

Emergency Surgery Redesign

Toolkit for Implementation in NSW Health Hospitals



Health

*Right Patient
Right Operation
Right Staff
Right Place*

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Emergency Surgery Redesign

“After changing the way we manage Emergency cases we would never go back to the old way - it’s better for me and better for the patients”

General Surgeon - Nepean Hospital

Has your facility identified any of the following challenges with emergency surgery?

- The after-hours nature of emergency surgery
- Inadequate matching of demand for emergency surgery and resources (operating theatre time allocated)
- Inadequate planning for emergency surgery
- Disruptions to non-emergency activity (eg elective surgery)
- Workforce challenges
 - availability of surgeons on call
 - registrar supervision
 - safe working hours
 - sub-specialisation of surgeons and surgical trainees

How can the emergency surgery guidelines and principles help you to improve your emergency surgery model of care?

The Key Principles of emergency surgery redesign:

- Consultant-led models of emergency surgery care
- Patients operated on during daylight hours where clinically appropriate.
- Sufficient daylight operating theatre sessions to meet emergency surgery demand.
- Principal hospitals identified within an Area Health Service to undertake emergency and elective surgery loads.
- Reallocation of surgery resources (equipment and staff) to meet the emergency surgery workload.

Introduction



What are the Emergency Surgery Guidelines?

The NSW Health Emergency Surgery Guidelines, developed by experienced surgical staff in 2009, define the principles underpinning the redesign of Emergency Surgery and specify the steps required for its redesign. The guidelines should be used in partnership with hospital managers and clinicians when undertaking Emergency Surgery reform.

The redesign of Emergency Surgery entails reform in two distinct areas: operational reconfiguration at the LHD and hospital levels, and, defining the most appropriate model of Emergency Surgery care best suited to the hospitals role and its Emergency Surgery volume. The Emergency Surgery guidelines outline the tasks involved in each of these areas to achieve Emergency Surgery redesign in your facility.

Why were the Guidelines developed?

Emergency Surgery is a major component of the surgical services workload in many NSW hospitals. The impact of Emergency Surgery demand is felt throughout the health-care system, including ambulance transport, emergency department load, operating theatre scheduling, intensive care, high dependency units, ward bed access and staff rostering.

The lack of organisation of Emergency Surgery in addition to long delays and after hours work has been the catalyst for change among clinicians. A subgroup of the Surgical Services Taskforce, the Emergency Surgery sub committee was commissioned to develop these guidelines. The group aimed to develop clinically appropriate redesign guidelines to guide the reform and redesign of Emergency Surgery in all specialities.

The guidelines encourage hospitals to focus and plan for the predictable Emergency Surgery workload for all specialities and to allocate the necessary operating theatre time which is aligned to surgeon availability.

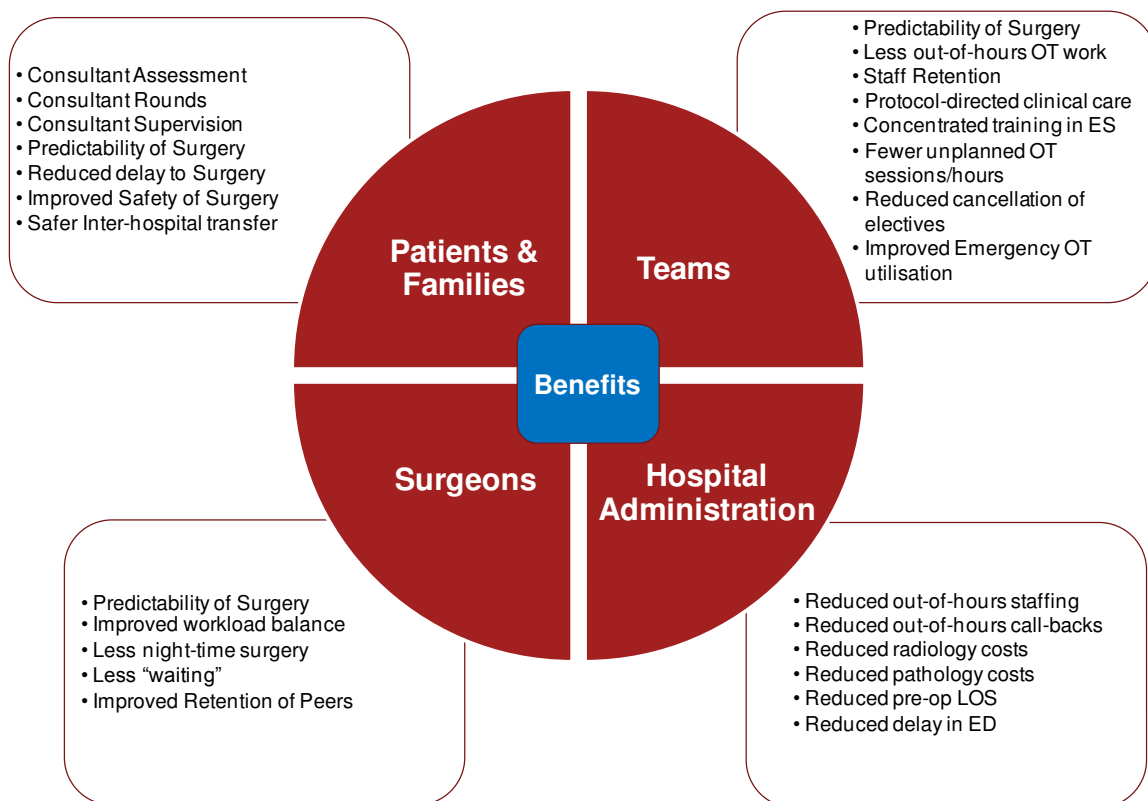
The benefits of redesigning Emergency Surgery

The redesign of Emergency Surgery makes good business sense. There is a continuing need to use existing resources more efficiently in a resource scarce public system. The benefits of Emergency Surgery redesign may be observed clinically, in the workforce and in resource management. The potential benefits are shown below in Figure 1 and include:

- improved patient outcomes
- enhanced patient and surgical team satisfaction
- increased supervision in Emergency Surgery
- a more robust system of patient handover between surgical teams

Significant management benefits may also be realised from higher rates of emergency operating theatre utilisation, more efficient use of surgeons' time, reduced patient cancellations (both planned and emergency) and reduction in after hours costs. This also has the potential to result in better outcomes for patients and more cost-effective services.

Figure 1 Benefits of Emergency Surgery Redesign



As many health care facilities have limited resources, investing time, money and human resources into implementing and maintaining the Emergency Surgery guidelines may present challenges. Additionally, while the costs of adverse events to a facility can be easy to identify, the cost reduction benefits of redesigning Emergency Surgery may not always be immediate and obvious. However, the guidelines ultimately provide the people of NSW with timely access for Emergency Surgery, reductions in elective surgery cancellations and improved patient safety and outcomes.

The Toolkit and Implementation process: an overview

What is the purpose of the toolkit?

The toolkit was developed to facilitate the local implementation of the guidelines. The purpose of the toolkit is to lead the project team, step by step, through the phases and core tasks required for Emergency Surgery redesign. At the completion of the toolkit you will have an understanding of:

- the demand for Emergency Surgery at your facility
- the appropriate Emergency Surgery model for your facility
- the steps required for implementation, review and evaluation.

The toolkit has been designed to be user friendly and include all the information and tools for the assessment, design and implementation of models of care.

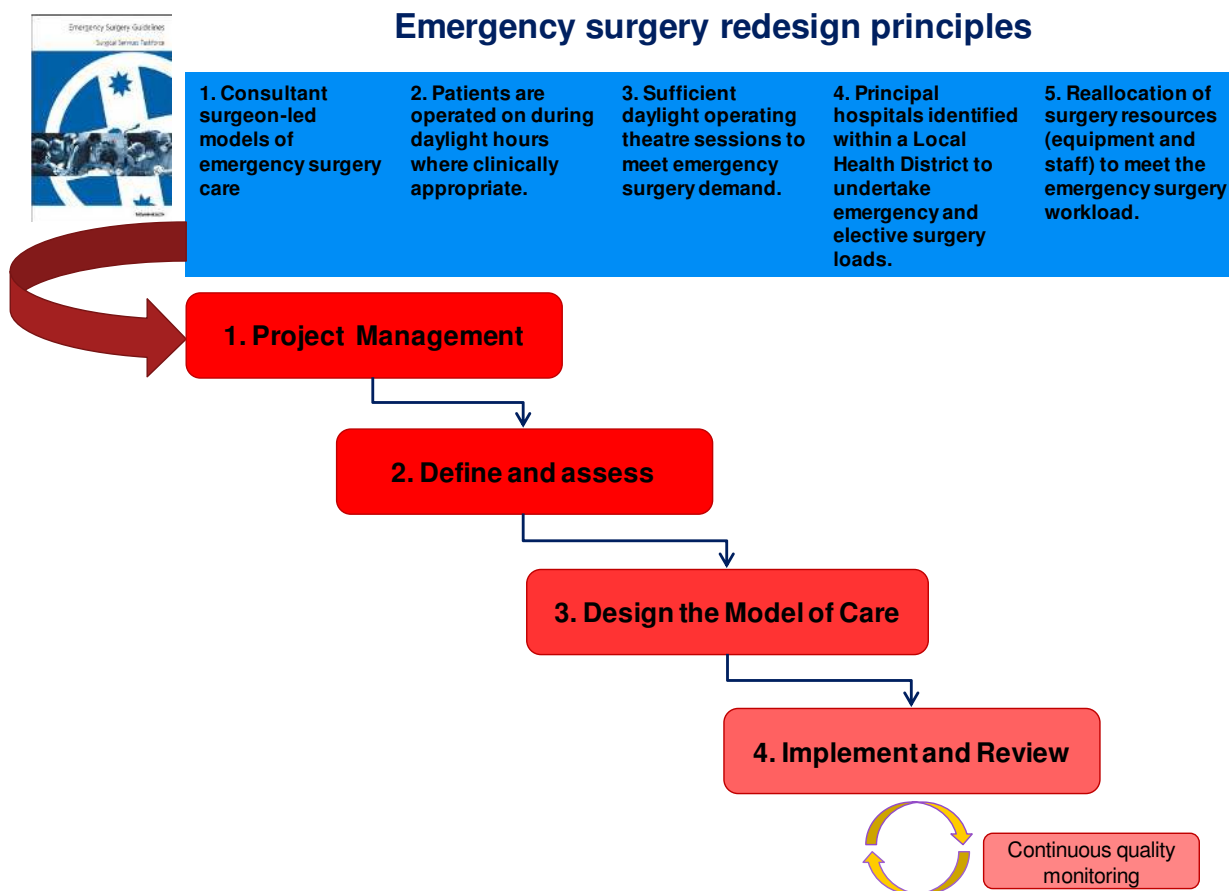
Who should use the toolkit?

This toolkit can be used by any hospital wishing to re redesign their emergency surgery. Emergency Surgery redesign necessitates an active partnership between clinicians and managers in its planning and function. The toolkit is a redesign management tool to be used by the surgical, nursing and other clinical managers responsible for implementation of the new Emergency Surgery model.

Overview of the toolkit

The toolkit is based on Emergency Surgery Redesign Principles outlined in the Emergency Surgery Guidelines that have been endorsed by the Surgical Services Taskforce. There are 4 phases in the toolkit, each phase is completed sequentially followed by continuous quality monitoring after implementation. Ongoing evaluation enables the feedback loop and modifications as required.

Figure 2: The Emergency Surgery principles an Implementation phases



The four phases include:

1. *Project management* - The purpose of this phase is to enable you to lay the foundations for a successful redesign and implementation. Successful implementation of changes will depend on effective project management throughout the period of the project.
2. Define and Assess – The purpose of this phase is to establish the arrangements for directing, managing and controlling the intended Emergency Surgery redesign and implementation in a way that maintains a focus on and delivers the intended benefits.
3. Design the Emergency Surgery Model – The purpose of this phase is to assist you to prepare for the redesign; analysing the qualitative and quantitative data and Emergency Surgery activity in your facility, setting objectives for the redesign and creating a business case to present to the senior executive to put forward your case for change.
4. Implement and Evaluate – The purpose of this phase is to implement the model, monitor the change management and to collect, analyse and report on performance indicators.

Key to icons

A number of symbols are used throughout the toolkit; these will guide you to useful facts or resources.



Link to the guidelines

Highlights where readers should refer to more detailed information contained in the Emergency Surgery Guidelines (GL2009_009)



Helpful hints

Ideas and suggestions to help make implementation easier



Case studies

Stories from practice which provide a real life example of change or improvement



Tools and templates

A number of tools and templates have been provided in the Appendix. These are not exclusive – you might refer to other relevant documents or local guidelines to support implementation



References

Provides references to best practice evidence based documents including NSW Health policy directives and professional college guidelines

Project Management

1

The purpose of this phase is to establish the arrangements for directing, managing and controlling the intended Emergency Surgery redesign and implementation in a way that maintains a focus on and delivers the intended benefits.

Activities

There are four key activities to consider in relation to project management. These include:

- **Set up the Emergency Surgery redesign project team and obtain executive support**
 - **Determine project budgets**
 - **Map and engage stakeholders**
 - **Develop communication plan**
-

“Successful implementation of changes will depend on effective project management throughout the period of the project”

Step 1: Set up the Emergency Surgery redesign project team and obtain executive support

Effective leadership and team support are crucial for the success of any project. It is important to have a dedicated staff member to obtain executive level support and establish a group of key stakeholders who will champion the redesign project and lead implementation.

Redesign methodology has at its core the use of a project team to guide and execute the design and implementation of the Emergency Surgery model. For the project to be successful, team selection is crucial. The team you choose to work on your project must be:

- multidisciplinary
- represent all parts of the process
- motivated
- approximately 5 – 9 in number.

Your team should include:

- someone with knowledge of redesign
- representation from clinical and management staff.

Once a project manager and project team has been appointed, a number of questions are key to understanding the project team:

- Do you know who will be your decision-making body – that is, the group to which you escalate issues, and seek approval to progress? What are the project governance structures?
- Who will you, as Project Manager, allocate particular tasks to?
- How will you maintain executive and clinical support for this project, and how will wider stakeholders be involved in formal decision-making?

Developing Good Teams

It is important to remember that effective team work doesn't just happen because people are put in a meeting room together. The theory behind using a team is the collective output is greater than the sum of individual efforts.

Some key hints in promoting effective team work includes:

- Define each person's role; ask whether they are there representing a group or because of their expert perspective. The expectation of consultation as a result needs to be clearly expressed.
- Create an environment that recognises this work as part of real work. Everyone is busy with little capacity to take on additional 'project work'.
- Share the leadership – match tasks with skills.
- Agree on the team ground rules at the first meeting.



Emergency surgery redesign necessitates an active partnership between clinicians and managers in planning and function. This requires time and commitment from surgeons and operating theatre staff. It also needs strong leadership from surgeons fully supported by a majority of their professional colleagues and by the leaders of Surgical Departments or Divisions, where these exist.

We have included the following templates in the Appendix to facilitate the set up of your project structure: Project Team Structures (Appendix A) and Example Governance Structures (Appendix B).

Decisions and update meetings: The redesign process will need decisions to be made efficiently and effectively. We recommend that you schedule regular meetings with the different members of your team and different groups. We recommend weekly Project Team meetings, and weekly or fortnightly communication between the Project Manager and Project Sponsor/Executive. This may be in the form of Project Status Reports and/or attendance of the Project Manager at Executive meetings to provide an update and answer any questions. A project status report template has been included as Appendix C.

Things to consider:

- Agree how your Project Sponsor/Executive wish to receive progress updates.
- Agree upfront what your Project Sponsor /Executive expect as outputs at each phase, and where they want to be included in decision-making/approvals.
- Maintain a note of risks as they are identified and consider how they might be mitigated. You can record risks relating to individual activities and tasks in your Implementation Plan and overall project risks in a separate Risk Register. A risk register template has been included in Appendix D.
- Risks that may inhibit achievement of the intended benefits which therefore need to be managed and mitigated by the program.



Recommended tools and templates

- Appendix A: Project Team Structures
- Appendix B: Example Project Governance Structure
- Appendix C: Project Status Report
- Appendix D Risk register

Step 2: Budget

The purpose of the project budget is to establish the overall shape and scope of the redesign project and, that the project is underpinned by clear plans, resources and a budget.

Sound financial management supports the ongoing viability of the Emergency Surgery. Accurate financial/budget reports should be provided to the leadership team and performance against this tracked over time.

Develop a budget for the Implementation Project. Your Project Sponsor/Executive can help you with this and confirm where your costs, as dedicated Project Manager, will sit. You might also wish to consider other costs: e.g. other resources, capital expenditure; IT development (for example the Nepean ASU have developed an electronic handover tool). Costs relating to stock and supplies, equipment, and staffing should be considered as part of the overarching surgical/theatres budget, and not the project's budget.

We have provided a Budget template to help get you started on this exercise in Appendix E.

Step 3: Map and engage stakeholders

One of the most important tasks you will undertake as Project Manager is to decide who your key stakeholders are, and the types of roles you may need individuals and groups to take on. This information will directly feed into the Implementation Plan and Communications Plan that you will create at the end of this phase, but also allow you to speak to the appropriate people as you continue with data collection and understanding how current services are delivered. This is not a one off activity and is something that you as Project Manager should be updating throughout the project.

Mapping your stakeholders - Stakeholders can be individuals or groups, people with direct interest and accountability for the implementation, or simply people who will be affected or involved intermittently. As Project Manager, try to have appropriate representation from all the disciplines and services that will be affected by the Emergency Surgery Redesign. We have suggested a key list of people that may need to be consulted, however this will need to be checked:

- Staff involved with the front-end delivery of Emergency Surgery – surgeons, anaesthetists, nursing, allied health, ambulance, pathology and radiology. Stakeholders will also come from different areas or departments, for example pre-operative, recovery, the emergency department, wards, theatres
- Staff supporting the delivery of Emergency Surgery – HR, theatre bookings, theatre management, CSSD, cleaning, catering.

If people are involved and understand what is happening they will have a greater sense of ownership and involvement in making this a success.

We have provided a Stakeholder Analysis template and example core stakeholder list to get you started on this exercise in Appendix F. You may find it helpful to review and challenge this list within the wider Project Team.

Step 4: Communications Plan

A communications plan is a schedule of communication activities, setting out deadlines, accountabilities and target audiences. The communication plan for redesign projects are crucial to communicate the changes to all the relevant stakeholders, including patients, LHD and hospital staff.

The team needs to consider which communication strategies will be most useful to meet the communication needs of various stakeholders at different levels of the facility. It is important that stakeholders receive regular updates from the project team regarding the progress of the project work plan, especially during the early phases of the project. Stakeholder needs will be different depending on their level of influence and support for the project. Ideally, all stakeholders should be asked their preferred means of communication; however more in-depth consideration may need to be given to those stakeholders who have high influence to keep them fully informed of progress.

Things to consider:

- How do you like to receive information – do you prefer information by email, hardcopy documentation, or through discussion?
- As the clinical environment is complex, with stakeholders often juggling many competing demands, multiple methods of communication may be most effective. It increases the chance that information about the project progress gets to all who need to know.
- Depending on your preferred Emergency Surgery model, and the amount of change expected, you might need to consider conducting formal consultations and include them in your Implementation Plan, noting the extended timeframes required.

A template for a Communications Plan has been provided in Appendix G. This can be used as a prompt as to what communications activity you need to consider, but also as a check against overload and unnecessary circulation of information.



Helpful Hint

Many experienced project managers and coordinators recommend regular face-to-face contact as the primary communication strategy in building and maintaining engagement of all stakeholders. Face-to-face contact keeps people engaged and builds relationships.



Recommended tools and templates

- Appendix E: Budget template
- Appendix F: Stakeholder analysis template
- Appendix G: Communications Plan template



Checklist

- Identified a dedicated staff member to act as the Project Manager for the life of the project and lead the implementation
- Identified a Clinical Champion
- Established the multidisciplinary project team who will champion the project to redesign Emergency Surgery
- Obtained executive level support
- Completed project governance structures
- Established meeting dates for the project team
- Developed a risk register
- Completed stakeholder mapping exercise
- Developed the project budget
- Prepared communications plan

The purpose of this phase is to assist you to prepare for the redesign; analysing the current data and Emergency Surgery activity in your facility, setting objectives for the redesign and creating a business case for change to present to the executive.

Activities


In preparing a sound business case for the redesigning Emergency Surgery model a number of key steps will need to be undertaken to put forward a case for change to your hospital executive:

- **Quantitative data analysis**
 - **Interpreting the data**
 - **Collecting additional information to confirm the case for change**
 - **Evaluating options and selecting the right model**
 - **Defining objectives for redesign**
 - **Developing the business case**
-

The project management structures are now in place and you are ready to start the process to redesign your Emergency Surgery.

Step 1: Quantitative Data Analysis

A key step in redesigning Emergency Surgery in line with the NSW Health Emergency Surgery Guidelines is to understand your current level of Emergency Surgery activity. This will provide an understanding of the predicted volume and variability in demand by speciality (the 'generally predictable workload'), and inform the selection of an optimal operating model to manage for the predicted volume and spikes in demand.



The first step required to achieve the most suitable emergency surgery configuration for a hospital is to measure and estimate the emergency demand by Area Health Service, by hospital and by specialty (see section 2.1.1 of the guidelines).

Quantitative data analysis has been conducted as part of the NSW Health Emergency Surgery Implementation Project conducted by PwC and in partnership with NSW Health (2011). An estimation of Emergency Surgery demand by speciality at a facility level has been conducted in 39 major hospitals in NSW. These data should be used to support your business case.

To access this information please contact the Surgery Team at NSW Health.

Undertaking the data analysis

There is currently no nationally recognised standard definition for Emergency Surgery. The NSW Health Emergency Surgery Guidelines (2009) defines an Emergency Surgery patient as follows:

“An emergency procedure is one being performed on a patient whose clinical acuity is assessed by the clinician as requiring the surgery within 24 hrs or in less than 72 hours where the patient is not physiologically stable enough to be discharged from hospital prior to the required surgery.”

Although a definition of Emergency Surgery has not been specified by the Australian Institute of Health and Welfare Emergency Surgery definitions will include two main components:

- An unplanned nature of identification of the need for surgery; and
- A relative urgency for surgical intervention, without which the patient's health may deteriorate and risk poor clinical outcomes (including loss of life, limb, or function, or reduced quality of life).

For ease of data collection from NSW Health and the 39 major hospitals as part of the NSW Health Emergency Surgery Implementation Project the following definition for Emergency Surgery was used when conducting data analysis:

“Emergency Surgery is considered as any surgical procedure performed in an operating theatre which has not been booked onto the elective surgery waiting list.”

A number of data sets were used to analyse and assessing the Emergency Surgery load:

- the centrally available NSW Health Information Exchange (HIE) data set which is derived from the admitted patient data collection for NSW public hospitals
- the individual hospital operating theatre data sets derived from local data collection systems.

The Emergency Surgery data items from these data sets have been analysed to provide insight into the trends of Emergency Surgery activity of the 39 individual hospitals are contained in Table 1 below.

Table 1 Emergency Surgery data items

Data Item	HIE	Additional hospital data/analysis
Current emergency and planned surgery load by specialty	✓	
Amount of Emergency Surgery performed after hours (1800 – 2200 hrs and 2200 – 0700 hrs) by surgical specialty		✓
Inpatient load that requires Emergency Surgery by specialty	✓	
Estimation of sessions required for Emergency Surgery in standard hours scheduling by specialty	✓	✓
Volume of Emergency Surgery patients that are transferred in and required repatriation	✓	
Total sessional availability and capacity for emergency and planned surgery		✓
Patient Journey: For those patients who are admitted via the Emergency Department and have an Emergency Surgery procedure during the 2010 calendar year, what are their patient journey average times by specialty		✓
Length of stay by procedure type (fractured NOF, compound fracture, appendectomy, cholecystectomy, caesarean, hands)	✓	

Data Limitations

There are a number of data limitations to be mindful of when undertaking this analysis.

HIE - The HIE data extract supplied by NSW Health has not been independently verified by PwC. However we are confident in the robustness of this source as hospitals submit their data in accordance with the standards for State reporting via the Health Information Exchange.

Additional hospital data/analysis - With regard to the operating theatre data supplied directly by the hospitals, submissions from hospitals will only be as good as the understanding and application of the data submission requirements by the hospital. Potential errors could be found in differing definitions between hospitals about what is considered Emergency Surgery. However PwC provided clarity around definitions for the hospitals to minimise this.

For more detailed information in relation to the data limitations please refer to your hospital data summary.

Step 2: Interpreting the data to determine the appropriate Emergency Surgery model

Although Emergency Surgery is generally considered to be predictable in volume, it is to be expected that daily variation in activity will occur. A range of Emergency Surgery caseloads should be recognised and will influence the type of service model selected. The points below will assist you to interpret the data for your facility:

- Where caseloads are high in a specialty (e.g. Orthopaedic, General, Obstetric or Plastic Surgery) an Emergency Surgery model for that specialty will be worthy of consideration.
- Where caseloads are low in a number of specialties, an Emergency Surgery model that combines specialties may be considered.
- Even in hospitals with high Emergency Surgery caseloads, occasional irregular peaks of activity can occur. The small variations in volume week-to-week should be accommodated in planning of the OT sessions however an escalation plan to further address these irregular peaks of activity is recommended.
- Where caseloads are so low in a metropolitan hospital that there is no predictability, it would be appropriate to consider whether an Emergency Surgery service is justifiable after-hours, and possibly even in standard hours.



Helpful hint

Taking the time to understand your current service model and activity will allow you to:

- Deepen your understanding of the aims behind implementing and redesigning ES
- Confirm which future model is most appropriate to be recommended for your local context
- Deepen your understanding of the volume and type of ES patients
- Provide a baseline from which to measure benefits and impacts
- Gauge the extent and types of changes required to implement the ES redesign

STEP 3: Qualitative data collection and analysis

Based on the quantitative data analysis you will now have an understanding of the demand for Emergency Surgery services at your facility including the overall growth and the growth by speciality along with the after-hours Emergency Surgery activity.

To make sure all aspects of your facility are considered, qualitative data collection is an important step in the redesign of your Emergency Surgery model. These data will highlight other characteristics of your facility and components of Emergency Surgery that will better inform the model of Emergency Surgery appropriate to your hospital.

Initial hospital assessment

A template to assist you to assess your hospitals initial requirement and preparedness for a new emergency surgery model of care has been attached as Appendix H. This template provides a summary of the proportions of emergency surgery overall, undertaken during daylight, twilight and overnight hours. These data are followed by further questions about your hospital and current emergency surgery practices and each category is rated Based on the above responses please rate the potential for redesign across a five point scale – no potential, little potential, some potential, good potential and excellent potential. The initial assessment template concludes with an overall potential rating for redesign, based on the collated responses.

Additional information to confirm the case for change

Additional information can be collected through targeted questions to complement the data analysis. This will assist the hospital in deciding the preferred Emergency Surgery model and building the business case for implementation. Not all questions will be applicable to all hospitals, however, a guide to suggested questions is provided to in Appendix I.

The questions cover the following topic areas:

- Current model for Emergency Surgery
- Hospital profile: beds, operating theatres, procedure rooms, etc (including those dedicated to Emergency Surgery)
- Theatre scheduling: theatre template, allocated and vacant sessions, rostering patterns, emergency and elective scheduling, booking processes for Emergency Surgery, on-call roster
- Patient entry: clinical priority determination (E1, E4, E8, E24, E72)
- Workforce: dedicated Emergency Surgery staff, required skill mix
- Support services: pathology, radiology, CSSD, clerical support staff
- Current policies and protocols
- Barriers to in-hours Emergency Surgery: (eg surgeon/ anaesthetic/ nursing/ theatre/ bed/ transport availability)
- Key areas that impact on the capacity for the unit to expand, redesign or realign the theatre sessions (eg hospital readiness)

The qualitative data will assist you to further determine the 'as is' state of Emergency Surgery and provide additional detail to interpret the quantitative data analysis. Furthermore the qualitative data will provide a summary of influences on any potential new model of Emergency Surgery including local challenges, capacity and readiness for change.

Hospital readiness

Your facility must be agreeable to undertaking change or improvement. Organisational readiness for change is an important consideration that should be addressed during the initial planning phase. Similarly, a facility may be enthusiastic initially, but the environment may not be able to sustain change over time. This may be related to a number of factors, for example local workforce or recruitment difficulties. Thinking and planning for sustainability at the commencement of a project is important if positive results from the initial phase are to be sustained in the long term.

A template to assess change readiness has been included in appendix J.



Recommended tools and templates

- Appendix H: Initial hospital assessment
- Appendix I: Questions to assist the development of the business case
- Appendix J: Hospital readiness template

STEP 4: Determining the right Emergency Surgery model

You now have all the information required to assist you in determining your future model of Emergency Surgery. The *Emergency Surgery Guidelines* document a number of models for redesigning Emergency Surgery. The model selected for individual hospitals will depend on the Emergency Surgery load, volume and range of specialities, number of operating theatres, number of surgical consultants participating on the Emergency Surgery roster, collegiality of consultants on the roster, geographical location and the hospital designation. A description of each model is located in Table 2 below. All the models documented in the *Emergency Surgery Guidelines* follow the key principles described in Table 2.

Table 2 Models of Emergency Surgery care

Model	Key features	Suitability	Working Examples
Acute surgery unit (ASU)	<ul style="list-style-type: none"> • Consultant surgeon led with consultant surgeon on site in standard operating hours • Consultant rostered on with no other commitments during period as rostered • ASU surgeon • Dedicated emergency theatre sessions in standard operating hours • Surgeon control of case priority in OR sessions • Surgeon present, teaching and supervising when surgery is being performed • ASU team (registrar, RMO, CNC) • Agreed clinical guidelines for common emergency surgical admissions • Formalised handover process • Designated beds or ward for assessment and management of ASU patients 	Principal referral hospital with large Emergency Surgery load and high case complexity.	Prince of Wales Hospital Nepean Hospital Westmead Hospital John Hunter Hospital
Designated daily Emergency Surgery sessions	<ul style="list-style-type: none"> • High volume of orthopaedic emergency caseload allocated a designated daily session within standard hours. Orthopaedic consultant surgeon allocated to supervise the session. • A general emergency session staffed 24/7 for all other specialities. 	Principle referral hospital with large Emergency Surgery load and high case complexity.	St George Hospital
Mixed emergency & elective sessions	<ul style="list-style-type: none"> • Sessions are planned to accommodate expected emergency cases and any variation in Emergency Surgery load could be covered by short notice elective cases. 	Low Emergency Surgery load and low complexity of cases.	
Designated emergency & elective sessions (ie. Auburn Hospital Model)	<ul style="list-style-type: none"> • Full-day sessions are divided into a set amount of time for elective and Emergency Surgery. • Elective sessions run 0800-1430 with Emergency Surgery commencing at 1430-1830. 	Hospitals where Emergency Surgery load and case complexity are relatively low.	Auburn Hospital
Designated daily full Emergency Surgery sessions for single specialities	<ul style="list-style-type: none"> • Daily emergency session available for single speciality e.g. orthopaedics and general surgery. • Availability of appropriate surgeon to improve utilisation. 	When Emergency Surgery load is sufficient.	Liverpool Hospital Lismore Base Hospital
Designated full emergency sessions less frequent than daily	<ul style="list-style-type: none"> • Sessions available for a number of lower volume Emergency Surgery specialities. 	Lower volume emergency surgery specialities e.g. plastics, ENT, urology.	
Late afternoon session “Twilight session”	<ul style="list-style-type: none"> • Facilitates patient preparation during the day. • Usually conducive for surgeon available. • Difficult to coordinate multiple consultants. 	Low-volume Emergency Surgery load.	

There are numerous models of Emergency Surgery that have been implemented in NSW Hospitals. A tertiary referral hospital with a large emergency surgery load can support the establishment of an Acute Surgery Unit (ASU). Refer to Appendix T for a case study on the ASU at Prince of Wales Hospital (Sydney, Australia). Additional Models of Emergency Surgery Care Hospitals with a lesser load of

Emergency Surgery or specialty units with lesser case volumes can also redesign their Emergency Surgery service without the establishment of an ASU.

Confirming the recommended Emergency Surgery model

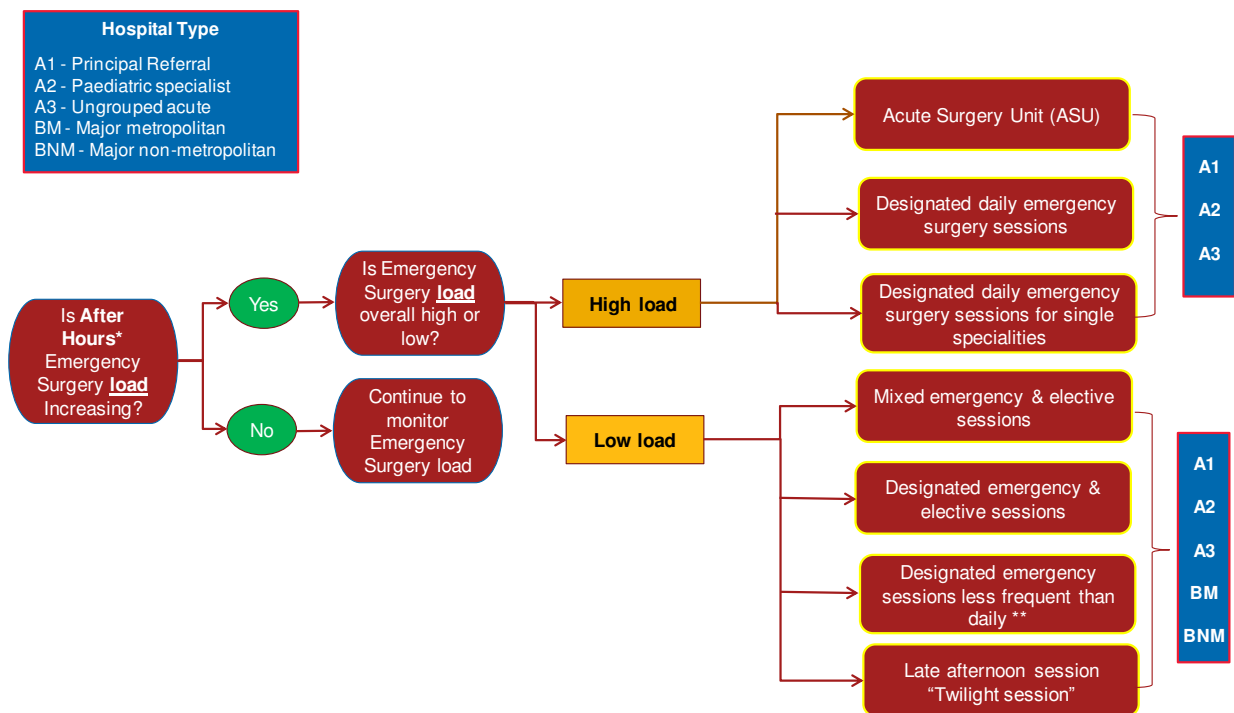
In confirming your recommended Emergency Surgery model collating and analysing the following features will help you to decide which model is most appropriate for your local area:

- Quantitative data: the volume and growth in Emergency Surgery case load overall and by specialty
- Qualitative data: hospital profile, challenges and barriers, intended benefits and facilitators
- Degree of clinical engagement and support from local staff
- Availability of workforce to staff the new model
- Anticipated patient activity volumes and their sustainability
- Availability of support services such as pathology, radiology, CSSD
- Alignment with agreed objectives and intended benefits of the Emergency Surgery model

A matrix based on the quantitative data analysis is provided below to assist you in determining which model of Emergency Surgery care is most appropriate for your facility.

Most models will be designed with one particular specialty in mind, for example an ASU model for General Surgery or a dedicated daily emergency session for Orthopaedics. Most facilities will choose to implement one model for Emergency Surgery at a time. However if you are making considerable changes to the theatre template then it may be worthwhile implementing two models concurrently. These issues should be discussed with key stakeholders including the Project Sponsor / Executive and included as part of the business case.

Figure 3 Emergency Surgery model matrix

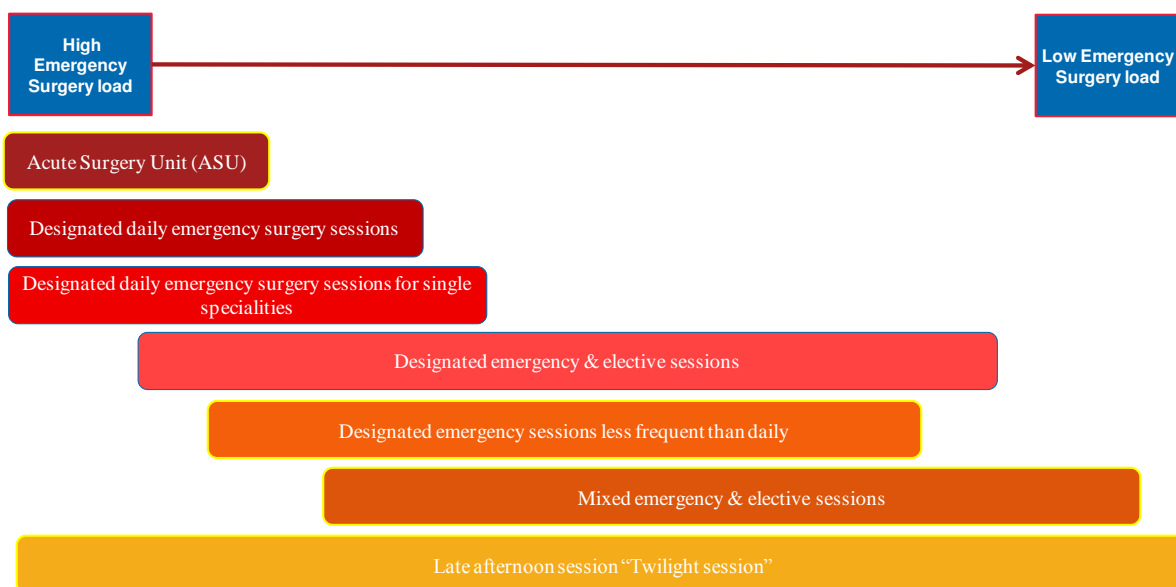


* After hours data includes 'Twilight' (1800 – 2200) and 'Overnight' (2200 – 0700) data

** Suitable for lower volume emergency surgery specialities eg plastics, ENT, urology

When determining the appropriate Emergency Surgery model based on your Emergency Surgery load there will be many factors involved. It will be useful to present a number of options for consideration in your business case. Emergency Surgery load across hospitals will vary along a spectrum from high to low as show in Figure 4 below. There are a number of Emergency Surgery models of care that may be appropriate.

Figure 4 Emergency Surgery model determined by load



There are a number of key outcomes that your Project Sponsor / Executive will need to agree on when finalising the most appropriate model for your facility:

- What type (casemix) and volume of patient's will we design the model for?
- What capacity (physical area and workforce – type and number) will we require?
- Which is our final recommended Emergency Surgery model?

Understanding the required workforce model

Underpinning your chosen Emergency Surgery model will be assumptions about your workforce capacity and strategy. We have provided a template in Appendix K to support you in determining your workforce requirements based on the model selected above.

The capability and skills framework is used as a basis for assessing the existing capabilities, defining the existing gaps, and developing a plan to address and close the gaps, including a cost estimate.

As you work to create your workforce model, consider the following:

- What types of skills do you require? Refer to your original assessment of scope of services and workforce type, review your definition of core processes, and review your assumed governance/delegation arrangements for key activities.
- How many staff do you require? Refer to your original capacity and demand assessment
- How will these staff be rostered? Do you expect that demand will increase over time?

Recommended tools and templates

- Appendix K: Skills matrix template



STEP 5: Defining the objectives for change

It is important to determine from the outset the overall aims and objectives for redesigning your Emergency Surgery model, and why the status-quo is not a model for the future. The rationale for Emergency Surgery redesign should be documented and referred to throughout the implementation process.

Based on the quantitative and qualitative data, determine objectives that include: the percentage improvement you will work towards achieving and the time within which you will achieve the objective. Using the SMART acronym will assist in setting aims that are specific, measurable, achievable, results oriented and time limited.

Setting an Objective

Your overall objective or aim for the project should be a SMART objective. SMART objectives should seek to answer the question *'Where do we want to go and in what timeframe?'.* The detail of a SMART objective is shown below:

Specific

- Well defined and clear to anyone who has a basic knowledge of the project

Measurable

- Quantify your objective

Achievable

- Is it doable and agreed to by relevant stakeholders

Realistic

- Do you have the resources to make the objective happen

Time-scheduled

- State when you will achieve the objective

Some examples of SMART objectives include:

- “To reduce the amount of non limb and life threatening surgery performed after-hours Emergency Surgery by 10% in the next 3 months”.
- “To undertake greater than 80% of orthopaedic Emergency Surgery during day time hours within six months”.



Helpful hint

When setting the objective consider that:

- You need to understand the full extent of the problem – baseline data, benchmarks
- You need to have a general understanding of the change implications – time, resources
- Stretch goals will help with motivation, a stretch goal should be achievable but difficult.
- You should not suggest the solution as your aim (eg. implement best practice guidelines. This could be an appropriate intervention, but not an aim)

STEP 6: Developing the Business Case

Developing the business case is the final step in the Assess and Design phase.

A business case will assist to illustrate and frame the need and benefits for redesigning Emergency Surgery in your facility, including the financial impact. As the redesign may require financial support a business case will present the case for change in a format that administrators can relate to. The data that have been analysed in Step 1 is essential to support and create a successful business case.

It is important to gain agreement on the purpose, scope, and timeframe of the redesign of Emergency Surgery. The following questions and answers will assist to set out a vision for the preferred Emergency Surgery model:

- What are we trying to achieve by introducing a new model for Emergency Surgery?
- What evidence do we have that describes the current challenges experienced?
- What are the intended benefits?
- What is our preferred model option?
- When does it need to be implemented by?
- How will we know if we have got this right?

We have provided a template to be of assistance in preparing your business case. The template is not prescriptive but forms a guide to preparing an appropriate business case. The main headings include:

- Overview: options appraisal, costs and benefits
- Introduction: background, problem statement, strategic and redesign objectives
- Options analysis: preferred option justification
- Procurement of services and equipment
- Project strategy: key milestones and deliverables
- Cost-benefit analysis
- Project management and control: business case, governance, risk management, progress monitoring.



Helpful hint

The business case helps to document the decision-making process within organisations. It provides a means by which organisations can determine priorities and gain support for cost effective proposals to establish new projects, continue or expand existing services and programs, or to undertake specific one-off projects.

A business case, in the context of health services, is a well-defined case for change which demonstrates that a particular program, service or project will result in benefits for the population served by the provider, and that the costs of implementing the project are justified.



Recommended tools and templates

- Appendix L: Business case



Checklist

- Completed quantitative data analysis
- Undertaken interpretation exercise
- Completed the questions for qualitative data analysis
- Undertaken hospital readiness assessment
- Determined the aims/ objectives for redesign
- Determined the preferred Emergency Surgery Model
- Determined workforce skill mix required
- Completed the business case

Designing the Emergency Surgery Model

3

The purpose of this phase is to focus on the detailed development of the future model of Emergency Surgery.

Activities

There are six key activities to consider in designing the Emergency Surgery Model. These include:

- **Developing the detailed Emergency Surgery model**
 - **Designing the facilities**
 - **Workforce planning**
 - **Defining and documenting processes and procedures**
 - **Determining the Emergency Surgery Key Performance Indicators**
 - **Implementation planning**
-

Step 1: Determining Emergency Surgery Key Performance Indicators

Now that your business case is complete and you have selected the most appropriate Emergency Surgery model for this project we need to start by defining how we will measure the change. The operational and clinical Key Performance Indicators (KPIs) determined will assist to demonstrate changes and improvements in overall patient care.

As part of the process of agreeing an aim it is worthwhile considering what measures you will use to monitor implementation progress and improvements in Emergency Surgery services. Measurement helps to focus resources and effort so it is important to choose measurements carefully.

Helpful Hint

Remember when choosing KPIs that:

- the data should be readily available
- the effort to collect the data should not outweigh the benefit
- you may need to choose a surrogate measure rather than the perfect measure. Despite the vast number of data available in the health system there is often a lack of true outcome measures and as a result you may need to use an indirect measure.



The capacity to monitor and evaluate performance is a critical building block for improvement of Emergency Surgery and patient outcomes. Robust performance monitoring and evaluation processes incorporate data collection, analysis, review and communication. These processes contribute to the development of an evidence-based understanding of the quality of an emergency surgical service by measuring it against common standards of care.

Determining ongoing potential for improvement and reporting processes should become part of business-as-usual operations.

Given that Emergency Surgery stakeholder groups are so diverse, performance should be monitored and used at a number of levels including the individual clinician level, the team level and the hospital or Local Health District.

Two types of KPIs should be considered in relation to Emergency Surgery:

- Operational indicators: measuring the operational performance of an emergency surgical service, such as patient wait times and patient turnaround times.
- Clinical indicators: relates to patient safety more specifically and measures the 'clinical management or outcome of care' of patients, such as morbidity and mortality rates.

KPIs should be purposeful, clearly defined and easy to interpret.

KPIs from the Emergency Surgery Guidelines

The Key Performance Indicators (KPIs) chosen should reflect the quality of care the patients will experience after a change in the delivery of emergency surgery, the education and training benefits afforded to registrars and the improved access to emergency surgery. Suggested KPIs may include:

- performance according to emergency surgery urgency category
- emergency surgery theatre utilisation
- supervision of registrars (consultant surgeon in operating suite)
- length of hospital stay for index conditions (emergency cholecystectomy, fracture neck of femur, acute appendicitis)
- clinical outcomes for high volume cases (e.g. acute cholecystitis, fractured neck of femur, acute appendicitis)
- measurement of after-hours activity
- postponements of emergency cases
- time from Emergency Department arrival to operating theatre entry for index cases;
- measurement of distribution of emergency surgery performance across days of the week, hours of the day (standard-hours, after-hours, after 10pm), weekends





Recommended tools and templates

- Appendix M: KPI template

Step 2: Designing the facilities

The physical facilities design is a key component of the redesign project. The facilities must be flexible and provide for current and future operational, functional, and technical needs and support the change initiative. Some facilities may be already appropriate but others may require changes to be made.

Step 2 focuses on the following:

- Determine infrastructure requirements and design facilities
- Determine technology and other support service requirements

Determine infrastructure requirements and design facilities

This task addresses the design of the site, internal building layouts and fixtures, fittings, furniture, and equipment. The successful implementation of a new Emergency Surgery model is dependent on the physical operating theatre space available, the associated infrastructure and equipment.

The design of the facility should be such that the functional design of facilities (e.g. workspace) is fit for purpose and maximises the productivity and efficiency of Emergency Surgery.

Do you require:

- changes to the infrastructure or physical layout of the operating theatres?
- procurement of any new fixtures, fittings, furniture or equipment?

If yes to the questions above then you will need to:

- identify overarching governance, delivery assurance, and management structures in place to oversee any required infrastructure or fit out changes?
- develop a procurement plan detailing specific requirements and delivery/ fitting dates?

Determine technology and other support service requirements

Technology and support services are a component of all Emergency Surgery models of care.

Some things to consider include:

- Is there a current documented agreement with all services (consider CSSD, linen, cleaners, catering) required? Do you have a documented agreement for key support services to make sure that minimum standards/turnaround times are maintained? Do any current agreements need to be updated or amended to include the new Emergency Surgery model?
- What needs to be in place so that appropriate information flows between the Emergency



Helpful Hint

Remember to include services such as linen, catering, HR, finance, IT, etc. What level of support in these areas do you expect to require?

Allocate responsibility for support service and third party agreements to one person within the project team. This is a crucial role to manage risk and quality issues, and needs to be an accountability that is held at the appropriate level.

Surgery support services and external providers if applicable (e.g. pathology, radiology, medical records, other external referrals)?

- What information technology requirements do you have, in light of those information flows (and management reporting requirements)?
- What systems are currently in place? Do any new technologies need to be integration with existing technologies?

Step 3: Define and document policies and procedures

Rigorous business, operational and clinical policies and procedures must be in place if there is to be efficient and unimpeded access to Emergency Surgery. It will not be necessary to create all new policies and procedures; rather in most cases you will be able to modify existing policies and procedures. The aim is that staff understand clearly what is required of them and that they undertake their responsibilities consistently and safely.

Step 3 focuses on the following:

- Confirm the Emergency Surgery governance arrangements
- Define Emergency Surgery accountabilities, roles and responsibilities
- Define business and operational policies and procedures
- Define clinical protocols

Confirm the Emergency Surgery governance arrangements

Formal governance is essential for the Emergency Surgery model to deliver and benefit your facility. Creating and documenting the structures, roles, and responsibilities removes ambiguity about how the Emergency Surgery model will be run, helping to resolve issues and risks arising during later stages. This task is used to define and implement the framework within which decisions are made in relation to Emergency Surgery.

Clinical governance is the overarching responsibility of the governing body who has the responsibility for the quality of care delivered by a service and that this accountability is shared equally with the clinicians delivering the care.

Things to consider:

- Will the governance arrangements for the new Emergency Surgery model be any different from the current surgical governance arrangements?
- Who will have responsibility for the day-to-day running of Emergency Surgery? Who will they report to operationally and professionally? What do they need to be able to report on or provide assurance to management teams about service levels and patient safety?
- Will there be any changes in relation to current clinical leads for continuing professional development, staff credentialing, and other clinical governance areas?
- Is there a current documented clinical governance framework for surgery that includes Emergency Surgery?



Helpful Hint

A clinical governance framework supports:

- an environment that fosters quality
- monitors the quality of care
- provides a regular report to the governing body on the quality of care
- minimises the risk and identifies deficiencies in the quality of care
- effectively addresses these deficiencies.

- What other clinical governance considerations need to be made to support this new model?

Define Emergency Surgery accountabilities, roles and responsibilities

Roles and responsibilities within the Emergency Surgery model should be clearly defined with the procedures and reporting processes agreed. This typically leads to a more successfully run model.

Things to consider:

- How will the Emergency Surgery model be supported at different levels (i.e., steering committee structures, fit with existing surgical decision-making)?
- How will people involved in Emergency Surgery be kept informed of developments through reporting processes?
- Are there documented authority levels and escalation points?
- How will the Emergency Surgery model be organised and evolve over time?

Accountabilities, roles and responsibilities should be clearly documented and defined in governance frameworks, position descriptions and committee terms of reference.

See Appendix N for further examples of the Emergency Surgery workforce roles and responsibilities.






Define and document business and operational policies and processes

Policies and processes will form the foundation for efficient and unimpeded access to emergency surgical services. In most cases, existing business and operational policies and processes can be amended to accommodate the changes to the Emergency Surgery model.

The aim is that staff clearly understands what is required of them in relation to Emergency Surgery and that they undertake their responsibilities consistently and safely.

The following checklist in Table 3 will help you to determine where you may need to develop or modify these policies and procedures. Do you have operational policies, procedures or protocols that cover the following areas?

Table 3 Questions to assist in the review of your policies and procedures

Questions	Yes/No	Useful Information
Is there a policy that documents the operational aspects of Emergency Surgery service delivery?	<input type="checkbox"/>	Emergency Surgery service delivery encompasses Emergency Surgery hours, linkages with other areas across the hospital (eg ED, wards) and performance monitoring and evaluation processes
Is there a policy that documents Emergency Surgery clinical prioritisation processes?	<input type="checkbox"/>	<p>A system for prioritisation of patient care according to clinical need is key to providing timely care and should be linked to the admission process. Defined categories of clinical priority have the benefit of addressing perceived inefficiencies that are associated with non-standardised decision-making systems.</p> <p>The SST has endorsed a Priority System for Emergency Surgery with associated KPIs. The use of this system should be clearly documented and communicated.</p> <p>Clinical prioritisation may also include a list of procedures requiring urgent operative management</p>  See section 4 table 1 and Appendix C: Examples of Procedures Requiring Urgent Operative Management.
Is there a policy that documents the clinical handover process?	<input type="checkbox"/>	<p>Effective clinical handover is important to facilitate a safe and effective transition of care when an episode of care is completed or when a new consultant is taking responsibility for that patient's ongoing care. It is important to determine the appropriate handover system that uses reliable tools including an electronic handover system.</p>  The OSSIE Guide to clinical handover has been published to assist clinicians to improve handover processes – see section 2.2.4 Standardised Emergency Surgery Patient Handover
Is there a policy that documents clinical supervision processes?	<input type="checkbox"/>	<p>Adequate standards of supervision should be provided for junior registrars both in- and out-of-hours.</p> <p>The availability of consultant supervision for junior surgical registrars has been highlighted in the NSW Health Emergency Surgery Guidelines as one of the principle objectives for clinical restructure. This objective has informed the recommendation to adopt Consultant-led models of emergency surgical care, as it facilitates the availability of supervision for surgical registrars</p>  See section 6 Supervision of Junior Staff
Is there a policy that documents and supports professional education?	<input type="checkbox"/>	<p>The education and training of surgeons is critical to the maintenance of a highly skilled surgical workforce that has the capacity to meet the Emergency Surgery demand. The development of these skills requires both formal training opportunities and operative experience in time-critical cases.</p> <p>Similarly, the training and education of nursing staff is essential to support the surgical workforce in Emergency Surgery.</p>
Is there a policy that documents inter-hospital transfer processes?	<input type="checkbox"/>	<p>Inter-hospital transfer is required when the clinical requirement or resources for patient management are not available in the referring hospital. Standardised transfer guidelines will facilitate the safe and efficient transfer of patients.</p>  See section 9 Inter-hospital Transfer of Patients with Specific Conditions
Is there a policy that documents safe working hours?	<input type="checkbox"/>	<p>Out-of-hours work should be limited to comply with safe working hours standards; at the same time, it is usually appropriate that an after-hours service be available to respond to high priority emergency cases that present during this period.</p>  The Royal Australasian College of Surgeons (RACS) standards present key recommendations around safe working hours to inform Emergency Surgery schedules.




Define clinical protocols

Clinical protocols are a key component of Emergency Surgery. These protocols streamline patient care processes, support safe practice and quality clinical management and encourage patient focussed care. To a large extent clinical protocols will be similar to that used for elective surgery.

Things to consider:

- It is important to determine processes for Emergency Surgery case management from presentation to discharge.
- Evidence based guidelines on care planning and delivery should be in place.
- Achieving effective planning, delivery and coordination of care may be supported by clinical pathways or care plans. Clinical pathways have been developed for high risk procedures such as fractured neck of femur. Where possible these types of pathways should be developed or amended for local use and implemented. An example patient pathway is provided in Appendix O.

Do you have clinical procedures/protocols that cover the following areas?

Steps	Yes/No	Useful Information
Presentation and triage ED assessment Surgical referral Surgical assessment	<input type="checkbox"/>	<p>The majority of Emergency Surgery patients will first present to the ED. To facilitate a comprehensive admission and assessment process documented guidelines that assess the needs of the patient together with instruction on the referral to surgical services should be in place.</p> <p>The assessment process should be comprehensive, multidisciplinary and based on clinical need and priority and as far as possible avoid duplication.</p>
Referred for booking Admission procedures	<input type="checkbox"/>	<p>Processes for patient scheduling and the use of booking systems should be agreed and documented. Operating theatre booking-systems have the potential to play an integral part of the dynamic between elective and Emergency Surgery, and form the basis for planning and communication relating to surgical scheduling.</p> <p>Linkages between the operating theatre booking system and the Admission system will also need to be considered.</p>
Pre-operative preparation	<input type="checkbox"/>	<p>Pre-operative assessment protocols are required to increase clinical safety and are based on professional standards and evidence.</p> <p>All patients should be adequately assessed before surgery to make certain their health status and the condition for which they are being treated can be appropriately managed by the staff and facility.</p> <p>Surgeons, anaesthetists and nursing staff assess the patient on admission as per the health services assessment policy.</p> <p> RANZCA Anaesthetic Guidelines</p>
Operating theatre	<input type="checkbox"/>	<p>Emergency Surgery policies and procedures should comply with general operating policies and procedures and NSW Health policy directives.</p> <p> NSW Health Department PD 2007_079 Correct Patient, Correct Procedure and Correct Site Model Policy.</p>
Post operative recovery	<input type="checkbox"/>	<p>All patients are recovered and only transferred when they meet the relevant criteria for transfer of care, as defined by the health service.</p>
Transfer procedures	<input type="checkbox"/>	<p>Following post operative recovery patients transfer of care to any of the following areas may occur: ICU/HDU, ward or discharged.</p> <p> NSW Health Policy Directive 2007_092, Discharge Planning</p>

Step 4: Workforce planning

As a component of the Emergency Surgery model you will need to confirm the workforce model (understanding the capacity and type of staff you will need and how you will deploy them), and a workforce transition plan (detailing where you will get your staff from and any training requirements).

Step 4 focuses on the following:

- Confirming the workforce model
- Preparing new or revised job descriptions
- Recruitment and redeployment
- Transitioning the workforce

Preparing new or revised position descriptions

Position descriptions including job function and activities, responsibilities and accountabilities and processes of performance management should support the new Emergency Surgery model.

It can be assumed that most staff will work across both emergency and elective surgery and thus current position descriptions may only need to be updated. Where new positions are created, position descriptions will need to be created to meet the needs of the new Emergency Surgery model.

Recruitment and redeployment

As a part of the change initiative, it is important that the right people with the right skills are selected to fulfil the roles within the new Emergency Surgery model. All organisations will have their own policies, methods, and criteria for internal selection. Existing processes should be adapted or developed so the selection process is carried out as quickly and as thoroughly as possible.

Things to consider:


- Where appropriate, map existing staff to roles in the new structure.
- Put in place clearly defined selection procedures to enable a consistent recruitment policy for both internal and external recruitment activities.

Transitioning the workforce

Fundamental to sustained transformation is supporting people to successfully 'transition' from old to new ways of working.

The capability and skills framework is defined and used as a basis for assessing the existing capabilities, defining the existing gaps, and developing a plan to address and close those gaps, including a cost estimate.

As you create your workforce transition plan, consider the following:



Availability of surgeons to undertake the standard-hours emergency surgery will generally require adjustments to their rostering arrangements for emergency surgery and their allocated elective surgery sessions. If staffing shortages threatens the availability of operating theatre sessions, those sessions allocated for emergency surgery must not be automatically targeted for closure. Scheduled emergency surgery sessions are at least as important as elective surgery sessions, if not more so.

- What impact will this have on existing staff? Refer to your current state assessment. Assess any workforce gaps for the new model of Emergency Surgery – what needs to be done to start recruiting for those roles?
- Will there be any impact on existing surgical services that requires consideration of backfill, or redeployment options? What local arrangements exist regarding pooled/redeployed staff that you might need to consider?
- What lead times do you need in order to transition staff
- What training is required for new or existing staff? How long will it take to introduce this? What training must be undertaken before service delivery (i.e. mandatory) and what can be provided on the job?

Once you have finalised your workforce and transition models, you will need to include this information in your budget, and update your Implementation and Communications Plans accordingly. You should discuss with your Project Sponsor/Executive where any costs associated with transitioning staff should sit.

Step 5: Realigning elective and emergency sessions

One of the key challenges in the management of Emergency Surgery is to minimise the impact that Emergency Surgery cases have upon scheduled elective surgery cases. In developing the detailed Emergency Surgery model a key focus is the realignment of elective and Emergency Surgery sessions.

Regardless of which Emergency Surgery model is adopted, effective patient scheduling processes and systems are crucial to balancing emergency and elective surgery demand. During the Assess and Design Phase and the preparation of the business case you determined the most appropriate Emergency Surgery model that would meet the needs of your service and the objectives of NSW Health and the Emergency Surgery Guidelines.

The next step is to adapt and make changes to the operating theatre template to realign elective and Emergency Surgery as per the proposed Emergency Surgery model outlined in your business case. During this process you will need to consider the following:

- Who will be responsible for making these changes? Do you need to set up a special working group to undertake this task?
- Who needs to be consulted before, during and after the changes have been made? How will this consultation be undertaken?
- What implications will these changes have to staffing and rosters?

Key steps to be undertaken will include:

- Updating the theatre template and realigning elective and Emergency Surgery to accommodate the proposed changes
- Updating staffing rosters to match the new theatre template requirements

Step 6: Implementation Plan - Step by Step Guide

Your Implementation Plan documents a logical sequence of events intended to take the Emergency Surgery model designed and outlined in this phase through to implementation and delivery of emergency surgical services and finally evaluation of the new model. As Project Manager you will have ownership and accountability for this document.

In conjunction with your Project Sponsor/Executive and Project Team you should:

- Identify all activities and tasks that need to be completed to facilitate a smooth implementation
- Allocate responsibility for the each activity, breaking it down into tasks where required
- Determine completion dates for activities and tasks
- Understand and sequence any tasks that depend on the completion of other tasks

Assess any known or perceived risks and identify ways in which they might be overcome, these risks may be added to the Risk Register

- Communicate the key milestones to the relevant stakeholders, as per the Communications Plan.

An Implementation Plan template has been included in Appendix P that provides the framework for the implementation process. You can also use this document to help you provide progress updates as required.



Helpful Hint

- Consider any factors that have pre-defined delivery timeframes and lead times, e.g. recruitment of new staff; consultations with staff required to change current and theatre scheduling; new refurbishment exercises. Make sure that you have allowed enough time in your plan to undertake and achieve these activities.
- Consider how your organisation likes to monitor projects. If most are undertaken using MS Project, transfer your Implementation Plan to this software. This is particularly useful if there are several dependencies that you need to depict clearly.
- You may wish to merge your Implementation and Communications Plans depending on the level of detail in both. Remember, however, that your Communications Plan is a live document and will be updated regularly



Recommended tools and templates

- Appendix N: Emergency Surgery workforce roles and responsibilities
- Appendix O: Example patient pathway
- Appendix P: Implementation Plan Template



Checklist

- Developed and agreed operational and clinical KPIs
- Determined infrastructure and design requirements and developed plans as required
- Determined technology and other support services requirements and developed plans as required
- Confirmed Emergency Surgery governance arrangements
- Defined Emergency Surgery accountabilities, role and responsibilities
- Documented operational policies and procedures
- Defined clinical protocols and care pathways
- Confirmed the workforce model
- Updated position descriptions
- Determined workforce transition plan
- Updated the theatre template realigning Elective Surgery and Emergency Surgery
- Updated staff rosters to match new theatre template requirements
- Determined implementation plan

Implement and Evaluate

4

The purpose of this phase is to implement the model, monitor and manage the change to collect, analyse and report on performance indicators.

Activities

There are four key activities to consider in implementing and evaluating the Emergency Surgery model. These include:

- **Beginning service delivery and monitoring implementation**
 - **Monitoring the change management process**
 - **Collecting, analysing and reporting performance data**
 - **Next steps**
-

This is the final phase of the redesign process.

Step 1: Begin service delivery

The Emergency Surgery model is now ready to “go live”.

You and your Project Team will continue to be required to support operational demands, supporting the team to resolve any unanticipated issues. You will be required to monitor and adjust the workforce and support service model as required.

Arrange time with your Project Sponsor/Executive to discuss and agree which outstanding actions remain your accountability. Review the Implementation Plan and Communications Plan and check that the right people are responsible for any outstanding actions.

As Project Manager, you will be a useful source of information for stakeholders, to explain the rationale behind service delivery decisions, and how these decisions were reached during the implementation period.

The new Emergency Surgery model will eventually become business as usual and will no longer require project management. At an agreed point you will want to wind down and cease certain project initiatives and roles. The Project Team will have amassed an impressive amount of knowledge regarding the process of designing an Emergency Surgery model and successfully implementing it.

Step 2: Monitoring change management

Successful change management is about accelerating the delivery of benefits in ways that are sustained long after a change has been made. Making change stick requires a change approach that:

- focuses on benefits
- encourages involvement
- builds sustainability

John Kotter's 8 steps for leading change in organisations provides a useful way for project teams to think about how they will use the chosen solutions and strategies to approach implementation, and takes into account factors such as individual motivation, the context, and the need for leadership and clear vision. The steps and examples of how Kotter's framework might be applied are listed in Table 4 below:

Table 4 Kotter's 8 steps for leading change

Create a sense of urgency	Provide data, information and education about the scope of the problem, with reference to the local context.
Form a powerful guiding coalition	Form the leadership and project team, aim for representation from those in the facility that will have the power and authority to make change, as well as opinion leaders and allies from all levels of the organisation.
Create the vision for change	Establish a vision of staff and patient safety; what will Emergency Surgery look like when it is conducted during safe working hours.
Communicate the vision	Communicate to all the aims of the project – use multiple modes of communication; enlist clinical leaders and champions to spread the vision.
Remove obstacles	Make it easy for people to do their work – place resources at the point of care, have the project team work with staff to come up with new ways of working.
Create short term wins	Share with all the facility the successes as they become apparent, even if only small improvements to begin with – E.g. run data reports after one week demonstrating any decrease in after-hours Emergency Surgery etc.
Build on the change	Spread the Emergency Surgery initiative to other units and departments and communicate success.
Anchor the change in culture	Keep the new Emergency Surgery redesign model—a priority – make sure policies reflect new practices, build regular updates into routine forums, committees, encourage staff to present ongoing successes

Source: Kotter, J. (1995) *Leading change: why transformation efforts fail*. Harvard Business Review, March–April.

You will need to monitor implementation and the change approach to facilitate a smooth and streamlined transition to the new Emergency Surgery model.

Step 3: Collecting, analysing and reporting performance data

The monitoring of measures that you identify during the Design of the Model phase will be used on an ongoing basis to report on activity and performance to clinician and management groups. These will form the basis of your evaluation, and will help you understand the impact of the Emergency Surgery redesign over time, as well as the experience of patients through any surveys or feedback that you gather.

The development of an evaluation plan will assist you to monitor performance, report results to both clinicians and management and determine changes to the model or future improvements. An evaluation plan should comprise:

1. Quality activities
2. Key Performance Indicators – as identified in Chapter 3.

Quality activities

References

NSW Health has developed a Clinicians' Toolkit to advise clinicians about methods of collecting information relating to the quality of care being provided to patients. The activities outlined in this toolkit are fairly common practice for ensuring patient safety and quality of care, and include: facilitated incident monitoring, sentinel event management, the effective use of clinical indicators, peer review meetings, morbidity and mortality meetings and ad hoc audits/reviews. The regular occurrence of these activities contributes to a performance monitoring system that emphasises patient safety and quality of care.

Collection

There should be a plan for regular collection and analysis of data. At a minimum, data should be collected at baseline (commencement of the new Emergency Surgery model), and then a set time following the implementation of the model, so that comparisons can be made before and after, as an example this may occur on a monthly basis following implementation. Consideration should be given to the time needed to enable change to occur.

References

The NSW Health Easy Guide to CPI (2002) recommends the following steps be considered to help make measurement more simple and effective:

- plot data over time
- focus on measures directly related to your aim
- use sampling to collect data
- provide information and training
- create simple graphs
- refine the data collection process.

Analysis

Quality organisations are always striving to improve the services they provide. By continuously measuring and monitoring the services delivered, organisations can determine the extent to which they may change their processes and practices to achieve the same or better outcomes.

Key stakeholders should be part of the analysis, as they have a working knowledge of Emergency Surgery and the working environment, and can review data and provide insights into the context, and advice regarding what the data might mean.

By reviewing results with risk management in mind, organisations can determine if there is a general trend towards improvement or whether particular parts of the model of implementation need to be changed. In the longer term, analysis of the data will assist to prioritise areas for quality improvement.

Reporting

The process of reporting should be transparent and accountable across different stakeholders, including junior staff, other clinicians, health services managers and patients. Most importantly, information should be presented in an easy to read and meaningful format. Data and the resulting information can enable health care organisations to trend results and improvements over time and benchmark with peers.



Recommended tools and templates

- Appendix Q : Evaluation plan

Step 4: Next steps

Congratulations on redesigning and implementing your Emergency Surgery model.

As you wind down the team, remember to provide future points of contact, and also key points of contact for staff. You may want to consider holding a celebration event for your Project Team and key stakeholders, and schedule a formal debrief to capture final lessons learnt. This can be fed back to NSW Health and shared with other sites undertaking the implementation on new Emergency Surgery model.



Recommended tools and templates

- Appendix R : Lessons learned template
- Appendix S: Team debrief template



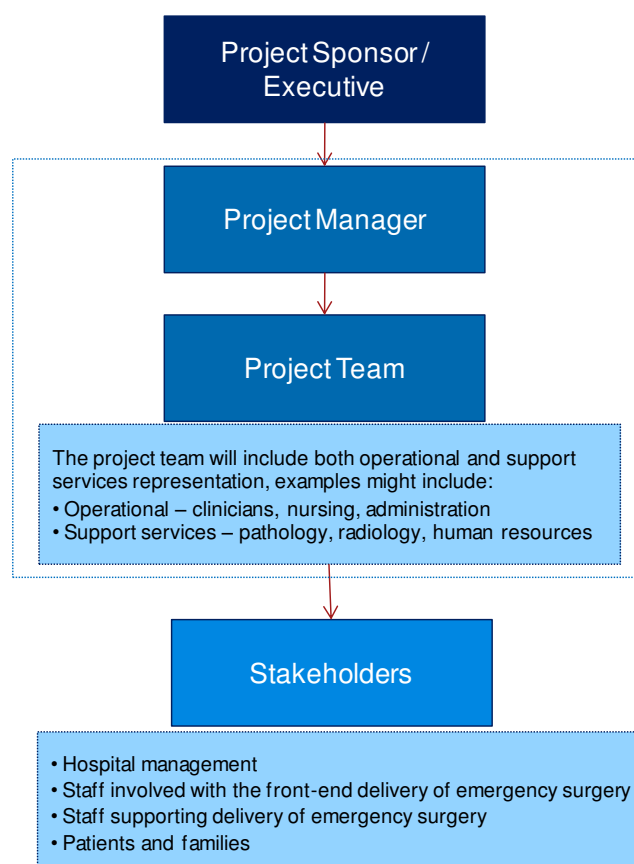
Checklist

- Commenced service delivery and monitored implementation
- Monitored change management and update as required
- Developed an evaluation plan
- Collect, analyse and report data and information on an ongoing basis
- Debriefed with the project team
- Identified lessons learned

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Appendix A: Project team structures



Project roles and responsibilities of the project team

The Project Team is the group responsible for planning and executing the project. It consists of a Project Manager and a variable number of project team members, who are brought in to deliver their tasks according to the project schedule.

The project will require a specific team who are responsible for the formulation of the Emergency Surgery governance, policies and procedures, staff roles and responsibilities, operational requirements and the development of the centre.

Executive Project Sponsor

The Executive Project Sponsor is a manager responsible for securing and allocating resources for the project. They will have a high level of interest in the outcome of the project. Ideally, the Executive Project Sponsor should be the highest-ranking manager possible in regards to the size and scope of the project. They should legitimise the project goals and objects, being the visible and vocal champion of the project. The Executive Project Sponsor must be acquainted with all the major activities and be the end decision-maker for the projects final approval, including any change of scopes, and signing off on approvals to proceed to each succeeding project phase. They should provide support to the project manager.

The Executive Project Sponsor may elect to delegate some of the above responsibilities to other personnel either on or outside the project team co-ordinator.

Project Manager

The Project Manager will be in charge of the 'hands on role' in the redesign of Emergency Surgery. Their role will include forming a team to assist in setup up the new model for Emergency Surgery. The Project Manager will organise regular consultation amongst the team to formulate the approach and strategy of the redesign project.

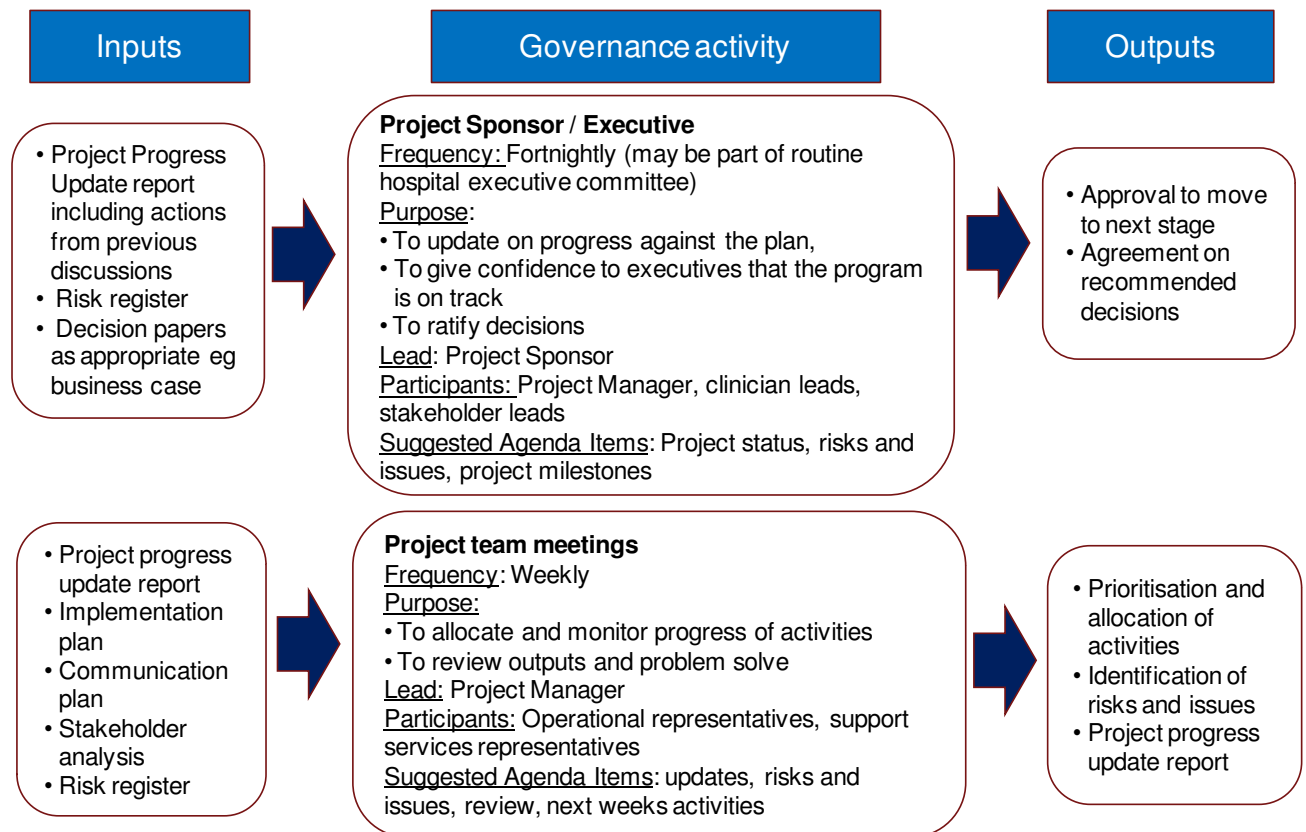
Project Team

The Project Team will be the people charged with developing the new model for Emergency Surgery and undertaking activities to commence service delivery. You may want this to include people with specific expertise (HR, IT, facilities management) and operational experience (eg support service staff and administrative leads). There may be clinical leaders who you think are important to be on this team, who can influence peers to support the implementation process. Team members will have the capacity and expertise to undertake discrete activities within the project, and produce documents or make initial decisions on the day to day workings of the new model for Emergency Surgery.

Stakeholders

Stakeholders will comprise multiple groups of people with different roles to play in the project. They may include people who should be kept informed, people who will be participants in the process, or people who will be affected by the new model for Emergency Surgery eg workforce.

Appendix B: Example project governance structure



Appendix C: Project Status report

Project Progress Update

Purpose

Your project sponsor/ executive will indicate the frequency they wish to meet and be updated on how the project is progressing. You may like to agree with them how they receive this information so that meetings are focussed and only relevant issues are discussed. The template below is an example project progress report that you might like to use or amend to make relevant to your implementation project.

Project Progress against Overall Timeframes

Status													
Phase	1				2				3				4
Week	1	2	3	4	5	6	7	8	9	10	11	12	13+
Date Commencing	1/11/2010	8/11/2010	etc										

On Schedule
At Risk
Delayed

This weeks activities & achievements

Next weeks planned activities & achievements

Risks and Issues

Risk / Issue Description	Priority	Actions to resolve	By Whom	By When

Project Progress against Phase Completion

Phase and Checkpoint	25%	50%	75%	100%
Project Management				
Define and Assess				
Design the model of care				
Implement and review				

Project Progress against Milestones

Key Milestone	Planned Achievement Date	Status	Comment
Project team & governance initiated			
Implementation Plan completed			
Communications Plan completed			
Determine project budgets			
Recommended model confirmed			
Phase 1 Checklist completed			

Appendix D: Risk Register template

Purpose

As you produce your Case for Change, and do the detailed planning as part of your Implementation Plan, you will identify a number of risks. Similarly as you progress through the implementation itself, new risks will present themselves, and others may be mitigated or resolved.

You should keep a separate risk register as an 'audit trail' of those risks as they come and go and report on these to your Steering Committee and Project Sponsor as and when required (see also the Project Status Update template).

Typically a risk register contains:

- A description of the risk
- The impact of the risk should occur
- The probability of its occurrence
- A summary of the planned response should the event occur
- A summary of the mitigation (the actions taken in advance to reduce the probability and/or impact of the event)
- Actions by and Due date.

The template below is an example of a risk register

Risk	Probability (1-5)	Impact (1-5)	Risk Score	Consequence	Mitigation	Action By	Due By
Enter description of the risk	This is scored out of 5 with 5 being the highest probability	This is scored out of 5 with 5 being the highest impact	This is a combined score of the probability and impact that allows a ranking of the risks	What will happen if the risk is not managed	What action needs to happen to mitigate against the risk	Name of accountable person	Date action required by
E.g. Anticipated patient volumes do not occur							
E.g. Services cannot commence within a X month period							
<To be completed >							

Appendix E: Budget Worksheet

This template provides an example budget worksheet for each phase of the project. Each facility will have different expenses across the different phases. This template can be modified to suit your needs and requirements.

Phase	Expenses	Total Costs
Project Management Getting organised	Project Manager Staff meetings Meeting expenses	
Stakeholders Identification, assessment and engagement activities	Meeting expenses (room, food and beverage) Focus groups Staff/departmental meetings	
Assess and Design	Meetings Surveys	
Design the Emergency Surgery Model	Redesign of facility costs Information Technology specialist's time Information Technology training time Equipment and its maintenance Additional staff costs Presentations at key meetings Article in the hospital newsletter Workshops	
Implementation and Evaluation	Development of audit tools Data collection Data analysis and report	

Appendix F: Stakeholder analysis template

Stakeholder	Role in the implementation	Preferred method of communication	Preferred point of contact	Impact (H,M,L)	Attitude (+,-)

Appendix G: Communications Plan

Stakeholder	Purpose	Tools and medium	Timing/ Frequency	Responsibility
Project executive/ sponsor	Project updates	Face-to-face meetings	Fortnightly	Project Manager
	Promotion of the project	Progress status reports		

Appendix H: Initial hospital assessment

Hospital name

Proportion of surgery classified as ES*	Proportion of ES done in daylight hours	Proportion of ES done in Twilight	Proportion of ES done overnight	↑ speciality volumes: Orthopaedics	↑ speciality volumes: O&G

Further questions

Current model

1. What is the current emergency surgery model of care within the hospital? (eg ASU, designated ES lists, specialty ES Lists, twilight model)
2. Are there any emergency surgery redesign initiatives underway in your facility?
3. Is there currently space on the theatre template to move more ES “in-hours”?

Based on the above responses please rate the potential for redesign by placing a X in the relevant box below

No potential	Little potential	Some potential	Good potential	Excellent potential

Current facilities

4. How many operating theatres are there? (are all operational?)
5. Are there dedicated emergency surgery operating theatres / lists? If yes how many?
6. How many procedure rooms are there?
7. How often are Elective Surgery lists delayed or cancelled to accommodate ES?

Likert scale – place a tick next to relevant answer:

Daily:

At least 2 – 3 times per week:

At least once per week:

Every now and again:

Rarely:

Based on the above responses please rate the potential for redesign by placing a X in the relevant box below

No potential	Little potential	Some potential	Good potential	Excellent potential

Workforce

8. Are there dedicated staff for emergency surgery?
9. Are there any local workforce or recruitment issues that would make redesigning emergency surgery difficult?

10. What is the main reason for emergency surgery being done “out of hours”? Who is generally conducting this surgery (% being conducted with/ without a consultant being present and ‘scrubbed’)?

<i>Based on the above responses please rate the potential for redesign by placing a X in the relevant box below</i>				
No potential	Little potential	Some potential	Good potential	Excellent potential

Barriers and issues

- 11. Are there any issues posing barriers to access to emergency surgery? (eg surgeon/ anaesthetic/ nursing/ theatre/ bed/ transport unavailability?)
- 12. Are there any other issues that have a negative impact upon turnaround times in theatre?
- 13. What are the three key areas that impact on the capacity for the unit to expand, redesign or realign the theatre sessions?

<i>Based on the above responses please rate the potential for redesign by placing a X in the relevant box below</i>				
No potential	Little potential	Some potential	Good potential	Excellent potential

Hospital readiness

14. In your opinion would your facility be agreeable to undertaking change or improvement in emergency surgery?

<i>Based on the above responses please rate the potential for redesign by placing a X in the relevant box below</i>				
No potential	Little potential	Some potential	Good potential	Excellent potential

OVERALL POTENTIAL:

<i>Based on the above responses please rate the potential for redesign by placing a X in the relevant box below</i>				
No potential	Little potential	Some potential	Good potential	Excellent potential

Appendix I: Detailed questions to assist the development of the business case

These questions will be used to complement the data analysis for hospital site selection for implementation and assist in building the business case. Not all questions will be applicable to all sites.

Data

- Current emergency and planned surgery load by specialty
- Amount of Emergency Surgery performed after hours (1800 – 2200 hrs and 2200 – 0700 hrs) by surgical specialty
- Inpatient load that requires Emergency Surgery by specialty
- Estimation of sessions required for Emergency Surgery in standard hours scheduling by specialty
- Volume of Emergency Surgery patients that are transferred in and required repatriation
- Patient Journey: For those patients who are admitted via the Emergency Department and have an Emergency Surgery procedure during the 2010 calendar year, what are their patient journey average times by specialty
- Length of stay by DRG
- Clinical supervision of registrars

Hospital understanding

- What is the current Emergency Surgery model within the hospital? (eg ASU, designated ES lists, specialty ES Lists, twilight model)
- Are there any Emergency Surgery redesign initiatives underway in your facility?
- What linkages are currently in place with other facilities (in terms of surgery)?

Hospital Profile

- How many beds are there in the hospital? (breakdown into ED/ medical/ surgical/ other)
- How many operating theatres are there? (are all operational?)
- Are there dedicated Emergency Surgery operating theatres / lists? If yes how many?
- How many procedure rooms are there?
- Are there any other procedure rooms used for Emergency Surgery? If yes how many?
- How many anaesthetic prep rooms/bays are there?
- How many recovery beds/spaces are there?
- Is there a dedicated Emergency Surgery ward / acute surgery unit /beds or similar? If yes, how many beds?
- Is there ICU/HDU onsite? How many beds?

Emergency Surgery theatre scheduling

- Describe theatre session template used?
- Does the anaesthetic roster match the theatre template?
- How are vacant/ unused theatre lists allocated?
- Do you adjust your Emergency Surgery schedule to accommodate changing levels of demand for ES?
- How often are ES lists delayed or cancelled to accommodate ES? (Likert scale: daily, at least 2 – 3 times per week, at least once per week, every now and again, rarely)
- Are ES patients added to elective surgery lists? (yes/no)
- Who manages ES list cancellations to make way for ES? (operating/ referring surgeon, surgical registrar, in-charge anaesthetist, anaesthetist registrar, theatre NUM, theatre liaison nurse, other)
- Who manages the Emergency Surgery patient-to-list bookings process? Include: who makes the booking, who decides the order of cases? (operating/ referring surgeon, surgical registrar, in-charge anaesthetist, anaesthetist registrar, theatre NUM, theatre liaison nurse, other eg booking clerk)
- Describe the process for booking and scheduling a patient for Emergency Surgery (e.g. booking form, canaries, notification of duty anaesthetist) Please consider time taken for each role in this process and the time costs for staff (eg registrar, booking officer)
- What systems are used to facilitate patient scheduling?

Patient entry

- Who is involved in determining clinical priority? (referring/ treating surgeon, clinical director, surgical registrar,

anaesthetist in charge, treating anaesthetist, anaesthetist registrar, Operating Theatre Manager, Theatre Liaison Nurse, other)

Workforce

Are there dedicated staff for Emergency Surgery?

- How many of the following medical staff are currently employed? (EFT: Medical: Staff specialists, VMO, Registrar/ fellows, other)
- How many nursing staff are currently employed to staff Emergency Surgery? (EFT: NM, NUM, ANUM, RN, EN, other) To what extent does specialisation of nursing staff within Emergency Surgery occur?
- Which sessions have senior medical staff rostered on to cover Emergency Surgery? (weekdays 9 – 12.30pm, 12.30pm – 5pm, Twilight hours, weekdays (5pm-10pm), After hours, weekdays (5pm-9am), weekends, other)
- What is the main reason for Emergency Surgery being done “out of hours”? Who is generally conducting this surgery (% being conducted with/ without a consultant being present and ‘scrubbed’)?
- If Emergency Surgery cases are registrar-led, what form of consultant supervision is available? (direct, indirect, off-site, on-call, other)

Clinical: What minimum skill mix required for a theatre to be open and safely operating?

- What medical roles are required on each shift/ theatre sessions? (Consultant, Registrar, Anesthetics)
- What nursing roles are required on each shift/theatre session? (RN, specialist roles in theatre and recovery unit)

Support Services

- Pathology: When are pathology services available to support Emergency Surgery? (24/7, in-hours).
- Radiology: When are radiology services available to support Emergency Surgery? (24/7, in-hours, other).
- Clerical Support Staff: When are clerical support services available to support Emergency Surgery? (24/7, in-hours)
- CSSD: When are CSSD support services available to support Emergency Surgery? (24/7, in-hours)
- Cleaning: When are cleaning services available to support Emergency Surgery? (24/7, in-hours).

Policies and Protocols:

- Hand over
- Inter-hospital transfer
- Data collection

Barriers

- Are there any issues posing barriers to access to Emergency Surgery? (eg surgeon/ anaesthetic/ nursing/ theatre/ bed/ transport unavailability?)
- Are there any other issues that have a negative impact upon turnaround times in theatre?

Order and Priority

- What are the three key areas that impact on the capacity for the unit to expand, redesign or realign the theatre sessions?

Appendix J: Hospital Readiness Template

Element	Question	Facilitators	Barriers	Actions
Structure	Is there enough staff to support the change process			
Workplace culture	To what extent are the guidelines principles consistent with the values, attitudes and beliefs of the practice environment To what degree does the culture support change?			
Communication	Are there adequate (formal and informal) communication systems to support information exchange relative to implementation?			
Leadership	To what extent do the leaders within the practice			
Commitment				
Availability of resources				
Interdisciplinary relations				

Appendix K: Skills matrix template

The intention of this matrix is to determine the skill mix required for the new model and to identify associated challenges and gaps.

Clinical skills		
Based on model you have chosen, how would you describe the core clinical skills required to staff this model?		
Professional group	Required (yes/no)	How will this be staffed? Indicate the number of staff, part-time, full-time, specialty, grade etc.
Surgeons		
Anaesthetists		
Registrars		
Registered nurses		
Enrolled nurses		
Support staff eg allied health		
Other		
Are there any challenges in coverage or skills that could be addressed?		
Is the coverage of people with clinical skills appropriate to the needs of the new model?		
Are there any other considerations?		

Appendix L: Business Case

Emergency Surgery Redesign

Business Case Template

Executive summary

→ **The executive summary should be completed last**

<This should provide a summary of the introduction, background, rationale for change and objectives that are in the main body of the document.>

Be sure to include information about the priority and importance of the project in the context of the Strategic Objectives of your facility, and the benefits to your facility of the redesign.>

Options appraisal

<Provide a brief summary of the options considered and the reasons for choosing the preferred option.>

Costs and benefits

<Summarise the main points and include sufficient detail so that your executive or approval committee can use this page as a ready reference.>

1. Introduction

Project Name:

Project Sponsor/ Executive:

Project Manager:

2. Background

<Provide a brief history of how the project came into being, and from where the authority and drive for it comes. Include background on the nature of the work conducted that explains why you want to take on the redesign.>

2.1 Rationale for change

< The rationale for emergency surgery redesign should be documented and referred to throughout the implementation process. Summarise why the status-quo is not a model for the future and the benefits of the new model (qualitative and quantitative) in bullet points here>

2.2 Objectives (SMART)

< Based on the qualitative and quantitative data, determine objectives that include: the percentage improvement you will work towards achieving and the time within which you will achieve the objective. Using the SMART acronym will assist in setting aims that are specific, measurable, achievable, results oriented and time limited.>

3. Options Analysis

You may be required to consider more than one emergency surgery model to achieve improvements, and this section should contain an analysis of the redesign models plus the ‘do-nothing’ option.

- Provide a summary of the expected benefits, costs and risks of each redesign model.
- Based on a comparison of benefits, costs and risks select the preferred redesign model.
- Summarise the basis on which the preferred redesign model was chosen and given the highest priority. Include reference to the achievement of the intended outcomes and outputs, broad cost considerations and feasibility of implementation.

The following table summarises the comparisons of all emergency surgery model considered.

4. Preferred emergency surgery model

State the preferred emergency surgery model and why.

	<i>Emergency surgery model 1 -</i> <short description>	<i>Emergency surgery model 2 -</i> <short description>	<i>Emergency surgery model 3 -</i> <short description>
Benefits <benefits of each emergency surgery model > **			
Disadvantages <List the negative consequences of each emergency surgery model.>			
Timescale <Over what period will the costs be incurred and over what period will the benefits occur.>			
Costs <Summarise the costs and supporting assumptions associated with each emergency surgery model, including ongoing costs.>			
Major Risks <Provide a summary			

<i>of the risks to implementation></i>			
---	--	--	--

** Note: A reminder that the benefits of the emergency surgery model will be observed clinically, in the workforce and in resource management. Clinical benefits anticipated include improved patient outcomes, enhanced patient and surgical team satisfaction and increased trainee supervision in emergency surgery. Significant management benefits will ensue from high rates of emergency operating theatre utilisation, reduced patient cancellations and reduction in afterhours costs

5. Infrastructure changes (if applicable)

<State what action would need to be undertaken. Include an indicative timetable and justification for the proposed approach.>

6. Project Strategy

Key milestones and deliverables: *the key milestones will be presented in a table, as follows:*

Event/ Milestone	Deliverable	Date
Project Management <ul style="list-style-type: none"> • <i>Team set up</i> • <i>Project budget established</i> • <i>Stakeholders engaged</i> • <i>Communications plan</i> 		
Define and assess <ul style="list-style-type: none"> • <i>Quantitative data analysis</i> • <i>Qualitative data analysis</i> • <i>Objectives set</i> • <i>Model selection</i> 		
Model of emergency surgery <ul style="list-style-type: none"> • <i>KPI development</i> • <i>Model design</i> • <i>Designing facility</i> • <i>Processes and procedures established</i> • <i>Workforce planned</i> • <i>Implementation planned</i> 		
Implement the model <ul style="list-style-type: none"> • <i>Initiate service delivery</i> • <i>Collection of performance data</i> • <i>Evaluation plan</i> 		

7. Project management

7.1 Business case

<Write a brief statement on how this document will be kept up to date during the course of the project; that is, review points particularly where the expected scope, costs, benefits and savings figures are re-adjusted or confirmed.>

7.2 Governance

<This section outlines the project management structure that you will use to manage the project. Make sure you cover at least the following points:

- *Who will oversee progress (e.g. executive sponsor, divisional head)*
- *Who will manage the project?*
- *How will the facility executive be kept informed of progress?*

7.3 Risk management

<Check the organisational risk assessment tools and policy to undertake a risk assessment of each of the options>

7.4 Progress monitoring, evaluation and KPIs

<Enter here the mechanisms that you will establish to monitor and compare actual achievements against your baseline plan.>

Name:

Position: *Project Manager*

Signed _____

Name:

Position: *Divisional Head*

Signed _____

Name:

Position: *Executive Sponsor*

Signed _____

Appendix M: KPI template

Type of KPI	Explanation	Examples
Operational Indicator	Measuring the operational performance of an emergency surgical service, such as patient wait times and patient turnaround times	<ul style="list-style-type: none">• Performance according to Emergency Surgery urgency category• Measurement of after-hours activity• Supervision of registrars (consultant surgeon in operating suite)• Pre-op LoS• First case on-time start on weekends
Clinical Indicator	Relates to patient safety more specifically and measures the 'clinical management or outcome of care' of patients, such as morbidity and mortality rates	<ul style="list-style-type: none">• Clinical outcomes for high volume cases (e.g. acute cholecystitis, fractured neck of femur, acute appendicitis)• LoS for index conditions• Adverse events eg infection, wrong site surgery

Appendix N: Emergency Surgery workforce roles and responsibilities

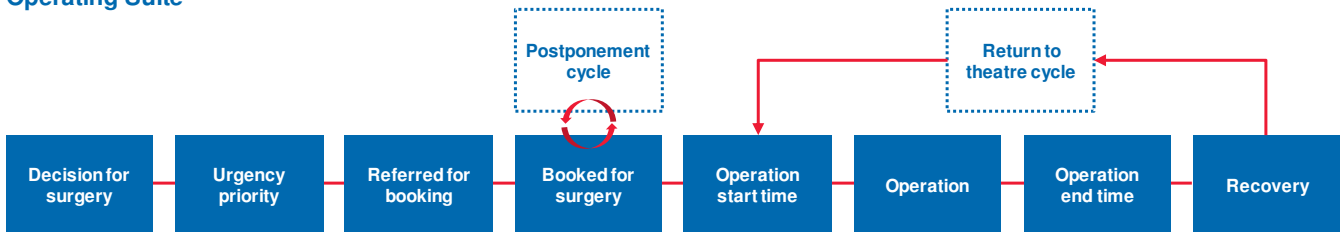
Roles and descriptions	Responsibilities
Directors	<ul style="list-style-type: none"> • The clinician that is responsible for the service delivery and operational performance of the unit • Initial and ongoing assessment of volume and activity • Supervision of compliance of medical staff with operational policies • Management of medical staff who fail to comply with operational policies • Assist in the development, review and monitoring of clinical protocols used in the unit
Surgeon	<ul style="list-style-type: none"> • Responsible for operating theatre management during surgical procedures
Nurse Unit Manager	<ul style="list-style-type: none"> • The Nursing Manager who coordinates the service delivery and the day to day operation of the unit • Supervision of nursing and ancillary staff of the unit • Active role in ensuring access to beds • Liaising with admissions, pre admission, operating theatres and patient flow in preparation and planning for future workload • Actively promote the use of protocols and liaising with surgical specialty staff
Nursing staff	<p>Pre operative</p> <ul style="list-style-type: none"> • Prepare patients for surgical procedure according to operational policies • Provide pre operative patient education • Escort patients to operating theatre and handover to operating theatre staff <p>Theatre</p> <p>Post operative</p> <ul style="list-style-type: none"> • Provide patient care for second stage recovery as per clinical protocol • Provide patient care for ward area as per clinical protocol • Assessment for allied health interventions • Prepare patient for discharge • Patient education (verbal & written) • Discharge checklist
Anaesthetist	<ul style="list-style-type: none"> • Administration of anaesthetic and patient monitoring
Admin staff	<ul style="list-style-type: none"> • Prepare admission paperwork for patients • Update of Patient Administration system for admissions and discharges and transfers

Appendix O: Example patient pathway

Emergency Department



Operating Suite



Inpatient



Appendix P: Implementation Plan template

Step	Actions	By who?	By when?	Resources needed	Progress measures
Decide specific implementation processes and strategies <ul style="list-style-type: none"> • who will be responsible for what actions • when each action will occur • the resources required • measures will be used to monitor progress 	<i>example: development of new policies and procedures</i>				
Develop communications plan	<i>example: develop newsletter template, update intranet fortnightly</i>				
Risk assessment of action plan <ul style="list-style-type: none"> • Trouble shoot plan to identify barriers • List strategies to overcome barriers to implementation process 	<i>example: strategies for workforce shortages</i>				
Identification of monitoring processes <ul style="list-style-type: none"> • Establish baseline • Set measures to monitor progress. 	<i>example: Education on audit tools and KPIs Gather baseline data before launch date</i>				
Approval of implementation plan <ul style="list-style-type: none"> • Implementation plan and tools approved by relevant management/executive 	<i>Example: Exec team member to discuss plan and resources/support required at exec management group</i>				

Source: Adapted from: *The OSSIE Toolkit (2010)*

Appendix Q: Evaluation Plan

Step	Actions	By who?	By when?	Resources needed	Progress measures
Identification of monitoring processes	<p><i>Example:</i></p> <p><i>Gather baseline data before launch date</i></p> <ul style="list-style-type: none"> • Qualitative and quantitative • Establish baseline • Set measures to monitor progress 				
Frequency and timing of data collection	<p><i>Example:</i></p> <p><i>Collect operating theatre procedure data weekly</i></p> <ul style="list-style-type: none"> • How, when, where will data be collected 				
Feedback schedule	<p><i>Example:</i></p> <p><i>Display progress and changes compared to baseline</i></p> <p><i>Monthly update to exec</i></p> <ul style="list-style-type: none"> • Level of feedback (Individual, team, organisation) • Data comparisons • Timing and frequency of feedback • Method of feedback (presentations, email, etc) 				
Celebrate short term wins Plan for celebration to mark milestones.	<p><i>Examples:</i></p> <p><i>Spread results across hospital with FYI email</i></p> <p><i>Article in patient and staff newsletter</i></p>				

Source: Adapted from: *The OSSIE Toolkit (2010)*

Appendix R: Lessons learnt template

Purpose

The purpose of this template is to capture any lessons learnt or key success factors that you encountered during your experience of implementing the new Emergency Surgery model.

When should I complete this?

You should make a note of these at the end of each phase as you progress through the project. Remember that there will be other organisations who will be undertaking this project after you have completed yours, and could benefit from your reflection and advice on how you could have done things differently.

Who should I share this with?

Send the completed template to NSW Department of Health so that this can be shared with other sites undertaking redesigning of their Emergency Surgery model.

What did you learn?	What would this change in how you approached or ran your implementation?	Who should hear about this?	Who can people contact to find out more?	Attach any relevant documents or material

Appendix S: Team debrief template

Purpose

A team debrief is usually held at the end of a project, and used to reflect upon what worked well, and what could be done differently if undertaking a similar task. You can also hold feedback and debrief sessions with your team as you progress through the project phases.

A team debrief can be used to celebrate successes, and to capture lessons learnt. You may want to hold it at a venue external to the organisation, and run it formally or informally. Make sure that everyone has a chance to speak and be listened to.

Suggested agenda

- 1 Welcome and ground rules for discussion.
- 2 A look back over the project – What have we achieved?
- 3 What worked well?
- 4 What could we have done differently?
- 5 Summarise Actions Agreed (if any).

Appendix T: Case Study: Prince of Wales Hospital, Acute Surgery Unit

Prince of Wales Hospital – Sydney, Australia

Hospital profile

Prince of Wales Hospital is one of 13 principal referral hospitals for adults in New South Wales with 440 beds

Emergency Surgery Model

- An acute-care ward of 4 beds and an operating theatre were placed under the control of the rostered Acute-Care Surgeon (ACS).
- Patients treated in the acute-care theatre were drawn from a wide range of specialties including paediatrics, neurosurgery, orthopaedics, plastic surgery and vascular and transplant surgeries; obstetrics emergencies were excluded.
- The ACS roster was shared by 8 general surgeons, who provided on-site service from 8am-6pm Monday to Friday and on-call service after hours. The first rostered surgeon covered between Monday 8am until Wednesday 12:30pm; the second covered Wednesday 12:30pm until Friday 6pm; the weekend reverted to pre-existing on-call arrangements.
- A formal handover process occurred between duty periods.
- The sole commitment of the ACS was to treat and manage patients and the acute-care theatre for the duty period. He/she was also responsible for conflict resolution between specialties.
- The ACS, duty anaesthetist and theatre management staff met at 3pm every weekday to select the first case to be scheduled at 8am in the acute-care theatre the following day.
- The acute-care team consisted of the ACS, an acute-care registrar (a senior basic surgical trainee) and an acute-care resident.
- All patients with an acute general surgical illness who did not require high dependency or intensive care were planned for admission to an acute surgical ward. These patients came from a range of specialties (excluding obstetrics).

Outcomes

Over a 79 week period that commenced in September 2005:

- In-hours emergency theatre utilisation increased from 57% to 69%.
- The first operation of the day has commenced 14 minutes earlier than pre-project.
- There was an 11% reduction in acute-care operating after hours, and 26% fewer emergency cases were handled between midnight and 6am.
- 40% of patients who were seen by the ED and deemed not for admission by the ACS would have been admitted by the registrar had the consultant not been on-site and reviewing patients. This created a saving of potentially 114 bed days, or \$AUD142,000.

Conclusions

The ASU model resulted in a more efficient use of the entire theatre block, including higher theatre utilisation rates and a decrease in cases handled after-hours. It enabled on-site consultant-driven surgical leadership that provided a significant positive change to the provision of acute surgical care and enabled better supervision of junior staff. In addition, the ASU model improved the lifestyle of the surgeons and was unanimously accepted by those involved as a better model than the previous on-call system.

