

*Nursing and Midwifery Office  
Queensland*

# Business Planning Framework

A tool for nursing workload management

## Perioperative Services Addendum

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## 1.0 Introduction

The *Business Planning Framework: A tool for nursing workload management* (4th edition) is Queensland Health's mandated tool for managing nursing and midwifery workload, as documented within the *Nurses (Queensland Health) – Section 170MX Award 2003*. The Business Planning Framework (BPF) supports nurses and midwives in determining appropriate staffing levels to meet service requirements and assists them in evaluating the efficiency and effectiveness of their performance. The framework focuses on balancing the supply of services and resources with service demands through an individual unit or program based approach to business planning. The framework encourages nursing and midwifery staff to use quantitative and qualitative methods to analyse and determine human resource requirements, identify priorities and set service goals aligned with the organisation's strategic directions.

Within Queensland Health, a number of nursing and midwifery services were experiencing issues with the application of the BPF in certain speciality areas after its release in 2008. Consequently, a recommendation was made within the workforce planning strategy of the *Nurses and Midwives (Queensland Health) Certified Agreement (EB7) 2009* to further refine and develop the BPF in those speciality areas. This recommendation was made to ensure an effective workload management tool is available for all Queensland Health nurses and midwives.

The following speciality areas were nominated to participate in the BPF refinement process:

- mental health
- primary and community health
- public health
- perioperative services
- outpatient and ambulatory services.

Working parties and strategic groups were formed to engage clinical experts, nursing leaders, professional nursing bodies and finance officers in the development of strategies to improve application of the BPF in these areas.

This addendum aims to clarify the application principles of the BPF in each of the designated specialty services and to ensure consistent and transparent business planning practices.

## 2.0 Purpose of the perioperative services addendum

The purpose of this addendum is to improve the application and implementation of the BPF in perioperative services throughout Queensland Health. It is recommended the addendum be used in conjunction with the existing BPF manual (2008) to support the analysis of specialty service demands, establish the nursing and midwifery resources required and evaluate service performance. This addendum will assist nursing staff in perioperative services to:

- determine and manage the unique circumstances within their perioperative service that require special consideration when applying BPF principles

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- articulate productive (direct and indirect) nursing and midwifery activity within perioperative services
- understand the current and emerging demand considerations for nursing and midwifery hours within perioperative services
- determine appropriate client/service complexity and activity measures to improve consistency in the statewide application of the BPF in perioperative services
- review the application methods of the standard BPF multipliers in perioperative services within Queensland Health
- develop productive hours and non-productive hours planning tables relevant to perioperative services.

### 3.0 Business planning context for perioperative services

There are a number of workload management and workforce planning issues in perioperative services acknowledged by health professionals worldwide. The most frequently discussed issues involve:

- articulating perioperative nursing and midwifery work
- validating indirect perioperative nursing and midwifery hours
- applying standard business planning definitions relevant to perioperative services and;
- accessing suitable perioperative data collections and reporting systems <sup>[1-11]</sup>.

Perioperative nursing and midwifery hours are difficult to measure because limited data is collected to validate the work of individual disciplines within the perioperative multi-disciplinary team <sup>[1, 3-5]</sup>. This deficient in quantitative workload information adds complexity to the process of calculating productive perioperative staffing hours and is known to significantly impact workload management and workforce plans <sup>[5, 11, 12]</sup>.

The Association of Perioperative Registered Nurses (AORN) endorses the use of the Perioperative Nursing Data Set (PNDS) as the primary framework to standardise and improve the quality of the nursing and midwifery data collected <sup>[1, 3, 4, 10]</sup> (refer to Appendix A). This empirically validated data set uses clinical terminology to provide uniformity in perioperative clinical documentation to emphasise the contributions of nursing and midwifery staff <sup>[1, 3]</sup>. The PNDS is capable of improving the structure and consistency of workforce planning information by enabling individual perioperative nurses and midwives to document and measure their workload contributions <sup>[1, 3, 4, 10]</sup>. The PNDS is also able to assist nursing and midwifery educators and researchers to document and measure their productive contributions to perioperative nursing and midwifery services <sup>[3]</sup>. Unit-based education, clinical portfolios, research, and quality improvement activities are included in the PNDS which ensures these workload demand considerations are incorporated into the total productive nursing and midwifery hours required <sup>[2, 12-15]</sup>.

Currently, there is limited application of the PNDS within Queensland Health's perioperative information systems. This deficit has contributed to a number of perioperative nursing and midwifery services developing local spreadsheets to complement the generic workload and workforce data being used for business planning. Improvements in the quality of perioperative data is expected when a statewide electronic medical record system is implemented. Electronic medical record systems are capable of collecting workforce data and producing business reports relevant to:

- service planning
- benchmarking
- care delivery
- quality outcomes
- costs and;
- workload management <sup>[3, 13]</sup>.

Based on this capacity, electronic medical record systems facilitate improvements in monitoring, planning and evaluating nursing and midwifery workforce and the management of financial, material and human resources in the perioperative environment <sup>[1, 3, 10, 13]</sup>.

Finally, the use of a staffing standard such as that endorsed by the Australian College of Operating Room Nurses (ACORN) is recommended when developing workload and workforce management plans. The ACORN staffing standards provides guidance and consistency at a national level regarding perioperative staffing requirements <sup>[2, 16]</sup>. Each standard is evidence-based, updated every two years and highly respected by accreditation authorities and law courts <sup>[2]</sup>. Similarities exist between the workload demand considerations found in the ACORN staffing standard and those found within the BPF methodology. Both documents recommend the review and inclusion of workload demands resulting from the environment, materials management, service activity, surgical complexity, skill mix requirements and educational programs <sup>[2, 16]</sup>. The ACORN staffing standard also provides guidelines on minimum safe staffing levels, staff competence and suitable experience levels required for individual perioperative services <sup>[2]</sup>. This information is valuable when planning workforce numbers, rostering staff and equitably distributing nursing and midwifery workloads.

## 4.0 Calculating productive nursing and midwifery hours

Productive nursing and midwifery hours include both direct and indirect clinical hours and are based on client complexity and service activity. Calculating the number of productive hours required for a perioperative service is the first step in managing nursing and midwifery workloads and establishing the total operating budget.

As outlined within the BPF manual (2008), direct nursing and midwifery hours relate to the activities nurses and midwives do that directly contribute to care provided to the client. Indirect hours relate to the activities nurses and midwives do for clients while not in direct contact within them. For example, education and training programs provided within the clinical service/program/facility are considered indirect hours. Whereas, clinical hours associated with mandatory training and professional development leave for education purposes are allocated within the non-productive hours. It is important to make certain all direct and indirect nursing and midwifery hours are included when calculating the total productive hours required.

**Total productive hours = Direct clinical hours + Indirect Clinical Hours**

Creating a list of standard direct and indirect nursing and midwifery activities in your unit or practice area will assist in articulating and monitoring the use of productive hours. This process should be undertaken with unit staff as group discussions concerning service activities being may highlight areas where efficiencies could be gained.



Information gathered about productive hours can be used to inform a number of service requirements such as staffing numbers, skill mix, models of care and education/training programs. It is important to document all nursing and midwifery activities relevant to your service, especially those considered unique to your unit or practice area. Defining productive hours increases the understanding of the nursing and midwifery work being performed and provides an excellent foundation when developing a service profile.

Figure 4.1 provides examples of productive and non-productive nursing and midwifery activities within perioperative services. The table does not include every productive and non-productive nursing and midwifery activity performed and should be used in conjunction with the examples already provided in the BPF manual (2008, p.50-51).

**Figure 4.1: Productive and non-productive nursing and midwifery hours examples**

Activity	Direct	Indirect	Non-Productive	Examples
<b>Service delivery</b>				
Set ups	x			Operating room (OR), procedures, anaesthetics, remote locations
Reprocessing re-usable items	x			Items used in OR eg. instruments
Complex care delivery	x			Advanced airway/pain/critical event management, security patients
Infection control management	x			Patient OR scheduling, cleaning requirements
Patient assessment, planning, implementation and evaluation	x			Pre-op/procedure checks, fasting management, result review, pt alert management, case management - including complex care management due to co-morbidities
Specialised equipment management	x			Patient specific prosthesis ordering, loan/consignment, electrical test and tag for loaned equipment
Clinical care	x			Pre, intra-operative (instrument, circulating, anaesthetics) and post operative nursing care
Out of unit services	x			Remote services for anaesthetics, medical imaging, electroconvulsive therapy, radiation therapy and telehealth
Clinical documentation	x			Perioperative notes, surgical safety checklist, accountable items record, specimen management, referrals, test requests
Patient incident reporting	x			Incident reporting and follow-up to immediately address the issue
Family liaison	x			Patient journey through the OR, post anaesthetic area and entry for carers/relatives
<b>Leadership and service management</b>				
Unit coordination		x		Nurse Unit Manager/Clinical Nurse Consultant
Multidisciplinary team coordination		x		Coordinating proceduralists, surgeons, occupational therapists and physiotherapists
Shift coordination	x			Experienced Registered Nurse managing multiple rooms and staff
Clinical nurse team leader	x			Staff coordination
Patient flow				Case planning/coordination, bed management, discharge planning, surgical & anaesthetic service templates.
Models of care/patterns of work		x		Productive OR (National Health Service model)
Liaison with medical staff		x		Arranging cases, planning times and equipment
Case conferencing	x			Multiple procedures on the one patient, complex co morbidities
Management of waiting lists		x		General scheduling, patient or surgeon rescheduling, rebooking and notifying patients
Leave management				Scheduling and management of leave entitlements such as sick, family, maternity and fatigue leave
Evidence based practice		x		Nursing research, projects, trials, education
Monitoring clinical indicators		x		Pressure areas, medication incidents, falls
Change management		x		Clinical change initiatives, OR redesign/reform

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<b>Staff management &amp; leadership</b>				
Rostering		x		Coordinating staffing numbers and skill mix, after hours/on call allocation
Leave management		x		Annual leave, sick leave, fatigue leave, study/research leave
Skill mix management /allocation		x		Attended daily by Nurse Unit Manager, shift coordinator (unit level), team leader for each case in individual OR
Human resource management		x		Pay enquires, movement forms, conflict resolution, position occupancy
Recruitment and retention		x		Advertising, interviewing, developing retention strategies
Staff management data collation/analysis		x		Reviewing labour expenditure, sick leave management, monthly reporting
Pay enquiries		x		Daily payroll management, shift changes, on call changes, emergent leave
Grievance, debriefings, staff support		x		Complex issues for resolution
Succession planning		x		Mentoring staff, increasing number of shift coordinators and individual OR team leaders
Coordinate and chair unit meetings, write up minutes		x		Communication and progress of unit and organisational plans
<b>Quality and safety</b>				
Quality activity coordination		x		90 day plans, elective targets
Audits - Clinical practice		x		Hand hygiene, pressure areas, consent and documentation
Risk management		x		Workplace Health and Safety rounds and audits, emergency equipment checks
Infection control monitoring		x		Aseptic technique audit, scrubbing, gowning and gloving
Waste management monitoring		x		Disposable laparoscopic items, general, clinical and cytotoxic waste
Accreditation coordination		x		Staff education, developing a culture of quality
Ministerial correspondence		x		Complaints or activity reporting
Policy and procedure coordinator/benchmarking		x		Practice review and change, education
Incident management		x		Incident monitoring, root cause analysis
Complaints management		x		Feedback to staff, patients and families
Portfolio management		x		Different surgical specialities offered
<b>Education and research</b>				
Transition program governance		x		Perioperative Nurse Educator and/or Nurse Unit Manager
New graduate interviews and program overseer		x		Perioperative Nurse Educator lead and/or Nurse Unit Manager
Succession planning		x		Training for Acting Nurse Unit Manager Role
Portfolios		x		Infection control, education and laser
Performance Appraisal and Development - mentoring & coaching		x		Compliance with organisational policy
In-service		x		New equipment, instruments, procedures and technology
Orientation - nursing staff, medical and students		x		Program designed to meet the orientation needs of all new staff including experienced and novice practitioners
Mandatory training			x	Depend on services offered on template
Speciality training provided in the clinical environment		x		Different/new surgical specialities/surgeons and anaesthetists
Clinical supervision	x			Changing or increasing scope of practice in surgical speciality areas
<b>Business management</b>				
Workforce planning		x		Staffing numbers and skillmix requirements
Service planning service profile report		x		Implementing the BPF
Service profile development and evaluation of service reporting		x		Developing and updating service profiles, reporting activity targets using templates, schedules and operating lists
Human resource and budget management		x		Reviewing, analysing, monitoring and variance reporting using business systems such as the Decision Support System (DSS)

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Performance indicator reporting		x		Activity targets, cancellations, operational plans, funding submissions for staffing, equipment and refurbishments
Concept brief and/or business case development		x		Change in service delivery
Data inputting, management and analysis		x		Data base management analysis and reporting
Filing/emails/correspondence		x		Communication records
Divisional meetings		x		Staff attendance
Capital works and redevelopment		x		Planning design, patient flow/journey, project and change management
<b>Materials management</b>				
Supplies and equipment purchasing, monitoring, controls		x		Asset management and stock rotation
Repairs and maintenance		x		Routine, preventative and emergent issues
Meetings with Sales Reps		x		New market items or uses
Financial management		x		Purchase prioritisation of equipment
Information and communication technology		x		Communication plans, maintenance and upgrades
<b>Other</b>				
Committee participation		x		Nursing and midwifery divisional meetings
Project Management		x		Hospital redesign/reform, refurbishments, information systems implementation
Central sterilising department function		x		Work stations, volume, case load and equipment breakages

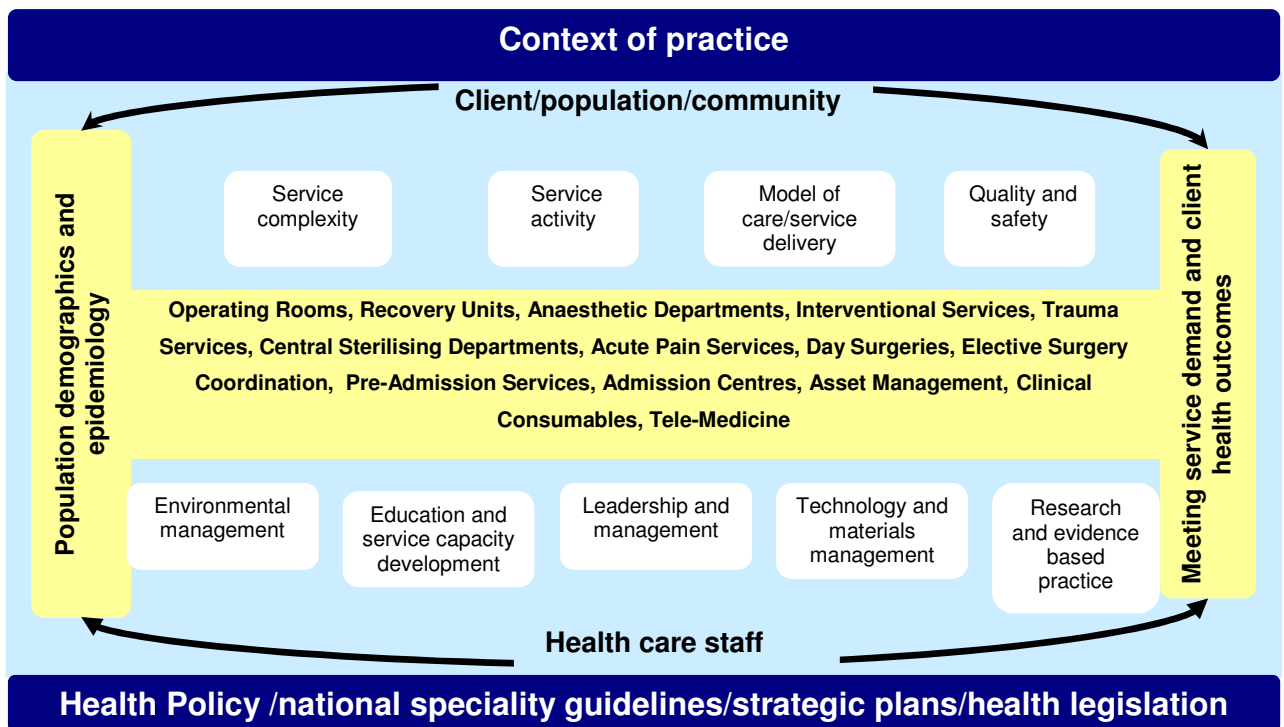
## 5.0 Nursing and midwifery core demand considerations

To improve consistency and transparency in BPF application, specific demands on direct and indirect nursing and midwifery hours in perioperative services have been categorised. The categories are based on the most common and frequent demands being placed on nursing and midwifery hours within perioperative services.

Figure 5.1 illustrates the relationships between all categories that coexist and interact with each other. This section explains each of these categories in more detail.

The demand categories should not be considered in isolation especially when used as a reference source in developing local service profiles. Core demands also influence the non-nursing and midwifery members of the multi-disciplinary team, so the level of role interactions should be discussed within the service profile. This section includes explanatory notes about each category and a practical example of how to use the diagram is located in appendix A.

Figure 5.1: Perioperative services core demand considerations



## 5.1 Meeting service demands and health outcomes

Successfully meeting service demands and achieving positive health outcomes for consumers is a key goal of healthcare delivery. Developing service objectives, strategies and goals assist in achieving a balance between service demand and supply in your area. It is important to articulate the core demands on your service and ensure all influences are considered when planning workforce numbers, skill mix profiles and material resources. The perioperative nursing and midwifery core demand diagram (Figure 5.1) illustrates a number of areas which regularly impact service delivery.

Before you commence calculating the total productive nursing and midwifery hours needed in your unit or practice area, address these demands in your service profile.

## 5.2 Population, demographics and epidemiology

Analysing the epidemiology and population trends within your catchment area will provide useful insights into the categories and levels of perioperative services required. Calculating the percentage of potential and known populations at risks will assist in workforce planning and management of nursing and midwifery workloads.

When reviewing population demands on nursing and midwifery hours within your service, consider:

- demographics (e.g. growth rate, age, socioeconomic status)
- cultural considerations (e.g. diversity of population)
- morbidity/mortality (e.g. disease trends)
- infection control data (e.g. infection and infectious disease trends)

- birth rates (e.g. present and future population numbers)
- transient trends (e.g. influences from industry and tourism trends)
- community expectation (e.g. are expectations realistic and able to be delivered?)

### 5.3 Context of practice

Context of practice considers all the *essential* elements of your service that determine and influence the framework of nursing and midwifery practice. Examining the context of practice within a service will help to highlight and explain the unique workload considerations for nursing and midwifery staff. Context of practice considerations include, but are not limited to:

- services offered
- catchment area coverage
- location of direct care delivery
- resources available.

Conduct an environmental analysis of your service to help you articulate the workload impacts of this demand category on nursing and midwifery hours. For more information about environmental analysis criteria, refer to the BPF manual (2008, p.18).

### 5.4 Health policy, national clinical guidelines, strategic plans and health legislation

Health policy, clinical guidelines, service plans, strategic plans and legislation influence the level of demand placed on nursing and midwifery hours within perioperative services. This demand can directly inform a number of service areas such as staffing numbers, quality standards, clinical protocols, infection prevention and control requirements and education/training requirements.

When developing a comprehensive service profile to manage both direct and indirect nursing and midwifery hours, refer to relevant health policy, national clinical guidelines, strategic plans and health legislation (see Section 8).

### 5.5 Quality and safety

Quality and safety activities within perioperative environments are primarily governed by organisational policy and legislation. The productive hours of your service will be influenced by quality and safety, however the distribution of direct and indirect hours will depend on variables such as services delivered, staff skill mix required and location of your unit or practice area. Quality and safety concepts which can place demand on the number of productive nursing and midwifery hours required include:

- client safety
- staff safety
- mandatory/requisite training requirements
- policy development & review
- portfolios
- incident and near miss reporting and management

- workplace health and safety legislation
- infection monitoring and control.

As this is not an exhaustive list, a review of your local activities is recommended.

## 5.6 Service complexity

Measuring service complexity within perioperative services is a multifaceted process. Using only a quantitative approach to measure complexity is not always appropriate due to the variability in client/customer cohorts and contexts of practice. The preferred approach combines the following information:

- quantitative information relating to changing client trends based on surgical complexity characteristics described within the Clinical Services Capability Framework (CSCF)
- qualitative information taken from professional judgment and experience
- reference to ACORN staffing standards.

Depending on the type of perioperative service, the impact of client complexity can be expressed by calculating the nursing and midwifery hours required to manage the workload of the service. Terms such as Nursing Hours per Occasion of Service (NHPOS), Nursing Hours per Activity Unit (NHPAU) or Nursing Hours per Patient Day (NHPPD) can be used to quantitatively describe service complexity. Refer to the BPF manual (2008, p. 55) for more information relating to complexity/acuity levels.

Figure 5.6 provides examples of complexity identifiers suitable for trending in perioperative services. This is not an exhaustive list and as such individual programs and services should identify the client/customer complexity identifiers relevant to their area.

### Figure 5.6: Perioperative complexity identifier examples

(Source: Clinical Services Capability Framework, Version 3.0, Queensland Health 2010)

Client Complexity Identifiers	Surgical Complexity Identifiers
Diagnosis	Surgical complexity I (SCI)
Stage of illness	eg. local anaesthetic for removal of lesions
Co-morbidities/client risk factors	Day surgery for SCI
Client demographic (neonatal/paediatric/obstetric)	Surgical complexity II (SCII)
Level of intervention	eg. local anaesthetic and/or sedation for excision of lesions
Intervention type (minor/major)	Day surgery for SCII
American Society of Anaesthesiologist (ASA) classification	Surgical complexity III (SCIII)
Type of anaesthesia	eg. general anaesthesia for inguinal hernia
Skill mix level required	Day surgery III
Weighted Activity Units	Surgical complexity IV (SCIV)
Expected time allocation	eg. general anaesthesia for abdominal surgery such as laparotomy
Population risk factors	Surgical complexity V (SCV)
	eg. general anaesthesia for any major or complex surgery

## 5.7 Service activity

There are a number of ways to measure service activity within perioperative environments. Most methods involve counting the number of service sessions delivered (eg. operations), total operating minutes, and/or the number of clients accessing a service. Collectively, activity measurements are often described as an 'occasion of service' or 'activity unit'. The method/s chosen to measure activity in your area will depend on the type of service/s

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provided, funding models and data collection systems. To gain a thorough understanding of measuring and reporting activity in your service, you should collaborate with executive management and business teams. Commonly used service activity measures in perioperative services are:

- number of admissions
- number of discharges
- number and size of waiting list/s
- number of sterilised items processed
- number of operations
- number of day surgery cases
- Weighted Activity Units (WAUs)
- operating room usage
- occasions of service.

Please note this is not an exhaustive list as each individual service will experience different circumstances.

Additional descriptors about service accessibility, activity targets, waiting lists and scheduling arrangements can also be used to complement the primary activity data being collected. Including relevant primary and secondary activity data within the environmental analysis section of your service profile will help you calculate the productive nursing and midwifery hours required.

## **5.8 Models of care/service delivery**

The demand placed on nursing and midwifery hours within perioperative services is affected by the model of care and/or service delivery model used. Describing how a model of care or service delivery model influences the productive hours within your unit or practice is important when validating the hours required.

Any changes to the model of care or service delivery model will require an impact assessment on nursing and midwifery hours relating not only to the hours themselves but also the clinical skill required to deliver them. Impact assessments should review factors relevant to your service including, but not limited to, the healthcare setting, internal health providers (eg. multidisciplinary teams) and external providers (eg. Visiting Medical Officers).

When developing your annual service profile, review and evaluate the model of care and service delivery model in relation to the nursing and midwifery hours and skill mix required.

## **5.9 Leadership and management**

The leadership and management structure within your perioperative unit or practice impacts on the level of demand placed on productive nursing and midwifery hours. Leadership and management roles are closely linked with local service delivery models and organisational strategic directions. Common leadership and management demand considerations include:

- skill requirements of leaders/managers
- service accountabilities and responsibilities

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- human resource management (e.g. recruitment, succession planning, business planning)
- organisational involvement (e.g. committees, networking)
- organisational culture
- staffing profile (e.g. categories, scope of practice, training and skills)
- interactions with multi-disciplinary team members.

The type and level of influence from leadership and management demands will depend on a number of factors which may vary throughout the year. Review your local leadership and management structure on a regular basis.

### 5.10 Research and evidence based practice

Research and evidence based practice is essential to improve the standards of care that will produce better health outcomes for clients. Undertaking research and evidence based practice activities influences the number of indirect nursing and midwifery hours required for service delivery. Nursing and midwifery hours committed to trialling new technology, clinical practices and medication as well as policy development and review need to be considered.

Include research and evidence based practice demands in your service profile by:

- assigning an average allocation of nursing hours to research and evidence based practice within your regular roster or
- accumulating hours for use during a designated period within the financial year.

### 5.11 Education and service capacity developers

The demand on nursing and midwifery hours within perioperative services is influenced by educational requirements and service capacity developers. Organisational policy, health registration boards and legislation provide guidelines on the level of influence these demands will have on your service. For example, Queensland Health's reprocessing of reusable medical devices and surgical products standard influences the number of productive hours required for staff training by instructing all reprocessing staff to undergo formal training and annual workplace skills assessments. Local human resource functions such as recruitment, orientation, induction programs, succession planning and rostering will also impact the number of nursing and midwifery hours required within your service. The correct allocation of indirect hours within the total productive hours calculations will ensure adequate nursing and midwifery coverage is achieved for your healthcare service.

Individual units or practices should assess the level of influence these demands have on a yearly basis or whenever a change in service delivery occurs.

### 5.12 Environmental management

Perioperative environments are expansive and deliver a diverse range of health services in settings ranging from admission centres to operating rooms. Effective and efficient environmental management of these services minimises risk to clients and staff while supporting workflow. The time committed by staff to manage these environments effectively and how these hours are allocated and documented should be considered. All

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quantitative and qualitative information regarding environmental management activities should be included when calculating the productive nursing and midwifery hours for your service. Environmental management considerations which may directly or indirectly influence the level of demand on your service include:

- number of operating rooms
- number of post anaesthetic bays
- number of services provided in secondary locations
- number of perioperative services provided (eg. pain service, central sterilising department, day of surgery unit)
- number of support services (eg. operational services)
- physical layout of perioperative service
- infection monitoring and control standards
- workflow patterns
- leadership and management structure
- access to third party service providers (eg. waste management).

As this list is not exhaustive, a review of your local activities is recommended.

### **5.13 Technology and materials management**

The demands produced by technology and materials management are generated by similar factors as environmental management. Large numbers of diverse services will produce a corresponding need for technology and materials management. The standard of technology and equipment management will influence client outcomes so be sure to include and document the productive nursing and midwifery hours associated with this demand. Common demand considerations associated with technology and material management include:

- policy and procedures for management of equipment and materials
- maintenance and upgrade schedules for equipment and software programs
- participation in purchasing new equipment and instrumentation
- participation in trialling new products and equipment
- staff training, education and competency acquirement
- consideration of infection control, workplace health and safety, Therapeutic Goods Administration (TGA) approval and reprocessing requirements.

## **6.0 Business planning considerations**

Factors a service should consider when analysing the internal and external environment as part of service profile development are outlined in the BPF manual (2008, p.18-27). Specialty services incorporated into the perioperative sector will experience fluctuations in the level of influence from these factors and will need to adapt their services based on changes in the internal and external environments.

Units or practices should annually assess the impact of internal and external factors on their environment and make the necessary adjustments to the allocation of nursing and midwifery hours. Document the type and level of impact each demand consideration has on nursing and midwifery workloads in the service profile to support the calculation of productive hours.

Figure 6.1 provides examples of several business planning considerations relevant to perioperative services based on recognised internal and external influences.

#### Internal factors

1. Structural
2. Human resource management
3. Information technology
4. Performance

#### External factors

1. Policy/legal
2. Economic factors
3. Social factors
4. Technological factors
5. Research and evidence based practice

**Figure 6.1: Business planning considerations for perioperative services**

Influences (internal and external)	Service impact	Examples of workload management considerations
<b>Locality of service (Internal)</b> (Metropolitan, regional, rural and remote)	The locality, type and catchment area of a service will influence the balance of service demand and supply.  <i>Examples:            Rural and remote perioperative services need to consider the workload impacts of delivering care in isolated communities.</i>	<b>Direct nursing and midwifery hours:</b> Calculation of clinical hours for direct care, allocation of clinical hours (rosters), selection of service activity/acuity measures, use of minimum safe staffing requirements
<b>Type of service (Internal)</b> (Operating room, recovery, anaesthetics, interventional, trauma, sterilising, acute pain, day surgeries, surgery coordination, preadmission, admission, assets management, clinical consumables and tele-medicine)	<i>Perioperative services should consider how their context of practice impacts workload management.</i>  <i>All services need to consider the impact of skill mix on optimal service delivery.</i>	<b>Indirect nursing and midwifery hours:</b> Calculation of clinical hours for indirect care, travel, program or service based education, succession planning, quality activities and research
<b>Catchment area (Internal)</b> (Local health and hospital networks versus statewide services)		<b>Workforce planning:</b> Development of strategic local and statewide workforce plans to inform fulltime equivalent requirements, skill mix profiles and macro workforce planning formulas.
<b>Nursing and midwifery structure (Internal)</b> (Roles, functions, accountabilities and relationships between all categories of nursing and midwifery staff)	The model of care selected for a service will influence the nursing and midwifery and support structures required. Nursing and midwifery roles and how they relate with other clinical roles will impact on the balance of service demand and supply.  <i>Examples:            In perioperative teams, nursing and midwifery roles can be categorised by the skills required such as surgical assistant, anaesthetic nurse, circulating nurse, instrument nurse, post anaesthetic recovery nurse and client assessment and education nurse. To accommodate the wide range of skills required a level of</i>	<b>Direct nursing and midwifery hours:</b> Calculation of clinical hours for direct care provided in and outside the service, position classifications for the clinical hours required, allocation of clinical hours (rosters), selection of optimal service activity/acuity measures, safe staffing levels.
<b>Support structure (Internal)</b> (Providing support to other services and/or receiving support from other services)		<b>Indirect nursing and midwifery hours:</b> Calculation of clinical hours for non-direct care networking/collaboration (internal and external) travel, staff training, professional development, quality activities and research.

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<p><b>Model of care (Internal)</b> (Multi-functional teams)</p>	<p><i>flexibility in role description is necessary which can impact on the number of nursing and midwifery staff employed and their workloads.</i></p> <p><i>Within rural and remote communities access and/or support from other services may be limited. Nurses and midwives within these environments are required to practice autonomously at an advanced level. The classification of positions within these communities will reflect this requirement.</i></p> <p><i>The accessibility and level of support available to and from other services will vary between services which impacts the nursing and midwifery hours required.</i></p>	<p><b>Workforce planning:</b> Development of role descriptions and skill mix profiles suitable for the context of practice (internal and external) to the service. Devising operational and organisational structures to support staff in applying the chosen model of care. Development of operational workforce plans to inform fulltime equivalent requirements and macro workforce planning formulas.</p>
<p><b>Policy/legal factors (External)</b></p>	<p>Changes in health policy and legislation will influence service delivery and staff requirements. Common change drivers include governments (commonwealth/state), licensing organisations, professional and industrial groups.</p> <p><i>Examples:</i></p> <ul style="list-style-type: none"> <li>• <i>Legislation e.g. workplace health and safety</i></li> <li>• <i>Commonwealth health reform</i></li> <li>• <i>Queensland Health strategic plan</i></li> </ul>	<p><b>Direct nursing and midwifery hours:</b> Calculation of clinical hours for direct care (based on available funding), position classifications for the clinical hours required, registration commitments for clinical hours, allocation of clinical hours (rosters), selection of optimal service activity/acuity measures, and use of minimum staffing requirements.</p>
<p><b>Economic factors (External)</b></p>	<p>Funding policies, the national economy and the interface between public and private health care providers will influence the delivery of perioperative services and the number of staff required.</p> <p><i>Examples:</i> <i>Service improvement initiatives (eg. waitlist reductions) provide non-recurrent funding increases for services which achieve the targeted results. These incentives impact the skill and number of nurses/midwives required for service delivery.</i></p>	<p><b>Indirect nursing and midwifery hours:</b> Calculation of hours for indirect and non-productive activities such as policy development, business planning, service interfaces, travel, staff training, professional development, quality activities and research.</p>
<p><b>Social/population factors (External)</b></p>	<p>Population demographics and community expectations will impact on the types of perioperative services offered, how the services are offered, staffing numbers and skill mix required for service delivery.</p> <p><i>Examples:</i> <i>A community with a high proportion of non-English speaking people will impact the number and type of clinical hours required to deliver healthcare services.</i></p>	<p><b>Workforce planning:</b> Development of role descriptions and skill mix profiles suitable for the context of practice (internal and external) to the service.  Devising operational and organisational structures to support staff in applying the chosen model of care.  Development of operational workforce plans to inform fulltime equivalent requirements and macro workforce planning formulas.</p>

## 7.0 Information systems and collections

Accessing relevant information for your perioperative service is imperative when applying the principles of the BPF. Information systems such as operating room management information system (ORMIS), ERIC, automated anaesthetic records keeper (AARK), hospital based corporate information system (HBCIS), enterprise discharge system (EDS), Primary Related Incident Management and Evaluation System (PRIME) and Decision Support System (DSS) provide a wide range of information about consumers, workforce and service performance which assist service profile development. Systems such as AARK and HBCIS collect and store client information from a number of sources and are able to collate reports about service activity, client complexity and health outcomes. Figure 7.1 outlines the main information systems suitable for business planning in perioperative services.

**Figure 7.1: Perioperative services information systems**

Information system	Purpose	Informs
Operating Room Management Information System (ORMIS)	ORMIS is the Queensland Health enterprise system designed to assist staff in the management and operational efficiency of the operating room. This system provides an electronic clinical pathway for client undergoing elective and emergency surgery, assists in the scheduling of theatre lists and provides clinical and theatre use reports. <a href="http://qheps.health.qld.gov.au/loganb/itsys/chims-home.htm">http://qheps.health.qld.gov.au/loganb/itsys/chims-home.htm</a>	<ul style="list-style-type: none"> <li>• Activity</li> <li>• Workforce</li> <li>• Services</li> <li>• Performance</li> <li>• Client complexity</li> <li>• Funding</li> </ul>
Hospital Based Corporate Information System (HBCIS)	Queensland Health's enterprise patient administration system, capturing and managing both admitted and non admitted patient, clinical, administrative and financial data. <a href="http://qheps.health.qld.gov.au/id/">http://qheps.health.qld.gov.au/id/</a>	<ul style="list-style-type: none"> <li>• Activity</li> <li>• Workforce</li> <li>• Services</li> <li>• Performance</li> <li>• Client demographics</li> <li>• Referral/waitlist</li> <li>• Financial reporting</li> </ul>
* modules relevant to perioperative services		
* Elective Admissions Management (HBCIS module)	This module provides functionality to place prospective patients on a waiting list, book expected admission dates for those patients and maintain prospective patient details until they are admitted.	
* Theatre Management System (HBCIS module)	This module provides a comprehensive and flexible theatre booking, operations register and reporting package. It has the capability to schedule and reorganise bookings for sessions, theatres and surgeons. The system can compile theatre utilisation statistic and produce a range of reports.	
ERIC Record System (note this is not an acronym)	Primarily is a storage and retrieval system. ERIC is a step towards progression to the electronic medial health record. It combines electronically converted images of paper records and up to date data interfaced from clinical system. <a href="http://qheps.health.qld.gov.au/loganb/itsys/eric-about.htm">http://qheps.health.qld.gov.au/loganb/itsys/eric-about.htm</a>	<ul style="list-style-type: none"> <li>• Activity</li> <li>• Workforce</li> <li>• Services</li> <li>• Performance</li> <li>• Client complexity</li> </ul>
Automated Anaesthetic (Perioperative) Record Keeper (AARK)	AARK spans the entire perioperative patient journey from pre-admission, through operating theatres and procedure rooms, to post-anaesthetic care units and acute pain services. It enables all relevant patient information to be collated into a standardised anaesthetic record of patient care. <a href="http://qheps.health.qld.gov.au/aark/home.htm">http://qheps.health.qld.gov.au/aark/home.htm</a>	<ul style="list-style-type: none"> <li>• Activity</li> <li>• Client complexity</li> <li>• Client trends</li> <li>• Performance</li> <li>• Client outcomes</li> </ul>
Queensland Hospital Admitted Patient Data Collection (QHAPDC)	The QHAPDC is the morbidity collection for all patients who have been admitted and separated from a hospital in Queensland. The information collected is used to manage, plan. Research and fund facilities at a local state and national level. <a href="http://qheps.health.qld.gov.au/hic/dsu_collections.htm">http://qheps.health.qld.gov.au/hic/dsu_collections.htm</a>	<ul style="list-style-type: none"> <li>• Activity</li> <li>• Client complexity</li> <li>• Client trends</li> <li>• Performance</li> <li>• Client outcomes</li> <li>• Funding</li> </ul>
Enterprise Discharge Summary (EDS)	The EDS application uses information from a number of existing Queensland Health specialist systems to create a legible, consistent, electronic discharge summary. It	<ul style="list-style-type: none"> <li>• Client trends</li> <li>• Client complexity</li> <li>• Client outcomes</li> </ul>

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	allows the summary to be delivered electronically to general practices in a secure, timely and standardised format. <a href="http://qheps.health.qld.gov.au/eds/home.htm">http://qheps.health.qld.gov.au/eds/home.htm</a>	<ul style="list-style-type: none"> <li>• Performance</li> </ul>
Primary Related Incident Management and Evaluation System (PRIME)	Management of clinical incidents and health care complaints <a href="http://connect.health.qld.gov.au/prime/">http://connect.health.qld.gov.au/prime/</a>	<ul style="list-style-type: none"> <li>• Performance</li> <li>• Service safety</li> <li>• Client outcomes</li> </ul>
Decision Support System (DSS Panorama)	Provides summary data reports displaying aggregate expenditure, budgets, variances and balances for cost centres and account codes for services. Reports are available for agency use, overtime, leave/ absenteeism, position occupancy and work centres. <a href="http://dss.health.qld.gov.a.u/">http://dss.health.qld.gov.a.u/</a>	<ul style="list-style-type: none"> <li>• Workforce</li> <li>• Expenditure</li> <li>• Performance</li> </ul>

Use reports derived from information systems and data collections as part of the environmental analysis of your service and reference them within your service profile.

Current information systems may not capture all the data required to conduct a comprehensive environmental analysis of your nursing and midwifery service. In this situation, locally designed data collection tools such as a demand driven workforce (DDW) database can be used to collect service demand data specific to your area. If developing local spreadsheets, allocate time for this activity within your productive hours and adhere to data collection standards and all relevant Queensland Health policies regarding information management. All data sources must be referenced and available for review by other team members involved in business planning, have senior management approval and be included in the calculation of productive clinical hours.

Data collection supports the measurement of service performance, both financially and non-financially. As per the BPF manual (2008, p.87), a balance scorecard uses service objectives and relevant measurements to monitor the progress of performance within a service. A balance scorecard allows comparisons to be made with other services and highlights both successful and unsuccessful performance trends. Key performance indicators within the balances scorecard should be linked with service objectives based on clients, staff and the greater organisation. Key performance indicators suitable for perioperative services are listed in Figure 7.2.

**Figure 7.2: Performance indicator examples for perioperative services**

Client indicators	Staff indicators	Service/organisation indicators
Access to services	Absenteeism	Activity/occupancy
Average length of stay	Attrition rates	Budget integrity
Appropriate analgesia provided	Competency compliance	Costs per WAU
Complement and complaints	Education hours	Leave usage/accumulation
Completed discharge summaries (time framed)	New - established staff ratio	NHPPD/NHPOS/NHPAU
Education provided	Re-deployment	Policy compliance
Incidents (e.g. medication, injury)	Staff satisfaction survey	Quality and safety initiatives/ audits
Infection rates	Perioperative qualifications	Research activities
Follow up appointments	Workcover claims	Skill mix profile
Waiting times – Elective/non-elective	Workload grievances	Workforce data – vacancy rates

## 8.0 Reference documents for perioperative services

Reference documents can originate from local, state, national and international sources and are authored by organisations such as healthcare services, governments, specialist interest groups, colleges and universities. References are important in validating the delivery of any service and are often useful when planning and/or managing change in any healthcare environments.

A number of reference sources are available to guide and support the development of service profiles in perioperative services. The suitability of reference sources will depend on your individual area and should be selected on the level of influence they have on the service delivery. For example, documents based on legislation will have the highest level of influence as they are mandated by law. Figure 8.1 lists reference sources appropriate for business planning in perioperative services.

**Figure 8.1: Perioperative business planning reference sources**

Queensland Health reference sources
Access Improvement Service <a href="http://qheps.health.qld.gov.au/chi/AIS">http://qheps.health.qld.gov.au/chi/AIS</a>
Centre for Healthcare Related Infection Surveillance and Prevention (CHRISP) <a href="http://www.health.qld.gov.au/chrisp/default.asp">http://www.health.qld.gov.au/chrisp/default.asp</a>
Clinical Services Capability Framework version 3.0 <a href="http://www.health.qld.gov.au/cscf/default.asp">http://www.health.qld.gov.au/cscf/default.asp</a>
Elective Surgery Services Policy <a href="http://qheps.health.qld.gov.au/policy/docs/pol/qh-pol-342.pdf">http://qheps.health.qld.gov.au/policy/docs/pol/qh-pol-342.pdf</a>
Organ and Tissue Donation after Cardiac Death Policy <a href="http://qheps.health.qld.gov.au/policy/docs/pol/qh-pol-329.pdf">http://qheps.health.qld.gov.au/policy/docs/pol/qh-pol-329.pdf</a>
Overtime Human Resources Policy <a href="http://www.health.qld.gov.au/qhpolicy/docs/pol/qh-pol-185.pdf">http://www.health.qld.gov.au/qhpolicy/docs/pol/qh-pol-185.pdf</a>
Prevention and Control of Healthcare Associated Infection (HAI) Implementation Standard <a href="http://www.health.qld.gov.au/qhpolicy/docs/imp/qh-imp-321-1.pdf">http://www.health.qld.gov.au/qhpolicy/docs/imp/qh-imp-321-1.pdf</a>
Queensland Health Procurement Procedures <a href="http://qheps.health.qld.gov.au/policy/docs/pcd/qh-pcd-044-1.pdf">http://qheps.health.qld.gov.au/policy/docs/pcd/qh-pcd-044-1.pdf</a>
Queensland Health Reprocessing of Reusable Medical Devices and Surgical Products Standard <a href="http://www.health.qld.gov.au/qhpolicy/docs/imp/qh-imp-321-2.pdf">http://www.health.qld.gov.au/qhpolicy/docs/imp/qh-imp-321-2.pdf</a>
Queensland Health Strategic Plan for Multicultural Health 2010-2011 <a href="http://www.health.qld.gov.au/multicultural/policies/policies_plans.asp">http://www.health.qld.gov.au/multicultural/policies/policies_plans.asp</a>
Queensland Health Patient Safety and Quality Plan 2008 – 2012 <a href="http://www.health.qld.gov.au/psq/governance/docs/s&amp;q_patient_plan_v4.pdf">http://www.health.qld.gov.au/psq/governance/docs/s&amp;q_patient_plan_v4.pdf</a>
Queensland Health Strategic Plan 2011-2015 <a href="http://www.health.qld.gov.au/about_qhealth/strat_plan/strat-plan2011-15.pdf">http://www.health.qld.gov.au/about_qhealth/strat_plan/strat-plan2011-15.pdf</a>
Radiation Safety Act 1999 – Application and Licence Fees – ‘Use’ Licenses Human Resource Policy <a href="http://www.health.qld.gov.au/qhpolicy/docs/pol/qh-pol-209.pdf">http://www.health.qld.gov.au/qhpolicy/docs/pol/qh-pol-209.pdf</a>
Surgical Safety Checklist Policy <a href="http://qheps.health.qld.gov.au/policy/docs/pol/qh-pol-332.pdf">http://qheps.health.qld.gov.au/policy/docs/pol/qh-pol-332.pdf</a>
Time Off in Lieu Human Resource Policy <a href="http://www.health.qld.gov.au/qhpolicy/docs/pol/qh-pol-244.pdf">http://www.health.qld.gov.au/qhpolicy/docs/pol/qh-pol-244.pdf</a>
State reference sources
Anti-Discrimination Act 1991 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/A/AntiDiscrimA91.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/A/AntiDiscrimA91.pdf</a>
Child Protection Act 1999 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/C/ChildProtectA99.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/C/ChildProtectA99.pdf</a>
Child Protection (Offender Reporting) Act 2004 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/C/ChildProtORA04.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/C/ChildProtORA04.pdf</a>
Child Protection Regulation 2000 <a href="http://www.legislation.qld.gov.au/Search/">http://www.legislation.qld.gov.au/Search/</a>

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Coroners Act 2003 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/C/CoronersA03.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/C/CoronersA03.pdf</a>
Environmental Protection Act 1994 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/E/EnvProtA94.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/E/EnvProtA94.pdf</a>
Environmental Protection (Waste Management) Regulation 2000 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/E/EnvProtWaMR00.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/E/EnvProtWaMR00.pdf</a>
Guardianship and Administration Act 2000 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/G/GuardAdminA00.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/G/GuardAdminA00.pdf</a>
Health (Drugs and Poisons) Regulation 1996 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/H/HealDrAPoR96.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/H/HealDrAPoR96.pdf</a>
Health and Hospitals Network Act 2011 <a href="http://www.legislation.qld.gov.au/LEGISLTN/ACTS/2011/11AC032.pdf">http://www.legislation.qld.gov.au/LEGISLTN/ACTS/2011/11AC032.pdf</a>
Health Practitioners Regulation National Law Act 2009 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/H/HealthPracRNA09.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/H/HealthPracRNA09.pdf</a>
Health Service Act 1991 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/H/HealthServA91.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/H/HealthServA91.pdf</a>
Industrial Relations Act 1999 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/I/IndustRelA99.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/I/IndustRelA99.pdf</a>
Nurses and Midwives (Queensland Health) Certified Agreement (EB7) 2009 <a href="http://www.health.qld.gov.au/eb/documents/eb7_nurses_final.pdf">http://www.health.qld.gov.au/eb/documents/eb7_nurses_final.pdf</a>
Power of Attorney Act 1998 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/P/PowersofAttA98.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/P/PowersofAttA98.pdf</a>
Private Health Facilities Act 1999 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/P/PrivatHeaFacA99.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/P/PrivatHeaFacA99.pdf</a>
Public Health Act 2005 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/P/PubHealA05.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/P/PubHealA05.pdf</a>
Public Sector Ethics Act 1994 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/P/PublicSecEthA94.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/P/PublicSecEthA94.pdf</a>
Queensland Health Nurse and Midwives Award – State 2011 <a href="http://www.qirc.qld.gov.au/resources/pdf/awards/q/q0090_160311.pdf">http://www.qirc.qld.gov.au/resources/pdf/awards/q/q0090_160311.pdf</a>
Radiation Safety Act 1999 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/R/RadiatSafA99.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/R/RadiatSafA99.pdf</a>
Right to Information Act 2009 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/R/RightInfoA09.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/R/RightInfoA09.pdf</a>
Transplantation and Anatomy Act 1979 <a href="http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/T/TransplAAnatA79.pdf">http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/T/TransplAAnatA79.pdf</a>
Workplace Health and safety Act 1995 <a href="http://www.legislation.qld.gov.au/LEGISLTN/ACTS/1995/95AC025.pdf">http://www.legislation.qld.gov.au/LEGISLTN/ACTS/1995/95AC025.pdf</a>

### National reference sources

Aboriginal and Torres Strait Islander Health Performance Framework <a href="http://www.health.gov.au/internet/main/publishing.nsf/Content/oatsih_health-performanceframework">http://www.health.gov.au/internet/main/publishing.nsf/Content/oatsih_health-performanceframework</a>
Australian and New Zealand College of Anaesthetists (ANZCA) <a href="http://www.anzca.edu.au/">http://www.anzca.edu.au/</a>
Australian Bureau of Statistics <a href="http://www.abs.gov.au/ausstats">http://www.abs.gov.au/ausstats</a>
Australian College of Operating Room Nurses (ACORN) Standards <a href="http://www.acorn.org.au">http://www.acorn.org.au</a>
Australian Day Surgery Nurses Association <a href="http://www.adsna.info/">http://www.adsna.info/</a>
Australian Government Department of Health and Ageing Website <a href="http://www.health.gov.au/internet/main/publishing.nsf/Content/Aged+care+services-1">http://www.health.gov.au/internet/main/publishing.nsf/Content/Aged+care+services-1</a>
Australian Institute of Family Studies <a href="http://www.aifs.gov.au/">http://www.aifs.gov.au/</a>
Australian Institute of Health and Welfare <a href="http://www.aihw.gov.au/">http://www.aihw.gov.au/</a>
Australian Safety and Quality Framework for Health Care <a href="http://www.safetyandquality.gov.au/internet/safety/publishing.nsf/Content/NSQF">http://www.safetyandquality.gov.au/internet/safety/publishing.nsf/Content/NSQF</a>
Australian Society of Anaesthetists <a href="http://www.asa.org.au/asa">http://www.asa.org.au/asa</a>
Department of Health and Ageing Elective Surgery Waiting List Reduction Plan <a href="http://www.health.gov.au/internet/main/publishing.nsf/content/elective-surgery">http://www.health.gov.au/internet/main/publishing.nsf/content/elective-surgery</a>

This addendum is a complementary document to the industrially endorsed *Business Planning Framework: a tool for nursing workload management* (2008) and does not represent change to existing organisational policy.

Gastroenterological Nurses College of Australia

<http://www.genca.org/>

Nursing and Midwifery Board of Australia (Australian Health practitioner Regulation Agency - APHRA)

<http://www.nursingmidwiferyboard.gov.au/>

Workplace Relations Act 1996

<http://www.workplace.gov.au/workplace/Publications/Legislation/WRAAct/>

### International reference sources

Association of Perioperative Registered Nurses (AORN)

<http://www.aorn.org/>

American Society of Anaesthesiologists (ASA)

<http://www.asahq.org/>

## 9.0 Business planning for perioperative services

Before deciding on the number and skill mix of nursing and midwifery staff, calculating the total productive hours required for your unit or practice area is essential. The BPF manual (2008, p.46-84) recommends following the seven steps below when establishing your total nursing and midwifery operating budget:

- Step 1 Calculate total productive nursing and midwifery hours**
- Step 2 Calculate total annual productive nursing and midwifery hours required**
- Step 3 Determine skill mix/category of the nursing and midwifery hours**
- Step 4 Convert productive nursing and midwifery hours into full-time equivalents (FTE)**
- Step 5 Calculate non-productive nursing and midwifery hours**
- Step 6 Convert FTEs into dollars**
- Step 7 Allocate nursing and midwifery hours to service requirements**

These seven steps are explained in detail within this section.

### 9.1 Step 1: Calculate total productive nursing and midwifery hours

When calculating the total productive nursing and midwifery hours required within your unit or practice area, consider client complexity and service activity. A definite or expected change in either client complexity and/or service activity should be highlighted in the environmental analysis section of the service profile as it may result in variations to the number or type of nursing and midwifery hours needed.

The BPF manual (2008) provides examples of four possible methods to assist in determining the productive hours for your service:

1. Historical payroll or rostering information
2. Applying a base staffing model (e.g. minimum safe staffing levels)
3. Benchmarking
4. Patient dependency systems.

The examples provided in this addendum and appendices use the following methods to calculate productive hours:

- base model staffing numbers, as recommended in the ACORN staffing standards
- payroll and rostering information.

Further information regarding productive hours calculations using benchmarking and patient dependency systems are available within the BPF manual (2008).



## Base model staffing numbers

Base staffing models can be used to establish the nursing and midwifery hours within perioperative services. Applying minimum safe staffing principles as outlined in reference documents such as the ACORN staffing standard and the CSCF assists perioperative managers to determine the productive hours required to meet service activity demands.

Identifying and analysing differences between predicted productive hours and actual paid productive hours will assist managers to effectively balance service supply and demand. It is also recommended that managers review historical payroll data, performance outcomes and quality standards relevant to both clients and staff when assessing the sufficiency of productive hours.

For services not using base staffing models, there are a number of other methods available to calculate the productive nursing hours required. To determine the best method/s for your service, review the productive hour formulas available within the BPF manual and select the process which complements the supply and demand indicators of your service. It is recommended that similar services within an organisation or district apply the same productive hours calculation method/s to improve the transparency, consistency and validity of workload management formulas.

Figure 9.2 demonstrates several methods of calculating productive hours in central sterilising departments (fictional examples).

**Figure 9.2 Methods of calculating productive hours in central sterilising departments**

Method	Example	
Calculating central sterilising nursing hours requirements as a percentage of surgical minutes <i>*based on local data</i>	Number of surgery hours 2010/11	426,462
	Ratio of CSD time to surgery hours (3%)	*0.03
	<b>Average Annual Productive Hours</b>	<b>12,794</b>
	<b>Average Annual Productive FTE</b>	<b>6.48</b>
Calculating central sterilising requirements based on average nursing hours per sterilising/anaesthetic load and loan trays <i>*based on local data and time and motion studies</i>	Average annual number of steriliser/ anaesthetic trays	3,120
	Average annual number of loan trays	*3,198
	Average annual nursing hours for steriliser/anaesthetic trays (2.87 nursing hours per tray)	*8,954.4
	Average annual nursing hours for loan trays (1.2 nursing hours per tray)	3,837.6
	<b>Average Annual Productive Hours</b>	<b>12,792</b>
<b>Average Annual Productive FTE</b>	<b>6.47</b>	
Calculating central sterilising requirements based on average nursing hours per agreed central sterilising activity (eg. reprocessing activities such as sorting, cleaning, checking, packages and documentation). <i>*based on local data and time and motion studies</i>	Average annual number of central sterilising activities	161,928
	Average minutes per central sterilising activity	*4.74
	Average annual nursing minutes for each activity	767,539
	<b>Average Annual Productive Hours</b>	<b>12,792</b>
	<b>Average Annual Productive FTE</b>	<b>6.47</b>

To achieve service efficiency in perioperative services direct clinical hours need to be balanced with indirect clinical hours. Historical payroll data does not distinguish between direct and indirect hours, therefore alternative data sources should be used to calculate the percentage of direct and indirect nursing and midwifery hours being used.

Information about use of indirect hours can be gathered from local records, patient dependency systems, education and training databases and organisational policies. Information about direct hours can be gained from theatre use, staffing rosters, overtime shifts and extra nursing and midwifery hours paid reports. Most data collected from these sources will be retrospective and will require further analysis to ascertain the level of impact, if any, on the allocation of nursing and midwifery hours in services applying base staffing models.

## **9.2 Step 2: Calculate total annual nursing and midwifery productive hours required**

After Step 1 is completed, you can calculate the total annual productive nursing and midwifery hours required. Review each individual perioperative areas separately as the staffing requirement for each area will differ due to the different service delivery methods. For instance, operating room sessions details, such as start and finish times, the number of sessions scheduled per day and the category of sessions (ie. half or full day) will influence the total number of productive nursing hours required.

*Example: A full day operating room session will require meal relief (30 minutes) to be included for each staff member. This translates to 1.75 hours of meal relief being required for one operating room using an average of 3.5 nursing staff. Whereas, two half day sessions scheduled at separate times during the day (morning and afternoon) will usually incorporate a break between sessions hence no meal relief is required to be organised for staff.*

Similarly, skill mix requirements and staff availability are variables which also influence the prioritisation, allocation and calculation of nursing and midwifery productive hours in perioperative services.

*Example: Perioperative services employing anaesthetic technicians will not require nursing hours to be allocated to anaesthetic support roles. Consequently, the total productive nursing hours required in this service will be different when compared to a service which employs only nursing staff in anaesthetic roles. Alternatively, there are specialty perioperative services which require additional staff to manage the demand generated by client complexity (ie. maternity and burns). In these circumstances, more nursing and/or midwifery hours will be required to deliver the service.*

The following total annual productive hours formulas have been selected based on the service delivery models used in the fictional example from Meadowlands Hospital outlined in Appendix B. Details outlining the influential variables in service delivery have been included to clarify the calculation of productive nursing hours.

### **Example 1: Calculating productive hours for the Meadowlands perioperative services**

#### **Admission Unit service details**

- Monday to Friday service
- Operating hours 0630-1600
- Pre-operative admission only, no post-operative services delivered
- No additional meal relief required
- Average nursing hours per client has been determined using historical data and benchmarking with similar services

This addendum is a complementary document to the industrially endorsed *Business Planning Framework: a tool for nursing workload management* (2008) and does not represent change to existing organisational policy.

<b>Monday to Friday – Admissions Unit (0630– 1600)</b>	
Number of <b>pre-op</b> clients per day (average)	34
Number of hours	9.5
Number of working days	251
<b>Average Nursing Hours per Client</b>	<b>0.5</b>
<b>Average Annual Productive Hours</b>	<b>4,267</b>
<b>Average Annual Productive FTE</b>	<b>2.16</b>

**Total annual productive hours**

= average no. clients per day x average nursing hours per client x no. working days

= 34 x 0.5 x 251

= 4,267 total annual productive hours required

**Operating Rooms (Monday to Friday) service details**

- Three operating rooms
- All day sessions only; meal relief required
- Monday to Friday services
- Operating hours 0730-1830; set up commencing at 0730 and clean up finishing by 1830
- Calculation of annual productive hours includes the rostering of clinical nurses, registered nurses, enrolled nurses and assistants in nursing
- Nurse required 1 x anaesthetic nurse, 1 x circulating nurse, 1 x instrument, 0.5 x nurse for education and supervision purposes

<b>Monday to Friday – Operating Rooms (0730-1830)</b>	
Number of operating rooms	3
Number of hours (allows 1 hour setup and clean up)	11
Number of working days	251
Number of staff per operating room (anaesthetic/circulating/instrument nurses)	3.5
Annual meal relief required (30 minutes per staff)	439.25
<b>Average Annual Productive Hours</b>	<b>29,429.75</b>
<b>Average Annual Productive FTE</b>	<b>14.89</b>

**Total annual productive hours**

= (no. operating rooms x no. operating hours x no. working days x no. of staff) + annual meal relief

= (3 x 11 x 251 x 3.5) + 439.25

= 29 429.75 total annual productive hours required

**Operating Rooms (Saturday) service details**

- Two operating rooms
- All day sessions only; meal relief required
- Saturday service only
- Operating hours 0730-1630; set up commencing at 0730 and clean up finishing by 1630
- Calculation of annual productive hours includes the rostering of clinical nurses, registered nurses, enrolled nurses and assistants in nursing
- Nurse required 1 x anaesthetic nurse, 1 x circulating nurse, 1 x instrument, 0.5 x nurse for education and supervision purposes

<b>Saturday – Operating Rooms (0800-1700)</b>	
Number of operating rooms	2
Number of hours (allows 1 hour setup and clean up)	9
Number of working days (Saturdays only)	52
Number of staff per operating room (anaesthetic/circulating/instrument nurses)	3.5
Annual meal relief required (30 minutes per staff)	91
<b>Average Annual Productive Hours</b>	<b>3,367</b>
Average Annual Productive FTE	1.70

**Total annual productive hours**

= (no. operating rooms x no. operating hours x no. working days x no. of staff) annual meal relief  
 = (2 x 9 x 52 x 3.5) + 91  
 = 3,367 total annual productive hours required

**Post Anaesthetic Care Unit (0800-2000) service details**

- Provides post-anaesthetic care for three operating rooms
- Monday to Friday service
- Operating hours 0800-2000; staffing hours distributed according to service activity demands
- Staffing formula outlines 1 x nurse per operating room plus 1 x extra nurse
- A minimum of 1 x competent post anaesthetic care nurse is required in the unit at all times
- Calculation of annual productive hours includes the rostering of clinical nurses, registered nurses, enrolled nurses and assistants in nursing
- No additional meal relief required

<b>Monday to Friday – Post Anaesthetic Care Unit (0800 – 2000)</b>	
No. of hours	12
No. of working days	251
No. of Staff (1 per operating room + 1 extra)	4
<b>Average Annual Productive Hours</b>	<b>12,048</b>
<b>Average Annual Productive FTE</b>	<b>6.10</b>

**Total annual productive hours**

= no. operating hours x no. working days x no. of staff  
 = 12 x 251 x 4  
 = 12 048 annual productive hours required

**Post Anaesthetic Care Unit (0800-1700) service details**

- Provides post-anaesthetic care for three operating rooms
- Saturday service only
- Operating hours 0800-1700; staffing hours distributed according to service activity demands
- Staffing formula outlines 1 x nurse per operating room plus 1 x extra nurse
- A minimum of 1 x competent post anaesthetic care nurse is required in the unit at all times
- A minimum of 2 nurses are required whenever there is a client in the unit
- Calculation of annual productive hours includes the rostering of clinical nurses, registered nurses, enrolled nurses and assistants in nursing
- No additional meal relief required

<b>Saturday – Post Anaesthetic Care Unit (0800 – 1700)</b>	
No. of hours	9
No. of working Days	52
No. of Staff (1 per operating room + 1 extra)	3
<b>Average Annual Productive Hours</b>	<b>1,404</b>
<b>Average Annual Productive FTE</b>	<b>0.71</b>

**Total annual productive hours**

= no. operating hours x no. working days x no. of staff  
 = 9 x 52 x 3  
 = 1 404 annual productive hours required

**Holding Bay (0730 - 1830) service details**

- Provides an essential holding area
- Monday to Friday service only
- Operating hours 0800-1830
- A minimum of 1 x competent perioperative nurse is required in the bay

<b>Monday to Friday – Holding Bay (0730 – 1830)</b>	
Number of beds	1
No. of hours	11
No. of working days	251
<b>Average Annual Productive Hours</b>	<b>2,761</b>
<b>Average Annual Productive FTE</b>	<b>1.40</b>

**Total annual productive hours**

= no. beds x no. of hours x no. working days  
 = 1 x 11 x 251  
 = 2 761 annual productive hours required

**Central Sterilising Department (0800-1700) Service Details**

- Provides sterilising services for three operating rooms and other hospital units and wards
- Monday to Saturday service only
- Operating hours 0800-1700; staffing hours distributed according to service activity demands
- Nursing hours demand indicator are:
  - Average productive nursing hours per sterilising/anaesthetic load is 2.87 hours, based on local time and motion studies and;
  - Average productive nursing hours per loan tray is 1.2 hours, based on local time and motion studies
- Calculation of annual productive hours includes the rostering of clinical nurses, registered nurses, advanced practice enrolled nurses, enrolled nurses and assistants in nursing
- No additional meal relief required

<b>Monday to Saturday – Central Sterilising Department</b>	
Average annual number of steriliser/anaesthetic trays	3,120
Average annual number of loan trays	3,198
Average annual nursing hours per steriliser/anaesthetic trays	8,954.4
Average annual nursing hours per loan trays	3,837.6
<b>Average Annual Productive Hours</b>	<b>12,792</b>
<b>Average Annual Productive FTE</b>	<b>6.47</b>

Steriliser/anaesthetic trays

= annual no. steriliser/anaesthetic trays x average nursing hours per tray  
= 3,120 x 2.87  
= 8,954.4 annual productive hours required

Loan trays

= annual no. loan trays x average nursing hours per tray  
= 3,198 x 1.2  
= 3,837.6 annual productive hours required

#### Total annual productive hours

= Steriliser/anaesthetic trays annual productive hours + loan trays annual productive hours  
= 8,954.4 + 3,837.6  
= 12,792 annual productive hours required

#### Indirect roles and annual hours

Perioperative Services Indirect Roles and Annual Hours	
Nurse Unit Manager (1 FTE)	1,976
Clinical Facilitator (1 FTE)	1,976
Clinical Nurse: (2 FTE)	3,952
Clinical Nurse: Technology & Materials management (0.5FTE)	1,040
Clinical Nurse: Portfolio Time	416
Research and Evidence Based Practice	912
Assistant in Nursing (environmental and stock duties) (2.2 FTE)	4,348
<b>Average Annual Productive Hours</b>	<b>14,620</b>
<b>Average Annual Productive FTE</b>	<b>7.40</b>

#### Average total annual productive hours for Meadowlands perioperative services

= the sum of annual productive hours from all perioperative services  
= 4,267 + 29,429.75 + 3,367 + 12,048 + 1,404 + 2,761 + 12,792 + 14,620  
= 80,688.75 annual productive hours required

Data sources: DSS, HBCIS and local spreadsheets

### 9.3 Step 3: Determine the skill mix/category of nursing and midwifery staff

After you have calculated the annual productive nursing and midwifery hours, the next step is to determine the skill mix required to meet service demand by referring to your service profile. The BPF manual (2008, p.64) recommends reviewing the following when determining the skill mix for your service:

- analysis of client needs
- scope of each nursing and midwifery category
- desired health outcomes.

Once the needs and health outcomes for clients have been matched with nursing and midwifery skills, you can allocate clinical hours. The following example uses operational hours and service preferences to demonstrate this step.

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**Example 1: Meadowlands Perioperative Services Skill Mix Preferences****Nurse Unit Manager:** day shifts rostered Monday to Friday**Clinical Facilitator:** day shifts rostered Monday to Friday**Clinical Nurses:** 1 x CN rostered as team leader on morning and afternoon shifts Monday to Saturday, 1 x CN per operating room (50% of time) and 1 x CN central sterilising department and post anaesthetic care unit.**Registered Nurse/ Enrolled Nurse Advanced Practice/Enrolled Nurse:** covers designated requirements morning and afternoon shifts Monday to Saturday.**Assistant in Nursing:** undertakes operational duties morning and afternoon shifts Monday to Saturday shifts

Nurse Grades	Hours/week
Grade 7 (Nurse Unit Manager)	38.00
Grade 6 (Clinical Facilitator)	38.00
Grade 6 (Clinical Nurse/Clinical Midwife)	416.00
Grade 5 (Registered Nurse/Midwife)	720.00
Grade 4 (Enrolled Nurse Advanced Practice)	93.71
Grade 3 (Enrolled Nurse)	158.00
Grade 1 (Assistant in Nursing)	88.00
<b>Total</b>	<b>1,551.71</b>

**9.4 Step 4: Convert productive nursing hours into full-time equivalents (FTE)**

Expressing staffing requirements in terms of FTE allows comparison between services regarding their staffing requirements and associated costs. When determining the FTE numbers for your unit or practice area, you will need to know the nursing and midwifery hours required per **week** (calculated during step 3). To calculate the number of FTE required, use this formula:

$$\text{FTE} = \frac{\text{Number of hours worked per week}}{38}$$

**Example 1: Meadowlands Perioperative Services**

$$\frac{1,551.71 \text{ hours per week}}{38} = 40.83 \text{ FTE}$$

Nurse Grades	Hours/week	Weekly FTE (hours per week/38)
Grade 7 (NUM)	38	1.0
Grade 6 (Clinical Facilitator)	38	1.0
Grade 6 (Clinical Nurse/Clinical Midwife)	416	10.95
Grade 5 (Registered Nurse/Midwife)	720	18.95
Grade 4 (Enrolled Nurse Advanced Practice)	93.71	2.47
Grade 3 (Enrolled Nurse)	158	4.16
Grade 1 (Assistant in Nursing)	88	2.32
<b>Total</b>	<b>1,551.71</b>	<b>*40.85</b>

\* calculated to two decimal places

## 9.5 Step 5: Calculate non-productive nursing and midwifery hours

After the total productive FTE requirements have been determined, you can calculate the non-productive hours. Non-productive nursing and midwifery hours include all leave and mandatory training requirements and assists in the calculation of on-costs such as penalty payments and allowances.

To determine the leave replacement hours and costs associated with non-productive entitlements, you will need to convert the hours into a daily percentage. For example, over a year (52 weeks), a three shift full-time position will work 38 hours/week and be entitled to six weeks annual leave. To calculate the on-costs percentage for this position, you need to calculate the total annual nursing and midwifery hours by multiplying the hours worked per week by the weeks in a year.

$$\text{Total annual nursing and midwifery hours required} = 38 \text{ hours/week} \times 52 \text{ weeks/year} = 1976$$

To calculate the daily percentage, divide the nursing and midwifery hours worked per day by the annual nursing and midwifery hours and multiply this number by 100.

$$\text{Daily percentage per FTE} = (7.6 / 1976) \times 100 = 0.38\%$$

To determine the percentage cost for six weeks of annual leave, multiply the daily hours worked by the number of leave days and then divide that number by the total annual nursing and midwifery hours and multiply by 100.

$$\text{Annual leave percentage (6 weeks)} = (7.6 \times 30) / 1976 = 0.1154 \times 100 = 11.54\%$$

The tables below provide quick reference sources and examples of the on-costs calculations in your service. More examples are available in the BPF manual (2008, p.67-74).

### Non-productive daily percentages

Days	No. of hours	Percentage/FTE
1	7.6	0.38%
2	15.2	0.77%
3	22.8	1.15%
4	30.4	1.54%
5	38	1.92%
6	45.6	2.31%
7	53.2	2.69%
8	60.58	3.08%
9	68.4	3.46%
10	76	3.85%

### Non-productive multiplier percentages

Item	Amount	Percentage/FTE
Annual Leave	6 weeks	11.54%
	5 weeks	9.6%
	4 weeks	7.6%
Sick leave	Based on QH previous year average	4.00 *
Professional development	3 days	1.15%**
Penalties	Average of use within your service	24 %***

\* Example only - refer to your business team annually for the statewide sick leave average

\*\* Example only - refer to Queensland Health policy for the relevant professional development leave entitlements relevant to your service

\*\*\* Example only - refer to your business team annually for the average penalty percentage used within your service

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The process of calculating non-productive nursing and midwifery hours in FTE using service examples is provided below. For the broad purposes of this addendum, the examples offered include sick leave FTE in the total FTE. Transferring this practice to your area will depend on local recruitment strategies and business rules. It is recommended that you discuss these strategies with your nursing and midwifery and business.

### Example 1: Meadowlands Perioperative Services

Productive		Non-Productive					Total FTE
Grade	FTE	Annual Leave (5 weeks)	Sick Leave (4%)	Professional Development Leave (PDL) (1.15%)	Mandatory Training		
					Average 8 new staff headcount (4.23%)	Existing 40 staff headcount (1.92%)	
7	1.00	0.096	0.04	0.012			1.148
6	1.00	0.096	0.04	0.012			1.148
6	10.95	1.051	0.44	0.126			12.567
5	18.95	1.819	0.76	0.218	0.34	0.77	22.857
4	2.47	0.237	0.10	0.028			2.835
3	4.16	0.399	0.17	0.048			4.777
1	2.32	0.223	0.09	0.027			2.660
<b>Total</b>	<b>40.85</b>	<b>3.921</b>	<b>1.64</b>	<b>0.47</b>	<b>0.34</b>	<b>0.77</b>	<b>47.99</b>

Mandatory training is calculated based on headcount. In this example, the headcount for the unit has been set at 48 staff. The mandatory training FTE allocation has been incorporated into the grade 5 level as a recruitment strategy.

The following calculations can be applied to all grades of staff within the examples provided.

#### Calculation example for Grade 7 (1 FTE):

Annual Leave FTE = Productive FTE x Annual Leave (5 week) % = 1.0 x (9.6/100) = 0.096 FTE

Sick Leave FTE = Productive FTE x Sick Leave % = 1.0 x (4/100) = 0.04 FTE

Professional Development Leave FTE = Productive FTE x PDL% = 1.0 x (1.15/100) = 0.012 FTE

Total FTE = 1.15 (calculated to two decimal places)

#### Calculation example for Grade 5 (18.95 FTE):

Annual Leave FTE = Productive FTE x Annual Leave (5 week) % = 18.95 x (9.6/100) = 1.819 FTE

Sick Leave FTE = Productive FTE x Sick Leave % = 18.95 x (4/100) = 0.76 FTE

Professional Development Leave FTE = Productive FTE x PDL% = 18.95 x (1.15/100) = 0.218 FTE

Mandatory Training (11 day) = New staff headcount x 11 day % = 8 x (4.23/100) = 0.34 FTE

Mandatory Training (5 day) = Existing staff headcount x 5 day % = 40 x (1.92/100) = 0.77 FTE

Total FTE = 22.86 (calculated to two decimal places)

## 9.6 Step 6: Calculate total nursing and midwifery FTEs and convert into dollars

Calculating costs of the required nursing and midwifery FTE is essential when allocating resources during the business planning process. The BPF manual (2008) outlines two methods of converting the total nursing and midwifery FTEs required into a dollar value: nurse-by-nurse and averaging. Nurse-by-nurse uses the hourly rate of an individual's

grade and pay point to calculate the total costs whereas averaging involves using the average costs of a staff category. Refer to the BPF manual (2008, 71-73) for more information.

The example below uses the **averaging** method to determine the costs of the total nursing and midwifery FTE required, and is based on the fictional Meadowlands Hospital example. The annual base salary data used in this example is current as of September 2011.

### Example 1: Meadowlands Hospital Perioperative Service

Grade	Pay Point	FTE	Annual Base Salary per pay point
7	3	1.00	97,676
6	1	4.00	296,592
6	2	3.33	252,744
6	3	2.00	155,326
6	4	2.62	208,109
5	1	3.33	188,908
5	2	2.70	160,429
5	3	3.40	211,167
5	4	1.80	116,642
5	5	4.06	274,054
5	7	3.66	266,799
4	1	1.06	56,534
4	2	1.41	79,833
3	3	1.76	88,239
3	4	2.40	122,237
1	5	1.60	77,733
1	6	0.72	35,441
<b>Total</b>		<b>40.85</b>	<b>2,688,463</b>

**Step 1:** Calculate the costs of FTE required within your service by collecting information about the grade and pay points of all nursing and midwifery staff. Access the current annual base salary per pay point through QHEPS: [http://www.health.qld.gov.au/hrpolicies/wage\\_rates/nursing.asp](http://www.health.qld.gov.au/hrpolicies/wage_rates/nursing.asp)

Calculate the annual base salary of FTE per grade and pay point using the formula below:

Annual Base Salary = pay point per grade (\$) X FTE

Annual Base Salary = Grade 6.1 (\$74,148) x 4 FTE  
= \$296,592

**Step 2:** Determine the total annual base salary per grade by adding together the annual base salary of each grade and pay point. The total Annual Base Salary per grade can then be used to calculate the costs of nursing staff in Step 3.

Total Annual Base Salary/Grade 6 = Grade 6.1 (\$) + Grade 6.2 (\$) + Grade 6.3 (\$) + Grade 6.4 (\$)  
= \$296,592 + \$252,744 + \$155,326 + \$208,109  
= \$912,771

**Step 3:** Calculate the total cost for each grade by using the established multiplier percentages in section 9.5 of this addendum.

Productive		Non-Productive					Mandatory Training		Total \$
Grade	FTE	Annual Base Salary per Grade	Penalties @ 24% \$	Annual Leave (9.6%) \$	Sick Leave (4%) \$	Professional Development (1.15%) \$	Average 8 new staff (headcount) \$	Existing 40 staff (headcount) \$	
7	1.00	97,676	0	9,377	3,907	1,123			112,083
6	11.95	912,771	219,065	87,626	36,511	10,497			1,266,470
5	18.95	1,217,999	292,320	116,928	48,720	14,007	22,271	50,544	1,762,789
4	2.47	136,367	32,728	13,091	5,455	1,568			189,209
3	4.16	210,476	50,514	20,206	8,419	2,420			292,035
1	2.32	113,174	27,162	10,865	4,527	1,302			157,029
<b>Total</b>	<b>40.85</b>	<b>2,688,463</b>	<b>621,789</b>	<b>258,092</b>	<b>107,539</b>	<b>30,907</b>	<b>22,271</b>	<b>50,544</b>	<b>3,779,615</b>

This addendum is a complementary document to the industrially endorsed *Business Planning Framework: a tool for nursing workload management* (2008) and does not represent change to existing organisational policy.

**Total Cost for Grade 7 FTE:**

Penalties	= \$0 (nil required)
Annual Leave	= Annual Base Salary X 5 weeks leave % = \$97,676 X 0.096 = \$9,377
Sick Leave	= Annual Base Salary X Sick Leave % = \$97,676 X 0.04 = \$3,907
PD Leave	= Annual Base Salary X PDL % = \$97,676 X 0.0115 = \$1,123
Total Cost	= Annual Base Salary + Penalties + Annual Leave + Sick Leave + PDL = \$97,676+ \$0 + \$9,377 + \$3,907, \$1,123 = \$112,083

**Total Cost for Grade 5 FTE:**

Penalties	= Annual Base Salary x Penalties % = \$1,217,999 x 0.24 = \$292,320
Annual Leave	= Annual Base Salary X 5 weeks leave % = \$1,217,999 x 0.096 = \$116,928
Sick Leave	= Annual Base Salary X Sick Leave % = \$1,217,999 X 0.04 = \$48,720
PD Leave	= Annual Base Salary X PDL % = \$1,217,999 X 0.0115 = \$ 14,007
Mandatory training (new)	= $\frac{\text{Total Annual Base Salary All Grades}}{\text{Total FTE}}$ x Mandatory training % x No. new staff = $\frac{\$2,688,463}{40.85} \times 0.0423 \times 8$ = \$22,271
Mandatory training (existing)	= $\frac{\text{Total Annual Base Salary All Grades}}{\text{Total FTE}}$ x Mandatory training % x No. existing staff = $\frac{\$2,688,463}{40.85} \times 0.0192 \times 40$ = \$50,544

Total Cost for Grade 5 FTE = Annual Base Salary + Penalties + Annual Leave + Sick Leave + PDL + Mandatory training  
 = \$1,217,999 + \$292,320 + \$116,928 + \$48,720 + \$14,007 + \$22,271 + \$50,544  
 = \$1,762,789

## 9.7 Step 7: Allocate nursing and midwifery hours to service requirements

The final step in developing an operational budget for your service is to balance the supply of nursing and midwifery resources with the demands of the unit. The BPF manual (2008, p 75) recommends reviewing the following considerations when assessing the supply and demand trends of your service:

- time of day
- day of week
- seasons
- medical officer availability
- compulsory service closures
- other locally significant reasons such as tourism, industry and major community events.

The retrospective analysis of quantitative and qualitative data relating to service demand and supply will be necessary. Reviewing monthly activity trends such as occasions of service will help to reveal peak periods. Historical data regarding the actual nursing and midwifery hours used per month is also useful when allocating hours to future requirements. While some areas will experience significant variations in service demand and supply throughout a year, others will find minimal changes within their service. For this reason, a thorough environmental analysis is recommended to provide a comprehensive overview of the demand and supply variables within your service.

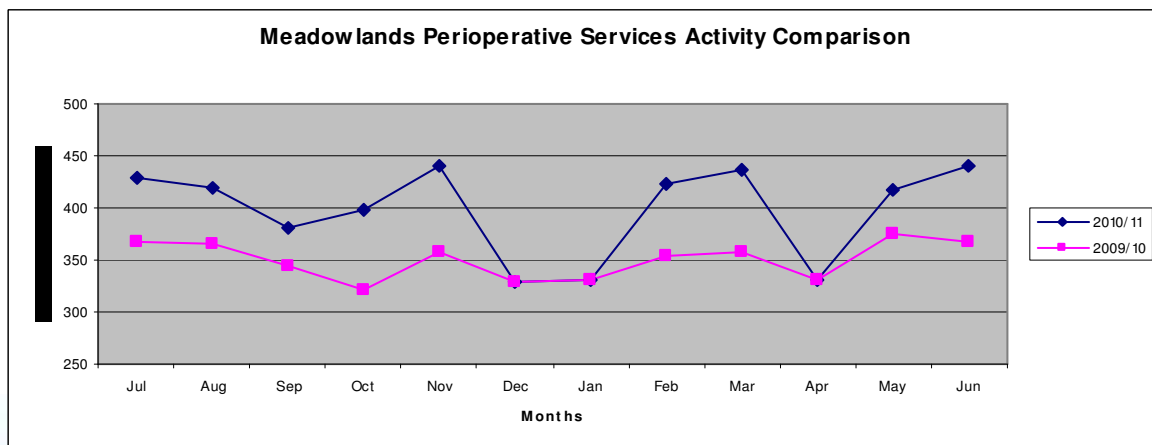
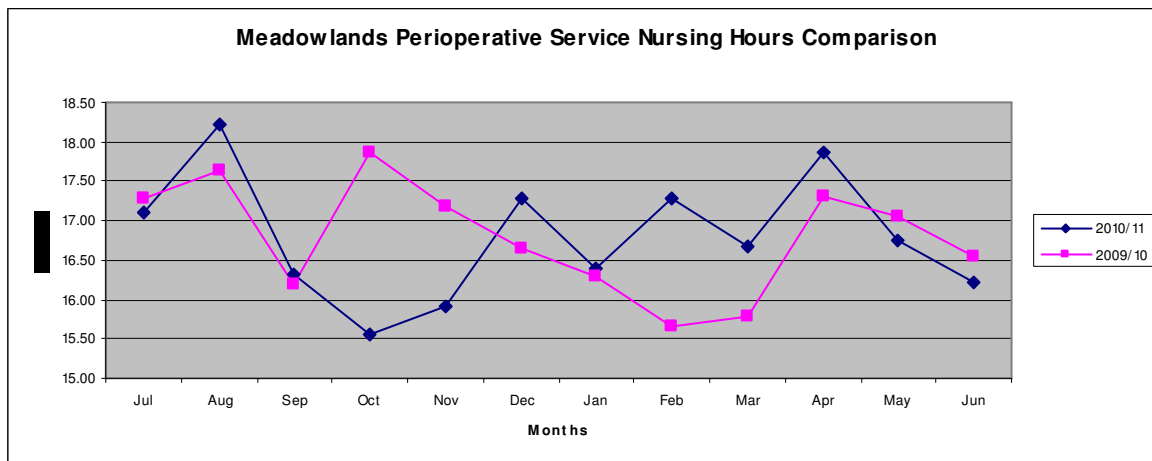
The tables and graphs below present data from the fictional Meadowlands Hospital example provided in appendix B. Graphs have been used to illustrate the quantitative trends in activity and nursing/midwifery hours used. A short qualitative analysis of the data follows each example provided. The concept of monitoring service activity and nursing/midwifery hours on a monthly basis can be transferred to daily and weekly trending if required within your service.

### Example 1: Monthly Overview of Meadowlands Perioperative Services

2010/11	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
<b>Tot. hrs required/month</b>	7,341	7,654	6,205	6,194	7,001	5,687	5,423	7,307	7,289	5,914	6,989	7,157	80,161
<b>OOS</b>	429	420	380	398	440	329	331	423	437	331	417	441	4,776
<b>Average NHPOS</b>	17.11	18.22	16.33	15.56	15.91	17.29	16.38	17.27	16.68	17.87	16.76	16.23	16.78

2009/10	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
<b>Tot. hrs required/month</b>	6,356	6,451	5,587	5,731	6,134	5,481	5,394	5,544	5,649	5,727	6,397	6,091	70,542
<b>OOS</b>	368	366	345	321	357	329	331	354	358	331	375	368	4,203
<b>Average NHPOS</b>	17.27	17.63	16.19	17.85	17.18	16.66	16.30	15.66	15.78	17.30	17.06	16.55	16.78

This addendum is a complementary document to the industrially endorsed *Business Planning Framework: a tool for nursing workload management* (2008) and does not represent change to existing organisational policy.



#### Evaluation of service activity and nursing hours used:

- Moderate increase the number of OOS between 2009/10 and 2010/11
- Similar *annual activity trend* during both financial years
- Noteworthy changes observed in the annual NHPOS trend. Implementation of roster improvement strategies in 2010/11 have assisted with stabilisation of hours used in relation to service activity.
- Continue leave allocation and mandatory training opportunities during December, January and April as OOS are lower then the average during these times.
- Conversely, a full complement of clinical staff is required during peak demand in November, February, March, May and June.

## 10.0 Summary

Determining total staffing requirements and operational budgets is an important process when balancing the supply of nursing and midwifery staff with the demand for health services. Within Queensland Health, the BPF is used to promote transparency and consistency in managing the supply of nurses and midwives with service demand. The framework supports nurses, midwives and business teams to assess, develop and evaluate healthcare services using local information gathered from a variety of quantitative and qualitative sources.

Service profile development is the industrially agreed process for nursing and midwifery staff to follow when implementing the BPF. The information required when conducting a service profile will assist staff in reviewing historical service data, assessing current circumstances and developing plans for the future. A comprehensive service profile will help determine the productive and non-productive nursing and midwifery hours required to meet service demand and assist nursing and midwifery managers to develop workforce plans and operational budgets.

Perioperative services can achieve improvements in workload management practices and outcomes by:

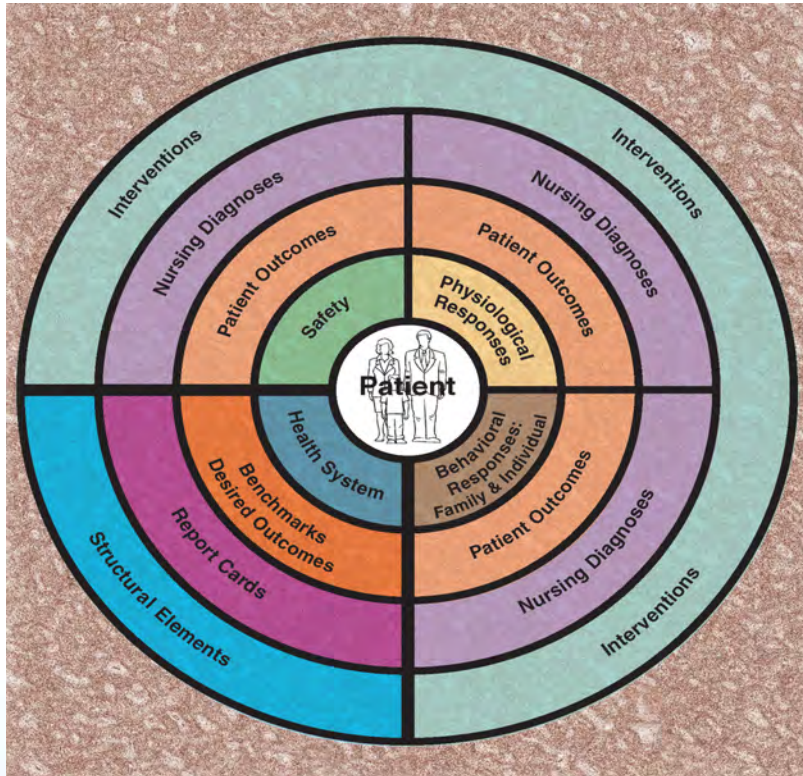
- including all direct and indirect nursing and midwifery activity into productive hours
- incorporating the effects of existing/emerging service demands on nursing and midwifery resources in service profiles
- using consistent and appropriate client acuity/complexity and activity measures
- applying all standard multipliers as directed within the BPF manual (2008)
- networking and sharing of business planning processes and practices within the speciality area.

To assist the application and implementation of the BPF within your area, service profile and performance evaluation examples have been included within the appendices of this addendum.

For more information about the BPF, visit your local intranet site or  
Nursing and Midwifery Office Queensland's intranet site:  
<http://qheps.health.qld.gov.au/nmog/default.htm>

## Appendix A

### Perioperative Patient-Focused Conceptual Framework Model



(Kleinbeack and Dopp, 2005)

## Appendix B

### Perioperative services core demand at Meadowlands Hospital (fictional example)

The following fictional example describes and prioritises a number of realistic demands which influence the total nursing and midwifery hours required in a perioperative service based on the core demand diagram located in section 5 of this addendum. Impact assessments of each demand have been included to highlight specific nursing and midwifery workload considerations and implications in service delivery. The demand impacts have been summarised and used to inform the workload management strategies and workforce plans found in the Meadowlands service profile in appendix C.

This example does not constitute organisational policy.

#### Meadowlands perioperative services demands/desired health outcomes

<b>Client</b>	<ul style="list-style-type: none"> <li>• Access to safe, quality perioperative services including obstetrics, gynaecology, urology, minor general surgery and minor orthopaedic surgery</li> <li>• Delivery of elective surgical and endoscopic procedures for low to medium risk surgery with an assessed low to medium anaesthetic risk</li> <li>• Provision of pre- and post-operative care for clients</li> <li>• Establishment and maintenance of collaborative partnerships with public and private sector services</li> </ul>
<b>Staff</b>	<ul style="list-style-type: none"> <li>• Access to the 'Transition to Practice Program' for novice perioperative nurses</li> <li>• Commitment to the growth of undergraduate nursing students via the perioperative training program</li> <li>• Implementing Queensland Health's succession management/career development framework</li> <li>• Improve mandatory training and speciality requisite training compliance to 100%</li> </ul>
<b>Organisation</b>	<ul style="list-style-type: none"> <li>• Access to quality services delivered in the right way, at the right place and in the right time</li> <li>• Improve the equity of health outcomes for consumers</li> <li>• Create a sustainable, proactive and continually improving health system</li> <li>• A sustainable and high quality workforce to meet future health needs</li> </ul>

#### Workload impact assessment:

- *direct nursing and midwifery hours considerations include the delivering of clinical care with the appropriate allocation of nursing hours and skill mix*
- *indirect nursing and midwifery hours considerations and priorities includes succession planning, performance appraisal and development, business planning, rostering and recruitment*
- *non-productive nursing and midwifery hours consideration includes scheduled and unscheduled leave, mandatory training and backfill arrangements.*

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## Population demographics

- Population of District X in 2011 is 1,031,064 with an expected growth to 1,178,819 by 2021 (↑12.61%)
- Population of region where Meadowlands hospital is situated is 145,780 in 2011 with an expected growth to 170,751 by 2021 (↑14.62%)
- 2.0% Aboriginal and Torres Strait Islander population (average in Australia 2.3%)
- 20.9% of the local population were not born in Australia
- 6.2% of the local population have non-English speaking backgrounds

### District X's Expected Population Growth of Local Planning Areas by 2021

(Queensland Health InfoBank, Health Statistic Centre)

Local Planning Area	Population 2011	Expected Population 2021	Increase (%)
1	70,926	103,616	31.55
2	566,611	621,313	8.80
3	64,364	83,783	23.18
4	183,383	200,356	8.47
5	145,780	170,751	14.62

### Workload impact assessment:

*There is steady growth projected for the District's primary population which is comparable with the expected growth of other Health Service Districts. Meadowlands hospital is located in service planning area 5 of District X. An increase in population of 14.62% is expected in this planning area over the next decade making it the third highest growth area within in the District. Incremental increases in perioperative nursing and midwifery human resources and infrastructure will be needed by 2021 to provide for the anticipated growth in population. Collaboration with associated healthcare services including primary and community health services will be a necessity to ensure the availability and continuity of perioperative services in the future. A moderate increase in indirect nursing and midwifery hours is expected.*

## Context of practice

- Metropolitan Health Service District
- Meadowlands' is a group B, 192 bed secondary acute hospital providing both primary and secondary level service
- Meadowlands' is geographically distant from major tertiary facilities
- Meadowlands hospital is co-located with a community health centre, public residential aged care facility and a private hospital
- Perioperative services are located in the acute services building
- Meadowlands perioperative service specialises in day surgery and provides urology, gynaecology, minor general and minor orthopaedic surgical services to elective clients. This service also provides limited non-elective services for general surgery and obstetrics
- Obstetrics nursing and midwifery support is provided 24 hours/day (includes on-call)
- Operating hours are from 0600 – 2100 days Monday to Friday and 0700 – 1700 Saturdays
- Skill mix – Director or Nursing, Nursing Director, Nurse Unit Manager, Clinical Nurses/Midwives, Registered Nurses, Midwives, Advanced Practice Enrolled Nurses, Enrolled Nurses, Assistants in Nursing, Consultants, Medical Officers, Visiting Medical Officers and Registrars
- Limited access to casual and/or permanent staffing pools due to perioperative skills shortage
- Emergent leave is often covered by overtime, part-time extra shifts and agency staff
- Secondments from other perioperative services within the District are used to cover long-term scheduled leave
- Nursing and midwifery attrition levels are higher than Queensland Health's statewide average
- Private services arrangement for perioperative services in place with co-located private hospital

**Workload impact assessment:**

*Meadowlands perioperative services provide secondary level acute surgical care to clients requiring low to medium risk surgery. Appropriately trained and experienced staff are required to deliver clinical services. The services are operationally managed by a core group of medical, nursing and midwifery staff with the Nurse Unit Manager being primarily responsible for the daily management of operating room schedules and staff rosters.*

*During the last financial year, Meadowlands perioperative services have experienced an above average rate of staff attrition. The increase in staff turnover has resulted in higher than expected use of overtime shifts, fatigue leave and agency staff as access to skilled casual staff is limited. An increase in the number of nursing and midwifery workload grievances over the last year has also been noted. The main reason documented for these grievances involves the lack of appropriately trained staff to cover roster shortfalls and emergent leave. Development and implementation of staff recruitment and retention strategies as well as improving access to novice programs is required.*

*Additional priorities for this services includes better management of scheduled and unscheduled leave and increasing staff participation and compliance with organisational programs such as mandatory/speciality training, succession management and performance development. By actioning these priorities and proactively managing indirect and non-productive clinical hours, availability of direct clinical hours is expected to improve.*

**Health policy, guidelines, strategic plans and legislation**

The following policies, guidelines, plans and legislation influence the perioperative services at Meadowlands Hospital:

- Clinical Services Capability Framework (version 3.0)
- Elective Surgery Services Policy
- Overtime Human Resources Policy
- Queensland Health Procurement Policy
- Queensland Health Patient Safety and Quality Plan 2008-2012
- Queensland Health Strategic Plan 2011-2015
- *Radiation Safety Act 1999*
- Queensland Health Reprocessing of Reusable Medical Devices and Surgical Products Standard
- Surgical Safety Checklist Policy
- Time Off in Lieu Human Resource Policy
- *Environmental Protection (Waste Management) Regulation 2000*
- *Health (Drugs and Poisons) Regulation 1996*
- *Health Services Act 1991*
- *Nurse and Midwives (Queensland Health) Certified Agreement 2009*
- *Queensland Health Nurses and Midwives Award – State 2011*
- *Workplace Health and Safety Act 1995*
- Australian College of Operating Room Nurses (ACORN) Standards
- Australian Day Surgery Nurses Association
- Department of Health and Ageing Elective Surgery Waiting List Reduction Plan.

**Workload impact assessment:**

*Service demands placed on perioperative services at Meadowlands Hospital as a result of policy, guidelines, plans and legislation impacts both direct and indirect nursing and midwifery hours. A number of influential factors and their associated demands have been included in the allocation of nursing and midwifery hours (e.g. NHPOS/NHPAU) while others have been captured in alternative demands such as quality and safety and/or education and service capacity building.*

This addendum is a complementary document to the industrially endorsed *Business Planning Framework: a tool for nursing workload management* (2008) and does not represent change to existing organisational policy.

## Service complexity

- 12% increase in cases during 2010/11 per year (↑ 2.4% previous financial year)
- 11% increase in the number of scheduled caesarean sections (↑ 1.6 previous financial year)
- 17% increase in gynaecology procedures (↑ 2.9% previous financial year)
- 38% decrease in urology procedures from previous financial year

## Surgical Complexity Comparison 2010/11 and 2009/10

(Source: HBCIS, Queensland Health)

Surgical/Day Surgery Classification	2010/11	2009/10
I	23%	30%
II	31%	33%
III	43%	33%
IV	3%	4%
V	NA	NA

## Top 10 Diagnostic Related Groups (DRGs) 2010/11 and 2009/10

(Source: Casemix information, Queensland Health)

Top 10 DRG 2010/11	Top 10 DRG 2009/10
1. O01B S Caesarean delivery w/o catastrophic or severe cc	O01B S Caesarean delivery w/o catastrophic or severe cc
2. N09Z S Conisation, vagina, cervix, vulva procedures	N09Z S Conisation, vagina, cervix, vulva procedures
3. L10Z S Skin, subcutaneous tissue and breast plastic or procedures	L10Z S Skin, subcutaneous tissue and breast plastic or procedures
4. N10Z S Diagnostic curettage or diagnostic hysteroscopy	N10Z S Diagnostic curettage or diagnostic hysteroscopy
5. H08B S Laparoscopic Cholecystectomy w/o closed CDE w/o catastrophic or severe cc	H08B S Laparoscopic Cholecystectomy w/o closed CDE w/o catastrophic or severe cc
6. G10B S Hernia procedures w/o cc	G10B S Hernia procedures w/o cc
7. G11Z S Anal and stomal procedures	G11Z S Anal and stomal procedures
8. L06B S Minor bladder procedures w/o catastrophic or severe cc	N07Z S Other uterine and adnexa procedures for non-malignancy
9. I24Z S Arthroscopy	I24Z S Arthroscopy
10. N07Z S Other uterine and adnexa procedures for non-malignancy	L06B S Minor bladder procedures w/o catastrophic or severe cc

## Workload impact assessment:

*DRG data indicates minimal change in the perioperative services delivered between 2009/10 and 2010/11. A reduction in urological procedures caused by the retirement of a Visiting Medical Officer resulted in the reduction of urology DRGs from the Top 10 DRG list in 2010/11. The vacant operating room sessions have been filled by SCII and SCIII gynaecology procedures which have moderately increased service activity and complexity. An 11% rise in elective caesareans is also contributing to service complexity and activity changes. The surgical complexity data shows there has been a significant change in the percentage of SCI and SCIII cases in Meadowlands perioperative services. SCI cases have reduced by 7% meanwhile SCIII cases have increased by 10%.*

*At present, the service projections for Meadowlands perioperative services indicate service complexity and activity will continue to rise in 2011-2012. Therefore, the number of direct nursing and midwifery hours required within this service will need to be reviewed. Adjustments to indirect*

nursing and midwifery hours in support of direct client care is also expected in the areas of undergraduate training, succession planning, performance appraisal and development, business planning and recruitment and retention activities.

To continue the effective and efficient management of service demands and human resources, changes to the model of care and service delivery methods will be required. The capacity of Meadowlands perioperative service to manage more complex clients will gradually be increased over the next decade to accommodate for growth in both the local planning area and the District. Commitment to recruitment, staff development and training programs is essential. Induction processes, rostering practices and staff education will need to be modified to provide appropriate levels of support to new and existing staff. A comparison in the usage of indirect perioperative nursing and midwifery hours between Meadowlands hospital and other peer hospitals is recommended.

### Service activity

- 4,776 cases seen in 2010/11 (↑12% from previous financial year)
- 398 cases seen per month (average)
- 62% cases are day only clients (↓ 8%)
- 36% cases are admitted either pre or postoperatively (7%)
- 2% cases arrive via the emergency department (↑1%)

### Service Activity by Specialty Service

(Source: HBCIS, Queensland Health)

Surgical Specialty	Surgical Activity %	Associated Surgical Complexity
Obstetrics	28%	III, IV
Gynaecology	23%	II, III
General Surgery	18%	I, II, III, IV
Breast	15%	I, II, III
Orthopaedic	10%	III
Urology	4%	II, III

### Waiting Time by Priority Category and Number of Clients

(Source: HBCIS EAM, Queensland Health Admitted Patient Data Collection)

Priority Category	No. Client Waiting	No. Long Waits	Median Wait Time (days)
1	42	0	18
2	218	0	31
3	90	0	98
All Categories	350	0	26

### Workload impact assessment:

There has been a 12% increase in perioperative service activity at Meadowlands Hospital. The surgical specialties of obstetrics and gynaecology are the main services contributing towards this rise in activity. Day procedures remain the primary type of surgical service delivered at Meadowlands, though an increase in the number of admitted clients is occurring. This increase coincides with more complex surgeries being scheduled.

The number of clients admitted for surgical procedures directly from the emergency department has double when compared with the previous year's results however this activity only constitutes 2% of the total perioperative activity. There are no long waits documented for perioperative services at Meadowlands and the average median wait times is within or better than the expected wait times in

*other Queensland Health facilities. These results align with the Commonwealth's Elective Surgery Waiting List Reduction Plan demonstrating appropriate levels of productivity within this service.*

*A formal review of current workforce and service delivery plans is needed to maintain service productivity with the projected increases in client activity and complexity. The number and skill mix of nursing and midwifery hours required will be affected by changes in service activity, complexity and applied models of care.*

### **Model of care**

- Perioperative nursing and midwifery services mainly use a staff allocation model of care.
- The allocation of nursing and midwifery roles to surgical cases is based on an individual's scope of practice, level of experience and expertise in that specialty area.
- Perioperative clinical rotations are used to encourage a flexible, integrated and multi-functional nursing and midwifery service.
- Meadowlands perioperative services foster a collaborative multidisciplinary approach to delivering surgical care.
- Meadowlands Hospital supports a perioperative service agreement with the co-located private hospital.

### **Workload impact assessment:**

*As a small perioperative service, nursing and midwifery staff are required to develop skills suitable for a wide range of surgical specialties. Rotational rosters are used to facilitate skill development and maintenance which includes both direct and indirect clinical activities. The allocation of indirect nursing and midwifery hours for human resource management and operational scheduling is high to accommodate the complex multifunctional perioperative environment. The inappropriate allocation of indirect clinical hours is likely to negatively impact the delivery of direct clinical hours resulting in workload issues.*

*Workforce plans forecast incremental growth in nursing and midwifery services will be necessary to manage the expected rise in service complexity and activity. Changes in the model of care and adjustments to the staff skill mix profile will be needed to support the expansion of perioperative services at Meadowlands. Collaboration with medical, administration and operational services will be necessary to support change initiatives and processes in this service.*

### **Quality and safety**

- Integrated multidisciplinary specialty reporting formats
- Reporting and management of client and staff workplace incident reports
- Clinical workplace audits (e.g. infection control, environmental management)
- Staff compliance (100%) to mandatory competencies such as workplace health and safety training requirements (e.g. fire safety, occupational violence training, infection control and prevention)
- Staff participation in policy/procedure development and review
- Four multidisciplinary clinical portfolios – infection control, workplace health and safety, education and training, quality improvement and evidence based practice.

### **Workload impact assessment:**

*Calculation and regular rostering of indirect nursing and midwifery hours are required to support the quality and safety activities within the unit. Documentation of the activities, the resources used (including staff time) and evaluation processes will provide valuable information to assist workload, workforce and operational planning.*

## Environmental management

- Three operating rooms
- Post anaesthetic care unit
- Available services include day of surgery and central sterilising department
- Integrated workflow patterns between nursing and midwifery, medical and operational services
- Environmental audits
- Third party providers (e.g. waste management company and linen services).

### Workload impact assessment:

*Environmental management of the perioperative service influences both direct and indirect clinical hours. Fundamentally, the number of operating rooms and the length of time they are used will contribute towards the number and type of productive clinical hours required. Clinical hours spent on integrating support services workflow patterns as well as coordinating environmental audits and waste management processes have been included in indirect hours. The rostering of indirect environmental management activities is primarily accomplished through delegated roles. For example the workplace health and safety portfolio is managed by a clinical nurse who is allocated offline time to manage and coordinate this delegated activity. Future service expansion plans include the commencement of 24 hour perioperative services which will increase the clinical hours required for environmental management.*

## Education and service capacity development

- Continual professional development points for all staff (registration requirements)
- Mandatory and speciality requisite training
- Undergraduate nursing students support (based on 42 weeks per year)
- Postgraduate study support (variable numbers)
- Recruitment and retention strategies
- Succession planning and performance appraisals.

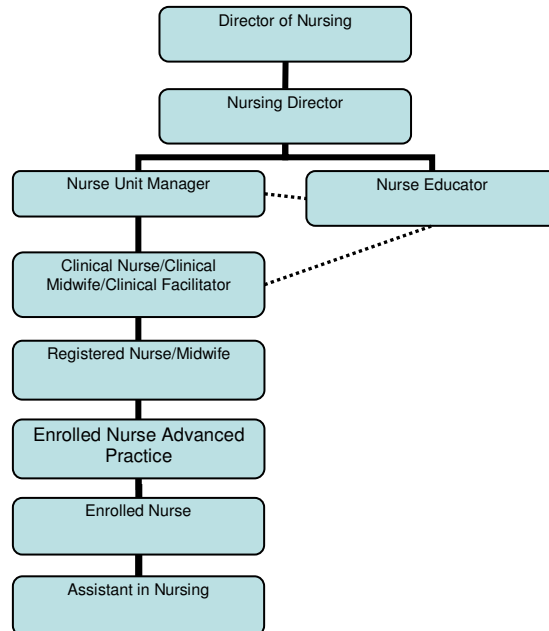
### Workload impact assessment:

*The education and service capacity considerations for this service directly influence the number of productive and non-productive hours required. Adequate allocations of nursing and midwifery hours are necessary to maintain organisational commitments to staff development and training. At present, all local training processes are managed by the Nurse Educator, Nurse Unit Manager, Clinical Facilitator and Clinical Nurses. The local management of education and training significantly influences the number of indirect nursing and midwifery hours rostered.*

*Capacity for staff to attend education and training programs has been incorporated into the productive hours roster with added concessions made for the use of professional development leave in the determination of non-productive nursing and midwifery hours. The monthly allocation of these hours throughout 2011/12 is recommended to ensure the most efficient use of clinical education and training hours.*

## Leadership and management

### Meadowlands Perioperative Nursing and Midwifery Structure



- **Nursing Director:** professionally and operationally manages surgical and perioperative nursing and midwifery services within Meadowlands Hospital.
- **Nurse Unit Manager:** professionally and operationally manages perioperative nursing and midwifery services within Meadowlands Hospital on a daily basis including staffing, rostering, operating room scheduling, recruitment and retention, performance appraisals and management and business planning. Provides clinical leadership to staff and utilises their clinical expertise to indirectly participate in the delivery of care to clients.
- **Nurse Educator:** responsible for the strategic direction of education within the service. Supports the Clinical Facilitator in delivering education and training specific for the perioperative environment.
- **Clinical Facilitator:** responsible for the delivery of clinically-based education and training to staff within the perioperative service. Manages the service's education portfolio.
- **Clinical Nurses/ Clinical Midwives:** responsible for delivery of direct client care, portfolio management, and team leading in the absence of the Nurse Unit Manager. Supports the delivery of education, training and preceptorship specific to the perioperative service.
- **Registered Nurses/Midwives:** responsible for the delivery of direct client care within their designated scope of practice.
- **Enrolled Nurses Advanced Practice:** provides an advanced level of direct clinical care under the supervision of a registered nurse within their designated scope of practice.
- **Enrolled Nurse:** provides direct clinical care under the supervision of a registered nursing within their designation scope of practice.
- **Assistants in Nursing:** work within their designated scopes of practice to assist staff with the supervised delivery of direct clinical care and assist with operational and environmental management of the service.

**Other considerations:**

- 65% of staff have post graduate qualifications relevant to perioperative services. Remaining staff have or are in the process of completing the perioperative transition to practice program.
- Staff are allocated based on designated scope of practice, skills, experience and expertise.
- Staff rosters are based on regular speciality rotations.
- Staffing profile supports 4 FTE of undergraduate student placement for 42 weeks per year.
- Leadership and management of the perioperative service is based on strong collaborative partnerships between nursing and midwifery, medical, administration and operational services.

**Workload impact assessment:**

*Rostering of productive hours and allocation of non-productive hours as per the BPF and Queensland Health's Best Practice Guidelines is required. Direct nursing and midwifery hours will be used as a basis for calculating the indirect hours and non-productive hours required such as succession planning, mandatory/requisite training, professional development and accrued leave. Reviewing the role descriptions and work undertaken by nursing and midwifery staff as the service expands will inform any alterations to the staffing skill mix profile. Continuous monitoring and evaluation of nursing and midwifery productivity is necessary and should be included in the monthly balanced scorecard.*

**Research and evidence based practice**

- 2 x 12 week practice development program planned
- 1 x staff member is involved in a research studies (collaborative work with University A)

**Workload impact assessment:**

*Calculation and allocation of indirect nursing and midwifery hours is required to meet the demands of research and evidence based practice in this unit. The time committed to practice development will need to be averaged throughout the year to assist in the consistent distribution of nursing and midwifery hours. Backfill for staff undertaking research activities/accessing SARAS leave will need to be assessed and provided within the non-productive hours if required.*

**Technology and materials management**

- Purchasing new equipment and materials
- Coordination and participation in equipment and product trials
- Maintenance and upgrading of equipment and software programs
- Establishing staff training, education and competency systems.

**Workload impact assessment:**

*Nursing and midwifery interaction in regards to technology and materials management is primarily indirect care and has been included in the established productive nursing and midwifery hours (e.g. NHPOS/NHPAU). Coordination and management of this demand is achieved in partnership with operational services and third party companies (e.g. health technology representatives). Networking and other non-clinical collaborative meetings relating to technology and material management is calculated in the indirect category of productive nursing and midwifery hours. As the number of technologies and materials increase in perioperative services, growth in clinical hours is expected to occur. The coordination of this demand is presently allocated on a part-time basis to a clinical nurse.*



## Appendix C

### Meadowlands Hospital Perioperative Services Service Profile 2011/12 (fictional example)

#### Service name

Meadowlands Hospital Perioperative Services

#### Service aim

To deliver quality perioperative services to the communities within region A of District X by:

- providing evidence based perioperative services for low to medium risk surgery at the right time, in the right place and in the right way
- employing and retaining a high quality workforce to provide sustainable, proactive and continually improving perioperative services.

#### Service objectives

1. Assess, plan and implement service capacity changes to meet the projected 14.6% growth in population of local planning areas 5 for perioperative services by 2021.
2. Maintain surgical waiting list performance throughout 2011/12 by continuing to achieve waiting times below the state average in priority categories 1 to 3 and having no long waits registered for surgery at Meadowlands.
3. Develop operational strategies to increase the capacity of the transition to perioperative practice program by two fulltime equivalent (FTE) staff by December 2011.
4. Improve staff compliance in mandatory and speciality requisite training to 100% and develop operational maintenance strategies by December 2011.
5. Service based implementation of the Nursing and Midwifery Office Queensland's succession planning and mentoring framework by July 2012.
6. Monthly monitoring of the alignment of operating room session times with staff roster and leave management plans by maintaining the average nursing hours per occasion of service (NHPOS) within a +/- 10% range of 16.78 NHPOS.
7. Maintain 100% compliance with service-based infection monitoring, control and reporting standards and polices.

#### Present service

The perioperative service is a part of Meadowlands Hospital which provides healthcare services within region A of District X. This service delivers a range of elective low to medium risk surgical procedures to clients with low to medium anaesthetic risk. The surgical specialties offered include obstetrics, gynaecology, urology, general surgery and orthopaedics. A map of the service boundaries can be found on our intranet site. Highly specialised clinical care is coordinated and delivered by a team of medical and nursing professionals with support being provided by operational and administration services. Perioperative services at Meadowlands hospital works collaboratively with other hospital departments as well as the co-located private healthcare organisation to deliver coordinated, holistic acute surgical services to clients. Service delivery standards and practices within the Meadowlands perioperative services are guided by State and National

policies, standards and legislation. The service is scheduled to operate from 0600-2100 Monday to Friday and 0700-1700 on Saturdays. After-hours services are provided on a staff call in basis.

## Internal environmental analysis

### Structural

Meadowlands Hospital is a 192 bed secondary acute facility located in suburb B of Region A. The hospital is separated into two blocks and provides varying levels of primary and secondary healthcare services in speciality areas such as:

- Emergency medicine
- General medicine
- General surgery
- Cardiology
- Orthopaedic
- Gynaecology
- Urology
- Obstetrics/Maternity
- Mental health
- Paediatrics.

District X has a geographically large catchment area. Situated within this District are two major universities which offer pre- and post-graduate education for medical, nursing, midwifery and allied health staff. Perioperative services within this District have affiliations with both universities which support prospective and existing staff in both undergraduate clinical placements and post-graduate degrees. Meadowlands perioperative services are located on ground floor of block A and incorporate a day of surgery unit, three operating theatres, a post anaesthetic care unit and central sterilising department. The physical layout of the service includes 4 x offices, 1 x conference/education room, 2 x general store rooms, 1 x pharmacy store room, 1 x client reception/lounge areas, 1 x staff kitchen and two x staff change rooms. A variety of security devices (e.g. swipe cards and combination locks) are in place to prevent unauthorised persons from accessing restricted perioperative areas.

Staffing and skill mix allocation is based on meeting the workload demands of the physical environment and client activity. The majority of client activity is elective, though unscheduled obstetrics and emergency activity has increased which is causing minor levels of unpredictability in service demands. To support service activity, nursing and midwifery staff are divided into work teams based on scope of practice and clinical experience in areas such as day of surgery unit, operating rooms, post anaesthetic unit and central sterilising department. Approximately 30% staff are rostered permanently in the individual areas except the central sterilising department where all staff are rostered permanently. The remaining 70% staff are rotated on a regular basis through all areas to maintain skill mix flexibility within the service. Each nursing team is led by the clinical nurse in charge or suitably qualified delegate with support being provided primarily by the Nurse Unit Manager during hours and the hospital's Nurse Manager after hours.

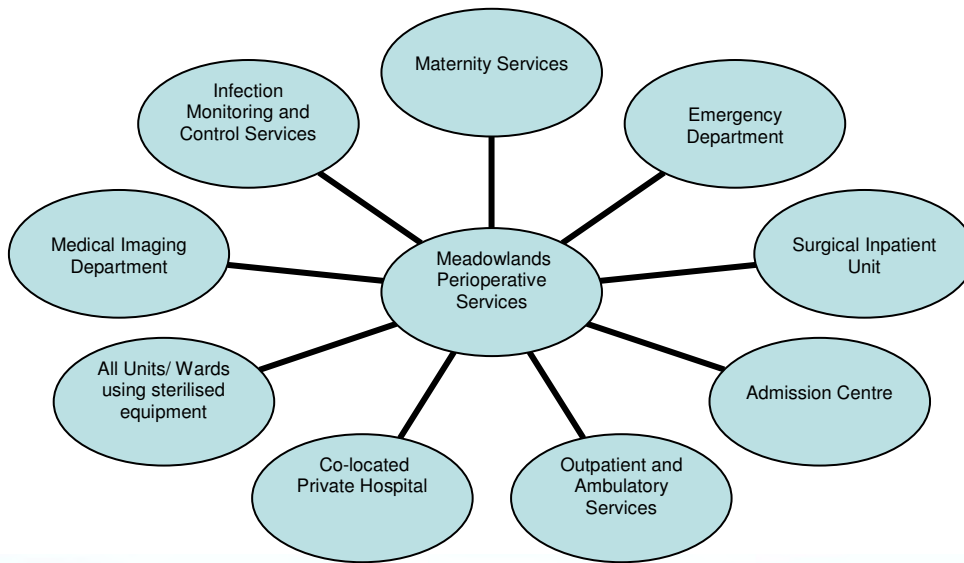
There is very limited capacity to physically expand the perioperative services to manage the expected 14.6% growth in local population by 2021. Opportunities for major capital works at the hospital are being discussed in relation to whole of District surgical service

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development plans. Viability and costing assessments are underway regarding the prospect of building an additional floor above Block A to house the expansion of surgical and maternity services. This extension would allow perioperative service to extend into the current surgical inpatient unit. This expansion would accommodate a further two operating rooms and extension of the post anaesthetic care unit.

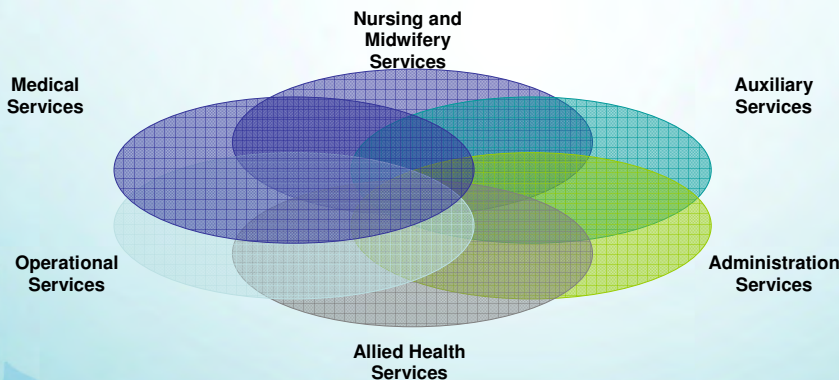
The perioperative services regularly interfaces with a number of internal departments and has a perioperative service arrangement with the co-located private hospital as shown in the diagram below:

**Meadowlands Perioperative Services Interface**



The provision of perioperative services at Meadowlands Hospital relies on a multidisciplinary/multiservice team approach to care delivery. This collaborative structure includes medical, nursing and midwifery, auxiliary services (ie. trauma service, infection monitoring and control), administration and operational staff. High standards of communication are required to function effectively and governance groups such as the theatre management committee are used to facilitate collaboration. The following diagram depicts the individual services merging together to form a united professional perioperative team.

**Meadowlands Multiservice Perioperative Team**



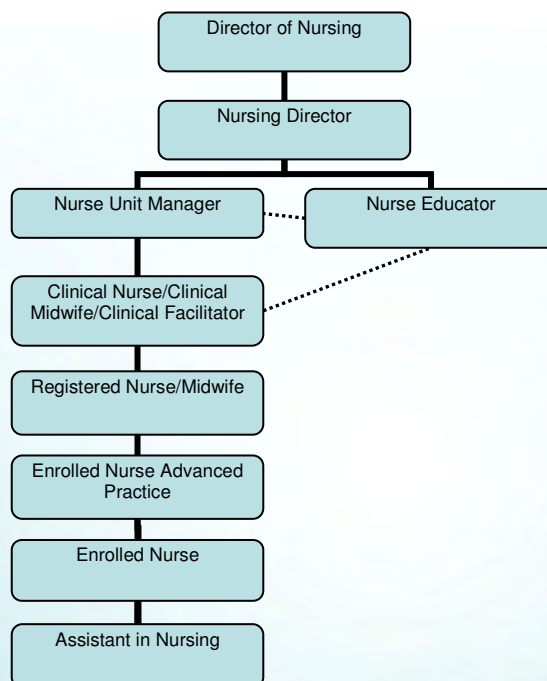
The nursing and midwifery structure within perioperative services comprises of assistants in nursing, registered nurses/midwives, clinical nurses/midwives, educators and managers. Within this structure, each individual position works to support the delivery of direct and indirect care professionally or operationally for perioperative clients. Educational support within the structure is considered vital in sustaining the service's aim of staff qualified with either tertiary qualifications and/or organisational training providing high quality acute perioperative services.

A large proportion of staff within the unit are experienced registered nurse/midwives or clinical nurses/midwives. The reasons for this skill mix profile include:

- the large number of specialty perioperative services provided
- the physical layout of the perioperative environment is large to accommodate the specialty services
- matching client and surgical acuity with scope of practice and skill of nursing and midwifery staff.

In addition, there is growing demand to employ larger numbers of graduate nurses. The present nursing and midwifery structure (see diagram below) facilitates undergraduate clinical placements and preceptorship of graduate registered and enrolled nurses by rostering adequate numbers of staff trained in supporting new staff. Educational, managerial and clinical support is provided by the two Grade 7 positions while additional clinical/preceptor assistance is supplied by Grade 5 and 6 nurses/midwives and transition to practice programs.

### Meadowlands Perioperative Nursing and Midwifery Structure



Four cost centres are used within Meadowlands perioperative services to manage costs associated with the day surgery unit, operating rooms, post anaesthetic care unit and central sterilising department. A multi-cost centre format allows the Nurse Unit Manager to monitor and coordinate funding arrangements efficiently so the balancing of service supplies with demand can be achieved.

## Human resource management

The core staff working within perioperative services includes:

- Nurse Unit Manager: professionally and operationally manages perioperative nursing and midwifery services within Meadowlands Hospital on a daily basis including staffing, rostering, operating room scheduling, recruitment and retention, performance appraisals and management and business planning. Provides clinical leadership to staff and uses their clinical expertise to indirectly participate in the delivery of care to clients.
- Nurse Educator: responsible for the strategic direction of education within the service. Supports the Clinical Facilitator in delivering education and training specific for the perioperative environment.
- Clinical Facilitator: responsible for the delivery of clinically-based education and training to staff within the perioperative service. Manages the service's education portfolio.
- Clinical Nurses/ Clinical Midwives: responsible for delivery of direct client care, portfolio management, and team leading in the absence of the Nurse Unit Manager. Supports the delivery of education, training and preceptorship specific to the perioperative service.
- Registered Nurses/Midwives: responsible for the delivery of direct client care within their designated scope of practice.
- Enrolled Nurses Advanced Practice: provides an advanced level of direct clinical care under the supervision of a registered nurse within their designated scope of practice.
- Enrolled Nurse: provides direct clinical care under the supervision of a registered nursing within their designation scope of practice.
- Assistants in Nursing: work within their designated scopes of practice to assist staff with the supervised delivery of direct clinical care and assist with operational and environmental management of the service.
- Consultant Surgeons/Anaesthetists: responsible for the operation delivery of consultant surgical and anaesthetic services.
- Registrars: work in conjunction with consultant surgeons to deliver surgical services.
- Administration Officers: provide administrative support to the entire perioperative team.
- Operational Officers: provides operational and environmental support within perioperative services.

Within Meadowlands perioperative services:

- 65% of staff have post graduate qualifications relevant to perioperative services
- 35% of staff are in the process of completing the perioperative transition to practice program
- staff are allocated based on designated scope of practice, skills, experience and expertise
- staff rosters are based on regular speciality rotations
- staffing profile supports 6 FTE of undergraduate student placement for 42 weeks per year and 6 FTE of graduate staff for 52 weeks per year
- the leadership and management structure of the perioperative service is based on strong collaborative partnerships between nursing, midwifery, medical, administration and operational services.

Meadowlands perioperative services are an important part of perioperative services within District X. Within the Meadowlands perioperative services, the Nursing Director, Director of Anaesthetics and Director of Surgery are professionally responsible and accountable for the delivery of services. The incumbents of these fulltime positions are expected to have suitable qualifications/experience in perioperative services and healthcare management. Within the nursing and midwifery services, the Nurse Unit Manager is the conduit between operational and professional management. The Nurse Unit Manager works in partnership with the Nursing Director to achieve the aims and objectives of Meadowlands perioperative services. Additionally, the Nurse Unit Manager is expected to have suitable qualifications/experience in perioperative nursing and have or be working towards appropriate qualifications in healthcare management.

In 2009, 71% of staff within Meadowlands perioperative service participated in a hospital-wide 'Better Workplaces' staff survey (average participation in other wards/units was 66%). Cultural issues were noted between clinical staff and senior management regarding communication and change management within perioperative services at a greater extent than other units and wards. In accordance with organisational directions, Meadowlands perioperative services developed an action plan with senior/executive management to improve communication processes between all levels of staff. Action plan priorities included:

- commencement of monthly unit multi-disciplinary based staff meetings, with clinical portfolios as standard agenda items
- fortnightly meetings scheduled between Nurse Unit Manager and Nursing Director
- monthly reporting structure modified eg. distribution of service line scorecard to NUM and reformatting of NUM monthly report
- surgical and perioperative service line clinical nurse forum held monthly
- staff member designated to attend monthly Chief Executive Offices forum.

The action plan has been implemented with initial feedback from staff being positive, however an increase in the use of indirect clinical hours on a monthly basis has occurred.

As a secondary perioperative service, Meadowlands has a significant role in supporting undergraduate, graduate and postgraduate education within the District. Providing clinical experience suitable for medical, nursing and midwifery students is an educational priority of this unit. While each discipline individually manages their own students there is a collaborative effort to coordinate student placements within the unit. The undergraduate nursing and midwifery shifts are available Monday to Friday (early and late shifts only) for 42 weeks of the year.

The student placement program is centrally managed by the hospital's Clinical Education and Training Unit with support from the local Nurse Educator. Each student nurse is allocated a registered nurse or small group of registered nurses to work with during their placement. An average of six students per day is expected over the 42 week period which means a minimum of 4.85 FTE of staff are required to be available and capable of facilitating students.

To successfully facilitate nursing and midwifery students, registered nurses/midwives need to have the following attributes:

- minimum of one year clinical perioperative experience
- completed transition to practice modules for perioperative services

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- working towards or completed organisational preceptorship course
- completed university student facilitator program.

Participation in the undergraduate student placement program is unlikely to change over the next 12 to 18 months, therefore the current allocation of productive nursing hours for the student placement program remains unchanged.

Postgraduate study is encouraged and supported within Meadowlands perioperative services. Clinical experiences and educational support are often organised through the Nurse Educator. Organisational support is available through Study and Research Assistance Scheme (SARAS) in relation to financial assistance and leave arrangements. The level of assistance provided depends on individual and organisational needs which may vary from academic term to term. Presently, perioperative services have two part-time nursing staff accessing SARAS which has resulted in minimal impacts to workloads.

An increase in the number of graduate nursing staff from 4 FTE to 6 FTE is planned for 2011/12. This increase will be largely supported by two established programs: the organisational preceptorship program and the transition to perioperative practice program. These programs will assist staff delivering and participating in preceptorship and induction programs. By increasing the number of staff available to preceptor, more graduates and/or new staff can be employed. Allocation of sufficient indirect and non-productive hours is needed to ensure this successful outcome is achieved.

The mandatory training and agreed speciality training requisites for perioperative services are not expected to change within 2011/12. Current calculations of productive and non-productive nursing and midwifery hours for the service include all essential education and training programs. In consideration of the specialty skills required in perioperative services the non-productive mandatory training time for new (11 days) and existing (5 days) staff has been included in the total recruit to FTE. This will ensure an appropriate skill mix of staff is available to backfill education and training time similar to the processes already established for annual leave and professional development leave.

Perioperative nursing and midwifery hours incorporate both direct and indirect clinical hours. Indirect hours include:

- portfolio management – infection control, workplace health and safety, education/training and quality improvement/evidenced based practice
- reporting and managing consumer and staff incidents
- workplace audits
- policy development and review
- clinical unit education/training
- continual professional development points (registration requirement)
- recruitment processes and retention strategies
- succession planning and performance appraisals
- practice development/evidence based practice/research.

Staff acknowledge that not all professional development opportunities relating to registration requirements will occur inside the workplace.

## Technology and materials management

Within the Meadowlands perioperative service, the demands of technology and materials management have been included in the established productive nursing and midwifery hours (eg. NHPOS/NHPAU). Coordination and management of this demand is achieved in partnership with operational services and third party companies (eg. health technology representatives). Networking and other non-clinical collaborative meetings relating to technology and material management is calculated in the indirect category of productive nursing and midwifery hours. A steady growth in the number of technologies and materials in perioperative services is expected in the future and increases in clinical nursing and midwifery hours may be required if operational services cannot be increased. At present, a part-time Clinical Nurse (0.5 FTE) has been allocated to this role and is responsible for overseeing the:

- consultation with infection control services about new equipment and materials
- purchasing new equipment and materials
- coordination and participation in equipment and product trials
- maintenance and upgrading of equipment and software programs
- establishment of staff training, education and competency systems.

## Information technology

The information systems and collection most commonly used within the Meadowlands perioperative services are listed in the table below.

**Information Technology in Meadowlands Perioperative Services**

Information System	Purpose
Operating Room Management Information System (ORMIS)	ORMIS is the Queensland Health enterprise system designed to assist staff in the management and operational efficiency of the operating room. This system provides an electronic clinical pathway for client undergoing elective and emergency surgery, assists in the scheduling of theatre lists and provides clinical and theatre utilisation reports. <a href="http://qheps.health.qld.gov.au/loganb/itsys/chims-home.htm">http://qheps.health.qld.gov.au/loganb/itsys/chims-home.htm</a>
Hospital Based Corporate Information System (HBCIS) * modules relevant to perioperative services	Queensland Health's enterprise patient administration system, capturing and managing both admitted and non admitted patient, clinical, administrative and financial data. <a href="http://qheps.health.qld.gov.au/id/">http://qheps.health.qld.gov.au/id/</a>
* Elective Admissions Management (HBCIS module)	This module provides functionality to place prospective patients on a waiting list, book expected admission dates for those patients and maintain prospective patient details until they are admitted.
* Theatre Management System (HBCIS module)	This module provides a comprehensive and flexible theatre booking, operations register and reporting package. It has the capability to schedule and reorganise bookings for sessions, theatres and surgeons. The system can compile theatre utilisation statistic and produce a range of reports.
ERIC	Primarily is a storage and retrieval system. ERIC is a step towards progression to the electronic medial health record. It combines electronically converted images of paper records and up to date data interfaced from clinical system. <a href="http://qheps.health.qld.gov.au/loganb/itsys/eric-about.htm">http://qheps.health.qld.gov.au/loganb/itsys/eric-about.htm</a>
Automated Anaesthetic (Perioperative) Record Keeper (AARK)	AARK spans the entire perioperative patient journey from pre-admission, through operating theatres and procedure rooms, to post-anaesthetic care units and acute pain services. It enables all relevant patient information to be collated into a standardised anaesthetic record of patient care. <a href="http://qheps.health.qld.gov.au/aark/home.htm">http://qheps.health.qld.gov.au/aark/home.htm</a>
Queensland Hospital Admitted Patient Data Collection (QHAPDC)	The QHAPDC is the morbidity collection for all patients who have been admitted and separated from a hospital in Queensland. The information collected is used to manage, plan, research and fund facilities at a local state and national level. <a href="http://qheps.health.qld.gov.au/hic/dsu_collections.htm">http://qheps.health.qld.gov.au/hic/dsu_collections.htm</a>
Enterprise Discharge Summary (EDS)	The EDS application uses information from a number of existing Queensland Health specialist systems to create a legible, consistent, electronic discharge summary. It allows the summary to be delivered electronically to general practices in a secure, timely and standardised format. <a href="http://qheps.health.qld.gov.au/eds/home.htm">http://qheps.health.qld.gov.au/eds/home.htm</a>

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Primary Related Incident Management and Evaluation System (PRIME)	Management of clinical incidents and health care complaints <a href="http://connect.health.qld.gov.au/prime/">http://connect.health.qld.gov.au/prime/</a>
Decision Support System (DSS Panorama)	Provides summary data reports displaying aggregate expenditure, budgets, variances and balances for cost centres and account codes for services. Reports are available for agency use, overtime, leave/ absenteeism, position occupancy and work centres. <a href="http://dss.health.qld.gov.au/">http://dss.health.qld.gov.au/</a>

While the information systems used within Meadowlands perioperative services provides a wide range of quantitative data useful for monitoring client trends and service activity, not all work performed by nursing and midwifery staff is captured accurately. To improve this situation, qualitative information has also been gathered from clinicians to facilitate a comprehensive analysis of the service. Local spreadsheets have been developed by staff and approved for use by nursing management and the business team to assist in the monitoring of nursing and midwifery workloads. These spreadsheets are completed daily and consolidated into a monthly report by the nursing and midwifery staff of Meadowlands perioperative service. The collation and distribution of reports adds to the productive nursing and midwifery hours required within the unit.

Access to service data is varies depending on the relevance to the clinical position held. For example, client incidents are reported monthly to all levels and categories of the staff within the multi-disciplinary team while cost centre reports are provided to management staff only. Most reports used within the perioperative services are not automated at an organisational level, hence the business team is responsible for collating and distributing these reports to staff. Data interpretation and analysis are core development skills included in performance and succession management plans for grade 5, 6, and 7 nursing and midwifery staff. Indirect hours associated with succession planning have been included in the calculation of total productive nursing and midwifery hours.

In perioperative services, frontline multi-disciplinary team members and administration staff are largely responsible for data input. Issues with reliability, accuracy and the timeliness of data input have been noted during the past year. Mitigating strategies such as information systems training programs and information technology awareness raising sessions have been commenced for the entire multi-disciplinary team significantly increasing indirect clinical hours. These strategies are coordinated and monitored by the Nurse Educator.

Limited access to computers has been highlighted by staff as a major barrier to inputting and/or retrieving data in a timely manner. A request has been made for three extra computer terminals or three mobile computer units to be purchased. This request has been categorised as a high priority for the services during this year's perioperative planning day.

## Performance

The financial performance of Meadowlands perioperative service over the past three years shows labour expenditure is above the costs budgeted:

- 2010/11 – 14% overrun in labour expenditure compared to budget
- 2009/10 – 12% overrun in labour expenditure compared to budget
- 2008/09 – 11% overrun in labour expenditure compared to budget.

Major factors attributing to this increase are:

- external agency use
- increasing use of overtime
- increasing service activity
- increasing staff attrition
- increasing surgical complexity
- leave management eg. emergent and scheduled arrangements.

There has been a moderate increase in consumables expenditure (6% to 8%) when compared to budgets over the last two financial years, mainly due to changes in technology associated with surgical procedures. The overall performance of Meadowlands perioperative services has been above average when compared with Queensland Health's desired targets and waiting list goals.

#### ➤ Client complexity/acuity overview

- 12% increase in cases during 2010/11 per year (↑ 2.4% previous financial year)
- 11% increase in the number of scheduled caesarean sections (↑ 1.6 previous financial year)
- 17% increase in gynaecology procedures (↑ 2.9% previous financial year)
- 38% decrease in urology procedures from previous financial year.

#### Top 10 Diagnostic Related Groups (DRGs) 2010/11 & 2009/10

(Source: Casemix Information, Queensland Health)

Top 10 DRG 2010/11	Top 10 DRG 2009/10
O01B S Caesarean delivery w/o catastrophic or severe cc	O01B S Caesarean delivery w/o catastrophic or severe cc
N09Z S Conisation, vagina, cervix, vulva procedures	N09Z S Conisation, vagina, cervix, vulva procedures
L10Z S Skin, subcutaneous tissue and breast plastic or procedures	L10Z S Skin, subcutaneous tissue and breast plastic or procedures
N10Z S Diagnostic curettage or diagnostic hysteroscopy	N10Z S Diagnostic curettage or diagnostic hysteroscopy
H08B S Laparoscopic Cholecystectomy w/o closed CDE w/o catastrophic or severe cc	H08B S Laparoscopic Cholecystectomy w/o closed CDE w/o catastrophic or severe cc
G10B S Hernia procedures w/o cc	G10B S Hernia procedures w/o cc
G11Z S Anal and stomal procedures	G11Z S Anal and stomal procedures
L06B S Minor bladder procedures w/o catastrophic or severe cc	N07Z S Other uterine and adnexa procedures for non-malignancy
I24Z S Arthroscopy	I24Z S Arthroscopy
N07Z S Other uterine and adnexa procedures for non-malignancy	L06B S Minor bladder procedures w/o catastrophic or severe cc

#### Meadowlands Perioperative Services Surgical Classifications

(Source: HBCIS, Queensland Health)

Surgical/Day Surgery Classification	2010/11	2009/10
I	23%	30%
II	31%	33%
III	43%	33%
IV	3%	4%
V	NA	NA

DRG data indicates minimal change to the perioperative services delivered between 2009/10 and 2010/11. A reduction in urological procedures caused by the retirement of a Visiting Medical Officer resulted in the reduction of urology DRGs from the Top 10 DRG list

in 2010/11. The vacant operating room sessions have been filled by SCII and SCIII gynaecology procedures which have moderately increased service activity and complexity. An 11% rise in elective caesareans has also contributed to service complexity and activity changes. The surgical complexity data shows there has been a significant change in the percentage of SCI and SCIII cases in Meadowlands perioperative services. SCI cases have reduced by 7% meanwhile SCIII cases have increased by 10%. At present, the service projections for Meadowlands perioperative services indicate service complexity and activity will continue to rise in 2011-2012. Therefore, the number of direct nursing and midwifery hours required within this service will need to be reviewed. Adjustments to indirect nursing and midwifery hours in support of increasing direct client care is also expected to achieve service plans for undergraduate training, succession planning, performance appraisal and development, business planning and recruitment and retention activities.

Changes to the model of care and service delivery methods are likely to efficiently manage the balance of service demand with supply of human resources. The capacity of Meadowlands perioperative service to manage more complex clients will gradually be increased over the next decade to accommodate for growth in both the local planning area and the District. Continued commitment to recruitment, staff development and training programs is required. Induction processes, rostering practices and staff education will need to be modified to provide appropriate levels of support to new and existing staff. A review of how indirect nursing and midwifery hours are used in Meadowlands perioperative services combined with peer group comparisons is recommended to assess the adequacy of the hours allocated.

#### ➤ Service activity

- 4,776 cases seen in 2010/11 (↑12% from previous financial year)
- 398 cases seen per month (average)
- 62% cases are day only clients (↓ 8%)
- 36% cases are admitted pre-operatively (↑7%)
- 2% cases arrive via the emergency department (↑1%)

#### Service Activity by Specialty Service

(Source: HBCIS, Queensland Health)

Surgical Specialty	Surgical Activity %	Associated Surgical Complexity
Obstetrics	28%	III, IV
Gynaecology	23%	II, III
General Surgery	18%	I, II, III, IV
Breast	15%	I, II, III
Orthopaedic	10%	III
Urology	4%	II, III

#### Waiting Time by Priority Category and Number of Clients

(Source: HBCIS EAM, Queensland Health Admitted Patient Data Collection)

Priority Category	No. Client Waiting	No. Long Waits	Median Wait Time (days)
1	42	0	18
2	218	0	31
3	90	0	98
All Categories	350	0	26

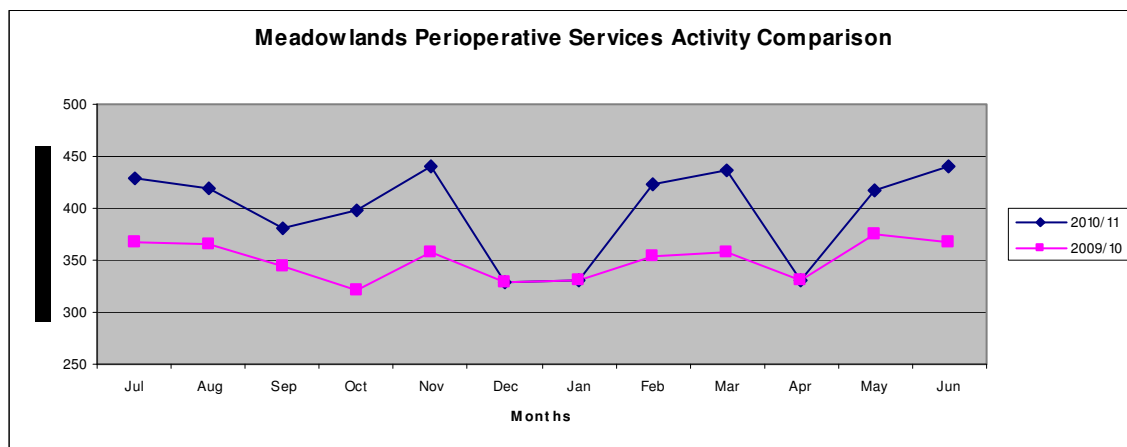
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**Monthly Overview of Meadowlands Perioperative Services 2010/11**

2010/11	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
<b>Tot. hrs required/month</b>	6,770	6,766	5,980	6,094	6,800	5,360	5,278	6,823	6,828	5,306	6,576	6,970	75,551
<b>OOS</b>	429	420	380	398	440	329	331	423	437	331	417	441	4,776
<b>Average NHPOS</b>	15.78	16.11	15.74	15.31	15.45	16.29	15.95	16.13	15.62	16.03	15.77	15.80	15.82

**Monthly Overview of Meadowlands Perioperative Services 2009/10**

2009/10	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
<b>Tot. hrs required/month</b>	6,215	6,215	5,587	5,731	5,986	5,481	5,399	5,544	5,649	5,727	6,397	6,091	70,022
<b>OOS</b>	368	366	345	321	357	329	331	354	358	331	375	368	4,203
<b>Average NHPOS</b>	16.89	16.98	16.19	17.85	16.77	16.66	16.31	15.66	15.78	17.30	17.06	16.55	17

**Service activity considerations:**

- Similar *annual activity trends* during both financial years
- Continue leave allocation and mandatory training opportunities during December, January and April as client activity is lower than the average during these times.
- Conversely, a full complement of clinical staff is required during peak demand of demand November, February, March, May and June.

**➤ Evaluation of service activity**

There has been a 12% increase in perioperative service activity at Meadowlands Hospital with similar trends noted in surgical activity over the last two financial years. The surgical specialties of obstetrics and gynaecology are the main services contributing towards this rise in activity. Day procedures remain the primary type of surgical service delivered at Meadowlands, though an increase in the number of admitted clients is occurring. This increase coincides with more complex surgeries being scheduled. The number of clients admitted for surgical procedures directly from the emergency department has double when compared with the previous year's results however this activity only constitutes 2% of the total perioperative activity. There are no long waits documented for perioperative services at Meadowlands and the average median wait times is within or better than the expected wait times in other Queensland Health facilities. These results align with the Commonwealth's Elective Surgery Waiting List Reduction Plan demonstrating appropriate levels of productivity within this service. Review of current workforce and service delivery plans is needed to maintain service productivity with the projected increases in client

activity and complexity. The number and skill mix of nursing and midwifery hours required will be affected by changes in service activity, complexity and models of care.

#### ➤ Financial outcomes

The nursing and midwifery labour costs within Meadowlands perioperative services are over-budget primarily due to the high use of overtime and financial impacts of unscheduled leave (eg. fatigue leave). For the current year labour costs are 14% above budget which is a 3.5% improvement on the previous financial year. Productivity measures indicate the increased labour costs are largely mitigated by surgical activity however improvements in workflow and the proposed expansion of perioperative services will progress this result. Investment in recruitment and retention strategies as well as education and training programs and supports has contributed to reducing the labour costs in the last financial year. Plans to progress this work exist as outlined in the service objectives.

#### ➤ Quality of service

The quality of the services provided within the Meadowlands perioperative service is monitored through a monthly balanced scorecard. Data is collected regarding four key performance areas which have been influenced by internal and external strategic directions, policies and legislation. The three areas are risk monitoring and management, client/workflow management and staff management.

Data is collected into integrated multidisciplinary service reports regarding client/staff workplace incidents, clinical workplace audits, staff competency compliance, policy development and review and clinical portfolios. Calculation and regular allocation of indirect nursing and midwifery hours has occurred to support the quality and safety activities within the service.

Environmental management is a large contributor toward the quality of Meadowlands perioperative service and influences both direct and indirect clinical hours. Clinical hours spent on integrating support services workflow patterns in the four separate areas of the perioperative services as well as coordinating infection control compliance audits and waste management processes increases indirect hours. At Meadowlands Hospital, the rostering of indirect environmental management activities is primarily accomplished through delegated roles. For example, the workplace health and safety portfolio is managed by a Clinical Nurse who is provided offline time to manage and coordinate this delegated activity. Future service plans to increase Meadowlands to a 24 hour perioperative services will increase the clinical hours required for environmental management.

## Key performance summary

## Meadowlands Perioperative Service Performance

Key performance areas	Performance indicators	Results (Dec 2010)	Service actions
Risk monitoring and management	Client incidents	On target	Continue monitoring.
	Staff incidents	On target	Continue monitoring
	Pressure area audits	< 10% from target	Increase awareness of pressure area assessments on all clients and implementation of suggested actions
	Workplace Health & Safety Audit	On target	Continue monitoring
	Infection Compliance Assessments	On target	Continue monitoring
	Workload grievances	< 10% from target	Actioning of strategies to improve staff rosters, leave management and recruitment /retention plans
Client/workflow	Operating room utilisation	On target	Continued monitoring and reporting to multidisciplinary team members.
	No. long waits	On target	
	Delays in client transfer	On target	
Staff management	Overtime use	< 10% from target	Recruitment/retention, increase graduate staff, increase access to transition to practice program, increase capacity to support undergraduate nursing students, growth perioperative skills in casual staffing pool, overtime and fatigue leave reduction strategies involving leave management.
	Agency use	> 10% from target	
	Sick leave	> 10% from target	
	Fatigue Leave	> 10% from target	
	Mandatory/requisite training	< 10% from target	Develop annualised schedule for training requirements. Incorporate into PAD process and clinical portfolios.
	Education participation	On target	Continue monitoring
	Research participation	On target	Continue monitoring

## Table Legend

On target
< 10% from target
> 10% from target

## External environmental analysis

## Policy/legal factors

Meadowlands perioperative services are influenced by a number of policies, guidelines, plans and legislation. Demands placed on the services as a result of policy, guidelines, plans and legislation impacts both direct and indirect nursing hours. A number of policy/legal factors have been included during the establishment of productive hours while others are captured in alternative activities involving safety and quality and education and training. The key policy and legal documents impacting the Meadowlands perioperative services include:

- Clinical Services Capability Framework (version 3.0)
- Elective Surgery Services Policy
- Overtime Human Resources Policy
- Queensland Health Procurement Policy
- Queensland Health Patient Safety and Quality Plan 2008-2012
- Queensland Health Strategic Plan 2011-2015
- *Radiation Safety Act 1999*

This addendum is a complementary document to the industrially endorsed *Business Planning Framework: a tool for nursing workload management* (2008) and does not represent change to existing organisational policy.

- Queensland Health Reprocessing of Reusable Medical Devices and Surgical Products Standard
- Surgical Safety Checklist Policy
- Time Off in Lieu Human Resource Policy
- *Environmental Protection (Waste Management) Regulation 2000*
- *Health (Drugs and Poisons) Regulation 1996*
- *Health Services Act 1991*
- *Public Health Act 2005*, Chapter 4
- *Nurse and Midwives (Queensland Health) Certified Agreement 2009*
- *Queensland Health Nurses and Midwives Award – State 2011*
- *Workplace Health and Safety Act 1995*
- Australian College of Operating Room Nurses (ACORN) Standards
- Australian Day Surgery Nurses Association
- Department of Health and Ageing Elective Surgery Waiting List Reduction Plan.

### Economic factors

- International/national: the global financial crisis continues to impact funding capacity at the State Government level.
- Public/private interface: Meadowlands Hospital is co-located with a private hospital. A service agreement is in place between the Meadowlands perioperative services and the private facility.
- Private health care providers: as per above.
- Capital works: Proposed extension of the physical capacity of perioperative and surgical services, currently no funding has been approved.

### Social factors

The current population of District X is 1,031,064 with an expected growth to 1,178,819 by 2021. To manage the projected increase in the general population a proposal has been made to incrementally extend the physical capacity of surgical and perioperative services by 2016. The socio-economic index for areas (SEIFA) decline ranking for this area is 9 which place this region in the second top 10%. Culturally, the population is made up of 2.0% Aboriginal and Torres Strait Islander people, 20.9% of residents were born overseas and for 6.9% of the population English is their second language. As the only secondary health service within the region community expectations are high in relation to the delivery of accessible quality care. Feedback from consumer and carers groups is regularly sought and used to improve services.

Staff attrition levels within the Meadowlands perioperative services are high in comparison with Queensland Health's state average. The perioperative services rely on casual/agency staff, overtime usage and part-time extra shifts to cover roster shortfalls and replace staff leave (emergent and scheduled). Agency costs are high and the use of overtime and part-time extra shifts contribute to fatigue leave. Therefore, to balance service supply with demand, a commitment to sustainable staffing practices has been made. Strategies to improve recruitment and retention practices as well as 'growing our own' staff through transition to practice programs and universities affiliations has been made. These strategies are expected to increase the number and availability of skilled nursing and midwifery staff within the service, reducing the reliance on high cost labour options such as overtime and agency staff.

## Technological factors

Currently, telehealth facilities are not used within the Meadowlands perioperative services. Plans to trial these services are emerging, however no clear directions have yet been agreed. Telehealth services are not suitable for the direct delivery of care to a large percentage of clients, although opportunities do exist for staff in education and training. This possibility is being explored by medical and nursing and midwifery perioperative educators.

## Research and evidence based practice

Two 12 week practice development programs have been incorporated into the calculation for productive nursing hours. The time committed to practice development has been averaged throughout the year but will be rostered as separate blocks. Two staff members have been awarded perioperative research scholarships and are involved in collaboration with one of the local universities. SARAS leave has been approved to support each staff member to undertake the project.

## Strengths, weaknesses, opportunities and threats (SWOT) analysis

### Strengths

- Demand for services increasing
- Integrated multi-disciplinary team focus
- Highly skilled clinical leadership team
- Staff committed to improving service capacity
- Successful trial of transition to practice program
- Succession management strategy
- Committed and motivated staff
- Focus on education and training
- Clinical portfolios development
- Committed to evidence based practice programs
- Collaborative arrangements with other services (public and private)

### Opportunities

- Health Reform
- Organisational restructuring
- University affiliations
- External research grants
- Collaborative programs with other perioperative services and statewide clinical networks
- Development of certificate courses in sterilisation with local TAFE

### Weakness

- Computer access
- Data management
- Current physical environment lacks capacity for growth
- Limited access to experienced staff within District's casual/relief pool
- Compliance with mandatory /specialty competencies
- Staff attrition levels
- Emergent leave management
- Overtime and agency use
- Increasing demand for productive hours
- Recruitment management
- Involvement in nursing research
- Insufficient storage space

### Threats

- Unstable global economy
- Health Reform
- Organisation restructuring
- Funding model changes
- Global shortage of nurses/midwives with perioperative skills
- Ageing workforce



## Appendix D



## Balance Scorecard example

**Perioperative Services Monthly Balanced Scorecard 2010/11**

Key Performance Area	Performance Indicator	Performance Target	Performance Achievement	Rating
Risk Monitoring & Management	Client incidents	<5%	3%	—
	Staff incidents	<5%	2%	▲
	Pressure area audit	>95%	89%	▲
	Workplace health & safety audit	>95%	97%	—
	Infection control audit	>95%	98%	—
	Workload grievances	0	9	▲
Client/Workflow	Operating room utilisation	>95%	96%	▲
	No. long waiting list	0	0	—
	Delays in client transfers	<5%	4%	—
	Overtime usage	<0.68 FTE	0.75 FTE	▲
Staff Management	Agency usage	<0.34 FTE*	3.4 FTE	▲
	Sick leave	<3.8%	4.30%	▲
	Fatigue leave	<1%	1.6%	▲
	Mandatory training	>100%	92%	▲
	Education session attended by staff (headcount)	>40	42	▲
	Evidence based practice projects/research	2	2	▲

\* Based on Queensland Health's target of 0.75%

## Table Legend

	On target		Performance Improvement
	< 10% from target		Performance Decline
	> 10% from target		Nil change in performance

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[http://www.health.qld.gov.au/publications/corporate/stateplan2007/QSHSHS\\_plan.pdf](http://www.health.qld.gov.au/publications/corporate/stateplan2007/QSHSHS_plan.pdf)

### Queensland Health Intranet Sites

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<http://www.health.qld.gov.au/chrisp/>
- Decision Support System  
<http://dss.health.qld.gov.au/>
- Nursing and Midwifery Office Queensland  
<http://qheps.health.qld.gov.au/nmog/default.htm>
- Patient Safety and Quality Improvement Service  
<http://qheps.health.qld.gov.au/chi/PSQ/>
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## Glossary

**Balance scorecard** – a range of indicators used to measure an organisation’s financial and non-financial performance.

**Business Planning Framework: A tool for nursing workload management** – the mandated tool used by Queensland Health nursing and midwifery services to balance service demand and the supply of nursing/midwifery services. Client/customer complexity – a measure used to assist nurses in identifying and planning the resources required to meet the care demands of clients/customers.

**Clinical Services Capability Framework** – a coordinated and integrated approach to health service planning and delivery in Queensland.

**Client complexity** – a measure used to assist nurses in identifying and planning the resources required to meet the care demands of consumers.

**Diagnostic related groups** – patient classification system.

**Direct nursing and midwifery hours** - activities nurses and midwives do that directly contribute to care provided to the client.

**External environmental analysis** – analysis of the external environmental factors which can potentially influence a service.

**Full-time equivalent** – full-time employee working 38 hours per week.

**Indirect nursing and midwifery hours** - activities nurses and midwives do for clients while not in direct contact with them.

**Internal environmental analysis** – analysis of the internal environmental factors which can potentially influence a service.

**Service activity** – work performed to produce outputs.

**Service profile** – describes the role and function of a service.

**Socioeconomic index for areas** – product developed especially for those interested in the assessment of the welfare of Australian communities.

**Study and research assistance scheme** – designed to assist employees to participate in further education.

**Productive nursing and midwifery hours** – hours that contribute to patient care and include both direct clinical and indirect clinical care.

**Non-productive nursing and midwifery hours** – hours over and above the direct and indirect hours covered in productive nursing hours. When converted to costs, these hours are often referred to as ‘on-costs’.

**Nursing hours per occasion of service** – the average nursing hour per unit of activity for ambulatory patients.

**Nursing hours per patient day**– the average nursing hours per unit of activity for inpatient services.

**Occasions of Service** – any examination, consultation, treatment or other service provided to a non-admitted patient in a functional unit or a health service facility.

**Occupied Bed Days** – the total number of days a unit’s beds are occupied over the financial year.

**Weighted Activity Units** – a measurement used to determine the relative value of a services activity.

## List of acronyms

<b>AARK</b>	Automated Anaesthetic (Perioperative) Record Keeper
<b>ACORN</b>	Australian College of Operating Room Nurses
<b>AORN</b>	The Association of Perioperative Registered Nurses
<b>BPF</b>	Business Planning Framework
<b>CN</b>	Clinical Nurse
<b>CNC</b>	Clinical Nurse Consultant
<b>CSCF</b>	Clinical Services Capability Framework
<b>DDW</b>	Demand Driven Workforce
<b>DRG</b>	Diagnostic Related Group
<b>DSS</b>	Decision Support System (DSS Panorama)
<b>EDS</b>	Enterprise Discharge Summary
<b>EN</b>	Enrolled Nurse
<b>ENAP</b>	Enrolled Nurse Advanced Practice
<b>ERIC</b>	Reporting system (note ERIC is not an acronym)
<b>FTE</b>	Fulltime equivalent
<b>HBCIS</b>	Hospital Based Corporate Information System
<b>NHPOS</b>	Nursing Hours per Occasion of Service
<b>NHPAU</b>	Nursing Hours per Activity Unit
<b>NHPPD</b>	Nursing Hours per Patient Day
<b>NUM</b>	Nurse Unit Manager
<b>OOS</b>	Occasion of service
<b>OR</b>	Operating room
<b>ORMIS</b>	Operating Room Management Information System
<b>PNDS</b>	Perioperative Nursing Data Set
<b>PRIME</b>	Primary Related Incident Management and Evaluation System
<b>RN</b>	Registered Nurse
<b>QHAPDC</b>	Queensland Hospital Admitted Patient Data Collection
<b>SARAS</b>	Study and Research Assistance Scheme
<b>TGA</b>	Therapeutic Goods Administration

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