Centre for Health Information
Newfoundland & Labrador

MIS Standards, Workload Measurement and Statistical Data Collection

Reference Guide for Respiratory Services

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1 INTRODUCTION

1.1 Purpose

The purpose of this reference guide is to educate readers regarding the Management Information Systems (MIS) Standards and their application to the discipline of respiratory services in the Newfoundland and Labrador Health Care System.

1.2 What are the MIS Standards?

The Standards for Management Information Systems in Canadian Health Service Organizations*, the MIS Standards*, are published by the Canadian Institute for Health Information (CIHI). The MIS Standards are the national data standard for the collection and reporting of financial and statistical information from health service organizations. Originally developed for hospitals, the MIS Standards have been expanded over the years to include all types and sizes of health organizations. The MIS Standards specify:

- what data to collect;
- how to group and process data; and
- how to analyze and use the data to support management functions such as evaluation, control, budgeting, planning and quality initiatives (turning data into information).

Core components of the MIS Standards are:

- chart of accounts;
- accounting principles and procedures;
- workload measurement systems;
- indicators;
- management applications; and
- glossary of terms.

The primary goal of the MIS Standards is to provide standardized, basic operational management information to front line managers as well as administrators throughout the health system. Implementation of the MIS Standards enables organizations to have comparable financial information and related statistics (such as workload and patient activity) for the many clinical services they provide. This data can then be used to report calculation of key indicators, providing a useful tool to measure and monitor performance. Some examples are:

- accountability reporting by managers for resource use;
- development of budgets based on meaningful workload and activity projections;
- more precise resource allocation; and
- more informed management decisions.

The MIS Standards were adopted by the Newfoundland and Labrador Department of Health and Community Services in 1992. Provincial reporting requirements were developed based on the national reporting requirements with provincial customization as required to meet local information needs.

A national MIS Technical Working Group provides CIHI with expert technical advice on the development, maintenance and effective implementation of the MIS Standards across the continuum of health service delivery. The working group is composed of provincial and territorial MIS Coordinators, with additional members from the field added at CIHI's discretion.

1.3 What is the Role of the Provincial MIS Committees?

The Provincial MIS Committees are discipline-specific groups that:

- make recommendations regarding implementation of the components of the MIS Standards applicable to their discipline;
- promote the use of the workload measurement systems by their discipline; and
- provide a vital link between the professions, Department of Health and Community Services (DHCS) and the Data Quality and Standards Division of the Newfoundland and Labrador Centre for Health Information (the Centre).

Currently there are 18 provincial MIS committees for the following disciplines:

- Data Quality and Reporting *(Financial & Statistical Reporting);*
- Audiology;
- Clinical Laboratory;
- Electrodiagnostic, Cardiac and Vascular Laboratories;
- Food Services Administration;
- Health Information Services ;
- Medical Imaging;
- Nursing;
- Nutrition Services;
- Occupational Therapy;
- Pastoral/Spiritual Care;
- Pharmacy;
- Physiotherapy;
- Psychology;
- Respiratory Therapy;
- Social Work;
- Speech-Language Pathology; and
- Therapeutic Recreation.

The Provincial Data Quality and Reporting MIS Committee includes finance representatives from all Regional Health Authorities, the DHCS and the Centre. It has overarching responsibility for issues related to the quantity and quality of the data collected provincially.

The Provincial Respiratory services MIS Committee was formed in 1994 to facilitate implementation of the MIS Standards as they apply to the respiratory services in the province of Newfoundland and Labrador. The ongoing work of the Committee includes:

- provision of education sessions on workload management and statistical data collection;
- maintenance of the discipline specific reference guide;
- development and administration of audit tools;
- promotion of data quality on a provincial basis;
- development of provincial performance indicators;
- provision of feedback on changes to the MIS Standards to CIHI through the provincial MIS Standards Manager; and
- facilitation of revisions to the MIS Standards pertinent to respiratory services.

Information about the Terms of Reference and membership for all MIS committees can be obtained from the MIS Standards staff at the Centre, also see Section 13 Resources.

1.4 What is the Role of the Centre for Health Information?

The Centre for Health Information was established to provide quality information to health professionals, the public and health system decision makers. Through collaboration with the health system the Centre supports: the development of standards; maintains key provincial health databases; prepares and distributes health reports; and supports and conducts applied health research and evaluations. The Centre's mandate also includes the development of a confidential and secure Electronic Health Record for the Province.

The MIS Standards are the responsibility of the Data Quality and Standards Division within the Centre. This division is responsible for developing and promoting the use of data standards for financial, statistical, social, demographic and clinical data collection in the health sector. It is responsible for ensuring that this data is uniform in definition, measurement, collection and interpretation. Many of these standards are developed with or mirror national standards; which ensures comparability and consistency of data across the health system.

2 KEY CONCEPTS

2.1 Code Structure and Matching Principle

The MIS Chart of Accounts general coding structure consists of several various code blocks (see Figure 1).

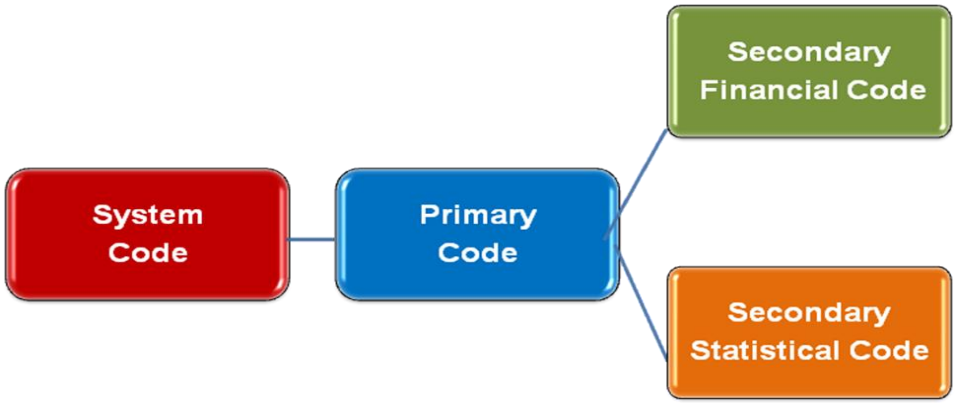

Figure 1

Using these code blocks, data can be recorded in a health service organization's financial and statistical general ledgers in a structured manner. The number of blocks used depends on the account being defined.

The first code in all account numbers is the **system code** block. It is assigned by the information systems or finance department when the Chart of Accounts is established for the health service/reporting organization and represents the highest level of data aggregation. Organizations use this code block to numerically identify a facility, site or program within the Regional Health Authority.

The **primary code** refers to a numerical name for a functional centre or accounting centre. Functional centres in the diagnostic and therapeutic functional centre framework section are discipline specific. See section 3 for further detail.

The **secondary codes** provide for the recording of either financial or statistical information and identify specific types of information about the functional centre. See sections 4 and 5 for further detail.

The creation of primary and secondary accounts should be discussed with the individual responsible for MIS reporting within an organization to ensure that accounts correctly reflect the activity that occurs and that the secondary accounts are correctly linked with the primary account or functional centre. The person responsible for coordinating MIS activities in an organization can provide additional information on the accounts used for a particular service.

The **matching principle** in accounting associates both revenues and expenses to a defined time period. The MIS Standards expand this matching principle to the reporting of statistics within the same period as the associated revenues and expenses to enable the calculation of accurate cost indicators. Within the MIS framework there are three levels of data collection and reporting:

- The **functional centre direct cost reporting** level builds on the functional centre framework, linking revenues, expenses, statistics and indicators to provide a comprehensive picture of a functional centre's resource utilization, activity and productivity. Functional centres in the diagnostic and therapeutic functional centre framework section are discipline specific.

- The **functional centre full cost reporting** level builds upon the functional centre direct cost reporting level by including the indirect costs associated with each functional centre.

- The **service recipient reporting** level changes the focus from the functional centre to the service recipient and is often referred to as a "case costing." All financial and statistical data is linked to a specific person who receives services. This provides a comprehensive picture of how medical, nursing, therapeutic and support services are utilized in the treatment of various patient, client or groups. It can demonstrate the impact of practice patterns, programs, services and case mix groups on functional centres, service outcomes and the health service organization as a whole.

Functional centre direct cost reporting is the required level for reporting information to the Department of Health and Community Services. This means that all financial and statistical data are linked to defined functional centres and are reported in the functional centre in which the activity took place. While organizations may choose to collect information at the levels of the full cost or service recipient reporting, they will still be required to report to the Department of Health and Community Services at the functional centre level to ensure comparative data is available; however, they will have the advantage of enhanced information for internal decision making.

2.2 Broad Occupational Groups

The MIS Standards require all staff be assigned to one (or more) of three broad occupational groups. By doing so, the accuracy of productivity analysis is improved and the degree of overhead support associated with the service is identified.

Management and Operational Support Personnel (MOS)

Management and operational support are the personnel, including purchased consultant services, whose primary function is the management or support of the operation of the functional centre, although at times they may carry out unit-producing activities. This group includes:

- directors;
- managers;
- supervisors;

- administrative support staff;
- clerical support staff, and
- medical service aids, etc.

If the manager generates workload statistics, the worked hours related to this activity must be recorded as unit-producing, not management and operational support. Failure to link workload with unit-producing worked hours will skew performance indicators.

Unit-Producing Personnel (UPP)

Unit-producing personnel are those personnel whose primary function is to carry out activities that directly contribute to the fulfilment of the service mandate.

Examples include:

- registered nurses;
- licensed practical nurses;
- laboratory technicians;
- accounts payable clerks;
- pharmacists;
- therapeutic professionals (e.g. recreation specialists, physiotherapists, psychologists, etc.); and
- therapeutic assistants (e.g. social work assistants, occupational therapy support workers, etc.).

These personnel generate workload units. It is recognized that UPP staff may, at times, perform activities that are not unit-producing.

Medical Personnel (MP)

Medical personnel are physicians who are compensated for their professional services either on a fee-for-service or salary basis, including interns and residents.

Examples include:

- pathologists;
- psychiatrists;
- cardiologists;
- medical interns;
- medical students; and
- medical residents

Note: The designation of a broad group category is based on function; job category and union category should not be considered. Job category is not appropriate because one job category in an institution can be management and operational support in one functional centre, yet the same job category can be unit-producing in another functional centre (e.g. clerical staff in most clinical departments are MOS but in admitting departments they are UPP). Union category does not apply as therapists performing the same job are union in some organizations and non-union in others.

2.3 Categorization of Earned Hours

Earned hours statistics measure the use of labour in fulfilling the mandate of the service. These hours should be recorded in the broad categories of workers as outlined in the previous section. The cost of a worked hour may vary from one period to another and from one shift to another. Overtime and standby compensation expenses are attached to the actual hours that are worked (e.g. an hour of overtime is recorded as only one earned hour but the compensation may be at time and half).

Earned Hours = Worked Hours + Benefit Hours + Purchased Service Hours

Figure 2

Worked Hours

Worked hours are those hours that are spent carrying out the mandate of the service. Staff members are physically present and available to provide service. Worked hours include:

- regular worked hours, including paid coffee breaks;
- worked statutory holidays;
- relief staff hours, such as vacation relief and sick relief;
- overtime;
- call back hours paid and banked[1]; and
- attendance at on-site committee meetings and in-service education[2] (non-service recipient workload).

[1] Call back hours are a component of worked hours, recorded as the actual hours worked, rather than the minimum number of hours paid. Standby hours are not included in the count of worked hours but the associated expenses (compensation) are a component of worked salaries.

[2] Includes education sessions of less than ½ day; sessions greater than ½ day are considered benefit hours.

Costs are intended to link with activities and workload and therefore banked hours should be recorded in the payroll system during the period they are earned and not when they are taken.

Benefit Hours

Benefit hours are those hours when staff members are not present but receive pay. Benefit hours include:

- statutory holidays and vacation;
- sick and bereavement leave;
- workers compensation leave;

- attendance at facility orientation, formal education and training sessions (educational leave);
- union leave with pay; and
- any other paid leave of absence.

Purchased Service Hours

Purchased service hours are the hours spent carrying out the mandate of the service by personnel hired from an external agency. They have no benefit hour component. Purchased service hours are treated as worked hours. When contracting for external services, the costs related to management and support compensation, unit-producing compensation and supply costs should be differentiated within the contract.

Notables

Education hours – Staff time spent in education can fall into both worked and benefit categories. The MIS Standards describe education recorded as benefit hours as formal planned events for self-development and education recorded as worked hours as informal, short duration in-service sessions. When education occurs during worked hours, non-service recipient workload is reported.

Hours spent in education sessions of greater than ½ day duration are considered to be benefit hours (education leave); time spent in sessions of less than ½ day are considered to be worked hours (non-service recipient workload). This will provide comparable information for performance indicators provincially.

Unpaid worked hours – Only paid hours can be recorded as worked hours. If staff work additional hours and record workload for that time, the comparison of worked hours to workload could demonstrate productivity greater than 100%. Submission of unpaid worked time as worked hours will have a negative effect, as performance indicators will not provide an accurate picture of the real situation. Staff working unpaid hours should record this information for internal purposes. Worked hours should be generated from the payroll system to ensure accuracy.

Volunteers – Work performed by volunteers cannot be recorded as part of the functional centres UPP workload. Sometimes this is work that would not be performed by the facility if staff had to be paid and sometimes this is necessary for the provision of services. The number of volunteer hours should be recorded and reported internally in order to gain an understanding of the contribution of volunteers to the organization. Details of the type of work will be helpful in determining the role of the volunteer in reducing costs or enhancing the quality of the service provided.

2.4 Categories of Service Recipient

A service recipient is the consumer of service activities of one or more functional centres of the health service organization. Service recipients include individuals (e.g. inpatients, residents, clients), their significant others and others as defined by the health service organization.

Significant others are individuals who are acting on behalf or in the interest of, the service recipient such as parent, spouse/partner, child, legal guardian or substitute decision-maker. Excluded from this definition are professionals such as teachers, lawyers or other health care professionals.

The MIS Standards recognize and define eight categories of service recipients. They are detailed below:

Inpatient

An individual who has been officially accepted by a hospital for the purpose of receiving one or more health services; who has been assigned a bed, bassinet or incubator; and whose person identifiable data is recorded in the registration or information system of the organization and to whom a unique identifier is assigned to record and track services. This category includes: individuals receiving acute, physical rehabilitation: mental health and addiction services in a hospital setting: and those admitted to emergency while awaiting a bed on a nursing inpatient unit.

Note: Also includes services provided by a contracted out third party provider that provides inpatient services typically provided by a hospital.

This category excludes hospital clients receiving services of a specialty day/night care or specialty clinic nature on a nursing inpatient unit, as well as residents receiving services on a residential care unit, community hospice unit, mental health residential care unit, addiction services residential care unit and stillbirths.

Client Hospital

An individual who has been officially accepted by a hospital and receives one or more health services without being admitted as an inpatient; whose person identifiable data is recorded in the registration or information system of the Regional Health Authority and to whom a unique identifier is assigned to record and track services. Examples include individuals who receive hospital-based emergency day surgery, specialty day/night care, specialty clinic, outreach, mental health, rehabilitation and independent diagnostic and therapeutic services (provincially defined).

Client Community

An individual who has been officially accepted by a Regional Health Authority to receive one or more health services (other than home care), without being admitted as a resident or inpatient; and, whose person identifiable data is recorded in the registration or information system of the Regional Health Authority and to whom a unique identifier is assigned to record and track services. Examples include individuals receiving community-based mental health and/or addictions counselling, public health nursing, health promotion and wellness services, etc. (provincially defined).

Client Home Care

An individual who has been officially accepted by a Regional Health Authority to receive one or more home health or home support services in his/her place of residence (e.g. private residence, assisted living residence), at an alternative health delivery location (e.g. community health office) or at a location that meets the client's needs (e.g. school, public place); and whose person identifiable data is recorded in the registration or information system of the Regional Health Authority and to whom a unique identifier is

assigned to record and track services. Examples include individuals receiving home health services such as the treatment of acute conditions, maintenance of chronic health conditions, rehabilitation to improve functional abilities, etc. and/or home support services such as homemaking, home maintenance, personal care and respite services (provincially defined).

This category excludes outreach services provided by hospital or community-services-based health professionals (e.g. home dialysis services provided by hospital staff, mental health services provided by the staff of a mental health outreach program).

Referred-In

A hospital client or specimen: that has been referred for hospital services from another health service organization; and whose person-identifiable data is recorded in the registration or information system of the organization and to whom a unique identifier is assigned to record and track services. Examples include: individuals referred from a health service organization for an MRI exam; respiratory services such as hyperbaric chamber and specimens to be tested by the clinical laboratory.

Note: This category is not used in the Newfoundland and Labrador master chart of statistical accounts.

Resident

An individual who has been officially accepted into a designated long-term care bed for the purpose of receiving one or more health services; and whose person-identifiable data is recorded in the registration or information system of the organization and to whom a unique identifier is assigned to record and track services. This category includes individuals admitted to residential facilities providing mental health or addiction services in a community setting (provincially defined).

This category excludes inpatients receiving services from hospital acute, rehabilitation, mental health and addiction services and palliative nursing units.

Facility/Organization/Citizen Partnership

A facility or organization that has been officially accepted by a health service organization to receive one or more health services; and whose encounter is recorded in the registration or information system of the organization and to whom a unique identifier is assigned to record and track services; or whose encounter is recorded within a uniquely-identifiable, hard-copy file or record (rather than in the organization's registration or information system) that is used to record and track services. Examples include: restaurants; swimming pools and day care centres to which environmental health and licensing services are provided; and schools, businesses or community organizations to which consultative services are provided regarding concerns such as policy development, food safety or healthy living.

A citizen partnership that has been established to address an identified health issue and whose membership consists of citizens or citizen groups and other key stakeholders (e.g. health care providers, community agencies) that have knowledge of the concern and/or could influence change; and, whose encounter may be recorded within a uniquely-identifiable hard copy file or record rather than in the registration or information system of the organization. Examples include: a "farm safety coalition" that was formed

to discuss ways to prevent tractor accidents amongst teenagers; a "food security coalition" organized to advance the concept of a food charter to support local agriculture products; and a "playground partnership" established to discuss ways to build a safe new play area that will meet the needs of the children in a low-income community.

Service Recipients not Uniquely Identified

An individual who receives one or more services from a health service organization when not currently registered as an inpatient, resident, client hospital, client community, client home care, facility/organization/citizen partnership; and whose encounter is not recorded in the registration or information system of the organization and who has no unique identifier assigned to record and track services. Examples include: individuals calling hotlines for counselling services; individuals attending drop-in centres; and participants attending a general forum on smoking cessation that is aimed at educating the community as a whole.

Workload, service activity and caseload status statistics must be recorded separately for each category of service recipient. This separation supports more detailed analysis of the data, providing an understanding of different resource needs, as well as supporting external reporting requirements.

3 PRIMARY ACCOUNTS – FUNCTIONAL CENTRES

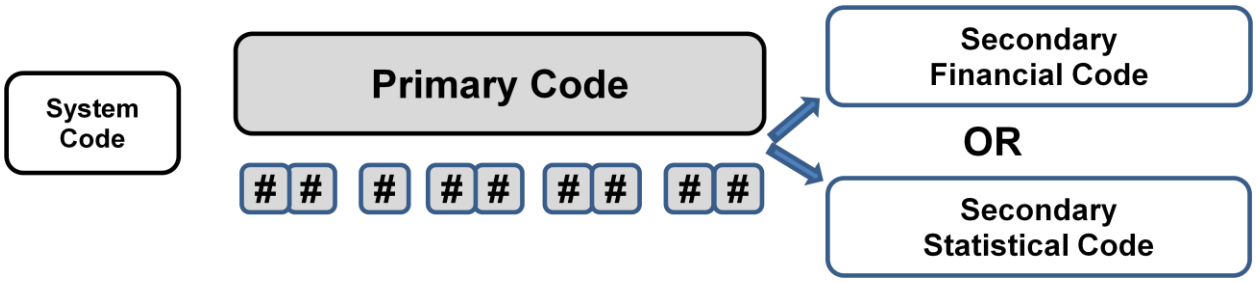

Figure 3

A key component of the MIS Standards is the functional centre framework. Functional centres are a type of primary account that forms the foundation of much of the reporting of the financial and statistical data within a health care organization. The functional centre framework is a five level hierarchical arrangement of departments or functional centres that recognizes the diversity in size and specialization of health service organizations. It provides a method for organizing information for both internal and external reporting purposes. The hierarchical arrangement allows varying sizes of health service organizations to use the structure and also permits information to be "rolled-up" or consolidated for external comparative reporting.

Each department or service that is a cost centre (has a designated budget) is assigned a primary account code. These primary account codes are typically used in conjunction with a secondary account code, to further label and define an account. This is required by a health service organization in order to track revenues, expenses and statistics associated with each department or service.

Primary account codes are made up of five segments; with a total of nine coding positions, which are structured in a specific manner (see Figure 4 below).

Figure 4

The following details the five segments of the primary account code:

Account Type

7 The 1st digit is the account type. The account number will always start with a 7 to indicate that this account represents a functional centre.

Fund Type

71 The 2nd digit indicates the primary source of funding for this activity. The finance department will designate this digit. In most cases this will be a 1 to indicate global/operating funding.

Framework

71 4 The 3rd digit indicates where the service was provided. Diagnostic and therapeutic services are represented by 71 4 (see Figure 5).

Functional Centre (level 3)

71 4 ## The 4th & 5th digits indicate the type of service provided. For therapeutic services these are primarily profession-specific functional centres. This is referred to as level three reporting.

Functional Centre (level 4)

71 4 ## ♦♦ The 6th & 7th digits indicate further breakdown of services for some functional centres. These accounts are sub-categories of level three accounts. This is referred to as level four reporting.

Functional Centre (level 5)

71 4 ## ♦♦ ★★ The last two digits of the primary account code are used to provide additional detail and may be reserved for board use in some situations. This is referred to as level five reporting.

Function centres are used to aggregate and integrate information concerning specific activities. The account assigned to a functional centre provides the reader of the information with insight into the activity that has generated the data reported. For example, the primary account number **71 4 35 00 00** tells the reader that the data is related to the respiratory services of a hospital, whereas **71 4 35 25 10** tells the reader that the data is related to the respiratory services, specifically routine/critical care respiratory services (as illustrated in Figure 5).

7	1	4	35	25	10
Account Type	**Fund Type**	**Framework Section**	**FC Level 3**	**FC Level 4**	**FC Level 5**
1- 6 Balance Sheet Accounts **7 Functional Centres for Revenue, Expense and Statistics** 8 Accounting Centre	**1 Operating Fund** 2 Inactive 3 Inactive 4 Board Designated 5 Capital 6 Special Purpose 7 Inactive 8 Endowment Revenue – Unrestricted 9 Endowment Revenue - Restricted	1 Administration & Support 2 Nursing Inpatient/ Resident 3 Ambulatory Care **4 Diagnostic & Therapeutic** 5 Community & Social Services 6 Inactive 7 Research 8 Education 9 Undistributed	10 Laboratory 15 Diagnostic Imaging **35 Respiratory Services** 45 Clinical Nutrition 50 Physiotherapy 55 Occupational Therapy 60 Speech-Language Pathology and Audiology 70 Social Work 75 Psychology 80 Pastoral Care 85 Therapeutic Recreation 90 Child Life	Accounts specific to previous level and provide further breakdown. e.g. **25 Routine/ Critical Care Respiratory Services** 30 Hyperbaric Chamber 42 Pulmonary Function Laboratory 45 Blood Gas Laboratory 50 Anesthesia Respiratory Services 60 Perfusion	Accounts specific to previous level and provide further breakdown. e.g. **10 Routine Respiratory Services** 20 Critical Care Respiratory Services

Figure 5

Prior to reporting workload, all functional centre account assignments should be reviewed to ensure that workload data can be correctly linked to functional centres. In most organizations there will only be one functional centre for each therapeutic discipline but some larger organizations may elect to create lower level functional centres if the activities are provided by a distinct set of staff. This should only be done when the compensation, recoveries, expenses and activities can be clearly isolated. If this is not possible, one functional centre is appropriate and the workload statistics can be used to identify more specific details.

Individual frameworks are available for research and non-patient education. It is important that these activities are not included in the **71 4** functional centre as this will distort the performance indicators related to the provision of patient/client/resident therapeutic services.

Purchased/Referred-out Therapeutic Services

If the facility does not have a therapeutic department and purchases or refers-out all therapeutic services, a therapeutic functional centre is still required. All costs will be linked to this functional centre and all therapeutic costs will show as a purchased service. Purchased service is recorded when non-facility staff provide service to patients/residents within the facility. Referred-out service occurs when people are sent to another facility for service and the service is paid for by the sending facility. However, if there is no cost to the facility a functional centre is not created and no financial or statistical information is recorded.

Program Management/Multifunctional Centres

In cases where therapeutic staff report to another discipline, therapeutic workload, service activity and caseload status statistics and resources associated with these activities should still be reported in the discipline specific functional centre. Both statistics and expenses related to an activity must be reported in the same functional centre. The portion of workload and expenses related to various programs should still be identifiable for program-based reporting.

Greater Levels of Detail

Some organizations will elect to capture an even greater level of detail than requested for external reporting submissions. More detailed functional centres should only be established when it is reasonable and material to separate staffing, revenues, expenses and statistics. If functional centres have been created to meet internal needs but are not valid accounts (i.e. not included in the provincial account code listing), these functional centres must be rolled up and reported under the appropriate MIS account.

Research (71 7)

The research framework section is designed to capture the expenses and revenues (if any) of research services. This would include health care professionals and technicians whose mandate is research. As such, their hours and compensation are reported in this type of functional centre, not the therapeutic functional centre.

Compensation for unit-producing staff members that participate in research but are assigned to a therapeutic functional centre is reported in that functional centre. The workload related to data collection is reported as the non-service recipient activity, research and the workload related to clinical interventions is reported as the service

recipient activity (assessment, therapeutic intervention or consultation/collaboration), according to category of service recipient.

If a health care professional is involved to a significant degree (greater than 20%) in both research and service recipient activities, the compensation for this individual should be apportioned to both of the appropriate functional centres to reflect the actual expenses. The workload and portion of earned hours that resulted in service recipient activity (patient/resident/client care) should be accounted for in the discipline specific functional centre and the workload and hours associated with the research should be accounted for in the research functional centre.

Education (71 8)

The education framework section is designed to capture the expenses and revenue (if any) of dedicated staff educators. This would include staff members that provide employee orientation sessions, in-service classes or formal programs for students from educational organizations. As such, their hours and compensation are reported in this functional centre not the therapeutic functional centre.

Compensation for unit-producing staff members that provide staff education but are assigned to a therapeutic functional centre is reported in that functional centre. The workload related to education is recorded as the non-service recipient activity, teaching/ in-service.

If a health care professional is involved to a significant degree (greater than 20%) in both education and service recipient activities, the compensation for this individual should be expensed to both of the appropriate functional centres to reflect the actual activity. The workload and portion of earned hours that resulted in service recipient activity should be accounted for in the therapeutic functional centre and the workload and hours associated with education should be accounted for in the education functional centre.

Unit-producing staff members that provide service recipient education should be assigned to the appropriate therapeutic functional centre. The workload related to educating service recipients is recorded as the service recipient activity, therapeutic intervention.

Marketed Services Ancillary Operations (71 9 20 **)

Marketed services are in the nature of business enterprises and do not include the direct provision of clinical services to registered patients/residents/clients or the provision of education or research services associated with the organization. Marketed service activities may be cost recovery or profit-generating activities. Any excess of cost over revenue/recovery becomes a part of the cost per weighted case for the organization. Patient/resident/client services are never classified as a marketed service even if a profit is generated. If the service is funded outside of Department of Health and Community Services funding, the activity is designated as an “other fund” clinical service functional centre.

When services are financed by third parties that are not funding bodies, this is recorded as revenue and linked to the appropriate functional centre providing the service (e.g. WHSCC, insurance, self pay).

When services are provided for the service recipients or staff of another organization and this service is material, this is classified as a marketed service by the providing organization and a purchased service for the organization receiving the service. In particular, this would apply when a contract for the service has been negotiated and the service is continuous. All compensation and supplies must be distributed to the marketed service functional centre. It is recognized that in some situations a marketed service may be at cost. No service activity, caseload status or workload statistics are reported by the organization selling the service.

Example of marketed services:

If an organization is routinely providing services every Friday to another organization, the compensation and associated hours for the staff providing this service would be charged to the marketed service functional centre and all recoveries for this service would be credited to this functional centre.

The use of a marketed service functional centre will preserve the integrity of performance indicators for the provision of care by the organization.

3.1 Respiratory Services Functional Centres

The following primary accounts are available for use by respiratory services. Each organization should use only those applicable to the size and specialization of their service. The decision to set up separate functional centres for various services should be made in consultation with the finance department staff. The 'C' noted after some accounts denotes clearing accounts from which all expenses must be cleared and assigned to the user functional centre at the end of each fiscal year. 'CMDB' means the level of detail is required for national reporting to the Canadian MIS Database.

71 4 35 Respiratory Services (CMDB)

The functional centre pertaining to the administration of gases, aerosols, tests as well as those specialty services that assist in the diagnosis and treatment of inpatients/residents/clients with respiratory and cardio respiratory-related conditions. Includes the maintenance and repair of respiratory services, anesthesia and perfusion associated equipment.

71 4 35 10 Respiratory Services – Administration (C)

The functional centre clearing account pertaining to the provision of overall management and operational support of the entire respiratory services. Before functional centre direct cost reports are prepared, comparative reporting is done or data is submitted to the Canadian MIS Database; any amounts in this account should be distributed by nature of expense using a cost distribution base such as the workload units produced by the consuming functional centres.

71 4 35 25 Routine/Critical Care Respiratory Services

The functional centre pertaining to the administration of gases, aerosols (with the exception of anesthesia and hyperbaric chamber) and specialized procedures to assist in the routine and critical care treatment of inpatients/residents/clients with respiratory and related conditions. Includes the maintenance and repair of respiratory services and associated equipment.

71 4 35 25 10 Routine Respiratory Services

The functional centre pertaining to the administration of gases, aerosols and specialized procedures to assist in the routine treatment of inpatients/residents/clients with respiratory and related conditions. Includes the maintenance and repair of respiratory services and associated equipment.

71 4 35 25 20 Critical Care Respiratory Services

The functional centre pertaining to the administration of gases, aerosols and specialized procedures to assist in the treatment of critically ill persons with respiratory and related conditions. Includes the maintenance and repair of respiratory services and associated equipment.

71 4 35 30 Hyperbaric Chamber

The functional centre pertaining to the treatment of specific medical conditions with the use of a recompression chamber which is pressurized with compressed air and in which 100 percent O_2 is administered to the patient/resident/client.

71 4 35 42 Pulmonary Function Laboratory

The functional centre pertaining to the detection, localization and quantification of pulmonary disorders through the use of highly specialized diagnostic procedures. Includes the maintenance and repair of pulmonary function diagnostic equipment.

71 4 35 45 Blood Gas Laboratory

The functional centre pertaining to the analysis of blood and gases for the purpose of measuring pH and the pressures of physiological gases. Includes the maintenance and repair of blood gas analyzers.

71 4 35 50 Anesthesia Respiratory Services

The functional centre pertaining to the preventive maintenance and quality control of anesthetic and patient systems monitoring equipment; attendance at selected surgical procedures for the purpose of assisting in the operation and monitoring of such equipment; and assistance in the pre-induction procedures and the respiratory management and hemodynamic monitoring of the patient/resident/client during surgery. Includes the maintenance and repair of all associated equipment.

71 4 35 60 Perfusion

The functional centre pertaining to the activities associated with the assistance for selected surgeries for patients requiring extracorporeal circulation or for patients requiring the use of specialized cardiac equipment (e.g. intra-aortic balloon pump). Includes the maintenance and repair of all associated equipment.

Related Functional Centres

71 7 40 Diagnostic and Therapeutic Services Research

The functional centre pertaining to formally organized research projects undertaken by personnel of the diagnostic and therapeutic services functional centres.

71 8 40 40 Diagnostic and Therapeutic Services In-Service Education

The functional centre pertaining to in-service education provided within the health service organization to personnel of the diagnostic and therapeutic services section.

71 8 70 35 Respiratory Services Formal Education

The functional centre pertaining to the provision of formal education and experience in a clinical setting to students who are fulfilling the requirements of a respiratory services program which is accredited by the respective provincial licensing body.

4 SECONDARY FINANCIAL ACCOUNTS

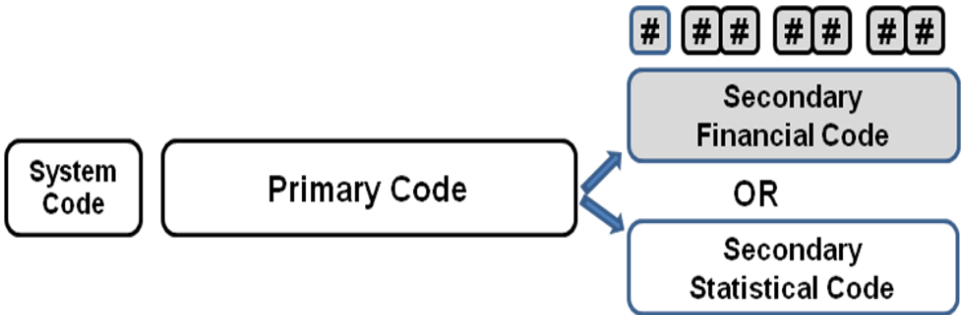

Figure 6

Secondary financial accounts are designed to provide additional information on the nature of revenues and expenses in an organization. Each secondary code is associated with an appropriate primary code. Financial accounts can then be linked to the secondary statistical accounts within the same functional centre to produce performance indicators for the functional centre. Secondary financial accounts establish the direct costs that are attributed to functional centres.

The secondary financial account code is made up of four distinct segments totalling seven coding positions. Secondary account codes are three, five or seven digits in length which are structured in a specific manner (see Figure 7).

Figure 7

Broad Group

4 The first block is a single character which identifies the secondary financial broad group. Broad group 4 is supplies. (See Figure 8 for further broad groups)

Nature of Secondary Revenue or Expense

66 The second block is two characters long and defines the nature of the revenue or expense. In this example it is supplies – medical gases.

Capture of Further Detail of Secondary Revenue or Expense

22 The third block is used to capture further detail and is specific to previous code block. In this example it is supplies – medical gases - oxygen.

Further breakdown of Secondary Revenue or Expense

00 In certain cases, the Newfoundland and Labrador Chart of Accounts, uses two more digits for further breakdown (provincially defined).

Secondary financial account **4 66 22 00** is used to represent supply expenses specific to respiratory services, as illustrated in Figure 8.

4	66	22	00
Broad Group	**Nature of Revenue and Expense**	**Capture of further detail**	**Capture of further detail**
1 Revenues 2 Inactive 3 Compensation **4 Supplies** 5 Traceable Supplies & Other Expenses 6 Sundry 7 Equipment Expense 8 Contracted-Out Services 9 Buildings and Grounds Expense	Supplies for the following 10 Print/Stationary/Office 15 Housekeeping 20 Laundry 60 Medical Surgical 65 Drugs **66 Medical Gases** 70 Supplies Lab	Accounts specific to previous level and provide further breakdown. 10 Anesthetic Gases 20 Oxygen and Bulk Oxygen Service Charge **22 Oxygen** 24 Bulk Oxygen Service Charge 25 Demurrage 30 Other Medical Gases	Accounts specific to previous level and provide further breakdown.

Figure 8

The broad groups of secondary financial accounts are:

Revenue

Revenue is defined as proceeds earned by the health service organization from all sources including payment for services provided to service recipients, recoveries, contributed services, donations, grants and investment revenue. When revenue is generated in relation to clinical services for facility patients/residents/clients, this revenue is recorded as a recovery in the functional centre incurring the expense. This reduces the cost of providing service to these patients.

Compensation

Compensation is defined as the sum of gross salaries plus benefit contribution expenses. Compensation costs are linked to the functional centre.

For the purpose of capturing and reporting compensation expenses, the MIS Standards require all staff of a functional centre be assigned to one (or more) of three broad occupational groups; then further categorized by type of earned salaries. By doing so, the accuracy of analysis is improved and the degree of overhead support associated with the service is identified. The following is a list of broad occupational groups:

- management and operational support personnel (MOS);
- unit-producing personnel (UPP); and
- medical personnel (MP).

For each broad occupational group, the types of earned salaries should be further categorized as:

- worked salaries;
- benefit salaries; and
- purchased service salaries

Benefit contributions are an integral part of compensation expense. These costs must also be distributed to functional centres. The benefit contributions include salaries paid to casual and temporary staff in lieu of vacation, statutory holidays and termination. No hours are attached to these payments and therefore they are not included in benefit hours.

Supplies

Supplies are consumable products used by a functional centre. Accounts exist for items ranging from paper, computer supplies, test manuals and forms, medications and other clinical products. In order to make supply transaction coding more efficient, finance and materials management departments should coordinate the stores catalogue to link individual stock item codes to supply expense codes. All expense accounts should be reviewed to ensure that the items included in these accounts are appropriate and to ensure that the expenses for all functional centres are recorded accurately. Only those items used by the therapeutic departments should be charged to the therapeutic functional centre.

Traceable Supplies and Other Expenses

These are consumable supplies or other expenses that:

- can be directly associated with a particular service such as an operative; procedure or drug intervention;
- can be traced to a particular service recipient;
- vary according to the clinical needs of the service recipient; and
- usually do not behave linearly with workload.

Sundry

Sundry costs are those that do not fit into other categories. It includes items such as long distance telephone charges, courier charges, travel expenses, etc. Most sundry expenses and some supply expenses are intended for administrative and support functional centres and are actually overhead costs for the organization as a whole. Some organizations have elected to distribute these costs to functional centres. The primary purpose for distribution is better accountability for expenses. An example of an overhead supply cost is laundry. An example of an overhead sundry expense cost is postage.

Equipment Expenses

Equipment expenses are the operating expenses of equipment, including maintenance, repairs, depreciation, gain or loss on disposal, interest on equipment loans and rental or lease expenses incurred or any other operating expense incurred in the provision of equipment for use by functional centres in the facility. Depreciation costs for all equipment as well as preventative and repair costs for all clinical equipment are to be

expensed to functional centres. This will improve the comparability of costs across organizations. When comparing costs across organizations it is important to understand that there could be variations in the allocation methodology and reporting of these costs.

Contracted-Out Services

The contracted-out services expenses are those related to one of a group of services performed for the health service organization by a contracted-out third party provider using their personnel and often their supplies, equipment and premises. The fee charged may include a cost for these items as well as a mark-up for employee benefits and administrative and support expenses**.**

Buildings and Grounds Expense

Those expenses that are associated with the building, its service equipment and the grounds are usually charged to an accounting centre because it is not reasonable or practical to distribute to all functional centres in the organization.

4.1 Select Secondary Financial Accounts Applicable to Respiratory Services

For a full listing of the Secondary Financial Accounts and the accompanying definitions, please refer to the MIS Standards CD 2011 or to the Provincial User Guide, 2011/2012.

Broad Group No. 1: Revenues

1 20	Recoveries from External Sources
1 30	Contributed Services
1 40	Donations
1 50	Grants
1 60	Investment Revenue
1 70	Revenue from Other Funds
1 90	Other Revenue

Broad Group No. 3: Compensation

3 11	MOS Worked Hours
3 13	MOS Benefit Hours
3 15	MOS Benefit Contribution Expenses
3 19	MOS Purchased Service Hours
3 51	UPP Worked Hours
3 53	UPP Benefit Hours
3 55	UPP Benefit Contribution Expenses
3 59	UPP Purchased Service Hours
3 91	MP Worked Hours
3 93	MP Benefit Hours
3 95	MP Benefit Contribution Expenses
3 99	MP Purchased Service Hours

Broad Group No. 4: Supplies

4 10	Supplies - Printing, Stationery and Office Supplies
4 10 10	Printed Forms
4 10 20	Paper Stocks
4 10 30	Printing Supplies
4 10 40	Duplicating Supplies
4 10 50	Photocopying Supplies
4 10 60	Microfilm
4 10 70	Computer Supplies
4 10 90	General Office Supplies
4 15	Supplies - Housekeeping
4 20	Supplies - Laundry
4 25	Supplies - Linen
4 28	Supplies - Linen Reusable - Interdepartmental
4 30	Supplies - Plant Operation
4 35	Supplies - Plant Maintenance
4 40	Supplies - Plant Maintenance Equipment and Vehicles
4 45	Supplies - Biomedical Engineering
4 50	Supplies - Food
4 55	Supplies - Dietary
4 60	Supplies - Medical and Surgical
4 60 40	Instruments
4 60 41	Instruments-Disposable
4 60 42	Instruments –Reusable
4 60 50	Sutures and Staples
4 60 52	Sutures
4 60 54	Staples
4 60 60	General Medical and Surgical Supplies
4 60 61	Dressings

4 60 62 Catheters

This account is used to record the expense of general medical and surgical supplies which include various types of catheters (excluding IV catheters), drains, stylets, guide wires, stents, etc. A sub-category of: General Medical and Surgical Supplies 4 60 60.

4 60 63 Needles

This account is used to record the expense of general medical and surgical supplies which include disposable needles, IV catheters and butterflies. A sub-category of: General Medical and Surgical Supplies 4 60 60.

4 60 64 Syringes

This account is used to record the expense of general medical and surgical supplies which include disposable and reusable syringes. Excludes blood collection tubes such as Vacutainer (4 70 50). A sub-category of: General Medical and Surgical Supplies 4 60 60.

4 60 65 Gloves

This account is used to record the expense of general medical and surgical supplies which include disposable sterile and non- sterile gloves used to prevent transmission of infection. A sub-category of: General Medical and Surgical Supplies 4 60 60.

4 60 66 Rubber Goods

This account is used to record the expense of general medical and surgical supplies which include miscellaneous tubings, bags, pouches, etc. A sub-category of: General Medical and Surgical Supplies 4 60 60.

4 60 67 Administration Sets (IV)

4 60 68 Pour solutions

This account is used to record the expense of general medical and surgical supplies which include sterile water, sterile saline, other irrigating solutions, etc. Does not include intravenous solutions (4 65 50). A sub-category of: General Medical and Surgical Supplies 4 60 60.

4 60 70	Medical and Surgical Supplies not Elsewhere Classified
4 64	Supplies - Pharmacy (Packaging and Compounding)
4 65	Supplies – Drugs

4 66 Supplies - Medical Gases

This account is used to record the expense of anesthetic gases, oxygen and other medical gases. A sub-category of: Supplies, Broad Group 4.

4 66 10 Anesthetic Gases

This account is used to record the expense of gaseous and volatile agents used in inhalation anesthesia. Examples include cyclopropane, fluothane, halothane, nitrous oxide, ether, chloroform, etc. A sub-category of: Supplies - Medical Gases 4 66.

4 66 20 Oxygen and Bulk Oxygen Service Charges

This account is used to record the expense of oxygen used in the treatment of service recipients and the charges which are related to the provision of bulk storage facilities for such oxygen. A sub- category of: Supplies - Medical Gases 4 66.

4 66 22 Oxygen

This account is used to record the expense of oxygen used in the treatment of service recipients. A sub-category of: Oxygen and Bulk Oxygen Service Charge 4 66 20.

4 66 24 Bulk Oxygen Service Charge

This account is used to record the expense relating to the provision of bulk oxygen storage facilities as opposed to the charge for the oxygen supplied. A sub-category of: Oxygen and Bulk Oxygen Service Charge 4 66 20.

4 66 30 Other Medical Gases

This account is used to record the expense of medical gases other than oxygen and anesthetic gases. A sub-category of: Supplies - Medical Gases 4 66.

4 70	Supplies – Clinical Laboratory
4 75	Supplies – Medical Imaging
4 77	Supplies - Electrodiagnostics

4 80 Supplies - Respiratory Services

This account is used to record the expense of reusable and disposable anesthetic hoses, airways, tubing, connecting tubing, tracheal and endo-tracheal tubes, anesthetic face masks, Brylime CO2, inhalators, nasal cannulas and other supplies used specifically in Respiratory Services. A sub-category of: Supplies, Broad Group 4.

4 85	Supplies - Research
4 90	Supplies - Education
4 95	Supplies – General

4 95 10 Department Supplies – General

Broad Group No. 5: Traceable Supplies and Other Expenses

These accounts should be used by all organizations doing Service Recipient Reporting.

5 20	Traceable Travel Expense - Service Recipient * (CMDB)
5 50	Traceable Supplies - Food * (CMDB)
5 60	Traceable Supplies - Medical and Surgical*
5 60 10	Donated Organs - Cost of Acquisition (CMDB)
5 60 20	Prostheses (CMDB)
5 60 30	Orthoses (CMDB)
5 60 62	Catheters (those for Cardiac Catheterization and Diagnostic Imaging Interventions only) (CMDB)
5 65	Traceable Supplies - Drugs*
5 65 10	Antineoplastics (CMDB)
5 65 20	Anti-Infectives (CMDB)
5 65 30	Autonomics (CMDB)
5 65 40	Total Parenteral Nutrition Products (CMDB)
5 65 50	Other drugs, pharmacological and therapeutic products, devices and aids (including non-medicated IV solutions) (CMDB)
5 66	Traceable Supplies - Medical Gases * (CMDB)
5 66 22	Oxygen
5 66 30	Other Medical Gases

Broad Group No. 6: Sundry

6 10	Departmental Sundry
6 10 10	Postage
6 10 15	Delivery and Courier
6 10 20	Long Distance Charges
6 10 22	Long Distance - Telephone
6 10 24	Long Distance - Fax (Facsimile)
6 10 26	Long Distance - Modem
6 10 30	Course Registration Fees and Materials
6 20	Travel Expense - Service Recipient
6 20 10	Local Travel
6 20 12	Provincial/Territorial Travel
6 20 14	Out of Province/Territory Travel
6 22	Travel Expense - Board
6 22 10	Local Travel
6 22 12	Provincial/Territorial Travel
6 22 14	Out of Province/Territory Travel
6 24	Travel Expense - Staff
6 24 10	Local Travel
6 24 12	Provincial/Territorial Travel
6 24 14	Out of Province/Territory Travel
6 26	Travel Expense - Recruitment and Relocation
6 26 10	Recruitment
6 26 20	Relocation
6 30	Bank Charges
6 40	Data Processing
6 50	Professional Fees
6 60	Other Fees
6 60 10	Licence Fees
6 60 20	Membership Fees
6 60 30	Accreditation Fees
6 60 40	Subscription Fees
6 70	Advertising
6 75	Public Relations
6 80	Insurance
6 85	Board Honorariums
6 90	Rent - Land or Building (Excluding Equipment)
6 95	Sundry Expenses - Not Elsewhere Classified
6 96	Meeting Expense
6 97	Interdepartmental Services

Broad Group No. 7: Equipment Expense

7 10	Equipment Maintenance - External
7 10 20	Equipment Maintenance - Contract
7 10 22	Software Maintenance - Contract
7 10 40	Equipment Maintenance - Other
7 10 42	Software Maintenance - Other
7 20	Equipment Maintenance - Interdepartmental
7 30	Replacement of Major Equipment Parts
7 50	Amortization on Major Equipment - Distributed
7 51	Net Gain or Loss on Disposal of Major Equipment
7 55	Interest on Major Equipment Loans
7 60	Rental/Lease of Major Equipment
7 65	Minor Equipment Purchases
7 80	Amortization - Software Licences and Fees
7 90	Equipment Expense - not Elsewhere Classified

Broad Group No. 8: Referred-Out Services

8 40	Diagnostic and Therapeutic Services

Broad Group No. 9: Buildings and Grounds Expense – Undistributed

5 SECONDARY STATISTICAL ACCOUNTS

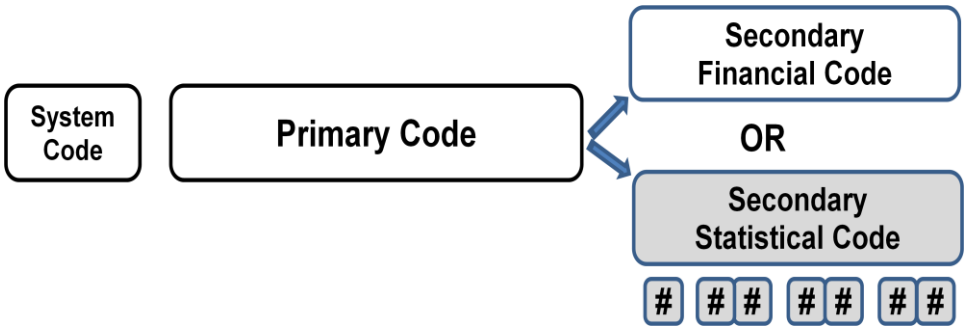

Figure 9

Secondary statistical accounts are designed to provide additional information on the nature of activities that occur within an organization. Each secondary code is associated with an appropriate primary code. Statistical accounts can then be linked to the secondary financial accounts within the same functional centre to produce performance indicators for the functional centre.

The secondary statistical account code is made up of four distinct segments totalling seven coding positions. Secondary account codes are three, five or seven digits in length. As with financial secondary accounts the first digit identifies the broad group. The remaining blocks provide additional detail with the meaning of each segment being dependent on the code used in the preceding segment.

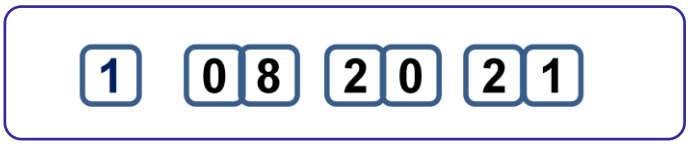

Figure 10

Secondary Statistical Accounts

1 The first block is a single character that identifies the secondary statistical broad group. In this example broad group 1, workload is used (see Figure 11 for further broad groups).

Nature of Statistic

08 The second block consists of two characters and identifies the statistic itself and is specific to the previous code block (example – workload units, inpatient admissions, etc.).

Capture of further detail of the Statistic

20 The third block is used to capture further detail and is related the nature of the statistic and is specific to the previous code block (example – category of service recipient).

Further breakdown of the Nature of Statistic

21 The fourth block is used to provide even greater detail on the nature of the statistic.

1	08	20	21
Broad Group	**Nature of Statistic**	**Capture of Further Detail**	**Additional Breakdown**
1 Workload 2 Staff Activity 3 Earned Hours 4 Service Activity and Caseload Status 7 Functional Centre Operation 8 Health Service Organization Operation and Contracted-out Services	Workload Units -Service Recipient Activities 02 Workload Units Service Recipient Activities 03 Drug Distribution 07 Diagnostic Therapeutic **08 Respiratory Services** 13 Food Services 14 Health Records	Category of Service Recipient 10 Inpatient **20 Client Hospital** 40 Resident 50 Facility/Organization/ Citizen Partnership 60 Service Recipient not Uniquely Identified 80 Client Community 90 Client Home Care	Activity Category 10 Diagnostic 20 Therapeutic Intervention **21 Assessment** 30 Consultation/Collaboration

Figure 11

The MIS Standards organizes all statistical data into six broad groups that identify the nature of the statistic. These broad groups are further explained on page 30.

Secondary statistical accounts can only be reported at the level defined by the Department of Health and Community Services in the Provincial Chart of Statistical Accounts. If lower level accounts have been created for internal use, these must be “rolled-up” to the provincial account prior to data submission.

Secondary statistical account **1 90 10 00** is used to represent the non-service activity called workload functional centre activities.

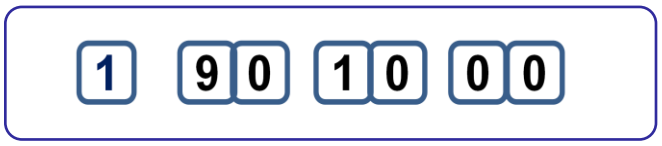

Figure 12

1	90	10	00
Broad Group	**Nature of Statistic**	**Capture of Further Detail**	**Additional Breakdown**
1 Workload 2 Staff Activity 3 Earned Hours 4 Service Activity & Caseload Status 7 Functional Centre Operation 8 Health Service Organization Operation and Contracted-Out Services	Service Activity and Caseload Status Statistics **90 Non-Service Recipient Activities**	Category of Service Recipient **10 Functional Centre Activities** 20 Organizational/ Professional 30 Teaching/In-Service 40 Research	Accounts specific to previous level and provide further breakdown.

Figure 13

All statistics must be reported in the same functional centre as the activity took place. This includes earned hours, service activity and caseload status statistics.

The broad groups of secondary statistical accounts are:

Workload

Workload statistics are those applicable to functional centres that have a workload measurement system (WMS) in the MIS Standards such as nursing, nutrition services, speech-language pathology, medical imaging and pharmacy. This workload data is important to functional centres as it provides information for the analysis of service volumes, productivity and costs.

Staff Activity

Staff activity statistics pertain to select activities performed by staff when fulfilling the service mandate of the functional centre. In some cases, these statistics may be used as a surrogate workload measure for functional centres that do not have a workload measurement system in the MIS Standards. For example, laundry can track the number of kilograms of clean linen issued, human resources can track the number of grievances resolved and payroll can track the number of pay cheques/stubs issued.

Earned Hours

Earned hours statistics are those that categorize earned hours by broad occupational group and type of hour. This data is collected by the organizations' compensation systems (payroll).

Service Activity and Caseload Status

Service activity and caseload status statistics pertain to the service activities provided by the nursing in-patient services and ambulatory care, diagnostic and therapeutic services and community health services functional centres. Examples of service activity statistics include visits - face-to-face, visits - non-face-to-face, in-house exams and inpatient days. These statistics supplement workload information by defining the complexity of service activities provided and are used to determine costs for these activities. Caseload status

statistics describe the status of service recipients of current, past and future caseloads (i.e. admissions, discharges, transfers and new referrals).

Functional Centre Operation

Functional centre operation statistics are specific to the operation of a functional centre. They include those that describe its characteristics (e.g. physical size or capacity), catchment population and personnel complement.

Health Service Organization Operation and Contracted-Out Services

Health service organization operations and contracted-out services statistics pertain to the operation of the health service organization as a whole. They include the number of cardiac arrests, medication errors, different types of revenue days, clients receiving home health/home support services and changes in employee status. They also include data related to the physical facility, such as energy consumption, heating days and cooling days and to those services that are provided by a contracted-out third-party provider.

6 WORKLOAD MEASUREMENT SYSTEM

6.1 What is a Workload Measurement System?

A workload measurement system (WMS) is defined as a tool for measuring the volume of services provided in terms of a standardized unit of productive personnel time and serves as a:

- department management tool to provide systematic quantification of workload to assist in staffing, planning, budgeting and performance monitoring;
- standardized method for recording workload that will yield uniform data for internal and external reporting, permitting historical trending and selective national and peer group comparisons.

The Generic Workload Measurement and Reporting Framework provides a model for data collection and reporting for many clinical disciplines while enabling users to customize the level of detail for their discipline or service.

Workload is collected for all activities that are undertaken on behalf of a service recipient. A service recipient is defined as the consumer of primary service activities of one or more functional centres of the health service organization. Service recipients include individuals (e.g. inpatient, residents, clients) and their significant others. Significant others are individuals who are acting on behalf or in the interest of the service recipient, such as parent, spouse/partner, child, legal guardian or substitute decision-maker.

Note: There are other individuals who act on behalf of or in the interest of service recipients but are not considered to be a "significant other." Examples include: ministers, teachers, lawyers or other health care professionals. The time spent with these individuals is recorded as the service recipient workload, consultation/ collaboration. No service activity statistic is recorded.

6.2 Who Records Workload?

The allocation of individual staff members to broad occupational groups should be reviewed to determine the appropriate identification of unit-producing staff to ensure that worked hours and workload are matched. Management staff routinely participating in unit-producing activities should have their compensation divided between management and operational support and unit-producing personnel.

Managers who perform unit-producing activities should collect workload for this activity if it consumes more than 20% of their time. In some situations it may even be advisable to collect workload for individuals who spend smaller percentages of their time providing clinical service. This would depend on the size of the service and the impact on productivity indicators.

In today's environment, traditional management duties are often delegated to UPP staff, although this may not be greater than 20% for any individual staff member. These staff members are designated as UPP with UPP worked hours and non-service recipient activity workload is used to record time for management work. Clinical leaders are not unit producers if their primary role is management. When comparing performance indicators across organizations, knowledge of the service delivery model is essential. Although these models may reduce overhead costs in traditional administrative functional centres and reduce reported management hours in diagnostic and therapeutic functional centres, there may be an offsetting increase in the cost per workload unit as UPP non-service recipient activity workload may increase.

If a UPP staff member is responsible for management activities on an occasional basis, this time is recorded as non-service recipient activity (functional centre activities) within UPP worked hours. If an individual is responsible for management activity for greater than 20% of their time, the worked hours of these staff should be divided between MOS and UPP categories. No workload is recorded for the management portion of their time.

6.3 Respiratory Services Workload Measurement System

Conceptual Model for Respiratory Services

SERVICE RECIPIENT ACTIVITIES				NON-SERVICE RECIPIENT ACTIVITIES			
Diagnostics	Therapeutics						
Diagnostic Intervention	**Assessment**	**Therapeutic Intervention**	**Consultation/ Collaboration**	**Functional Centre Activities**	**Organizational/ Professional Activities**	**Teaching/ In-service**	**Research**
Direct Lung Volumes Indirect Lung Volumes Pulmonary Mechanics Lung Diffusion Studies Inspired/ Expired Gas Studies Exercise Studies Challenge Studies Bronchoscopy Sleep Studies Blood Procurement & Analysis Non-Invasive Monitoring Cardiac Testing Clinical Documentation	Respiratory Assessment Comprehensive Assessment Swallow Assessment Follow-up/ Discharge Assessment Clinical Documentation	Auscultation Topical Pulmonary Chemotherapy Incentive Spirometry Medical Gas Administration Lung Volume Recruitment CPAP/BiPAP Ventilator Management Artificial Airway Management Arrest Management Suction Service Recipient Transport Aesthesia Hemodynamic Monitoring Cardioversion/ Pacemakers Thoracic Drainage Clinical Documentation	Team Conferences Service Rounds Professional Consultation Clinical Documentation Staff Change Report	Functional Centre Management Employee Meetings Caseload Management Maintenance Quality Management Travel for Functional Centre Activities Travel to and from the place where service recipient activities are provided*	Board/ Committee Functions Public Relations Program Management Advocacy – Professional Activities Travel	Students Professionals Academic In-Service Education Travel	Project 1 Project 2 Travel

Figure 14

**Note: Organizations that are involved in a lot of travel "to and from the place where the service recipient activities are provided" may want to report this travel separately.*

Service Recipient Activities

All work on behalf of service recipients (e.g. inpatients, residents, clients) is recorded, even if outside regular working hours (e.g. during overtime hours); but not unpaid worked hours. This is necessary in order to have a full understanding of service needs and potential costs. Service recipient workload activities are divided into three main components: (See below);

Diagnostics

A diagnostic intervention refers to an activity carried out/service provided that is often individually designed for a specific service recipient or group of service recipients and/or their significant other(s). It is associated with assessing the presence, absence or status of a disease process or health condition.

Assessment

Assessment refers to a series of activities/interventions conducted for the purposes of:

- evaluating the need for services;
- assessing an individual's physical, psycho-social, emotional and cognitive health status;
- identifying service recipient goals and expected outcomes;
- identifying a diagnosis and consequences of health conditions; and
- determining the extent of services required.

Assessment in this context is a formal, comprehensive process that may include observations, interviews/verbal reporting, the administration of specific assessment tools and standardized tests and measures.

Examples of Assessment activities:

- preparation;
- collection of background information relevant to the service recipient's health and health management profile;
- analysis of the assessment findings;
- formulation of a working diagnosis;
- development of the care/therapeutic intervention plan;
- documentation of assessment findings;
- assessment for the purposes of re-evaluating and updating goals, expected outcomes; and
- documenting health status at the time of discharge

Assessment excludes the ongoing monitoring activities and evaluation associated with a specific therapeutic intervention.

Information may be obtained from a variety of sources such as the patient/client/ resident, family, employer, teacher, written documentation from the health record and other sources.

Therapeutic Intervention

Therapeutic intervention refers to all activities carried out with or on behalf of a service recipient and/or significant other(s) that are aimed at health promotion and disease prevention, improving/maintaining health status or minimizing the impact of deterioration on function and the quality of life. Therapeutic interventions are often individually designed and supervised by the service provider for a specific person, organization or group.

Examples of therapeutic intervention activities:

- selection and prescription of activities according to the individual's physical and psychological impairments or disabilities, physical and psychological limitations, and requirements for equipment or assistive technology;
- preparation of treatment (individual or group);
- provision of specific techniques and procedures;
- monitoring, revising and/or progressing activity or programs based on the service recipient's responses; and
- clinical documentation related to the intervention activities.

**Transporting of service recipients is considered a service recipient activity, under activity category therapeutic intervention, when it requires the skills of your discipline and a therapeutic interaction occurs.*

Therapeutic intervention includes individual, family, couples, group sessions, preparation for therapy, administering the therapy and clinical documentation.

Preparation for and participation in Individual Support Services Plan (ISSP) meetings is usually considered a therapeutic intervention activity as well. Such meetings are intended to be held with the client/or significant other present to discuss progress to date, share information among care providers, as well as the family and revise the care plan as required.

Consultation/Collaboration

Consultation/collaboration refers to contact with service providers from within the organization, other organizations, the community or other agencies for discussion regarding specific service recipients to obtain, provide or exchange information relative to the person's care. The purpose of the consultation may be focused on the needs of a service recipient/family or on improving the effectiveness of a system/ environment. Discussions may be formal or informal. It includes any regularly scheduled or attended meetings of professionals to coordinate team efforts for activities provided to service recipients.

Examples of consultation/collaboration activities:

- interdisciplinary/multidisciplinary conferences (when service is not present);
- informal meetings with other staff that are service recipient specific;
- team meetings;
- completion of referrals; and
- clinical documentation related to these activities is also included.

Note: Clinical documentation includes those activities related to the service recipient records, including documentation of assessment findings, service planning, intervention/treatment plans, discharge plans, specific interventions provided and preparation or review of reports, written opinions, etc. Time spent on documentation should be recorded under the appropriate category of assessment, therapeutic intervention or consultation/collaboration, depending on the nature of the documentation.

Non-Service Recipient Activities

Non-service recipient activities are integral to the functional centre's operations but they do not involve the delivery of services to service recipients and/or their significant others. Non-service recipient workload is divided into four main components (see below) and has the following characteristics:

- it is not directly related to service recipient care but supports the activity of the department/program, the organization or the community;
- it includes activities related to education or research; and
- it is not normally census driven.

Functional Centre Activities

Functional centre activities are activities required for the operation/maintenance of the functional centre and for the benefit of staff. This category includes but is not limited to:

- **Functional Centre Management**: Includes but is not limited to:
  - housekeeping/clerical activities;
  - organizing files;
  - orienting staff;
  - recording and calculating workload and other statistical data;
  - preparing non-clinical documentation;
  - compiling data for reports and management purposes;
  - management activities related to discipline specific activity; and
  - development of discipline specific service programs;

- **Employee Meetings**: Includes, but is not limited to, formal and informal meetings of functional centre staff for the purpose of disseminating and receiving information pertaining to the operation of the functional centre and the organization;

- **Caseload Management**: Includes, but is not limited to, prioritization and assignment of service recipients within a caseload, receiving of referrals, etc.;

- **Maintenance**: Includes, but not limited to, activities such as maintaining a safe, tidy environment, maintenance of equipment and inventory control;

- **Quality Management**: Includes, but is not limited to, time spent attending quality management meetings, performing and documenting activities that improve the quality of services delivered in keeping with organizational policies and industry standards; and

- **Travel**: Includes, but is not limited to, internal and external travel associated with the activities listed above, as well as travel associated with the provision of services to service recipients within the organization or in their home. Also includes portering* of service recipients when performed by staff.

  **Portering of service recipients is considered a non-service recipient activity, under activity category functional centre activities when it does not require the skills of your discipline.*

Organizational/Professional Activities

Organizational/professional activities are performed for the general functioning and direct benefit of the organization, community or profession. Such activities may include:

- **Board/Committee Functions:** Activities performed during worked hours relating to the preparation, attendance and follow-up of health service organization board/committee functions (e.g. Accreditation Committee meetings, Occupational Health and Safety Committee work);

- **Program Management:** Management activities related to multidisciplinary program(s) and program management activities related to the organization as a whole;

- **Public Relations:** Activities directly associated with the public relations function of the health service organization. Includes, but is not limited to, planning, meetings and participation in the event (e.g. media events, information programs, preparing articles for publication, etc.);

- **Professional Activities:** Services provided to the professional, scientific and local communities, agencies and service groups during worked hours (e.g. participation in professional association committees);

- **Advocacy-Professional:** Activities related to advocacy on behalf of your profession; and

- **Travel:** Internal and external travel associated with the above organizational/ professional activities.

Teaching/In-Service

Teaching/in-service includes activities devoted to the dissemination of knowledge by functional centre staff, through lectures, presentations, observations or direct participation, to individuals other than service recipients. It includes, but is not limited to, clinical placements of students, information sessions for other staff, formal lectures to university/college students. This also includes in-service education received by staff. Some examples include:

- **Students**: Activities associated with the preparation, orientation, instruction, supervision and/or evaluation of students prior to, during or immediately following their clinical placements. Excluded are service recipient related activities performed during the course of teaching;

- **Professionals:** Activities associated with the preparation, orientation, presentation and/or instruction of other professional staff;

- **Academic:** Activities involved in the preparation and presentation of course/lecture material to students and evaluation of students as part of their academic curriculum;

- **In-Service Education:** Activities include, but are not limited to, receiving usually brief, in-house educational information sessions presented by other staff of the organization, orientation to new procedures or equipment, grand rounds and reading of professional journals, books and on-line articles; and

- **Travel:** Internal and external travel associated with the above teaching/in-service activities.

  *Note**:** Professional development, which is tracked by the payroll system as a benefit hour (usually as education leave), is excluded from this in-service education definition. Professional development activities are longer, more formal, discipline-specific and are usually greater than ½ day in duration. Professional association annual conferences, courses, symposiums, seminars and workshops are examples of typical professional development activities. It also includes related travel.*

Research

Research is defined as formally designed and approved clinical investigations directed towards advancing knowledge in the field of health and the delivery of health services, using recognized methodologies and procedures. This category includes activities performed during worked hours such as reviewing previous research, writing research proposals, compiling and analyzing data, report writing and travel related to these activities.

It excludes the provision of service recipient activities, which is provided as a part of the research program. These are recorded as service recipient workload units under the appropriate category.

Note: Informal research is recorded as non-service recipient, teaching/in-service workload.

6.4 Recording Methodology

One workload unit is equal to one minute of unit producing personnel time spent performing service recipient and non-service recipient activities of a functional centre.

One Workload Unit = One Minute

Figure 15

The Generic Workload Measurement and Reporting Framework has been designed to support collection of workload using either an actual or standard time recording system.

Actual Time Recording

The most accurate way to record the exact time spent providing service recipient and non-service recipient activities is using a watch. Each unit producing personnel would do this retrospectively throughout each calendar day. This method may be appropriate for recording times for activities that are not performed often or those in which the time varies from occasion to occasion. It may not be advantageous however to record workload data in this way for all activities. It would be an onerous task for the staff to do on a day-to-day, hour-by-hour basis and may take valuable time away from fulfilling the mandate of the functional centre.

The use of time blocks may be one way to ease the workload data collection burden. Time blocks should be no more than 10 minutes in order to minimize variances due to rounding. Depending on the length of time it takes to perform most procedures, time blocks of five minutes or less may be more appropriate to use. Although some error may be introduced, this is generally insignificant since the variances due to overestimating and underestimating the actual time spent tends to be offset when summed. Time should be captured as precisely as possible to ensure accurate data. All blocks should be converted to minutes at the end of the reporting period (see Figure 16)

Minutes Spent Performing Workload Activity	Time Blocks
1-4	0
5-14	1
15-24	2
25-34	3
35-44	4
45-54	5
55-64	6
etc.	

Figure 16

Standard Time Recording

Standard times are facility specific time values and therefore reflect the style of practice at the facility and the environment in which the work is done. Each standard time should represent a desirable and achievable goal for the personnel and not merely describe the actual current levels or the ideal world. Standards are especially useful when there are high volumes of activities with minimal time variations such as procedures and routine clinic visits which consistently take a predictable time to complete.

The functional centre can establish standard time values for each activity. Staff can then select those activities performed and a time value will automatically be attached. Each standard time represents the functional centre's average time to perform the activity for the average service recipient, with the average care provider in normal circumstances. When the range of time for a specific activity is large specific times can be developed for unique service recipients or environments.

To calculate workload multiply the number of interventions times the value assigned to that intervention; then add the total time values for all interventions to determine total service recipient workload.

6.5 Validity and Reliability

The validity of a workload measurement system is defined as its ability to measure what it is supposed to measure. Workload measurement systems should be reviewed annually to ensure that:

- the system reflects the activities of the service;
- the times reflect current reality when a standard or average time methodology is used; and
- data collection is consistent by routine reliability audits.

The reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to be measuring consistently. Inter-rater reliability refers to the extent to which data is reproducible by various staff members. It is important that different staff using the same measurement tool, measuring the same individual, at the same time, will derive a consistent result. A reliable system provides consistent data.

Factors that may influence the reliability of workload information include:

- characteristics of the tool or system (Is it user friendly or difficult to use?);
- terminology and definitions used;
- time required to enter information;
- person entering data (best if the person providing the care enters data);
- time of completion (close to time of intervention);
- motivation of the person recording (reduced if information not shared, not relevant, not valued, not used); and
- staffing levels (often left undone if understaffed).

Factors to consider when selecting a workload measurement system reliability process:

- when reliability data does not meet standards, the number of checks should be increased until the problem is identified, strategies for improvement implemented and reliability scores have improved;
- audits should be random;
- when more than one category of service recipient is treated in one functional centre, audits should be completed on each category; and
- efforts should be made to review the workload recorded by several people.

The MIS Standards recommend at least an 85% inter-rater reliability rate. Inter-rater results that fall below the target indicate a need for re-education, redesign of the tool/system or the instructions on how to enter data. The frequency and number of checks should be related to the use of the data and the importance of the resulting decisions.

Workload data must be considered valid and reliable before it can be used for decision-making or for external comparisons. In some provinces, workload is used in the current funding formula as the base for cost allocation between funding groups. Service recipient workload is used inpatient/resident/client specific costing which is consequently used in the development of weights for case mix groupings.

7 SERVICE ACTIVITY STATISTICS

Service activity statistics are captured in functional centres providing service recipient care. Together with caseload status statistics they identify the volume of activities that are provided to or on behalf of specific service recipients.

Service activity statistics supplement workload statistics in providing valuable information concerning the resources required for specific activities; they are intended to be used with matching workload statistics to measure functional centre productivity and the resource consumption of specific activities. These statistics are used with financial statistics to cost service recipient activity. The same categories of service recipients applied to workload statistics should be used with service activity and caseload statistics in order to identify the resource consumption of specific service recipient types (e.g. inpatient, resident and client hospital).

In respiratory services, all functional centres should collect the service activity statistic 'procedure'. A list of the procedures that should be counted each time they occur is included in the schedule of procedures/activities in Appendix A.

As well, the service activity statistic 'attendance days' may be collected in the respiratory services functional centres if desired. Implementation of a method to collect this data should be considered as part of the workload measurement system implementation

Service Activity Statistics

In-House Procedures - Respiratory Services (Required)
Attendance Days - Face-to-Face (Optional)
Attendance Days - Non-Face-to-Face (Optional)

Figure 17

Required Statistics

- **In-House Procedures – Respiratory Services** refers to the procedures performed in the functional centre pertaining to the administration of gases, aerosols, tests, as well as those specialty services that assist in the diagnosis and treatment of inpatients/residents/clients with respiratory and cardio-respiratory related conditions. It includes the maintenance and repair of respiratory services, anesthesia and perfusion associated equipment.

Optional Statistics

- **Attendance days – face-to-face** refers to the number of calendar days during which primary service activities are provided to service recipients face-to-face or by videoconference on an individual or group basis. Attendance days - face-to-face is the required activity statistic used by therapeutic functional centres for provincial and

national reporting. It is intended to represent a meaningful interaction that involves the provision of services and not simply a social interaction. Service is provided for longer than five minutes and is documented according to the health service organization policy.

Only one attendance day - face-to-face is recorded for each person, each day, for each functional centre even if several different staff interact with the person or if the person visits the department several times during the day. If several providers in one functional centre report contact with the same service recipient during a 24-hour period, the total workload associated with these contacts is recorded and linked to one attendance day - face-to-face for the functional centre.

An attendance day - face-to-face is intended to reflect a therapeutic interaction and a minimum of five minutes of service (not necessarily staff time) is required. If the person is involved in a group activity the workload units of the therapist assigned for the individual patient may not be greater than 5 minutes, on a per person basis. However, the service received by the person is greater than 5 minutes; therefore an attendance day is counted.

An attendance day - face-to-face requires face-to-face contact with the service recipient or significant other, either in-person or video conference. If the service recipient and significant other(s) are seen together, only one attendance day - face-to-face is recorded. The workload will reflect the additional time that may be required to communicate with more than one person. If the significant other is seen without the service recipient an attendance day is recorded under the service recipient registration number/name.

- **Attendance days - non-face-to-face** refers to the calendar days during which service recipient activities are provided to service recipients or significant others by means other than face-to-face. These calendar days take the place of an attendance day face-to-face. Examples may include attendance days via telephone, email or other forms of electronic communication, either on an individual or group basis. These services are documented according to the health service organization's policy and are provided for more than five minutes.

  Note: If services are provided face-to-face and non-face-to-face on the same calendar day only an attendance day - face-to-face is recorded for that day, regardless of which occurred first.

8 CASELOAD STATUS STATISTICS

Caseload status statistics are captured in functional centres providing service recipient care. Together with service activity statistics they identify the volume of activities that are provided to specific service recipients.

Caseload status statistics supplement workload statistics in providing valuable information concerning the resources required for specific activities; they are intended to be used with matching workload statistics to measure functional centre productivity and the resource consumption of specific activities. These statistics are used with financial statistics to cost service recipient activity. The same categories of service recipients applied to workload statistics should be used with caseload status statistics in order to identify the resource consumption of specific service recipient types (e.g. inpatient, resident, client hospital).

In order for a respiratory services therapeutic functional centre manager to ascertain the number of service recipients who received services during a particular period, the statistics 'new referral' and 'active carryover' can be collected, if desired. The sum of these two statistics provides the number of 'active service recipients'. A method to collect this data should be established when a system is put into place to collect the workload and service activity statistics (see Figure 18).

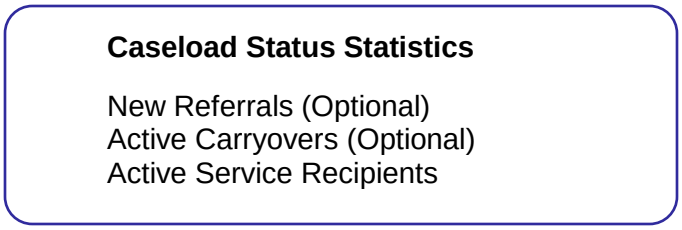

Figure 18

Optional Statistics

- **New referrals** are defined as the number of service recipients, registered with the functional centre, who received services in the current month and who had not received services from the functional centre in a prior month. Only one new referral should be counted by the functional centre for the time interval during which the service recipient's file remains open and the individual receives services. For inpatients and residents only one new referral should be counted per admission, even if the services were interrupted or temporarily discontinued during the admission. With reference to clients only one new referral should be counted for the time interval during which the client's file remains open and the client receives services. A file is closed when services are terminated and/or interventions are no longer necessary or effective or a 12-month period has elapsed since the person has received services and no planned follow up is intended.

Note: If the status of a service recipient changes (i.e. changes from inpatient to client), a new referral is recorded by the functional centre for that individual.

- **Active carryovers** are defined as the number of registered service recipients who were new referrals in a prior month and who have received services from the functional centre during the current month.

- An **active service recipient** is an individual who is either a new referral or an active carryover during the current month. The total number of active service recipients during a given period is equal to the sum of new referrals plus the number of active carryovers for that period and reflects the total number of individuals who received services during the month (active caseload). An annual count cannot be derived by adding all new referrals and active carryovers for the year as active carryovers are not cumulative. To accurately count the number of active service recipients on an annual basis, functional centres must use a master registry or similar process to track this information.

Active Service Recipients = New Referrals + Active Carryovers (for a given month)

Figure 19

Note: A new referral or active carryover is counted when there is face-to-face or non - face-to-face contact with the service recipient or significant other, as well as, when work is completed on behalf of a service recipient.

9 SPECIAL RECORDING SITUATIONS

Clinics and Rounds:

The total period of time spent by the staff person is recorded even if not all service recipients discussed are on the therapist/provider's caseload. No service activity and caseload status statistics are recorded unless the service recipients participate in the rounds. If service recipient-specific recording is required, the total time is divided evenly amongst all service recipients under the care of the therapist/provider.

Note: Time spent discussing a person's care with family members is recorded as either assessment or therapeutic intervention depending on the nature of the conversation. This also applies to team meetings in which the service recipient and/or significant other is in attendance.

In clinical practice there are often several activities occurring at once. When selecting a workload category, select the activity that best describes the major focus of the activity. For example, if a one hour session with a client consists of 50 minutes of assessment and 10 minutes of therapeutic intervention, record all 60 minutes as assessment workload. If time with a client is more evenly divided between activities then the time can be divided as well (e.g. 30 minutes in each category).

Multiple Staff Members Providing Care

If two staff members from the same functional centre participate in service recipient activities at the same time, both report workload; however, only one set of service activity and caseload status statistics is recorded. For example, a therapist and support worker from the same functional centre are both involved in an assessment, only one attendance day and one new referral/active carryover statistic is recorded.

Group Activities

If one staff person provides care to a group of 10 service recipients for a one hour period of time, the workload time of the staff person is recorded as 60 minutes and 10 attendance days are recorded. If collecting workload on a service recipient-specific basis each individual receives 6 minutes of service recipient workload.

Students

When calculating service recipient costs and resource requirements it is important to include all resource requirements. Therefore all service recipient workload is recorded even if provided by unpaid students instead of staff. The contribution of students to service recipient workload will vary depending on their stage in the learning process. Identification of resource use is one of the goals of the MIS Standards. The MIS Standards suggest service recipient workload, service activity and caseload status statistics generated by students, who are functioning independently, be recorded. The Provincial MIS Committees recommend that senior level students, as identified by each committee for their own discipline, record service recipient and non-service recipient workload, in addition to their worked hours, service activity and caseload status statistics.

Organizations are advised to measure the contribution/cost of students by separately identifying service recipient and non-service recipient workload of students and non-service recipient student time of employees on their workload tool. If documentation of student supervision time is required for professional organizations this should be captured through other mechanisms.

Volunteers

Volunteers are not paid employees of the organization, are not considered unit-producers and do not collect and report workload or service activity/caseload status statistics.

Services Provided in Absence of Service Recipient

A person can be counted as part of your caseload in a given month if services are provided in the absence of the service recipient (e.g. arranging for equipment and documenting in a client's chart). Although, there is no attendance day the time spent can be recorded as service recipient workload and a new referral or active carryover will be collected when appropriate. This means that if there is no attendance day for the period (month) there can still be a caseload statistic.

Travel Time for Service Recipient Activities

Travel time to get to a client is often necessary in order to provide service recipient care; however, the amount of time that is consumed traveling to a client is not related to the needs of the person but rather to the characteristics of the organization, such as number of sites, physical layout, organizational structure, staff assignments and the geographic area to be covered. Therefore, it is concluded that it is not appropriate to record travel time as service recipient workload.

Workload tools can be used to track staff travel time specifically (either continuously or by sampling) in order to provide insight into the impact on workload and assist in better decision-making. This is particularly useful in Regional Health Authorities with multiple service sites.

Waiting Time

Waiting time refers to time waiting for clients, other health care professionals or physicians. This is non-productive time and should not be recorded as workload. Although wait time consumes resources there is no output. Some clinicians have included this time as workload as it is perceived to be uncontrollable but this is not appropriate; instead, strategies should be considered to reduce this non-productive time.

If waiting time appears to be excessive it is recommended that staff record wait time (by sampling preferably) in order to provide a measure of time wasted. This time should be reported on internal management reports but must not be included in external workload reporting. This can be a valuable piece of information that can facilitate the identification of strategies to reduce wait time. Sometimes, just the measurement and communication of the magnitude and cost of this time will have beneficial effects. In other situations policy changes may be needed.

Time spent waiting for clients, other health care professionals or physicians is non-productive time and should not be recorded as workload, unless another activity is undertaken to fill that time, e.g. charting.

Educational Activities of Unit-Producing Staff

The dissemination of knowledge by functional centre unit-producing staff through lectures, presentations, observations or direct participation to individuals other than registered service recipients is included in the non-service recipient workload (under teaching/in-service). Unit-producing time in this activity should not be charged to the education framework unless the time spent by an individual in this activity is greater than 20% of that individual's time. In that case, the individual is considered multi-functional and earned hours are divided between the two functional centres.

Research Activities of Unit-Producing Staff

All activities performed by functional centre unit-producing staff who are involved in formally designed, systematic approved clinical investigations directed to advancing knowledge in the field of health care using recognized methodologies and procedures, are recorded as non-service recipient workload. This includes reviewing and writing proposals, completing and analyzing data and writing reports. Unit-producing time in this activity should not be charged to the research framework unless the time spent by an individual in this activity is greater than 20% of that individual's time. In that case the individual is considered multi-functional and earned hours are divided between the two functional centres.

Reporting Options for Service Recipient Workload

Service recipient activity workload can be recorded on a service recipient-specific basis or therapist/provider-specific basis. Service recipient-specific recording requires the provider to record the amount of time spent in service recipient activities (assessment, therapeutic intervention or consultation/collaboration) for each person during the reporting period. This can be more time consuming than therapist/provider-specific recording depending on the type of recording methodology and technology involved and is required for case costing. Therapist/provider-specific recording requires the provider to record their total time for the period spent in service recipient activities. In this case, one cannot identify the amount of time devoted to a specific individual. Regardless of the level of recording detail chosen, the total workload statistics will be the same.

Additional Points Related to Non-Service Recipient Workload

Non-service recipient workload is usually only recorded during worked hours. In addition, non-service recipient activities can only be recorded if required by the organization. If staff members are required to attend a meeting, either facility or community, outside work hours or the staff member is expected to spend a percentage of time in research or education and this expectation is defined in the job description, then non-service recipient workload can be recorded. Many non-service recipient activities may not be required by the organization and therefore workload cannot be recorded for this time. Examples include: attendance at professional meetings, participation in academic and research activities, participation in community activities, etc.

Non-service recipient workload is important as it demonstrates the extent of activities that are not related to specific patient/resident/client volumes but are still an integral part of the professional's contribution to the health system. These activities can be for the benefit of the community, staff, students or the organization. If there are specific

activities that should be highlighted internal reports should be created to provide further insight into the activities that consume clinician's time. This may include:

- staff travel related to the provision of patient care;
- activities which are not under the control of the manager such as:
  - legislated activities - Occupational Health and Safety Committee involvement,
  - facility required activities - reengineering, restructuring, accreditation;
- activities that support the organization's employees such as:
  - critical incident stress debriefing,
  - counselling, and
  - spiritual care;
- activities that support the community such as:
  - development of infrastructures that will support service recipients after discharge,
  - participation in community agency boards, and
  - educational sessions for service agencies.

Technology Requirements

Information systems provide essential infrastructure for the workload measurement process. The nature of workload data is such that technology can greatly assist in its collection and analysis. Information systems are tools that support the use of workload information by providing ready access to data and presenting this information in statistical reports. Patient/resident/client management systems have themselves evolved to the point where workload measurement can occur as a by-product of documentation. There are many different technology options that can optimize this "point of care" documentation including hand held, pen based and barcode devices. The MIS Standards do not specify a particular software package or technology option to be employed in workload measurement.

Currently in Newfoundland and Labrador there are several means by which organizations collect, analyze and report workload data. These include: a completely manual process; manual collection with data entered or scanned into a central computer system; workload collected as a by-product of documentation in an automated system; and hand held entry devices which download into a computer system.

A variety of computerized options are currently used to collect and/or report workload data including direct entry into Meditech systems, use of customized software and use of spreadsheet programs such as Excel. Clinicians working in Health and Community Services will use the Client and Referral Management System (CRMS) to collect and report workload data.

10 TURNING DATA INTO INFORMATION

10.1 Information Pathways

Financial Information is maintained in the Meditech systems of the Regional Health Authorities as well as the Client Pay Module of the Client and Referral Management System (CRMS).

Statistical information in Newfoundland and Labrador is collected by frontline staff in a number of ways:

- electronically (by spread sheet or computer program);
- as a by-product of charting (collected in the background in your computer system); or
- manually.

Regardless of the method of data collection, the information must be entered into the statistical general ledger of the regional Meditech system for regional use and external reporting.

Financial and statistical information is submitted electronically by the Regional Health Authorities to the Provincial MIS Database at the Department of Health and Community Services. The information is used for budget monitoring, service planning, resource allocation, etc.

The Department of Health and Community Services submits the data electronically to the Canadian MIS Database (CMDB) at CIHI. This information is used to determine Canada's health expenditures, meet international reporting requirements, calculate national economic indicators such as the gross domestic product and conduct health and health system evaluation and analyses. The diagram below illustrates the flow of financial and statistical information from the points of data collection within the Regional Health Authorities to the CMDB.

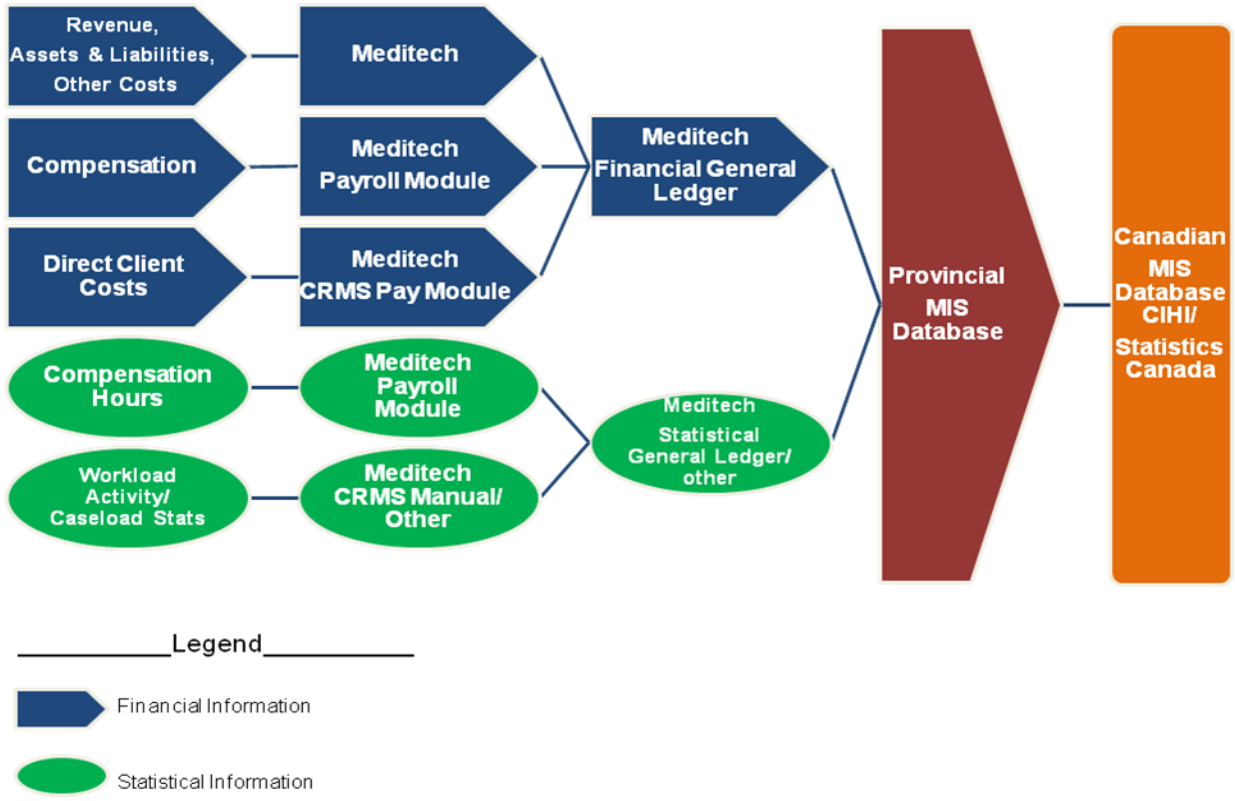

Figure 20

10.2 Performance Indicators

Data are statistics that, on their own, may not have a great deal of value or meaning. In order to be useful and relevant, good quality data must be turned into meaningful information which is accurate, timely, comprehensive, useable and relevant. When workload data is linked to financial or other statistical data to create performance indicators, the data can then be used for decision-making.

Indicators are ratios or percentages calculated from financial and/or other statistics that quantify a relationship between the data elements. Indicators measure performance and provide information that can be used to facilitate decisions or compare performance, such as, cost per workload unit (see Figure 21). They turn data into useful information.

The MIS Standards contain numerous indicators within the five categories of financial, staffing, productivity, utilization and workload. They can be used to analyze and interpret workload data, service activity and caseload status statistics and can assist staff and managers in analyzing and evaluating their services. Indicators are valuable decision-support tools for service planning, impact analysis and effective management. Implementation of a workload measurement system and reporting of workload and other statistical data is not the ultimate goal however; the primary value in workload measurement is the use of the information to make better management decisions. This is essential in order to gain value from the time, effort and dollars consumed in the workload collection

process. Appropriate use of the information and feedback to staff will enhance understanding and support for accurate information, resulting in better data quality.

Selected examples of some key indicators, their calculations and interpretation have been included in this section:

- cost per workload unit;
- workload units per activity;
- cost per workload unit by service recipient type; and
- worked productivity

Cost per Workload Unit

This indicator describes the cost to provide one minute of service or one workload unit.

$$\text{Cost per Workload Unit} = \frac{\text{Defined Cost}}{\text{Workload Units}}$$

Figure 21

The costs in this formula can be defined as:

- **full cost** which includes both direct and indirect functional centre costs;
- **direct cost** which includes only direct functional centre costs**;** or
- **a specific component** of direct cost such as unit-producing compensation, supplies or sundry.

Workload can be defined as:

- **total** (service recipient and non-service recipient);
- **service recipient**; or
- **non-service recipient**.

The cost and workload values selected for measurement will be dependent on the intended use of the data. The components of this indicator must be known when comparing costs across organizations. One of the most commonly used financial indicators is direct cost per service recipient workload unit. Total cost per service recipient workload unit is used to support case costing analysis. Managers will find that compensation cost per workload unit is valuable to support human resource decisions as well.

Factors that may affect this indicator include:

- staff mix;
- workload measurement system in use;
- overtime;
- use of on-call staff; and
- sick time;

- education and orientation costs;
- benefit compensation packages; and
- compensation levels.

Cost per workload unit can be used, in conjunction with workload units per activity, to determine costs of new programs and services and to determine the financial resources to be added, transferred or removed from a functional centre due to changes in population served, program or service (i.e. impact analysis).

Cost per Workload Unit by Service Recipient Type

Workload units by service recipient type is used in calculating the costs of specific patient/resident/client type services for funding purposes and for calculating the impact of changes in service recipient characteristics.

$$\text{Cost per Workload Unit by Service Recipient Type} = \frac{\text{Total Cost for Functional Centre}}{\text{Total Service Recipient Workload Units}} \times \text{Workload Units per Type}$$

Figure 22

Therapeutic functional centres need to consider the impact of patient/resident/client type changes on their department. This can be done by measuring the rate of referrals for specific types of service recipients, calculating the number of attendance days generated by the average referral for this type and identifying the average workload for this type of attendance day.

Workload Units per Activity

This indicator describes how workload is related to a specific activity, such as an attendance day, admission or visit.

$$\text{Workload Units per Activity} = \frac{\text{Workload Units for the Defined Activity}}{\text{Volume of Activity}}$$

Figure 23

The workload units used could be:

- **total** (service recipient and non-service recipient);
- **service recipient;** or
- **non-service recipient.**

The workload unit(s) used will depend on the intended use of the data. When calculating staffing for changes in-patient/resident/client volumes, only the service recipient workload should be considered as non-service recipient workload is not volume dependent and will remain despite changed service volumes. This would also apply when considering changes in service recipient type (i.e. chronic rather than acute, or inpatient rather than client).

Factors that can affect this indicator include:

- availability of support staff on the unit;
- availability of other health professionals;
- physician ordering practices;
- care delivery models;
- nursing care models;
- organizational policies;
- facility layout; and
- patient/resident/client acuity and demographics.

Productivity

Productivity is the relationship between inputs and outputs. In this context inputs are worked hours and outputs are workload units. The goals or targets set for productivity indicators depend on the circumstances and the strategic goals of the organization.

The options for increasing productivity include:

- maintaining the worked hours but increasing the workload units;
- decreasing the worked hours but maintaining the workload units;
- decreasing both the worked hours and workload units but decreasing the worked hours more than the workload units;
- increasing both the worked hours and workload units but increasing the workload units more than the worked hours; or
- decreasing the worked hours and increasing the workload units.

The MIS framework does not include coffee breaks in workload measurement. Coffee breaks alone can account for 7-8% of worked hours; in addition, at least 5% is usually lost to personal or delay time. Therefore the maximum productivity which can be expected is approximately 87%. Realistically, 80-85% total productivity is a reasonable level of accountability of how worked hours were spent. If productivity is higher than this it could be related to:

- staff working through coffee and/or lunch;
- presence of students;
- staff working unpaid hours to provide service recipient care; or
- inaccurate reporting of either worked hours or workload.

Two of the most commonly calculated productivity indicators are:

- unit-producing personnel worked productivity (%); and
- unit-producing personnel total productivity (%).

UPP Worked Productivity (%)

Productivity is expressed as a percentage and therefore will be multiplied by 100. This indicator calculates the percentage of all unit-producing personnel worked and purchased hours spent in the provision of service.

$$\text{UPP Worked Productivity \%} = \frac{(\text{Service Recipient Workload Units}) \div 60}{\text{UPP Worked + Purchased Hours}} \times 100$$

Figure 24

UPP Total Productivity (%)

This indicator calculates the percentage of all unit-producing personnel worked and purchased hours spent in the provision of service recipient and non-service recipient activities.

$$\text{UPP Total Productivity \%} = \frac{[(\text{Service Recipient + Non-Service Recipient Workload Units}) \div 60]}{(\text{UPP + Purchased Hours})} \times 100$$

Figure 25

Performance Indicators Related to Resource Consumption

The following performance indicators are considered the most useful for organizational comparisons and to also provide a comprehensive picture of a department/program. Individual organizations may elect to produce other indicators that are relevant to its needs.

The formulas for these indicators are included in the MIS Standards:

- unit-producing worked productivity (%);
- unit-producing total productivity (%);
- percentage of distribution of workload, by category of service recipient;
- percentage of distribution of workload, by workload categories;
- direct cost per workload unit;
- workload units per attendance day;
- workload units per new referral;
- service recipient workload units per UPP full-time equivalent; and
- number of full-time equivalents per occupational group/class.

To effectively allocate and use resources policy makers, health administrators and professionals must understand resource consumption and costs of caring for groups of service recipients with varying needs, in different settings. Workload measurement data, in conjunction with other information, can provide valuable information to support decisions. At the department level these decisions include:

- identification of staff hours required to meet workload requirements;
- construction of a staffing schedule that reduces resource requirements;
- equitable staffing assignments;

- appropriate skill mix;
- optimal education level for the type of services provided; and
- best process for care delivery.

How can Workload Information be used for Costing?

The allocation of functional centre costs is based on workload data that is considered to be the most accurate statistic to use. Workload values affect not only the allocation of functional centre direct costs to types of service recipients but also the distribution of indirect costs (administrative and support costs). This occurs because indirect costs are distributed to types of service recipients based on the direct costs.

How can Organizations Apply Performance Indicators?

Reports generated using the financial and statistical data collected provide functional centre managers, senior health care executives and the board of trustees with information critical for decision-making. A view of specific information across all the organizations in a region (e.g. drugs, unit-producing compensation) can be important for a senior manager. The examples listed below will demonstrate some of the different ways financial and statistical data can be aggregated across health service delivery settings (e.g. acute care hospital, community health care centre, home care):

- budgeting/impact analysis;
- staffing/scheduling;
- human resource decisions;
- cost minimization; and
- quality initiatives

Budgeting/Impact Analysis

Workload information can be used to determine zero based or flexible budgets for existing services or for planning the budget of a new or altered service.

1.	Predicted Volume	X	Service Recipient Workload per Activity	=	Predicted Service Recipient Workload	
2.	Predicted Service Recipient Workload	X	Cost per Service Recipient Workload Unit	=	Predicted Total Cost	

3. Benefit Hours + Salaries + Benefit Contribution Dollars must then be added to develop the total budget.

Figure 26

Increase/Decrease/Transfer of Service Recipients or Dollars within an Organization/ Between Organizations.

Workload information can prove helpful when trying to determine the staffing impact of increasing or decreasing a particular activity or when trying to determine the appropriate transfer of funds/staff that are linked to the particular activity.

Example: change of an acute inpatient service to a rehab service

To determine impact on staffing:

1. Number of Rehab Referrals X Service Recipient Workload Units per New Referral = Expected Rehab Service Recipient Workload Units

2. Expected Rehab Service Recipient Workload / Service Recipient Workload Units per FTE = # of FTEs required

3. To determine budget impact:

   Service Recipient Workload X Cost per Service Recipient Workload Unit = Total Cost Estimated

4. Then a comparison needs to be made between the costs of acute vs. rehab services to determine the impact of the change on staffing needs.

Figure 27

Staffing/Scheduling

Workload can be used to justify current staffing and identify staff increases or reductions based on workload requirements. Patient census alone cannot identify needs since not all service recipients are equal and do not require the same health services.

An increase in productivity can reduce costs by eliminating non-productive time. This can be achieved through a better matching of workload requirements and actual staffing and by monitoring trends of resource needs by day of week and time of year. Staffing schedules can sometimes be altered to provide a better match.

Non-productive time can only be identified if service recipient and non-service recipient workload is accurately defined and measured. A system that presumes that all time not related to service recipient activities is automatically non-service recipient time or a system that assumes non-service recipient activity is directly related to service recipient time will not provide the required information. Non-service recipient activities need to be specifically defined with associated time values.

Workload information can also be used to determine staff assignments. Rather than determining staff assignments based on the number of service recipients, the assignments can be determined based on the workload generated by each service recipient. This can lead to more equitable assignments, higher staff morale and better care. This will lead to more accurate workload collection. Staff travel time also needs to be considered when assigning caseloads in order to reduce non-service recipient workload. Included in this decision process one must also consider the knowledge and skill required to provide care for specific types of patients/residents/clients.

Human Resource Decisions

A workload measurement system, that identifies types of specific activities, can also be useful for skill mix decisions. The tasks that are frequently selected can be reviewed to determine the level of expertise that is required to complete the tasks and this information can be helpful in determining the appropriate ratio of staffing. **Caution should be exercised when using this process as the level of expertise required to provide service recipient care is not only the sum of specific tasks**. It should also take into account the analysis required to determine appropriate strategies to respond to the data generated by these tasks. The workload resources required could be the same in two units but the level of expertise necessary to provide care may be different depending on the complexity of care.

In order to improve productivity, if the appropriate matching of workload and actual hours cannot be achieved within the current staffing complement, the manager may need to alter the full-time/part-time ratio to allow the flexibility required to provide the desired match.

Given current fiscal restraints and recruitment/retention issues in many health disciplines, there is a growing interest in capturing more human resource related data through the MIS Standards.

Cost Minimization

A workload measurement system, which examines specific activities, can be used to identify non-value added activities or to identify improved processes or timing for providing specific tasks. If activities are not vital to clinical outcomes or client satisfaction they may be considered for elimination. The identification of these activities usually occurs during the implementation and validation/revalidation of standard time tools.

Activities can be linked to care plans or critical pathways to assist in quantifying and selecting alternate modes of care. Physician-driven activities can also be quantified and this can provide valuable information when discussing critical paths with the medical staff.

A workload measurement system can identify specific tasks performed by therapeutic staff that could be performed by other staff, thus reducing costs. This could involve the work of other health care professionals or support staff. However, when these tasks do not consume significant time it may be more cost effective for therapeutic staff to continue to perform the tasks.

> Example: If there are sufficient clerical or portering activities, it may warrant the transfer of these tasks to non-professional staff.

Quality Initiatives

Workload data can identify processes that could be improved. These processes may be controlled by the functional centre manager or by another department. If tasks are transferred to another department the workload measurement systems will identify the staffing and cost implications for both departments.

11 PERFORMANCE INDICATORS FOR RESPIRATORY SERVICES

The Provincial Respiratory Services MIS Committee has identified a number of indicators as being appropriate for use by its discipline. Additional indicators can be found in the MIS Standards.

11.1 Financial Indicators

Total Compensation per In-House Service Recipient Workload Unit

The average compensation cost per in-house service recipient workload unit for a functional centre. It is calculated by dividing the functional centre's total compensation expense by the in-house service recipient workload units generated by that functional centre in a given period.

$$\frac{\text{Total Compensation Expense}}{\text{Total In-House Service Recipient Workload Units}}$$

Figure 28

Total Compensation per In-House Procedure

The average compensation cost per in-house procedure for a functional centre. It is calculated by dividing the functional centre's total compensation expense by the in-house procedures performed by that functional centre in a given period.

$$\frac{\text{Total Compensation Expense}}{\text{Total In-House Procedures}}$$

Figure 29

11.2 Staffing Indicators

Number of Full-Time Equivalents (FTE) by Broad Occupational Group

Number of FTE by broad occupational group is the average number of full-time equivalents for each broad occupational group (MOS or UPP). It is calculated by dividing the earned hours for all employees (full-time and part-time) in a specific broad occupational group by the normal earned hours for a full-time equivalent in that specific group in a given period.

$$\frac{\text{Total Earned Hours for all Staff in a Broad Occupational Group}}{\text{Normal Earned Hours for one FTE in a Broad Occupational Group}}$$

Figure 30

The number of UPP FTEs can be further analyzed by occupational class by modifying this formula.

Worked Hours to Earned Hours (%)

Worked hours to earned hours is the proportion of earned hours that is attributable to the worked hour's component. It is calculated by dividing the total worked hours by the total earned hours in a given period. This indicator may be calculated for a given functional centre, broad occupational group or occupational class.

$$\frac{\text{Worked Hours}}{\text{Earned Hours}} \times 100$$

Figure 31

A similar calculation can be used to analyze the types of worked hours (e.g. determine the proportion of Worked Hours that were regular hours vs. overtime hours).

Benefit Hours to Earned Hours (%)

Benefit hours to earned hours is the proportion of earned hours that is attributable to the benefit hour's component. Benefit hours are periods of paid absence such as sick leave, vacation, education leave, etc. It is calculated by dividing the total benefit hours by the total earned hours in a given period. This indicator may be calculated for a given functional centre, broad occupational group or occupational class.

$$\frac{\text{Benefit Hours}}{\text{Earned Hours}} \times 100$$

Figure 32

A similar calculation can be used to analyze the types of benefit hours (e.g. determine the proportion of benefit hours that were related to sick leave, education leave).

11.3 Productivity Indicators

Worked and total productivity are commonly used indicators; the ratios of worked and total productivity shows the amount of staff time spent in service recipient activities versus the total time spent carrying out the mandate of the service. While worked productivity is an important indicator on its own it should not be used exclusively as it does not take into account time spent in non-service recipient activity which can be significant in some functional centres. Both of these indicators can vary depending on the type and location of the service, as well as the support available to UPP staff and should be reviewed keeping these factors in mind.

Worked Productivity (%)

Worked productivity (%) is the percentage of all unit-producing personnel worked hours spent in the delivery of services to or on behalf of specific service recipients. It is calculated by dividing the service recipient workload units (converted to hours) by the worked hours plus purchased hours of the unit-producing personnel in a given period and multiplying by 100. This has traditionally been the most widely used productivity indicator.

$$\frac{\text{Service Recipient Workload Units} \div 60}{\text{Unit-Producing Personnel Worked + Purchased Hours}} \times 100$$

Figure 33

Total Productivity (%)

Total productivity is the percentage of all unit-producing personnel worked spent in the provision of service recipient activities and non-service recipient activities. It is calculated by dividing the service recipient and non-service recipient workload units (converted to hours) by the worked hours plus purchased hours of the unit-producing personnel in a given period and multiplying by 100.

$$\frac{\text{Service Recipient + Non-Service Recipient Workload Units} \div 60}{\text{Unit-Producing Personnel Worked + Purchased Hours}} \times 100$$

Figure 34

Service Recipient Workload Units per Full-Time Equivalent (FTE)

Service recipient workload units per FTE is the average number of service recipient workload units generated by each unit-producing personnel full-time equivalent. It is calculated by dividing the service recipient workload units by the number of unit-producing personnel full-time equivalents (see previous staffing indicator for the calculation of the number of unit-producing personnel FTEs). This indicator is commonly used to establish realistic caseload guidelines, monitor staff productivity and workload and determine the impact of changes in service demands.

$$\frac{\text{Service Recipient Workload Units}}{\text{Number of Unit-Producing Personnel FTEs}}$$

Figure 35

Total Workload Units per Full-Time Equivalent (FTE)

Total workload units per FTE is the average number of total workload units generated by each unit-producing personnel full-time equivalent. It is calculated by dividing the total workload units by the number of unit-producing personnel full-time equivalents (see previous staffing indicator for the calculation of the number of unit-producing personnel FTEs). This indicator is commonly used to establish realistic caseload guidelines, monitor staff productivity and workload and determine the impact of changes in service demands.

$$\frac{\text{Service Recipient + Non-Service Recipient Workload Units}}{\text{Number of Unit-Producing Personnel FTEs}}$$

Figure 36

11.4 Workload Indicators

Distribution of Service Recipient Workload Units by Category of Service Recipient (%)

Distribution of service recipient workload units by category of service recipient is the percentage of unit-producing personnel time that is attributable to the various categories of service recipients. It is calculated by dividing the number of service recipient workload units for a specified category of service recipient (e.g. inpatient, resident, client hospital) by the total number of service recipient workload units for a given period and multiplying by 100.

$$\frac{\text{Service Recipient Workload Units (Specified by Category of Service Recipient)}}{\text{Service Recipient Workload Units for all Categories of Service Recipients}} \times 100$$

Figure 37

Distribution of Workload Units by Workload Category (%)

Distribution of workload unit by workload category is the percentage of unit-producing personnel time spent in the two workload categories (service recipient and non-service recipient activities). It is calculated by dividing the number of workload units of one of the specified categories by the total number of workload units (service recipient and non-service recipient activities) for a given period and multiplying by 100.

$$\frac{\text{Specified Category (e.g., Service Recipient Activities) Workload Units}}{\text{Service Recipient and Non-Service Recipient Workload Units}} \times 100$$

Figure 38

Interpreting Workload Indicators Results

Why would your workload measurement values change when the type(s) of service recipients and volume remain the same? Some possible reasons that could affect service recipient and non-service recipient values include:

- service recipient activities:
  - physician ordering practices may have changed;
  - advances in technology;
  - staff may be over or under recording due to their perceived uses of the system;
  - there may be new staff who do not understand how to use the system; and
  - clinical practices may have changed.
- non-service recipient activities:
  - new organizational expectations for unit-producing staff involvement in committees;
  - development of a new service/program;
  - introduction of a new facility computer system requiring in-service education;
  - change in student volumes;
  - availability of support staff;
  - participation in a new research project; and
  - new expectation for community or staff support.

Why would your workload data differ from that of another organization when the type(s) of service recipients and volume are the same? Possible reasons include:

- differences in physician ordering practices;
- staff may be doing work in one hospital that is performed by other health care providers in another setting;
- differences in technological support;
- differences in the physical environment (e.g. distance between service recipients, availability of elevators);
- differences in support systems such as proximity of equipment or supplies;
- differences in service recipient needs despite having the same diagnosis (e.g. socio-economic needs, distance to the facility);
- differences in provider mix (e.g. professional to assistant ratio and levels of support staff); and
- differences in clinical practice.

11.5 Sample Performance Indicator Report

Sample Performance Indicator Report					
	Fiscal Year				
	Fiscal Period				
	Facility A	Facility B	Facility C	Facility D	Facility E
	Functional Centre	Functional Centre	Functional Centre	Functional Centre	Functional Centre
Performance Indicators					
Financial					
Direct Cost per Service Recipient Workload Unit	$1.69	$1.42	$1.17	$1.32	$1.60
Total Compensation to Total Expenditures	99.1%	97.5%	98.2%	96.7%	97.6%
Staffing					
UPP Worked to Earned Hours	52.6%	81.0%	80.5%	82.5%	83.7%
UPP Benefit to Earned Hours	17.4%	19.0%	19.5%	17.5%	16.3%
Productivity					
UPP Worked Productivity (%)	48.0%	54.3%	61.7%	61.1%	54.6%
Total UPP Productivity (%)	67.4%	78.3%	81.6%	88.5%	78.0%
Utilization					
SR Workload Units per Attendance Day					
Inpatient	50.53	70.72	50.35	55.32	59.28
Client Hospital	54.26	73.95	45.00	55.85	93.38
Client Home Care	21.14	20.49	0.00	0.00	65.23
Client Community	30.20	0.00	41.55	0.00	33.00
Resident	45.31	48.64	18.66	60.62	0.00
Facility/Organization/Citizen Partnership	0.00	100.71	0.00	30.00	0.00
SR not Uniquely Identified	15.15	34.11	28.88	33.29	78.15
Workload					
% Distribution of Service Recipient Workload Units					
Inpatient	46.8%	44.1%	46.8%	38.6%	20.9%
Client Hospital	39.0%	44.0%	34.5%	42.4%	76.9%
Client Home Care	1.0%	2.3%	0.0%	0.0%	0.5%
Client Community	1.5%	0.0%	3.4%	0.0%	0.3%
Resident	11.3%	8.2%	15.2%	14.3%	0.0%
Facility/Organization/Citizen Partnership	0.0%	0.4%	0.0%	0.0%	0.0%
SR not Uniquely Identified	0.4%	1.0%	0.1%	4.7%	1.4%
% Distribution of Workload Units					
% Service Recipient Workload Units	71.3%	69.4%	75.6%	69.1%	70.0%
% Non-Service Recipient Workload Units	28.7%	30.6%	24.4%	30.9%	30.0%

Figure 39

Data does not represent any one facility or region.

12 IMPORTANT POINTS ABOUT DATA COLLECTION

Secondary statistical information, such as, workload, service activity and caseload status statistics, is collected by unit-producing personnel (UPP) only.

Care should be taken to ensure that only the worked hours of staff (UPP) are matched to the workload that is generated, as these two pieces of data will be used to produce productivity information. Failure to accurately match these data elements will skew productivity indicators.

When management staff members provide direct care (unit-producing) for a portion of their time, their workload and earned hours for that time should be included in the functional centre totals.

Workload measurement collection expectations and targets should be incorporated into:

- staff orientation programs;
- job descriptions for all staff;
- performance evaluations and reviews; and
- the strategic goals of the organization.

Maintenance of workload measurement systems requires:

- involvement of all staff;
- formal annual review by staff or whenever there are changes in service recipient types or care processes;
- on-going in-service education; and
- regular reliability testing.

Manager responsibilities:

- provide leadership for implementation;
- ensure adequate reference material is available;
- understand all components of the system;
- regularly monitor the results to ensure data quality;
- investigate sources of inconsistent data;
- use the information to support decision-making; and
- provide feedback to all staff recording workload (e.g. individual reports, discussion of analysis).

Staff responsibilities:

- record data accurately to quantify services provided;
- record data in a timely manner;
- accurately measure the resource requirements of their patients;
- understand the workload measurement system, both recording and interpretation of results; and
- share knowledge with new staff, such as accurate use of reference material.

13 RESOURCES

National Resource Materials

The Standards for Management Information Systems in Canadian Health Services Organizations (MIS Standards) are published on CD-Rom bi-annually by CIHI. A copy is sent to the Chief Financial Officers of each Regional Health Authority, the DHCS and the Centre upon release by CIHI. Further details regarding all topics enclosed in this reference guide are contained in the MIS Standards. If you require access to the national MIS Standards, please contact the appropriate regional financial department.

Provincial Resource Materials

Resource documents and information available from the MIS staff of the Centre include:

- Provincial Reporting Requirements User Guide
- discipline specific reference guides;
- information sheets relating to earned hours, workload, data quality and statistical data collection (FACT sheets);
- audit tools and answer guides;
- discipline specific indicator reports;
- annual statistical summary;
- annual Nursing Report Card; and
- current membership lists and Terms of Reference for MIS committee.

Resource documents and support are also available through MIS Committee members.

Education

CIHI provides a series of education sessions including eLearning and WebEx sessions on an on-going basis and in-person sessions a minimum of once per year. The topics for these sessions vary and a current schedule may be obtained either through CIHI's website or by contacting the MIS Staff at the Centre. Educational workshops are also available through the Centre and can be customized for specific needs and offered on a site specific or regional basis.

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APPENDIX A

SCHEDULE OF PROCEDURES/ACTIVITIES

Note: Before reviewing the schedule of procedures/activities for respiratory services the entire WMS document should be read.

Introduction

The schedule of procedures/activities provides users with a comprehensive list of procedures and select activities performed in respiratory services. Each activity is assigned a four-digit code and is accompanied by a brief description and procedure count.

The schedule that follows includes a list of the service recipient activities and non-service recipient activities that are specifically applicable to respiratory services. The procedures/activities listed are not intended for the sole purpose of any one functional centre. Workload units should be recorded and reported in the functional centre where the activities occur.

It should also be noted, that wherever possible, the unit values reflect the American Thoracic Society (ATS) standards for pulmonary function procedures.
Unit-producing personnel may perform additional activities that may not be listed in the schedule of procedures/activities. When establishing a master procedure/activity profile, it is important to include all such activities.

For those procedures not found/listed in the Schedule of Procedures/Activities, please add to your master activity profile, complete the form "Notification of Procedure" and submit to CIHI.

Canadian Institute for Health Information
495 Richmond Road, Suite 600
Ottawa, ON K2A 4H6

Chart of Secondary Statistical Accounts

The data related to workload and number of procedures is reported using the chart of secondary statistical accounts (account numbers 1 08 ** - Workload Units - Service Recipient Activities–Respiratory Services, 1 90 ** - Workload Unit - Non-Service Recipient Activities, and 4 68 ** - In-House Procedures–Respiratory Services.

Procedure Count

In order to standardize the recording and reporting of the number of procedures performed in respiratory services, the procedure count indicated in the schedule of procedures/activities should be recorded.

Special Recording Instructions

- If specific tests are carried out pre- and post-procedure, the appropriate unit value should be counted twice unless otherwise noted (e.g. spirometry pre and post bronchodilator).
- The unit values for some blood analysis include, where required, the calibration of the instrument, replicate analysis, and the use of nomograms to generate additional parameters. Quality control samples are not included in the unit values and should be recorded as specimens.
- The medical gas administration group represents those procedures for which medical gas is administered via a mask, cannula catheter, T-piece, oxyhood, croup, cystic mist, oxygen tent and isolettes. The procedure's unit values do not include cylinder set-up, if required.
- The cylinder use group of procedures (codes 3820 and/or 3830) should be claimed when a cylinder must be set up for the administration of medical gas (e.g. mask, tent, ventilator).
- Travel time is not included in the unit values. Travel is considered a non-service recipient activity and should be recorded separately.
- When multiple attempts are made to complete a procedure, e.g. five to six attempts to complete a flow volume loop procedure satisfactorily, the procedure count remains one.

Outline

The schedule of procedures/activities is organized in the following manner:
Service Recipient Activities

Diagnostics

Diagnostic Intervention

- Direct Lung Volumes
- Indirect Lung Volumes
- Pulmonary Mechanics
- Lung Diffusion Studies
- Inspired/Expired Gas Studies
- Exercise Studies
- Challenge Studies
- Bronchoscopy
- Sleep Studies
- Blood Procurement and Analysis
- Non-Invasive Monitoring
- Cardiac Testing

Therapeutics

Assessment

Therapeutic Intervention

- Auscultation
- Topical Pulmonary Chemotherapy
- Incentive Spirometry
- Sputum Induction
- Medical Gas Administration
- Lung Volume Recruitment

- Continuous Positive Airway Pressure (CPAP)
- Bi-level Positive Airway Pressure (BiPAP)
- Ventilator Management
- Artificial Airway Management
- Arrest Management
- Suction
- Service Recipient Transport
- Anesthesia
- Hemodynamic Monitoring
- Cardioversion/Pacemakers
- Thoracic Drainage
- Miscellaneous

Consultation/Collaboration

Non-Service Recipient Activities

- Functional Centre Activities
- Organizational/Professional
- Teaching/In-Service
- Research

Service Recipient Activities

Service recipient activities are unit-producing personnel activities that involve the delivery of services to or on behalf of a specific service recipient. These activities directly contribute to the fulfillment of the service mandate of the functional centre. In the respiratory services WMS, the service recipient activity workload categories are diagnostics and therapeutics. The following table provides a list of the procedures/activities performed within the various respiratory services functional centres.

Diagnostics - Diagnostic Intervention

Code	Procedure Name and Description	Procedure Count	Unit Value
Direct Lung Volumes			
1110	**Spirometry/Flow volume loops:** The measurement and calculation of any combination of FVC, VC, FEV.5, 1, 2, 3, PEFR, MMEFR, FEF 25-75, FEF 200-1200/ PIFR, FIF 25%,50%.	1	12
1112	**Lung subdivision:** Includes ERV, IC, IRV. Can include FRC.	1	10
1130	**Maximum voluntary ventilation:** Any single measurement or calculation of MVV or MBC	1	6

Code	Procedure Name and Description	Procedure Count	Unit Value
Indirect Lung Volumes			
1200	**Body plethysmography:** The measurement and calculation of any combination of ITGV, TLC, FRC, RV, RV/TLC%, Raw, Gaw, Carbon Monoxide diffusing Capacity - Single Breath.	1	Actual Time/ Standard Time
1210	**Helium dilution method:** Using a multiple breath dilution technique, this procedure includes the measurement and calculation of any combination of TLC, FRC, RV, RV/TLC%, VT, VE.	1	13
1220	**Nitrogen washout method:** Using a multiple breath technique, this procedure includes the measurement and calculation of any combination of TLC, FRC, RV, RV/TLC%, VT, VE.	1	17
Pulmonary Mechanics			
1310	**Maximum inspired/expired pressures:** The measurement of both max-inspired and max-expired pressures, including the calculation of predicted values.	1	Actual Time/ Standard Time
1320	**Peak flow/Peak cough:** Measurement of velocity of air being expelled from the lungs after a hard fast blow or spontaneous cough.	1	8
1322	**Shunt determination:** To determine the fraction of blood that traverses the pulmonary system without participation in gas exchange.	1	Actual Time/ Standard Time
1324	**Compliance - Static/Dynamic:** The measurement of lung compliance in a non-ventilated service recipient.	1	20
Lung Diffusion Studies			
1410	**Carbon monoxide diffusing capacity - Single breath:** The measurement and calculation of any combination of DLCO, VA, KCO.	1	12
1420	**Carbon monoxide diffusing capacity - Steady state:** The measurement and calculation of DLCO and/or any combination of VE, VT, and tidal and mixed expired CO2.	1	15

Code	Procedure Name and Description	Procedure Count	Unit Value
Inspired/Expired Gas Studies			
1520	**Deadspace/tidal volume (capnograph):** The measurement and calculation of VD/VT only, as a separate manoeuvre, not in conjunction with any other procedure. Includes sample procurement and analysis by capnograph.	1	12
1530	**Deadspace/tidal volume (blood gas analysis):** The measurement and calculation of VD/VT only, as a separate manoeuvre, not in conjunction with any other procedure. Includes sample procurement and analysis by Blood Gas Analysis.	1	17
1540	**Cardiac Output Non-invasive:** By gas inhalation - as a diagnostic measurement in the pulmonary lab. Includes set up, testing, calculation and reporting.	1	15
Exercise Studies			
1710	**Cardio-Pulmonary stress test:** Graded exercise to maximum tolerance exercise, includes continuous heart rate (ECG), BP, oximetry monitoring, and ventilation at rest and at each workload.	1	Actual Time/ Standard Time
1720	**Steady state exercise:** Repeated steady state graded exercise (should include heart rate, ventilation, VO2, VCO2, BP, ECG-12 lead, tidal and mixed venous CO2 at rest, and 3 levels of exercise and recovery) with the addition of calculations of VD/VT, VA, A-aDO2 diff., cardiac output, stroke volume and venous admixture using blood gas results obtained during the test. DOES NOT include arterial puncture or arterial blood gas analysis.	1	Actual Time/ Standard Time
1730	**Walk test:** Continuous monitoring and measurement of oxygen saturation using an oximeter in conjunction with a walk test, with the service recipient breathing room air or titrating supplemental oxygen. May or may not include measurement of HR, RR, and/or Borg Scale.	1	Actual Time/ Standard Time

Code	Procedure Name and Description	Procedure Count	Unit Value
1810	**Exercise induced asthma study:** Assessment of exercise induced asthma (workload sufficient to achieve heart rate 85% of predicted maximum); performance of spirometry or flow volume loops before and after exercise. Includes medication administration and Spirometry/FVL.	1	Actual Time/ Standard Time
Challenge Studies			
1820	**Non-specific bronchial provocation test:** Assessment of bronchial responsiveness using aerosol histamine, methylcholine, cold air or specific suspected environmental trigger. Includes baseline spirometry and post bronchodilator, spirometry after each dose of solution and calculation of PC2O and/or PD20**.**	1	Actual Time/ Standard Time
1822	**Allergy skin testing:** To determine service recipient's topical sensitivity to environmental allergens. Includes obtaining history, testing and documentation of results.	1	Actual Time/ Standard Time
1824	**Sweat chloride test:** Includes set-up, stimulation, collection and analysis of sweat.	1	15
Bronchoscopy			
1910	**Bronchoscopy (assistance):** Includes preparation of service recipient, set-up of equipment, ventilation (if required), monitoring (ECG and SaO2) and specimen collection and handling. Excludes cleaning of instruments.	1	Actual Time/ Standard Time
Sleep Studies			
1920	**Sleep study:** Obstructive, central, mixed apnea - Includes preparation of service recipient, equipment setup and, continual monitoring multi-channels, scoring and reporting.	1	Actual Time/ Standard Time
1922	**CPAP/BiPAP titration (Post Positive Sleep Study):** The titration of adequate levels of positive pressure to overcome obstructive apnea episodes post positive sleep study. Includes initial set-up of service recipient, multi-channel monitoring, adjustments, and reporting.	1	Actual Time/ Standard Time

Code	Procedure Name and Description	Procedure Count	Unit Value
1924	**Overnight oximetry - Set-up:** Assessment of service recipient's SaO2. Includes monitor set -up, set-up with or without oxygen, lead application and finger probe placement, adjustment of alarms. May included multi-channel recording.	1	Actual Time/ Standard Time
1926	**Completion of overnight oximetry:** Includes download, printing of report, review for artifact, discontinuation of oximetry. Does not include pickup.	1	Actual Time/ Standard Time

Blood Procurement and Analysis

2110	**Arterial puncture:** Includes preparation, specimen procurement and follow-up.	1	20
2120	**Arterial line sampling/venous sampling (indwelling):** Includes preparation and sampling from an indwelling line.	1	4
2130	**Capillary puncture:** Includes preparation and capillary sampling from ear, finger or heel sites.	1	20
2140	**Blood gas analysis:** Blood gas analysis on an analyzer that performs a variable number of other measured parameters such as electrolytes, hemoglobin, co-oximetry, etc.	1	6
2142	**Co-ox or INR analysis:** Co-ox or INR analysis on an analyzer that performs one or more measurements.	1	6
2144	**Venipuncture:** Includes venous puncture to obtain blood, including scalp veins in infants.	1	15

Non-Invasive Monitoring

2210	**Non-invasive monitoring - Set-up:** The set-up of equipment plus application of leads on service recipient for long term monitoring. Excludes oximetry and transcutaneous monitoring.	1	Actual Time/ Standard Time
2220	**Oximetry spot check:** One time measurement of Spo2 using finger/ear or other probe (includes validation of results).	1	5

Code	Procedure Name and Description	Procedure Count	Unit Value
2230	**Non-invasive monitoring - Check:** The regular monitoring of a service recipient and/or the non-invasive monitoring equipment.	1	3
2240	**Non-invasive monitoring - Lead or site change:** The relocation of monitor electrode to another body site. Includes calibration.	1	4
2250	**Non-invasive monitoring - Discontinue:** Discontinuation of monitoring, disassembly of equipment and assessment of service recipient.	1	4
2254	**O2 Analyzer set-up and check:** Includes set-up of equipment and analysis of environmental oxygen concentration.	1	5
2260	**Transcutaneous monitoring - Set-up:** The set-up of equipment and application of leads on service recipient.	1	8
2262	**Transcutaneous monitoring - Check:** The regular monitoring of a service recipient and/or the non-invasive monitoring equipment.	1	4
2264	**Transcutaneous monitoring - Lead or site change:** The relocation of monitor electrode to another body site. Includes calibration.	1	10
2266	**Transcutaneous monitoring - Discontinue:** Discontinuation of monitoring.	1	2
4280	**Indirect Calorimetry measurement and check:** The assessment of a service recipient's metabolic and caloric requirements or 02 cost of breathing. Includes set-up, checking and discontinuance of equipment (e.g., metabolic cart).	1	60
Cardiac Testing			
2310	**Electrocardiogram (12 lead):** Obtaining a tracing of a service recipient's ECG. Includes movement of the service recipient (if required), lead placement, recording, and documenting the procedure.	1	14
2320	**Holter monitor - Set-up:** The application of electrodes and leads to service recipient. Includes the verification of quality and lead placement by means of a printout or on a monitor.	1	20

Code	Procedure Name and Description	Procedure Count	Unit Value
2330	**Holter monitor - Read:** Includes scanning, reviewing and editing the tape.	1	Actual Time/ Standard Time
2340	**Holter monitor - Discontinue:** Does not include analysis.	1	10
1740	**Cardiac Stress Test:** Maximal exercise effort, using standard protocols (Bruce, Modified Bruce, Naughton, Post MI, etc.) on a bicycle or treadmill, for the evaluation of the cardiovascular system. A heart rate of greater than 85% of predicted maximum is required. Includes continuous 12 lead ECG and B/P monitoring before, during and up to 15 minutes after the exercise.	1	Actual Time/ Standard Time

Therapeutics - Assessment

Code	Procedure Name and Description	Procedure Count	Unit Value
3720	**Respiratory assessment:** A major evaluation of a service recipient's overall cardio-respiratory condition to determine or monitor treatment/condition. Includes respiratory history, pulse rate, respiratory rate, auscultation, oxygen saturation, service recipient condition, and the documentation of the related observations/data.	1	17
3010	**Comprehensive assessment:** Main Components of assessment could include the following: respiratory history, smoking history, chest assessment, vital signs, oximetry, review of medications, discuss sleep habits, discuss ventilator use (includes BiPAP, CPAP) if any, administer quality of life questionnaire.	1	Actual Time/ Standard Time
3015	**Swallow assessment:** Process that is implemented to identify and assess service recipients with dysphagia that will optimize nutrition, assess risk of aspiration and minimize the need for feeding tubes and artificial airways. Does not include videoscopy for visualizing, but does include tracheostomy cuff deflations, suctioning, both oral and tracheal and follow-up assessments at 5 and 15 minutes. (Note: include only time spent with service recipient).	1	Actual Time/ Standard Time

Code	Procedure Name and Description	Procedure Count	Unit Value
3020	**Follow-up or Discharge assessment:** Activities include respiratory assessment and repeat of questionnaires, as applicable.	1	Actual Time/ Standard Time

Therapeutics - Therapeutic Intervention

Code	Procedure	Procedure Count	Unit Value
Auscultation			
3105	**Auscultation:** The evaluation of service recipient breath sounds and documentation.	1	6
Topical Pulmonary Chemotherapy			
3110	**Aerosol/High Humidity treatment - RT in constant attendance:** Any therapy utilizing aerosol. Includes auscultation and physiologic monitoring.	1	19
3120	**Aerosol/High Humidity treatment - Start (RT only starts Rx):** Any therapy utilizing aerosol.	1	8
3130	**Aerosol/High Humidity treatment - Start/stop (RT starts and stops Rx):** Any therapy utilizing aerosol.	1	9
3140	**Aerosol/High Humidity Treatment - Check or Change:** A visit to monitor therapy and/or check/change equipment .	1	5
3160	**Medication dose inhaler - Instruction and administer:** Teaching and Instruction given to service recipient or significant other regarding the use and care of the inhaler. May include initial administration.	1	15
3165	**Medication dose inhaler - administration only:** The administration of medication by metered dose inhaler, turbuhaler, diskus etc. (Note: allows for up to 4 puffs per drug/per treatment).	1	4
Incentive Spirometry			
3210	**Incentive spirometry treatment - Start:** Any therapy utilizing Incentive Spirometry including instruction.	1	10

Code	Procedure	Procedure Count	Unit Value
3220	**Incentive spirometry treatment - Check or change:** A visit to monitor therapy or change.	1	5
Sputum Induction			
3310	**Sputum Induction:** Aerosol therapy session followed by spontaneous coughing or suction. Also includes specimen handling if required.	1	21
Medical Gas Administration			
3410	**Medical gas administration - Start:** Set-up equipment and initiate therapy. Includes oxygen, Heliox and Carbogen and Entonox therapy. Excludes Nitric Oxide.	1	11
3420	**Medical gas administration - Check or change:** A visit to monitor therapy and/or check/change settings.	1	5
3510	**Environmental Therapy - Start:** Includes set-up and initiate therapy for oxyhoods, croup, cystic, mist, oxygen tent and isolettes.	1	Actual Time/ Standard Time
3520	**Environmental therapy - Check or change:** A visit to monitor therapy and/or check/change equipment.	1	5
3820	**Oxygen concentrator/cylinder/liquid oxygen - Set-up:** The set-up of an oxygen concentrator, cylinder or liquid oxygen for a service recipient. Includes initial function check and the set-up of O2 therapy supplies. Includes portables.	1	8
3830	**Oxygen concentrator/cylinder/liquid oxygen - Check:** The routine function check of the supplies (i.e., filters, flow, etc.) to ensure proper operation of concentrator/liquid oxygen, or cylinder. Includes portables.	1	6
Lung Volume Recruitment			
3910	**Mechanical In-exsufflator (CoughAssist TM) set-up and initiate:** The delivery of positive pressure during inspiration, negative pressure during expiration to generate mechanical expiratory flow for secretion clearance. Includes set-up, explanation of procedure to service recipient and treatment.	1	40
3912	**Mechanical In-exsufflation treatment:** Non-invasive treatment to clear secretions including monitoring of O2 saturations, dyspnea and vital signs.	1	20
3914	**Mechanical In-exsufflation treatment check:** Observation of technique.	1	15

Code	Procedure	Procedure Count	Unit Value
3920	**Lung volume recruitment (LVR):** Breathstacking - For the purpose of improving chest range of motion, cough and prevention of atelectasis. May include LVR using a manual ventilation bag, a ventilator or glossopharyngeal breathing technique with or without abdominal thrust manoeuvre. Includes teaching and instruction and treatment to service recipient.	1	Actual Time/ Standard Time
3930	**Glossopharyngeal Breathing (GPB) technique instruction:** GPB also known as frog breathing using the mouth and throat to pump air into the lungs. Includes explanation of technique to service recipient.	1	Actual Time/ Standard Time
Continuous Positive Airway Pressure (CPAP)			
4110	**CPAP treatment - Initial Set-up and Start:** Includes initial set-up of equipment with service recipient and monitoring.	1	25
4120	**CPAP therapy - Monitor/Change parameters/Start/Stop Therapy and/or Check Equipment:** A visit to monitor therapy, change parameters, start therapy subsequent to initial set-up or stop therapy and/or check equipment.	1	10
4130	**CPAP therapy - Circuit change:** Initial monitoring after a circuit change, as well as disassembly of equipment.	1	14
4140	**CPAP therapy - Discontinue:** Discontinuing CPAP therapy from service recipient and disassembly of equipment. Includes monitoring of service recipient post discontinuation.	1	10
Bi-Level Positive Airway Pressure (BiPAP)			
4150	**BiPAP therapy - Initial Set-up and Start:** Includes initial set-up of equipment with service recipient and monitoring.	1	30
4160	**BiPAP therapy - Monitor/Change Parameters/Start/Stop Therapy and/or Check Equipment:** A visit to monitor therapy, change parameters, start or stop therapy and/or check equipment.	1	12
4170	**BiPAP therapy - Circuit Change:** The changing of a circuit and initial monitoring. Includes the disassembly of equipment.	1	14

Code	Procedure	Procedure Count	Unit Value
4180	**BiPAP therapy - Discontinue:** Discontinuing BiPAP Therapy from service recipient and disassembly of equipment. Includes monitoring of service recipient post discontinuation.	1	10
Ventilator Management			
4210	**Ventilator - Initial Set-up with Service Recipient and Start:** Includes initial setting of parameters, and monitoring of service recipient until stabilized.	1	23
4212	**High Frequency Ventilation -Initial Set-up with Service Recipient and Start:** Initial setting of parameters and monitoring of service recipient until stabilized.	1	45
4220	**Ventilator - Monitor/Change Parameters/Start/Stop Therapy and/or Check Equipment:** A visit to monitor therapy and/or change parameters, start therapy subsequent to initial set-up or stop therapy and/or check equipment.	1	9
4230	**Ventilator - Circuit change:** Initial monitoring after a circuit change, disassembly of equipment.	1	20
4250	**Ventilator - Discontinue:** Discontinue therapy from service recipient and disassembly of equipment.	1	10
4260	**Optimal/Best PEEP:** Conducting a series of tests (compliance, ABG's, BP, oximetry, etc.) to establish the optimal/Best PEEP on a ventilated service recipient.	1	Actual Time/ Standard Time
4270	**Resistance and compliance testing:** The manual measurement of the resistance and compliance of a ventilated service recipient. Includes all associated recording.	1	7
4290	**MDI - Ventilated service recipient:** The administration of medication by a metered dose inhaler to a ventilated service recipient. (Note: allows for 4 puffs per drug/per treatment.)	1	4
4292	**Surfactant administration:** Preparation of equipment and solution, evaluation of service recipient, administration and monitoring. Does not include measurement of tidal volumes.	1	Actual Time/ Standard Time

Code	Procedure	Procedure Count	Unit Value
4294	**Nitric Oxide Administration - Start:** Includes equipment set-up, calibration on service recipient, initiation of therapy and initial monitoring.	1	Actual Time/ Standard Time
4296	**Nitric Oxide Check/Change/Discontinue:** A visit to monitor therapy, check equipment, change parameters or discontinue therapy.	1	10
4630	**Continuous Respiratory Support/Monitoring:** When respiratory support (manual ventilation) or continuous monitoring/observation is required by a therapist. Includes all related procedures.	1	Actual Time/ Standard Time
Artificial Airway Management			
4310	**Tracheostomy tube change:** Includes necessary preparation and checks performed prior to the change, actual change (assist or performed), securement of tube, assessment of tube position and tracheobronchial toilet and monitoring of service recipient after a change.	1	32
4315	**Endotracheal tube care or repositioning:** Includes preparation of necessary equipment, assessment of service recipient, and the stabilization or repositioning, assessment of E-tube position, and suctioning as necessary.	1	16
4320	**Tracheostomy care:** Includes preparation of necessary supplies, assessment of service recipient, sterile technique for site cleaning, inner cannula care, suctioning and changing ties.	1	25
4325	**Tracheostomy Weaning:** The occlusion of the tracheostomy tube (corking/plugging), and /or pilot balloon deflation as part of weaning process from this artificial airway. Includes related pulmonary hygiene and initial monitoring. Also, includes decannulation. Excludes set-up of oxygen, humidity, etc.	1	15
4330	**Extubation:** Includes equipment preparation, set up of oxygen, extubation of service recipient, tracheal and oral hygiene, tube removal (assist or perform and monitoring post extubation.	1	20
4340	**Weaning parameters:** Set-up of equipment and assessment of service recipient's weaning parameters.	1	13

Code	Procedure	Procedure Count	Unit Value
4350	**Cuff pressure check:** The check of service recipient's cuff pressure. May include withdrawal of air from the cuff, infiltration of air, auscultation for leaks and recording. Does not include suctioning.	1	3
4360	**Endotracheal intubation:** Performing or assisting with the endotracheal intubation of a service recipient. Includes set-up of supplies, securing the tube, initial monitoring, and recording.	1	30
4370	**Apnea test:** Test to ensure the absence of spontaneous respirations.	1	15
4372	**Passy Muir Valve - Initiation:** Includes initial implementation of Passy Muir Valve including monitoring and suctioning.	1	Actual Time/ Standard Time
4374	**Passy Muir Valve Use and/or Care:** Includes monitoring and/or cleaning of Passy Muir Valve.	1	10
4376	**Transtracheal Catheter Change (Assist/Perform):** Equipment preparation and catheter change (assist or perform) including monitoring.	1	32
Arrest Management			
4420	**Arrest attendance:** Includes all activities performed by RT during arrest up until stabilization of service recipient. Does not include travel to the arrest.	1	Actual Time/ Standard Time
4422	**Trauma attendance:** Includes all activities performed during trauma up until stabilization of service recipient. Excludes ventilator set-up. Does not include travel to the trauma.	1	Actual Time/ Standard Time
4424	**High Risk, Infant Delivery (Assistance):** Includes all activities associated with assisting in high-risk infant delivery including set-up of equipment until stabilization of infant and transfer to Nursery/NICU. Includes CPR.	1	Actual Time/ Standard Time
Suction			
4510	**Tracheal/Oral/Nasogastric suction - Set-up:** Set-up of tracheal/oral/nasogastric suction equipment.	1	6
4512	**Nasogastric Tube Insertion:** Includes set-up of supplies, explanation of procedure and insertion of NG Tube.	1	8

Code	Procedure	Procedure Count	Unit Value
4525	**Suction Check:** A visit to monitor or check service recipient or suction equipment.	1	5
4530	**Tracheal/Oral suction treatment:** The removal of secretions using in-line or conventional suction techniques. May include manual ventilation as required.	1	9
4540	**Suction discontinue:** Discontinue and disassembly of equipment.	1	5
4550	**Endo-bronchial instillation:** Includes all suctioning. May include manual ventilation.	1	13
4560	**Chest Hygiene:** Assisted cough or postural drainage. May include suctioning.	1	Actual Time/ Standard Time
Service Recipient Transport			
4610	**Service Recipient transport (In-house):** In-house service recipient transport where therapy/monitoring is required by a therapist. Includes set-up and preparation.	1	Actual Time/ Standard Time
4620	**Service Recipient transport (External):** The transport outside the hospital where therapy/monitoring is provided by a therapist, e.g., hospital to hospital round trip in an ambulance. Includes set-up and preparation.	1	Actual Time/ Standard Time
Anesthesia			
4700	**Induction and/or intubation and ongoing monitoring of anesthetized service recipient and assisting anesthetist:** Includes regular verification of gas concentration, monitoring systems, equipment function and safety systems and effects on service recipient as well as assisting anesthetist. Includes all activities associated with service recipient.	1	Actual Time
4726	**Anesthesia gas machine concentration change:** Activities related to a change in gas concentration and associated ventilator changes (if required) as well as post-change monitoring.	1	Actual Time/ Standard Time
4727	**Anesthesia gas machine - Pre-Op Set-up and Check:** Includes initial set-up, checking of equipment and supplies and selection of initial settings.	1	8

Code	Procedure	Procedure Count	Unit Value
4728	**Anesthesia gas machine - Check/monitor:** Regular verification of gas concentration, effect on service recipient, equipment function and safety systems.	1	Actual Time/ Standard Time
4729	**Anesthesia gas machine - Discontinue:** Includes discontinuing treatment and disassembly of equipment, monitoring of service recipient, preparing service recipient for transfer and accompanying service recipient.	1	Actual Time/ Standard Time
4730	**Blood/fluid warming system - Set-up:** The set-up of IV solutions through a blood warmer. Excludes high volume warmers.	1	8
4732	**Blood/fluid warming system - Check:** Basic function check to ensure proper operation of equipment and checking service recipient.	1	3
4734	**Blood/fluid warming system - Discontinue:** Discontinuance of treatment and disassembly of blood warming system. Also includes assessment of service recipient.	1	8
4740	**Hypo-/Hyperthermia blanket - Set-up:** The set-up of warming and cooling blankets and initial monitoring.	1	7
4742	**Hypo-/Hyperthermia blanket - Check:** The checking or changing of water levels in the blanket. Also includes assessment of service recipient.	1	5
4744	**Hypo-/Hyperthermia blanket - Discontinue:** Discontinuance of treatment, disassembly of a hypo/hyperthermia blanket and the assessment of service recipient.	1	5
4750	**Malignant hyperthermia case - Set-up:** The set-up of the anesthetic machine and equipment, initial testing and monitoring to ensure proper function, assessment and monitoring of service recipient.	1	30
4755	**Malignant hyperthermia case - Discontinue:** Discontinuance of treatment and disassembly of all equipment associated with malignant hyperthermia case and the replacement of regular equipment.	1	17
4793	**Spinal Catheter Insertion (assist):** Assist anesthetist with various spinal procedures. Includes preparation of tray and service recipient.	1	30
4794	**Isovolemic hemodilution:** Establishing a second IV to take off blood during surgery, and volume replacement with Pentaspan/crystalloid.	1	20

Code	Procedure	Procedure Count	Unit Value
4796	**Blood Patch (Assist):** Assist anesthesia with procedure. Includes set-up of equipment, preparation of service recipient and post procedure monitoring.	1	25
4798	**Latex Allergy Case Set-Up:** Includes set-up and preparation of equipment and service recipient.	1	18
Hemodynamic Monitoring			
4810	**Arterial line - Set-up:** The set-up of an arterial line and insertion tray.	1	8
4812	**Arterial line - Insertion (Assist):** Performing or assisting the physician with the insertion of an arterial line, the securing and flushing of the line, zeroing the transducer, and initial monitoring.	1	18
4814	**Arterial line - Monitoring:** Monitoring arterial line pressures, observing waveforms as well as taking and recording readings.	1	3
4816	**Arterial line - Discontinue:** Discontinuance of an arterial line and disassembly of equipment. Includes application of pressure and monitoring of site.	1	15
4818	**Suturing:** Suture to secure a cannula that is in a place.	1	30
4820	**CVP line - Set-up:** The set-up of CVP pressure monitoring kit for transducing CVP readings. Includes set-up of preparation trays. (Note: For multi-lumen set-ups, claim IV set-up for each additional line.	1	10
4822	**CVP line - Insertion (assist):** Assisting physician with the insertion of a central venous line, the securing of the line, and initial monitoring of central venous pressure measurement.	1	18
4824	**CVP line - Monitoring:** Monitoring central venous pressures. Includes observing waveforms as well as taking and recording readings.	1	3
4826	**CVP line - Discontinue:** Discontinuance of CVP line and disassembly of equipment. Includes monitoring of service recipient.	1	15
4828	**Injection:** Includes administering a substance by injection: intravascular, intramuscular, intradermal or sub-cutaneous.	1	8

Code	Procedure	Procedure Count	Unit Value
4830	**IV line - Set-up:** Includes the set-up of the IV line and solution by the therapists/technician. Does not include insertion.	1	5
4832	**IV line - Insertion:** Insertion of an IV including securing the line and the initial monitoring.	1	6
4834	**IV line - Discontinue:** Discontinuance of the IV line and disassembly of equipment.	1	5
4840	**Pulmonary artery catheter (Swan-Ganz) - Set-up:** The set-up of a pulmonary artery catheter (e.g., Swan-Ganz), preparation tray and transducers.	1	17
4842	**Pulmonary artery catheter - Insertion (assist):** Assisting the physician with the insertion of a thermodilution catheter, zeroing the transducer, flushing and securing the lines and initial monitoring.	1	30
4844	**Pulmonary artery catheter - Monitor:** Monitor the set-up to ensure proper operation and to measure/record appropriate readings including wedge pressures.	1	13
4846	**Pulmonary artery catheter - Discontinue:** Discontinuation of pulmonary artery catheter and disassembly of equipment.	1	5
4900	**Cardiac output measurement:** Calculation of cardiac output by thermodilution method to obtain any combination of CI, SV, SVR, PVR, and related indexes. Does not include obtaining a PAWP, CVP, or mean BP.	1	10
Cardioversion/Pacemakers			
4910	**Cardioversion (Assist):** Includes preparation of service recipient and equipment, ventilation (if required) and monitoring (ECG and SaO2).	1	Actual Time/ Standard Time
4912	**Pacemaker Insertion (Assist):** Includes preparation of service recipient and equipment, ventilation (if required), and monitoring (ECG and SaO2).	1	Actual Time/ Standard Time
4914	**Pacemaker Check:** Utilization of a pacemaker programmer to verify by magnetism, all pacemaker parameters and perform diagnostic testing under the supervision of a cardiologist.	1	15

Code	Procedure	Procedure Count	Unit Value
Thoracic Drainage			
4920	**Chest tube insertion Set-up:** Includes the set-up of equipment and supplies for chest tube insertion.	1	12
4922	**Chest tube insertion (Assist):** Preparation of service recipient for chest tube insertion and assisting with procedure. Includes monitoring service recipient.	1	20
4924	**Chest tube removal (Assist):** Preparation of service recipient for chest tube removal and assisting with procedure. Includes monitoring service recipient.	1	10
4926	**Thoracentesis (Assist):** Service Recipient and equipment preparation, continual monitoring, specimen collection and handling. Sterile tray set-up and draping.	1	Actual Time/ Standard Time
4928	**Chest needle (Assist):** Includes assisting with insertion, aspiration, reposition and removal of a chest needle.	1	14
Miscellaneous			
3740	**Service Recipient Teaching/Education/Emotional Support:** The activities associated with counselling of inpatient/resident/client, or groups of inpatients/residents/clients concerning treatment, related disease state and equipment. Also includes emotional support provided. Excludes instruction provided to service recipient when explaining procedure.	0	Actual Time/ Standard Time
4952	**Assist Other Health Professional:** Activities include unplanned assistance provided to another health professional excluding respiratory therapists (e.g., assisting a nurse in positioning a service recipient).	0	Actual Time/ Standard Time

Consultation/Collaboration

Code	Procedure	Procedure Count	Unit Value
3750	**Professional Consultation:** Discussions with other health care professionals regarding the cardiorespiratory care of service recipients.	0	Actual Time/ Standard Time

5010	**Staff change report:** Reporting between service providers regarding service recipient care, plans, progress, etc.	0	Actual Time/ Standard Time
5012	**Service Rounds/Team Conferences:** Participating in organized inpatient/resident/client-specific discussions during walking or sit-down rounds or conferences, as a member of a multidisciplinary team to evaluate and optimize inpatient/resident/client care.	0	Actual Time/ Standard Time

Non-Service Recipient Activities

Non-service recipient activities are unit-producing personnel activities that are integral to the functional centre's operations, but do not involve the delivery of services to service recipients. There are four non-service recipient activity workload categories - functional centre activities, organizational/professional activities, teaching/in-service and research. The following table lists the types of activities that are typically considered non-service recipient activities.

Functional Centre Activities

Code	Activity	Procedure Count	Unit Value
9010	**Functional Centre Management:** Includes housekeeping/clerical activities; organizing; orienting personnel; recording and calculating workload and other statistical data; non-clinical documentation; compiling data for reports and management purposes; management activities related to discipline specific activity; development of discipline specific service programs, and participation in quality improvement activities.	0	Actual Time/ Standard Time
9020	**Employee Meetings:** Includes formal and informal meetings of functional centre staff for the purpose of disseminating and receiving information pertaining to the operation of the functional centre and the organization.	0	Actual Time/ Standard Time
9030	**Caseload Management:** Includes, but not limited to prioritization and assignment of service recipients within a caseload.	0	Actual Time/ Standard Time
9040	**Maintenance:** Includes, but not limited to activities such as maintaining a safe, tidy environment, activities related to maintenance of equipment and inventory control.	0	Actual Time/ Standard Time

9070	**Quality Management:** Includes time spent attending quality management meetings; performing and documenting activities that improve the quality of services delivered commensurate with functional centre policy and industry standards.	0	Actual Time/ Standard Time
9080	**Travel:** Includes internal and external travel associated with the functional centre activities listed above as well as travel associated with the provision of services to specific service recipients within the organization or in their home. Also includes portering of service recipients when performed by functional centre staff and travel associated with removal of equipment.	0	Actual Time/ Standard Time

Organizational/Professional Activities

Code	Activity	Procedure Count	Unit Value
9130	**Board/Committee Functions:** Activities performed during worked hours relating to the preparation, attendance and follow-up of health service organization board/committee functions.	0	Actual Time/ Standard Time
9140	**Program Management:** Management activities related to multidisciplinary programs(s) and program management activities related to the organization as a whole.	0	Actual Time/ Standard Time
9150	**Public Relations:** Activities directly associated with the public relations function of the health service organization. Includes, but not limited to, planning, meetings and participation in the event, e.g., Media interviews, information programs, preparing articles.	0	Actual Time/ Standard Time
9160	**Advocacy-Professional Activities:** Includes services provided to the professional, scientific and local communities, agencies and service groups during worked hours.	0	Actual Time/ Standard Time
9180	**Travel:** Includes any travel associated with organizational/professional activities.	0	Actual Time/ Standard Time

Teaching/In-Service

Code	Activity	Procedure Count	Unit Value
9210	**In-Service Education:** Includes receiving brief, usually in-house educational information presented by health service organization staff, orientation to new procedures or equipment, grand rounds, and reading of professional articles, journals and books.	0	
9220	**Teaching of Students:** Activities associated with the preparation, orientation, instruction, supervision and/or evaluation of students either prior to, during, or immediately following their clinical placements. Excluded are service recipient related activities performed during the course of teaching. This type of activity is recorded under the appropriate service recipient activity category.	0	
9230	**Teaching of Professionals:** Activities involved in the preparation, orientation, presentation and/or instruction of health service organization personnel.	0	
9240	**Academic Teaching:** Activities involved in the preparation and presentation of course/lecture material to students, evaluation of students as part of their academic curriculum.	0	
9250	**Travel:** Includes travel associated with any of the above.	0	

Research

Research Project:

Formally designed and approved clinical investigations directed toward advancing knowledge in the field of health, and delivery of health services using recognized methodologies and procedures. All activities performed during worked hours such as reviewing previous research, writing research proposals, compiling and analyzing data and report writing are included. Excluded are service recipient activities, which are provided as part of the research program. These activities are recorded in the appropriate category under service recipient activities.

Code	Activity	Procedure Count	Unit Value
9310	**Project 1**	0	
9320	**Project 2**	0	
9340	**Travel:** Includes any internal or external travel associated with research activities.	0	

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