service based on day case patients only or same day admission patients for more complex procedures, or both?
- Do you have a homogeneous patient population such as an orthopaedic hospital or a heterogeneous complex patient population such as a large tertiary referral hospital?
- Do you plan to run a triage service from where patients are then sent forward for medical optimisation, or do you plan to provide a specialist-based clinic which has the expertise to consolidate the medical work-up in a focused manner?
- Having a clear vision on the type of service you plan to provide is essential for business planning
- Not spending time working with all the potential stakeholders
- Service managers, policy-makers, medical, surgical and nursing colleagues, health and social care professions etc.
- It is essential to have the laboratory, radiology, clinical investigation and cardiology divisions all on board from the outset.
- If you are planning a pre-admission unit that serves the entire pre-operative patient population, you must have buy-in from all surgical colleagues.
- If you have a complex patient population who are being referred to your institution from other centres, you will need an efficient system to collate all the relevant patient information. You will need excellent administrative and IT support.
- If you expect to be dealing with a physiologically complex patient population who are likely to need prompt medical optimisation, you will need additional medical expert opinion from services such as cardiology, haematology etc.

This support is often hard won and usually needs to be reciprocated. It most often involves anaesthesia consultant/medical consultant direct communication.

- Insufficient senior decision-making capability
- It is essential to have senior input from the planning phase onwards e.g., from senior service managers, the CEO, finance, senior medical consultants, senior nursing personnel, health and social care professionals etc. It is also essential to have senior personnel from laboratories, radiology, vascular and pulmonary departments.
- For efficient day-to-day operation of the clinic, senior clinical decision-making is essential. You will need a medical consultant lead, usually a consultant anaesthetist. It is essential to have senior nursing management input, and staff nurse support. If the

objective is to provide a medical management service for complex patients who will attend for major surgery, a medical consultant-based clinic is essential. Alternatively, if the clinic is simply involved in the initial stages of processing or screening of the elective pre-operative patient population, a pre-admission unit staffed by non-medical personnel may be sufficient. Selected patients may then be referred from this service to a clinic for more comprehensive work-up/ medical optimisation.

- It is essential to have sufficient resource allocation and good financial planning
- In our current economic environment, resource re-allocation and re-evaluation of job descriptions/ roles and responsibilities within an organisation is worth considering. It is essential to take time to draft a comprehensive business plan in conjunction with all stakeholders.

- Critical successes
- Almost the inverse of a, b and c above.
- For setting up the service, it is essential to have 2-3 people who have the knowledge, skills and determination to lead change in the delivery of care.
- As a change management initiative, be mindful of obstacles, resistance, and opposition.
- There will also be many positive, engaged stakeholders who will help you on your journey.
- It is really useful if the core people setting up the service have had experience of pre-operative assessment/ management units either nationally or internationally.
- Make sure that you tailor-make your service for your patient demographic and institution.
- Take the opportunity to speak with other clinics and, ideally, spend time visiting their service.
- Having the core premise of 'building a service to improve peri-operative patient care' is essential.

11.0 POLICIES, PROCEDURES AND GUIDELINES FOR PRE-ASSESSMENT, GENERAL ANAESTHETIC AND CONSCIOUS SEDATION PATHWAY

Whether setting up a new pre-admission unit or improving an existing service, good communications between all parties involved and well-designed PPGs are essential building blocks for a successful outcome. The role of communication is referred to in previous chapters.

The design of robust PPGs is a daunting task, as it involves the standardisation of a large number of steps and decisions affecting a number of professionals in various specialties. A significant amount of work developing PPGs has been done throughout Ireland. The National Clinical Programme in Anaesthesia has collated a number of documents which provide a valuable resource to assist those involved in policy-making. Ways to access these documents are being developed, and information will be uploaded to the National Clinical Programme in Anaesthesia (NCPA) webpages on the HSE website. Further information will be available on HSE LanD at www.hseland.ie

The Model of Care for Elective Surgery also contains sample templates collated from colleagues across Ireland. These are in Word format and can be modified and used as a basis for development of documents to meet your local needs. They too will be available via the NCPA page.

When using documentation developed in other institutions, it must be borne in mind that their development was in response to the particular conditions pertaining to the specific hospital where they were designed, and most will need careful adaptation to local circumstances in order to meet individual unit requirements.

PPGs are required to standardise three functions:

- PPGs prescribing steps in the patient pathway (standard operating policies)
- PPGs to prescribe (or guide) decision-making.

- PPGs providing standardised information to the patient.

The 'sample document resource' contains good examples of questionnaires and policy documents from many hospitals around the country, including specific references to enhanced recovery programmes.

In addition, the NHS has developed a policy document on the pre-operative assessment of inpatients, titled National Good Practice Guidance on Pre-operative Assessment for Patients.

The 'sample document resource' also contains a number of standard operating policies (SOPs) describing the patient pathway for a number of recurring steps within the pre-assessment process. SOPs for patients changing or cancelling their operation date; the process for patients not suitable as day cases; patients not attending their pre-assessment appointment; non-cardiology referrals, and direct GP access are included in the list.

In addition, examples of documentation relating to information provided to patients on anticoagulation management, pre-operative fasting, and the peri-operative management of the patient's own medication is also available.

The UK Pre-Operative Association is also a good source of information, which can be accessed at www.pre-op.org.

12.0 ABBREVIATIONS

AAGBI	Association of Anaesthetists of Great Britain and Ireland
ACP	advanced care plan
ASA	American Society of Anaesthesiologists
AVLOS	average length of stay
BADS	British Association of Day Surgery
CAI	College of Anaesthetists of Ireland
CEO	chief executive officer
CNM	clinical nurse manager
CNS	clinical nurse specialist
CPEX	cardio/pulmonary exercise testing
CSSD	central sterile supplies department
DNA	did not attend
DOSA	day of surgery admission
ECG	electrocardiography
ESA	European Society of Anaesthesiology
EURO	European system for cardiac operative risk evaluation
HDU	high dependency unit
HIPE	Hospital In-Patient Enquiry
HRO	highly reliable organisation
HSCP	health and social care professionals
HSE	Health Service Executive
ICT	information and communications technology
ICU	intensive care unit
ICULOS	intensive care unit length of stay
KPIs	key performance indicators
M&M	morbidity and mortality
MDT	multidisciplinary team
MUST	malnutrition universal screening tool
NCHD	non-consultant hospital doctor
NCPA	National Clinical Programme in Anaesthesia
NICE	National Institute for Clinical Excellence
PAU	pre-admission unit
POA	pre-operative assessment
PPGs	policies, protocols and guidelines
p-POSSUM	Physiological and operative severity score for the enumeration of mortality and morbidity
PROMs	patient-related outcome measures
RCOA	Royal College of Anaesthetists
RCRI	revised cardiac risk index
RTT	referral to treatment time
SOP	standard operating policy
TOR	terms of reference
TPOT	the productive operating theatre
UICA	unanticipated intensive care admission
WTE	whole time equivalent

13.0 GLOSSARY

Model of Care	An approved normative healthcare delivery framework
Elective Surgery	The Elective Surgery Model of Care works to define ways to improve the Model of Care delivery of elective surgical care through a range of initiatives
Pre-admission Unit	A pre-admission unit is designed to prepare the patient for surgery prior to being admitted to the hospital
Pre-assessment	Ensuring that the patient has been adequately assessed and is fit for surgery on the day
Day of Surgery Admission	Where patients are admitted to hospital and have surgery on the same day
Hospital Group	A tiered categorisation of the healthcare service delivery capability of the hospital system
Healthcare-associated Infection	Infection arising in a patient in a healthcare facility after 48 hours
Primary Care	Primary care means all of the health or social care services that you can find in your community, outside of hospital. It includes GPs, public health nurses and a range of other services
Triage	The process of determining the priority of patients' treatments based on the severity of their condition.

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