Final Draft

The Challenge of Implementing "New" Preoperative Systems

The last decade has seen a 'paradigm shift' in the organisation of preoperative assessment and preparation, towards a more structured and systematic approach to patient care. This change has been occurring internationally, and the 'new' model of perioperative patient management is continuing to evolve.

Despite the differences between different types of hospitals, a general or 'ideal' model can be described. The model is robust and can be appropriately adapted to the particular requirements and case-mix of different hospitals. While there are controversies about various details, the new model of preoperative preparation has generally been seen as providing improved patient outcomes and quality of care simultaneously with significant cost savings.

Comparing changes and innovations between hospitals, between health services, and especially internationally, is fraught with danger. There are always important differences affecting the factors that shape and drive change differently. Every hospital is uniquely different, sometimes in ways that are subtle and poorly recognised, even by those 'on the ground'. Inevitably, there is wide variation in the different systems that have been developed and implemented internationally. That said, there are çommon features and principles underlying these developments, and it is possible to conceptualise the key features of this 'new model of surgical care' as it continues to evolve internationally.

The following cannot be regarded as based on 'evidence', and thus is not referenced. It represents the author's personal summary of key issues noted from the literature (usually the 'grey' literature), from conference proceedings and discussions, from discussion with various centres involved in implementing perioperative systems, and direct observation during site visits to preoperative services in over seventy hospitals in Australia, New Zealand, Hong Kong, the UK, Scandinavia, Austria, The Netherlands, Canada and the USA. That said, most of the author's experience is in Australia. It is therefore appropriate to give some background to this setting.

The Australian healthcare system is highly fragmented, being split between state, federal, or private organisations, and funded by a mix of state, federal, private insurance, patient co-payments, veterans or compensation insurance. About 60% of all elective surgery, particularly simpler procedures, are performed in quasi-independent private institutions. Communication between health care professionals is variable in quality and reliability. Patients may attend multiple specialists and have procedures or investigations in a diverse range of settings, both public and private. Primary care practitioners and consulting specialists are less integrated with the health system than in the British NHS or similar systems.

All these features exacerbate the challenges of global patient care, and particularly the challenge of optimising preoperative patient preparation.

It is notable that private healthcare providers are becoming more active in many countries that have been traditionally dominated by ‘universal’ public health systems. Thus the dysfunctional aspects of the Australian healthcare system may become more widespread.

The organisation of the hospital medical workforce is reasonably similar to the British system, with similar training and clinical roles. Australian surgeons and physicians are becoming highly subspecialised. Most Australian anaesthetists have a broad general medical experience before commencing specialist training.

While recognising the above differences between hospitals, health systems and countries, there are enough features in common to discuss the ‘new’ model. This chapter will review the features of this new model of preoperative care, and then discuss the challenges of implementing the model. The main focus will be on the preoperative components of the system.

The New Model of the Preoperative Process

The common conceptual basis of the new preoperative system is to plan all stages of care of an elective surgery patient as a unified and integrated process. A cross-specialty and multidisciplinary clinical service *(the Perioperative Service)* manages the assessment and preparation of all elective surgical admissions. When an operation is being planned, a hospital-based clinical service gathers information about the patient from the surgical team, from the patient (e.g. by interview or questionnaire), from the patient's GP and from other health providers. This is used to triage the patient to an appropriate level of preparation complexity, with selective use of outpatient clinic attendance prior to admission. Patients attending clinics are assessed by a multi-disciplinary team, predominantly nurses and anaesthetists. The Perioperative Service team then coordinates preparation until admission, including communication to relevant hospital care providers.

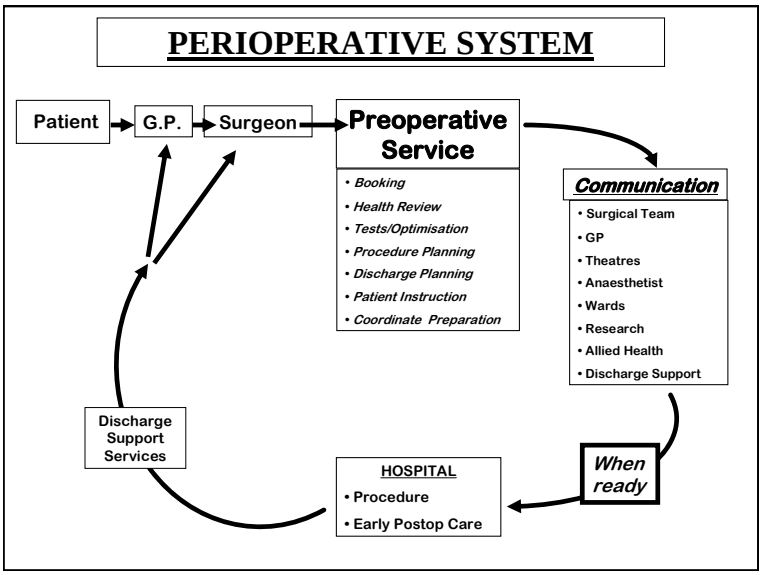
KEY FEATURES

- *Pre-admission patient preparation*
- *Selective clinic review*
- *Day of Surgery Admission*
- *Centralized Preoperative Care*
- "*Hot Bedding"*
- *Planned hospital care & discharge*
- *Elective surgery centrally organised & coordinated by a multidisciplinary Perioperative Service*
- *Ongoing service development and clinical process redesign 'driven' by the Perioperative Service*

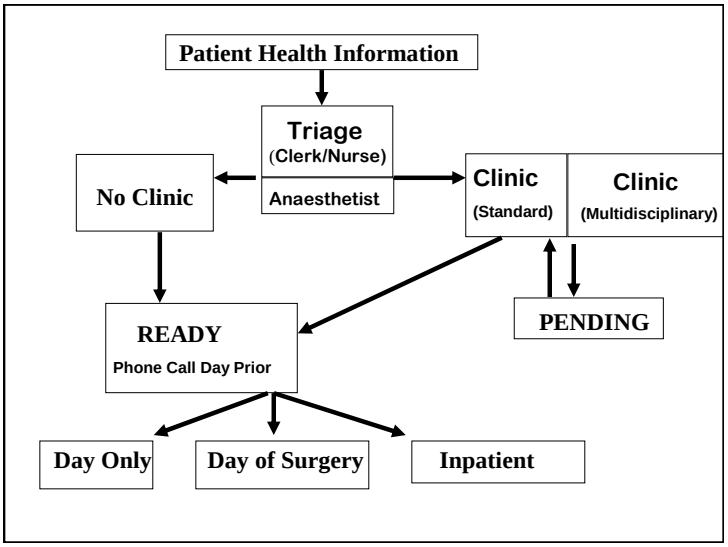
The new preoperative process can be conceptualised graphically (Fig 1). Comparison with Fig 2 in Chapter XX makes clear the shift in emphasis away from in-hospital activity. Patient assessment and preparation commences at the time of booking, and patients do not enter hospital until ready for their procedure. Communication with all care providers is a major focus of activity. Care planning (particularly discharge planning) occurs proactively.

The preadmission assessment process can also be shown graphically (Fig 2). Information about the patient gathered by questionnaire or from other sources is used to triage the patient into groups needing no clinic-based assessment, 'simple' clinic assessment, or multidisciplinary assessment. Non-clinic patients are given preparation instructions (e.g. printed instructions by mail), and have any further necessary preparation managed by telephone (e.g. a call on the evening prior to admission). Some patients who attend for clinic assessment will be postponed pending further investigations, medical stabilisation etc. All

patients are then admitted either as Day Only (DO) patients; Day of Surgery Admission (DOSA); or Inpatients (i.e. admitted on the day before surgery). With appropriate preparation, over 90% of admitted patients (i.e. excluding Day-Only) can be managed as DOSA patients. This includes major vascular, neurosurgery, orthopaedic and cardiothoracic patients.



(Fig 1)



(Fig 2)

The new model of care represents a substantial clinical process redesign. The establishment of the Perioperative Service is both a result of this redesign, and a platform for ongoing redesign. Thus the functions of the Perioperative Service include both clinical service delivery, and ongoing driving of clinical process redesign.

ORGANISATIONAL CONSIDERATIONS

The Perioperative Service is a clinical service. Therefore it will needs the same organisational infrastructure of any other clinical service (see box). As a new service working to deliver a new model of care, this infrastructure may take some time to develop. The function of the service shall tend to be suboptimal until all the necessary infrastructure is established. Local characteristics such as numbers of patients, clinical complexity, financial drivers, workforce skills, space constraints, and intra-organisational politics shall determine the particular organisational features of any perioperative service in any particular institutional setting.

- Staff – Nurses, Clerical, Medical & Allied Health .
- Budget
- Accommodation (Clinic plus Office area)
- Equipment
- Policy & Procedures
- Medical Clinician Leader/Director (Generally an anaesthetist)
- Service Manager (Generally a Nurse)
- Executive Sponsor
- A Place in the Organisation Chart

STAFFING & LEADERSHIP

As a clinical service, a service manager (generally with a theatre or surgical ward background) and a designated medical clinician leader/director is required. These roles are complementary. The function of the service, particularly in driving clinical process redesign, will be constrained until both positions are filled by clinicians with appropriate seniority and authority. Among the responsibilities of the Medical Director is taking clinical responsibility for policies and procedures and clinical decision-making such as deciding on preoperative tests and investigations, and preoperative prescribing. An appropriate statement of position responsibilities for the medical director must be developed and agreed by the institution, in particular to clarify 'turf' issues with other medical clinicians. In the USA, the responsibility for ordering preoperative investigations has been a focus of this 'turf war'. This appears to have been less controversial elsewhere.

WORKFORCE CHANGE

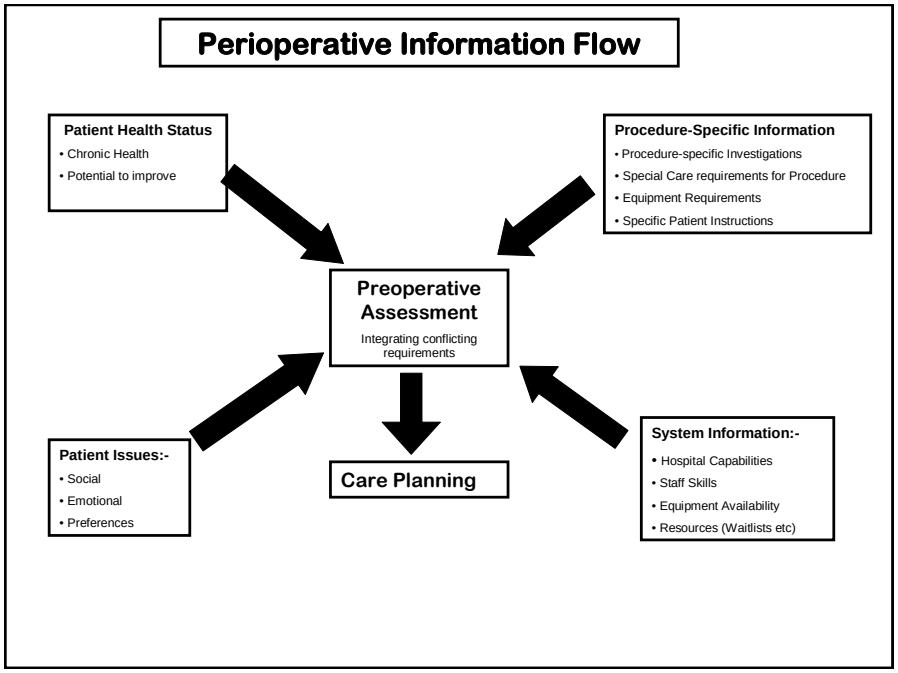
Workforce change is intrinsic in the new preoperative systems, and inevitably includes task transfer or substitution, transfer of skills, and extension of roles. Extension of roles by nurses into areas traditionally considered the domain of medical staff is both necessary and inevitable, but requires training and skill transfer. Many of the tasks involved in preoperative assessment, particularly

information gathering and handling, are performed more effectively by 'clerical' staff than by clinicians such as nursing and medical staff. This involves of extension and upgrading of traditional clerical roles to become 'para-clinical' staff.

For all staff, but for anaesthetists in particular, there is a "philosophical" debate as to whether to the process they are involved in is 'pre-anaesthetic' or 'pre-operative' assessment and preparation. More broadly, this is a debate about whether the process (and those working in it) are aiming to provide a 'gatekeeper' or a 'roadmaker' function. (See later comments.)

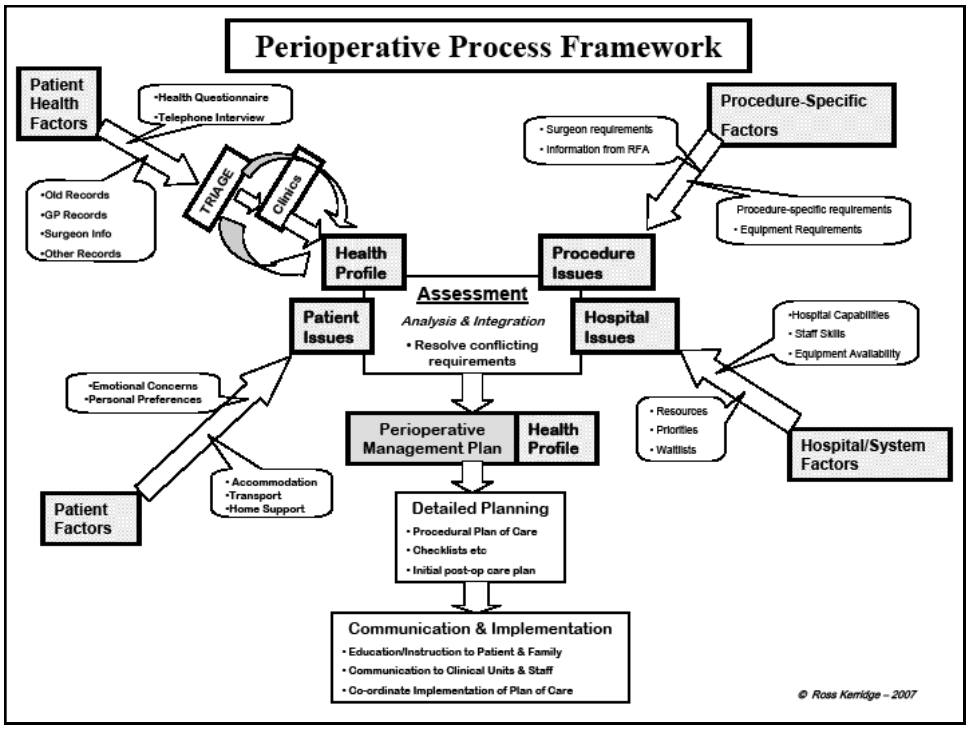
RECONCEPTUALISING THE DECISION FRAMEWORK

The 'new' model for preoperative assessment is a change in clinical processes. It can also be thought of as representing a change in information flow and decision-making in preoperative preparation. As discussed in chapter XXX, the traditional model of care was based on relatively simple, linear information flow and decision-making. The new model and be conceptualised as based on four separate sources of information and input into decision-making in the preoperative process. These four areas are:- (i) the surgical information and procedural requirements (ii) the patients health status (iii) the health system or hospital requirements; and (iv) the patients personal preferences and requirements. These areas all need to be considered during preoperative assessment and to enable optimal preparation. A simple representation is shown.



(Fig 3)

The patient assessment process involves bringing together information in all these categories, integrating the information, identifying areas of conflict requirements, and developing a plan to manage all the various demands from the different 'stakeholders' in the preoperative process. The various intersecting and conflicting demands can be integrated and developed into an overall 'strategic' plan. This strategic plan can then be further developed into a detailed plan, which can then used to manage the particular episode of care. This can be shown in the more detailed graphic (Fig 4). Note the flow of information and decision-making in the patient health stream. Information is gathered to enable triage. Some patients need to attend for clinic-based preparation. When this is completed, the patient's health is summarised in a Standard Health Profile. This information is integrated with surgical, system, and patient factors to make a perioperative assessment and plan. This is used to enable detailed planning for the episode of care.



(Fig 4)

In summary, 'new' preoperative assessment involves integrating the health status of the patient, the surgical requirements, the patient's personal requirements and preferences, and the system's requirements, to make an overall 'strategic', and then a detailed, plan of care.

Design & Function of Patient Questionnaire

Despite the rising capability of information technology, most health systems internationally are characterised by poorly integrated health information, so that a patient-completed questionnaire to elicit health information is necessary to enable patient care planning and triage. At this stage most centres use paper-based systems, and this is likely to continue for some years. The following points primarily concern paper-based systems, although many points apply equally to electronic questionnaires.

The general purpose of the questionnaire is to enable appropriate triage. Thus detailed questions are unnecessary if they only apply to patients who will be further assessed in a face-to-face clinic. The questionnaire should not be considered as independent of the overall system. It must be part of a 'layered' system of patient assessment. This implies that the questionnaire is interpreted by trained staff who have the ability to contact the patient to clarify answers, can seek advice regarding interpretation from more senior clinicians, and where there is appropriate response when the questionnaire fails to elicit the information required.

The Questionnaire should be designed as a general patient health issues questionnaire. It should not be seen as 'just' a 'pre-anaesthetic' or a 'screening' questionnaire. Therefore it should include sections designed to elicit a general picture of the patient's health; to screen the patient for particular conditions that may affect perioperative management, particularly anaesthetic management; and to gather broader health and social information including domestic support and transport arrangements, to help patient management in the perioperative period and for discharge planning.

Questionnaire design should be guided by expert advice with regard to format and language. There is always tension between the size of the questionnaire and the detail requested of patients. A long well-designed and well-presented questionnaire is more acceptable to patients than a shorter poorly designed form that is generated by poor quality photocopying. The rising availability of broadband internet and better information technology will enable better design of questionnaires, but similar expert advice will be required.

Duplicated, 'redundant' or overlapping questions, and a mixture of formats such as 'tick boxes' and open-ended questions without a fixed structure, are valuable to ensure comprehensive answers, and enable staff to develop a "feel" for the patient while analysing the Questionnaire in the absence of the patient. Even the quality of handwriting and spelling mistakes convey information about a patient. Some of this granularity of detail and non-lexical information may be lost by electronic systems.

Efforts to design questionnaires to identify all patients with potential airway problems have generally been unsuccessful, and there may be little to be gained by including such questions. It is unlikely that anything can be done to change a patient's airway prior to surgery, although some warning may assist list scheduling and gathering difficult airway equipment in advance. Even after face-to-face assessment, it is impossible to predict all potentially difficult airways. Therefore Anaesthetists must always be prepared to manage a patient with a difficult airway. The procedural anaesthetist must always examine the patient's airway immediately prior to induction and take appropriate steps to manage a predicted difficult intubation at that time. This will occasionally lead to delays in an elective surgery list while unexpected difficult airway management equipment is gathered, but this may be unavoidable.

Commitment of scarce resources to develop the questionnaire in different languages (e.g. immigrant minority group languages) may not always be appropriate. Pragmatically, most of the patients who are unable to comprehend the Questionnaire will get help from their family or from their primary care doctor to complete the Questionnaire. The fact that a patient does not perform this task satisfactorily is, of itself, an indication that that patient should be brought to the Preoperative Clinic at which time an interpreter should be used to assist assessment and preparation. This principle is equally applicable to a patient who speaks the local language. If the patient cannot comprehend and respond to the Questionnaire appropriately, they may well not be able to follow written preoperative instructions. Clinic-based assessment and preparation may be indicated for these patients to identify the reason for difficulty in using written material (e.g. literacy, cognitive limitations, personal attitudes), and to ensure appropriate preparation within these constraints.

Development of questionnaires is a task that often becomes the focus of effort of a large range of hospital staff, all with strongly held but varying views on the various issues that are encountered. The development or improvement of the questionnaire involving a multidisciplinary working party can be a useful strategy to engage all stakeholders in the process, and developed shared 'ownership' of the questionnaire. Beyond this, however, it may be inappropriate to use excessive staff time in prolonged efforts attempting to develop the 'perfect' questionnaire. As noted earlier, the questionnaire must be seen <u>part</u> of a 'layered' <u>system</u> of patient assessment. It may be better too accept an imperfect questionnaire, and devote attention to developing the <u>system</u> within which the questionnaire functions.

Patient Triage

Although all patients require early assessment and preparation, this does not mean that all patients require the same complexity of clinic-based preparation. Many patients can be appropriately prepared without clinic attendance. Patients should not be expected to waste their own time and resources on unnecessary clinic visits if these can be avoided by assessment by questionnaire, telephone, and by gathering patient information from the General Practitioner or other health care providers, and past hospital records. Apart from resource issues, it also frustrating for staff to waste time assessing patients in clinic unnecessarily.

For those patients who are required to attend the clinic, assessment may be of varying complexity. For some patients, assessment & preparation may be able to be provided by a single trained nurse or other clinician, with assistance as required. Complex patients will require prolonged assessment by a multidisciplinary team. Patients coming from geographically distant locations may be prepared by their GP, or by 'satellite' clinics, with distant supervision by the hospital-based service. A triage process is necessary to guide decision-making on these issues.

Triage will primarily consider patient health co-morbidities and the complexity of the planned procedure. Patient factors and social issues that may affect preoperative preparation or discharge planning must also be considered. The travel requirements imposed on patients by the preparation process may also be relevant. Systems for 'long-distance' preparation of patients are required, especially in tertiary referral and rural settings.

Triage decision-making can be assisted by guidelines. A set of guidelines based on two axes of complexity of surgery and patient health (e.g. ASA score) can be developed. An example is shown (Fig 5). These must always be regarded as guidelines to be used by trained, and experienced, staff working under supervision in a system. A clear process for 'escalating' triage decision making to a more senior clinician should be established when triage guidelines are developed.

Perceptions of the appropriate level of triage of patients (i.e. what proportion need to be assessed face-to-face in the clinic) vary:- In general, nurses advocate a high attendance, and anaesthetists a lower proportion. The appropriate proportion of patients who need to attend for face-to-face clinic assessment is dependent on the surgical casemix, the average level of comorbidities and other complexities, and other local health service factors. In the author's experience, a well-functioning service will require 10% or less of day-stay patients and 25-35% of inpatients to attend for face-to-face preparation.

Perioperative Clinic Triage Guidelines

Operations	Minor Surgery		Intermediate Surgery		Major Surgery	
HEALTH SCORE ⇩	Superficial surgery,	Cataracts D&C, Breast Lump Wisdom Teeth Removal of minor hardware	Laparoscopy Varicose Veins Tonsillectomy Ing./Fem. Hernia Arthroscopy Removal of Major Hardware Sinus surgery	Lumbar/Cervical Discectomy Thyroidectomy Lap. Chole. Minor Vascular LSCS Pelvic Floor Shoulder Repair	TAH TURP	Total Joints Cardiothoracic Bowel Resection Major Vascular Radical Neck Dissection Nephrectomy Major ENT
1	E	E	D	C	B	A
2a	E	E	C	C	B	A
2b	E	D	C	B	A	A
3a	E	C	B	B	A	A
3b	D	B	A	A	A	A
4a	C	B	A	A	A	A
4b	B	A	A	A	A	A

(Fig 5)

Ongoing development of shared protocols and guidelines, and continuing review of problems that are identified, is required to maintain the quality of the triage process. All triage processes have an unavoidable failure rate manifest as 'missed' patients and 'over-triage'. It is inevitable that there will be occasional delays & cancellations on the day of surgery, or unnecessary patient visits as a result. These 'failures' should be monitored as a Key Performance Indicator, and seen as a marker of the quality of the triage process. It must be accepted that they cannot be eliminated altogether. Development of trust and respect between clinicians to develop confidence in shared preoperative assessment has been problematical in some centres, but is fundamental to the ongoing function of a high-quality preoperative preparation service.

Clinical Records

The patient's health status must be appropriately documented. Traditional hospital care commenced with a comprehensive record completed on admission. This was often duplicated by different health disciplines (i.e. nursing, medical etc) working independently. In many centres, this is now less consistently performed. Records are often inconsistent in format, accessibility, legibility, terminology and comprehensiveness. They are also not multidisciplinary in scope, thereby laying the ground for unnecessary rework & duplication of effort.

A standard of care for any perioperative system should be that;-

> '*The patient's Health Status at the time of finalisation of pre-admission preparation should be documented in a consistent format that can be used by all health professionals caring for the patient.'*

In order to address this standard during the pre-admission review, the multidisciplinary team should develop an appropriately detailed summary statement of the patient's health status. This summary (a 'Standard Health Profile') should have the following characteristics:-

- *It should be compiled by the multidisciplinary team, avoiding duplication of enquiry and avoiding the same question being asked multiple times.*
- *It should be usable for clinical patient care by all health professionals.*
- *It should be consistent in format (i.e. always looks the same)*
- *The clinical terminology should be standardised where possible*
- *It must be readily available at point of care*
- *It must be legible*
- *The information in the Profile must be reliable.*
- *The Profile must be validated ("signed off")by an authorised clinician when preadmission preparation is finalized, and the patient is accepted as adequately prepared for admission.*

The components of the Standard Health Profile should include the following:-

- *Current Active Health Problems or Issues*
- *Past Health Problems (including procedures & operations)*
- *Allergies & Sensitivities*
- *Medications*
- *Exercise Tolerance*
- *Normal Activities and/or Occupation*
- *Social History & Issues*
- *Smoking, Drug & Alcohol use etc*
- *Relevant Physical Examination*
- *Summary of Investigations & Results*
- *Summary Reports of Consultations*

Apart from this summative record of the patient's overall health status and co-morbidities, the pre-procedural preparation process must result in other clinical records that include:

- A record of the patient's problem with regard to the planned procedure itself
- Assessment with regard to the planned anaesthetic
- A 'perioperative' assessment integrating all the relevant issues pertaining to this particular procedure and episode of care. In necessary, this should include the rationale for resolving the various areas of conflicting requirements (i.e. risk balancing).
- a 'strategic' plan of care for this episode;
- a record of discussions/instructions to the patient
- legal documentation of patient consent as jurisdictionally required.

These records lay the foundation for the various detailed care plans and records that will be used by the staff delivering the care.

The Preoperative Preparation Area

The new model of preoperative care includes the development of a specialised pre-operative preparation and holding area where all patients are admitted from home to hospital shortly before their procedure. Hence, patients do not go to the surgical ward until after their operation. Ideally, the area should be close to theatres (less transfer distance) or close to the hospital entrance (less travel time for patients on arrival). Pragmatically, this area is often developed in an area where there is available space. In hospitals that have a day surgery unit in close proximity to theatres, or where day-only patients are managed through 'main' theatres, Day-Only and Day of Surgery Admission patients can be managed through the same area.

The separate preoperative area has not been implemented universally, The advantages of a central preoperative area include the following-

- All patients go to the same place pre-operatively, hence allowing *simplified patient instruction.*
- A single geographical location creates *simplified patient transfers*.
- Staff are not distracted by postoperative patients, and can thus focus on the tasks of getting patients ready for their procedure, giving *improved coordination with theatres*
- Centralisation of processes helps staff familiarity with tasks, builds skills, and fosters development of peri-operative protocols, all leading to b*etter patient preparation*
- Facilitation of *"Hot Bedding"*, whereby patients do not require a ward bed till the latter part of the morning, enabling the bed to be fully utilized overnight. This reduces the need for preoperative ward beds, and enables substantial financial savings.
- The centralized area can be a less threatening environment, which results in a *better patient experience*.
- Staff specialization provides a platform that enables staff to facilitate change and further adapt their role (e.g. for clinical audit & research etc)
- Reduces patient exposure to surgical ward environment, which may *reduce bacterial infections*.
- Centralization enables *clarification of medical responsibility* for preoperative patient care policies and procedures.

IMPLEMENTING THE "IDEAL" MODEL - CHANGE MANAGEMENT

Introducing a changed model of patient care, or making any other change in hospitals, involves all the 'usual' challenges of change management. This is becoming a sizeable body of knowledge and a new 'industry', with specialist practitioners available (at cost) to consult and manage the 'change process'. The health sector has its own particular challenges, and the complexity of change increases dramatically with the size of the system being changed. These are 'generic' issues concerning change management, and will not be dealt with further.

There are multiple strategies that are used to manage change and redesign. Many of these have been developed in the settings of other industries, and are used by management consulting groups as a framework for their work in the healthcare setting. Examples include Continuous Quality Improvement, Six Sigma, the Fifth Discipline, Lean Thinking, and Accelerated Implementation Methodology. It is unclear which or if any of these methodologies are superior in the healthcare setting. All external management experts bring new skills and knowledge, but these need to be used together with the existing workforce to adapt the methods for their own purposes.

All change management depends on ongoing work over a long time to be sustained. It also requires ongoing engagement at all levels of the organisation. This means the workers at the 'coal-face', the middle management, and the executive. In the healthcare setting, the 'coal-face' engagement should include both clinicians of all disciplines, and patients as active participants in redesign and change.

Common Controversies encountered in Changing Preoperative Systems

As discussed at the beginning of this chapter, despite the wide variation between hospitals, health systems, nations and cultures, a number of common themes or focal points of controversy and variation can be identified with regard to new systems of peri-operative patient care. These are the issues that can be considered to be the particularly difficult challenges of implementing the new model of care.

All change is accompanied by controversy and disputation. Where there is a clear 'answer' or 'solution' this will usually become obvious reasonably promptly, although implementation may be delayed because of the cost or power implications of the proposed solution. If there is sustained controversy, it may be presumed that there is no 'right' answer. The best solution will vary between institutions and settings, and will be strongly influenced by local factors. Hence, although the same controversial issues may be encountered, a local debate must

deal with the issue to develop an appropriate local solution. Some of the common controversial themes arising from the challenge of new preoperative care systems include:-

- A shift from discipline-specific work practices to multidisciplinary teamwork. The most obvious manifestation of this change is shared clinical records, and a breakdown of the traditional division of both clinical tasks and decision-making. Where this change is simple 'workforce substitution' (e.g. training nurses to perform tasks traditionally performed by medical staff), there may be cost savings, or evidence may be produced showing equivalence of care (but rarely both together). The real opportunity for improvement is in using the shift to multidisciplinary teamwork as an opportunity for true process redesign. The question is not if worker A can substitute for worker B; rather we should first define what work needs to be done. This implies a labour-intensive process-mapping exercise, which must involve all stakeholders in the process. The inevitable involvement of external facilitators, long committee meetings, and use of jargon can make engagement of clinicians problematic!

- Implementation of a multidisciplinary model of care requires changes in supervision and responsibility – the traditional professional 'silos' dividing nurses, doctors and other health professionals must be broken down. Staff working within the preoperative service may be comfortable with this, if only because of a self-selection process. However, breakdown of professional silos may threaten the power structures of more senior management, and thus be resisted or sabotaged. For example, 'senior' medical, nurse, or clerical management may not accept 'their' junior staff being supervised by a different discipline.

- Staffing of the Preoperative (Perioperative) Service has been a source of conflict in some hospitals. At initial stages of change, when only 'screening' preoperative assessment and basic preparation is is undertaken, a 'simple' service with nurses working independently may be effective. As process redesign develops, a single-discipline service will become constrained in scope due to limited capacity and ability to interact with all health professionals involved in perioperative care. In order to achieve profound and ongoing clinical process change, both medical and nursing involvement in the service must occur. This should be augmented by other health professionals such as para-clinical staff, pharmacists, and allied health services.

- Leadership of the Perioperative Service is also controversial. Advanced nursing training provides skills and abilities in service management, so this position is most appropriately filled by a nurse (although allied health professionals and others have filled the role). A designated medical

leader/director is necessary as the function of the service expands to deal with more complex patients, takes a more active role in clinical decision-making and investigations, and initiates therapeutic interventions. While this role need not be discipline-specific, it is difficult to imagine any medical specialist other than an anaesthetist filling this role successfully.

- Preoperative processes can be based on 'generic' patients, or based on surgical sub-specialty. Traditional organisation of surgical care focuses on the specialised issues related to the particular operation the patient is having. In high-volume or low-variation specialities such as short day-stay procedures, cataracts or cardiac surgery this may be appropriate, but can lead to uncoordinated surgical 'empires' with unnecessarily different work practices within the same institution. Alternatively, all patients can be managed by a common system with expertise for most patients having most operations, backed up by highly specialised expertise on an 'as needs' basis for 'problem' cases. The latter model appears to offer greatest potential for 'whole of hospital' system improvements, process flexibility, and efficiency of staff time. In both systems, active management is necessary to balance these conflicting advantages and disadvantages. A possible compromise can be a generic preoperative service with specialised clinical streams managed by designated staff.

- Appropriate standardisation. Any Clinical System Redesign program (such as perioperative systems) will raise expectations of standardisation of clinical infrastructure (e.g. forms, terminology, workforce, work practices) as well as clinical care itself (e.g. standard clinical guidelines, protocols etc). But at what level? In the same specialty, why should Doctor A treat her patients different to Doctor B? In the same hospital, why should specialty X have a different fasting protocol to specialty Y? Why doesn't St Elsewhere's Hospital use the same paperwork as the Royal General? Why can't there be an agreed national definition of theatre start time, or funding standards? External imposition of standardisation, particularly in clinical care, can be unproductively divisive. Most of the benefits of standardisation can be achieved at the simple and basic level, and can be achieved 'under the radar' if more controversial areas of variation in practice are allowed to continue. In this area of controversy, change advocates frequently fall into the trap of trying to fix everything rather than 'just' 80%, and end up fixing nothing.

- The appropriate organisational role of the Anaesthetist in supervising the preoperative patient care process continues to evolve. The process may presume that the anaesthetist must see every patient as an early preoperative consultation (as has been mandated in France). If the

preoperative process includes a selective consultation system, then patients must be triaged to varying levels of preoperative care. This triaging can be based on a defined process that is designed, supervised and managed by anaesthetists. Alternatively, anaesthetists may be involved as 'passive' recipients, consulting when requested by others (such as the surgical team or advanced nurses) for occasional or complex cases. In situations where anaesthetists are seen as a technical service provider ("bag-squeezer"), are in relatively short supply, or if funding depends on time in theatre, the appropriateness of anaesthetists working in out-of-theatre settings will be challenged. The interest & enthusiasm of the local individuals and clinical specialty groups or disciplines is a major determinant of this development. This issue may become manifest as a 'political' turf war about whether the preoperative service should be surgeon, nurse or anaesthetist led.

- The scope of the preoperative assessment service's involvement in patient care varies in 'depth'. Preoperative processes can be seen as limited to assessment - checking the quality of preparation performed by others (a "gatekeeper"), or may be both assessment and preparation - actively involved in organising investigations, optimising the patient's health, and planning care (a 'roadmaker').

  For all staff, but particularly nurses, a preparation rather than screening role implies a more activist and ongoing involvement in patient care during the preoperative period. This may require ongoing attention to a particular 'problem patient' over days or weeks. Care processes need to be appropriately designed to assure ongojng preoperative care, particularly to accommodate job-sharing or part-time work. Similarly, anaesthetists taking on the role of 'perioperative physician' must be prepared to provide a service that is not 'just' preanaesthetic assessment – they may need to become involved in explaining surgical procedures, discussing broader medical issues, and leading discussion of risk/benefits of anaesthesia and surgery. That said, enthusiasts may need to be restrained from becoming too involved in long-term patient care issues encountered incidentally which are better managed by their primary care provider. This can include opportunistic preventative health care; involvement in social issues, and investigation and treatment of hypertension, asthma, and other long-term conditions.

- The scope of the Perioperative service/system also varies in 'breadth' or duration. When does the perioperative period start and finish? The perioperative period can be thought of as commencing at the time a decision is made that the patient should have an operation, and finishing when the patient has recovered to their stable postoperative health status. Ideally, the patient care should be an integrated sequence of steps that are planned and coordinated to produce optimal quality and

efficiency of care. In reality, every hospital includes a collection of different groups jealousy guarding their own 'empires', and subverting efforts to integrate patient care.

The "big issues" and the "little problems"

The shift towards a multidisciplinary, team-based and protocolised perioperative model of patient care gives rise to ongoing 'big issues' and challenges associated with change in hospitals.

- Achieving the right balance in patient care between a 'sausage machine' (inappropriately rigid clinical protocols) and clinical freedom/anarchy.
- Maintaining staff satisfaction in a more 'disciplined' work environment.
- Achieving adequate levels of trust in the system of preoperative preparation so that (say) the procedural anaesthetist will accept assessment & preparation by a different anaesthetist or other health professional. This must be achieved while not developing an entire abdication of responsibility to others.
- Maintaining Surgeon's "sense of involvement" with managing patient care, and keeping the best features of the traditional hierarchical model of surgical care. Surgeons must not become surgical technicians.
- Recognising the skills and building the contribution of clerical (or 'para-clinical') staff in the peri-operative team.
- Recognising the potential for skills- and task-transfer between different disciplines of health professionals, whilst accepting the important differences between them.
- Maintaining the momentum for change without underestimating the complexity and difficulty of achieving it.

There are also the myriad 'little problems' as well. These are the 'little' issues that seem to recur ubiquitously, and become flashpoints for disputation or difficulties in managing change. Examples include legible completion of hospital forms, the process for obtaining documented consent, responsibility for writing up medication, timing of patient arrival on the day of surgery, patients arriving after commencement of surgical lists, administrators undervaluing clerical staff, managing 'standby' patients, arguments about paperwork, Doctor/Nurse issues, authorisation for test ordering, and ICU/HDU/Ward bed allocation problems. Despite their apparent 'triviality', these 'little' problems can become major stumbling blocks to implementation. Even with the help of highly paid external consultants, experts in 'change management', nothing can avoid the requirement for tediously working through all the little challenges (and 'little victories') of process change.

Future Developments

Existing 'high-functioning' comprehensive pre-operative systems already include preparation for postoperative care and discharge. A logical development of this process would therefore be the integration of both the preoperative and postoperative phases of care into a multidisciplinary perioperative service. This could be achieved by integration of the pre-operative service with post-operative services such as the acute pain service. Extension of the pre-operative service's role into involvement with non-elective patients (particularly complex sub-acute patients such as orthogeriatrics) would also be an appropriate development. The role of advanced practice nurses and anaesthetists in this model of care yet to be defined. The potential exists for evolution into perioperative clinicians, building on skills and knowledge developed from current involvement in ICU/HDU, acute pain services, Medical Emergency Teams, and preoperative assessment & preparation. Integration of this clinical service with the routine collection of outcome data provides the basis for integration of patient risk factors obtained preoperatively with patient outcomes, so that quality assurance, risk management and audit becomes internalised within the perioperative process.

Further development of preoperative assessment and preparation may also provide a platform for institutional risk management. Early assessment of the patient's health status and their perioperative risk can be used to make an appropriate decision as to whether the institution wishes to accept the risk of providing the proposed surgical or other procedure for the particular patient. In hospital settings providing 'free' surgical care, it may then become realistic to deny the patient surgery (such as a knee replacement) until the patient has lost weight or stopped smoking. Alternatively, high-risk patients may be diverted from surgical interventions at an early stage rather than after expectations have developed.

Around the world, medico-legal and general risk is being disseminated from individual practitioners to institutions. Adverse outcomes can no longer be blamed on a rogue practitioner. When a patient has an operation, it is not 'just' the surgeon providing the service – it is provided by the health care institution. By being 'proactive', the decision by the institution to provide a clinical procedure can be made at the time of booking the patient, rather than after the patient has been waiting in expectation of having surgery for some time. This is much more likely to be accepted by the patient, their family and the community. From an institutional or health system point of view, better systems for early preoperative assessment and preparation provide a better platform for managing the institutional, as well as the patient's, risk.

The development of better and more integrated systems and processes for preoperative assessment and preparation, and delivery of perioperative patient care will continue to evolve. While there will be ongoing differences, these general developments will result in systems and processes that will be better for

the patient, better for the staff and ultimately better for the organisation delivering the care.