Business planning framework
a tool for nursing workload management

Resource manual 4th edition
July 2008
The Business planning framework: a tool for nursing workload management is a comprehensive resource designed to support training in business planning for the purpose of managing nursing resources and workload management.

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Foreword

Nursing workload management in Queensland Health is in accordance with the *Business planning framework: Nursing Resources* (BPF), which was developed collaboratively by *Queensland Health* and the *Queensland Nurses Union* (QNU). The BPF was originally published in 2001. The approach taken by the BPF is to achieve a balance between service demand and the supply of nursing resources required to meet the identified demand. Use of the BPF for nursing workload management was mandated in the *Nurses (Queensland Health)-Section 170MX Award 2003, Part 5, Section 17*.

The parties involved in the Nurses Interest Based Bargaining (NIBB) process, representing Queensland Health and the Queensland Nurses Union (QNU), agreed that five key priority issues will ensure a sustainable nursing workforce into the future, as well as underpinning the successful implementation of the Nurses (Queensland Health) Certified Agreement (EB6) 2006. Part 4, Section 31 of EB6 addresses workload management and acknowledges the need to ensure the integrity and appropriate application of the existing agreed nursing workload management tool (BPF).

Since 2006, Nursing Interest Based Bargaining Interest Group (NIBBIG) has been addressing the five agreed priority areas of recruitment and retention, work-life balance, education and training, models of care and workloads. NIBBIG has provided Queensland Health, QNU and the nursing workforce with a positive opportunity to examine and address the underlying issues that hamper the recruitment and retention of nurses within Queensland Health.

A joint Queensland Health/QNU working party was established in 2006 to address the effective management of nursing workloads and nursing workforce planning through the development of this edition of the *Business planning framework: a tool for nursing workload management*. The aim of the BPF is to provide nurses with a business planning process to assist in determining appropriate nursing staff levels to meet service requirements, identify strategies to assist in managing workloads and evaluate the performance of the nursing service.

Queensland Health nurses are encouraged to take an active role in developing, implementing and evaluating a business plan and workload management strategies relevant to the services they deliver. A sound business framework and workload management strategies are essential in delivering quality care in today’s competitive and dynamic health care environment.

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Acknowledgments

Review and development of the fourth edition of the *Business planning framework: a tool for nursing workload management* (2008), formally the *Business planning framework: Nursing Resources*, was undertaken by members of the Nursing Workloads Management committee:

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Business planning framework: a tool for nursing workload management
Overview

The design and development of the Queensland Health Business planning framework: Nursing Resources (BPF) was an outcome of the Ministerial Taskforce on Nursing Recruitment and Retention 1999, which identified that ‘no means existed to effectively analyse staffing level requirements for Queensland Health’ and recommended a ‘business planning model’ for nursing be developed as a priority. Further, the model needed to include measures relating to workloads, skill mix, and patient acuity/complexity together with the training and development needs of nurses.

Recommendation 29 of the Taskforce Report was formulated to address this issue and stated that:

Queensland Health funds the development of a Business Planning Model to provide a method of determining appropriate long term nursing staffing levels necessary to meet specific service requirements.

The BPF, originally published in 2001 has been periodically reviewed and updated in consultation with key stakeholders. The 2007-2008 (4th) edition of the BPF takes into account feedback received from key stakeholders, including nurses who have been extensively involved with implementation and use of the BPF.

Additionally, the BPF has been incorporated into the Nurses (Queensland Health) – Section 170MX Award 2003. Part 5, Section 17 of this Award requires nursing workload management to be in accordance with the BPF and states:

17.1.2 Nursing workload management in Queensland Health will be in accordance with the Business planning framework: Nursing Resources, as amended from time to time by agreement between parties, which was developed in consultation with the Australian Nursing Federation (Queensland branch) and published in July 2001, to address workloads of nurses in Queensland Health. (Australian Industrial Relations Commission, Nurses (Queensland Health) Section 170MX Award 2003)

The review of the BPF undertaken in 2007 was in response to the negotiation of the Nurses (Queensland Health) Certified Agreement (EB6). The parties involved in these negotiations identified a number of priority areas of critical importance to the nursing workforce, including ‘effective management of nursing workloads and nursing workforce planning’. It was agreed that addressing these priority areas would underpin the successful implementation of EB6. The objective of this review of the BPF is to deliver fair and reasonable nursing workloads through the implementation of a transparent and consistent workload tool and the implementation of strategies to address nursing workloads.
Introduction

Business planning is a systematic process for examining an organisation and its environment in order to best allocate resources to meet service demand. A business plan (sometimes referred to an operational plan) is the working document that articulates the strategies for achieving the goals of the service. It is through the use of this process that nursing resources will be allocated to most appropriately manage workloads.

The *Business planning framework: a tool for nursing workload management* provides nurses with a business planning process to assist in determining appropriate nursing staff levels to meet service requirements and evaluate the performance of the nursing service. It is a move away from using historical staffing establishment ratios to a method based on a demand and supply approach that is responsive to the changing health care delivery environment and the subsequent nursing resource requirements.

This approach to nursing resource management focuses on achieving a balance between service demand and the supply of nursing resources necessary to meet identified demand.

Service demand relates to meeting patient care needs and is established by considering factors such as:

- activity
- acuity/complexity
- performance targets
- technology
- physical layout and environment of work area
- supply issues of health professionals and support staff
- service quality
- patient and staff safety
- models of service delivery
- financial outcomes
- government initiatives and policy direction
- public/private interface.

Calculating nursing human resource requirements (supply) necessary to meet service needs (demand) involves measuring demand in terms of the total number of required nursing hours.

Factors affecting the supply of nursing resources include:

- budgeted full-time equivalents (Appendix E: Definitions of FTE)
- employment conditions including leave entitlements
- supply issues of health professionals and support staff
- recruitment and retention
- workforce skill mix and allocation
- workforce requirements such as training/staff development and performance management
- direct and indirect patient care hours.
Matching the supply of nursing resources to service demand is an integral part of developing a business plan for any health service. This manual will assist the user to systematically work through the business planning process, including calculating supply and demand within that process, and developing and implementing strategies to manage them, which in turn supports the management of nursing workloads.

**Purpose of the manual**

The BPF manual is a comprehensive reference and education resource to assist nurses with the process of determining nursing human resource requirements (supply) in the context of the demands placed on the service (demand). The outcome of this process is the development of a business (or operational plan) that relates to the effective management of nursing resources and workloads in the service.

This manual has been designed primarily to address business planning needs for nurses. However it has the potential to be used as an effective resource by other professional groups. The manual guides the user through analysing a unit, service, or department, determining the nursing resources required and evaluating the performance of the nursing service in order to develop an achievable business plan.

The aim of the resource manual is to assist nurses to undertake business planning for their service and to provide education on business planning and workload management strategies.
Business planning framework: a tool for nursing workload management

Content

The resource manual consists of five modules that include recommended references. Queensland Health documents referred to in the manual are available via the Queensland Health Electronic Publishing Service (QHEPS).

Module 1
Introduces the concept of developing a business/operational plan.

Module 2
Describes how to develop a service profile, including aim, objectives and environmental analysis.

Module 3
Describes types of costs, reports and budgets that are relevant to the development of a nursing budget.

Module 4
Explains the steps involved in developing a nursing operating expense budget based on the allocation of nursing hours (supply) to achieve a balance with service requirements (demand), and outlines strategies for managing imbalances between supply and demand.

Module 5
Discusses the evaluation of performance of the service by analysing the balance between service demand and resource allocation (supply).

Application of the BPF is supported by a number of tools designed to assist nurses and nurse managers to determine nursing requirements appropriate for the workload anticipated in the work unit. Queensland Health staff can access tools on QHEPS via the Office of the Chief Nursing Officer website at http://qheps.health.qld.gov.au/ocno/home.htm
**Principles of the business planning framework**

The BPF is underpinned by three principles that are to be integrated into its application. These principles are:

1. The patient/client
2. The staff
3. The organisation.

**Principle 1: The patient/client**

The BPF supports the provision of patient/client focused health care through:

- applying models of clinical care and clinical practice that are evidence based and support integration
- meeting agreed outcomes and health improvement targets
- promotion of the premises underpinning delivery of safe, quality health care by Queensland Health namely:

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**Principle 2: The staff**

Nursing staff plan and manage resources, ensuring:

- the supply of nursing staff is balanced with service demand to effectively manage nursing workloads
- integration of:
  - workforce planning
  - workplace flexibility
  - evidence based practice
  - clearly identified required competencies
  - appropriate training
- systems are in place for managing safe, equitable workloads.

**Principle 3: The organisation**

The BPF incorporates the principles associated with Queensland Health’s current strategic direction through:

- strong committed leadership that will support the achievement of organisational goals
- optimal use of resources to achieve quality outcomes
- integration of systems to assist decision making
- health service managers providing access to timely, accurate and reliable data to enable planning and monitoring of services and costs.
The Business planning framework

The BPF consists of three stages:

Stage 1 Develop a service profile (demand)
Stage 2 Resource allocation (supply)
Stage 3 Evaluate performance (analysis of the balance between demand for resources to resources allocated).

The overall aim of the process is to achieve a balance of service demand with resource allocation. Through this framework, nurses are provided with the means to develop a flexible, responsive business/operational plan that is relevant to a particular service, unit or department.

Each stage of the process should not be considered in isolation, or as separate from the desired outcome of developing a business/operational plan.

The principles of the framework can be applied to a variety of health care services in rural, remote, tertiary, regional and community settings where nurses are employed by Queensland Health.

The framework is depicted in the diagram below.
Module 1: Develop a business plan

1.1 Introduction
1.2 Objectives
1.3 What is business planning?
1.4 What is a business plan?
1.5 Why develop a business plan?
1.6 How to develop a business plan
1.1 Introduction

Business planning is a systematic process for examining an organisation and its environment in order to allocate resources to meet service demand in the most appropriate way. This module introduces the concept of business planning, its relevance to Queensland Health’s strategic direction and includes a brief overview of the process involved in developing a business plan.

1.2 Objectives

On completion of this module, the reader/workshop participant will be able to:

1. Determine how the local service agreement is aligned with the Queensland Health strategic direction.
2. Analyse and summarise how the local health service meets the relevant goals of Queensland Health.
3. Identify those who need to participate in the development of a business/operational plan for the health service.
4. Describe the sections of a business plan.

1.3 What is business planning?

Business planning is the process of determining actions to support strategic direction. It should be undertaken for the development of either a new planned or existing service. Throughout the process, the total operation of the planned or existing health service is critically examined. Health care organisations exist in a complex and changing environment. Undertaking planning will assist in adapting to these changes.

Business planning can be viewed as a three-part process.

1. Aims

The business planning process should begin with identifying the aims and objectives of the service.

2. Analysis

The second stage is where a systematic analysis of the service and its environment is undertaken, including an evaluation of the previous year’s implementation. This stage encompasses the critical measuring of whether resource allocation (supply) meets current and future service demands.

3. Action

In this stage of the business planning process, actions to achieve the aims of the service are developed, decisions are made regarding the allocation of resources and evaluation measures are determined.
1.4 What is a business plan?

A business plan (sometimes referred to as an operational plan), is the working document that articulates the strategies for achieving the goals of the unit. It is a statement of what the service, unit or department expects to achieve over a set period as a step towards fulfilling its strategic plan.

In Queensland Health, there is a connection and interdependency between different planning processes. These include whole of government priorities, the Queensland Health Strategic Plan, and the Queensland Statewide Services Plan. The Queensland Health Strategic Plan is developed for a set period of time and articulates the vision, mission, strategic intent, objectives, initiatives and outputs to be achieved by Queensland Health over a period of five to 10 years.

Health service planning then needs to define what and how services will be provided. The relevant corporate and Health Service District (HSD) priorities and strategies need to be reflected in the service level business plans and as per the service agreement. The outputs of the HSD will be achieved by the various business units in the district.

A business plan usually has a one year timeframe based on the financial year. Adjustments to the plan may be required as key factors such as patient/client activity and nursing supply change over the time period.

1.5 Why develop a business plan?

Nursing is the most visible service in health care organisations and as such, requires a significant proportion of budgetary allocation. The business plan provides a sound basis for projecting the required nursing resources.

There are many factors impacting on the nursing resources needed to deliver services. These require careful and thorough consideration. The number of nursing hours required in one organisation will not necessarily be transferable to another organisation, as there are a number of key variables which impact on the workloads of nurses. It is important to determine the key variables that have a significant impact on nursing workloads. Effective staffing levels need to be developed from both a service and whole of organisation perspective.

Participation in the development of a business plan for the work area will assist nurses to actively engage in decision making in regard to resource utilisation. Nurses are then involved in how their workloads are managed in their work area.

Benefits of a business plan

- Assists the nurse to plan for the delivery of services.
- Clearly defines the goals/objectives (in line with the strategic plan) to give purpose and direction to the work of the team members within the services.
- Identifies tasks and priorities.
- Determines the resources required to deliver services.
- Provides guidance with the monitoring and evaluation of service performance.
1.6 How to develop a business plan

In developing a business plan, consultation with stakeholders needs to occur. Involving the service staff in the planning process has the advantage of assisting the staff to see the service as a whole. There will potentially be a better understanding of the concepts, as well as greater ownership and commitment to the plan. The following points are important considerations when developing a business plan.

Who you need

Use a small group of stakeholders to develop the business plan (stakeholders being people who will be influenced by the plan). While the majority of the group would usually be members of the service, external people may also participate, for example:

- a person with expertise in business planning
- a member of the senior management staff.

What you need

Documents

Relevant key information contained in the following documents will assist in the planning process.

- The current Queensland Health Strategic Plan
- District performance reports/scorecards
- District service agreement
- Other relevant policy/planning documents including past business plans
- Quality reports
- Financial and activity reports

Time

It is important to commit sufficient time to undertake the process.

Activity

1. Review the current Queensland Health Strategic Plan and Statewide Health Services Plan.
2. Review the current Service Agreement for your District.
3. Note how the service agreement is aligned with the goals of the strategic plan.
4. Summarise how your business unit/organisation/service meets the relevant goals of the strategic plan.
5. Consider who needs to participate in the development of a business plan for your service.
**Structure of a business plan**

The business plan is a formal document and as such needs to be retained as a reference for future planning. Tailor the plan according to the preferences of the users.

**Size and format**

The size of the business plan will depend on the size and complexity of the service. It shouldn’t be too long or it won’t be read or used as intended.

**Content**

The plan needs to contain sufficient information for the users to understand how it is used to in the delivery of services. The plan should be informed by the following sections. Each of these sections will be further discussed in the later modules.
In this manual, each of these sections informing the business plan is addressed in detail through individual modules. A brief description of the contents of each of these sections is presented in the following table.

**1. Introduction** (see Module 1)
This section provides a brief history of the service including past activity and achievements.

**2. Service profile** (see Module 2)
   a. Aims/objectives
      The aims and objectives of the service should be stated.
   b. Present service.

This section needs to have a more detailed description of the current state of the service. It may include reference to past commitments that were unable to be achieved and priorities for future service development.

**3. Environmental analysis** (see Module 2)
The extent of analysis of the external and internal environment is dependent on the service for which the plan is being developed. For example, a service that is for the entire state will be more complex than a service for a small, defined population.

**4. Strengths, weaknesses, opportunities, threat (SWOT) analysis**
   (see Module 2)
The SWOT analysis is the assessment of factors in the external and internal environment into the categories of strength, weakness, opportunity or threat, including information from the evaluation of previous plans.

**5. Resource requirements/allocation** (see Modules 3 and 4)
This section will describe the resources that are required to deliver the services and the allocation or distribution of these.

**6. Performance measures/evaluation** (see Module 5)
This section details the measures that will be used to monitor and control the outcomes of the business plan. To measure progress against objectives the Business Plan needs to be regularly reviewed. Revision of the plan can also occur in line with changes in the external and internal environments.

Table 1.1: Business planning: A brief description of the content in each section
For examples of completed business plans, see Appendices A and B.

This module has introduced you to the concept of a business plan and associated processes and the relevance to the corporate strategic direction of Queensland Health.

Module 2 will describe how to develop a service profile (establishing demand), including defining the aim and objectives of the service and how to undertake an environmental analysis.

The Business planning framework: a tool for nursing workload management is illustrated below.
Module 2: Develop a service profile

2.1 Introduction
2.2 Objectives
2.3 What is a service profile?
2.4 Identifying the aim
2.5 Developing objectives
2.6 Describing the present service
2.7 Environmental analysis
2.8 Strength, weakness, opportunity, threat analysis

1. Develop a Service Profile (Demand)

2. Resource Allocation (Supply)

3. Evaluate Performance

Balance of Service Demand and Resource Allocation
2.1 Introduction

Developing a service profile (demand) is the next stage in the development of a business plan. Module 2 will outline how to identify the aim, develop the objectives and describe the service. Additionally, a comprehensive description of external and internal environmental factors that may impact on the service is included. The process of exploring environmental factors and grouping them into categories of strengths, weaknesses, opportunities or threats is also explained.

The initial service profile developed by a cost centre is part of the process to inform the initial budget bid or ‘proposed service profile’. Following discussion and negotiation, an agreed budget for the new financial year is finalised. Once the agreed budget is finalised and the level of service agreed, the service profile should be reviewed and amended periodically to reflect the budget allocation. The final document is recognised as the ‘agreed service profile’. It is important to remember that the service profile is only one step in the development of a business plan.

Module 3 will articulate a staged approach to explaining the application of various reporting mechanisms necessary to establish the cost of services required.

2.2 Objectives

On completion of this module, the reader/workshop participant will be able to:

1. Identify the budget process for their district/organisation
2. Develop a proposed service profile for the new financial year bid
3. Outline the aims and objectives of the service
4. Describe the current service including recent achievements and priority areas for service development
5. Summarise the internal and external environmental factors impacting on the service
6. Classify the environmental factors according to the categories of Strength, Weakness, Opportunity and Threat (SWOT)
7. Finalise an agreed service profile that reflects the agreed, negotiated annual operating budget and activity level for the financial year

2.3 What is a service profile?

Developing a service profile is the first step in the business planning process. This includes describing the role and function of the service by:

- stating the aim of the service
- defining the objectives of the service
- systematically analysing the internal and external environment
- completing a SWOT (strength, weakness, opportunity, threat) analysis.
In developing the service profile, it is important to reflect on how your service is aligned with the corporate strategic direction of Queensland Health. What goals of the corporate plan is your service meeting? Are you delivering core services or services other than core services? It is important to ensure that the activities undertaken by the service are addressing the goals and strategies of Queensland Health so that resources are used appropriately.

2.4 Identifying the aim

Queensland Health has a strategic plan stating the mission statement and key outcomes to be achieved during the designated timeframe. The current mission statement for Queensland Health is ‘Creating dependable health care and better health for all Queenslanders’. When developing a business plan at a local service level, the aim of the service needs to be clearly identified. This aim must be consistent with the direction of Queensland Health.

State the aim of your service in a succinct, broad sentence, describing how your service contributes to achieving the goals of Queensland Health.

The following aim is an example applicable to a cardiac service:

To provide holistic care for cardiology patients, utilising a coordinated multidisciplinary approach, resulting in optimal patient outcomes.

The aim of the service should be in line with that of the Queensland Health current strategic direction.

2.5 Developing objectives

The objectives of the service need to flow from the aim. They are statements indicating the key outputs for the service to achieve and therefore form a basis for assessing the performance of the organisation. The objectives of the service will need to be aligned to corporate goals. In developing objectives, consider past non-achievements of the service and incorporate any new activities or programs that need to be undertaken. Ensure the stated objectives are:

- easy to understand
- specific
- realistic and achievable
- time oriented
- outcome focused
- measurable
- prioritised.
Two examples of service objectives are:

1. Provide pre/post care for patients undergoing interventional/diagnostic procedures in the cardiac catheter laboratory over the next 12 months.
2. Implement the reviewed cardiac patient education program within six months.

Objectives of the service must remain in line with the aim of the service and the current *Queensland Health Strategic Plan*.

### 2.6 Describing the present service

Now describe the present service (or the service being planned). This includes:

- service location (geographical and physical)
- service boundaries (geographical)
- recognised type of service (eg. a cardiac service)
- functions of the service
- current role delineation/*Clinical Service Capability (Framework)*.

Reference to past commitments that were not achieved and priorities for future development might also be included if they are considered valuable in the context of the business plan.

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**Activity**

1. What is the aim of your service?
2. What are the objectives of your service?
3. Describe your service, including location, type and level. What significant achievements were made in the last 12 months?
4. List the current priorities for service development (this may change once you have undertaken an environmental and SWOT analysis).
2.7 Environmental analysis

Internal and external environmental factors can affect the functions of the service. The impact, or potential impact, of any of these factors on the service, and therefore nursing workloads, can be identified by systematically analysing the service environment. Understanding the environmental factors affecting the service assists when making a comparative analysis with other services and benchmarking.

2.7.1 Internal factors

Internal factors are those the service can potentially influence. There is a comprehensive list of internal environmental factors that can impact on the service, and these have been categorised under four headings:

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

1. Structural – the environment in which the services are to be delivered.

Location and size
- Describe the physical environment in which the service exists.
- What factors can impact on the amount of nursing resources required? For example, remote areas where transport is difficult to obtain can delay the discharge of patients; the size of the locality services can affect community and outreach services (travelling distances and time).

Design of facility
- The design of the facility can impact on nursing costs. Geographically isolated units may incur higher fixed nursing costs by requiring a minimum staffing level that is far greater than patient care requirements.

Services within facility
- What services are located within the facility?

Organisation and unit structural design
- Does the district/unit structural design support the service to be delivered?
- The larger organisations within Queensland Health may have matrix structures where staff have responsibilities to both operational and professional leaders. This can create conflicts of interests in decision making.
Cost centre structure

The structure of the service may comprise one or more units/cost centres.

– Do the number, size and type of cost centres meet the current need for reporting? Are there too many or too few cost centres?
– Do these reflect the needs of the service and service managers?

Structure of the service

– What is the structure of the service?
– What teams are involved in service delivery?
– What are the roles, responsibilities and accountabilities of team members?
– What are the reporting relationships of team members?

Nursing structure

– What are the number, roles and functions of all categories of nursing staff?
– What are the accountabilities of nursing staff?
– What impact does the nursing structure have on the clinical and non-clinical workload?
– Model of care/service options.

A ‘model of care’ can be described as a multifaceted concept that broadly defines the way health services are delivered at unit, division or whole of service level. An example of a model of care is the Queensland Health Integrated Mental Health service.

Current model of care

– Is the current model of care aligned to the health care requirements of the local community?
– What are the outcomes for patients/clients?
– Is there good evidence to support the current model of care?
– Does the existing structure support the model of care?

Alternative models of care

– Are there other models of care preferred in terms of economic effectiveness and patient/client outcomes?
2. Human resource management

Leadership and management

- Describe the environment in which the service exists.

Leaders are needed to achieve the objectives and direction set of a work unit or service. Leadership relates to the ability to motivate and guide others in a specific direction. Management encompasses leadership but also includes the tasks of planning, organising, controlling and communicating in a manner that influences and makes optimum use of resources.

In order to optimise outcomes, leaders and managers of the whole service (and individual units within the service) need to consider and be aligned to:

- What are the skills of the leaders/managers in the organisation?
- Do they have the level of knowledge required to achieve the outcomes?
- Who is accountable for the service?

Organisational culture

Leadership also influences organisational culture. Leaders need to assess the level of trust, communication, devolvement and commitment to change that exists within their service.

Core staff working in the service – categories, scope of practice, skills

This refers to those staff members either directly employed to work in the service or rostered to work in the service. Their primary roles and responsibilities are within the service.

- What are the categories of core staff working in the service?
- What are the numbers/FTE, role and functions of:
  - medical staff
  - allied health staff
  - nursing staff – registered nurses (management and clinical), enrolled nurses, assistants in nursing
  - administrative staff
  - operational staff.
- What is the current scope of practice of the clinical staff?
- What potential is there to advance the scope of practice?
- What opportunities are there for staff to develop further skills? For example, through education, rotation through work areas, and secondment to other services.
- How many of the staff are practising at the following levels:
  - novice
  - advanced beginner
  - competent
  - proficient
  - expert
- Do the competency levels of the staff match patient/client needs?
Support staff
This refers to staff who are not directly employed by the service, and not rostered exclusively to the service. They have roles and responsibilities across multiple services that may impact on service delivery. For example:

- allied health
- clerical/administrative
- business support
- operational
- volunteers
- specialist nurses or roving CNCs.

- What are the numbers, hours of work, skills and duties of these staff?
- What duties/activities in the service do these staff perform that impact on the workload of nurses? For example, support personnel may perform bed cleaning; however this may be limited to 0800 – 1700, Monday to Friday only. Clerical staff provide ward reception and main reception work between the hours of 0800 – 1630 Monday to Friday. In smaller organisations, the phones may be switched through to the ward from 16.30.
- Are nurses performing any other tasks that could be done by other categories of staff?

Teaching and training/development commitments/needs
- What is the teaching role of the service?
- What agreements with universities are in place or under development?
- What is the impact of these agreements? For example:
  - costs
  - opportunities for funding
- What clinical placements are required?
- What structures/processes are in place to support the teaching requirements/commitments?
- What time allocation is required for activities such as:
  - orientation of new staff
  - orientation of relief staff
  - mandatory credentialing
  - optional credentialing.
- What time has been allocated previously? Was this time sufficient?
- Are needs likely to change?
Other indirect patient/client care commitments

- What management/administrative responsibilities do team members have? For example:
  - portfolio work (such as NO2 special projects)
  - quality improvement activities, accreditation
  - research.

3. Information technology/management

Information technology (clinical and management)

- What level of information technology is in place?
- What is the access to systems?
- How reliable are the systems e.g. are nursing staff required to input information after periods of downtime?
- What plans are there for future developments in IT systems?

Information management

- What information sources and systems are in place?
- Is there sufficient information provided?
- What access is there to this information?
- Who collects/supplies the information?
- How timely and accurate is the information from these systems?
- Do staff know how to use the information?

4. Performance

Detailed information to assist with the assessment of the organisation’s past performance is contained within Modules 3 and 4.

Consider the performance of your service for efficiency, effectiveness and economy. This requires you to review:

- financial performance against budget
- performance against desired outcomes.

In reviewing these items, major areas to focus on are complexity of care requirements, activity and financial and service quality.
Comparative analysis

It can be helpful to compare key performance factors with a similar service focusing particularly on the resources used by other services. Ideal services for comparative purposes are those with a similar patient/client complexity and activity level.

- **Patient/client complexity/acuity**

Patients and clients differ in the amount and complexity of resources required to care for them. Casemix is the term used to describe the different categories of patients.

The term ‘acuity’ is used to describe the severity of illness of a patient/client. The higher the acuity, the greater the amount/complexity of resources required to care for them.

- For hospital units, what are the major diagnosis related groups (DRGs) of your patients?
- For community based services, what is the complexity of the care needs of your clients?
- For the services relating to the business plan process, what are the nursing care needs (measured in hours and minutes of care per day) of the most significant DRGs (for example, Top 20 DRGs)? The nursing care requirements for groups of patients can be used as an indirect measure of patient acuity/complexity. Such information can be obtained from a Patient Dependency System if one is used.

- **Patient/client activity**

Key activity data for your service should be reviewed. Activity areas to consider are listed in the following table.

<table>
<thead>
<tr>
<th>Number of separations</th>
<th>Number of day surgery cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted separations</td>
<td>Outpatients occasions of service</td>
</tr>
<tr>
<td>Total occupied beds</td>
<td>Number of births</td>
</tr>
<tr>
<td>Average occupancy</td>
<td>Retrievals</td>
</tr>
<tr>
<td>Occasions of service</td>
<td>Back-transfers</td>
</tr>
<tr>
<td>Emergency department presentations</td>
<td>Home visits</td>
</tr>
<tr>
<td>Numbers per triage category</td>
<td>Number of group sessions, numbers of attendees at group sessions</td>
</tr>
<tr>
<td>Number of operations</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2.1: Activity factors**

Note – these are some of the major activity areas that need to be examined by the service. However, within individual units there may be other types of activity that need to be reviewed. Consider:

- What were the trends in the activity areas listed above over the last two to three years?
- Is any significant change anticipated?

Module 3 contains more information on interpreting reports and forecasting.
• Financial outcomes
  – What were the financial outcomes; over-budget, under-budget, trends in costs?

• Quality of service – current/preferred/evaluation methods
  – What quality measures are currently in place?
  – What is the current performance of the organisation as measured against clinical, financial and employee indicators?
  – Is current performance acceptable?

Activity
List the internal impacts that are influencing your service under the following major headings:

1. Structure
2. Human resource management
3. Information technology/management

2.7.2 External factors
The external environment consists of conditions and forces that are usually beyond the control of the service. These can be categorised under five headings.

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

The following external environmental factors can impact on the unit or service.

1. Policy/legal factors

Commonwealth direction/policies/funding
Current Commonwealth direction and policies usually include the setting of National Health Priorities. These are often areas of health care that will receive additional funding.
Queensland Health direction/policies/initiatives

For information on these see:

- The current *Queensland Health Strategic Plan* and *Queensland Statewide Health Services Plan*
- Service agreements, which outline the funds allocated to the HSD and the corresponding service and corporate responsibilities
- Other Queensland Health policies, plans and proposed plans. Note that some policies will have greater impact on nursing resourcing, eg. ‘Family Friendly’ provisions
- Capital works programs
- Other relevant corporate documents.

Legislation

Examples of legislation that are relevant to health services include:

- *Health Services Act 1991*
- *Workplace Relations Act 1997*
- *Nursing Act 1992*
- *Health (Drugs and Poisons) Regulation 1996.*

Licensing organisations

- How do the requirements of the nursing, medical and allied health registration boards impact?

Professional groups

- Do groups such as the Australian College of Operating Room Nurses (ACORN) or the Australian College of Midwives Inc. (ACMI) mandate standards of practice and/or training impacting on nursing resources?

Industrial groups/issues

- Examples are award conditions, enterprise bargaining agreements, or variations across the continuum of care.

Education imperatives

- What educational imperatives are impacting on the service? For example, is there a high level of demand for tertiary/TAFE clinical placements (for any of the health professions) within the organisation?
2. Economic factors

International/national economy
The state of the international and national economy will influence funding policies and expenditure patterns. For example, the cost of supplies imported from overseas can be affected by the exchange rate.

Public/private interface
– Are there services similar to yours provided by a local private hospital?
– Does this have an impact on your activity levels?
– What is the impact of the Queensland co-location policy?

Private health care providers – general practitioners, midwives, allied health, domiciliary nursing agencies?
– What are the role, type and level of services currently provided by these groups?
– Are there plans for this to change?

Capital works
– What future capital works are planned?

3. Social factors

Demographics
The demographics of the population being serviced will determine the types of health services required. For example:
– Is it a young or ageing population?
– What is the growth rate of the population (by age groups)?
– What is their socio-economic profile?
– Are the health needs of the community matched with the national and state priorities for health outcomes?

Cultural
– How diverse is the population?
– Is there a high proportion of Indigenous or ethnic persons?

Morbidity/mortality
– What are the local morbidity/mortality and disease trends of your population base?
– Do local industries impact on the service?

The demographics of the population being serviced can influence the resources required. For example, a large non-English speaking population will require the use of interpreter services. Organising these services consumes resources and the actual time taken to give nursing care may be increased by having to use interpreters.
Community expectations
- What does the local community expect from its health services?
- Are these expectations realistic and/or deliverable?
- What is their level of awareness of the health services they require and that are provided?
- What involvement does the community have in local health service planning?

Workforce issues
- Are there enough nurses with the skills required for your health service?
- What other workforce recruitment and retention issues are there?
- Are there difficulties with attracting medical staff that impact on the workload of the nursing staff?
- What is the utilisation of casual staff?
- Is there a changing workforce profile, e.g. ageing workforce?
- What are the links to the direction of District and Area Health Service workforce planning?

4. Technological factors
- What is the impact of technology on the service? For example, e-commerce, internet, advances in medical equipment capability, telemedicine, WAN?

5. Research and evidence based practice
What research developments are impacting, or will impact on services? For example:
- Are you required to take part in data collection?
- What research activities/projects is your service planning to undertake?
- Is this affecting your workload?
- To what extent have you incorporated evidence based practice in your service?
- What resources are available to support research?

Activity
List the external environmental factors that are influencing your service under the following headings:

1. Policy/legal
2. Economic
3. Social
4. Technological
5. Research and evidence based practice.
Review of environmental analysis

The environmental analysis serves as a guide for determining the long-term direction of the service. As such, it is not always necessary to undertake a comprehensive analysis each year. However, the analysis needs to be reviewed annually to:

- make adjustments as significant changes in the environment occur
- serve as a basis for review of where the service status.

2.8 Strengths, weaknesses, opportunities and threats analysis

Once the factors impacting on the service have been identified, these can be assessed under the categories of strength, weakness, opportunity or threat. This is referred to as a SWOT analysis.

Strength
A strength is a distinctive competence of the service.

Weakness
A weakness is a deficiency that limits the performance of the service.

Strengths and weaknesses are identified when analysing the internal business drivers/impacts. Weaknesses highlight where organisational development may be required. The following example shows internal strengths and weaknesses in an Intensive Care Unit.

Example 2.1: Internal strengths and weaknesses in an Intensive Care Unit

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>60% of the nursing staff will have a postgraduate qualification in critical care.</td>
<td>80% of the monitoring equipment is six years old and breaks down frequently.</td>
</tr>
</tbody>
</table>

Opportunity
An opportunity is a factor external to the service that presents an area of potential for the service.

Threat
A threat is an unfavourable factor in the external environment.

Opportunities and threats are identified when analysing the external environment to determine how these may impact on the service when trying to achieve its objectives. Example 2.2 shows an opportunity and a threat to a Community Health Service.
Example 2.2: External opportunity and threat to a Community Health Service

**Opportunity**

The Government recently announced a series of grants for improving services to residents of caravan parks.

**Threat**

HACC services are funded only for given timeframes, eg. one year, therefore permanent recruitment to these positions cannot occur.

Note that environmental factors can only be one of the four categories of strength, opportunity, weakness or threat.

**Activity**

Categorise the external and internal environmental factors for your service into one of the following categories:

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
<th>Opportunity</th>
<th>Threat</th>
</tr>
</thead>
</table>

2.9 Agreed service profile

Following discussion and negotiation, an agreed budget for the new financial year is finalised with the management team overseeing the area/cost centre.

Once the agreed budget is finalised and the level of service is agreed, the ‘Proposed service profile’ should be reviewed and amended to reflect the budget allocation. These amendments are necessary to ensure that the profile reflects the available resources and service priorities.

As the level of activity agreed in the service profile is the driver of nursing workloads, the appropriate allocation of nursing resources (FTE) to the work unit will be required. If agreement is not reached to allocate the required nursing FTE identified, negotiation will then need to focus on the adjustment to the level of activity possible if the resources are not allocated. If the activity levels are not renegotiated, it should be identified that the consequence will be increased nursing workloads and a budget overrun or deficit due to staffing costs associated with contracting external staff to manage the activity or service demand.

The final document is recognised as the ‘Agreed service profile’ and should be signed off by senior management and the cost centre manager.

This module has outlined the development of a service profile have to identify the aims and objectives of the service, and explained the undertaking of an environmental analysis in line with Queensland Health initiatives. The next module describes nursing costs, budgets and the types of reports that will be analysed when managing nursing resources.
Module 3: Costs, reports and budgets

3.1 Introduction
3.2 Objectives
3.3 Types of staffing costs
3.4 Patient acuity/activity
3.5 Activity
3.6 Reports
3.7 Budgets
3.1 Introduction

In order to develop a budget for nursing services, it is essential to understand how a budget is built up, the types of costs occurring and the measures of acuity and activity. Various reports need to be reviewed and used in the development of the budget and in turn, the development of the business/operational plan. A brief description of the different types of budgets, some examples and the role of nurses in budgeting will be described in this module.

3.2 Objectives

On completion of this module, the reader/workshop participant will be able to:

1. Understand the composition of a budget – types of staffing costs and common terminology.
2. Explain acuity and list key activity factors for the service.
3. Identify the data that informs the composition of a budget and the reports that are generated from that data.
4. Describe variance analysis and trends together with their importance in validating and managing a budget.
### 3.3 Types of staffing costs and common terminology

A number of cost types can be used to describe budgets.

<table>
<thead>
<tr>
<th>Types of costs</th>
<th>Explanation</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Costs</td>
<td>Costs that do not change regardless of other influences</td>
<td>NUM = 1.0 FTE, minimum staffing on night duty (2 per shift), Nurse Educators</td>
</tr>
<tr>
<td>Variable Costs</td>
<td>Costs that vary with changes in level/type of activity</td>
<td>Cost of agency nurses, increased nursing hours during periods of high demand eg. seasonal</td>
</tr>
<tr>
<td>Semi-Variable Costs</td>
<td>Costs that are fixed to a certain level of service delivery but will increase if the pre-determined level is exceeded.</td>
<td>If one extra bed is opened in a ward, existing nursing hours may be able to absorb the increased activity. If more than 2 beds are opened, extra nursing hours may be required (depending on acuity)</td>
</tr>
<tr>
<td>Total Cost</td>
<td>Sum of fixed cost + variable costs + semi-variable cost</td>
<td>Total cost of staffing</td>
</tr>
<tr>
<td>Direct Clinical Hours – converted to costs</td>
<td>The nursing hours utilised to support direct care to patients converted to costs</td>
<td>The nurse who is involved in planning and assessment of patient care provides direct care</td>
</tr>
<tr>
<td>In-direct Clinical Hours – converted to costs</td>
<td>The nursing hours utilised to support the delivery of direct care – converted to costs</td>
<td>Staff education, clinical facilitation, quality coordination, staff attending workshops, AIN’s making beds, NUM management time</td>
</tr>
<tr>
<td>Total Productive Hours – converted to costs</td>
<td>Sum of Direct and Indirect Clinical Hours – converted to costs</td>
<td>Cost of NUM + CNs + RNs + ENs + AINs + nurse educator + any other nursing roles working on that roster</td>
</tr>
<tr>
<td>Non-productive Hours – converted to costs</td>
<td>Those hours paid to nurses that are over and above Total Productive Hours. Called ‘on-costs’ for the purpose of costing staff.</td>
<td>Funded sick leave, and annual leave</td>
</tr>
</tbody>
</table>

TOTAL NURSING LABOUR COST = Total Productive hours costs + Non-productive hour costs

Variations in definitions for productive and non-productive nursing hours may occur across organisations/facilities. When this occurs, it is critical that the organisation/facility and associated work units have internal consistency with the definitions. Additionally, nursing staff require a full understanding of what the definitions mean, particularly for budget preparation and reporting.
Example 3.1 shows nursing costs for a unit as extracted from a Queensland Health general ledger (financial) report. For another example of a report, see Appendix D.

Example 3.1: Medical Ward – Labour – Internal Nursing Costs

<table>
<thead>
<tr>
<th>General Ledger Account Code</th>
<th>Item</th>
<th>Monthly Expenditure $'s</th>
<th>Type of Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>500030</td>
<td>Salaries &amp; Wages</td>
<td>86,005</td>
<td>Productive</td>
</tr>
<tr>
<td>501030</td>
<td>Overtime</td>
<td>416</td>
<td>Productive</td>
</tr>
<tr>
<td>502030</td>
<td>Penalties</td>
<td>18,069</td>
<td>Non-productive</td>
</tr>
<tr>
<td>502130</td>
<td>Shift Allowances</td>
<td>2,517</td>
<td>Non-productive</td>
</tr>
<tr>
<td>502930</td>
<td>Other Allowances</td>
<td>229</td>
<td>Non-productive</td>
</tr>
<tr>
<td>5035302</td>
<td>Sick Leave</td>
<td>3,589</td>
<td>Non-productive</td>
</tr>
<tr>
<td>503630</td>
<td>Maternity Leave</td>
<td>0</td>
<td>Non-productive</td>
</tr>
<tr>
<td>503030</td>
<td>Annual Leave nursing</td>
<td>11,121</td>
<td>Non-productive</td>
</tr>
</tbody>
</table>

3.4 Patient acuity

Acuity is a measure of patient complexity and can assist nurses in identifying and planning resources required to meet the provision of care. Acuity can be considered as a qualitative and/or a quantitative measure.

Qualitative

A reflection of acuity levels is integral to decisions relating to nursing care and the allocation of resources required for the provision of optimal patient care. The skilled nurse makes these decisions daily by drawing on their clinical knowledge, previous experience and an understanding of the skills required to meet patients’ needs. Generally as patient acuity increases, there should be a review of the resources needed to care for the patient/client.

A reflection of acuity is embedded in clinical paths, care plans and treatment orders. Both qualitative and quantitative measures are contained in the Patient Dependency Systems and demand driven workforce tools used in some organisations. In areas such as mental health, legislation governs some aspects of patient acuity. For example, a patient requiring suicide watch is on a ‘one nurse to one patient’ ratio. Another example of the qualitative aspect of patient acuity relates to patients in the early phase of a cardiac rehabilitation program, who might initially require more intensive support. It would be expected that this support would reduce over the course of the program.

Quantitative

One method used to determine patient acuity is the utilisation of the diagnosis related group (DRG) classification system. This system classifies diseases/conditions into like groups. Every acute patient admitted to a Queensland Health hospital is assigned a DRG upon separation (discharge, death or transfer).
Diagnosis related group information

A selection of the current version of the AR-DRGs (Australian Refined Diagnosis Related Groups) and cost weights are shown here as examples.

Example 3.2


<table>
<thead>
<tr>
<th>AR-DRG</th>
<th>Description</th>
<th>Public Cost Weight (Group A Hospitals)</th>
<th>Number of Separations</th>
<th>Weighted Separations</th>
</tr>
</thead>
<tbody>
<tr>
<td>60C</td>
<td>Acute leukaemia w/o cat/sev CC</td>
<td>0.60</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Q61C</td>
<td>Red blood cell disorders w/o cat/sev CC</td>
<td>0.40</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>J62A</td>
<td>Malignant breast disorder A&gt;69 W CC</td>
<td>3.00</td>
<td>10</td>
<td>30</td>
</tr>
<tr>
<td>G65B</td>
<td>GI Obstruction w/o CC</td>
<td>0.75</td>
<td>10</td>
<td>7.5</td>
</tr>
<tr>
<td>G01B</td>
<td>Rectal Resection w/o catastrophic CC</td>
<td>4.45</td>
<td>10</td>
<td>44.5</td>
</tr>
<tr>
<td>F20Z</td>
<td>Vein Ligation and Stripping</td>
<td>1.00</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>10.2</strong></td>
<td><strong>60</strong></td>
<td><strong>102</strong></td>
</tr>
</tbody>
</table>

There are problems inherent in the analysis of this data, where services treat patients in ‘acute’ and ‘non-acute’ episodes of care, as cost weights per DRG can only be applied to ‘acute’ separations.

Determination of Cost Weights

Each DRG has an associated ‘cost weight’ which indicates the use of resources in caring for the patient. Each separation is then multiplied by its assigned cost weight to give a weighted separation. This forms part of the data to inform the nursing hours required in the unit.

The current Queensland Health Casemix Funding Model 2007/08 Technical Supplement (available on QHEPS), informs the determination of Weighted Activity Units (WAUs) which are applied to both inpatient and outpatient activity. This in turn will inform the BPF. Districts are allocated activity targets, expressed as WAUs, as part of the budget process. The WAU is a measure of the relative value across all of the variable components of the Casemix Funding Model (CFM), and is used similarly to the previous Weighted Separation. Weighted Separations were only applied to acute inpatients, whereas the WAU applies to all CFM patient types including outpatients.
Examples of factors used to calculate quantitative value of acuity in Queensland Health are as follows:

- average length of stay for the particular DRG
- number of separations (discharges) converted to ‘weighted separations’
- if occupied bed days are constant but WAUs for inpatient activity have increased, there may be a requirement to increase NHHPD.

A weighted separation is a method of quantifying patient discharges to reflect the cost and complexity of the patient’s treated condition. They are only applied to patients admitted in ‘acute’ episodes of care, and exclude patients changed into ‘non-acute’ episodes of care. Examples of non-acute case types include rehabilitation and palliative care patients.

### 3.5 Activity

Activity is the work performed to produce outputs. In nursing there will be peaks and troughs in activity. It is important to analyse these peaks and troughs in order to achieve a balance between supply and demand.

Key measures of activity include the following:

- number of separations (discharges, transfers, deaths)
- weighted separations
- total occupied beds
- average occupancy
- occasions of service
- emergency department presentations
- numbers per triage category
- number of operations
- day surgery cases
- outpatients occasions of service
- number of births
- retrievals
- home visits
- client separations
- number of group sessions
- number of clients attending group sessions.

Activity factors need to be monitored and reviewed as activity is one of the measures of organisational performance. While the listed measures are the major ones to be considered on a whole of organisation basis, within individual services, there may be other types of activity that need to be reviewed.
Therefore, each unit should develop a minimum data set which is a listing of the factors considered to be important indicators of workload for that particular service. For example, the information collected in the operating room will be different from a surgical ward or a community health service.

### 3.6 Reports

#### 3.6.1 Types of reports

A range of reports/indicators are relevant to service delivery and the allocation of resources. Cost centre managers should receive monthly reports but the format of these reports may vary between organisations and districts, and are important in the analysis of variance between services.

Reports/indicators include, but are not limited to the following categories.

1. **Staffing**

Staffing reports contain employee data and can include:

- approved staffing levels
- leave replacement costs (annual, sick, etc.)
- skill mix/category
- full-time/part-time numbers/ratios
- award entitlements
- casual staff usage
- agency staff usage
- overtime
- on call usage
- leave entitlements (annual, sick, professional development, parental, long service, etc.).

**Example 3.3: Staffing report – Nursing**

<table>
<thead>
<tr>
<th></th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Nursing</td>
<td>$383,874</td>
<td>$630,730</td>
<td>$407,748</td>
<td>$368,292</td>
<td>$319,351</td>
<td>$295,187</td>
<td>$293,800</td>
</tr>
<tr>
<td>Labour Expenditure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approved</td>
<td>53.95</td>
<td>53.95</td>
<td>53.95</td>
<td>53.95</td>
<td>53.95</td>
<td>53.95</td>
<td>53.95</td>
</tr>
<tr>
<td>Nursing FTE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Nursing</td>
<td>84.25</td>
<td>90.6</td>
<td>87.48</td>
<td>81.45</td>
<td>73.58</td>
<td>69.42</td>
<td>68.99</td>
</tr>
<tr>
<td>FTE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Staffing data may be reported by fortnight or by month.
2. Financial - labour

Financial reports show the actual cost for labour by discipline and type of cost, for example, ordinary hours, overtime, annual leave, sick leave. Financial data can be reported by pay fortnight or by month, for example an inpatient ward budget plan.

3. Activity

Activity reports provide information such as the number of separations, occasions of service, client visits and length of stay. Areas of activity that should be reviewed are listed previously in Module 3. Activity reports usually show activity on a per month basis.

4. Casemix

Casemix reports show information about activity and costs according to individual DRGs. Casemix reports will provide information on the acuity of the patients (refer to section 3.4 on acuity).

5. Quality

Quality reports indicate the performance of the service with regard to outcomes of the activities of the service. This information must be considered along with the financial information in evaluating the total performance of an organisation. This topic is examined in more detail in Module 5 – Evaluation.

### Activity

1. Obtain current staffing, financial, activity, Casemix and quality reports for your service.
2. Identify the key items as per above.

3.6.2 Reviewing reports

For all reports it is important to:

- determine their source
- identify the items and know their definition
- determine any relationships that may exist between the items
- determine whether they contain enough information
- assess the reliability of the data: for example, payroll reports should be checked to ensure that staff have been accurately charged to the right cost centre
- note the timeframe of the report, which is particularly important when looking at the relationships between reports. Is the report fortnightly or monthly? Consider the impact of public holidays occurring in the timeframe of the report.
Reports should be presented in order to facilitate trending for analysis, with details for:

- predicted/budgeted result
- actual result
- the current month
- year-to-date average
- year-to-date total
- same month in previous year.

The reports should be analysed to determine any changes (variances) and patterns in the changes over time (trends).

3.6.3 Variance analysis

Variance analysis is a process of measuring the differences between the expected result and the actual result. The variance may be described according to volume, price or quantity. Variances can be described as favourable or unfavourable. A favourable variance for labour costs would be where expenditure was less than expected, while a variance would be described as *unfavourable* when labour costs exceeded the budget. Through analysis, the cause of the variance can be determined.

**Types of variances**

Variance analysis identifies probable or actual reasons for favourable or unfavourable results, eg. if an increase in activity has resulted in the use of additional nursing hours above the agreed funded level. The additional nursing hours and costs are explained through this analysis. If the activity increase is estimated to remain at the higher level, it would be appropriate to renegotiate the funded nursing hours in line with adjustments to the business plan, taking into account the increased activity. Public holidays occurring during the time period of the report are also a variance to consider when analysing the results.

- A fixed budget assumes a constant level of activity. A fixed budget can have a total variance. The *total variance* of a fixed budget is the difference between the original fixed budget and the actual expenditure incurred. Once the activities have occurred, a total variance can be calculated. The total variance will include volume, price and quantity differences.

- *Quantity variance* – A quantity variance occurs when there is a difference in the number of nursing hours budgeted to care for a given number of patients and the actual number of hours used. This may occur due to an inability to replace staff on sick leave.

- *Price variance* – An example of a price variance is where one type of clinical supply is substituted for another, thereby costing less (or more).

- *Volume variance* – An example of volume variance is when the number of admissions to the Mental Health unit is greater than was predicted.
Example 3.4: Variances

Five nursing hours per patient day at a cost of $20 per hour has been budgeted for in this unit. The forecast level of activity is 25 occupied bed days per day each month.

<table>
<thead>
<tr>
<th></th>
<th>July</th>
<th>August</th>
<th>September</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Budget</td>
<td>Actual</td>
<td>Variance</td>
</tr>
<tr>
<td>OBD</td>
<td>775</td>
<td>775</td>
<td>0</td>
</tr>
<tr>
<td>Nrs. Hrs</td>
<td>3,875</td>
<td>3,700</td>
<td>(175)</td>
</tr>
<tr>
<td>$</td>
<td>$77,500</td>
<td>$74,000</td>
<td>$(3,500)</td>
</tr>
</tbody>
</table>

3.6.4 Trend Analysis

*July:* the actual number of nursing hours used was less than budgeted for, and the cost of the nursing hours was less; there was no difference in the level of activity, therefore a *quantity* variance occurred.

*August:* the budgeted amount of activity occurred and the number of nursing hours used was as budgeted; however, actual expenditure in dollars was greater than budgeted, therefore a *price* variance has occurred.

*September:* while the actual number of nursing hours used and the cost of the nursing hours were as budgeted for, the level of activity was less than expected, therefore a *volume* variance occurred.

**Actioning variances**

1. Determine the absolute and relative size of the variance.
2. Is the variance large enough to be of concern? Predetermined levels of variance requiring action may be in place. *Management by exception* is a method whereby analysis of variances focuses only on those that are significant.
3. Determine what is causing the variance, that is, is it due to changes in price, quantity or volume?
4. Is there a trend or is it only appearing periodically?
5. Determine whether the variance is caused by something within your control, eg. if a significant variance in nursing hours used has occurred in your unit, then you will need to be able to explain why it is occurring.
3.6.4 Trend analysis

Trend analysis is used to understand the relationship between items and groups of items over a given period of time. Trends need to be identified and monitored because they will assist in forecasting future activity and resource requirements. Having the information presented in graphical form assists with identifying trends.

Example 3.5: Sick leave trend nursing – the number of sick leave hours taken as a % of the hours worked for the period. For example, if during a month 40 hours of sick leave were taken and 1000 hours were worked, the sick leave versus worked hours would be 4%.

![Annual Sick Leave Trend](chart)

Trends may be occur on a daily, weekly, monthly, annual, seasonal or other regular basis.

Factors in trends to be considered include:

- why they exist
- how they occurred
- the degree of change
- the relationship among the changes.

Trends can indicate:

- increasing or decreasing activity at a steady rate
- fluctuations due to seasonal factors
- areas that require further investigation and action, for example, increasing sick leave.
3.6.5 Forecasting

Forecasting is a method of determining what may happen in the future, based on analysis of trends from the past and considered judgement.

**Activity and acuity/complexity forecasting**

Accurate forecasting of activity and acuity/complexity levels will assist with the allocation of resources. There are complex statistical methodologies for forecasting demand; however, these are outside the scope of this document.

Past data (*a minimum of 12 months*) can be analysed to determine the impact of factors that cause variability of demand (activity) for services, such as:

- seasonal, eg. winter/summer, significant events held in rural communities, peak tourist times
- school vacations
- senior medical staff annual leave
- annual clinical meetings
- public holidays.

Annual activity targets set by Queensland Health (outlined in the service agreement) need to be factored into forecasting. Once the data has been analysed, activity levels can be estimated for the following year. It is important to record assumptions made during the forecasting.

Forecast activity levels provide the basis for the allocation of nursing resources.

Acuity levels may be forecast by analysing past data, considering the future Casemix of the service or changes in clinical practice.

---

**Activity**

What trends can you identify in your service from the reports you obtained for the previous activity?

1. Staffing
2. Activity
3. Expenditure

When examining these reports, you need to consider whether the changes are occurring on a daily, weekly, monthly, annual or seasonal basis.
3.7 Overview of funding model and budgets

3.7.1 Funding Model

Both the Queensland Public Hospitals Commission of Inquiry and Queensland Health Systems Review identified a range of weaknesses in Queensland Health’s funding and budgeting systems. In particular, a lack of transparency and responsiveness was noted in the budgeting system, which was also characterised as being centrally controlled and managed.

In response, the Queensland Government delivered its Action Plan – building a better health service for Queensland, which committed to developing a new funding model based on population health need and Casemix funding for hospitals, and to devolved decision making closer to the patient. Prior to the development of this funding model, Queensland was the only Australian jurisdiction to fund its health system on a historical basis.

Implementation of this new approach to funding is expected to deliver the following system improvements:

- responsiveness to population changes
- enhanced accountability and transparency
- de-centralised budget control
- provision of a mechanism to support investment decision making across the health continuum
- formation of links to policy, planning and performance monitoring
- improved equity and efficiency
- provision of greater budget certainty.

The New Funding Model (NFM) has been developed to suit the unique characteristics of Queensland, in particular the highly dispersed population. It is based on a Program structure that aligns with the full range of services that Queensland Health delivers. These Programs are:

- Promotion, Prevention and Protection
- Primary Health Care
- Ambulatory
- Acute Inpatient
- Rehabilitation and Extended care
- Integrated Mental Health.

The NFM has two levels. The top level, the Resource Allocation Model (RAM), will allocate Queensland Health’s budget to the Area Health Services, based principally on the health needs of their populations, with adjustment for factors such as remoteness and the Indigenous population. This is to ensure Area Health Services (AHS) receive their fair share of the funding for the services they are required to deliver.
The lower level of the funding model is the Casemix Funding Model (CFM). The CFM will fund hospitals based on the services they provide. The focus of the model is to link funding to the services provided by the hospital. It will also provide funding for clinical education, research, special grants and high cost patients.

The New Funding Model was introduced in July 2007. Initially the CFM funded 23 of the state’s largest public hospitals, based on the services they provide. These hospitals were determined to have the systems necessary to implement the new funding model. Appropriate activity based funding arrangements will be developed over time for those hospitals not moving to the new model in 2007. The funding model will be reviewed regularly to ensure that both aspects of the model remain relevant and current.

The main differences seen under the funding model will be:

- reporting under the new Programs
- historical budget items no longer relevant for reporting are ‘rolled up’
- new funding will be allocated in line with the NFM
- accountability for new funding assigned to match NFM funding allocations
- activity targets based on Casemix
- introduction of incentives
- performance reporting to include Casemix.

For more information or resources on the Queensland Health’s (NFM), visit the Resource Allocation Unit site on QHEPS.

3.7.2 What is a budget?

A budget is simply a plan for the allocation of resources.

3.7.3 Purpose of a budget

Developing a budget ensures that the service is able to optimise the achievement of its objectives within the given resources, and enables the performance of the service to be measured.

3.7.4 How Queensland Health budgets

The Queensland Government operates under a Managing for Outcomes system. A budget for the whole of Queensland Health is negotiated with Queensland Treasury. The Financial Unit budget team of Queensland Health then allocates a budget to each of the Health Service Districts.

This budget incorporates historical and special initiative funds and Commonwealth funding for projects and specific programs, for example, Home and Community Care (HACC).

**Accounting method**

Queensland Health utilises accrual accounting. Accrual accounting records revenue and expense transactions at the time they occur, even though they may not have been paid or received. For example, expenses such as wages are recognised at the time the activity occurs.
The Queensland Government previously operated under cash accounting. Cash accounting records revenue in the period in which the cash was received at the bank, and expenses were recorded as money left the bank.

3.7.5 Nurses’ role in budgeting

Queensland Health requires all Health Service Districts to implement devolved management systems for resource and activity management. Nurses in many areas are appointed as cost centre managers and as such need to:

- be actively involved in the development of the budget for the service they provide
- have control of items charged against the budget for their service
- receive and review regular timely reports of actual expenditure versus budgeted expenditure
- be accountable for the financial results of those items that they control
- analyse and explain the reason for variances

3.7.6 Types of budgets

1. Global budget

A global budget is an allocation of a block sum of money to a department or organisation. The manager then allocates these funds in whichever way they decide is most appropriate.

2. Historical budget

A historical budget is based on the activities and expenditures of a previous year or years.

3. Zero-based budget

A zero-based budget is developed ‘from the ground’, based on the analysis and costing of each factor comprising the budget.

4. Flexible (variable) budget

A flexible budget is a budget adjusted according to differences in activity levels. Within this flexible budget however, it is only the variable and semi-variable (stepped) costs that will differ with changes in activity levels; fixed costs remain static. A flexible budget is usually prepared at the end of each accounting period once the level of service provided is known. It shows the expected costs for the given period of time. This may then be compared with the actual costs that occurred.
5. **Fixed budget**

A fixed budget assumes the level of activity is constant. For example, a ward is assumed to have an occupancy rate of 90% at all times over the budget period. Proportion of an annual fixed budget assists management as expected costs for a given level of service is known. This budget method is used by most services within Queensland Health.

6. **Annual operating expenses budget**

An annual operating budget is the allocation of resources for a one-year timeframe. It is based on the forecast level of service demand and expenses. This type of budget can be prepared using a historical, zero-based, fixed or flexible approach. The operating expense budget consists of labour and non-labour costs. The BPF focuses only on the labour expenses for nursing.

3.7.7 **Budget preparation pre-requisites**

Preparing a budget is a formal process. The following pre-requisites will assist in ensuring an effective budget preparation:

- a supply of reliable data
- a list of budget assumptions
- a timeframe for preparing budget

This module has examined nursing costs, budgets, and the types of reports that will be analysed when managing nursing resources.

The next module, Module 4, explains how to develop a nursing operating expense budget by calculating nursing hours required and converting these hours into dollars. It then demonstrates how to allocate resources according to activity levels.
Module 4: Resource allocation

4.1 Introduction
4.2 Objectives
4.3 Developing the annual operating expense budget for nursing
4.4 Strategies to address an imbalance of supply and demand
4.5 Monitoring the use of resources
4.1 Introduction

Resource allocation is the second stage of the Business planning framework: a tool for nursing workload management.

This module outlines the process of developing the annual operating expense budget for nursing. It explains in detail how to calculate nursing hours and how these are converted into dollars. Methods to allocate nursing resources in response to demand are explained and strategies outlined for dealing with a situation where the allocation of funds does not balance with service requirements.

Remember: Always refer to the service profile when calculating resource allocation, taking into account negotiations that have occurred at a local level.

4.2 Objectives

On completion of this module, the reader/workshop participant will be able to:

1. Develop an annual operating expense budget for the nursing service.
2. Explain the relationship between service demand and resource allocation (supply).
3. Describe strategies to address an imbalance between resource allocation (supply) and service demand.

4.3 Developing the annual operating expense budget for nursing

The annual operating expense budget is the financial part of the business plan. The annual operating expense budget for nursing includes all labour expenditure (i.e., salaries and wages) for nursing staff, including productive costs (indirect and direct costs) and non-productive costs (annual leave, sick leave etc.). Developing an annual operating expense budget will provide a guide/framework for allocating and controlling nursing resources.

Determining the budget required for each service can occur once the following activities have been undertaken:

- service analysis and profile completed
- analysis of nursing hours per unit of activity used in the past
- analysis of trends in patient acuity data
- levels of activity forecast
- comparative analysis with similar services
- consultation with staff providing the services. The staff who deliver the services have the professional judgment, knowledge and experience to advise on the level of resources required to deliver care.
Electronic calculation of the total nursing budget

Queensland Health has developed electronic tools to assist with the process of developing the total nursing budget. These tools can be accessed on QHEPS at the Office Chief Nurse website. However it is important to understand the principles and the methodology behind these calculations. Examples of how to manually perform these calculations are outlined in this manual.

4.3.1 Steps required to establish a nursing budget

A total nursing budget incorporates both productive and non-productive components. Module 3 introduced the types of staffing costs to be considered when developing the productive and non-productive components of the annual operating expense budget for nursing. This module outlines the steps required to establish the total annual operating expense budget for nursing.

The steps have the following key components:

- **Productive nursing hours**
  
  Productive hours are those that contribute to patient care and include both direct clinical and indirect clinical hours.

- **Direct clinical hours**
  
  Direct clinical hours relate to the activities nurses do that directly relate to care provided to the patient/client. Examples include planning and assessment of care, care for the patient/client, and documentation.

- **Indirect clinical hours**
  
  Indirect clinical hours relate to the activities nurses do for the patient/client while not in direct contact with them, including Education and training on the clinical unit, mandatory competence attainment, quality activities and unit orientation time.

\[
\text{Total productive hours} = \text{Direct clinical hours} + \text{Indirect clinical hours}
\]

- **Non-productive nursing hours**
  
  Non-productive hours are those that are over and above the direct and non-direct hours described above. For example, sick leave, annual leave etc. When converted to costs, these are often referred to as ‘on-costs’.

  Therefore, it is the total of the productive and non-productive components that are calculated and converted to the required dollars for the nursing budget.

- **Converting total hours into FTEs.**

- **Converting FTEs into dollars (total nursing operating budget).**

There are seven steps that take place in establishing the total annual operating expense budget for nursing. As these steps lead to establishing the annual operating budget, the nursing hours calculated are considered in terms of averages for a specific period.
The seven steps to establish the total nursing operating budget are depicted below.

Step 1
Calculate total productive nursing hours

Step 2
Calculate total annual productive nursing hours required to deliver services

Step 3
Determine skill mix/category of the nursing hours

Step 4
Convert productive nursing hours into full-time equivalent (FTE)

Step 5
Calculate non-productive nursing hours

Step 6
Convert FTEs into dollars

Step 7
Allocation of nursing hours to service requirements

Figure 4.1: Establishing a nursing operating expense budget
4.3.2 Defining productive and non-productive nursing hours

The examples given in the following tables will assist in defining and differentiating a variety of nursing activities according to whether they are productive (direct and indirect) or non-productive nursing hours. Using these descriptors will help ensure consistency when organisations want to benchmark nursing hours per patient day (NHPPD), or nursing hours per occasions of service (NHPOS).

### Non-productive nursing hours

- Sick leave
- Family leave
- Staff development and continuing education activities
- Conference leave
- Bereavement leave
- Work Cover (if being paid by Work Cover)
- Annual leave
- Long Service Leave
- Professional Development Leave

### Productive nursing hours – examples include but are not limited to:

- **Direct** – All paid care hours provided for inpatient care, or for direct client care
  - Medication administration
  - Documentation related to patient care
  - Meal relief
  - Organising patient transfers/procedures/tests
  - Talking to relatives, patients and doctors about patient issues
  - Discharge planning
  - Team leader or coordinator in charge of the shift
  - Review/adjustment of workload allocation by the senior RN in charge of the shift
- **Handover**
- **Nursing hours** taken to leave the ward to conduct activities in the operating theatres eg.
  - maternity nurses leaving the ward to receive a baby at a caesarean section
- **Nursing hours** used to attend medical emergencies in other wards
- **Nursing hours** used to monitor/record observations for patients on remote telemetry
Clinical procedures, including recovery
Home visits
Staffing general nursery – does not include babies ‘rooming in’ 24 hours a day
Nursing care provided to patients who are not inpatients - patients may be observed or assessed but not treated or admitted
Nursing hours provided to supervise a patient in Radiology, nuclear medicine centres and CT scans
Escort between wards or to another organisation
Retrieval of a patient from another ward or from another organisation/place
Doctors’ rounds
Organising and attending teaching ward rounds
Telephone advice to outpatients, relatives
Patient education
Outpatient treatment - eg. wound dressings, removal of sutures, drains, catheters, blood sampling
Antenatal classes or clinics
Supplying medications from a pharmacy – small remote hospitals
Clinical skills assessment activities
Work Cover (if being paid as part of workforce on a ‘return to work program’)

Indirect – all paid hours for activities contributing to clinical processes but not directly caring for the patient, examples include:

Restocking with essential supplies
Orientation
Supernumerary time and ongoing support and supervision of staff
Education and training on the clinical unit
Attendance at ward or facility education and training programs
Hours required to support undergraduate programs
Assessing clinical skills (assessor)
Research and practice development activities
Nursing hours on special projects
Portfolio activities
Performance appraisal and development activities, managing performance issues
Organising and attending meetings
Quality improvement projects and meetings
Organising, reviewing and updating clinical policies and procedures
Rostering activities
Developing and monitoring budgets
Writing reports and submissions
Recruitment activities
Ward management discussions with reporting or reviewing officers
Investigating complaints

Allocations for supernumerary time, ongoing support and supervision can vary depending on the model used and the requirements of different groups including new graduates, new starters or nurses participating in re-entry/refresher programs. Preparing new staff can have both direct and indirect components depending on the model used.

**Calculating indirect clinical hours**

The number of standard nursing hours used to calculate nursing hours per unit of activity includes both direct and indirect clinical hours, as payroll information does not differentiate between these. As indirect requirements need careful consideration, it is important that records of this time are kept. Sources of this information include Patient-Nurse Dependency systems, Payroll/Human Resources (HR) systems or manual records.

There is no defined formula for determining indirect clinical hours. The Business Planning Framework is a guide to the management of nursing resources and does not prescribe what should and should not be included as indirect clinical hours. However, statewide minimum standards have been agreed for mandatory training, professional development and sick leave. *The allocation of indirect clinical hours for requisite training required by individual clinical units is based on negotiations at a local level.* As such there will be differences between services. The environmental analysis will highlight factors that impact on the indirect workload of nurses. Particular factors to consider include:

- orientation hours for newly recruited staff (reviewing turnover rates will give some basis on which to determine the amount of time required)
- mandatory learning requirements such as basic life support, fire and safety, infection control etc.
- in-service hours – will they be based on staff learning needs
- portfolio work such as quality improvement, workplace health and safety, special projects etc.
- management activities including performance appraisal and development and business planning.

Given that indirect clinical hours are negotiated locally and are site specific, it is paramount that the allocation of these hours and associated resources are prioritised.

The steps undertaken when establishing a nursing operating expense budget are now explained in detail on the following pages.
Step 1: Calculate total productive nursing hours

Total productive nursing hours include both direct clinical hours and indirect clinical hours. Total productive nursing hours can be presented in several ways.

1. Calculate direct and indirect clinical hours as average hours per unit of activity and present as one number.
2. Direct and indirect clinical hours are calculated and presented as separate components/numbers. The direct clinical hours are calculated as average hours per unit of activity and using this average, the annual hours/FTEs are determined. The indirect clinical hours are calculated and presented as annual hours/FTEs.

To effectively benchmark and manage the supply/demand aspect of nursing resource management, it is essential to understand which of these two methods apply to your business plan.

If your organisation has a valid and reliable Patient Dependency System (PDS), the direct and/or indirect clinical hours can be taken directly from the PDS. If this is the case, skip Step 1 and proceed to Step 2.

Remember that the nursing hours calculated are considered in terms of averages for a specific period. When considering acute inpatients, this is usually a 24 hour day and the average recognises that there will be high and low periods of demand on a daily, weekly and seasonal basis. For example, using an annual average of 4.8 productive nursing hours per day (NHPPD), a service will most likely have days/hours where demand is for more than 4.8 NHPPD, and days/hours where demand is less than 4.8 NHPPD.

Total productive hours

There are several ways to arrive at total productive hours. Some examples are:

1. Using historical payroll or electronic rostering information
2. Applying a base staffing model
3. Benchmarking with like services

However, patient acuity and activity must be taken into account in all cases.

1. Historical payroll or electronic rostering information

When using historical data derived from payroll or electronic rostering information, it is important to recognise that this information does not differentiate between direct clinical and indirect clinical hours. Additionally, historical nursing hours may not accurately reflect current or future changes in the service. The calculation of total productive nursing hours (direct and indirect clinical) based on the amount of time (converted to hours) used to deliver services in the past only reflects the historical hours supplied. This approach combines direct and indirect clinical hours.
However, it is a starting point when there is little change in the service profile from one year to the next and if a valid and reliable electronic dependency system is unavailable.

As an example, historical data derived from payroll information is used in this step to calculate the average units of activity. For all calculations it is preferable to use at least 12 months retrospective data (see Step 2: Calculate total annual productive nursing hours required to deliver services).

Units of activity include:

- patient days/occupied bed days – this unit of activity is used in the acute care setting for inpatients
- occasions of service
- home visits
- procedures.

a. Average nursing hours per unit of activity for hospital inpatients

Nursing Hours per patient day (NHPPD) is the most commonly used unit of activity for hospital inpatients. Information systems including Patient Dependency Systems (PDS) can provide nursing hours per patient day information automatically. When utilising a PDS, be aware that not all systems are exclusively nursing hours. For example, the residential classification systems used in aged care allocate hours per category (see example 4.1.b) is inclusive of diversional therapy hours.

Alternatively, the following method can be used.

Firstly, obtain the total number of hours worked per day (that is, per 24 hours). Remember this is productive time and includes direct clinical and indirect clinical hours worked by all nursing staff: permanent, temporary, casual and agency nurses.

Divide the total number of hours worked for a specific period of time by the total number of occupied bed days for the corresponding period of time. The formula appears below:

\[
\text{Average hours per patient day} = \frac{\text{Total no. of nursing hours worked} \times (\text{in a specified period})}{\text{Total no. of occupied bed days} \times (\text{in the corresponding period})}
\]

Sources of data for the above calculations include:

Total number of nursing hours worked

The Decision Support System (DSS) payroll report will provide this information. The total number of nursing hours worked includes the following paid nursing hours data:

- standard nursing hours
- standard casual nursing hours
- standard agency nursing hours
- overtime hours.
This will give the total number of historical nursing hours that were used in the service to care for the patients/clients.

**Total number of occupied bed days**

This information is usually obtained from systems such as DSS, HBCIS and the Clinical Information System (CIS).

**b. Average nursing hours per unit of activity for outpatient, ambulatory care and community care (eg. Nursing Hours per Occasions of Service-NHPOS) see Glossary**

For outpatient, ambulatory, community and mental health, nursing hours per patient or client activity can be calculated as follows:

\[
\text{Average hours per patient/client activity} = \frac{\text{Total no. of nursing hours worked *(in a specified period)}}{\text{Total no. of occasions of service (in the corresponding period)}}
\]

**Total number of nursing hours worked**

Data source is as for previous formula.

**Total number of client activities**

The total number of client activities can be obtained from HBCIS (outpatient occasions of service), other information systems such as CHIS (Community Health Information System) or from manually kept records.

It is noted that work is underway towards developing valid and reliable nursing units of activity across community health services.

**Acuity levels**

While the above method of calculating nursing hours is the basis for developing the nursing budget, it is historical and assumes the level of acuity of the patients in the service remains constant. However, while the level of activity in a unit may remain the same, the acuity of patients may change, thereby impacting on the levels of nursing resources required to care for the given case load of the service.

More detailed analysis of inpatient case load may be performed by examining nursing hours per patient day by DRG category. If your service uses a patient/nurse dependency system, nursing hours per patient day by DRG reports may be available. This data may be combined with Casemix information to calculate the Total Nursing Hours required for the given case load of the service. The following example demonstrates how this data can be used.
Example 4.1a: Surgical unit

100% of admissions are for the following DRGs (for further information on DRG’s see Module 3):

NB: the Av. no. of nursing hours per day have not been extracted from any system and are examples only

<table>
<thead>
<tr>
<th>DRG (AR-DRG v4.1)</th>
<th>Av. no. of nursing hours per day</th>
<th>No. occupied days</th>
<th>Total nursing hours per DRG</th>
</tr>
</thead>
<tbody>
<tr>
<td>D11Z</td>
<td>4.00</td>
<td>3000</td>
<td>12000</td>
</tr>
<tr>
<td>D13Z</td>
<td>3.51*</td>
<td>2000</td>
<td>7100</td>
</tr>
<tr>
<td>D40Z</td>
<td>5.08</td>
<td>1380</td>
<td>7100</td>
</tr>
<tr>
<td>D10Z</td>
<td>3.80</td>
<td>2500</td>
<td>9500</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>8880</td>
<td>35520</td>
</tr>
</tbody>
</table>

* Av. Nursing hours rounded up from 3.505

Total no. of nursing hours worked – 35520 hours = 4.0 Average NHPPD
Total no. of occupied bed days – 8880 days

For this unit the average number of nursing hours per patient day was 4.0 hours.

However, if the Casemix of the patients in this unit changed to:

<table>
<thead>
<tr>
<th>DRG (AR-DRG v4.1)</th>
<th>Av. no. of nursing hours per day</th>
<th>No. occupied days</th>
<th>Total nursing hours per DRG</th>
</tr>
</thead>
<tbody>
<tr>
<td>D11Z</td>
<td>4.00</td>
<td>3000</td>
<td>12000</td>
</tr>
<tr>
<td>D13Z</td>
<td>3.51*</td>
<td>2000</td>
<td>7100</td>
</tr>
<tr>
<td>D40Z</td>
<td>5.08</td>
<td>3880</td>
<td>19710</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>8880</td>
<td>38720</td>
</tr>
</tbody>
</table>

* Av. Nursing hours rounded up from 3.505

Total no. of nursing hours worked – 38720 hours = 4.4 Average NHPPD
Total no. of occupied bed days – 8880 days

Average number of nursing hours per patient day would now be 4.4 hours.

While the total number of occupied bed days (activity) in this unit remained the same, changes in the Casemix (and therefore acuity) have increased average nursing hours per patient day.
Example 4.1b: Residential aged care facility

The Residential Classification Scale (RCS) is used as a guide to determine the level of dependence and resultant hours required to care for the resident. It is important to note that the hours allocated per category may be inclusive of diversional therapy and/or AIN hours. The breakdown of the residents’ RCS categories and hours per resident per day are as follows:

<table>
<thead>
<tr>
<th>RCS Categories</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home 1</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Home 2</td>
<td>6</td>
<td>11</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total no. of residents</td>
<td>13</td>
<td>17</td>
<td>13</td>
<td>8</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Hrs per cat. calc</td>
<td>3.86</td>
<td>3.36</td>
<td>2.79</td>
<td>1.86</td>
<td>1.29</td>
<td>1.28</td>
<td>1.28</td>
<td>1.28</td>
</tr>
<tr>
<td>Total hrs/day</td>
<td>50.18</td>
<td>57.12</td>
<td>36.27</td>
<td>14.88</td>
<td>9.03</td>
<td>2.56</td>
<td>2.56</td>
<td>0</td>
</tr>
</tbody>
</table>

Indicated nursing hours per day – 172.54 = 2.8 average hours per resident day
No. of residents – 62

For this residential facility, the average number of nursing hours per resident day was 2.8 hours.

However, if the RCS categories of the residents in the home changed to:

<table>
<thead>
<tr>
<th>RCS Categories</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home 1</td>
<td>10</td>
<td>5</td>
<td>9</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Home 2</td>
<td>6</td>
<td>15</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total no. of residents</td>
<td>16</td>
<td>20</td>
<td>12</td>
<td>7</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Hrs per cat. calc</td>
<td>3.86</td>
<td>3.36</td>
<td>2.79</td>
<td>1.86</td>
<td>1.29</td>
<td>1.28</td>
<td>1.28</td>
<td>1.28</td>
</tr>
<tr>
<td>Total hrs/day</td>
<td>61.76</td>
<td>67.2</td>
<td>33.48</td>
<td>13.02</td>
<td>6.45</td>
<td>1.28</td>
<td>1.28</td>
<td>0</td>
</tr>
</tbody>
</table>

Indicated nursing hours per day – 184.47 = 3 average hours per resident day
No. of residents – 62

Average number of resident hours per resident day would now be 3 hours.

While the total number of residents in this residential facility remained the same, changes in the residents’ RCS categories have increased average hours per resident.
2. Base nursing staff model

Some nursing services may require a minimum number of nursing staff based on factors other than average hours per unit of activity, eg. rural facilities, critical care units, and operating theatres.

**Example 4.2a: Base nursing staff model – rural facility**

To ensure safe staffing for optimal patient care on night duty, a rural hospital or multipurpose health service will require a minimum of two nurses rostered for the night duty shift. This is despite the fact that nursing care hours calculated may indicate less nursing hours are required for the night shift.

**Example 4.2b: Base nursing staff model – operating theatres**

The requirement for nursing hours in an operating suite may be based on the projected number of theatre sessions expected to be available on average per month. In calculating the nursing hours, examples of factors to be considered include session start and finish times, coverage for emergency cases/theatres, and nursing hours required in anaesthetics and recovery.

3. Benchmarking

Benchmarking is a quality improvement methodology that involves comparison of a range of performance indicators across like services/facilities, or internal comparison of previous with current performance. The average number of nursing hours per patient day (NHPPD) for particular case groups can be validated through the process of benchmarking.

When benchmarking average NHPPD, the performance indicators used in the comparison and type of service provided need to be similar. For example, if the NHPPD for the inpatient orthopaedic service at one hospital were calculated using direct clinical hours only and the NHPPD for inpatient orthopaedic services at another hospital were calculated using both direct and indirect clinical hours, this comparison alone, would not be valid. Similar characteristics such as role delineation/ Clinical Services Capability (Framework), Casemix and activity should be taken into account when benchmarking.

To effectively strengthen the validity of benchmarking, the service variances identified in the service profile need to be considered and added/subtracted from benchmarked NHPPD. For example, the NHPPD for Unit A is 4.4 hours, but support services of an administration officer, phlebotomist and allied health staff are available. If the nurses in Unit B are required to take on those additional duties; they will need 4.4 direct hours plus extra nursing hours as these duties then become nursing duties in order to accommodate the additional workload.

Similarly, any impact from external influences on the unit/facility (such as minimum staffing levels, impact of technology or environmental design), needs to be factored into any benchmarked NHPPD. These would have been identified in the service profile.
4. Patient Dependency Systems

Patient Dependency Systems (PDS) can provide data to indicate the nursing requirements (demand) during different shifts, for example, by day, evening or night shift. This information can assist with the allocation of nursing resources over the various shifts on each day.

When using Patient Dependency Systems, the following must be considered:

- does the system calculate direct and indirect clinical hours as separate or combined components?
- when comparing hours per unit of activity, staff need to have a clear understanding of the inclusions and exclusions in the make-up of the hours per unit of activity
- hours per unit of activity generally refer to nursing hours only, but there can be exceptions
- ensure inter-rater reliability testing is in place and the required accuracy levels are achieved. This means that the PDS information is valid and reliable.

Defining activity in specialty areas

In some specialty areas where nursing activity is not measured in NHPPD, additional consideration may have to be given to the definition or measurement of activity. The principles of the BPF can be applied in a clinical area using an agreed unit of activity. Some units of activity that may apply, other than NHPPD include:

- number of separations (discharges, transfers, deaths)
- weighted separations
- total occupied beds
- average occupancy
- occasions of service
- emergency department presentations
- numbers per triage category
- number of theatre sessions
- day surgery cases
- outpatients occasions of service
- number of births
- retrievals
- home visits
- client separations
- number of group sessions
- number of clients attending group sessions.
The following case studies give an overview of the specific considerations that may be given to units of activity in the clinical areas of emergency and child community health. There is currently work underway in applying the BPF in many clinical specialty areas in Queensland Health. These case studies are not intended to be prescriptive, but may give some assistance on the application of the tool to the area.

The following are EXAMPLES only and specific details will differ depending on the demographics of the clinical area.

**Case Study One – Emergency Departments**

Since 2003, Queensland Health, the College of Emergency Nursing Australasia Limited, and the Queensland Nurses Union have endeavoured to adapt the BPF model to suit Emergency Departments in Queensland. This is a work in progress, and considerations and drivers that impact on demand and supply within Emergency Departments are outlined below.

Within any Emergency Department there are four demand drivers that need to be considered when calculating the nursing resources required to support patient care and other related activities. They are:

- core business of the department – Direct care hours
- fixed hours – includes direct and indirect
- post Emergency Department care decisions
- number of Emergency Department admissions.

These four demand drivers are influenced by the patient/clients, the staff and the organisation.

**Core Business of the department**

This refers to the direct nursing hours required for patients from presentation to decision to admit/discharge/transfer. Calculation of nursing hours within core business requires consideration of the following factors:

- acuity of patients – this includes triage category and the complexity of the patients which directly impacts on the nursing hours required for that category.
- average length of stay in Emergency Department
- number of patient presentations per triage category.

**Fixed hours**

The fixed staffing hours component is required regardless of the number of presentations within the department and includes both direct and indirect care. The direct component of fixed hours relates to the requirements to staff specific areas within the Emergency Department, such as Triage or Resuscitation. For example if the department has greater than 30,000 presentations annually then a Triage RN is required 24 hours a day. Which positions are included in fixed hours is dependent on the clinical model and service profile of the department.
The indirect component refers to the nursing hours required for positions that do not provide direct clinical care such as the Nurse Unit Manager, Nurse Educator, Clinical Facilitator, Floor co-ordinator, and non-clinical assistant-in-nursing.

At times there may be a requirement to provide a service outside the department, namely for transfer or retrieval, or in special circumstances such as disaster. Staffing for this component would also be included in fixed hours.

**Post Emergency Department care decisions**

This component refers to the nursing care hours required to care for patients after the decision for admission/discharge/transfer has been made but there is a delay in enacting this decision. This delay should be captured in the length of stay data used to calculate average nursing care hours required, utilising NHPPD as an agreed amount.

**ED/Short Stay admissions**

This component refers to the nursing hours required to care for those patients who have been admitted under the care of ED physicians, and are accommodated within a designated short stay unit within the department. There are two methods of calculation appropriate for this group.

The first is based on a NHPPD which would be reflective of the site specific Casemix. The second is a fixed staffing model, where an agreed amount of nursing resources is allocated to this area, regardless of the occupancy of the unit.

In practice, given the geographical layout of many departments, the fixed staffing model is the one utilised. It is important to note that these are acute patients and may be resource intensive.

Example:

<table>
<thead>
<tr>
<th>Triage Category</th>
<th>Agreed NHPPD/triage category</th>
<th>Number of presentations</th>
<th>Total nursing resources required in hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Required NHPPD = Presentations per triage category X agreed NHPPD
Case Study Two - Community Child Health Service - Primary Care Program

The Business Planning Framework principles have been used to develop for trial a workload management model for the Primary Care Program of the Community Child Health Service. The modelling that has been developed to date is activity based and reflects the complexity of care other than by time. Further work is ongoing to develop a workload management system based on the complexity of care.

The activity measure is based on the birth rate for the District and the number of activities that would be undertaken for this group such as home visits, clinics, hospital liaison services and school-based programs. A model of service delivery has been developed and a time allocated to the majority of health events and activities such as home visits, parenting groups and seminars, feeding support services and infant assessments.

A percentage of the birth population is used to estimate service usage. The time and percentage are then multiplied to calculate the direct time required. For some events, the direct time required has been based on the time the service is staffed. The model has been developed estimating that the service would see 85% of the birth population, with a reducing attendance as the child’s age increases. To achieve this demand driven service, the program identifies the FTE required. The program also identifies an alternative model which reflects the funded FTE, or supply driver. This model restricts universal services, has maintained selected services and reduced others.

Using the principles of BPF, other specialty areas will be developing models for determination of productive nursing hours per unit of activity. As these are developed, they will be made available through the Office of the Chief Nursing Officer (OCNO) web site.
Step 2: Calculate total annual productive nursing hours required to deliver services

The total number of productive nursing hours required to deliver services is based on productive hours (direct and indirect) only. It is important to note that the productive nursing hours used to deliver services in the past may not be relevant to the future.

Before applying past hours to the total number of nursing hours required to deliver services in the future, it is necessary to review the environmental analysis in the service profile section of the business plan (see Module 2), focusing particularly on internal factor changes such as:

- acuity/complexity of the activities
- standards of care
- models of care
- the role of the nursing staff/skill mix
- estimated activity (e.g. occupancy, occasions of service).

Significant changes in these factors, and/or the results of benchmarking with other services, may suggest that the hours used in the past require adjustment. If adjustments are required to productive hours, Step 1 (above) will need to be repeated taking into account any more or less nursing hours that may be required during the life of the business plan.

A fixed staffing hours component may be required for some services such as Emergency Departments or clinics; this refers to nursing hours required regardless of the actual activity within the work area. These hours may be used for roles such as Floor Co-ordinator, Triage Nurse or Clinic Nurse.

Module 3 refers to trend analysis and forecasting methodologies that can assist in determining how staffing and activity in the past can be analysed in relation to the future.

Once the necessary adjustments in nursing hours from past to future have been made, calculate the total number of productive nursing hours required per year. This is calculated by multiplying the average hours per unit of activity by the total number of activities per year. The total number of activities per year may be pre-determined or estimated as per forecasting (see ‘Forecasting’, Module 3).

Total number of nursing hours required per year:

Example 4.3: Calculating the total number of nursing hours required per day (data taken from Example 4.1a)

\[
35,520 \text{ hrs} = 4 \text{ nursing hours per patient day} \times 8880 \text{ occupied bed day}
\]

\[
\text{Total annual no. of productive nursing hrs.} = \text{Av. hrs. per unit of activity} \times \text{Total no. of activities per year}
\]
Step 3: Determine skill mix/category of the nursing hours

Each service needs to determine an appropriate skill mix/category of nurses. Once the total number of productive nursing hours required to deliver services has been determined, then consider how many total hours of care could be given by each category of nurse, that is, all levels of Registered Nurses, Enrolled Nurses and Assistants in Nursing. This mix of skills (and therefore category of nurses required) will be unique to each service and should be based on:

- careful analysis of the needs of the patients/clients being cared for
- the scope of practice of each category of nurse
- the outcomes required.

The skill mix/category required for any particular service may differ by time of day, day of the week etc.

Example 4.4: Calculating the skill mix/category for a 30-bed low acuity ward

Data

No. of occ. bed days x nursing hrs. per pt. day = Total productive nursing hours per year

8880 bed days x 4 NHPPD = 35,520 hours

Nursing hours required per week is 35,520 hours divided by 52 weeks = 683 hours

To calculate skill mix/category on a weekly basis

The number of hours for the categories of nursing staff has been determined to be as follows:

<table>
<thead>
<tr>
<th>Nursing Grades</th>
<th>Hours/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Nurse – Grade 6 (24 hours per day for 7 days/week)</td>
<td>168</td>
</tr>
<tr>
<td>Registered Nurse – Grade 5 (24 hours per day for 7 days/week)</td>
<td>403*</td>
</tr>
<tr>
<td>Enrolled Nurse – Grade 3 (16 hours per day for 7 days/week)</td>
<td>112</td>
</tr>
<tr>
<td>Total</td>
<td>683</td>
</tr>
</tbody>
</table>

* Where a component of the NUM/CNC hours is included within the total direct nursing hours, this needs to be included in the above calculations.

Therefore, the balance of nursing hours required per week is 403 (683-280 = 403, including NUM/CNC) or 365 hours (683-280-38 = 365, excluding NUM/CNC) and this will be comprised of Registered Nurses. These hours will then need to be allocated across the various shifts/days of the week.

The skill mix used in the past may not be relevant to the future. Consideration should be given to the Queensland Nursing Council’s Scope of Practice Framework for Nurses and Midwives (2005), and changes in service demand (refer to your service profile).
Step 4: Convert total productive nursing hours into full-time equivalent (FTE)

Once the total productive nursing hours and skill mix/category required for your service has been determined, this needs to be converted to full-time equivalents for the purpose of:

- workforce planning
- recruitment decisions
- calculating the budget costs.

Weekly full-time equivalents

A full-time equivalent (FTE) nurse works 38 hours per week. To calculate the number of weekly full-time equivalent staff required, divide the number of required hours per week by 38.

\[
\text{Number of productive FTE nurses per week} = \frac{\text{Total productive nursing hours required per week}}{38}
\]

When a nurse works part-time, the full-time equivalency of their hours worked is calculated as follows:

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

Example 4.5: Converting productive hours into FTE

A nurse works 3 x 8 hour shifts (24 hours) per week.

24 hours divided by 38 hours = 0.63 FTE

Note: In calculating part-time hours, the FTE equivalent is based on the standard 38 hour week (see above). Therefore when a part-time staff member works in excess of 7 hours 36 minutes per shift (38 hours divided by 5), the extra time needs to be taken into account when calculating total FTEs hours.
**Example 4.6: Converting productive hours into weekly FTEs**

<table>
<thead>
<tr>
<th>Nursing grade</th>
<th>Required hours per week</th>
<th>Weekly FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 (CNC/NM)</td>
<td>38</td>
<td>1</td>
</tr>
<tr>
<td>6 (CN)</td>
<td>168</td>
<td>4.42</td>
</tr>
<tr>
<td>5 (RN)</td>
<td>365</td>
<td>9.6</td>
</tr>
<tr>
<td>3 (EN)</td>
<td>112</td>
<td>2.95</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>683</strong></td>
<td><strong>17.97</strong></td>
</tr>
</tbody>
</table>

A total of 17.97 FTE nursing staff is required on a weekly basis to provide services (productive component). This does not take into account that each employed FTE nurse has entitlements such as annual leave, sick leave and professional development leave (ie. non-productive component).
Step 5: Calculate non-productive nursing hours

Non-productive hours include all leave. While not used to calculate nursing hours per unit of activity, non-productive nursing hours will determine such strategies as recruitment of additional staff to cover service requirements when staff are on leave.

The number of non-productive hours required can be determined by considering the following components.

Annual leave

Depending upon the award entitlement, each nurse is entitled to four, five or six weeks annual leave (pro rata for part-time workers).

Annual full-time equivalents required for leave replacement

For the purpose of workplace planning and recruitment to cover the services to be provided (leave replacement), the number of weeks worked per year for each nurse depends on their annual leave entitlement as per Award, as well as any other leave as determined by the service, for example, study leave.

Figure 4.2: Annual productive hours worked per FTE based on ARL entitlements

<table>
<thead>
<tr>
<th>No. of weeks annual leave</th>
<th>Productive hours worked per FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>1824*</td>
</tr>
<tr>
<td>5</td>
<td>1786**</td>
</tr>
<tr>
<td>6</td>
<td>1748</td>
</tr>
</tbody>
</table>

* These nurses usually have approximately 10 public holidays, in addition to their annual leave entitlement. However, public holiday replacement is generally not required for this category of nurses.

** Where nurses do not work a mix of all shifts, their annual leave entitlement is five weeks.

Note: Some facilities classify FTEs required for leave replacement as productive hours.

Sick leave

Each FTE accrues 10 days sick leave per year. An analysis of sick leave trends and a process of benchmarking is part of business planning. The minimum level allocated for sick leave is based on the previous year’s state average.
Mandatory training requirements

Since the initial publication of the BPF, mandatory learning requirements have been highlighted as an issue. Achievement of these annual ‘competencies’ cannot occur when the indirect hours allocated are insufficient.

Additionally, legislative changes (for example, child safety) have had an impact on the number of competencies to be addressed each year. Full analysis of dedicated nursing time required to achieve the competencies should be documented in the service profile. The service profile should have documented the strategies associated with achieving 100% of staff achievement. These strategies will vary from service to service. For example, some services may have dedicated down time that provides them with the ability to plan for all staff to attend to mandatory learning requirements.

There is an agreed minimum to be allocated annually for mandatory training per head count. For new staff, this is eleven (11) days and for existing staff, this is five (5) days.

<table>
<thead>
<tr>
<th>Legislated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Safety</td>
</tr>
<tr>
<td>Patient/Manual Handling</td>
</tr>
<tr>
<td>Fire &amp; Emergency Response</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QH Policy/District Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code of Conduct</td>
</tr>
<tr>
<td>Aggressive Behaviour Management</td>
</tr>
<tr>
<td>Cultural Awareness</td>
</tr>
<tr>
<td>Incident Management/Reporting</td>
</tr>
<tr>
<td>Harassment/Bullying</td>
</tr>
<tr>
<td>Complaint Handling</td>
</tr>
<tr>
<td>Medication Safety</td>
</tr>
<tr>
<td>Infection Control</td>
</tr>
<tr>
<td>Basic Life Support</td>
</tr>
<tr>
<td>Pandemic Planning/FIT testing</td>
</tr>
</tbody>
</table>

While there are core competencies to be met for all clinical staff, additional learning requirements may vary between clinical specialties, for example, mental health and critical care services.
Professional development leave

From 2007, all permanent Registered and Enrolled Nurses, other than those entitled to professional development under the Remote Area Nursing Incentive Package (RANIP), are entitled to three days per annum (pro rata for part-time employees) of paid Professional Development Leave (PDL) for professional development activities relevant to nursing practice. Paid PDL is an entitlement over and above all current entitlements, assistance or obligations. It is intended that PDL be used for activities over and above any mandatory training, requisite training or skill set training necessary for a nurse to perform the normal duties and functions of their role or other training that is required by their employer. PDL is not a substitute for assistance from the Study and Research Assistance Scheme (SARAS) or Industrial Relations Education leave.

Conditions associated with PDL are outlined in IRM 2.7-38, including examples of activities that would be appropriate for this entitlement.

Conference and training leave

In addition to professional development leave, leave may be granted to attend conferences, seminars and tertiary or other similar courses. The amount of leave allocated and how the associated funds are managed is negotiated at a local level.

On-costs

On-costs include penalty payments, other allowances and the cost of non-productive hours. Once determined, on-costs are generally expressed in terms of a percentage of the cost of each nurse.

To convert the hours of each on-cost into a percentage, the hours of the entitlement are divided by the hours in one year. If none of the leave entitlements were taken in one year, the working hours would be:

\[ 52 \text{ weeks} \times 38 \text{ hours/week} = 1976 \]

To calculate one day (7.6 hours) as a percentage:

\[ \frac{7.6}{1976} = 0.0038 \]

Multiply \( x \) 100 to express as a percentage = 0.38%
Business planning framework: a tool for nursing workload management

The following table indicates hours expressed as a percentage using the above formula. This will assist in the calculation of on-costs.

<table>
<thead>
<tr>
<th>Days</th>
<th>Number of hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7.6</td>
<td>0.38%</td>
</tr>
<tr>
<td>2</td>
<td>15.2</td>
<td>0.77%</td>
</tr>
<tr>
<td>3</td>
<td>22.8</td>
<td>1.15%</td>
</tr>
<tr>
<td>4</td>
<td>30.4</td>
<td>1.54%</td>
</tr>
<tr>
<td>5</td>
<td>38</td>
<td>1.92%</td>
</tr>
<tr>
<td>6</td>
<td>45.6</td>
<td>2.31%</td>
</tr>
<tr>
<td>7</td>
<td>53.2</td>
<td>2.69%</td>
</tr>
<tr>
<td>8</td>
<td>60.8</td>
<td>3.08%</td>
</tr>
<tr>
<td>9</td>
<td>68.4</td>
<td>3.46%</td>
</tr>
<tr>
<td>10</td>
<td>76</td>
<td>3.85%</td>
</tr>
</tbody>
</table>

These percentages are then added to the productive cost to determine the total budget for the nurse. For example:

Where non-productive costs = 41.8% and the annual salary cost for a nurse is $50,000, the total budget for the nurse would be $70,990.

$50,000 + $20,900 = $70,900

A break-down of on-costs is shown in the following example.

**Example 4.7: Breakdown of on-costs**

Payroll services can provide the average on-costs for each differing level of staff.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual leave</td>
<td>6 weeks</td>
<td>11.54</td>
</tr>
<tr>
<td></td>
<td>5 weeks (9.6%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 weeks (7.6%)</td>
<td></td>
</tr>
<tr>
<td>Sick/Family leave</td>
<td>Based on previous year QH average</td>
<td>4.00</td>
</tr>
<tr>
<td>Professional development</td>
<td>3 days</td>
<td>1.15</td>
</tr>
<tr>
<td>Penalties</td>
<td>Average of weekends/public holidays etc.</td>
<td>24.00</td>
</tr>
<tr>
<td>Total on-costs</td>
<td></td>
<td>40.69</td>
</tr>
</tbody>
</table>

Please refer to your Finance/HR Department as the allocations to some items (such as penalty rates) are examples only and can vary.
Step 6: Calculating total nursing FTEs and converting into dollars

Total nursing FTEs are determined by including both productive FTEs and non-productive FTEs. The latter may be presented as a percentage.

To calculate the number of annual FTE staff required, divide the number of required hours per year by the number of productive hours worked per year per FTE.

Therefore, the FTE number of staff required to provide services each week of the year is shown the following example.

Example 4.8: Total annual FTEs required (data taken from Example 4.6)

<table>
<thead>
<tr>
<th>Nursing grade</th>
<th>Column (1) Required hours per week (from example 4.4)</th>
<th>Weekly FTE</th>
<th>Column (2) Required hours per year</th>
<th>Hours worked per year/1 FTE</th>
<th>Column (5) Annual FTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 (CNC/NUM)</td>
<td>38</td>
<td>1</td>
<td>1976</td>
<td>1786</td>
<td>1.11</td>
</tr>
<tr>
<td>6 (CN)</td>
<td>168</td>
<td>4.42</td>
<td>8736</td>
<td>1748</td>
<td>5.00</td>
</tr>
<tr>
<td>5 (RN)</td>
<td>365</td>
<td>9.6</td>
<td>18,980</td>
<td>1748</td>
<td>10.86</td>
</tr>
<tr>
<td>3 (EN)</td>
<td>112</td>
<td>2.95</td>
<td>5824</td>
<td>1786</td>
<td>3.26</td>
</tr>
<tr>
<td>Total</td>
<td>683</td>
<td>17.97</td>
<td>35,516</td>
<td>20.23</td>
<td></td>
</tr>
</tbody>
</table>

Where:

- Column (1) ÷ 38 hours = Column (2)
- Column (1) x 52 weeks = Column (3)
- Data From Table 4.1 = Column (4)
- Column (3) ÷ Column (4) = Column (5)

While 17.97 FTEs are required to provide services, to ensure 100% annual leave relief is provided, an additional 2.33 FTEs would be required. This results in an annual total of 20.23 FTEs. Recruitment to this level could occur if included in the budget calculations.

However, recruiting permanently to this number of FTE can reduce flexibility when activity is less than anticipated. It also assumes 100% of nursing staff require backfilling for annual leave – this amount of backfilling is not always necessary as some services are reduced or closed at times during the year, for example, Christmas and/or Easter.

Finance/HR staff will often be involved with this process. However, it is important that nurses have an understanding of the methods used. The budget will include the productive and the non-productive components.
There are different methods used to convert FTEs into dollars. Two methods are shown on the following pages based on a 30-bed low acuity ward (as used in previous examples).

**Method 1 (nurse-by-nurse)**

This method costs individual nurses at their level and year of service. Non-productive component is as follows:

- annual leave is fully replaced as per award entitlements
- sick/special responsibility leave is based on the Queensland Health average for the previous year per FTE (currently 4%)
- professional development leave is as per award entitlements (3 days per year for a full-time FTE = 1.15%)

**Example 4.9a: Calculations (nurse by nurse)**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Pay pt</th>
<th>FTE</th>
<th>Hrly rate</th>
<th>Tot/hr</th>
<th>Annual Base Salary</th>
<th>Penalties @ 24%</th>
<th>A/L</th>
<th>S/L, Sp Resp @ 4%</th>
<th>PDL @ 1.15%</th>
<th>5 New Staff (HC) @ 4.32%</th>
<th>20 Existing Staff (HC) @ 1.92%</th>
<th>Mandatory Training</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 (NUM)</td>
<td>3</td>
<td>1</td>
<td>42.25</td>
<td>42.25</td>
<td>83,493</td>
<td>0</td>
<td>8,015</td>
<td>3,340</td>
<td>960</td>
<td>95,808</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 (CN)</td>
<td>2</td>
<td>1</td>
<td>32.84</td>
<td>32.84</td>
<td>64,881</td>
<td>15,571</td>
<td>7,487</td>
<td>2,595</td>
<td>746</td>
<td>91,280</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1</td>
<td>33.60</td>
<td>33.60</td>
<td>66,387</td>
<td>15,933</td>
<td>7,661</td>
<td>2,655</td>
<td>763</td>
<td>93,399</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2.42</td>
<td>34.36</td>
<td>83.15</td>
<td>164,320</td>
<td>39,437</td>
<td>18,963</td>
<td>6,573</td>
<td>1,890</td>
<td>231,183</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 (RN)</td>
<td>2</td>
<td>2</td>
<td>25.70</td>
<td>51.4</td>
<td>101,584</td>
<td>24,380</td>
<td>11,723</td>
<td>4,063</td>
<td>1,168</td>
<td>142,918</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2</td>
<td>26.87</td>
<td>53.74</td>
<td>106,182</td>
<td>25,484</td>
<td>12,253</td>
<td>4,427</td>
<td>1,221</td>
<td>149,387</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3</td>
<td>30.37</td>
<td>91.11</td>
<td>180,030</td>
<td>43,207</td>
<td>20,775</td>
<td>7,201</td>
<td>2,070</td>
<td>253,283</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>2.6</td>
<td>31.54</td>
<td>82.00</td>
<td>162,019</td>
<td>38,885</td>
<td>18,697</td>
<td>6,481</td>
<td>1,863</td>
<td>227,945</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 (EN)</td>
<td>4</td>
<td>1</td>
<td>22.03</td>
<td>22.03</td>
<td>43,538</td>
<td>10,449</td>
<td>4,180</td>
<td>1,742</td>
<td>501</td>
<td>60,410</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>1.95</td>
<td>22.40</td>
<td>44.80</td>
<td>86,309</td>
<td>20,714</td>
<td>8,286</td>
<td>3,452</td>
<td>993</td>
<td>119,754</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1797</td>
<td>1,058,743</td>
<td>234,060</td>
<td>118,040</td>
<td>42,349</td>
<td>12,175</td>
<td>12,461</td>
<td>22,624</td>
<td>1,500,452</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* No penalty rates apply for NUM position

** Annual leave: NUM and ENs = 5 weeks, CN and RN = 6 weeks and include leave loading

*** Pay rates are current at July 2008 and must be updated accordingly

Hourly rate is rounded up to two decimal points. In this example, totals rounded up (no decimal points)

Mandatory training requirements are based on employee Head Count (HC) x average base salary per FTE

Total nursing operating budget = $1,500,452
Method 2 (averaging)

An alternate method of converting nursing FTEs into dollars is to average the cost of each category of nurse (productive and non-productive) in the service and multiply this by the number of FTE required to provide services.

Example 4.9b: Calculations (averaging)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Productive</th>
<th></th>
<th>Non-Productive</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FTE</td>
<td>Annual Base Salary</td>
<td>Penalties @ 24%</td>
<td>A/L</td>
</tr>
<tr>
<td>7 (NUM)</td>
<td>1.00</td>
<td>$83,493</td>
<td>$0</td>
<td>$8,015.33</td>
</tr>
<tr>
<td>6 (CN)</td>
<td>4.42</td>
<td>$295,588</td>
<td>$70,941.12</td>
<td>$34,110.86</td>
</tr>
<tr>
<td>5 (RN)</td>
<td>9.60</td>
<td>$549,815</td>
<td>$131,955.60</td>
<td>$63,448.65</td>
</tr>
<tr>
<td>3 (EN)</td>
<td>2.95</td>
<td>$129,847</td>
<td>$31,163.28</td>
<td>$12,465.31</td>
</tr>
<tr>
<td>Total</td>
<td>17.97</td>
<td>$1,058,743</td>
<td>$234,060.00</td>
<td>$118,040.15</td>
</tr>
</tbody>
</table>

* No penalty rates apply for NUM position
** Annual leave: NUM and ENs = 5 weeks, CN and RN = 6 weeks and include leave loadin
*** Pay rates are current at July 2008 and must be updated accordingly

Hourly rate is rounded up to two decimal points. In this example, totals rounded up (no decimal points)

Mandatory training requirements are based on employee Head Count (HC) x average base salary per FTE

Total nursing operating budget = $1,500,453.63

Important Note:
Both Examples 4.9a and 4.9b provide both the original 17.97 productive FTE (example 4.8, p71) and converts the 2.26 non-productive FTE (total FTE 20.23 – 17.97) into a dollar amount.

While Method 1 provides a very accurate budget estimate, costs may change if nurses leave and the replacements are at different pay levels. If nursing staff turnover is low, this may be the preferred method; if turnover is significant, then Method 2 may be preferable as it is easier to calculate.
Cash flowing

Once the annual budget has been calculated, it is divided into months of the year to provide a basis for monitoring the budget. Cash flowing is the process of allocating dollars across defined time periods.

When a budget is cash-flowed, important considerations are differences in the allocation of dollars according to such factors as activity levels eg. winter bed demand, compulsory service closure for Christmas period etc.
Step 7: Allocation of nursing hours to service requirements

Once the review of the service and organisation has been completed, and the total annual nursing hours required to provide services determined, the nursing hours can then be negotiated according to the agreed, predicted and/or planned activity/service levels.

A supply and demand approach to nursing resource management means there is a need to focus on achieving a balance between the supply of nursing resources and service demands. Variations in demand, particularly for activity, can differ according to:

- time of day
- day of the week
- seasons
- medical officer availability
- other reasons, for example significant events in rural areas such as shearing, cane harvesting etc.

Where there is substantial variation in demand, the allocation of nursing hours can be matched to this demand. This can be achieved by developing a staffing plan. The staffing plan needs to map out the variations in the number of nursing hours required to deliver services over the year. Examples of allocating nursing hours according to seasonal and daily demand follow:

Example 4.10: Seasonal demand - paediatric ward

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBD</td>
<td>100</td>
<td>200</td>
<td>200</td>
<td>400</td>
<td>400</td>
<td>500</td>
<td>500</td>
<td>500</td>
<td>400</td>
<td>300</td>
<td>300</td>
<td>200</td>
<td>4000</td>
</tr>
<tr>
<td>%</td>
<td>2.5</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
<td>12.5</td>
<td>12.5</td>
<td>12.5</td>
<td>10</td>
<td>7.5</td>
<td>7.5</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>Req. NHPPD</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Total hours required/ month</td>
<td>400</td>
<td>800</td>
<td>800</td>
<td>2000</td>
<td>2000</td>
<td>2500</td>
<td>2500</td>
<td>2500</td>
<td>2000</td>
<td>1200</td>
<td>1200</td>
<td>800</td>
<td>18700</td>
</tr>
</tbody>
</table>

The months of April to September account for 67.5% of the activity (OBDS); January – March and October – December had 32.5% of the activity. The data also reveals a higher acuity for the ‘winter’ months. Assuming four hours per patient per day (rising to five NHPPD in the winter months) is required for this unit, then the total nursing hours required for each week is as per the bottom line of the table.

So the demand for nursing staff will be greater in the months of April through to September than for the other months due to both higher activity and higher acuity.
Example 4.11: Daily demand - surgical ward

Data:
Using the information from Example 4.3 and 4.9:

- occupied bed days per year is 8880 (averaging 171 per week)
- total nursing hours required per year is 35,520 hours
- the required nursing hours per patient day is 4.0 hours
- the average number of occupied bed days per day/patients per day is as shown below.

Assuming activity levels are constant over the 52 weeks of the year (however daily activity fluctuates), the total nursing hours required for the surgical unit can be allocated according to daily demand as shown

<table>
<thead>
<tr>
<th>Day</th>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thur</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
<th>Total per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Days</td>
<td>20</td>
<td>30</td>
<td>28</td>
<td>28</td>
<td>25</td>
<td>25</td>
<td>20</td>
<td>171</td>
</tr>
<tr>
<td>Hours required per day</td>
<td>80</td>
<td>120</td>
<td>112</td>
<td>80</td>
<td>112</td>
<td>100</td>
<td>80</td>
<td>684</td>
</tr>
</tbody>
</table>

Manual/observation

Close observation of workloads at various times of the day may provide a rough guide.

When there is variability in the demand for nursing resources, matching the supply of staff exactly to the demand may be difficult; therefore, the staffing roster needs to represent the average staffing needs. Rostering fewer hours than required means that if demand is unexpectedly below the anticipated level, there is less chance of using resources that are not required.

Supplying the required nursing hours to variable demand

Workforce planning can be undertaken to plan strategies for known demands. Examples of strategies for supplying the required nursing hours include:

- For seasonal/other longer-term fluctuations:

  Recruitment
  Where there is extended but temporary increased demand for services due to seasonal fluctuations, extra staff would be employed to cover this period of time.

  Leave arrangements
  The allocation of annual leave can be adjusted in accordance to demand. For example, when surgical services shut down over the Christmas/New Year period, staff other than those required to cover emergency services could be rostered on annual leave.
• For weekly/daily fluctuations:

Rostering
Rostering is the method by which the nursing hours required to deliver services is allocated on a daily basis. Demand during the 24 hours of a day differs, and therefore the number of nursing hours allocated across the day will need to be tailored. Daily demand can be met by allocating different numbers of nurses to each shift, as well as varying the shift commencement and finish times, and using different lengths of shifts.

Queensland Health’s Best Practice Framework for Rostering Nursing Personnel (2003) should be used to assist in creating a roster that is responsive to the peaks and troughs in activity expected in the work area.

Non-productive hours:
All leave may be added to the non-productive hours for the purpose of determining backfilling and recruitment strategies. Non-productive hours can be staffed (where required) by the following methods:

- permanently recruiting staff; the size of the service in terms of the total nursing FTE required to cover services will determine whether this will be achieved with cost-effectiveness. If the total annual leave relief component is less than one FTE, then this would not usually be an effective strategy
- use of extra hours by part-time staff
- casual, agency staff
- temporary contracts of employment
- overtime/time off in lieu (TOIL).

In managing the replacement of non-productive hours, the decision maker needs to understand the cost implications of each of the options. For example, agency staff cost more, however, this may be the only alternative available.
Business planning framework: a tool for nursing workload management

The relationship of service demand to the allocation of resources (supply)

Service Demand

What to consider when establishing levels and trends in service demand.

Analyse:
- Reports
  - total occupied bed days
  - number of separations
  - ED presentations and
  - number per triage category
  - day surgery cases
  - outpatients occasions of service
- Identify trends
- Compare with benchmarks

Activity
- number of births
- number of home visits
- number of group sessions
- number attending

Analyse:
- Reports
  - Casemix data eg. weighted separations
  - Patient dependency data
- Identify trends
- Compare with benchmarks

Acuity/Complexity

Consider:
- Indicators
- Corporate direction
- Targets determined by District Service Agreements
- Teaching/learning
- Performance management
- Support staff
- Technology
- Factors identified in the environmental analysis

Resource Allocation (Supply)

Steps in establishing a nursing operating budget

1. Calculate productive nursing hours (Average hours per unit of activity)
2. Calculate total hours required to deliver services
3. Determine skill mix of the nursing hours
4. Calculate non-productive nursing hours
5. Convert nursing hours into FTE
6. Convert nursing hours into dollars $
7. Allocate nursing hours

Balance – deliver the service

Analysis of Service Demand and Resource Allocation (Supply) relationship

Degree of match between these outcomes

Does not balance – (Consider alternative strategies)

Figure 4.2: The relationship of service demand to the allocation of resources (supply)
Considerations when service demand exceeds supply:
- change Casemix
- improve support services
- improve bed utilisation
- explore alternate funding sources
- prioritise service activity
- explore alternative models of service delivery
* Supply of nursing staff to meet demand – examples of terminology used are 'hours per unit of activity', 'hours per patient per day'.

Considerations when there is an under-supply of nursing staff in relation to service demand:
- increase nursing hours
- review skill mix (no action may be required if patient acuity is low)
- availability of agency/casual staff
- review nursing practices
- check indicators, for example:
- infection rates
- complaints & compliments
- satisfaction
- incidents (falls, medication)

Considerations when supply of nursing staff exceeds service demand:
- reduce nursing hours
- no action as acuity is high
- review flexibility of nursing hours (too many full-time staff to be able to reduce hours when required)
- review nursing practices

Figure 4.3: Achieving a balance between allocated resources (supply) and service demand
4.4 Strategies to address an imbalance of supply and demand

Use of the systematic approach of business planning to develop the nursing operating expense budget allows the nurse to understand the many issues impacting on resourcing. The aim of the BPF process is to achieve a balance between supply and demand. However differences occurring between service demand and supply are:

- service demand is greater than the supply of resources
- supply of resources is greater than service demand.

When differences occur, a balance can be achieved by adjusting either supply or demand. Figure 4.3 depicts an imbalance between service demand and supply of resources. Strategies are as follows.

**Where service demand is greater than the supply of resources**

The environmental analysis identifies factors impacting on service demand. Whilst changes to any of these may reduce demand, the following strategies are suggested.

Consider:

- nursing team to clearly identify capabilities with the available staff
- changing patient mix
- exploring improved support services
- improving bed utilisation/bed reductions
- exploring alternate funding sources
- prioritising clinical/work unit activity
- exploring opportunities for efficiencies
- changing the nursing skill mix
- modifying the role and function of the nursing staff
- reviewing indicators – patient/client, staff, quality.

**Where supply of resources is greater than service demand**

When an over-supply of resources has been identified, the following strategies could be considered:

- reduce nursing hours
- approve leave
- review flexibility of core roster
- review nursing practices
- re-direct allocated nursing hours
- increase services

*There needs to be procedures/agreements in place for managing variances in expenditure and/or activity as they emerge.*
4.4.1 Strategies for managing temporary vacancies

Traditionally, casual staff and agency staff have been employed on temporary contracts to backfill temporary vacancies created by Award leave entitlements such as long service leave, maternity and parental leave, parental work agreements, approved leave without pay; long-term sick leave and staff secondments. The vacancies created by these forms of leave and secondments can be significant in a work unit. This may result in:

- instability of staffing in work units
- variable skill mix
- increased workloads
- increased need for preceptoring and training of temporary staff
- decreased staff morale
- increased sick leave
- increased costs.

Ultimately this will impact on the ability of the work unit or facility to effectively manage nursing workloads. Existing practices of backfilling by temporary contracts of external/casual staff, or managing the unfilled shifts on a daily basis with agency staff, additional part-time shifts or overtime, can be inefficient when looking at the impact on the work unit.

One strategy which may increase efficiency is the establishment of a Nursing Support Unit/Bank/Pool (NSU). The purpose of such a unit is to provide appropriately skilled, permanent staff to backfill temporary vacancies. In turn this provides permanent employment to additional nurses who then provide backfill for the requirements described. This strategy is not intended to provide backfill for annual leave which is built into the work unit establishment.

Staff recruited to such a unit would be able to backfill a position in a work unit for a temporary period (possibly up to two years), allowing them the benefits of being members of the ward staff with pre-rostered shifts, and participating in activities managed at work unit level such as performance appraisal and development.

- If a position then becomes available in the allocated work unit, a NSU staff member may take that position and the NSU position can be recruited again. The NSU then becomes a ‘feeder’ for ward permanent staff.
- New graduate nurses can also be placed in the NSU and allocated to work units requiring relief, which in turn increases the facilities’ capacity to employ an increased number of graduate nurses.
- No budget is required for the NSU apart from the costs of setting up and maintaining the processes, as the work unit pays for the staff member.

Of course with the current shortage of nurses worldwide, there remains a risk that the numbers of nurses required to backfill all positions may not be adequate. Therefore, there will still be a need to fill some vacant shifts with casual/external staff as required. Critical to the success of a Nursing Support Unit (NSU) will be appropriate marketing of the role and intention of the unit, and the ability to recruit appropriate nursing staff.
**Benefits to an organisation from an NSU**

- Availability of permanent employment for nursing staff
- Reduced dependence on casual staff and reduction in agency usage
- Staff stability
- Forward planning of workforce management strategies
- Anticipated cost efficiencies through decreased overtime and use of external staff eg. agency
- Rapid filling of temporary vacancies

Additional costs would be involved with setting up and maintaining the process.

**Steps for establishing a Nursing Support Unit**

1. Gain executive support at District level.
2. By identifying the number of FTEs required for backfilling of leave, reviewing approved positions across the facility and determining the number of temporary staff/contracts currently in place, the average-FTE on above types of leave can be identified.
3. Determine the distribution of Registered Nurses and Enrolled Nurses required.
4. Determine the proportion of the NSU’s FTEs that will be designated to backfilling planned leave and the component designated to filling emergent leave, eg. 40 FTE for planned leave and 8 FTE for emergent leave.
5. Create the relevant number of permanent positions.
6. Allocate a dedicated coordinator with adequate resources.
7. Establish policies and protocols pertaining to:
   - appointment and allocation processes
   - orientation
   - expected core competencies
   - performance management
   - provision of education and professional development support
   - identified key performance indicators for assessment of the service.
8. Monitor monthly leave replacement requirements.
9. Regularly reassess requirements of NSU.
4.4.2 Management of emergent situations

Emergent situations will arise such as unexpected sick leave of staff members who are unable to be replaced, or an unplanned number of inpatients. Using the following flow sheet, nurses in clinical work units can consider strategies for implementation to manage the workload in the short-term. It is essential in these situations that safety for patients and staff is the priority.

\[\text{Figure 4.4: Emergent management of nursing workloads}\]

- **Determine a ‘high workload’**
- **Causes:**
  - shortfall in roster for the clinical activity
  - patient numbers are higher than number of funded beds
  - patient acuity or staff skill mix does not allow for the appropriate level of supervision or support

- **Confer with NUM or AHNM**

- **Staff available**
  - **Coordinate and confer with nursing team**
  - **Re-evaluate** throughout the shift. Will the shortfall resolve with the next shift or is it ongoing? Can beds be reopened?

- **No staff available**
  - **Extra nursing hours from**
    - casual staff
    - part-time extra shifts
    - agency staff
    - current or next shift hours
  - **Consider alternative strategies**
    - Prioritise activities required based on clinical need and ability of available staff
    - Adapt pattern of work eg. team nursing or task allocation
    - Skill mix alternatives eg. roles for ENs or AINs to support prioritised activities
    - Activity reduction eg. close beds as patients are discharged, no new admissions – implementation of escalation strategy/policy

- **Feedback to work unit**
- **Document workload issue as per local process and forward to NUM, Nursing Director, NCF**
4.5 Monitoring the use of resources

Monitoring nursing hours, as well as expenditure, is essential as it is the productive hours per unit of activity that the nurse can manage. The number of nursing hours used can be recorded on a daily basis:

- manually
- electronically
- using a PDS
- using a computerised roster system.

4.5.1 Monitoring

By monitoring the use of nursing resources enables assessment of the effectiveness of the allocation of resources can be assessed. It is important to monitor the use of nursing resources both in nursing hours and by expenditure, in order to explain variances. For example, an increase in the cost of nursing services may be due to an increase in the number of nursing hours used (quantity variance), or an increase in the cost of the nursing hours (price variance) – see the section on ‘Variance Analysis’ (Module 3).

Reviewing the information allows the early identification of variances. Some issues to be investigated when the nursing budget and actual expenditure do not match include:

- whether pay point differences for nursing staff are different to those budgeted
- leave taken is different to that budgeted
- different levels of staff have been substituted
- use of agency/casual nurses (higher hourly rate).

All the above elements will cause variances in costs when the actual number of nursing hours used is the same as was budgeted.

4.5.2 Dealing with variances

Unfavourable variances

Reasons for unfavourable variances may include increased activity and/or costs. It is important to determine whether the budget allocation is sufficient to meet the demand (for example, if demand was underestimated). Unfavourable variances may be actioned by any of the strategies listed in the previous section, ‘Strategies to address an imbalance of supply and demand’.

Favourable variances

It is important to also investigate why favourable variances are occurring. Obvious reasons may be activity is less than predicted or efficiencies have been made. However, savings may also have been made by under-staffing, which may lead to a decrease in the quality of service.

This module has examined the process of developing the annual operating expense budget for nursing. The final module, Module 5, briefly describes evaluating the performance of the service and discusses monitoring in further detail.
Module 5: Evaluate Performance

5.1 Introduction
5.2 Objectives
5.3 Measuring performance
5.4 Balanced scorecard
5.5 Frequency of measurement
5.6 Comparative analysis
5.7 Benchmarking
5.8 Conclusion
5.1 Introduction

Performance measurement occurs at various levels across Queensland Health, from monitoring performance in contributing to the Queensland Government’s priorities and outcomes to measurement at HSD or facility level.

The Queensland Health Integrated Performance Report Policy has been developed to provide greater rigour and transparency to performance reporting within the department. Key performance indicators have been identified for a number of issues such as safety and quality, efficiency, activity, budget performance and staffing.

The indicators in the performance reports are to inform the Queensland Health Executive Management Team, Resources Committee, Patient Safety and Quality Board and the Health Community Councils.

Evaluating performance is the third stage of the Business planning framework: a tool for nursing workload management. Evaluating the performance of the service and aligning with key performance indicators will:

- determine the extent to which stated objectives are being achieved
- determine the effectiveness and efficiency of the allocation of resources
- highlight changes to the business plan that may be required
- identify whether a balance between allocated resources (supply) and service demand has been achieved.

This module provides a brief overview of measuring performance, benchmarking and comparative analysis.

5.2 Objectives

On completion of this module, the reader/workshop participant will be able to:

1. Describe the importance of evaluating service performance.
2. Align service specific performance indicators with the strategic direction of Queensland Health.

5.3 Measuring performance

Measuring performance is the means of evaluating the overall effectiveness, efficiency and outcomes of the allocation of resources. It involves the evaluation of both financial and non-financial results.

In evaluating performance, actual results are compared with:

- planned indicators, measures and targets
- previous results
- the performance of other services, either internal or external to the organisation.
Queensland Health Integrated Performance Reporting

Introduced in 2006, the Queensland Health Integrated Performance Reporting Policy aims to improve performance and performance reporting. This ensures that Queensland Health is accountable to government across the range of dimensions of expected performance and public interest.

This is achieved by Areas, Districts and other health service providers reviewing and reporting against the key dimensions of:

- safety and quality
- access to services
- efficiency, activity, budget performance and staffing
- workplace culture partnerships and corporate culture
- prevention and health outcomes.

Districts develop key performance indicators in each of the dimensions, including the indicators used for reporting to the Queensland Health Resources Committee and all the safety and quality indicators used by the Patient Safety and Quality Board.

This is supported by the Data, Reporting and Analysis Centre which provides a performance monitoring framework and reporting system. Within the centre, the Quality Measurement and Strategy Unit provides a core set of performance indicators that measure organisational performance in addition to supporting the statewide quality and strategy reforms of Queensland Health.

Another source of data used for reporting is the Queensland Health Decision Support System (DSS). DSS is a management tool used by line managers to improve decision making in appropriate resource management.

Some other reporting systems are Community Health Information System (CHIS) and Community Health Information Management Enterprise (CHIME). (Appendix C: Sources of Data).

When performance is compared to targets or performance indicators, trends can be identified, and appropriate action can be taken as required.

5.4 Scorecard reporting

A ‘scorecard’ is comprised of a range of indicators used to measure organisational performance, both financial and non-financial.

Developing a scorecard performance measure involves the following steps.

1. Identify service objectives.
2. Consider measures for the objectives.
3. Consider whether the set of measures will ensure a sufficient assessment of progress towards the achievement of these objectives (key performance indicators).
4. Develop reporting formats.
By developing key performance indicators:

- adverse trends can be identified
- comparisons can be made within or with other organisations.

The use of a scorecard and associated indicators will assist the business planning process by allowing the identification and collection of indicators relevant to the service.

Analysis of the performance of a service needs to focus on three perspectives that are aligned to the principles underpinning the BPF. These are:

1. Patient/client
2. Staff

Performance indicators

Relevant indicators are developed to measure and analyse the performance of a service. These performance indicators are aligned with Queensland Health’s strategic direction. Examples of key indicators that could be monitored for each of the perspectives are:

The patient/client

- Complaints
- Satisfaction
- Incidents (includes falls, medication errors)
- Infection rates
- Waiting times
- Access

The staff

- Absenteeism (including sick leave, workers’ compensation)
- Incidents
- Total hours worked (where staff are salaried)
- Re-deployment
- Turnover
- Education hours
- Satisfaction

The organisation

<table>
<thead>
<tr>
<th>Financial</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget integrity</td>
<td>Activity</td>
</tr>
<tr>
<td>Leave</td>
<td>The extent to which service objectives have</td>
</tr>
<tr>
<td>Workforce data</td>
<td>been achieved</td>
</tr>
<tr>
<td>Overtime</td>
<td>Hours per unit of activity</td>
</tr>
<tr>
<td>Workers’ compensation ($)</td>
<td>The extent to which planned skill mix</td>
</tr>
<tr>
<td>Cost per unit of activity</td>
<td>levels and recruitment strategies have been</td>
</tr>
<tr>
<td></td>
<td>reached</td>
</tr>
<tr>
<td></td>
<td>Levels of non-clinical support</td>
</tr>
<tr>
<td></td>
<td>Types of audit processes that are in place</td>
</tr>
<tr>
<td></td>
<td>The levels of achievement of performance</td>
</tr>
<tr>
<td></td>
<td>management</td>
</tr>
</tbody>
</table>
Data set

Each service needs to identify relevant performance indicators and align these with the Queensland Health strategic direction. The performance indicators should include service specific indicators, measures and targets. The measures developed need to be reliable and valid.

5.5 Frequency of measurement

The frequency of measurement and evaluation of the indicators developed will vary by indicator and by service. For example, trends in daily staffing need to be reviewed. It is suggested this be done at least every three months, or whenever significant changes occur impacting on the service delivery area.

Most indicators could be reported on a monthly basis, with the data aggregated into three, six or twelve monthly reports. Queensland Health is required to report monthly on financial performance and quarterly on non-financial performance; however this is aggregated data from the Health Service Districts and is not nursing specific.

Hours per unit of activity can be reconciled with fortnightly payroll reports and activity reports.

5.6 Comparative analysis

Comparisons of the current performance of your service may be made against previous performance or other services.

Internal comparison

Evaluation of the service may include comparing the performance of the specific service in the current month or year with the same service’s performance in previous months or years. This may indicate whether performance is improving or deteriorating. This is referred to as an intra-entity comparison.

Examples

- Community health services may compare wait times and response times for clients awaiting service commencement, cost per unit of activity, wound infection rates for a transitional care service or occasions of community engagement for a period of time compared with another similar period of time.
- A hospital ward may compare length of stay for specific DRGs, NHPPD for a specific period or cost per OBD for a period of time compared with similar period of time.
External comparison

An external comparison involves comparison of the performance of a service with other similar services. In comparing your service with other services, particular attention should be paid to the internal and external environmental factors that impact on them. Differences in these environmental factors, such as the size of the service, need to be considered as they may affect resource requirements (for example, a smaller organisation such as a rural hospital may have higher fixed costs than a provincial hospital).

Examples

- Similar community health services may compare cost per unit of activity, wait times and response times for services or occasions of community engagement.
- Similar hospital wards may compare NHPPD, OBDs for a specific DRG, length of stay for specific DRG or cost per OBD.

5.7 Benchmarking

Benchmarking is a particular area of performance evaluation. The process of benchmarking examines the operation, processes and methods used to achieve best practice. It can be done internally within the organisation or externally with other organisations. When benchmarking, select other units/organisations with similar characteristics of:

- role delineation/Clinical Services Capability (Framework)
- Casemix
- activity.

In analysing the use of nursing resources, it is important that where there are differences in the benchmark results, the analysis of the differences be carefully considered.

The analysis should particularly focus on:

- skill mix/category of nurses
- support services
- team structure/numbers (other than nursing).

5.8 Conclusion

Module 5, Evaluating Performance, is the final stage of the BPF. Having completed the five modules, it is expected that the reader/workshop participant could develop a business plan that balances nursing human resource requirements (supply) with the demand placed on the local health service, and evaluate the performance of the nursing service.
Glossary of terms

ADO: Accrued day off

Casemix: The mix of different types of patients treated in a specific health service

Cost centre: A unit or department in an organisation with a manager who has responsibility for costs

Diagnosis-related groups (DRGs): A system that categorises patients into specific groups based on their diagnosis and other characteristics

Favourable variance (expenses): A variance in which less was spent than anticipated

Fixed costs: Costs which do not change as volume changes

Forecast: A prediction of some future value, e.g. activity levels, acuity levels

Full-time equivalent (FTE): The equivalent of one full-time employee working for one year

Health Service District (HSD)

Nursing hours per patient day (NHPPD): The average nursing hours per unit of activity for hospital inpatients

Nursing Hours Per Occasions of Service (NHPOS): The average nursing hours per unit of activity for ambulatory patients (e.g. ED, outpatients)

NIBB: Nurses Interest Based Bargaining

NIBBIG: Nurses Interest Based Bargaining Interest Group

Non-productive hours: Paid, non-worked hours such as annual leave, sick leave etc.

Objective: An objective describes the expected outcome of an activity. It is usually stated in terms that enable the extent of achievement to be measured

Occupied Bed Day (OBD): patient day = 1 patient occupying 1 bed for 1 day

Office of the Chief Nursing Officer (OCNO)

Operating expenses: The costs associated with the operations of the service

Patient Dependency System (PDS): A system that classifies patients according to the intensity of nursing care needs and therefore indicates the amount of nursing hours required. Systems currently used in Queensland include Trendcare and Excelcare.

Productive hours: Hours worked and paid for

Service: May be a unit, number of units or organisation

Staffing plan: A document which identifies the numbers and categories of staff members required for patient/client care

Trend: A general tendency in any given direction, for example an upward trend
Variable costs: Costs which change with the level of activity

Variance: The difference between the expected and actual result

Variance Analysis: A comparison of actual results with expected results, and investigation into the reasons for the differences

Year-to-date: The sum of the values for all months from the beginning of the year to the current time
Bibliography and further reading

Awards and agreements


Nurses (Queensland Health) Certified Agreement (EB6) 2006

Nurses (Queensland Health – Section 170MX Award 2003

Documents

Queensland Health 2005, Action Plan – Building a better service for Queensland

Queensland Health 2003, Best Practice Framework for Rostering Nursing Personnel

Queensland Health 2007, Casemix Funding Model Overview Paper

Queensland Health 2007, Casemix Roadshow Presentation

Queensland Health 2007, Clinical Governance Policy

Queensland Health 2005, Clinical Services Capability Framework, Version 2.0

Queensland Health 2006, Integrated Performance Reporting Policy

Queensland Health 2007, Queensland State-wide Health Services Plan

Queensland Health 2007, Queensland Health Strategic Plan 2007 – 12

Queensland Nursing Council 2005, Scope of Practice Framework for Nurses and Midwives
Business planning framework: a tool for nursing workload management

Articles


**Books**


Business planning framework: a tool for nursing workload management


Appendix A: Example – Proposed Business Plan

Proposed unit profile

Medical ward

Matilda Hospital
2007/2008
Service Profile

Aim
To provide value-driven, efficient and safe, patient focused care to renal, respiratory, alcohol, tobacco and other drugs of dependence (ATODS) patients/clients and general medical patients who access the service.

Objectives
- To provide a high standard of patient focused care through assessment, planning, early intervention and evaluation of acute medical problems to support people in achieving optimal health outcomes.
- To ensure a coordinated, multi-disciplinary approach in the management of the patient with complex medical needs.
- To work in partnership with the Renal Unit, Respiratory Unit, Endoscopy Unit, Rehabilitation and ATODS to maintain a coordinated approach to management of medical patients across the continuum.
- To work in partnership with High Risk Elders and Community Agencies to manage the care of high risk, confused and dementia patients in the acute care setting.
- To ensure continuity of support, education and rehabilitative measures to encourage patient independence and transition back to the community.
- To encourage patient and family participation in health care decisions and discharge planning.
- To foster partnerships with community agencies to support appropriate follow-up and health maintenance across the continuum.
- To foster a culture that encourages research in the delivery of evidence based care.
- To promote leadership in nursing, the partnership model of care and the Business Planning Framework in the management of nursing resources.

Priority areas for service development
- Review of the high risk elderly patients’ unit (Safe Haven) and resources.
- Submit proposal to increase CN: RN skill mix ratio on Medical Ward to account for 28 acute medical beds including Safe Haven.
- Education and implementation of the Buprenorphine Opiate Detoxification clinical management pathway.
- Commence in-depth analysis of renal patient admissions and length of stay.
- Continue recruitment and retention of skilled nursing staff.
- To support the role and development of the nurse in Medical Ward.
**Environmental Analysis**

**Internal environment**
Medical Ward is a 28 bed medical ward which has 24 acute medical beds, including four beds allocated as the ‘Safe Haven’ for high risk elderly patients. The ward has two ante-isolation negative pressure rooms.

Four of the beds in Medical Ward are acute alcohol and drug detoxification beds allocated through the bed management process.

**Cost centre structure**
Cost Centre number is 123498 and the Nurse Unit Manager is accountable for managing the cost centre.

**Nursing structure**
Medical Ward has:

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of beds</th>
<th>NHPPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Unit Manager</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>CNC/Educator</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Clinical Nurses</td>
<td>5.08</td>
<td></td>
</tr>
<tr>
<td>Registered Nurses</td>
<td>11.18</td>
<td></td>
</tr>
<tr>
<td>Enrolled Nurses</td>
<td>8.86</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26.62</strong></td>
<td></td>
</tr>
</tbody>
</table>

The staffing allocation is based on 92% average bed occupancy.

**Model of care**
The nursing staff in Medical Ward provide total patient care within a professional partnership model of care as per the District nursing standards and policy statement.

Medical Ward operates a four bed ‘Safe Haven’ within the 28 beds for the management of ‘high risk’ elderly patients. (This model is currently under review).

**Nursing hours per patient day (NHPPD)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of beds</th>
<th>NHPPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe Haven beds</td>
<td>4</td>
<td>6.5</td>
</tr>
<tr>
<td>Acute medical/detox</td>
<td>24</td>
<td>6.0</td>
</tr>
</tbody>
</table>

NHPPD includes direct and indirect clinical hours (total productive hours).
Business planning framework: a tool for nursing workload management

Categories/scope of practice/staff skills

- The Nurse Unit Manager (1.0 FTE) provides nursing management and leadership support five days per week.
- The CNC/Educator Medical (0.5 FTE) provides clinical expertise and leadership within the unit five days per week.
- The CNC/Ed Renal, Respiratory, Diabetes, Endoscopy support the unit as needed.
- Nursing skill mix target:
  - Clinical Nurses – 25%
  - Registered Nurses – 55%:
  - Enrolled Nurses – 20% for 25 acute medical beds
  - Enrolled Nurses – 100% for 4 bed Safe Haven.

Rostering

Distribution of nursing hours for 28 beds:

- morning shift – 63 hours
- afternoon shift – 53 hours
- night shift – 28 hours.

The Queensland Health Best Practice Rostering Framework was implemented in the ward during 2004-2005. The following rostering principles are used in the ward:

- A minimum of one Clinical Nurse rostered eight hours per day, as able
- Designated Shift Coordinator each shift
- Registered Nurses with Renal and ATODS competencies rostered each shift, as able
- Enrolled Nurses rostered each shift
- Enrolled Nurse cover from Medical Two for 4 hours across the night shift for Safe Haven
- Clinical Nurses maintain Renal and ATODS competencies
- Clinical Nurse Resource for Cystic Fibrosis and Respiratory patients
- Enrolled Nurse – Safe Haven.

Information technology

- Desktop computers with access to NOVELL, HBCIS, AUSLAB, PACS, QHEPS available in office and write-up bays.
- One central printer in nurse write-up bay.
- Nurse call paging system - not currently utilised.
- One fax machine at reception area.
- Wanderer Alarm Software and sensing hardware installed in Safe Haven Bay for more effective monitoring of ‘at risk’ patient wandering activity outside bay.

Information management

- NUM has access to Transition II, FAMMIS, HR Rostering Systems, Staff Development Databases, QHEPS, QHERS, NOVELL and GroupWise for rapid dissemination of information and patient care delivery:
- Records from the Staff Education Database can be accessed and printed out for staff.
- QHERS – provides information on clinical activity profile.
- Balanced Scorecard reporting.

- Two DECT phones in use by Nurse Unit Manager and designated shift coordinator.
- Nurses – access to databases HBCIS, AUSLAB, QHEPS, NOVELL and GroupWise for communication and patient care activities.
- Currently awaiting user/manager/supervisor training for Queensland Health Electronic reporting of patient incidents; awaiting roll-out of Single Sign On System in Medical Ward.
- Awaiting Institute support for supply and installation of nurse call enunciator panel at front desk.

Service Performance

Performance indicators

- NHPPD, Occupancy, Casemix Index, LOS
- Sick leave
- Falls
- Pressure ulcers
- Infection rates
- >28 days LOS

Historical OBD, Occupancy and Casemix Data
(Period start date – Period end date)

<table>
<thead>
<tr>
<th></th>
<th>Jan 06</th>
<th>Feb 06</th>
<th>Mar 06</th>
<th>Apr 06</th>
<th>May 06</th>
<th>Jun 06</th>
<th>Jul 06</th>
<th>Aug 06</th>
<th>Sep 06</th>
<th>Oct 06</th>
<th>Nov 06</th>
<th>Dec 06</th>
<th>Total /Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total OBD</td>
<td>850</td>
<td>806</td>
<td>858</td>
<td>822</td>
<td>852</td>
<td>834</td>
<td>866</td>
<td>865</td>
<td>822</td>
<td>869</td>
<td>834</td>
<td>857</td>
<td>844</td>
</tr>
<tr>
<td>One Day Stay (ODS)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual Total</td>
<td>850</td>
<td>806</td>
<td>858</td>
<td>822</td>
<td>853</td>
<td>836</td>
<td>866</td>
<td>866</td>
<td>822</td>
<td>870</td>
<td>834</td>
<td>857</td>
<td>845</td>
</tr>
<tr>
<td>Occupancy % OBD + ODS</td>
<td>97.9</td>
<td>102.8</td>
<td>98.8</td>
<td>97.9</td>
<td>98.2</td>
<td>99.6</td>
<td>99.8</td>
<td>99.8</td>
<td>97.9</td>
<td>100.2</td>
<td>99.3</td>
<td>98.7</td>
<td>99.2</td>
</tr>
<tr>
<td>Weighted Seps</td>
<td>126</td>
<td>148</td>
<td>151</td>
<td>154</td>
<td>133</td>
<td>211</td>
<td>135</td>
<td>93</td>
<td>187</td>
<td>108</td>
<td>107</td>
<td>203</td>
<td>146</td>
</tr>
<tr>
<td>Total Seps</td>
<td>60</td>
<td>57</td>
<td>72</td>
<td>69</td>
<td>73</td>
<td>73</td>
<td>60</td>
<td>59</td>
<td>87</td>
<td>59</td>
<td>65</td>
<td>75</td>
<td>67</td>
</tr>
<tr>
<td>Casemix Index</td>
<td>2.1</td>
<td>2.59</td>
<td>2.09</td>
<td>2.23</td>
<td>1.82</td>
<td>2.9</td>
<td>2.25</td>
<td>1.57</td>
<td>2.1</td>
<td>1.83</td>
<td>1.64</td>
<td>2.71</td>
<td>2.15</td>
</tr>
</tbody>
</table>

(Source: HBCIS Statistical Summary Report, DSS Casemix Activity Module)
Proposed Staffing and Activity for (Period start date – period end date)

<table>
<thead>
<tr>
<th>Monthly Average</th>
<th>Top 10 DRG’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHPPD/NHPOS/HPUA#</td>
<td>E62C</td>
</tr>
<tr>
<td></td>
<td>E65B</td>
</tr>
<tr>
<td></td>
<td>L67C</td>
</tr>
<tr>
<td></td>
<td>F74Z</td>
</tr>
<tr>
<td></td>
<td>E65A</td>
</tr>
<tr>
<td></td>
<td>E62B</td>
</tr>
<tr>
<td></td>
<td>G67B</td>
</tr>
<tr>
<td></td>
<td>F62B</td>
</tr>
<tr>
<td></td>
<td>F72B</td>
</tr>
<tr>
<td></td>
<td>F75C</td>
</tr>
</tbody>
</table>

*:- indicates unit of activity eg. Theatre session

#: NHPPD is Nursing hours per patient day, NHPOS is Hours per Occasion of Service, HPUA is Hours per Unit of Activity
Appendix B: Example – Agreed Business Plan

Matilda Health Service

1. Service profile

Aim:
To provide a patient/client focused health service that meets the needs of the community within the given resources.

Objectives:
- maximise opportunities to provide care on a continuum
- provide an integrated service
- improve staff development opportunities

Description of present service:

Location: Provincial city located on the central coast of Queensland.

Boundaries: The Health Service extends approximately 150 kms north of the city, 60 kms south of the city and 100 kms west of the city. It provides health services to the population of the city as well as to residents in the surrounding rural area.

Type of service: The service consists of:
- 100 inpatient beds comprising:
  - 30 bed ward for medical
  - 30 bed ward for surgical
  - 20 beds maternity and paediatrics
  - 20 bed mental health and medical/surgical overflow.
- Outpatients Department
- Community Health Services.

Functions of the service: The service provides medical, surgical, maternity, paediatric, mental health inpatient and community care.

Role delineation: Level 3/4 as per Clinical Services Capability (Framework) 2005

Significant achievements in the last 12 months:
- the hospital and community services were integrated into an organisational structure with a resultant combining of management positions across both areas of service delivery
- a number of specific clinical service advisory committee with membership from all health services in the area were formed (ie. included GPs and domiciliary nursing services)
- devolvement of budget responsibility to middle managers commenced.

Non-achievements in the last 12 months:
- devolvement of budget responsibility to middle management not completed as planned
- implementation of new parenting program did not occur due to delays in receiving funds.
Priority areas for service development:

- new parenting program
- expand clinical home care services
- implement strategies to reduce the number of paediatric admissions for minor ailments
- develop integrated care guidelines for asthmatics with the aim of reducing hospital admissions.

The service will be seeking accreditation in June.

Environmental analysis:

<table>
<thead>
<tr>
<th>Internal</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structural</strong></td>
<td>Newly built hospital and community health centre on one campus</td>
</tr>
<tr>
<td>• Physical environment Location</td>
<td>Located on the western outskirts of the city, (well-serviced by public transport)</td>
</tr>
<tr>
<td>Size</td>
<td>100 inpatient beds, community health centre will allow for future expansion of service</td>
</tr>
<tr>
<td>Design</td>
<td>Integrated health service with one executive for entire service</td>
</tr>
<tr>
<td>• Organisational/unit structural design</td>
<td>Hospital building is two stories with 2 wards on each floor. These wards have the ability to ‘swing beds’. Operating theatres (2) are located on the top floor</td>
</tr>
<tr>
<td>• Cost centre structure</td>
<td>Each ward is a designated cost centre</td>
</tr>
<tr>
<td>• Service structure</td>
<td>Nursing structure:</td>
</tr>
<tr>
<td>• Nursing structure Roles/functions</td>
<td>DON, 1 ADON</td>
</tr>
<tr>
<td>• Model of care/service options</td>
<td>NUM’s manage each of the 4 wards, Operating Suite/CSSD, Outpatients Department and Emergency Department. The NUM’s function approximately 70% clinical and 30% administration. This will change as cost centre accountability is devolved to them</td>
</tr>
<tr>
<td>Alternative</td>
<td>Care is patient focused. Wards area use a team nursing approach to care</td>
</tr>
<tr>
<td><strong>Human Resource Management</strong></td>
<td>Senior leaders of the service have broad experience. They have been with the organisation between 2 and 6 years</td>
</tr>
<tr>
<td>• Leadership &amp; management organisational culture</td>
<td>The organisation embraces change</td>
</tr>
<tr>
<td>• Core staff working in the service-categories, scope of practice, skills</td>
<td>Nurses in the service comprise Grades 7, 6 and 5 and Enrolled Nurses. The nurses have advanced clinical practice role, eg. Venipuncture, cannulation, minor suturing, midwives clinic</td>
</tr>
<tr>
<td>• Support staff, levels and roles/responsibilities</td>
<td>Priority needs are: Cost centre management, training to support movement between community practice and hospital</td>
</tr>
<tr>
<td>Training and development needs</td>
<td></td>
</tr>
<tr>
<td><strong>Information Technology/Management</strong></td>
<td>There is good access to computers in all clinical areas. A number of systems support patient census, HRM, payroll and rostering. There is no Patient Dependency System in use</td>
</tr>
<tr>
<td>• Information technology</td>
<td>Staff require further education in information management.</td>
</tr>
<tr>
<td>• Information management</td>
<td></td>
</tr>
</tbody>
</table>
### SWOT analysis

**Strengths:**
- Strong culture of quality improvement
- Low turnover rates amongst nursing staff

**Weakness:**
- Low number of staff with postgraduate qualifications

**Opportunity:**
- Enthusiasm from staff for opportunities to work across both hospital and community settings

**Threat:**
- Reluctance by local university campus to assist with the provision of courses in the area of child health/paediatric nursing

#### Internal

<table>
<thead>
<tr>
<th>Service Performance</th>
<th>This is covered in the following section on ‘Reports’</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Patient/client complexity/acyuity</td>
<td></td>
</tr>
<tr>
<td>• Patient/client activity</td>
<td></td>
</tr>
<tr>
<td>• Financial outcomes</td>
<td></td>
</tr>
<tr>
<td>• Service standards/quality</td>
<td></td>
</tr>
</tbody>
</table>

#### External

<table>
<thead>
<tr>
<th>Policy/legal</th>
<th>Currently have HACC funding until end of current financial year. This supports 2 FTE nursing positions and 0.5 Social Worker in community services</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Commonwealth policies/funding</td>
<td></td>
</tr>
<tr>
<td>• State Government policies/funding</td>
<td></td>
</tr>
<tr>
<td>• Qld. Health policies/funding</td>
<td></td>
</tr>
<tr>
<td>• Legislation</td>
<td></td>
</tr>
<tr>
<td>• Licensing requirements</td>
<td></td>
</tr>
<tr>
<td>• Professional groups</td>
<td></td>
</tr>
<tr>
<td>• Industrial groups/issues</td>
<td></td>
</tr>
<tr>
<td>• Education imperatives</td>
<td></td>
</tr>
<tr>
<td>• Received extra funding for expanded parent program (1 FTE nurse, 0.5 FTE Social Worker)</td>
<td></td>
</tr>
<tr>
<td>• Currently implementing changes in practice for ENs to give medications</td>
<td></td>
</tr>
<tr>
<td>• There is strong membership of nurses in professional special interest group/colleges, eg. ACMI</td>
<td></td>
</tr>
<tr>
<td>• Will be implementing most recent EB imperatives</td>
<td></td>
</tr>
<tr>
<td>• Currently provide clinical placements for undergraduate student nurses and post-graduate critical care course</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic</th>
<th>There is one small private hospital of 30 beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>• International/national economy</td>
<td></td>
</tr>
<tr>
<td>• Public/private interface</td>
<td></td>
</tr>
<tr>
<td>• Private health care providers</td>
<td></td>
</tr>
<tr>
<td>• Capital Works</td>
<td></td>
</tr>
<tr>
<td>• There is one domiciliary nursing service. This service has increased the number of nurses employed and has increased service provision</td>
<td></td>
</tr>
<tr>
<td>• The local GPs are supported by a Division of General Practice</td>
<td></td>
</tr>
<tr>
<td>• Capital works are complete</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social</th>
<th>Local community has strong support for health service. A recent survey indicated that the greater community believed that the health service met their health care needs at a high level</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Community expectations</td>
<td></td>
</tr>
<tr>
<td>• Workforce issues</td>
<td></td>
</tr>
<tr>
<td>Demographics</td>
<td>Stable population size overall. Birth rates have decreased over the last 5 years, however the rate of decrease is low (approx. 6% over 5 years)</td>
</tr>
<tr>
<td>• There is strong membership of nurses in professional special interest group/colleges, eg. ACMI</td>
<td></td>
</tr>
<tr>
<td>• There is one small private hospital of 30 beds</td>
<td></td>
</tr>
<tr>
<td>• There is one domiciliary nursing service. This service has increased the number of nurses employed and has increased service provision</td>
<td></td>
</tr>
<tr>
<td>• The local GPs are supported by a Division of General Practice</td>
<td></td>
</tr>
<tr>
<td>• Capital works are complete</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technological</th>
<th>Use of technology is similar to large city hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Technology</td>
<td></td>
</tr>
<tr>
<td>• Research</td>
<td>A generous community assists with updating of equipment.</td>
</tr>
</tbody>
</table>
Business planning framework: a tool for nursing workload management

Reports
To assess past performance of the service, staffing, activity, financial, Casemix and quality reports were obtained and analysed.

Key items noted included:

**Staffing**
- minimal turnover of nursing staff
- sick leave rate 3%
- workers’ compensation below that budgeted.

**Activity**
- hospital activity decreased, however average acuity of Casemix slightly higher than last year. Notable seasonal trends of decreased surgery over December/January due to VMO leave and increased medical and paediatric activity for May, June, July, August, September. A notable increase in the number of admissions for asthma in children and adults
- community activity increased.

**Finance**
- the health service achieved budget overall. Community health services were overspent by 15%, hospital services underspent by 15%.

**Quality**
- Medication errors low and declining
- Staff incidents low and declining
- Patient incidents low, slight increase noted over winter months.

2. **Resource allocation**
The following resource calculations have been done for the 30–bed medical ward.

- **Productive hours**

  Formula for inpatient services:

  \[
  \text{Average nursing hours per patient day} = \frac{\text{Total no. of nursing hours worked (in a specified period)}}{\text{Total no. of occupied bed days (in the corresponding period)}}
  \]
Last year:

Total no. of nursing hours worked 44,070 hours  = 4.43 NHPPD
Total no. of occupied bed days 9945 OBDS

Acuity of Casemix
The acuity of the Casemix is not expected to change significantly.

Indirect hours (non-clinical)
The following factors will increase the non-clinical workload of the nursing staff:

• preparation towards accreditation in June
• complete implementation of devolved management to grade 7 (NUM) nursing staff.

It is estimated that an additional 4 hours per week for the grade 7 NUM will be required.

Therefore, 208 hours (52 weeks x 4 hours) will be added to the above total number of nursing hours worked in order to determine the required NHPPD for this current year:

44,278 hours  = 4.45 NHPPD.
9945 OBDS

· Total productive nursing hours required to deliver services
Activity is estimated to decrease. The forecast number of occupied bed days is 9,300, therefore:

Total number of nursing hours required per year:

\[
Total\ no.\ of\ productive\ nursing\ hrs. = \text{Av. hrs. per unit of activity } \times \text{Total no. of activities per year}
\]

4.45 NHPPD x 9300 OBs = 41,385 hours
Business planning framework: a tool for nursing workload management

- **Skill mix/category**

  Total nursing hours per week: 41,385 hours/52 weeks = 796 hours/week

<table>
<thead>
<tr>
<th>Nurse grade</th>
<th>Details</th>
<th>Hours/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 (NUM)</td>
<td>(7.6 hours per day Monday to Friday)</td>
<td>38</td>
</tr>
<tr>
<td>6 (CN)</td>
<td>(24 hours per day for 7 days per week)</td>
<td>168</td>
</tr>
<tr>
<td>5 (RN)</td>
<td>(24 hours per day for 7 days per week)</td>
<td>478</td>
</tr>
<tr>
<td>3 (EN)</td>
<td>(16 hours per day for 7 days per week, no night duty)</td>
<td>112</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>796</strong></td>
</tr>
</tbody>
</table>

- **Non-productive time**

  The following non-productive time has been allocated:

  Breakdown of on-costs:

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual leave</td>
<td>6 weeks (5 weeks = 9.6%)</td>
<td>11.54</td>
</tr>
<tr>
<td>Sick/SR leave</td>
<td>State average for last financial year</td>
<td>4.00</td>
</tr>
<tr>
<td>Conference / Training Leave#</td>
<td>2 days</td>
<td>0.77</td>
</tr>
<tr>
<td>Professional Development</td>
<td>3 days per FTE</td>
<td>1.15</td>
</tr>
<tr>
<td>Penalties</td>
<td>Average of weekends/public holidays etc.</td>
<td>24.00</td>
</tr>
<tr>
<td></td>
<td>Set by QH Resource Committee</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Includes A/L loading, meal allowances</td>
<td>0.70</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>42.16</strong></td>
</tr>
</tbody>
</table>

# Conference/Training leave is a local decision (refer P.69)

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory training requirements*</td>
<td>11 days per new employee (head-count)</td>
<td>4.23</td>
</tr>
<tr>
<td></td>
<td>5 days for existing employees (head-count)</td>
<td>1.92</td>
</tr>
</tbody>
</table>

* Mandatory training requirements are based on employee Head Count (HC) x average base salary per FTE
### Converting hours into FTE

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>In charge shift allowance</td>
<td>Set at the amount expended in the previous financial year adjusted for any award increases</td>
<td></td>
</tr>
<tr>
<td>Qualifications allowance</td>
<td>Set at the amount expended in the previous financial year adjusted for any award increases</td>
<td></td>
</tr>
<tr>
<td>Superannuation, Long Service Leave etc</td>
<td>Set as per Corporate agreed rates</td>
<td></td>
</tr>
</tbody>
</table>

#### Annual FTEs

\[
\text{Annual FTE} = \frac{\text{Required hours per year}}{\text{Productive hours per year per FTE}}
\]

<table>
<thead>
<tr>
<th>Nurse grade</th>
<th>Column (1)</th>
<th>Column (2)</th>
<th>Column (3)</th>
<th>Column (4)</th>
<th>Column (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 (NUM)</td>
<td>38</td>
<td>1.00</td>
<td>1,976</td>
<td>1,786</td>
<td>1.11</td>
</tr>
<tr>
<td>6 (CN)</td>
<td>168</td>
<td>4.42</td>
<td>8,736</td>
<td>1,748</td>
<td>5.00</td>
</tr>
<tr>
<td>5 (RN)</td>
<td>478</td>
<td>12.60</td>
<td>24,856</td>
<td>1,748</td>
<td>14.21</td>
</tr>
<tr>
<td>3 (EN)</td>
<td>112</td>
<td>2.95</td>
<td>5,824</td>
<td>1,786</td>
<td>3.26</td>
</tr>
<tr>
<td>Total</td>
<td>796</td>
<td>21.00</td>
<td>41,392</td>
<td>23.58</td>
<td></td>
</tr>
</tbody>
</table>

Where:

| (1) From previous exercise | (2) Column (1) / 38 hours | (3) Column (1) x 52 weeks | (5) Column (3) / Column (4) |
• Conversion into dollars

<table>
<thead>
<tr>
<th>Year</th>
<th>FTE</th>
<th>Hrly rate</th>
<th>Tot / hr</th>
<th>Annual Penalties @ 24%</th>
<th>A/L @ 11.54%</th>
<th>S/L, SRL @ 4%</th>
<th>Professional Development @ 1.15%</th>
<th>Mandatory Training requirements</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUM</td>
<td>3</td>
<td>1</td>
<td>31.7</td>
<td>62639</td>
<td>7229</td>
<td>2506</td>
<td>720</td>
<td>73094</td>
<td></td>
</tr>
<tr>
<td>CN</td>
<td>2</td>
<td>1</td>
<td>27</td>
<td>53352</td>
<td>12804</td>
<td>6157</td>
<td>2134</td>
<td>614</td>
<td>75061</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1</td>
<td>27.7</td>
<td>54735</td>
<td>13136</td>
<td>6316</td>
<td>2189</td>
<td>629</td>
<td>77006</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>2.42</td>
<td>28.3</td>
<td>135356</td>
<td>32485</td>
<td>15620</td>
<td>5414</td>
<td>1557</td>
<td>190432</td>
</tr>
<tr>
<td>RN</td>
<td>2</td>
<td>2</td>
<td>20</td>
<td>79040</td>
<td>18970</td>
<td>9121</td>
<td>3162</td>
<td>909</td>
<td>111202</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>21</td>
<td>124488</td>
<td>29877</td>
<td>14366</td>
<td>4980</td>
<td>1432</td>
<td>175142</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>5</td>
<td>24</td>
<td>237210</td>
<td>56909</td>
<td>27364</td>
<td>9485</td>
<td>2727</td>
<td>333605</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>2.6</td>
<td>26</td>
<td>6760</td>
<td>133577</td>
<td>32058</td>
<td>15415</td>
<td>5343</td>
<td>187929</td>
</tr>
<tr>
<td>EN</td>
<td>4</td>
<td>1</td>
<td>18</td>
<td>35568</td>
<td>8536</td>
<td>4105</td>
<td>1423</td>
<td>409</td>
<td>50041</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>2</td>
<td>18.4</td>
<td>72717</td>
<td>17452</td>
<td>8392</td>
<td>2909</td>
<td>836</td>
<td>102306</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>242.1</td>
<td>500.3</td>
<td>988592</td>
<td>222229</td>
<td>114085</td>
<td>39544</td>
<td>11369</td>
<td>9957</td>
</tr>
</tbody>
</table>

• Allocating resources according to demand

**Annual demand**

<table>
<thead>
<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBDs</td>
<td>720</td>
<td>739</td>
<td>776</td>
<td>767</td>
<td>823</td>
<td>785</td>
<td>841</td>
<td>846</td>
<td>795</td>
<td>823</td>
<td>740</td>
<td>645</td>
<td>9300</td>
</tr>
<tr>
<td>Total hours required/month</td>
<td>3204</td>
<td>3289</td>
<td>3453</td>
<td>3413</td>
<td>3663</td>
<td>3493</td>
<td>3742</td>
<td>3765</td>
<td>3538</td>
<td>3662</td>
<td>3293</td>
<td>2870</td>
<td>41385</td>
</tr>
</tbody>
</table>

**Daily Demand (for the month of July)**

<table>
<thead>
<tr>
<th>Day</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
<th>Sun</th>
<th>Total per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBDs</td>
<td>28</td>
<td>29</td>
<td>29</td>
<td>27</td>
<td>25</td>
<td>25</td>
<td>27</td>
<td>190</td>
</tr>
<tr>
<td>Hours required per day</td>
<td>125</td>
<td>129</td>
<td>129</td>
<td>120</td>
<td>111</td>
<td>111</td>
<td>120</td>
<td>845</td>
</tr>
</tbody>
</table>
Care roster using 8 hour shifts

Number of shifts

<table>
<thead>
<tr>
<th></th>
<th>Day</th>
<th>Evening</th>
<th>Night</th>
<th>Total hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>112</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>104</td>
</tr>
</tbody>
</table>

A total of 792 hours have been scheduled on the core roster. This leaves 53 hours to be used as required.

3. Evaluation

Scorecard indicators for medical ward:

<table>
<thead>
<tr>
<th>The Client</th>
<th>The Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complaints</td>
<td>Absenteeism (including sick leave, workers’ compensation)</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Incidents</td>
</tr>
<tr>
<td>Incidents (includes falls, medication errors)</td>
<td>Re-deployment</td>
</tr>
<tr>
<td>Re-admission rates</td>
<td>Turnover</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Organisation</th>
<th></th>
<th>The Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td></td>
<td>Process</td>
</tr>
<tr>
<td>Budget integrity</td>
<td></td>
<td>Activity</td>
</tr>
<tr>
<td>Annual leave</td>
<td></td>
<td>The extent to which service objectives have been achieved</td>
</tr>
<tr>
<td>Workforce data</td>
<td></td>
<td>Hours per unit of activity</td>
</tr>
<tr>
<td>Overtime ($’s)</td>
<td></td>
<td>The extent to which planned skill mix levels have been reached</td>
</tr>
<tr>
<td>Workers’ Compensation ($’s)</td>
<td></td>
<td>Level of non-clinical support</td>
</tr>
<tr>
<td>Cost per NHPPD</td>
<td></td>
<td>Types of audit processes that are in place</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The levels of achievement of performance planning and review</td>
</tr>
</tbody>
</table>
Appendix C: Sources of Data

<table>
<thead>
<tr>
<th>Sources</th>
<th>What is available</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSS (Decision Support System)</td>
<td>• historical financial data – actual, budgets, forecasts</td>
</tr>
<tr>
<td></td>
<td>• ledger transactions</td>
</tr>
<tr>
<td></td>
<td>• expenditure by account and cost centre</td>
</tr>
<tr>
<td></td>
<td>• payroll analysis – financial and non-financial, fortnightly data, hours analysis</td>
</tr>
<tr>
<td></td>
<td>• graphs</td>
</tr>
<tr>
<td></td>
<td>• variances</td>
</tr>
<tr>
<td></td>
<td>• cost trends, peaks, troughs</td>
</tr>
<tr>
<td></td>
<td>• some accrual reporting capacity</td>
</tr>
<tr>
<td>FAMMIS (SAP)</td>
<td>• historical financial data – (cash and accrual), actual, budgets, forecasts</td>
</tr>
<tr>
<td></td>
<td>• ledger transactions</td>
</tr>
<tr>
<td></td>
<td>• expenditure by account and cost centre</td>
</tr>
<tr>
<td></td>
<td>• equipment and other assets management – location and cost centre, value, age, replacement</td>
</tr>
<tr>
<td>Rostering</td>
<td>• a number of spreadsheets have been developed in-house that allow analyses of</td>
</tr>
<tr>
<td></td>
<td>- standard roster costs</td>
</tr>
<tr>
<td></td>
<td>- costs of rosters variations</td>
</tr>
<tr>
<td></td>
<td>- roster matched to business (patient) needs</td>
</tr>
<tr>
<td></td>
<td>- care hours per occupied bed days</td>
</tr>
<tr>
<td>HBCIS</td>
<td>• patient activity – occupied bed days, separations, public, private, acute, nursing home type and other, occasions of service</td>
</tr>
<tr>
<td></td>
<td>• % day of surgery admission, % day surgery</td>
</tr>
<tr>
<td>COMBO</td>
<td>• cost modelling, DRG data, inpatient fraction, average length of stay, case weights, cost per case weighted separations</td>
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<td>EDIS</td>
<td>• used to manage and report on activities in all large public hospitals across Queensland.</td>
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<td>• EDIS system monitors progress and provide alerts and record treatment details from the time of arrival of patient and as they progress through the ED.</td>
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<td>ORMIS</td>
<td>• A system to improve operational service delivery and enhance emergency management in operating theatre environment.</td>
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<td>Source</td>
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<td>Transition II</td>
<td>• clinical costing, activity costing</td>
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<td>• asset management – maintenance, preventative maintenance, asset replacement</td>
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<td>WIMS</td>
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<td>Patient Dependency</td>
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<td>Capital Works Plans</td>
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<td>District Service Agreements</td>
<td>• scope of services, quality, quantity, new services, enhancements to existing services</td>
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<td>Unit Business Plans</td>
<td>• services – scope, location, quality, quantity</td>
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<td>• links to QHealth and District plans</td>
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<td>Hospital Redevelopment – 10 year Business Plans</td>
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<td></td>
<td>- inpatient separations</td>
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<td>- same day separations</td>
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<td>- proportion of same day separations</td>
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<td>- average length of stay – non same day</td>
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<td>- occupied bed days</td>
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<td>- average DRG cost weight—inpatients</td>
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<td>- non inpatient occasions of service</td>
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<td>- cost</td>
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<td>Hospital Funding Model</td>
<td>• the model, guidelines for development of budgets, elective surgery funds</td>
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<td>• accreditation checklist, PI thresholds</td>
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<td>Monthly Hospital Management Statistics</td>
<td>• statistics compiled each month and distributed to all Divisions and Departments</td>
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### Business Planning Framework: A Tool for Nursing Workload Management

#### Appendix D: Queensland Health General Ledger

| Date: 07/08 | Time: 09:27 | Page: 1 |

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Appendix E: Definitions of Full-Time Equivalents

What is a Full-Time Equivalent (FTE)?

Calculation of an FTE is based on the relevant Award/Enterprise Bargaining (EB) Agreement and currently a full-time nursing employee in the public sector works a 38 hour week. Therefore, when nursing hours are converted to FTEs they are divided by 38. There are a range of definitions related to the term ‘FTE’ used throughout Queensland Health for analysing and reporting purposes, which can become very confusing.

The FTE references used throughout Queensland Health include ‘affordable FTEs’, ‘budgeted FTEs’, ‘Productive FTEs’, ‘Non-Productive FTE’, ‘rostered FTEs’, etc. These FTE definitions are used (and reported) by a range of areas including nursing, finance, HRM, district executive and corporate staff.

For example, the HRM department, when reporting on the number of FTEs in a cost centre, may include those staff that have a substantive position in the cost centre but are on secondment to another area, on maternity leave, long service leave, undertaking a project, on leave without pay etc. The latter group of staff most likely will be backfilled, with the staff undertaking the backfill included in the cost centre. The FTE report for the particular cost centre will be higher than the budgeted FTE as both groups of staff are included in the calculation but the cost may be within budget.

The following are the some commonly used definitions relating to FTE type, as reported by the Queensland Health Financial Based Decision Support System (DSS). DSS is a management tool used by line managers to improve decision making in appropriate resource management. The DSS Human Resource module receives data from LATTICE and PAYman on detailed employee information (annual leave, overtime etc.) for each fortnight as the pay is processed. Viewing reports on the different categories of FTE allow the user to evaluate their area of responsibility in terms of payments made and the impact on budgets.

- **Total FTE** – this shows the total FTE for nursing staff calculated as full-time equivalents (FTE), and includes all paid and unpaid FTEs for the period. It includes internal, casual, full-time and part-time staff, as well as external or agency staff.
- **Approved Full-Time (AFT)** – this is calculated as the Base Standard funded hours + Permanent funded leave replacement (hours that are funded for permanent appointment to replace leave) divided by Award Full-Time Standard Hours
- **Paid FTE** – this shows the total salary paid for nursing staff calculated as FTE. This includes all temporary, full-time, part-time, casual and agency staff employed directly by a division.
- **Standard FTE** – This is the total salary paid for nursing staff calculated as FTE, excluding paid long service leave and recreation leave. This includes all paid sick leave, special leave (e.g. maternity, bereavement), productive salaries, overtime, penalty allowances, base non-worked and base terminated.
- Productive FTE – standard + overtime
- Non-productive FTE – all leave type categories
- Occupied FTE – this is calculated by totalling the FTE Hours of each occupant where ‘Not Current Position’ and ‘Cross District Employee’ do not appear against the employee divided by Award Full-Time Standard Hours.
Business planning framework: a tool for nursing workload management
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