Medical Imaging

Development

In 1977, the Federal-Provincial Steering Committee on Workload Measurement Systems invited the Canadian Association of Radiologists (CAR) and the Canadian Association of Medical Radiation Technologists (CAMRT) to form a working group responsible for the design, development and implementation of a workload measurement system (WMS) for Radiology. The Working Group received assistance from Health and Welfare Canada through a National Health Research and Development Program grant. The first published WMS for Diagnostic Imaging was released in 1982/83. Revisions to the original draft have been made over the years as new imaging modalities and technologies were introduced.

In April 1990, the MIS Project and the National Hospital Productivity Improvement Program (NHPIP) merged to create the MIS Group. In February 1994, the MIS Group became one of the four founding organizations of the Canadian Institute for Health Information (CIHI). CIHI assumed the responsibility for the ongoing development and maintenance of national workload measurement systems and their reporting frameworks at that time. Whenever revisions to the diagnostic imaging WMS have been undertaken, a number of representatives from the professional associations and individuals active in their profession have been involved.

The WMS for diagnostic imaging was redeveloped April 2002. In April 2003 the Diagnostic Imaging Schedule of Unit Values-Addendum for Specialty Pediatric Facilities was added. Since that time, due to significant technology changes and changes in practice, a complete review of the WMS was undertaken in 2009. These revisions for the renamed medical imaging WMS came into effect April 1, 2011. CIHI gratefully acknowledges the valuable contribution made by the members of the Diagnostic Imaging Advisory Working Group who contributed considerable time and expertise in the revision of the current medical imaging WMS.

In 2009, CIHI committed to the goal that workload units and descriptors should be kept up to date with scientific advances. To that end, CIHI surveyed medical imaging professionals in the field to obtain suggested improvements to the schedule of unit values of the MIS Standards 2013. A new survey was again widely disseminated to medical imaging professionals in the field in early 2015. Based upon this feedback, suggested improvements to the MI schedule of unit values were made, for implementation April 1, 2016. CIHI gratefully acknowledges the valuable contribution made by the medical imaging professionals who responded to the 2015 survey and contributed their time and expertise in providing valuable survey feedback. This WMS for medical imaging

reflects their advice and replaces any previous editions of WMS for diagnostic imaging or medical imaging WMS published by CIHI.

The Medical Imaging WMS

Introduction

A workload measurement system is defined as a tool for measuring the volume of activity provided by a specific functional centre in terms of a standardized unit of time. In the Introduction to this chapter and the Overview of the WMS, key points of the WMS are discussed.

The medical imaging WMS applies to these functional centres:

- General Radiography
- Mammography
- Interventional Radiology
- Computed Tomography
- Ultrasound
- Nuclear Medicine
- Cardiac Catheterization Diagnostic Services
- Positron Emission Tomography/Computed Tomography (PET/CT)
- Magnetic Resonance Imaging
- Multi-Functional Medical Imaging

Categories of Workload

The medical imaging WMS classifies workload data (i.e. workload units) into two categories:

- Service Recipient Activities
- Non-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.

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.

Classification of Workload Activities

Service recipient activities in medical imaging are all classified as:

- Diagnostic/Therapeutic Intervention

Non-service recipient activities are further classified into these four activity categories:

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

The conceptual model, as shown below, illustrates the workload and activity categories, and provides examples of the component activities.

Medical Imaging Conceptual Model

SERVICE RECIPIENT ACTIVITIES	NON-SERVICE RECIPIENT ACTIVITIES			
Diagnostic/Therapeutic Intervention	Functional Centre Activities	Organizational/ Professional Activities	Teaching/ In-Service	
Initial Handling/Set-Up Service Recipient Preparation/Instructions Diagnostic/Therapeutic Activities • Assessment (Pre & Post Exam Monitoring) • Administration of Radiopharmaceuticals, Contrast Media and Medications • Service Recipient Care Activities • MRSA/VRE/Latex Activities • Catheterization • Image Acquisition • Image Processing/ Post Processing Image Quality Assessment Service Recipient Assistance Clean Up Clinical Documentation	Functional Centre Management (includes program 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 Professional Activities Advocacy - Professional Program Management Travel	Students Professionals Academic In-service Education Travel	Pr Pr Tra

**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.*

The specific component activities listed under the activity categories are provided as examples only. Users who wish to record and report workload at this level are encouraged to identify and define the activities standard to their profession and/or that are reflective of the service activities of their functional centre.

Who Records Workload

The medical imaging WMS is intended for the unit-producing personnel of the functional centre. Unit-producing personnel are those personnel whose primary function is to carry out activities that directly contribute to the fulfillment of the service mandate. Examples of medical imaging unit-producing personnel include medical radiation technologists and diagnostic medical sonographers. Throughout this chapter, these persons are referred to as the technical staff. The diagnostic/therapeutic interventions performed by this broad occupational group are reflected in this WMS.

The medical imaging WMS is not intended to be used by management and operational support personnel (e.g. directors, managers, secretaries, clerks, clerical, darkroom technician, film librarian) or medical personnel (e.g. radiologists) unless they perform activities typically associated with the unit-producing personnel of the functional centre.

Unit-producing staff assigned to multidisciplinary teams or programs should record their workload and other statistics using the WMS/statistical standards for their discipline. The data collected should be recorded in a separate functional centre account that has been established by the manager and the individual responsible for the implementation of the MIS Standards in the health service organization. For example, those organizations that have nurses working in medical imaging functional centres such as interventional radiology and cardiac catheterization diagnostic services should collect costs, workload and other statistics separately from those that relate to the technical staff and then report this data under the applicable Medical Imaging Nursing (71 4 05 15) functional centres.

Medical radiation technologists or diagnostic medical sonographers working in functional centres other than medical imaging (e.g. Cardiac Catheterization Laboratory Specialty Day/Night Care - 71 3 40 37), should continue to use the medical imaging WMS to record and report their workload and other statistics.

For more detailed information click on broad occupational groups, categorization of personnel, students, categorization of hours, and functional centre accounts.

When Workload is Collected

As previously mentioned, all unit-producing personnel collect workload data. This should be done during all earned hours that are classified as worked (for example, regular, overtime, callback) or as purchased hours. When the latter is the case, a unit-producing person hired by the health service organization to carry out the mandate of the functional centre would record workload in the same manner as an employee of the organization.

Workload is not collected during benefit hours. An example of benefit hours is paid attendance at an external conference or a continuing education session.

Medical Imaging billing practices are highly variable across Canadian regions, provinces and territories; therefore radiologists' billing schedules are not a consideration of nor are they incorporated into the Medical Imaging WMS.

Service Recipients

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 and their significant others, and others as defined by the health service organization.

Workload and other statistics such as service activity should be recorded based on the category and type of service recipient that is appropriate at the time that the services are provided. The complete category of service recipient list is as follows:

- Inpatient
- Client Hospital
- Referred-In
- Resident
- Facility/Organization/Citizen Partnership
- Service Recipient, Not Uniquely Identified
- Client Community
- Client Home Care

The types of service recipient that are used in conjunction with these categories and for a particular functional centre vary depending on the mandate of the functional centre as defined in the glossary of terms, and thus the service recipient for which it is providing services at the time.

To view the categories and types of service recipient that would most often be applicable for all of the statistics collected by medical imaging, click on workload units and to read about data collection considerations, click here.

As mentioned above, significant others are also considered service recipients if they are acting on behalf, or in the interest of the service recipient (e.g. a parent, spouse/partner, child, legal guardian or substitute decision maker). Excluded in this definition are nurses, aides, ministers, teachers, or health service personnel. For example, when service recipient activities are provided to a significant other (e.g. spouse, mother) on behalf of a service recipient, the associated workload units and other statistics would be assigned to this service recipient. For example, it is suspected that a three-year-old client hospital–emergency has a broken leg. If the service provider explains to the parent how the exam will be performed, the workload units associated with this counselling activity would be assigned to the service recipient.

Non-service recipient activities are not collected by category and type of service recipient.

Note:

In all cases, it is important that the definitions of each category and type of service recipient be adhered to. If an occasion presents itself whereby a category and type of service recipient is required in order to report the functional centre's statistics accurately but it is not found on its "workload category and type of service recipient list", please contact fsi@cihi.ca for direction.
For further information on collecting statistics by category and type of service recipient, including a phased-in implementation approach and examples of how the data should be collected, click here.
To learn more about the uses of data reported by category and type of service recipient, click on determining the cost of providing services to a particular category and type of service recipient, identifying the direct costs of a particular type of service across the continuum, calculating an inpatient acute care cost for a standard hospital stay (CSHS), and relating financial and clinical data sets.

Time Recording Methodologies

The medical imaging WMS conceptual model has been designed to provide a method for recording the time spent on service recipient and non-service recipient activities.
The purpose of a workload measurement system is to track the time, in minutes, that unit-producing personnel spend performing the activities/tasks that fulfill the mandate of the functional centre. The time being tracked should be reflective of all service recipient and non-service recipient activities performed by the unit-producing personnel of the specific functional centre and be collected in a consistent manner. If the time is not reflective of the work, performance indicators will not be accurate and comparative reporting will be compromised.
For example, CIHI publishes an average unit value in the medical imaging WMS that states that it should take 21 minutes to perform a diagnostic mammography, bilateral—up to 4 projections (includes the initial handling/setup, service recipient preparation/instructions, diagnostic/therapeutic activities, service recipient assistance, clean up and clinical documentation). Your hospital performed this activity 100 times in the month. A time study revealed that at this organization the activity took an average of 25 minutes instead. If the 21 minute time is used by this functional centre, it would differ by 400 minutes of workload in the month. This alone will affect indicators like unit-producing personnel worked productivity and workload units per unit-producing personnel FTE.
The following describes various ways to collect the amount of time spent performing the activities of a functional centre in the most accurate way possible. The method employed will vary from functional centre to functional centre, from organization to organization, and from one type of workload being collected to another. For example, a standard time may work well for recording time associated with a specific service recipient workload activity that is performed frequently and for which no average unit value has been published. On the other

hand, actual time recording may be the methodology to record non-service recipient activities. All methods described may be appropriate for the medical imaging WMS.

The unit of measure for all recording methodologies is the workload unit, where one workload unit is equal to one minute of unit-producing personnel time spent performing service recipient and non-service recipient activities of the functional centre.

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 exams, time blocks of 5 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.

The following steps are integral to this methodology:

1. Prepare a time block schedule as follows:

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.	

2. Develop a time block recording system whereby all unit-producing personnel would refer to their watch when they have completed an activity.

The appropriate number of time blocks would be recorded to reflect this. For example, if Mary Smith attended a functional centre meeting for 50 minutes, she would record five time blocks under the non-service recipient functional centre activity category.

3. At the end of the reporting period, all time blocks are converted to minutes by multiplying the sum of the time blocks in a particular workload activity category by ten to determine the workload units. For example, if 10 activities with a time block of 6 were collected and 20 activities with a time block of 5, then the total workload in minutes is (10 activities x 6 time blocks x 10 minutes = 600) + (20 activities x 5 time blocks x 10 minutes = 1000) = 1600 minutes or 1600 workload units.

Average Time Recording

The average time recording methodology uses specific unit values that have been assigned to activities, based on time studies undertaken at a national level across a sample of Canadian health care organizations of varying size and type. The average times applicable to medical imaging are included in the schedule of unit values in this chapter. The published unit values represent the average number of minutes of personnel time that it takes to complete a defined activity once. At the end of the reporting period, the unit values are multiplied by the number of times this activity was performed to arrive at the 'total workload units per activity'. The sum of all activity totals yields the total number of minutes of unit-producing personnel time spent in the performance of service recipient activities where the average time methodology is used.

Average time is the national average of the time it takes to complete the identified medical imaging exams in the Schedule of Unit Values when performed by the average service provider for the average service recipient in average circumstances. If the published average time is not reflective of the time necessary to perform the exam by the unit-producing personnel at your site, a time study should be conducted to develop standard times using the protocol set out in the MIS Standards. In these circumstances, organizations are encouraged to submit their time study results to CIHI at fsi@cihi.ca for review and consideration for inclusion in the Schedule of Unit Values.

Average time values, developed through time studies, should be considered as "points of reference" rather than absolute measures of the time required to perform an activity.

Standard Time Recording

If average times are not reflective of the work performed by the unit-producing personnel in a specific functional centre, medical imaging may choose to use standard time for collecting workload data as an alternative to using the average time recording methodology. Standard times are assigned to activities performed by the staff of the functional centre, where each standard time represents the functional centre's average time to perform the exam for the average service recipient by the average service provider under average circumstances.

Standard times are site-specific averages and therefore reflect the style of practice and the environment in which the service is provided. A health service organization may wish to conduct a concurrent evaluation to determine the appropriateness of the standard times if there is any concern that the standard times may be inaccurate or if an operational or technological change has occurred. Organizations should review/revise their standard times at least annually to ensure ongoing reliability and validity of the data collected.
The following steps should be followed when implementing the WMS using standard time recording methodology:

1. Develop a Functional Centre Master Activity Profile

- Identify all exams/activities performed by the unit-producing personnel of the functional centre.
- Describe the tasks included in each of the defined exams/activities.
- Group each exam/activity into the appropriate workload category—service recipient activities and non-service recipient activities.

2. Develop Standard Times

- Include initial handling/set-up, service recipient preparation/instructions, diagnostic/therapeutic activities, service recipient assistance, clean-up and clinical documentation time in the standard time for exams.
- Develop a standard time for each defined exam/activity. Standard times can be developed using a variety of methods including but not limited to:
    - Work sampling: In work sampling, random observations are made of service providers to determine the ratio or percentage of time an activity occurs within a given time period.
    - Activity time studies: Time studies measure the time required by a service provider to perform a given exam following a specified method under typical working conditions.
    - Consensus approach: Expert opinion within the health service organization is used to determine standard times by consensus.
    - Published standards: Published time values can be used by health service organizations to develop their standard times.
    - Proprietary workload measurement systems: Time values developed by various proprietary systems can be employed by health service organizations to develop their standard times.
    - Combination of several methods: Standard times can be developed using a combination of methodologies such as those described above.

3. Develop a Workload Recording System

- List the exams/activities identified in Step 1 and their corresponding standard times.
- Develop a recording system (manual or computerized) which allows for a tally of exams/activities, categorized by workload or activity category, and by category and type of service recipient (e.g. inpatient, client

hospital–emergency, client hospital–diagnostic and therapeutic services and referred-in).

Implementing the Medical Imaging WMS

Introduction

A large part of the effort required to implement the workload measurement system is exerted only once, representing the "customizing" of the WMS at the outset to reflect the functional centre operations as accurately as possible. The steps for implementation are outlined below:

1. Develop a Functional Centre Master Activity Profile

- Identify all the functional centres (e.g. CT, MRI, etc.) within the medical imaging department by referring to the outline of the schedule of unit values.
- Identify the specific exams/activities performed within each functional centre by reviewing the pertinent sections of the schedule of unit values. Many will correspond to physician billing, while others will represent activities performed only by the technologists.
- Construct an activity profile based on activities listed in the schedule of unit values for each service recipient and non-service recipient activity delivered by each functional centre and record the item for count.
- Group each activity into the appropriate workload category—service recipient activities and non-service recipient activities and then by appropriate activity category.

2. Develop (Functional Centre-Specific) Unit Value Aggregates

- Simplify the recording of workload in a functional centre by aggregating activities as much as possible using the workload units found in the schedule of unit values. Three examples of methods that could be used are provided below.
  - Aggregating Activities in General Radiography

    An excerpt from the schedule of unit values indicates that 15 workload units (minutes) are required on average to perform a "routine x-ray of the skull, 1- 3 projections". Ten (10) additional workload units per projection are collected if extra ones are requested or required.

    For example, if a health service organization decides that a routine skull x-ray always requires five projections according to their protocol, code GR105 and GR195 would be recorded in their master activity profile as an aggregated 35 workload units.

Code	Exam/Activity	Unit Value
GR105	Skull (1-3 projections)	15

GR195	Two (2) additional projections (each additional projection is 10)	20
	Total Workload Units (15 + 20)	**35**

- Aggregating Activities in Interventional Radiology
  The following examples illustrate how to develop unit value aggregates for vascular therapeutic exams under various circumstances as the exam preparation and corresponding workload units are only recorded once per service recipient where one or more exam (s) is/are done.

Code	Exam/Activity	Unit Value
IR371	Placement of Venous Catheter- permanent or tunnelled May include hemodialysis line or other venous catheter. Count only if workload is performed by unit-producing personnel.	75
IR385	Removal of Venous Catheter	25
	Total Workload Units (75 + 25)	**100**

Additionally, for some exams, such as angioplasty, an additional exam with its corresponding workload units is recorded for each additional lesion.

Code	Exam/Activity	Unit Value
IR305	Angioplasty (for the first lesion)	100
IR306	Angioplasty, subsequent lesions	20
	Total Workload Units (100 + 20)	**120**

For other exams, such as embolization of a neurological vessel, an additional exam with its corresponding workload units is recorded for each additional vessel.

Code	Exam/Activity	Unit Value
IR310	Embolization of a neurological vessel-non-coil (includes cranial, spinal) non-coil and all associated imaging, pre- and post-processing	140

IR310	Additional embolization of a neurological vessel	140
	Total Workload Units (140 + 140)	**280**

3. Develop In-House Standard Time Values

- For some exams in the schedule of unit values (e.g. Miscellaneous Therapy, exam in nuclear medicine, Code NM750 - esoteric or new therapies), either actual or standard time may be used to develop the workload units. When in-house standard time values are derived, the time study data or other documentation should be retained for future reference by the functional centre.
  In the long run, the calculation of standard times will save recording time by reducing the time spent performing ongoing actual time recording.
  In-house average values are organization-specific and represent the average number of minutes to perform the defined exam once for the average service recipient by the average service provider under average circumstances.
- Where standard time values are applicable, they should be derived by using the fields of observation provided in the section on "conducting a time study".
  Capturing data in the discrete fields of observation initially, as opposed to timing one large block of activity, may reduce the effort required to keep time unit values current. This is because the time spent on activities in some fields may change due to technology (e.g. image acquisition time), while the time for other fields, such as service recipient initial handling/set-up, may remain fairly constant. As well, with all users using the same fields of observation for developing standard time values, some uniformity will be built into the workload measurement approach, even though undertaken by different health service organizations.
- For non-service recipient activities, standard time derivation per activity (e.g. staff meetings under functional centre activities) may reduce the time recording effort. If time spent can be reasonably estimated, a standard time value can be derived and applied when the activity takes place. This can then be added to the workload summary record.

4. Develop a Workload Recording System

- From the master activity profile developed for each functional centre identified in Step 1, develop a recording system (manual or computerized) that allows for the tally of activities categorized by workload category, activity category, and by category of service recipient.

Each functional centre should also record service activity statistics (i.e. the number of in-house exams and if desired, attendance days - face-to-face or visits - face-to-face).
For those exams with pre-assigned unit values, the recording system should allow the tally of workload and service activity statistics by category and type of service recipient (e.g. inpatient, client hospital–emergency, client hospital–diagnostic and therapeutic services and referred-in).

- Medical imaging functional centres may also want to capture an additional level of detail to analyze when, how and what services are provided (i.e. by shift, by degree of urgency, by body site, etc.) and for which type of service recipient. Use digits 6 and 7 of the statistical account code to create a number to record the data.

A workload summary should contain summary data in terms of both workload and corresponding service recipient activity statistics.

Click here to see Sample Recording Form for Workload/Service Activity Statistics

Click here to see Sample Recording Form for Exam Count by Degree of Urgency

Click here to see Sample Recording Form for Attendance Days - Face-to-Face

Click here to see Sample Recording Form for Visits - Face-to-Face

- A recording form should also be developed for non-service recipient activities. The following example is provided below.

Click here to see Sample Recording Form for Non-Service Recipient Activities by Functional Centre

The records of service recipient workload should be maintained separate from non-service recipient workload for reporting purposes.

- Medical imaging departments may also wish to develop a workload summary form to record the collective service recipient and non-service recipient workload (and corresponding service activity statistics) for the entire medical imaging department. An example of a recording form is provided below.

Click here to see Medical Imaging Workload Summary

Conducting a Time Study

As previously mentioned, one of the ways to develop a standard time is to conduct a time study within a particular functional centre. The goal of this is to determine the average time it takes the average service provider to perform a particular activity for the average service recipient under average circumstances.

Time studies should be conducted when activities that are being performed in the functional centre do not currently exist in the schedule of unit values, or when an assigned value or the tasks within the activity significantly differs from that in the schedule of unit values. A standardized timing protocol has been developed to promote flexibility and adaptability of unit values to a variety of settings and accurately reflect resource requirements. The timing protocol is also intended to provide a consistent approach to performing time studies.

In the medical imaging workload measurement system discussed in this chapter, service recipient activities are typically assigned a unit value. Non-service recipient activities on the other hand, are usually recorded using the actual-time methodology. By definition, the unit value for an activity is equivalent to the number of minutes of unit-producing personnel time required to complete the activity once.

Note: Activities, which are typically performed by clerical/secretarial staff, darkroom technicians, film librarians or physicians, are excluded from time studies. Examples include appointment booking and service recipient registration and order entry. Waiting time and non-service recipient activities such as teaching, in-service education, administrative duties (e.g. scheduling, purchasing, research and development, etc.) are also not included in time studies.

Therefore, to determine the unit value for an activity, time studies must be conducted in a routine setting to measure the amount of time required to perform all tasks that are part of that activity.

When performing time studies, the following fields of observation are typically measured where applicable:

- Initial Handling/Set-Up
- Service Recipient Preparation/Instructions
- Diagnostic/Therapeutic Activities
- Service Recipient Assistance
- Clean Up
- Clinical Documentation

The accuracy of the unit value for an exam will depend on identifying and measuring all the activities that occur as part of the exam. Further, the

assignment of the unit value must reflect the average time it takes the average service provider to perform the activity for the average service recipient under average circumstances.

NOTE: Waiting time should never be included in time studies. For example, if staff must wait for another health service provider to complete their tasks before the MRT can carry out the exam, the waiting time should not be included.

Steps in Conducting a Time Study

A single individual (surveyor) who is knowledgeable about the activity would conduct the time study as follows:

1. Observe the exam to be studied. Identify and note each step to be timed including initial handling/set-up, service recipient preparation/instructions, diagnostic/therapeutic activities, service recipient assistance, clean up and clinical documentation time prior to performing the actual timings.
2. Prepare the necessary forms to record the times for each activity. The sample recording form may be modified to meet your organization's requirements.
3. Measure the time spent by unit-producing personnel to perform the exam using a stopwatch or other suitable timer.
4. Time different personnel performing all tasks within the activity on different days of the week and at different times. Include productive time only—exclude waiting time or other unproductive time.
5. Time all steps as many times as required (the number of timings will depend on the time variability of each step). If the times vary markedly, perform additional timings. If an activity is rarely performed, it is acceptable to complete and document a timing only once.
6. Group activities consistently when conducting timings where activities are being grouped.
7. Average the time values by dividing the total time by the number of timings to determine the time to perform that exam once.
8. Record the average value in all systems that rely on this information to assign the workload units for a particular exam.
9. File all documentation related to the time study for future reference.
10. Re-conduct a time study on a regular basis to maintain the validity of the time value. These should be done when there is a consensus among the staff that the time does not reflect current practice, when the functional centre begins providing service to different types of individuals/organizations, when new workload data collection processes are implemented, or when the workload measurement systems in the MIS Standards are revised.
11. Submit the completed time study to CIHI for exams not currently in the schedule of unit values or exams where time requires revision. The time study will be considered for inclusion in the next revision of the medical

imaging WMS. An example of a time study that has been conducted is provided. (e.g. diagnostic mammography, bilateral (up to 4 projections) (Click here for the example).

Activities Included in Time Study Where Applicable

Initial Handling/Set Up

Includes reviewing the requisitions for completeness and appropriateness, entering information/demographic data into a computer system when done routinely as part of an exam, and adding service recipient identification to images.

Includes setting up the equipment prior to the exam, preparing the examination room, preparing the equipment and materials for the service recipient and the room for aseptic techniques.

NOTE: Only include the time spent by medical radiation technologists or diagnostic medical sonographers doing the technical component of the exam.

Activities

- Review of requisition
- Enter information/demographic data into a computer system interfaced/integrated with imaging equipment
- Add service recipient identification to images
- Set-up equipment prior to exam
- Prepare examining room
- Prepare equipment and materials for the service recipient
- Prepare room for aseptic techniques

Service Recipient Preparation/Instructions

Includes activities associated with assessing the service recipient's status (e.g. vital signs, history, etc.) prior to the exam, educating the service recipient (e.g. breast self exam, post-exam care such as diet, activity levels, signs/symptoms to watch for), consulting and reviewing the chart, explaining the exam, ensuring the consent for treatment is complete and preparing and positioning the service recipient.

Activities

- Assess the service recipient’s status
- Educate service recipient
- Consult and review the chart
- Explain exam
- Ensure the consent for treatment is complete
- Prepare and position the service recipient

Diagnostic/Therapeutic Activities

Includes the actual exam itself as well as monitoring or taking the service recipient's vital signs during and following the exam, establishing venous access, administering radiopharmaceuticals and/or contrast media, or other therapeutic medications, (including injectables), maintaining oxygen therapy, preparing the service recipient for transport and conducting activities related to the care of the service recipient.

Includes assisting a radiologist or other specialist in the performance of the exam.

Includes the manipulation, acquisition, processing, and quality assessment of the images.

Activities

- Perform assessment (pre and post exam monitoring)
- Administer radiopharmaceuticals, contrast media and medications
- Perform service recipient care activities
- Perform MRSA/VRE/Latex activities
- Participate in catheterization activities
- Acquire image
- Process image
- Perform image quality assessment
- Image processing/ Post processing

  (Definition: The processing of 3D digital imaging data, following the original examination, to reconstruct and then generate traditional radiological projection(s). This digital manipulation occurs following the encounter with the service recipient therefore there is no subsequent radiological exam required.) This activity may be collected when using existing data to create retrospective projections of another anatomical part(s), when an additional scan is not necessary.

Service Recipient Assistance

Includes assisting a service recipient to and from the waiting area to the bed/stretcher/wheelchair.

Includes assisting other health care providers with any preparation related to transferring the service recipient back to their originating functional centre or health service organization. Excludes portering activities.

Activities

- Assist service recipient to and from waiting area to bed/ stretcher/wheelchair

- Assist other health care providers in preparing the service recipient for transport

Cleanup

Includes clean up of the work area, decontamination procedures and disassembly of equipment where necessary.

Activities

- Clean up work area
- Perform decontamination procedures
- Disassemble equipment

Clinical Documentation

Includes documenting of service recipient and exam-related information, processing of images and/or data after the exam, inserting tracings or other documentation into the service recipient's file, performing any calculations or interpretation of data, and performing picture archiving activities.

Excludes processing of billing information, image filing, report typing and handling, and film library requests.

Activities

- Document service recipient and exam-related information
- Process images and/or data post exam
- Insert tracings or other documentation into the service recipient’s file
- Perform calculations or interpretation of data
- Perform picture archiving activities

Time Study Recording Form

Exam:

_____

Short description (i.e. main activities):

_____

_____

_____

_____

_____

ACTIVITIES	Minutes to complete activities Service Recipient									
	1	2	3	4	5	6	7	8	9	10
Initial Handling/Setup • Review of requisition • Enter information/demographic data										

into a computer system interfaced/integrated with imaging equipment • Add service recipient identification to images • Set-up equipment prior to exam • Prepare examining room • Prepare equipment and materials for the service recipient • Prepare room for aseptic techniques										
Service Recipient Preparation / Instructions • Assess the service recipient's status • Educate service recipient • Consult and review the chart • Explain exam • Ensure the consent for treatment is complete • Prepare and position the service recipient										
Diagnostic/Therapeutic Activities • Perform assessment (pre and post exam monitoring) • Administer radiopharmaceuticals, contrast media and medications • Perform service recipient care activities • Perform MRSA/VRE/Latex activities • Participate in catheterization activities • Acquire image • Process image/post processing • Perform image quality assessment										
Service Recipient Assistance • Assist service recipient to and from waiting area to bed/ stretcher/wheelchair • Assist other health care providers in preparing the service recipient for										

transport										
Cleanup • Clean up work area • Perform decontamination procedures • Disassemble equipment										
Clinical Documentation • Chart service recipient and exam-related information • Process images and/or data post exam • Insert tracings or other documentation into the service recipient's file • Perform calculations or interpretation of data • Perform picture archiving activities										
Total Minutes for Each Timing										

Recording Workload

The medical imaging workload measurement system allows for the collection and reporting of workload units and service activity statistics in a manner that is consistent with functional centre and service recipient reporting.
The following include recording standards that should be used when unit-producing personnel are recording workload units:

- Using the Conceptual Model
  All functional centre workload data should be recorded as service recipient and non-service recipient activities in order to have a comprehensive picture of the staff's activity. Users are encouraged to record workload data at the activity category level or the component activity level, where appropriate.
- Service Recipient Activities
  Service recipient workload activities are collected in the functional centre (i.e. general radiography, mammography, etc.) where the work is performed by category and type of service recipient (e.g. inpatient, client hospital–emergency, client hospital–diagnostic and therapeutic services and referred-in).

- Non-Service Recipient Activities
  Non-service recipient activities are not collected by category and type of service recipient.
- Service Recipient–Specific Recording
  Service recipient recording should be used when it is desirable to track workload data on a service recipient-specific basis for service recipient reporting. For medical imaging this recording option, using the workload + costing methodology, is particularly useful for resource allocation and planning purposes and for grouping data according to program, case mix group, etc.

Service Activity Statistics

Introduction

Service activity statistics are captured by functional centres providing services directly to service recipients. They describe and identify the volume of activities, which are provided to or on behalf of service recipients.

Service activity statistics supplement workload data in providing valuable management information on the resources required in the provision of specific services. Service activity statistics are intended to be used with the corresponding workload data to measure functional centre productivity and the resource consumption of specific service activities. They can also be used with functional centre statistics to cost service recipient activity. The same category and type of service recipient should be used for service activity statistics as for workload units so as to identify the resource consumption of specific categories of service recipients.

The following service activity statistics are intended to be collected by medical imaging, where appropriate, by category and type of service recipient:

- In-House Exams - Diagnostic/Therapeutic
- Attendance Days - Face-to-Face (Optional)
- Visits - Face-to-Face (Optional)

Recording Service Activity Statistics

Successful implementation of the medical imaging WMS may support the collection and reporting of service activity statistics as well as workload data required for functional centre and service recipient reporting.

The same category and type of service recipient (e.g. inpatient, client hospital–emergency, client hospital–diagnostic and therapeutic services and referred-in) should be used for service activity statistics as for workload units in order to identify the resource consumption of each group.

The following recording standards have been developed to facilitate consistent collection of the following statistical data by the unit-producing personnel of the functional centre:

- In-House Exams - Diagnostic/Therapeutic
  In-house exams reflect the volume of activities that are provided to or on behalf of specific service recipients. All activities have been given an exam count in the schedule of unit values.
- Attendance Days - Face-to-Face
  Attendance days reflect the volume of activities that are provided to or on behalf of specific service recipients in a particular day. This is an optional service activity statistic for medical imaging to collect.
  Only one attendance day should be recorded for each service recipient, per calendar day, by each functional centre even though the service recipient may have received services several times during the day from different service providers of that functional centre. For example, if an inpatient–acute had a CT scan at 1000 hours and another at 1300 hours, only one attendance day would be recorded for the CT functional centre.
- If a service recipient changes category and type during a calendar day and receives a therapeutic service under each, one attendance day under each should be recorded. For example, an inpatient–acute, who is assigned a bed on the medical unit, has an exam at 1000 hours. At 1200 hours he is discharged from this unit and admitted to a designated rehabilitation unit. Another exam is provided at 1400 hours so on that day one attendance day for inpatient–acute and another for inpatient–rehabilitation would be recorded for the functional centre.

Note: An attendance day should be recorded each time services are provided. At the end of the day, duplicate recording should be eliminated to ensure only one attendance day is recorded per calendar day under each category and type of service recipient.

- Visits - Face-to-Face
  Visits reflect the occasions on which services are provided to or on behalf of specific service recipients. This is an optional service activity statistic for medical imaging to collect.
  The total number of visits should be recorded for each service recipient, by each functional centre. If the service recipient received services several times during the day from different service providers of that functional centre a visit is recorded each time. For example, if an inpatient–acute had a CT scan at 1000 hours and another at 1300 hours, two visits would be recorded for the CT functional centre.
  Just as was the case described above under the recording of attendance days, if a service recipient changes category and type during a calendar day, the visits should be recorded based on the applicable category and type of service recipient at that time that the services were received.

Reliability and Validity

Reliability refers to the degree of consistency with which an instrument measures the attribute it is intended to measure. Interrater reliability is the degree to which data obtained by one individual agrees with the data obtained by another using the same instrument tool. It is important that different individuals using the same measurement tool, measuring the same activity at the same time will derive a consistent result. The more reliable a measurement tool, the more you can depend upon the results to guide actions and decision-making.

Validity refers to the extent to which a tool measures what it is intended to measure. The term refers to the appropriateness, meaningfulness and usefulness of the measurement tool.

It is important to note that the integrity of the data reported is the responsibility of the individual user. It is strongly recommended that users of the WMS implement a monitoring program to ensure ongoing reliability and validity of the data they are collecting.

Specifically, a monitoring program should ensure that the:

- workload measurement system reflects the activities of the functional centre;
- times assigned to the activities are in accordance with the MIS Standards unit values when an average-time recording methodology is used if they are considered to be accurate as to the time required to complete an activity; or
- times reflect current practice when a standard or actual-time recording method is used; and
- data collection process is standardized and consistent over time.

The following points should be considered when developing and implementing a monitoring program for the WMS:

- Workload measurement data collection processes and performance expectations must be incorporated into:
  - staff orientation programs;
  - job descriptions of all unit-producing personnel; and
  - performance evaluations and reviews.
- Maintenance of workload measurement systems requires:
  - formal annual review by functional centre staff;
  - review when changes in category of service recipients and/or in the data collection process are implemented, and when revisions are made to the MIS Standards;
  - ongoing in-service education; and
  - regular reliability testing.

Criteria for Selecting a WMS Information System

With the creation of the WMS and reporting framework, it may be difficult to determine whether a particular system provides users with all the elements

necessary for an effective and useful management tool. An outline of the major functional specifications for a medical imaging service is provided in Appendix 1 of the MIS Standards.

To assist with this, a list of criteria has been developed to serve as a guide for users. It represents system components, which are the most critical to the effectiveness of a system, and to the use of the system in conjunction with the MIS Standards.

The degree of modification required by systems used in health service organizations wishing to implement the MIS Standards will depend on the degree to which the system complies with the following criteria:

- The system should be easy to use, and flexible enough to allow modification to include organization and functional centre philosophies, goals and standards, as well as provincial/territorial and national standards.
- Each component of the system used to determine service needs should have a value, which specifically identifies the workload, associated with delivering service to specific service recipients.
- The system should address the distribution of the workload over the length of time of operation of the functional centre (i.e. 8, 12, 16 or 24 hours).
- The management information module should permit the extraction of data to support the preparation of budgets, and planning and control at all levels of management.
- The system should be structured to allow periodic selective revision and updating without major revision of the database.
- The methodology of the system should be readily available to users and the development process should be reliable and valid.
- The system should be flexible enough to allow development of a format to meet the specific requirements of health/clinical specialties.
- The information module should permit the extraction of data for categories of work by occupational class, if required.

Optional/Additional Criteria

In addition to meeting existing WMS criteria, future investment in system development should be targeted toward combined methodologies for determining both service recipient requirements for service and the cost of service. Those future systems should meet the following criteria:

- Be a value added by-product of the documentation methodology
- Be linked to the information systems of the health service organization
- Have the capability to reflect complexity and skill mix
- Be fully automated

Schedule of Unit Values

Note: Before reviewing the Schedule of Unit Values for Medical Imaging, the entire WMS document should be read.

Introduction

The schedule of unit values provides users with a comprehensive list of exams/activities performed in medical imaging. Each activity is assigned a three-digit code between 100 and 900 which is preceded by a two-letter acronym for the exam modality (e.g. NM for nuclear medicine). There is no requirement for an MI functional centre to change their code numbering system and add in the prefix of GR, US or other numonic unless it is useful to do this. Whatever codes are adopted, they are for internal purposes only. They identify specific exams and ensure that the exams, their counts and workload units are reported accurately and according to the current version of the MIS Standards.

These codes are accompanied by a brief description and the average unit value and the item for count, which are used as the basis to collect the workload and service activity statistics of the various functional centres. Each unit value incorporates all activities listed in the conceptual model for the Medical Imaging WMS for service recipient and for non-service recipient activity. This data is then reported using the chart of secondary statistical accounts (account numbers 1 07 ** - Workload Units - Service Recipient Activities - Diagnostic/Therapeutic, 1 90 ** - Workload Unit - Non-Service Recipient Activities and 4 57 ** - In-House Exams - Diagnostic/Therapeutic).

The unit values related to exams that are published in this section represent the average number of minutes required of the unit-producing service provider (e.g. medical radiation technologist, diagnostic medical sonographer) to perform all the steps needed to complete a defined exam once for the average service recipient under average circumstances. Case acuity variables are included in the average time workload unit value. The exception to the average service recipient statement are special needs service recipients for whom additional workload can be captured. Example: count extra workload using codes MI930 or MI931, and/or MI940 or MI941, and/or MI945 and/or MI970. In order to compare productivity and provide a mechanism for planning and decision-making, exam counts have been standardized and are provided in the schedule of unit values.

This workload measurement system assesses the average output per exam for similar functions and work performed in various facilities across Canada and takes into consideration workflow, technical protocols and resource utilization. Effort has been made with this update to provide clarity with regards to exam counts and terminology in order to provide managers with a sensitive decision-support tool. Where there are differences in productivity between similar facilities, an opportunity for consultation, reflection and application of best practices arises.

Any activity in the schedule of unit values can be utilized by any medical imaging functional centre if the unit value is accurate and reflective of the realistic average time required to perform a specified activity. Therefore, workload listed in various medical imaging modalities can be captured in any other medical imaging functional centre, if applicable, however these codes are only listed once, in the modality for which that it is most often used.
Where the exam typically requires more than one technologist to complete it, the published unit value reflects the total workload units for all of the technologists that are expected to be involved in performing that exam.
The established average values included in the schedule of unit values were developed taking into consideration various technologies, age of equipment and various types of practice and practice settings (e.g. ambulatory clinic, acute care hospital). The average unit value is inclusive for all the above except where additional unit values are specified.

If the published average time value for an exam is not reflective of the time spent in performing this activity at a particular health service organization (e.g. pediatric, special needs, geriatric, psychiatric), a standard time should be developed for the exam. A standardized timing protocol—conducting a time study has been developed to assist users when establishing the standard time.

If an exam is not listed in the schedule of unit values, users should establish a standard time using the standardized timing protocol and submit the information to CIHI using the Assignment of Unit Values Request Form (Click here for the form).

TBD unit values

Some activities show a workload unit value as TBD. This means that the average workload unit is yet “To Be Determined” as there were no time studies or expert opinions available at the time of publication. If an organization would like to assist in determining a unit value for one of these activities, they are encouraged to perform a time study and submit the data to CIHI for review by a working group as part of the next revision cycle.
For unit values related to quality control (QC) and equipment maintenance, refer to the non-service recipient activity functional centre activities category.

Items for Count

For the purposes of recording medical imaging workload, users should refer to the definitions of the items for count provided in this section. The item for count for service recipient activities is "exam" whereas; the item for count for non-service recipient activities may be occurrence, round trip, day, week or activity.

Exam

A defined technical investigation using an imaging modality to study one body structure, system or anatomical area that yields one or more projections for diagnostic and/or therapeutic purposes. Exceptions include routinely ordered multiple body structures that by common practice or protocol are counted as one exam (e.g. GR230 Skeletal Survey (1-13 projections)). Includes multiple projections (AP and lateral) of any site.
An exam is considered 'bilateral' if both extremities are imaged using the same exposure and the exam count is one. However, if the projections of bilateral extremities (e.g. AP, LAT and Oblique) cannot be imaged using the same exposure, or if both extremities (e.g. left and right hand) were imaged unilaterally for other reasons (e.g. comparison imaging), count as two exams.
When a service recipient undergoes additional imaging by other modalities, an additional defined exam is also counted, as applicable. For example, count workload and 1 exam for a GR140 and add the workload and 1 exam for US215. Another example is when the service recipient undergoes an unenhanced CT head (CT105) and is brought to IR suite for IR310 embolization of an aneurysm; count one exam for each MI modality (one exam for CT105 plus one exam for IR310).

Occurrence

An event or incident that happens or takes place at an instance or point in time.

Round Trip

Travel from the medical imaging functional centre to a remote/distant/satellite site, and the return trip.

Day

The period of 24 hours from 0001 hours to 2400 hours.

Week

The period of seven consecutive days from Sunday to Saturday inclusive.

Activity

Performing a specific function or duty.

General Information and Recording Instructions – Service Recipient Activities

The general information and recording instructions below apply to all sections of the medical imaging schedule of unit values. Some modalities have additional information and recording instructions that are specific to them.
Exams that are listed by modality are grouped for ease of reference. Codes listed in a modality are not mutually exclusive from other modalities. They can be used by any modality provided the exam count and unit values are reflective of the workload associated with the particular exam and an equivalent exam is not already listed in the modality and also that it is reported in the functional centre where the work took place.

There are some codes that are applicable to many modalities or even more than one section in one modality; however these codes are generally only listed once, in the modality for which that it is most often used.

• Activities for Which Additional Workload Units are Recorded

There are certain activities listed in the schedule of unit values that list workload units without exam counts. These activities when performed in conjunction with medical imaging exams/activities by unit-producing personnel (UPP) of the medical imaging functional centres require the recording of workload units in addition to the workload units for that particular exam without an exam count. These additional units are listed in various sections of the schedule of unit values as well as in the miscellaneous section. For those activities listed in the miscellaneous section of the schedule of unit values, the workload units are recorded and reported in the functional centre where that activity is performed. These activities and corresponding workload units are recorded using the same category and type of service recipient as that of the exam.

• Examinations Performed Outside the Department

Under certain circumstances, the medical radiation technologist/diagnostic medical sonographer must leave the medical imaging functional centre/department to perform an exam. The following service recipient workload units are added once per service recipient for each occasion during which services are delivered:

- Portables: When exams are performed on a nursing unit (e.g. nursery, emergency, intensive care), and additional time is required to set-up the portable machine and assist the service recipient, the additional workload units are recorded using code MI900.

- Operating Room: When exams are performed in the operating room or similar sterile environment and additional time is required to prepare the portable machine and to don gown/mask or glove etc., set-up equipment, etc, prior to entering the operating room, the additional workload units are recorded using code MI910.

- Isolation (e.g. MRSA/VRE, Latex allergy): When exams are performed when service recipients are in isolation and additional time is required to don gown/mask or glove etc., set-up equipment, or to clean the imaging equipment/suite post exam, etc, the additional workload units are recorded using code MI920.

•Failed Exams

For an attempted failed exam record the same number of units and exam count as a successful exam using the same exam code. The published workload units

are derived from average time methodology and it is anticipated that the number of failed exams are relatively few; therefore the net effect on the average time is not material and the workload units are calculated accordingly.

• **Preliminary or Delayed Images**

No extra workload units are assigned unless specified in the schedule of unit values for that modality. Delayed images are considered to be part of the original exam unless otherwise specified in the exam definition. Nuclear Medicine exams often involved delayed imaging therefore in the Nuclear Medicine modality, each exam definition specifies the exact number of delayed images, or assumes a maximum of two delayed images if unspecified in the exam definition.

• **Additional Projections**

Unless specified in the description, each exam is considered routine and includes all projections. For projections taken, in addition to the standard protocol, as specified in the exam definition, record additional workload units and a zero exam count as indicated in the schedule of unit values. For digital imaging, when digital images are acquired, reviewed by the physician and, while the technologist remains at the bedside, and a request is made to repeat the imaging, count one exam only. This scenario would be considered as multiple projections for one exam. Examples might include imaging associated with NG tube insertion or a fractured extremity that might require further manipulation. If the MRT has completed the exam and later another digital imaging is requested, count this as a second exam.

• **Non-adult Age Groups**

Additional workload can be counted for non-adult service recipients (e.g. pediatric, child, neonatal). See one of codes MI931, MI935, MI940, MI941, and/or MI 945, or MI970 for more detail.

- Pediatric/Child service recipients are defined as “>28 days of age to locally defined maximum age”. Generally the maximum age can range from 16-17 years.
- Neonate service recipients are defined as “from birth to 28 days of age”.

• **Conscious Sedation or General Anesthetic**

For service recipients who require extra assistance or monitoring because they have been given conscious sedation or a general anesthetic: record additional workload units. For conscious sedation (Adults): code MI930 with 10 workload units. For conscious sedation (Child): code MI931 with 20 workload units. For a general anaesthetic (Adult and Child): code MI935 with 30 workload units. These workload units are recorded for only direct service recipient care by unit-producing personnel (medical radiation technologists and diagnostic medical sonographers) and are not to be collected for waiting time.

• **Immobilization**

For time spent when unit-producing personnel provide assistance with immobilization of pediatric or special needs service recipients (e.g. pediatric,

neonate, combative, psychotic, severe morbid obesity, or confused service recipients). These additional workload units are recorded using one of codes MI940 or MI941.

• **Transfer**

For time spent when unit-producing personnel provide assistance with mechanical lift and/or transfer devices onto and/or off of the imaging equipment. These additional workload units are recorded using code MI945.

• **Fluoroscopy**

For exams performed by fluoroscopy, an extra workload unit value is added, excepting Interventional Radiology where fluoroscopy time is already integrated into the published unit values. For all other imaging modalities, unless specified in the exam definition, the unit value may be added for each fluoroscopic adjustment required, counted in 10 minute increments, such that the total time performing fluoroscopy is consistent with the total workload units. This includes fluoroscopy using a C-arm or O-arm. Note that the total workload units do NOT include any waiting time. If inclusion of fluoroscopy is not specified in the exam definition (except for Interventional Radiology), add workload for fluoroscopy using code MI955 from the Miscellaneous section of the schedule of unit values.

• **Post Processing Reconstruction**

The average time for post processing reconstruction (PPR) is 20 workload units that are integrated into the schedule of unit values as a component activity for all medical imaging modalities except for Nuclear Medicine and MRI. Nuclear Medicine is assigned 30 minutes for the average time for post processing reconstruction component activity. MRI post processing times are quite variable; therefore these values are not integrated into the MRI schedule of unit values. The PPR workload is captured instead using code MR105 in increments of time. To capture workload units greater than the average time already integrated for each modality, use code MI950 for additional post processing workload. If the images are reconstructed through computer automation with no hands-on technical intervention, workload units are not captured as no unit-producing personnel (UPP) hands-on time is involved.

• **Tomography**

For exams that regularly include tomography as a component (e.g. IVP), the unit value includes this component activity. For exams that do not regularly include tomography, use actual time methodology for the workload units and add to the exam time value. These additional units should be reported under code MI960 as service recipient activity, Miscellaneous. If tomography is performed in the absence of a preliminary x-ray, use code GR925. Advanced tomography

technology is captured using code GR910, an exam designated for volume radiology tomography technology.

• Counselling service recipient including guardians, parents or significant others

For unusually extended amounts of time spent by unit-producing personnel providing information, counselling or support to the service recipient, including their guardians, parents or significant others. Routine counselling activities such as providing education and preparation instructions are component activities that are integral to every medical imaging exam. The additional workload units that are recorded using code MI970 provides 15 workload units and a zero exam count. This code may be used in aggregation with other codes MI940 or MI941 for pediatric, geriatric, and/or any special needs service recipients and/or MI945. Code MI970 is intended for collecting workload for unusually extended counselling activities.

The breast navigator (post-mammography) consultation role counts as additional workload only in the mammography modality only. This is due to higher intensity counselling required in this functional centre and can be referenced at code MM250. As always, workload can be counted only if performed by unit-producing personnel.

• IV Fluid Administration

For exams that require IV fluid administration; includes provision of IV fluids for hydration, prevention of nephrotoxicity or other adverse effects of contrast or other radiopharmaceuticals, or for other physiologic requirements such as full bladder, maintenance of cardiac output or fluid challenges. These incremental additional units should be reported under MI980 as service recipient activity, Miscellaneous.

General Information and Recording Instructions – Non-Service Recipient Activities

• Travel time

In addition to each of the above, non-service recipient workload units are collected for travel with or without the portable machine to and from the service recipient. Record actual or standard time using code 2280 Travel.

• Copy/Digitizing Images

When the copying or digitizing of images is done separately from the routine exam, 10 workload units are added per exam. These additional units should be reported under code 2286 as non-service recipient activities.

Counting Exams

All exams described in the schedule of unit values have been given an exam count. Each corresponding unit value represents the total workload units for the number of exams shown.

The following examples are provided for clarification:

1. Code CT107 in computed tomography represents the exam Head, combined non-enhanced and enhanced- includes:

   a. brain,

   b. orbits,

   c. sella turcica,

   d. IAC and/or posterior fossa,

   e. facial bones,

   f. sinuses,

   g. nasopharynx

One exam includes any combination of anatomical parts listed (Usually the service recipient is not repositioned). Record 1 exam and 29 workload units.

2. Code US830 in ultrasound represents the exam "Hips bilateral". Report 1 exams and 30 workload units.

3. Code IR565 in interventional radiology represents an activity called “Cryosurgery/Radiofrequency ablation/ Thermoablation”. Report an exam count of zero and 62 workload units.

Outline of the Schedule of Unit Values

The schedule of unit values is organized in the following manner:

Service Recipient Activities	**Code Series**
Diagnostic/Therapeutic Intervention	
General Radiography	GR100-GR999
- Head	GR100-GR199
- Spine	GR200-GR299
- Shoulder Girdle and Upper Extremities	GR300-GR399
- Pelvic Girdle and Lower Extremities	GR400-GR499
- Thoracic Cage and Contents	GR500-GR599
- Gastro-intestinal (G.I.) Tract	GR600-GR699
- Genito-urinary (G.U.) Tract	GR700-GR799
- Bone Mineral Density	GR800-GR899
Mammography	
MM100-MM999	
-Screening Mammography	
MM100-MM199	
- Diagnostic Mammography	
MM200-MM299	
Interventional Radiology	IR100-IR999

- Vascular Diagnostic – Arterial	IR200-IR299
- Vascular Therapeutic	IR300-IR499
- Non-Vascular Interventional	IR500-IR699
Computed Tomography	CT100-CT999
- Head	CT100-CT199
- Neck and Spine	CT200-CT299
- Chest, Abdomen and Pelvis	CT300-CT399
- Extremities	CT400-CT499
- Miscellaneous	CT500-CT599
Ultrasound	US100-US999
- General	US100-US199
- Abdominal Ultrasound (Includes Non-Obstetrical Pelvis)	US200-US299
- Echocardiography Ultrasound (Fetal, Pediatric, Adult)	US300-US399
- Obstetrical Ultrasound	US400-US499
- Ophthalmic Ultrasound	US500-US599
- Neurological Ultrasound	US600-US699
- Vascular Ultrasound	US700-US799
- Small Parts Ultrasound	US800-US899
- Miscellaneous	US900-US999
Nuclear Medicine	NM100-NM999
- General	NM100-NM199
- Bone	NM200-NM299
- Lung	NM300-NM329
- Cardiovascular	NM330-NM399
- Circulatory/Lymphatic	NM400-NM419
- Endocrine	NM420-NM499
- Central Nervous	NM500-NM549
- Kidney	NM550-NM599
- Soft Tissue	NM600-NM699
- Gastro-Intestinal	NM700-NM799
- Miscellaneous General Imaging	NM800-NM809
Therapeutic	NM810-NM899
- Non-Imaging	NM900-NM999
Positron Emission Tomography/Computed Tomography (PET/CT)	PT100-PT999
Cardiac Catheterization Diagnostic Services	CC100-CC999
Magnetic Resonance Imaging	MR100-MR999
Miscellaneous	MI900-MI999
Non-Service Recipient Activities	**Code Series**
Functional Centre Activities	2201-2300
Organizational/Professional Activities	2301-2400

Teaching/In-Service	2401-2500
Research	2501-2600

The detailed schedule of unit values is as follows:

Service Recipient Activities—Diagnostic/Therapeutic Intervention

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 medical imaging WMS, the service recipient activity category is diagnostic therapeutic intervention.

The following table provides a list of the exams/activities performed within the various medical imaging functional centres.

General Radiography

General Information and Recording Instructions for General Radiography

1. Any activity in the schedule of unit values can be utilized by any medical imaging functional centre if the unit value is accurate and reflective of the realistic average time required to perform a specified activity. Therefore, workload listed in various medical imaging modalities can be captured in any other medical imaging functional centre, if applicable; however these codes are only listed once, in the modality for which that it is most often used.

2. The average time for post processing reconstruction for General Radiography is 20 workload units that are integrated into the schedule of unit values. To capture workload units greater than the average time already integrated into the unit value (e.g. beyond 20 minutes for General Radiography), see code MI950 for additional post processing workload. If the images are reconstructed through computer automation with no hands-on technical intervention, workload units are not captured as no unit-producing personnel (UPP) hands-on time is involved.

3. Please see Items for Count for the definition of “exam” in Medical Imaging WMS.

4. An exam is considered ‘bilateral’ if both extremities are imaged using the same exposure – the exam count is one. However, if the projections of bilateral extremities (e.g. AP, LAT and Oblique) cannot be imaged using the same exposure, or if both extremities (e.g. left and right hand) were imaged unilaterally for other reasons (e.g. comparison imaging), count as two exams.

5. Fluoroscopy averages 7 workload units and is integral to certain general radiography exams where specified. Where fluoroscopy time exceeds 7 minutes, use code MI955 to capture this workload as directed.

6. On average CR (computed radiology) technology, (e.g. using an imaging plate/cassette) takes 5 minutes longer than DR (direct radiology) technology. In this case, use GR930 to capture the extra workload associated with CR technology. If the functional centre's technology is mixed between CR and DR technology, perform a time study to calculate the proportion of CR to DR exams, to add on a proportion of GR930 workload units.

An audit of the average number of CR exams (GR930) performed in a certain timespan (day, week etc) can be used to determine the additional workload units to include. For example, assume that an audit of "CR (computed radiology) technology, using an imaging plate/cassette." (Code GR930) is undertaken, and an organization determines that 150 exams are performed on a weekly basis of which 40% of the exams are CR, and 60% are from DR instrumentation. Using this audit the additional weekly workload for CR exams can then be calculated as follows:

Total weekly workload for all General Radiography exams = 150 exams (based on weekly audit results)

CR technology = 40 % of all exams

40% of 150 exams = 6

40% of exams (60 exams) x 5 units (code GR930):

60 x 5 units (minutes) = 300 units

Important to note: When using weekly values, it is important to re-evaluate the percentages used on a regular basis or when the service changes significantly.

7. The component activities within the conceptual model for medical imaging include exam preparation activities, amongst other activities including room preparation, initial handling/set-up, cleanup, service recipient assessment (pre & post exam monitoring), consent and instructions, IV insertion, administration of radiopharmaceuticals, contrast media and/or medications etc.. Please refer to the Medical Imaging Conceptual Model for a list of component activities. Note: this workload applies only to medical radiation technologist unit-producing personnel in the medical imaging functional centre. To count additional workload for the administration of IV fluids, see code MI980.

General Radiography - Schedule of Unit Values

Code	Exam/Activity	Unit Value	Exam Count
	Head		
GR105	Skull (1-3 projections)	15	1

Code	Exam/Activity	Unit Value	Exam Count
	Also count workload for GR195 for additional projections >3		
GR110	Special Skull. Includes any one of: a) Internal auditory canal, both sides b) zygomatic arches c) sella turcica d) optic foramina e) mastoids (bilateral 1-6 projections)* f) orbits for foreign body localization g) temporo-mandibular joints (TMJ) Count one exam for each area. *For e) mastoids- also count workload for GR195 if additional projections >6	20	1
GR115	Orbit Screening for MRI (1- 2 projections) Also count workload for GR195 for additional projections >2	10	1
GR120	Facial bones (1-5 projections) Also count workload for GR195 for additional projections >5	15	1
GR125	Mandible (1-5 projections) Also count workload for GR195 for additional projections >5	17	1
GR130	Nasal bones (1-3 projections) Also count workload for GR195 for additional projections >3	10	1
GR135	Sinuses (1-3 projections) Also count workload for GR195 for additional projections >3	15	1
GR140	Salivary gland area- no contrast media (e.g. plain films)	20	1
GR145	Dental full series (with bitewings)	20	1
GR150	Teeth, panorex, single projection or panorex lateral cephalic	11	1
GR905	Arthrography –Upper Extremities-unilateral Note: GR905 is also referenced in other areas of the General Radiography schedule. Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	45	1

Code	Exam/Activity	Unit Value	Exam Count
GR906	Arthrography – Head – includes Temporomandibular joint (Head), Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	45	1
GR907	Arthrography –Shoulder Girdle- unilateral . Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	45	1
GR908	Arthrography –Pelvic Girdle Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	45	1
GR909	Arthrography –Lower Extremities- unilateral Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	45	1
GR155	Dacrocystography (e.g. lacrimal sacs and associated structures) Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	35	1
GR160	Sialography (using contrast media) Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	40	1
GR195	Additional projections for any of the exams above (Head) Count once for every additional 3 sets of projections.	10	0
GR165	Shunt Study (Includes AP, Lat Skull, AP Chest and AP Abdomen)	15	1
Spine			
GR205	Cervical (1-4 projections) Also count workload for GR295 for additional projections >4	15	1
GR210	Thoracic (1-3 projections) Also count workload for GR295 for additional projections >3	13	1
GR215	Lumbar (1-3 projections) and Lymphangiogram follow-up Includes imaging for lumbar flexion/extension. Also count workload for GR295 for additional projections >3	13	1

Code	Exam/Activity	Unit Value	Exam Count
	For Lymphangiogram exam, may see also IR217, NM405 Lymphoscintigraphy [whole body]), or MR450 or MR455.		
GR220	Sacrum and/or coccyx (1-2 projections) Also count workload for GR295 for additional projections >2	13	1
GR225	Scoliosis series	18	1
GR230	Skeletal survey (1-13 projections) Includes multiple projections (AP and lateral) of multiple sites (e.g. spine, pelvis, femora, skull, shoulders and humeri, ribs) May also add MI931, MI935, MI940 or MI941 and/or MI945 as applicable. Also count workload for GR295 for additional projections >13	30	1
GR235	Complete (detailed) Spine (1-8 projections) Includes projections of the cervical, thoracic and lumbar spines as well as the sacrum/coccyx Also count workload for GR295 for additional projections >8	30	1
GR295	Additional projections for any of the exams GR205-GR235-Spine. Count once for every additional 3 sets of projections.	5	0
GR255	Facet injection or nerve block Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	45	1
	See IR435 for Lumbar Puncture Myelogram		
GR265	Babygram (for post mortem exam)	12	1
GR270	Infant Skeletal Survey – Multiple placements (e.g. abdomen and chest)	20	1
Shoulder Girdle and Upper Extremities			
GR305	Shoulder, unilateral (1 to 3 projections) If each shoulder is imaged separately, count as two exams.	10	1

Code	Exam/Activity	Unit Value	Exam Count
	Also count workload for additional projections >3 – see GR395.		
GR310	Scapula unilateral or bilateral)(1-2 projections) If the scapulae are each imaged separately, count as two exams. Also count workload for GR395 for additional projections >2 An exam is considered “bilateral” if both sides are imaged using the same exposure.	10	1
GR315	Acromio-clavicular joints includes weight bearing Add 5 units for bilateral imaging. An exam is considered ‘bilateral’ if both sides are imaged using the same exposure. If the two AC joints are each imaged separately, collect workload and exam count as two exams.	10 5	1 0
GR320	Clavicle (unilateral) (1-2 projections) Add 5 units for bilateral exam An exam is considered ‘bilateral’ if both sides are imaged using the same exposure. If the two clavicles are each imaged separately, count as two exams. Also count workload for GR395 for additional projections >2	10 5	1 0
GR325	Upper Extremity– includes any one of: a) Unilateral Humerus b) Unilateral Elbow c) Unilateral Forearm,- includes radius and/or ulna d) Unilateral Wrist (may include scaphoid) e) Unilateral Hand f) Unilateral Digit(s) g) Unilateral Hand and Wrist combined h) Unilateral Scaphoid (e.g. as direct follow-up exam to wrist imaging) Count once per each area imaged.	10	1

Code	Exam/Activity	Unit Value	Exam Count
	An exam is considered 'bilateral' if both sides are imaged using the same exposure; in this case, count additional 7 units and one exam only. If the two upper extremities are each imaged separately, count as two exams.	7	0
GR330	Bone length scanogram for upper extremities	10	1
	An exam is considered "bilateral" if both sides are imaged using the same exposure; in this case, count additional 5 units and one exam only. If the two upper extremities are each imaged separately, count as two exams.	5	0
GR335	Bone age (1 projection)	8	1
GR336	Bone age (2 projections) Also count workload for GR395 for additional projections >2.	13	1
GR390	Additional units when performing exams above with stress projections for Shoulder Girdle and Upper Extremities	6	0
GR395	Additional projections for any of the exams above- Shoulder Girdle and Upper Extremities Do not count if GR390 is also captured.	5	0
	See GR905-GR909 for Arthrography- Head, Shoulder Girdle, Upper Extremities, Pelvic Girdle, Lower Extremities		
Pelvic Girdle and Lower Extremities			
GR405	Pelvis only (1 projection) Also count workload for GR495 for additional projections >1	8	1
GR410	Unilateral hip (2 projections) Also count workload for GR495 for additional projections >2	10	1
GR412	Bilateral Hip (1-5 projections) An exam is considered "bilateral" if both sides are imaged using the same exposure; in this case, count one exam only. If each hip is imaged separately, count as two exams. Also count workload for GR495 for additional projections >5	17	1

Code	Exam/Activity	Unit Value	Exam Count
GR415	Pelvis and unilateral hip (1-3 projections) Also count workload for GR495 for additional projections >3	10	1
GR420	Pelvis and/or bilateral hip (1-5 projections) An exam is considered “bilateral” if both sides are imaged using the same exposure; in this case, count one exam only. If the pelvis and/or unilateral hip is imaged separately from its opposite, count as two exams. Also count workload for GR495 for additional projections >5	20	1
GR425	Sacro-iliac joints (1-3 projections) Also count workload for GR495 for additional projections >3	12	1
GR430	Lower Extremity– includes any one of: a) Unilateral Toe(s) b) Unilateral Foot any part c) Unilateral Ankle d) Unilateral Tibia and Fibula e) Unilateral Knee f) Unilateral Patella g) Unilateral Calcaneus h) Unilateral Heel Count once per each area imaged. An exam is considered ‘bilateral’ if both sides are imaged using the same exposure; in this case, count additional 5 units and one exam only. If the two lower extremities are each imaged separately, count as two exams.	10 5	1 0
GR490	Additional units when performing exams above with stress projections for Pelvic Girdle and Lower Extremities	6	0
GR440	Unilateral femur, including hip and knee (1-4 projections) Also count workload for GR495 for additional projections >4	11	1
GR445	Bone length, scanogram, lower extremity	18	1

Code	Exam/Activity	Unit Value	Exam Count
GR450	Hip fixation in operating room including hip projections Includes **all** fluoroscopy time. Do not also count workload for MI955. May also count code MI910 for the workload required to prepare the portable machine and to gown/glove/mask prior to entering the operating room. May also count MI915 if only gown/glove mask is required for entering the OR (e.g. no portable equipment required).	45	1
GR455	Hip fixation in operating room including intermedullary nailing Includes **all** fluoroscopy time. Do not also count workload for MI955. Also count code MI910 for the workload required to prepare the portable machine and to gown/glove/mask prior to entering the operating room. May also count MI915 if only gown/glove mask is required for entering the OR (e.g. no portable equipment required).	100	1
GR495	Additional projections for any of the exams above – Pelvic Girdle and Lower Extremities Count once for every additional 3 sets of projections. Do not count if GR490 is also captured.	5	0
GR497	Renal Osteodystophy Series- for ESRD. For special needs service recipients, if applicable, consider also adding workload for any of codes MI931, MI935, MI940 or MI941 and/or MI970 and/or MI945.	35	1
	See GR905-GR909 for Arthrography - Head, Shoulder Girdle, Upper Extremities, Pelvic Girdle, Lower Extremities		
Thoracic Cage and Contents			
GR505	Chest (1-2 projections) Also count workload for GR506 for additional projections >2	10	1
GR506	Additional projections for any Thoracic Cage and Contents exams	5	0
GR510	Ribs, unilateral (1-3 projections) If unilateral ribs are each imaged separately, count as two	10	1

Code	Exam/Activity	Unit Value	Exam Count
	exams. Also count workload for GR506 for additional projections >3		
GR511	Ribs, bilateral (1-4 projections) (e.g. for paediatrics) An exam is considered “bilateral” if both sides are imaged using the same exposure; in this case, count one exam only. If unilateral ribs are each imaged separately, count as two exams. Also count workload for GR506 for additional projections >4	15	1
GR515	Chest and ribs (1-4 projections) Also count workload for GR506 for additional projections >4	15	1
GR520	Thoracic inlet/outlet	10	1
GR525	Sternum	12	1
GR530	Sterno-clavicular joints, bilateral	12	1
GR535	Nasopharynx, Neck Soft Tissue (1-2 projections) Also count workload for GR506 for additional projections >2	10	1
	Pacemaker insertion, temporary or permanent See IR920 or for pacemaker implants occurring in the Cardiac Catheterization functional centre, see codes CC920 (temporary) or codes CC335, CC340, CC345 or CC350 (permanent).		
GR540	Bronchography Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
Gastro-Intestinal (G.I.) Tract			
GR605	Dynamic Speech study using contrast media, with/without speech language pathology (modified barium swallow) Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
GR606	Pediatric Dynamic Speech Study, with contrast Includes fluoroscopy time up to 7 minutes.	45	1

Code	Exam/Activity	Unit Value	Exam Count
	Count MI955 for fluoroscopy time >7 minutes.		
GR610	Abdomen (1 projection)	8	1
GR611	Abdomen (2-3 projections) Includes AP, upright, or decubitus Note: count chest as a separate exam – see code GR505 Also count workload for GR695 for additional projections >3	16	1
GR615	Esophagram, (video) Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	15	1
GR616	Feeding Studies Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	45	1
GR620	Upper G-I tract, single or double contrast Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	15	1
GR625	Small bowel series only Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
GR630	Upper G-I and Small Bowel Follow-Through Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.For special needs service recipients, if applicable, consider also adding workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970 and/or MI945.	45	1
GR635	Small bowel enema Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	60	1
GR640	Hypotonic duodenography Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	35	1

Code	Exam/Activity	Unit Value	Exam Count
GR645	Colon, single contrast Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
GR646	Colon, double contrast Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	45	1
GR650	Pouchogram and/or Proctogram Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
GR655	Intravenous cholangiogram Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	45	1
GR660	T-tube Cholangiogram Includes all delayed films Includes fluoroscopy time. Do not also count workload for MI955.	25	1
GR915	ERCP (Endoscopic Retrograde Cholangiopancreatography) Includes sphincterotomy if performed by Radiologist concurrently. Includes fluoroscopy time. Do not also count workload for MI955.	50	1
GR665	Hypotonic G.I. tract study (e.g. Buscopan, Hyoscine or Glucagon study etc.),- additional per examination Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	10	0
GR670	Oro-gastric/Nasogastric (OG/NG) tube insertion Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	20	1
GR675	Sinogram Fistulogram Includes fluoroscopy time. Do not also count workload for MI955.	30	1
GR680	Small bowel biopsy Do not also count IR427, IR428, or MR410. Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1

Code	Exam/Activity	Unit Value	Exam Count
GR685	Lithotripsy – biliary Includes fluoroscopy time. Do not also count workload for MI955.	45	1
GR690	Colonoscopy Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
GR695	Additional projections for any Gastro-Intestinal (G-I) tract exams	5	0
Genito-Urinary (G.U.) Tract			
GR705	Kidneys, ureters, bladder (KUB)	8	1
GR710	Intravenous pyelography (IVP), including rapid sequence, drip infusion with or without tomography	40	1
GR715	Retrograde pyelogram, unilateral or bilateral An exam is considered 'bilateral' if both sides are imaged using the same exposure. Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
GR720	Cystography, static or voiding/retrograde Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes. For special needs service recipients, if applicable, consider also adding workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970 and/or MI945.	32	1
GR725	Urodynamics cystogram Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes. For special needs service recipients, if applicable, consider also adding workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970 and/or MI945	60	1
GR730	Ileo-loopogram (Kochogram) Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1

Code	Exam/Activity	Unit Value	Exam Count
GR735	Retrograde urethrogram Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	25	1
GR740	Antegrade pyelogram (alone) Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
GR745	Nephrostogram, unilateral Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
GR750	Vasogram, bilateral Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	40	1
GR755	Lithotripsy – kidney, unilateral For lithotripsy, bilateral: count GR755 twice Includes fluoroscopy time. Do not also count workload for MI955. If entering the operating room or similar sterile environment, also count workload for MI910	45	1
GR760	Hysterosalpingography Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
GR765	Male genitalia (E.g. penis) Includes fluoroscopy time up to 7 minutes. Count MI955 for fluoroscopy time >7 minutes.	30	1
GR910	Volume radiology (E.g. sternum, SC joint, glenoid fossa) Includes use of advanced tomography technology with all manual or automated post processing. Only count workload if performed by unit-producing personnel. Do not collect additional workload for tomography (code GR925) or post processing (MI950)	16	1
GR920	Surgical specimen Includes biopsy specimens, breast tissue specimens following lumpectomy or mammography, and amputated limb etc.	10	1

Code	Exam/Activity	Unit Value	Exam Count
GR925	Tomography Count workload if tomography is performed in the absence of a preliminary x-ray. Do not also count workload for GR910. For exams that do not regularly include tomography, use actual time methodology for the workload units and add to the exam time value using code MI960. Refer to General Information and Recording Instructions – Service Recipient Activities for miscellaneous exams.	Actual or Standard Time	1
Bone Mineral Density			
GR805	Bone density, one site	15	1
GR806	Bone density, two sites	25	1
GR807	Bone density, more than two sites Count once for each additional site >2 but less than whole body-GR810).	5	0
GR810	Bone density, whole body	25	1
Miscellaneous			
GR930	CR (computed radiology) technology (E.g. using an imaging plate/cassette) Excludes exams performed using DR (direct radiology) technology.	5	0
GR935	Radiostereometric exam E.g. assessment of joint replacement prosthesis Count as one exam only if not combined with another exam.	10	1

Mammography

General Information and Recording Instructions for Mammography

1. Screening programs for mammography are set-up to perform quality examinations within a minimal timeframe. Service recipients:

- are usually self-referred;
- meet published criteria; and
- are breast-symptom free.

(Service recipients are not eligible to be screened if they have an identified clinical problem such as a lump in the breast.)

2. Diagnostic mammograms are performed to investigate symptoms of suspected breast disease. As a result of differences in the protocols, screening mammography requires fewer workload units than that of diagnostic mammography.

3. When service recipient education related to breast self-examination is provided, the unit value should be derived using standard time. Note: additional workload is assigned to the unique role “Breast Navigator” for complex counselling duties in the Mammography functional centre only- see MM250.

4. Any activity in the schedule of unit values can be utilized by any medical imaging functional centre if the unit value is accurate and reflective of the realistic average time required to perform a specified activity. Therefore, workload listed in various medical imaging modalities can be captured in any other medical imaging functional centre, if applicable; however these codes are only listed once, in the modality for which they are most often used.

5. Please see Items for Count for the definition of “exam” in Medical Imaging WMS.

6. The average time for post processing reconstruction for mammography imaging is 20 workload units that are integrated into the schedule of unit values as a component activity. To capture post processing workload units beyond 20 minutes, see code MI950. If the images are reconstructed through computer automation with no hands-on technical intervention, workload units are not captured as no unit-producing personnel (UPP) hands-on time is involved.

7. A mammography exam is considered ‘bilateral’ if both sides are imaged using the same exposure, in which case, count as 1 exam. If each breast is imaged separately, count as two exams.

8. The component activities within the conceptual model for medical imaging include exam preparation activities, amongst other activities including room preparation, initial handling/set-up, cleanup, service recipient assessment (pre & post exam monitoring), consent and instructions, IV insertion, administration of

radiopharmaceuticals, contrast media and/or medications etc. Please refer to the Medical Imaging Conceptual Model for a list of component activities. Note: this workload applies only to the diagnostic medical sonographer or MRT who is unit-producing personnel in the medical imaging functional centre. To count additional workload for the administration of IV fluids, see code MI980.

Mammography - Schedule of Unit Values

Code	\Exam / Activity	Unit Value	Exam Count
MM105	Screening Mammography, bilateral, up to 4 projections Also count workload for MM115 for each additional projection >4	15	1
MM110	Screening Mammography, unilateral, up to 2 projections Also count workload for MM115 for each additional projection >2	10	1
MM115	Units for each additional projection greater than number stated in the exam definition	5	0
MM120	Breast implants with screening mammography Count with MM105 or MM110 as applicable.	5	0
Diagnostic Mammography			
MM205	Diagnostic Mammography, unilateral, up to 4 projections Also count workload for MM206 for each additional unilateral projection >4. If breast implant is present, count 10 additional workload units	16 10	1 0
MM206	Units for each additional projection- unilateral	7	0

Code	\Exam / Activity	Unit Value	Exam Count
MM210	Diagnostic Mammography, bilateral up to 4 projections Also count workload for MM211 for each additional bilateral projection>4 If breast implants are present, count 15 additional workload units	21 15	1 0
MM211	Units for each additional projection- bilateral	9	0
MM215	Fine wire localization (FWL), unilateral Includes scout films. Also count workload for MM216 for each additional FWL site on same side.	45	1
MM216	Each additional fine wire localization, same side	24	0
MM220	Galactography or mammoductography, including unilateral mammography	43	1
MM225	Core Biopsy – core of breast, single lesion Includes pre-biopsy imaging & post-stereo biopsy for clip placement For all other biopsies of anatomical sites, see one of: GR680, IR427, IR428, MR410	66	1
MM230	Core Biopsy- core of breast, multiple lesions Includes pre-biopsy imaging & post-stereo biopsy for clip placement For all other biopsies of anatomical sites, see one of: GR680, IR427, IR428, MR410	82	1
	Surgical specimen- (e.g. for breast tissue specimens following lumpectomy or mammography etc.) See code GR920	See GR920	

Code	\Exam / Activity	Unit Value	Exam Count
MM240	Breast Digital Tomosynthesis	20	1
MM250	Breast Navigator Role –counselling- complex Count once for additional workload associated with post-imaging in-depth consultation with MRT. Count for unit-producing personnel only. Do not also count MI970 if collecting workload for MM250.	Actual or Standard Time	0

Interventional Radiology

General Information and Recording Instructions for Interventional Radiology

1. The interventional radiology schedule of unit values is constructed to provide three separate and distinct interventional radiology exam activity sections:

- Vascular Diagnostic,
- Vascular Therapeutic and;
- Non-Vascular Interventional activities.

2. Where the exam typically requires more than one technologist to complete it, the published unit value reflects the total workload units for all of the technologists that are expected to be involved in performing that exam. Each component activity that is included in the exam is performed only once per exam by of the two technologists, and not by both (E. g. injecting the contrast media is not usually performed twice for one service recipient). For this reason, the workload units are not doubled when two technologists are performing the exam.

3. If the work is done by one technologist and one nurse, the unit values listed should be reported separately, according to the workload measurement system used respectively by the medical radiation technologist and the nurse. Only the portion of time that is applicable to the technologist should be reported under the medical imaging workload measurement system. As a reminder, you will see the notation “Count only if workload is performed by unit-producing

personnel" included in certain exam definitions where MI nurses might also perform some of the hands on work. Organizations that use a "nurse/technologist" staffing model should audit the proportion of the component activities performed by the technologist for specific exams, and count a percentage of the unit value accordingly, reported under the applicable Medical Imaging functional centre. The medical radiation technologist should also report the exam count that is specified in the Schedule of Unit Values. Likewise, the proportion of the nurse's workload and service activity statistics (face-to-face visit) for the nurse involved in the exam should be reported under the Interventional Radiology Nursing (71 4 05 15 24) functional centre.

4. Interventional Radiology workload might occasionally be elsewhere represented in the schedule of unit values for Medical Imaging. For example, if the Interventional Radiology functional centre performs exams such as Arthrography, upper extremities, unilateral, this code (GR905) can be referenced in the General Radiography section as it is commonly also performed in that functional centre. The Medical Imaging schedule of unit values is categorized by modalities to increase the ease of referencing the codes by users, therefore these codes, or any codes in other modalities, are available for use by all modalities provided the unit value/exam count is accurate and representative, and the workload is recorded in the functional centre where the exam was performed.

5. The average time for post processing reconstruction is 20 workload units that are integrated into the schedule of unit values as a component activity for Interventional Radiology. To capture workload units greater than the 20 minutes, see code MI950 for additional post processing workload. If the images are reconstructed through computer automation with no hands-on technical intervention, workload units are not captured as no unit-producing personnel (UPP) hands-on time is involved.

6. When multiple activities are performed together, the unit values should be aggregated. See examples below.

Aggregated activities example: Service Recipient with right renal artery thrombosis attends IR suite for right saphenous vein mechanical thrombolysis and angioplasties of left iliac artery and a minor left iliac branch artery. Note: diagnostic angiography had occurred at a previous encounter.

Code	Activity Description	Unit Value	Exam Count
IR305	Angioplasty to main branch left iliac artery	100	1

Code	Activity Description	Unit Value	Exam Count
IR306	Angioplasty to minor branch of left iliac artery (subsequent lesion).	20	0
IR341	Thrombolysis- mechanical- non-neurological	78	1
TOTAL		198 workload units	2 exams

7. Fluoroscopy is integral to Interventional Radiography exams; therefore, the average workload units for fluoroscopy are already accounted for in the published unit values listed below. Do not also count MI955 for fluoroscopy performed as part of an interventional radiography exam listed below.

8. The component activities within the conceptual model for medical imaging include exam preparation activities, amongst other activities including room preparation, initial handling/set-up, cleanup, service recipient assessment (pre & post exam monitoring), consent and instructions, IV insertion, administration of radiopharmaceuticals, contrast media and/or medications etc. Where applicable, additional workload for component activities is incorporated including scrub/circulation tasks, arterial/venous catheter insertion/removal, all imaging and post processing, use of closure devices for homeostasis etc. Please refer to the Medical Imaging Conceptual Model for a list of component activities. Note: this workload applies only to medical radiation technologist unit-producing personnel in the medical imaging functional centre. To count additional workload for the administration of IV fluids, see code MI980.

9. Angiography workload and exam count are grouped into two categories: diagnostic or therapeutic. Workload for a diagnostic angiography should not be counted during a therapeutic interventional procedure such as angioplasty, stent placement; thrombolysis or other therapeutic procedure which is planned or expected. This is because the vascular approach is necessary in order to complete the therapeutic interventional radiology procedure. If only a diagnostic angiogram (IR205) was scheduled, but circumstances of the case required an unplanned therapeutic procedure, then the workload for these two (or other multiple combinations) procedures are aggregated. Example: a planned diagnostic angiogram IR205 progresses to unplanned embolization of a neurological vessel (IR310) therefore aggregated workload for IR205 + IR310 = 88 workload units, 1 exam + 140 workload units, 1 exam = 228 workload units, 2 exams.

10. Some activities in the interventional radiology schedule can also be found in other sections of the medical imaging schedule of unit values. An example is cardiac pacemaker, which is also found in the cardiac catheterization section of the schedule of unit values; codes CC335, CC340, CC345, CC350 (permanent), and CC920 (temporary).

11. Any activity in the schedule of unit values can be utilized by any medical imaging functional centre if the unit value is accurate and reflective of the realistic average time required to perform a specified activity. Therefore, workload listed in various medical imaging modalities can be captured in any other medical imaging functional centre, if applicable; however these codes are only listed once, in the modality for which they are most often used or appear first in the schedule of unit values.

12. Please see Items for Count for the definition of “exam” in Medical Imaging WMS.

General Radiology - Schedule of Unit Values

Code	Exam /Activity	Unit Value	Exam Count
Vascular-Diagnostic – Arterial Note: The component activities within the conceptual model for medical imaging include routine exam preparation activities, including room preparation, initial handling/set-up, cleanup, service recipient assessment (pre & post exam monitoring), consent and instructions, IV insertion, administration of radiopharmaceuticals, contrast media and medications, scrub/circulation tasks, arterial/venous catheter insertion/removal, all imaging and post processing, use of closure devices for homeostasis etc. Please refer to the Medical Imaging Conceptual Model for a list of component activities. **All Interventional Radiology exams include fluoroscopy time. Do not also count workload for MI955.** May also see MI950 for additional workload associated with post processing reconstruction in excess of first 20 minutes of hands-on time.			
IR205	Diagnostic angiogram only Count once per exam. Includes carotid arteries. Do not count when an angioplasty, stent or thrombolysis or other therapeutic procedure is planned or expected. If IR205 escalates to an unplanned therapeutic procedure, then the	88	1

Code	Exam /Activity	Unit Value	Exam Count
	workload for the two exams (and/or other multiple combinations of exams) are aggregated. May also count workload for separate simultaneous catheterization; count once for each additional arterial access Does not include pacemaker. See code IR217 for Lymphangiogram.	16	0
IR206	Diagnostic angiogram only-subsequent vessels Count once per subsequent vessel in addition to the workload and exam count for code IR205.	12	0
IR210	Venography, unilateral (upper/lower extremity)	40	1
IR211	Venography, bilateral (upper/lower extremity)	55	1
IR215	Venography, selective- Other Includes superior vena cava, inferior vena cava, orbital, thoracic etc.	53	1
IR217	Lymphangiogram	60	1
IR220	Guided biopsy, transjugular liver - Focal Count once per exam. Excludes all other biopsies of anatomical sites-see one of: GR680, IR427, IR428, MR410	146	1
IR221	Guided biopsy, transjugular liver- Non-focal Count once per exam. Excludes all other biopsies of anatomical	120	1

Code	Exam /Activity	Unit Value	Exam Count
	sites-see one of: GR680, IR427, IR428, MR410		
IR225	A-V fistulogram, unilateral (E.g. imaging of A-V fistula for hemodialysis). If bilateral exam is performed, count as two exams. Excludes thrombolysis. See codes IR341 or IR346 for thrombolysis of A-V fistula. Excludes stent insertion: see code IR321.	45	1
IR230	Corpus Cavernosogram Count once per exam.	105	1
	Vascular Therapeutic Note: The component activities within the conceptual model for medical imaging include routine exam preparation activities, including room preparation, initial handling/set-up, cleanup, service recipient assessment (pre & post exam monitoring), consent and instructions, IV insertion, administration of radiopharmaceuticals, contrast media and medications, scrub/circulation tasks, arterial/venous catheter insertion/removal, all imaging and post processing, use of closure devices for homeostasis etc. Please refer to the Medical Imaging Conceptual Model for a list of component activities. **All Interventional Radiology exams include fluoroscopy time. Do not also count workload for MI955.** May also see MI950 for additional workload associated with post processing reconstruction in excess of first 20 minutes of hands-on time. Note: Do not also count IR205, diagnostic angiogram if any of the exams listed below were planned and/or expected.		
IR305	Angioplasty Includes all inflations done in order to dilate a single lesion and all associated imaging used in pre/post dilatations. May also count workload for separate simultaneous catheterization; count once for	100 16	1 0

Code	Exam /Activity	Unit Value	Exam Count
	each additional arterial access Count once per lesion.		
IR306	Angioplasty, subsequent lesions. Includes all inflations done in order to dilate a single lesion and all associated imaging used in pre and post dilatations. Count once for each subsequent lesion in addition to workload and exam count of code IR305.	20	0
IR308	Subintimal angioplasty (E.g. for lower extremity revascularization) Includes Crosser ® systems	180	1
IR310	Embolization of a neurological vessel – non-coil (E.g. cranial, spinal vessels) Count once for each embolization performed within a vessel (including its bifurcations). May also count workload for separate simultaneous catheterization; count once for each additional arterial access	140 16	1 0
IR311	Embolization of a neurological vessel – coil, (E.g. cranial, spinal vessels) Count once for each embolization performed within a vessel (including its bifurcations). May also count workload for separate simultaneous catheterization; count once for each additional arterial access	200 16	1 0

Code	Exam /Activity	Unit Value	Exam Count
IR312	Embolization of a non-neurological vessel – coil or non-coil Count once per vessel (including its bifurcations). May also count workload for separate simultaneous catheterization; count once for each additional arterial access	150 16	1 0
IR315	Therasphere infusion therapy (E.g. neoadjuvant therapy for neoplasm)	130	1
IR320	Stent Insertion – neurological Count once per lesion. May also count workload for separate simultaneous catheterization; count once for each additional arterial access	150 16	1 0
IR321	Stent Insertion – non-neurological Count once per lesion. May also count workload for separate simultaneous catheterization; count once for each additional arterial access	110 16	1 0
IR330	Endografts May also count workload for separate simultaneous catheterization; count once for each additional arterial access	240 16	1 0
IR920	Pacemaker, temporary or permanent, all inclusive Note: For pacemaker implants occurring in the Cardiac Catheterization functional centre, see codes CC920 (temporary) or codes CC335, CC340, CC345 or CC350 (permanent). Do not count IR920 in addition to cardiac catheterization pacemaker codes.	60	1

Code	Exam /Activity	Unit Value	Exam Count
	May also count workload for separate simultaneous catheterization; count once for each additional arterial access.	16	0
IR340	Thrombolysis- mechanical- neurological (E.g. Clot maceration and aspiration) May also count workload for separate simultaneous catheterization; count once for each additional arterial access	165 16	1 0
IR341	Thrombolysis- mechanical- non-neurological (E.g. Clot maceration and aspiration) May also count workload for separate simultaneous catheterization; count once for each additional arterial access	78 16	1 0
IR345	Thrombolysis- pharmacological- neurological (E.g. Injection of clot-dissolving pharmaceutical.) May also count workload for separate simultaneous catheterization; count once for each additional arterial access	100 16	1 0
IR346	Thrombolysis- pharmacological-non-neurological (E.g. Injection of clot-dissolving pharmaceutical.) May also count workload for separate simultaneous catheterization; count once for each additional arterial access	70 16	1 0
IR350	Thrombolytic recheck.	60	1

Code	Exam /Activity	Unit Value	Exam Count
IR355	Retrieval intravascular foreign body (E.g. IV catheter fragment retrieval)	40	1
IR360	TIPS (transjugular intrahepatic portal systemic) stent insertion	240	1
IR365	Venous sampling	73	1
IR370	Placement of venous catheter – temporary May include hemodialysis line or other temporary catheter. Count only if workload is performed by unit-producing personnel.	42	1
IR371	Placement of venous catheter – permanent or tunnelled May include hemodialysis line or other venous catheter. Count only if workload is performed by unit-producing personnel.	75	1
IR375	Placement – PICC line Count only if workload is performed by unit-producing personnel.	45	1

Code	Exam /Activity	Unit Value	Exam Count
IR380	Placement – Port-a-cath (insertion) Count only if workload is performed by unit-producing personnel.	70	1
IR385	Removal of venous catheter (E.g. Hickman, Port-a-cath, PICC, hemodialysis line etc) Excludes peripheral temporary intravenous lines, other than PICC catheters. Count only if workload is performed by unit-producing personnel.	25	1
IR386	Exchange of venous catheter (E.g. Hickman, Port-a-cath, PICC, hemodialysis line etc) Excludes peripheral temporary intravenous lines, other than PICC catheters. Count only if workload is performed by unit-producing personnel. Do not count code IR385.	30	1
IR387	Manipulation of central venous catheter line Includes venous catheter stripping (E.g. Hickman, Port-a-cath, PICC, hemodialysis line etc) Do not also count IR390. Excludes peripheral temporary intravenous lines, other than PICC catheters. Count only if workload is performed by unit-producing personnel.	45	1
IR390	A-V graft declotting	85	1

Code	Exam /Activity	Unit Value	Exam Count
IR395	IVC filter insertion (inferior vena cavagram)	65	1
IR396	Removal of temporary inferior vena cava filter	65	1
IR399	Wada Exam May also count workload for separate simultaneous catheterization; count once for each additional arterial access	180 16	1 0
Non-Vascular Interventional Note: The component activities within the conceptual model for medical imaging include routine exam preparation activities, including room preparation, initial handling/set-up, cleanup, service recipient assessment (pre & post exam monitoring), consent and instructions, IV insertion, administration of radiopharmaceuticals, contrast media and medications, scrub/circulation tasks, non-vascular catheter insertion/removal, and post processing, etc. Please refer to the Medical Imaging Conceptual Model for a list of component activities. **All Interventional Radiology exams include fluoroscopy time. Do not also count workload for MI955.** May also see MI950 for additional workload associated with post processing reconstruction in excess of first 20 minutes of hands-on time.			
IR405	Shuntogram (E.g. imaging a hydrocephalus-related implanted shunt)	30	1

Code	Exam /Activity	Unit Value	Exam Count
IR410	Thoracentesis– diagnostic	45	1
IR411	Thoracentesis – therapeutic	55	1
IR415	Cholangiogram, percutaneous transhepatic Count once per exam	120	1
IR420	Paracentesis, diagnostic	50	1
IR421	Paracentesis, therapeutic	80	1
IR427	Guided biopsy or aspiration of cyst, mass, organ, or bone – one site (E.g. liver biopsy [non-transjugular approach], thyroid, or spine etc.) Count once per exam. Excludes GR680 (small bowel biopsy), paracentesis (IR420, IR421) and thoracentesis (IR410, IR411), breast biopsy (MM225 and/or MM230). Also excludes	61	1

Code	Exam /Activity	Unit Value	Exam Count
	guided biopsy, transjugular liver (see codes IR220 (focal) or IR221 (non-focal)) and biopsy with MRI technology (MR410).		
IR428	Guided biopsy or aspiration of cyst, mass, organ, or bone – each additional site > 1. (E.g. liver biopsy [non-transjugular approach], thyroid, muscle, or spine etc.) Count once for each additional site in addition to workload and exam count of code IR427. Excludes GR680 (small bowel biopsy), paracentesis (IR420, IR421) and thoracentesis (IR410, IR411), breast biopsy (MM225 and/or MM230). Also excludes guided biopsy, transjugular liver (see codes IR220 (focal) or IR221(non-focal)) and biopsy with MRI technology (MR410).	12	0
IR430	Image-guided chest tube insertion	60	1
IR435	Lumbar puncture myelogram	45	1
IR440	Cisternal puncture myelogram	55	1

Code	Exam /Activity	Unit Value	Exam Count
IR442	Salivary gland- injections (E.g. Botox injections for treatment of excessive drooling)	120	1
IR445	Injection, facet/S.I. joint Do not collect workload/exam counts for codes CT575 and IR445 together. Count only if workload is performed by unit-producing personnel.	48	1
IR446	Injection, additional facet/S.I. joint Do not collect workload/exam counts for codes CT575 and IR446 together. Count only if workload is performed by unit-producing personnel.	20	1
IR450	Joint/spine/intrathecal injection/ aspiration Includes administration of chemotherapy and other therapeutic agents (E.g. epidural block) May count additional 30 workload units and zero exams for each additional injection/aspiration (E.g. multiple spine levels). For special needs service recipients (E.g. pediatric etc.), if applicable, consider also adding workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970 and/or MI945. Do not collect workload/exam counts for codes CT575 and IR450 or IR455 together. Count only if workload is performed by unit-producing personnel.	30 30	1 0

Code	Exam /Activity	Unit Value	Exam Count
IR455	Extensive joint injections Do not collect workload/exam counts for codes CT575 and IR450 or IR455 together. For special needs service recipients (E.g. pediatric etc.), if applicable, consider also adding workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970 and/or MI945.	180	1
IR460	Nerve block, injection Count once for each injection. Count only if workload is performed by unit-producing personnel.	36	1
IR465	Basket extraction of stone, G.U. tract Count once per exam.	132	1
IR470	Stent insertion, urinary tract- unilateral Count once per exam	142	1
IR471	Stent insertion, urinary tract- bilateral	182	1
IR475	Nephrostomy, percutaneous - unilateral	122	1

Code	Exam /Activity	Unit Value	Exam Count
IR476	Nephrostomy, percutaneous – bilateral	152	1
IR480	Nephrostomy, tube exchange – unilateral	97	1
IR481	Nephrostomy, tube exchange – bilateral	123	1
IR485	Drainage tube removal, G.U. tract Count once for each tube removed	35	1
IR487	Percutaneous suprapubic catheter insertion	60	1
IR488	Percutaneous suprapubic catheter exchange	35	1

Code	Exam /Activity	Unit Value	Exam Count
IR490	Dilatation G.U. tract	107	1
IR491	Dilatation, G.I. tract	110	1
IR495	Stent insertion, G.I. tract	110	1
IR500	Stent insertion, Respiratory tract E.g. Bronchial (unilateral and bilateral), or tracheal etc.	25	1
IR503	Dilation: respiratory tract E.g. Bronchial (unilateral and bilateral), or trachea etc.	54	1
IR505	Basket extraction of stone, G.I. tract	140	1

Code	Exam /Activity	Unit Value	Exam Count
IR510	Drainage, biliary, one branch	120	1
IR511	Drainage biliary, two branches	140	1
IR915	ERCP	50	1
IR515	Gastrostomy, percutaneous	60	1
IR520	Gastrojejunostomy	80	1
IR525	Catheter exchange, biliary	50	1

Code	Exam /Activity	Unit Value	Exam Count
IR526	Catheter exchange, gastrostomy	35	1
IR530	Drainage tube removal, G.I. tract	30	1
IR535	Catheter exchange, abscess	45	1
IR540	Guidance for catheter placement including for fluid/abscess drainage, single catheter Do not count for therapeutic paracentesis (see IR421) or therapeutic thoracentesis (see IR411).	90	1
IR545	Guidance for percutaneous catheter placement including for fluid or abscess drainage, multiple catheters Do not count for therapeutic paracentesis (see IR421) or therapeutic thoracentesis (see IR411).	130	1
IR548	Guidance for insertion, manipulation or exchange of peritoneal catheter	60	1

Code	Exam /Activity	Unit Value	Exam Count
IR550	Kyphoplasty – One Level	110	1
IR551	Kyphoplasty – two or more levels	150	1
IR555	Vertebroplasty	100	1
IR560	Cryosurgery/Radiofrequency ablation/ Thermoablation Count once for first lesion.	115	1
IR565	Cryosurgery/Radiofrequency ablation/ Thermoablation Count once for each additional lesion >1.	62	0
IR570	Percutaneous Caecostomy	60	1

Code	Exam /Activity	Unit Value	Exam Count
	Interventional Radiology- Post processing reconstruction see code MI950 for additional workload.		

Computed Tomography

General Information and Recording Instructions for Computed Tomography

1. Exams are counted separately if imaging of non-contiguous anatomical parts/regions (non-clustered body structures) is performed (e.g. brain and ankle). Imaging of non-contiguous anatomical parts/regions generally requires service recipient repositioning. Contiguous regions (clustered body structures) anatomical parts/regions imaging (e.g. chest/abdomen), generally does not require service recipient repositioning: therefore one exam is counted as defined in the applicable exam code section. Count separate workload and exams as applicable, if imaging of non-contiguous anatomical parts/regions (non-clustered body structures) is performed (e.g. brain and ankle). When repositioning is required, an additional exam is counted.

2. The average time for post processing reconstruction is 20 workload units that are integrated into the schedule of unit values as a component activity for the CT Scanning modality. To capture workload units greater than 20 minutes, see code MI950 for additional post processing workload. If the images are reconstructed through computer automation with no hands-on technical intervention, workload units are not captured as no unit-producing personnel (UPP) hands-on time is involved.

3. When a request is received to perform an enhanced and a non-enhanced image, use the combined code with 1 exam count. However, if a request is received to perform a non-enhanced image, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested, count both the non-enhanced and enhanced separately to total 2 exam counts.

4. The workload unit for enhanced exams includes accessing the service recipient's vein or injecting contrast or medication. The component activities within the conceptual model for medical imaging include exam preparation activities, amongst other activities including initial handling/set-up, service recipient preparation/instructions, assessment (pre & post exam monitoring),

administration of radiopharmaceuticals, contrast media and medications, etc. Please refer to the Medical Imaging Conceptual Model for a list of component activities. See code MI980 for additional workload associated with provision of IV fluids.

5. Any activity in the schedule of unit values can be utilized by any medical imaging functional centre if the unit value is accurate and reflective of the realistic average time required to perform a specified activity. Therefore, workload listed in various medical imaging modalities can be captured in any other medical imaging functional centre, if applicable; however these codes are only listed once, in the modality for which that it is most often used. (E.g. MI950 for post-processing).

6. The unit values listed here are averages of regular and routine medical imaging activities. When infrequent activities occur, use actual or standard time methodology to capture workload.

7. Please see Items for Count for the definition of "exam" in Medical Imaging WMS.

Computed Tomography - Schedule of Unit Values

Code	Exam/Activity	Unit Value	Exam Count
Head Note: One exam includes any combination of anatomical parts listed in each CT activity, (E.g. Usually the service recipient is not repositioned). Count separate workload and exams as applicable, if imaging of non-contiguous anatomical parts/regions (non-clustered body structures) is performed (e.g. brain and ankle). When repositioning is required, an additional exam is counted.			
CT105	Head, non-enhanced – includes: a) brain, b) orbits, c) sella turcica, d) IAC and/or posterior fossa, e) facial bones, f) sinuses, g) nasopharynx Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.	15	1

Code	Exam/Activity	Unit Value	Exam Count
CT106	Head, enhanced – includes: a) brain, b) orbits, c) sella turcica, d) IAC and/or posterior fossa, e) facial bones, f) sinuses, g) nasopharynx	22	1
CT107	Head, combined non-enhanced and enhanced – includes: a) brain, b) orbits, c) sella turcica, d) IAC and/or posterior fossa, e) facial bones, f) sinuses, g) nasopharynx	29	1
CT110	Head, stereotactic non-enhanced (e.g. 3D wand) Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.	22	1
CT111	Head, stereotactic enhanced (e.g. 3D wand)	26	1
CT112	Head, stereotactic combined, non-enhanced and enhanced (e.g. 3D wand)	35	1
CT120	TMJ/implant study, non-enhanced Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.	15	1

Code	Exam/Activity	Unit Value	Exam Count
CT121	TMJ/implant study, enhanced	21	1
CT122	TMJ/implant study, combined non-enhanced and enhanced	30	1
CT130	Angio, Head, enhanced	37	1
Neck and Spine			
CT205	Soft Tissue Neck, non-enhanced Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.	15	1
CT206	Soft Tissue Neck, enhanced	22	1
CT207	Soft Tissue Neck, combined non-enhanced and enhanced	30	1
CT210	Angiography, Soft Tissue Neck, enhanced Includes imaging of vasculature.	36	1
CT215	Angio, Spine, enhanced	37	1
CT220	Spine, non-enhanced – includes: a) cervical, b) thoracic, c) lumbar, d) sacrum and/or coccyx e) cervical, thoracic and lumbar may also contain subarachnoid contrast. Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested. One exam and number of workload units do not vary regardless of combination of listed anatomical parts imaged. Note: The unit values listed here are averages of regular and routine medical imaging activities. When infrequent activities occur, use actual or standard time methodology to capture workload.	18	1

Code	Exam/Activity	Unit Value	Exam Count
CT221	Spine, enhanced with IV contrast – includes cervical, thoracic, lumbar, sacrum and/or coccyx a) cervical, b) thoracic, c) lumbar, d) sacrum and/or coccyx. One exam and number of workload units do not vary regardless of combination of listed anatomical parts imaged. Note: The unit values listed here are averages of regular and routine medical imaging activities. When infrequent activities occur, use actual or standard time methodology to capture workload.	25	1
CT222	Spine, combined non-enhanced and enhanced – includes cervical, thoracic, lumbar, sacrum and/or coccyx a) cervical, b) thoracic, c) lumbar, d) sacrum and/or coccyx. One exam and number of workload units do not vary regardless of combination of listed anatomical parts imaged. Note: The unit values listed here are averages of regular and routine medical imaging activities. When infrequent activities occur, use actual or standard time methodology to capture workload.	33	1
Chest, Abdomen and Pelvis			
CT305	Sternoclavicular joints	17	1
CT310	Cardiac, non-enhanced (e.g. calcium scoring)	21	1

Code	Exam/Activity	Unit Value	Exam Count
	Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.		
CT311	Cardiac, enhanced	40	1
CT312	Cardiac, combined non-enhanced and enhanced	60	1
CT320	Thorax (chest), non-enhanced Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.	18	1
CT321	Thorax (chest), enhanced	26	1
CT322	Thorax (chest), combined non-enhanced and enhanced	32	1
CT330	Chest and abdomen, non-enhanced Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.	20	1
CT331	Chest and abdomen, enhanced	30	1
CT332	Chest and abdomen, combined non-enhanced and enhanced	35	1
CT334	Angio, chest, abdomen and pelvis, non-enhanced	32	1
CT336	Angio, chest, abdomen and pelvis, enhanced	37	1
CT338	Angio, chest, abdomen and pelvis, combined non-enhanced and enhanced.	42	1
CT340	Angio, Chest, enhanced (E.g. for pulmonary embolus, aortic dissection)	31	1
CT345	CT Scout Only (E.g. for purposes of service recipient positioning or detection of contrast) Use this code only when a scout is	8	1

Code	Exam/Activity	Unit Value	Exam Count
	performed and it does not progress to another exam.		
CT350	Abdomen, non-enhanced Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.	17	1
CT351	Abdomen, enhanced	25	1
CT352	Abdomen, combined non-enhanced and enhanced	31	1
CT355	Angio, Abdomen, enhanced (No runoff)	30	1
CT360	CT Enterography (small intestine)	33	1
CT365	Angio, abdomen and pelvis, enhanced	34	1
CT370	Angio with Runoff, enhanced (includes abdomen and pelvis and legs)	40	1
CT375	Angio, pelvis, enhanced	31	1
CT380	Pelvis, non-enhanced Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.	17	1
CT381	Pelvis, enhanced	25	1
CT382	Pelvis, combined non-enhanced and enhanced	31	1
CT385	CT Cystogram	25	1
CT390	Abdomen and pelvis, non-enhanced Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.	19	1

Code	Exam/Activity	Unit Value	Exam Count
CT391	Abdomen and pelvis, enhanced	26	1
CT392	Abdomen and pelvis, combined non-enhanced and enhanced	33	1
CT395	Chest, abdomen and pelvis, non-enhanced Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested.	23	1
CT396	Chest, abdomen and pelvis, enhanced	29	1
CT397	Chest, abdomen and pelvis, combined non-enhanced and enhanced	39	1
Extremities			
CT405	Angio, extremity, enhanced	45	1
CT410	Extremity, unilateral or bilateral if done simultaneously, non-enhanced Count separate workload and exams if, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested. Count unilateral exam twice if the service recipient was repositioned for the CT scan of the opposite extremity.	18	1
CT411	Extremity, unilateral or bilateral if done simultaneously, enhanced Count unilateral exam twice if the service recipient was repositioned for the CT scan of the opposite extremity.	25	1
CT412	Extremity, unilateral or bilateral if done simultaneously, combined non-enhanced and enhanced Count unilateral exam twice if the service recipient was repositioned for the CT scan of the opposite extremity.	32	1

Code	Exam/Activity	Unit Value	Exam Count
Miscellaneous			
CT505	CT Planning for radiation oncology Do not also count CT530.	25	1
	CT Post processing reconstruction – additional workload – see code MI950		
CT515	CT Scanned Plane – additional projections – must involve repositioning of service recipient	15	0
CT520	CT Delayed Scanning (E.g. IV contrast administered and then service recipient leaves the examination room, waits and later returns to the suite for completion of CT scan imaging. This does not include waiting time).	12	0
	Guided biopsy/aspiration/mass or organ See code IR427. Do not count for diagnostic paracentesis (see IR420) or diagnostic thoracentesis (see IR410). Also excludes biopsy with MRI technology (MR410).		
	Guided biopsy/bone or spine See code IR427. Also excludes biopsy with MRI technology (MR410).		
	Guidance for catheter placement/fluid drainage, single catheter See code IR540 Do not count for therapeutic paracentesis (see IR421),therapeutic thoracentesis (see IR411), suprapubic catheter insertion (IR487) or suprapubic catheter exchange (IR488). .		
	Guidance for catheter placement/fluid drainage, multiple catheters See code IR545 Do not count for therapeutic		

Code	Exam/Activity	Unit Value	Exam Count
	paracentesis (see IR421) or therapeutic thoracentesis (see IR411).		
CT530	CT for pre-procedural localization, non-enhanced Includes stereotactic (reference markers) and baseline pre-op imaging Do not also count CT505.	15	1
CT540	Scanogram	10	1
CT545	CT for Virtual Colonoscopy, supine or prone	50	1
CT560	CT Guided Cryoablation/Thermoablation Count once per lesion	120	1
CT561	CT Guided Cryoablation/Thermoablation Count once for each additional lesion	62	0
	IV hydration for pre and/or post imaging- See MI980 to count incremental workload unit values.	15	0
CT575	CT for guidance for injection of pharmacotherapy (E.g. in joints) Includes the preliminary aspiration. Do not collect codes CT575 and/or IR450 and/or IR455 together.	23	0
CT580	CT- Trauma series, Rapid (E.g. CT head, followed by total body angiogram (i.e. brain, heart, aorta depending on the main area of trauma) including without/or with contrast.	15	1

Ultrasound

General Information and Recording Instruction for Ultrasound

1. The workload units assigned may include 3D and/or 4D qualitative Doppler (colour), however, they do not include quantitative Doppler (measurements) unless specifically indicated. If quantitative Doppler is performed in addition

to the described exam, add the appropriate unit value as described in activity US110.

2. Workload includes all component activities integral to the MI conceptual model for the MI workload measurement system. The published US workload unit value includes administration of a radiopharmaceutical or medication (i.e. Lasix, Persantine, Hyoscine, Dobutamine, etc) with dosage calculations, documentation, MRSA/VRE/latex activities, catheterization, and image acquisition etc. Please refer to the Medical Imaging Conceptual Model for a list of component activities. Contrast media specific to ultrasound, is defined in code US105. See code MI980 for additional workload associated with the provision of IV fluids.

3. Any activity in the schedule of unit values can be utilized by any medical imaging functional centre if the unit value is accurate and reflective of the realistic average time required to perform a specified activity. Therefore, workload listed in various medical imaging modalities can be captured in any other medical imaging functional centre, if applicable, however these codes are only listed once, in the modality for which that it is most often used.

4. Please see Items for Count for the definition of “exam” in Medical Imaging WMS.

5. The average time for post processing reconstruction is 20 workload units that are integrated into the schedule of unit values as a component activity for Ultrasound. To capture workload units greater than 20 minutes, see code MI950 for additional post processing workload. If the images are reconstructed through computer automation with no hands-on technical intervention, workload units are not captured as no unit-producing personnel (UPP) hands-on time is involved.

6. Exams are counted separately if imaging of non-contiguous anatomical parts/regions (non-clustered body structures) is performed (e.g. pelvis and scrotum, or breast and axilla). If contiguous anatomical parts/regions (clustered body structures) are imaged (e.g. umbilicus/abdomen), one exam is counted as defined in the applicable exam code section.

Ultrasound - Schedule of Unit Values

Code	Exam/Activity	Unit Value	Exam Count
General			
US105	Contrast – additional units for the use of contrast media including microbubbles (agitated saline) or manufactured contrast media.	30	0

Code	Exam/Activity	Unit Value	Exam Count
US110	Quantitative Doppler, abdominal/pelvic, obstetrical, one anatomical group of venous or arterial blood vessels (e.g. hepatic, renal, uterine & ovarian, etc.) Use if Quantitative Doppler is not included in the description.	30	0
Abdominal Ultrasound (Includes Non-obstetrical Pelvis)			
US205	Abdomen, detailed If Quantitative Doppler is included, also count workload for code US110.	35	1
US207	Abdomen and appendix If Quantitative Doppler is included, also count workload for code US110.	30	1
US210	Abdomen, limited (may include a follow-up, single quadrant or a limited number of organs) Includes maternal kidney scan. If Quantitative Doppler is included, also count workload for code US110.	25	1
US213	Abdomen and pelvis, limited or preliminary transverse and saggital imaging- no service recipient preparation (e.g. full bladder etc) required May also count workload for obstetrical scanning with codes US405-US460, as applicable. If Quantitative Doppler is included, also count workload for code US110.	15	1
US215	Abdomen and pelvis , detailed May also count workload for obstetrical scanning with codes US405-US460, as applicable. If Quantitative Doppler is included, also count workload for code US110.	50	1
US217	Pelvis and appendix If Quantitative Doppler is included, also count workload for code US110.	30	1

Code	Exam/Activity	Unit Value	Exam Count
US220	Transabdominal pelvis May also count workload for obstetrical scanning with codes US405-US460, as applicable. If Quantitative Doppler is included, also count workload for code US110.	30	1
US225A	Pelvis, translabial, female May also count workload for obstetrical scanning with codes US405-US460, as applicable. If Quantitative Doppler is included, also count workload for code US110.	25	1
US230	Pelvis, or endovaginal (transvaginal) or transrectal female For obstetrical scan with fetal biophysical profile, aggregate exams US230 and one of either: US440 or US441 specifically, or any other obstetrical exam where endovaginal (transvaginal) imaging technique is not specified. If Quantitative Doppler is included, also count workload for code US110.	30	1
US235	Pelvis, transabdominal and endovaginal (transvaginal), female or Pelvis, transabdominal and transrectal, female May also count workload for obstetrical scanning with codes US405-US460, as applicable. If Quantitative Doppler is included, also count workload for code US110.	45	1
US240	Sonohysterography Includes contrast. If Quantitative Doppler is included, also count workload for code US110.	60	1
US245	Prostate/transrectal	30	1

Code	Exam/Activity	Unit Value	Exam Count
US250	Renal Artery Quantitative Doppler (may be used for post-stents or for renal transplants) If Quantitative Doppler is included, also count workload for code US110.	35	1
US251	Renal Transplant Work-up Includes aorta, iliac arteries and veins for diameter and patency. If Quantitative Doppler is included, also count workload for code US110.	30	1
US255	Transplant Ultrasound, non-hepatic Includes quantitative Doppler When performing abdominal ultrasound with quantitative Doppler for non-transplant purposes, refer to code US110	80	1
US260	Liver transplant with quantitative Doppler, For special needs service recipients (E.g. pediatrics), if applicable, consider also adding workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970. If Quantitative Doppler is included, also count workload for code US110.	60	1
Echocardiography (Fetal, Neonate, Pediatric/Special Needs, Adult)			
US305	Cardiac, Detailed	55	1
US310	Cardiac, Limited	30	1
US315	Cardiac, Fetal	50	1
US320	Cardiac, Transesophageal	60	1
US325	Stress echo (exercise)	60	1
US330	Stress echo (pharmacological with Persantine)	60	1
US335	Stress echo (pharmacological with Dobutamine)	80	1
Obstetrical Ultrasound			
US405	First trimester May include transabdominal, endovaginal	45	1

Code	Exam/Activity	Unit Value	Exam Count
	(transvaginal), translabial Count once for single fetus. For multiple gestation, also count US445 once for each additional fetus (>1). If Quantitative Doppler is included, also count workload for code US110.		
US410	Nuchal Translucency	35	1
US415	Second/third trimester- routine or recheck scan May include Doppler. Includes Biophysical recheck >14 weeks; includes fetal measurements (fetal biometry) FHR, AFI, fetal position, cervix, placenta, and limited or recheck anatomy. May include endovaginal (transvaginal), translabial For maternal kidney scan, use code US210. For multiple gestation, also count US450 once for each additional fetus. If Quantitative Doppler is included, also count workload for code US110.	55	1
US420	Obstetrical Post-16 week-Twins For multiple gestation, also count US450 once for each additional fetus >2. If Quantitative Doppler is included, also count workload for code US110.	90	1
US425	Amniocentesis	45	1
US431	Chorionic villi sampling- ultrasound guidance	50	1
US435	High risk pregnancy (To be used for highly suspicious or known abnormalities). May include biophysical profile.	55	

Code	Exam/Activity	Unit Value	Exam Count
	Includes all imaging in routine scan US405 and US415 plus further detailed measurements and cardiac imaging. If Quantitative Doppler is included, also count workload for code US110.		
US440	Biophysical profile only (scoring only) (E.g. basic or limited scanning or for recheck < 2 weeks after previous biophysical profile exam. See US441 for more detailed US exam) Count once per fetus If Quantitative Doppler is included, also count workload for code US110.	30	1
US441	Biophysical profile and measurements-detailed Includes detailed scanning and fetal measurements (E.g. head, abdomen, femur) resistive index and fetal heartbeat)	50	1
US445	First Trimester - Multiple gestation, additional units per fetus If Quantitative Doppler is included, also count workload for code US110.	25	0
US450	Second/Third Trimester – Multiple gestation, additional units per fetus	35	0
US455	Limited Obstetric ultrasound for monitoring of fetal position May include scanning after 14 weeks gestation for follow up or as a recheck. May include scanning for fetal position, amniotic fluid volume and/or index, cervical length, placental position and fetal heart rate.	26	1
US460	U/S Intrauterine fetal transfusion Includes cordocentesis If Quantitative Doppler is included, also count workload for code US110.	70	1

Code	Exam/Activity	Unit Value	Exam Count
US465	Umbilical Cord Doppler May include transabdominal, endovaginal (transvaginal), translabial Count once for single fetus. For multiple gestation, and depending on trimester, also count US445 or US450 once for each additional fetus (>1). If Quantitative Doppler is included, also count workload for code US110.	TBD	
Ophthalmic Ultrasound			
US505	Ophthalmic, imaging study, unilateral	30	1
US506	Ophthalmic, imaging study, bilateral	35	1
US510	Globe B-scan and Standardized A-scan unilateral	30	1
US511	Orbital B-scan and Standardized A-scan bilateral	60	1
US515	Globe immersion B-scan and Standardized A-scan unilateral	30	1
US520	2D High Frequency biomicroscopy immersion anterior segment examination unilateral	30	1
Neurological Ultrasound, includes 2D, Doppler (Pulsed and/or Colour and/or Power)			
US605	Carotid Arteries Bilateral -Includes subclavian and vertebral circulation and occasionally ophthalmic arteries.	50	1
US610	Carotid artery, limited (unilateral). If Quantitative Doppler is included, also count workload for code US110.	30	1
US615	Intraoperative U/S- for ultrasonography that occurs during a surgical operation If Quantitative Doppler is included, also count workload for code US110.	90	1
US620	Transcranial	35	1

Code	Exam/Activity	Unit Value	Exam Count
	May include MCA and/or vertebra-basilar circulation. For Pediatric (>28 days of age to locally defined maximum age) and other special needs service recipients, if applicable, consider also adding workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970 and/or MI945. If Quantitative Doppler is included, also count workload for code US110.		
US630	Neonatal brain (Neonate: from birth to 28 days of age) Do not also count US635	30	1
US635	Pediatric brain Note: (Pediatric: >28 days of age to locally defined maximum age) For other special needs service recipients, if applicable, may also consider adding workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970 and/or MI945. Do not also count US630	28	1
Vascular Ultrasound, includes 2D, Doppler (Pulsed and/or Colour and/or Power)			
US715	Extremities arteries Count once per limb If Quantitative Doppler is included, also count workload for code US110.	40	1
US720	Extremities veins Count once per limb If Quantitative Doppler is included, also count workload for code US110.	30	1
US725	Any other blood vessel (E.g. grafts, arm vein etc) If Quantitative Doppler is included, also count workload for code US110.	30	1
US730	Superior vena cava and neck vessels (E.g.	35	1

Code	Exam/Activity	Unit Value	Exam Count
	includes jugular veins) If Quantitative Doppler is included, also count workload for code US110.		
Small Parts Ultrasound (Includes musculoskeletal)			
US805	Neck (thyroid, parathyroid, lymph nodes)	30	1
US810	Shoulders, unilateral For bilateral US imaging (e.g. complete exam) of shoulders, when not used for comparison images, count as two exams.	25	1
US811	Shoulders, bilateral for image comparison purposes only.	40	1
US820	Other Joints, unilateral For bilateral US imaging (e.g. complete exam) of other joints, when not used for comparison images, count as two exams.	25	1
US821	Other Joints, bilateral for image comparison purposes only.	35	1
US830	Hips, bilateral for image comparison purposes only. For Pediatric (>28 days of age to locally defined maximum age) and other special needs service recipients, if applicable, consider also adding workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970 and/or MI945.	30	1
US840	Breast, unilateral For bilateral US imaging (e.g. complete exam) of breasts, when not used for comparison images, count as two exams. May include 3D	25	1
US841	Breast, bilateral for image comparison purposes only. May include 3D	40	1
US850	Ultrasound guided fine wire localization	45	1

Code	Exam/Activity	Unit Value	Exam Count
US851	Ultrasound guided fine wire localization (breast) - units for second site	20	0
US855	Soft tissue or other small part May include superficial mass, hernia, tendon and/or ligament	25	1
US860	Scrotum/testes with Doppler, quantitative See code NM585 for non-ultrasound testicular imaging.	30	1
US865	Local area/penile frequency analysis with Doppler, quantitative	30	1
Miscellaneous			
US870	Chest	25	1
US875	Spine	25	1
	Ultrasound guided catheter or central line placement See Interventional Radiography schedule of unit values to select one of codes IR370, IR371, IR375 or IR380, as applicable.		
US885	Surgical specimen (E.g. breast tissue or for confirmation of tumour margins)	17	1

Nuclear Medicine Schedule of Unit Values

General Information and Recording Instructions for Nuclear Medicine

1. The nuclear medicine section has been developed to be consistent with all other imaging modalities so the total unit value for each exam includes all components needed to complete it. Workload includes all component activities integral to the MI conceptual model for the MI workload measurement system. The published NM workload unit value includes insertion of the IV catheter, IV pump set-up, administration of a pharmaceutical (i.e. Lasix, Captopril, and Octreotide etc), the inherent dosage calculations, documentation,

MRSA/VRE/latex activities, post processing (30 minutes or less) and image acquisition etc. Please refer to the Medical Imaging Conceptual Model for a list of component activities.

2. The established unit values take into consideration various technologies and age of equipment. Unit values represent the average time to perform the exam for the average service recipient by the average UPP service provider under average circumstances. Where the exam typically requires more than one technologist to complete it, the published unit value reflects the total workload units for all of the technologists that are expected to be involved in performing that exam. If an exam is not listed in the schedule of unit values, users should establish a standard time using the standardized timing protocol and submit the information to CIHI at fsi@cihi.ca.

3. Exam counts are based on the definition of an exam; a defined technical investigation using an imaging modality to study one body structure, system or anatomical area that yields one or more projections for diagnostic and/or therapeutic purposes. The following scenarios demonstrate when more than one exam is counted: When a service recipient undergoes additional imaging by other modalities, an additional defined exam is also counted, as applicable. (see #6 below).

4. SPECT is defined as one completed camera rotation in any format that results in an image of a specific anatomical area. These units are used for any complete rotation that is in addition to the initial SPECT rotation. Where SPECT is identified in the description, workload for the SPECT component is included in the unit value/exam count. Code NM100 would therefore not be added in this scenario. For exams where initial SPECT imaging is not included in the description, or where SPECT imaging is performed additional to the initial SPECT, also count NM100 if applicable. For example: NM350 + NM100 for 70 workload units and no extra exam count.

5. Attenuation correction is not a component activity. Code NM105 for additional workload due to attenuation activities, however if you find this average time unit value is not representative of the workload within a nuclear medicine functional centre, it may be more appropriate to use Standard time methodology instead.

6. For exams/procedures that are done in conjunction with the NM procedure, aggregate the workload unit values and exam counts from any applicable modality in the Medical Imaging schedule of unit values. For example, in nuclear medicine, CT, GI or US exams are often performed along with an Interventional NM exam (procedure). These additional exams are aggregated similar to the examples of the Interventional Radiography introduction section.

7. Any activity in the schedule of unit values can be utilized by any medical imaging functional centre if the unit value is accurate and reflective of the realistic average time required to perform a specified activity. Therefore, workload listed in various medical imaging modalities can be captured in any other medical imaging functional centre, if applicable; however these codes are only listed once, in the modality for which that it is most often used.

8. Nuclear Medicine exams each have an integrated 30 minutes average time for the post processing reconstruction component activity. To capture workload units beyond 30 minutes for Nuclear Medicine, see code MI950 for additional post processing workload. If the images are reconstructed through computer automation with no hands-on technical intervention, workload units are not captured as no unit-producing personnel (UPP) hands-on time is involved.

9. Each exam in the Nuclear Medicine modality assumes delayed imaging either to a maximum of two images if unspecified in the exam definition or whatever exact number is specified in the exam definition. For additional delayed images, also capture workload for code NM110 for each delayed image exam, however no additional exams are counted.

10. See code MI980 for additional workload associated with provision of IV fluids.

11. Please see Items for Count for the definition of “exam” in Medical Imaging WMS.

Nuclear Medicine - Schedule of Unit Values

Code	Exam/Activity	Unit Value	Exam count
General			
NM100	SPECT- Add this unit value to the workload for an exam listed below where SPECT imaging is performed but not specified in the exam definition or when SPECT imaging is performed additionally to the initial SPECT imaging. Count NM100 once only when aggregated with other NM exams. Do not also count NM107. (E.g. NM305 + NM320 + NM100 [count once only]= 30 + 40 +30= 100 workload units)	30	0
NM105	SPECT/CT when using CT for attenuation, correction, localization only- add this unit	40	0

Code	Exam/Activity	Unit Value	Exam count
	value to the appropriate exam listed below when using SPECT. If the CT image is also used for diagnostic purposes, do not count extra workload units. Count NM105 once only when aggregated with other NM exams. (E.g. NM305 + NM320 + NM100 [count once only]= 30 + 40 +30= 100 workload units)		
NM107	SPECT/CT- Other Add this unit value to the workload for an exam listed below where SPECT or SPECT/CT imaging is performed but not specified in the exam definition Count NM107 once only when aggregated with other NM exams. Do not also count NM100.	30	0
NM110	Delayed image Count once per delayed image exam if beyond the number stated in the specific exam definition.	30	0
NM115	If performing a diagnostic CT only (e.g. not using the SPECT component) with the SPECT/CT instrument, capture units from the CT scan schedule.	See the schedule of unit values for CT	
NM120	Electrocardiogram (e.g. 12-Lead ECG) when associated with cardiac imaging (e.g. with gated wall motion procedures) Includes lead placement, recording, and documentation. Count only if performed by Medical Imaging unit-producing personnel. Do not also count NM345 and NM350.	11	0
	Post processing reconstruction in excess of initial 30 minutes in Nuclear Medicine modality. – additional workload – see code MI950		

Code	Exam/Activity	Unit Value	Exam count
NM135	Additional Pulse Sequence Count workload once per sequence in excess of the four sequences of any NM exam, unless otherwise specified.	5	0
NM140	Flow and Blood Pool image Count only if flow and blood pool image not specified in exam definition but is associated with specific site or whole body exam.	15	0
Bone			
NM205	Bone specific site Includes Orbital – unilateral or bilateral	50	1
NM210	Bone specific site with pinhole projection-first pinhole projection Used when doing a pinhole projection in conjunction with a regular exam. Count 5 workload units for each pinhole projection >1.	60 5	1 0
NM215	Bone specific site with pinhole projection, bone flow and/or blood pool image Count 5 workload units for each pinhole projection >1.	70	2
NM220	Bone specific site bone flow and/or blood pool image Includes NM205	60	2
NM225	Bone - whole body	50	1
NM230	Bone - whole body bone and flow and/or blood pool image Includes NM225	60	2
NM235	Bone - whole body and spot with additional joint projections Includes NM225	70	1
NM240	Bone - whole body including joints with bone flow and/or blood pool image May also count workload for additional	80	2

Code	Exam/Activity	Unit Value	Exam count
	joint views (e.g. joint survey)	15	0
NM245	SI joint ratios (Count for workload associated with calculations only)	10	0
NM250	NM radionuclide arthrogram	25	1
NM255	Bone marrow	75	1
	Orbital – unilateral or bilateral See code NM205		
NM265	Total Body Survey Includes Tc99m Sulfur Colloid (E.g. to assess bone marrow)	60	1
Lung Also count workload for NM100 or NM105 once only per combined NM exams, if SPECT and SPECT/CT CT is also performed but not mentioned in the following Cardiovascular NM exam definitions (E.g. NM305 + NM320 + NM100 [count once only) = 30 + 40 +30= 100 workload units.			
NM305	Lung perfusion May include Inferior Vena Cava (IVC)	30	1
NM310	Lung perfusion with flow May include Inferior Vena Cava (IVC))	40	1
NM315	Lung perfusion with quantification May include Inferior Vena Cava (IVC)	40	1
NM320	Lung ventilation May include gas or aerosol	40	1
NM325	Lung ventilation and perfusion May include gas or aerosol	70	1
NM330	Lung quantitative ventilation and perfusion	80	1

Code	Exam/Activity	Unit Value	Exam count
Cardiovascular Also count workload for NM100 or NM105 once only per combined NM exams, if SPECT and SPECT/CT is also performed but not mentioned in the following Cardiovascular NM exam definitions. (E.g. NM355 + NM365 + NM100 [count once only]= 40 + 65 +30= 135 workload units)			
NM345	12 Lead ECG - rest Includes lead placement, recording, and documentation for ECG interpretation. Count only if performed by unit-producing personnel. For 12-lead ECG-stress test: use code NM350. Do not also count workload for NM350 and NM120.	5	0
NM350	Stress test service recipient monitoring. Includes monitoring of ECG during exercise/pharmaceutical stressing for optimal timing of injection of radiopharmaceutical Do not also count workload for NM345 and NM120.	40	0
NM355	Rest myocardial viability (E.g. rest and redistribution)	70	2
NM360	Rest myocardial perfusion May include gating	50	1
NM365	Stress (exercise or pharmacological) myocardial perfusion. May include gating Includes the imaging and analysis of the data.	65	1
NM366	Rest- myocardial perfusion with pharmacological Includes Tc99m MIBI or MYO Rest Scan Includes post processing reconstruction	30	1

Code	Exam/Activity	Unit Value	Exam count
NM367	Stress- myocardial perfusion scan with pharmacological E.g. Tc99m MIBI or MYO Stress Scan Includes post processing reconstruction	30	1
NM370	Wall motion- resting (E.g. resting cardiac output) Includes resting MUGA scan, in-vitro RBC labelling, Tl201 Viability Rest Scan and all delayed scans (e.g. 4 hour, 24-hour), G-SPECT (3D) and all additional acquisitions. Includes all post-processing reconstruction. Add 30 workload units for in-vivo RBC labelling.	90 30	1 0
NM375	Wall motion stress (cardiac output) (E.g. exercise or pharmacological) Includes stress MUGA scan, in-vitro RBC labelling, G-SPECT (3D) and all additional acquisitions. Includes all post-processing reconstruction. Add 30 workload units for in-vivo RBC labelling. Do not count this workload if code NM370 is also being captured.	120 30	1 1
NM380	Myocardial Infarct Imaging	55	1
NM385	Superior Vena Cava (SVC)	40	1
NM390	Venogram flow - unilateral	35	1
NM391	Venogram flow - bilateral	60	1
NM393	Venogram RBC Includes in-vitro RBC labelling and all additional acquisitions. Add 30 workload units for in-vivo RBC labelling.	70 30	1 0
NM395	Ventricular Shunt - Right to Left	40	1
NM396	Ventricular Shunt - Left to Right	40	1

Code	Exam/Activity	Unit Value	Exam count
Circulatory/Lymphatic			
NM405	Lymphoscintigraphy (whole body) For angiogram exams, refer to one of: IR217, MR450 or MR455.	115	1
NM406	Lymphoscintigraphy - sentinel node - unilateral breast If SPECT/CT is used, count workload from NM100 or NM105 as applicable. If additional injections are necessary for bilateral breast imaging, count additional 15 workload units.	60 15	1 0
NM407	Lymphoscintigraphy - sentinel node melanoma- unilateral; includes 2 FOV SPECT/CT.	90	1
NM410	Whole Body Blood Pool	40	1
NM412	Lymphoscintigraphy- Sentinal Node Cervix	TBD	1
NM414	Lymphoscintigraphy- Sentinel Node Vulva	TBD	1
Endocrine Note: For codes NM425-NM457, may also count workload using code MI980 for IV fluid hydration for neuroendocrine studies if applicable.			
NM425	Parathyroid Includes the injection and first two sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >2. If SPECT/CT is used, count workload from NM100 or NM105 as applicable.	90	1
NM430	Thyroid scan Includes Thyrogen I-123 injection	30	1
NM435	Thyroid uptake (includes 2 uptakes) Includes first two sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >2.	30	1

Code	Exam/Activity	Unit Value	Exam count
NM437	Thyrogen I-131 E.g. for ablation	TBD	1
NM440	Adrenal Cortex Includes injection and first three sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >3.	140	1
NM445	Iodine whole body	60	1
NM450	I131 specific site Includes injection and first 4 sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >4.	50	1
NM451	MIBG (I123) Specific site (may include adrenal medulla) Includes injection and first two sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >2.	80	1
NM452	MIBG (I131) Specific site (may include adrenal medulla) Includes injection and first two sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >2.	85	1
NM453	Octreotide Specific site May include adrenal medulla. Includes injection and first two sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >2. Do not count code PT105 in addition to this exam.	85	1
NM455	MIBG (I123) whole body Includes the injection and first two sets of	95	1

Code	Exam/Activity	Unit Value	Exam count
	delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >2.		
NM456	MIBG (I131) whole body Includes the injection and first two sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >2.	100	1
NM457	Octreotide whole body Includes injection and first two sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >2. Do not count PT105 in addition to this exam.	110	1
Central Nervous System			
NM475	Brain (CNS) with flow Includes first two sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >2.	40	1
NM480	Brain SPECT (cerebral perfusion) Do not count code NM100.	85	1
NM481	Brain SPECT CT (cerebral perfusion) Do not count code NM105.	95	1
NM485	Brain death study	35	1
NM495	CSF Shunt, unilateral or bilateral	60	1
NM496	CSF leak Includes cisternography Includes injection and first three sets of delayed images, if applicable May count extra 15 workload units for each pledget insertion Use delayed image code (NM110) for each	170 15	1 0

Code	Exam/Activity	Unit Value	Exam count
	additional set of delayed images >3.		
NM497	CSF leak with pledget counting Includes cisternography Includes injection and first five sets of delayed images (4-5 visits), if applicable. Use delayed image code (NM110) for each additional set of delayed images >5	230	1
Kidney			
NM505	Renal Morphological Imaging - static	50	1
NM506	Renal Morphological Imaging – with flow	60	2
NM510	Cystogram Direct	65	1
NM511	Cystogram Indirect	40	1
NM515	Renal Dynamic study (flow and function)	60	1
NM520	Captopril Administration and Monitoring For use only if performed by unit-producing personnel. Includes only the administration and monitoring of Captopril. Aslo count workload for code NM515 for the exam.	60	0
NM525	Diuretic Administration For use only if performed by unit-producing personnel. Includes only the administration and monitoring of diuretic. Also count workload for code NM515 for the exam.	10	0
NM530	Renal Transplant	60	1
NM535	GFR Gamma camera method Includes a renal dynamic study. Includes measuring pre and post blood pressure due to medication administration. For IV pre-hydration, use code MI980. Do not count NM515 separately.	80	1
NM536	GFR Blood test method	75	1

Code	Exam/Activity	Unit Value	Exam count
	Includes measuring pre and post blood pressure due to medication administration. For IV pre-hydration, use code MI980.		
NM540	ERPF Blood Sample Method Note: includes all component activities (E.g. IV insertion, IV pump set-up etc.)	75	1
Soft Tissue			
NM550	Gallium specific site Includes first four sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >4.	55	1
NM551	Gallium whole body Includes first four sets of delayed images, if applicable. Use delayed image code (NM110) for each additional set of delayed images >4.	60	1
NM555	Dacroscintography (lacrimal duct) without quantitative analysis	55	1
NM556	Dacroscintography (lacrimal duct) with quantitative analysis	70	1
NM560	Scintimammography	65	1
NM565	WBC Indium specific site (does not include labelling) Includes first set of delayed imaging, if applicable. Use delayed image code (NM110) for each additional set of delayed images >1.	70	1
NM566	WBC Indium whole body (does not include labelling) Includes all delayed imaging, if applicable.	85	1
NM570	WBC Technetium specific site (does not include labelling) Includes first set of delayed imaging, if applicable.	65	1

Code	Exam/Activity	Unit Value	Exam count
	Use delayed imaging code (NM110) for each additional set of delayed images >1.		
NM571	WBC Technetium whole body Does not include labelling- see code NM575. Includes first set of delayed imaging, if applicable. Use delayed imaging code (NM110) for each additional set of delayed images>1.	85	1
NM575	WBC labelling (includes labelling with any radionuclide)	120	0
NM580	Peritoneal Scan (abdominal shunt patency)	65	1
NM585	NM Testicular Scan For Sonography, see US246	40	1
NM590	Prostate Therapy (e.g. Radium-223)	TBD	1
NM595	Whole body survey Includes Tc99m Sestamibi and Tl201 Thallous Chloride (E.g. assess for metabolic oncology) Use delayed image code (NM110) for each additional set of delayed images >2	60	1
Gastro-Intestinal			
NM605	Liver / spleen	35	1
NM606	Liver / Spleen with flow	45	1
NM610	RBC liver with flow Includes in-vitro RBC labelling. Add 30 units for in-vivo RBC labelling.	89 30	1 0
NM611	RBC spleen with flow Includes heat damage in-vitro RBC labelling.	150	1
NM615	Esophageal motility	45	1
NM620	Gastroesophageal reflux	75	1
NM625	Lung Aspiration	65	1

Code	Exam/Activity	Unit Value	Exam count
NM630	Solid Gastric Emptying	130	1
NM631	Liquid Gastric Emptying	120	1
NM635	Port-a-cath patency	15	1
NM640	RBC Labelling for GI Bleed – in vitro (e.g. Ultra Tag®)	30	0
NM641	RBC Labelling for GI Bleed – Modified in vivo/in vitro	30	0
NM645	RBC GI Bleed Imaging and flow	120	1
NM650	Pharmacologic Intervention for GI Bleed (Count ONLY if performed by unit-producing personnel).	15	0
NM655	Colloid GI Bleed	55	1
NM660	Gastrointestinal mucosa (Meckels)	70	1
NM661	Gastrointestinal mucosa (Meckels) with Pharmacologic Intervention (Count ONLY if performed by unit-producing personnel).	85	1
NM665	Hepatobiliary Scan	85	1
NM666	Hepatobiliary Scan with Pharmacologic Intervention with or without gallbladder ejection fraction Do not count NM665 separately.	115	1
NM670	Gallbladder Ejection fraction - non-pharmaceutical Includes the Hepatobiliary Scan. Do not count NM665 separately.	110	1
NM675	G.I. Transit Time (E.g. entire gastrointestinal tract)	50	1
NM680	Salivary gland	60	1
NM685	SeHCAT ([75Se] Tauroselcholic acid) (E.g. bile acid pool measurement and bile acid malabsorption investigation)	TBD	1

Code	Exam/Activity	Unit Value	Exam count
Miscellaneous General Nuclear Medicine Imaging			
NM690	Mobile Examination for Nuclear Medicine Do not also count workload for code MI900.	35	0
Therapeutic			
NM705	Treatment with I131 (E.g. for malignancy) Includes room preparation, service recipient assessment and/or counselling.	195	1
NM710	Treatment with I131 hyperthyroid	25	1
NM715	Treatment with Strontium-89 (SR89)	60	1
NM720	Treatment with Phosphorous-32 (P32)	30	1
NM725	Synovectomy treatment with colloid (Y90 or P32)	60	1
NM730	Treatment with monoclonal antibody – Y90 Chloride	95	1
NM735	Treatment with monoclonal antibody – I131	100	1
NM740	Treatment with Octreotide	195	1
NM745	Treatment with MIBG II31	195	1
NM750	Miscellaneous Therapy (For esoteric or new therapies such as Radium 223).	Standard or Actual Time	1
Non-Imaging			
NM805	Protein losing enteropathy	160	1
NM810	Red cell mass	95	1
NM815	Plasma volume	100	1
NM820	RBC and plasma volume	140	1
NM825	Red cell/platelet sequestration	190	1
NM830	Carbon 14 Breath Test	50	1
NM840	Blood procurement for testing other than for nuclear medicine purposes	10	0

Positron Emission Tomography/Computed Tomography (PET/CT)

1. Please see Items for Count for the definition of “exam” in Medical Imaging WMS.

2. Post processing times average 20 workload units for PET/CT. These average times for post processing are already integrated into existing unit values. Use code MI950 (counted in 10 minute increments) to capture additional post processing reconstruction workload greater than 20 minutes. If the images are reconstructed through computer automation with no hands-on technical intervention, additional workload units for post processing reconstruction are not captured as unit-producing personnel hands-on time is not involved.

Positron Emission Tomography/Computed Tomography (PET/CT) - Schedule of Unit Values

Code	Exam/Activity	Unit Value	Exam count
The following are additional units that may be added to the exams listed below:			
PT100	Additional frames (fields of view) with or without attenuation	15	0
PT105	Preparation of service recipient for radiation treatment	25	0
PT110	Lasix Administration Does not include additional pre- and post-image. Use additional frames (see above) if required. Count ONLY if performed by unit-producing personnel.	10	0
PT115	Oral Contrast Administration Count ONLY if performed by unit-producing personnel	10	0
PT120	Retrospective reconstruction (e.g. using different filters)	15	0
PT125	Gating (cardiac or respiratory)	25	0
PT130	Dynamic (includes the extra time required for the immediate real time images)	Actual or Standard Time	0
PT135	Extra paperwork required for Clinical Trial Protocol To be categorized as non-service recipient activity	20	0
The four exams below include any glucose testing required:			
PT200	Brain only	85	1
PT205	Cardiac only	90	1
PT210	Whole Body	150	1
PT215	Near Whole Body (eyes to thighs)	115	1

Code	Exam/Activity	Unit Value	Exam count
PT220	Head only	15	1
PT225	Neck only	15	1
PT230	Head and neck, only, combined	25	1
PT235	Upper extremity only	18	1
PT240	Lower extremity only	18	1
PT245	Abdomen only	17	1
PT250	Pelvis only	17	1
PT255	Abdomen and pelvis, only, combined	19	1

Cardiac Catheterization Diagnostic Services

General Information and Recording Instructions

1. In the majority of cases, most cardiac catheterization exams require two people to complete all activities. Where the exam typically requires more than one technologist, the published unit value reflects the total workload units for all of the technologists that are expected to be involved in performing that exam.

2. If the work is done by one medical radiation technologist and one nurse, only the portion of time that is applicable to the medical radiation technologist is reported under the medical imaging workload measurement system in the Cardiac Catheterization Diagnostic Services (71 4 15 55) functional centre. The medical radiation technologist also reports the exam count that is specified in the schedule of unit values. Workload and service activity statistics for the nurses involved in the exam is collected using their nursing workload measurement system, in the Cardiac Catheterization Diagnostic Services Nursing (71 4 05 15 55) functional centre.

3. Multiple exams/activities are to be aggregated when performed in sequence such as a percutaneous coronary intervention with thrombus aspiration, stent(s) insertion and intravascular ultrasound (IVUS).

4. The cardiac catheterization diagnostic services section has been developed to be consistent with all other imaging modalities so the total unit value for each exam includes all components needed to complete it. Workload includes all component activities integral to the MI conceptual model for the MI workload measurement system. The published workload unit value includes insertion of the IV catheter, IV pump set-up, administration of a pharmaceutical, the inherent dosage calculations, documentation, MRSA/VRE/latex activities,

post processing and image acquisition etc. Please refer to the Medical Imaging Conceptual Model for a list of component activities.

5. See code MI980 for additional workload associated with provision of IV fluids.

6. The established unit values take into consideration various technologies and age of equipment. Unit values represent the average time to perform the exam for the average service recipient by the average UPP service provider under average circumstances. Where the exam typically requires more than one technologist to complete it, the published unit value reflects the total workload units for all of the technologists that are expected to be involved in performing that exam. If an exam is not listed in the schedule of unit values, users should establish a standard time using the standardized timing protocol and submit the information to CIHI at fsi@cihi.ca.

7. The average time for post processing reconstruction is 20 workload units that are integrated into the schedule of unit values as a component activity for Cardiac Catheterization. See code MI950 for additional post processing workload greater than 20 minutes. If the images are reconstructed through computer automation with no hands-on technical intervention, workload units are not captured as no unit-producing personnel (UPP) hands-on time is involved.

8. Please see Items for Count for the definition of “exam” in Medical Imaging WMS.

9. Most exams in the Cardiac Catheterization modality rely on fluoroscopy as part of the exam (E.g. angiography exams). For this reason, 15 minutes of fluoroscopy time is integrated into the published unit values where applicable. Where fluoroscopy time is longer than 15 minutes, count extra workload units using code MI955.

Cardiac Catheterization Diagnostic Services - Schedule of Unit Values

Code	Exam/Activity	Unit Value	Exam Count
CC101	Fractional flow reserve (FFR) and/or intravascular ultrasound (IVUS) - Add-on Aggregate with other workload when FFR/IVUS is performed but is not included in a specific exam description	15	0
CC105	Biopsy- myocardial Do not also count IR227, IR428 or MR410.	15	1
CC110	Transplant Evaluation	40	1

Code	Exam/Activity	Unit Value	Exam Count
CC115	Diagnostic cardiac catheterization (angiography) - Coronary arteries	35	1
CC120	Diagnostic cardiac catheterization (angiography) - Left heart and coronary arteries	40	1
CC125	Diagnostic cardiac catheterization (angiography) - Right heart	30	1
CC130	Diagnostic cardiac catheterization (angiography) - Left and right heart and coronary arteries	70	1
CC135	Diagnostic cardiac catheterization (angiography) - Left heart and coronary arteries and grafts	70	1
CC140	Diagnostic cardiac catheterization (angiography) - Left and right heart and coronary arteries with grafts	85	1
CC145	Diagnostic cardiac catheterization (angiography) - Intra-aortic, left heart and coronary arteries	65	1
CC147	Diagnostic cardiac catheterization (angiography) –Left heart, aortic root and coronary arteries	70	1
CC150	Diagnostic cardiac catheterization (angiography) - Congenital anomalies Pediatric and/or Special Needs Service Recipients- also add workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970.	Actual or Standard Time	1
CC155	Percutaneous coronary intervention (PCI) (angioplasty) Use this code only when PCI is performed alone.	65	1
CC160	Percutaneous coronary intervention (PCI) (angioplasty) - with Doppler	Actual or Standard Time	1
CC165	Percutaneous coronary intervention (PCI) (angioplasty) - with thrombolytics	65	1
CC171	Percutaneous coronary intervention (PCI) (angioplasty) - with IVUS	85	1

Code	Exam/Activity	Unit Value	Exam Count
CC172	Percutaneous coronary intervention (PCI) (angioplasty) – with ICE	85	1
CC173	Percutaneous coronary intervention (PCI) (angioplasty) - with IVUS and ICE	100	1
CC175	Percutaneous coronary intervention (PCI) (angioplasty) – with thrombus aspiration	65	1
CC180	Percutaneous coronary intervention (PCI) (angioplasty) – with fractional flow reserve (FFR)	75	1
CC185	Percutaneous coronary intervention (PCI) (angioplasty) – with atherectomy	75	1
CC190	Percutaneous coronary intervention (PCI) (angioplasty) – with intra-aortic balloon pump (IABP)	70	1
CC195	Percutaneous coronary intervention (PCI) (angioplasty) – with one stent deployment	80	1
CC196	Percutaneous coronary intervention (PCI) (angioplasty) – Count once for each additional stent deployed >1	20	0
CC200	Percutaneous coronary intervention (PCI) with diagnostic catheterization only	80	1
CC205	Percutaneous coronary intervention (PCI) with diagnostic catheterization - with atherectomy	80	1
CC206	Percutaneous coronary intervention with diagnostic catheterization - with thrombus aspiration	70	1
CC210	Percutaneous coronary intervention (PCI) with diagnostic catheterization - with intracardiac ultrasound (ICE)	90	1
CC215	Percutaneous coronary intervention (PCI) with diagnostic catheterization - with intravascular ultrasound (IVUS)	90	1
CC220	Intracardiac ultrasound (ICE) Use this code only when performed alone.	30	1
CC225	Intravascular ultrasound (IVUS) Use this code only when performed alone.	30	1

Code	Exam/Activity	Unit Value	Exam Count
CC230	Optical coherence tomography	30	0
CC235	Atherectomy Use this code only when performed alone.	30	1
CC240	Atrial septal defect (ASD) closure Pediatric and/or Special Needs Service Recipients- also add workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970.	110	1
CC245	Patent foramen ovale (PFO) closure Pediatric and/or Special Needs Service Recipients- also add workload for any of codes MI931, MI935, MI940 or MI941, and/or MI945 and/or MI970.	110	1
CC250	Septal ablations	90	1
CC255	Valvuloplasty	115	1
CC260	Ventricular assist devices	50	1
CC265	Percutaneous valve replacement	150	1
	Fluoroscopy only- see code MI955 When fluoroscopy is performed in the absence of any other exam, count workload for code MI955 plus 1 exam. Round up to the higher total unit value whenever the actual increment is 5 minutes or more. (E.g. if ≥ 5 minutes, round up to 10 and if less, round down)	10 10	0 1
CC280	Percutaneous coronary intervention (PCI) with additional component - select only once per procedure (use for right heart add-on, IABP, temporary pacemaker, etc.)	25	0
CC290	Catheterization, right and left ventricle -Aortogram, coronary angiography with grafts	95	1

Code	Exam/Activity	Unit Value	Exam Count
CC295	Swan Ganz Insertion	30	0
CC305	Septostomy (E.g. Tetrology of Fallot) Pediatric and/or Special Needs Service Recipients- also add workload for any of codes MI931, MI935, MI940 or MI941, and/or MI970.	Actual or Standard Time	1
CC310	Mitral Valve Clip	150	1
CC315	Heads Up Tilt Table Test (HUTT)	75	1
CC320	Electrophysiology Study (EPS)	50	1
CC325	Ablation - without complex 3D mapping Includes cardioversion, when required.	80	1
CC330	Ablation - with complex 3D mapping (e.g. Carto, Navex, Ablation Frontier) Includes cardioversion, when required.	Actual or Standard Time	1
CC335	Permanent Pacemaker Implant– implant of single or dual chamber device Note: the workload for this activity is captured in Cardiac Catheterization Lab functional centres only Do not count workload for IR920 in addition to CC335.	60	1
CC340	Permanent Pacemaker Implant– implant of biventricular device Note: the workload for this activity is captured in Cardiac Catheterization Lab functional centres only Do not count workload for IR920 in addition to CC340.	110	1
CC345	Permanent Pacemaker Implant – replacement single or dual chamber device with/without lead(s) Note: the workload for this activity is captured in Cardiac Catheterization Lab	50	1

Code	Exam/Activity	Unit Value	Exam Count
	functional centres only Do not count workload for IR920 in addition to CC345.		
CC350	Permanent Pacemaker Implant – replacement of biventricular device with/without lead(s) Note: the workload for this activity is captured in Cardiac Catheterization Lab functional centres only Do not count workload for IR920 in addition to CC350.	90	1
CC355	Implantable Loop Recorder - implant	45	1
CC360	Implantable Loop Recorder – explant	45	1
CC370	Replacement of Permanent Pacemaker lead(s)	50	1
CC375	Revision of Permanent Pacemaker lead(s)	60	1
CC380	Cardioversion – electrical stimulation Capture this activity only if performed by unit-producing personnel (E.g. MRT).	45	1
CC385	Defibrillation Threshold Testing - (E.g. post-ICD implantation)	25	1
CC390	Implantable Cardioverter Defibrillator (ICD) - implant of single or dual chamber device	120	1
CC395	Implantable Cardioverter Defibrillator (ICD) – implant of CRT device	200	1
CC400	Implantable Cardioverter Defibrillator (ICD) - replacement of single or dual chamber device with/without leads	120	1
CC405	Implantable Cardioverter Defibrillator (ICD) – replacement of CRT device with/without leads	150	1
CC410	Replacement of ICD lead(s) only	120	1

Code	Exam/Activity	Unit Value	Exam Count
CC420	Revision of ICD lead(s) only	120	1
CC425	Laser vascularisation transmyocardial	120	1
	Fractured (broken) catheter or catheter fragment extraction See code IR355		
CC435	Pericardial puncture with or without drain	45	1
CC440	Insertion of ventricular assist device (E.g. ECMO, Impella) Note: activity is performed in Cardiac Catheterization Lab only	150	1
CC445	Removal of ventricular assist device (E.g. ECMO, Impella) Note: activity is performed in Cardiac Catheterization Lab only	150	1
CC450	Angiogenesis	115	1
CC455	Thoracotomy, with laser Note: activity is performed in EPS or Cardiac Catheterization Lab only	150	1
CC460	Drainage of an abscess or haematoma during a pacemaker or a defibrillator procedure Note: activity is performed in Cardiac Catheterization Lab only	50	1
CC465	Flutter correction (Overdrive)	45	1
	Cryotherapy/Radiofrequency ablation/ Thermoablation- See codes IR560 or IR565		
CC500	Holter monitor (e.g 24-48 hrs) Includes attachment to or disconnection from the monitor. Count one exam only either upon initiation completion of the scan.	30	1

Code	Exam/Activity	Unit Value	Exam Count
	Excludes cardiac event recorders.		
CC510	Cardiac event recorder Includes event loop monitors and symptom event monitors Excludes holter monitors. Count one exam only either upon initiation completion of the scan.	30	1
CC920	Temporary pacemaker Note: the workload for this activity is captured in Cardiac Catheterization Lab functional centres only	35	1

Magnetic Resonance Imaging

General Information and Recording Instructions for Magnetic Resonance Imaging

1. When a request is received to perform an enhanced and a non-enhanced image, count the combined code as 1 exam. However, if a request is received to perform a non-enhanced image, and as a result of the evaluation of the non-enhanced image, an enhanced image is requested, count the non-enhanced and enhanced separately as 2 exams.

2. Where applicable, both accessing the vein and injection of contrast media or radiopharmaceuticals is included in the appropriate exam. Workload includes all component activities integral to the MI conceptual model for the MI workload measurement system. The published MRI workload unit value includes insertion of the IV catheter, IV pump set-up, administration of a pharmaceutical (i.e. Lasix, Captopril, and Octreotide etc), the inherent dosage calculations, documentation, MRSA/VRE/latex activities, and image acquisition etc. Please refer to the Medical Imaging Conceptual Model for a list of component activities.

3. See code MI980 for additional workload associated with provision of IV fluids.

4. When performing an enhanced cardiac image pre and post stress, capture workload as follows:

- Pre stress image: MR311 Cardiac, gated, enhanced – 1 exam, 60 workload
- Stressing: MR320 Cardiac, stress – 0 exam, 20 workload units
- Post stress image: MR311 – 1 exam, 60 workload units
- Total exams = 2
- Total workload = 60 + 20 + 60

5. When performing an arthrogram, capture MR370 for the injection of the contrast media in the joint and MR361 or MR362 for the scan

- MR370: 0 exams, 15 workload units
- MR361: 1 exam, 45 workload units
- Total exams = 1
- Total workload = 15 + 45

6. Post processing reconstruction (PPR) times are highly variable for MRI. Use code MR105 (counted in 10 minute increments) to capture all post processing reconstruction workload for MRI. Collecting this workload is not dependent upon the physician's speciality (e.g. PPR can be requested by the radiologist, neurologist or other physician), provided the PPR is performed by unit-producing personnel. Whenever the images are reconstructed through computer automation with no hands-on technical intervention, additional workload units for post processing reconstruction are not captured as unit-producing personnel hands-on time is not involved.

7. Please see Items for Count for the definition of "exam" in Medical Imaging WMS.

8. Average number of sequences, including localizer image, per MR imaging exam is 4. For all MRI exams where more than 4 sequences are required, count additional workload using code MR110 and zero extra exam count.

Magnetic Resonance Imaging - Schedule of Unit Values

Code	Exam/Activity	Unit Value	Exam Count
MR105	MRI post processing reconstruction, when performed by UPP Count once per increment of 10 minute	10	0

Code	Exam/Activity	Unit Value	Exam Count
	periods. Do not also count workload for code MI950.		
MR110	Additional sequence beyond 4 per MRI exam: count once per additional sequence.	5	0
MR205	Brain orbits, posterior fossa, internal auditory canal nerves (IAC), and pituitary gland including sella turcica, non-enhanced May include OR planning activity.	30	1
MR206	Brain orbits, posterior fossa, internal auditory canal nerves (IAC), and pituitary gland including sella turcica, enhanced May include OR planning activity.	35	1
MR207	Brain orbits, posterior cranial fossa, internal auditory canal nerves (IAC), and pituitary gland including sella turcica, non-enhanced & enhanced combined May include OR planning activity.	40	1
MR208	Sinus(es) - maxillary, frontal, ethmoid, sphenoid	30	1
MR209	Head including brain, cerebral vasculature, cranial nerves and other soft tissues, cranial bones, joints and all other intracranial structures	60	1
MR210	Cranial Nerves, non-enhanced and enhanced thin slices- Includes the first 6 sequences. Performed in addition to Brain.	30	1
MR215	Functional MRI	60	1
MR220	Temporomandibular joints (TMJ), non-enhanced	30	1
MR221	Temporomandibular joints (TMJ), enhanced	35	1
MR222	Temporomandibular joints (TMJ),	40	1

Code	Exam/Activity	Unit Value	Exam Count
	non-enhanced & enhanced combined		
MR230	Neck, soft tissue, nasopharynx non-enhanced	30	1
MR231	Neck, soft tissue, nasopharynx enhanced	35	1
MR232	Neck, soft tissue, nasopharynx non-enhanced & enhanced combined	40	1
MR240	MR Spectroscopy	20	1
MR250	Brachial Plexus, non-enhanced	40	1
MR251	Brachial Plexus, enhanced	45	1
MR252	Brachial Plexus, non-enhanced & enhanced, combined	50	1
MR260	Cervical spine, non-enhanced	30	1
MR261	Cervical spine, enhanced	35	1
MR262	Cervical spine, non-enhanced & enhanced combined	40	1
MR270	Thoracic spine, non-enhanced	30	1
MR271	Thoracic spine, enhanced	35	1
MR272	Thoracic spine, non-enhanced & enhanced, combined	40	1
MR280	Lumbar spine, non-enhanced	30	1
MR281	Lumbar spine, enhanced	35	1
MR282	Lumbar spine, non-enhanced & enhanced combined	40	1
MR285	Two areas of the Spine, non-enhanced	45	1

Code	Exam/Activity	Unit Value	Exam Count
MR286	Two areas of the Spine, enhanced	50	1
MR287	Two areas of the Spine, non-enhanced & enhanced combined	55	1
MR290	Three areas of the Spine, non-enhanced	60	1
MR291	Three areas of the Spine, enhanced	65	1
MR292	Three areas of the Spine, non-enhanced & enhanced combined	70	1
MR300	Breast non-enhanced (unilateral or bilateral)	40	1
MR301	Breast enhanced (unilateral or bilateral)	45	1
MR302	Breast, non-enhanced and enhanced combined (unilateral or bilateral)	50	1
MR310	Cardiac, gated, non-enhanced	35	1
MR311	Cardiac, gated, enhanced	60	1
MR312	Cardiac, gated, non-enhanced & enhanced combined	80	1
MR320	Cardiac, stress Includes only the time required by the MRT to prepare the service recipient, administration of the medication (if applicable) and the application of additional pulses required. Use MR310-MR312 for the actual scanning. See special instruction #4.	20	0
MR330	Abdomen, non-enhanced Includes intra-abdominal organs (e.g. MR Enterography)	35	1
MR331	Abdomen, enhanced Includes intra-abdominal organs (e.g. MR Enterography)	40	1

Code	Exam/Activity	Unit Value	Exam Count
MR332	Abdomen, non-enhanced & enhanced combined Includes intra-abdominal organs (e.g.MR Enterography)	45	1
MR340	Pelvis, non-enhanced	35	1
MR341	Pelvis, enhanced	40	1
MR342	Pelvis, non-enhanced and enhanced combined	60	1
MR350	Endorectal or endovaginal technique	15	0
MR365	Proton spectroscopy, includes analysis	25	1
MR360	Any joint or extremity, right or left , non-enhanced Count a separate exam/unit value if the coil must be changed. For example: a) Digit/Hand, unilateral b) Hand/Wrist, unilateral c) Elbow, unilateral d) Wrist, unilateral e) Forearm, unilateral f) Shoulder/Humerus, unilateral g) Humerus, unilateral h) Knee, unilateral i) Ankle/Foot, unilateral j) Femur, unilateral k) Tibia/Fibula, unilateral l) Foot, unilateral m) Hip, unilateral n) Hip, bilateral o) Soft tissue mass of the torso	40	1

Code	Exam/Activity	Unit Value	Exam Count
	p) Toes		
MR361	Any joint or extremity, right or left, enhanced. Includes any one of: Count a separate exam/unit value if the coil must be changed. For example: a) Digit/Hand, unilateral b) Hand/Wrist, unilateral c) Elbow, unilateral d) Wrist, unilateral e) Forearm, unilateral f) Shoulder/Humerus, unilateral g) Humerus, unilateral h) Knee, unilateral i) Ankle/Foot, unilateral j) Femur, unilateral k) Tibia/Fibula, unilateral l) Foot, unilateral m) Hip, unilateral n) Hip, bilateral o) Soft tissue mass of the torso p) Toes	45	1
MR362	Any joint or extremity, right or left , non-enhanced & enhanced combined. Includes any one of: Count a separate exam/unit value if the coil must be changed. For example: a) Digit/Hand, unilateral b) Hand/Wrist, unilateral c) Elbow, unilateral	60	1

Code	Exam/Activity	Unit Value	Exam Count
	d) Wrist, unilateral e) Forearm, unilateral f) Shoulder/Humerus, unilateral g) Humerus, unilateral h) Knee, unilateral i) Ankle/Foot, unilateral j) Femur, unilateral k) Tibia/Fibula, unilateral l) Foot, unilateral m) Hip, unilateral n) Hip, bilateral o) Soft tissue mass of the torso p) Toes		
MR370	MR Arthrogram (any joint), when performed by Unit-Producing Personnel Includes only the injection of contrast into a joint. Count the scanning of the joint separately (E.g. MR361 or MR362).	15	1
MR380	Chest/thorax, non-enhanced	50	1
MR381	Chest/thorax, enhanced	55	1
MR382	Chest/thorax, non-enhanced and enhanced combined	60	1
MR400	Fetal MRI, non-enhanced	50	1
MR405	Specimen MRI (e.g. fetal demise)	30	1
MR410	MR guided biopsy including guided imaging Includes anatomic imaging. Do not also collect workload for codes GR680, MM225, MM230, IR427, or IR428.	90	1

Code	Exam/Activity	Unit Value	Exam Count
MR420	Intraoperative exam This activity is used when performing a MRI exam in the OR. Do not also count MI910.	25	0
MR425	MR Angiogram carotid arteries, non-enhanced	35	1
MR426	MR Angiogram carotid arteries, enhanced	42	1
MR427	MR Angiogram carotid arteries, non-enhanced and enhanced, combined	50	1
MR429	MR Angiogram Neurological (Brain) – non-enhanced Includes post processing time. Do not count MR105	27	1
MR430	MR Angiogram Neurological (Brain) – enhanced Includes post processing time. Do not count MR105	34	1
MR432	MR Angiogram Neurological (Brain) – non-enhanced and enhanced, combined Includes post processing time. Do not count MR105	45	1
MR435	MR Angiogram Chest/Thorax - enhanced	50	1
MR440	MR Angiogram Abdomen - enhanced	25	1
MR445	MR Angiogram Pelvis - enhanced	25	1
MR450	MR Angiogram Peripheral Upper - enhanced	25	1
MR455	MR Angiogram Peripheral Lower - enhanced	30	1
MR460	Magnetoencephalography (MEG) Includes visual evoked field (VEF), somatosensory evoked fields (SEF) or	75	1

Code	Exam/Activity	Unit Value	Exam Count
	(auditory evoked field) AEF		
MR465	MR Skeletal Survey- non enhanced Includes whole body (e.g. Multiple Myeloma screening)	46	1
MR467	MR Skeletal Survey- enhanced Includes whole body (e.g. Multiple Myeloma screening)	65	1
MR470	MR Skeletal Survey- non enhanced and enhanced, combined Includes whole body (e.g. Multiple Myeloma screening)	118	1
MR475	MRI Soft Tissues- whole body- non-enhanced. Includes post processing time. Do not count MR105	45	1
MR477	MRI Soft Tissues- whole body- enhanced. Includes post processing time. Do not count MR105	50	1
MR479	MRI Soft Tissues- whole body- non-enhanced and enhanced, combined. Includes post processing time. Do not count MR105	55	1

Miscellaneous

General Information and Recording Instructions for Miscellaneous

1. Please see Items for Count for the definition of “exam” in Medical Imaging WMS.

2. For General Radiography, Mammography, Interventional Radiology, Ultrasound, Cardiac Catheterization, MRI and PET/CT modalities, 20 minutes post processing time is integrated into published unit values. To capture workload units greater than 20 minutes, see MI950 for additional post processing workload. If the images are reconstructed through computer automation, with no hands-on technical intervention, additional workload units for post processing reconstruction are not captured as unit-producing personnel hands-on time is not involved.

3. When fluoroscopy time is included in the unit value for an exam in other modalities (except for IR), this is specified within the definition for miscellaneous MI activities. Fluoroscopy is integral to all Interventional Radiography exams; therefore MI955 is not counted along with any IR exam code. For any other exam where fluoroscopy is not specified within the definition, use code MI955.

Miscellaneous - Schedule of Unit Values

Code	Exam/Activity	Unit Values	Exam Count
MI900	Portable (use for x-ray, ultrasound and CT). May also count MI910 for portable imaging in the OR.	15	0
MI910	Operating Room (excludes MR420) or similar sterile environment. May also count MI900 for portable imaging in the OR.	15	0
MI920	Isolation Includes donning and doffing of personnel protective equipment (gloves, mask, gown) double-bagging biohazardous linen and/or equipment, post exam sanitizing protocols (e.g. using disposable wipes) of imaging equipment or MI suite and hand washing. For scenarios where there are two unit-producing personnel who are performing an exam with an isolation patient (e.g. Where one “clean” UPP is working with the equipment, and one "dirty" UPP is directly interacting with the patient (e.g. performing injections and positioning, manipulations etc.); each UPP will collect workload and zero exams for MI920 isolation procedures however only one UPP also counts workload for the medical	17	0

Code	Exam/Activity	Unit Values	Exam Count
	imaging exam itself. Note: waiting time is not counted. If an imaging room requires a 30-60 minute downtime interval for sanitizing following an airborne-isolation patient's exam, the MRT does not count this as workload.		
MI930	Conscious Sedation (Adult) This includes recovery post anaesthesia and respiratory anaesthesiologist set up.	10	0

Code	Exam/Activity	Unit Values	Exam Count
MI931	Conscious Sedation (Child) Includes recovery time post anaesthesia.	20	0
MI935	General Anesthetic (Adult and Child) Includes recovery time post-anaesthesia.	30	0

Code	Exam/Activity	Unit Values	Exam Count
MI940	Immobilization- no specialized equipment required Excludes MI941.	5	0
MI941	Pediatric immobilization- using specialized equipment (E,g. Pigg-O-Stat® Immobilizer/Positioner) Excludes MI940.	15	0

Code	Exam/Activity	Unit Values	Exam Count
MI945	Service recipient lift and/or transfer with manual, hydraulic or power lift mechanical devices (e.g. Hoyer Lift®) onto and/or off of medical imaging equipment.	10	0
MI950	Post processing – additional workload in excess of the 20 workload units specified for the component activities of each modality. (E.g. for General Radiography, Mammography, Interventional Radiology Ultrasound, Cardiac Catheterization PET/CT or 30 minutes for Nuclear Medicine only.) Count once per 10 minute period in increments. If ≥ 5 minutes, may round up to 10 and if 4 or less, may round down. Count only if performed by Unit-producing personnel. Excludes images reconstructed through computer automation with no hands-on technical intervention.	10	0

Code	Exam/Activity	Unit Values	Exam Count
MI955	Fluoroscopy		
	Count once per 10 minute period, in increments. If ≥ 5 minutes, may round up to 10 and if 4 or less, may round down.	10	0
	Excludes all Interventional Radiology exams; since IR exams include all fluoroscopy time in the published unit values.	10	1
	If MI955 is performed in the absence of any other exam, count 1 exam.		
MI960	Tomography	Actual Time	0
	When performed in the absence of any other exam, count 1 exam count.	Actual Time	1

Code	Exam/Activity	Unit Values	Exam Count
MI970	Counselling- extended Note: routine counselling activities such as providing education and preparation instructions are component activities that are integral to every medical imaging exam. Code MI970 is intended for collecting workload for unusually extended counselling activities. (E.g. nervous parents of an infant or nuclear medicine therapy might more than usual explanation time for the average service recipient). See code MM250 for complex counselling associated with Breast Navigator role in Mammography Functional Centre only. Do not count code MM250 if collecting workload for MI970.	20	0
MI980	IV fluid administration Includes provision of IV fluids for hydration, prevention of nephrotoxicity or other adverse effects of contrast or other radiopharmaceuticals, or for other physiologic requirements such as full bladder, maintenance of cardiac output or fluid challenges. Count once per 15 minute period, in increments. Note: Do not collect workload for MI980 for exams where the service recipient's IV infusion and/or the IV pump requires no action or attention by unit-producing personnel; this workload has already integrated into the unit value for each exam.	15	0

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	Unit Values	Item for Count
2205	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. Includes PACS validation, reviewing systems processes.	Actual or Standard Time	Each Occurrence
2210	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.	Actual or Standard Time	Each Occurrence
2215	Caseload Management Includes prioritization and assignment of service recipients within a caseload.	Actual or Standard Time	Each Occurrence
2220	Maintenance Includes, but not limited to, activities such as maintaining a safe, tidy environment and activities related to inventory control.	Actual or Standard Time	Each Occurrence
2225	Maintenance of Equipment	Actual or	Each Activity

Code	Activity	Unit Values	Item for Count
	Includes preventative maintenance and repair of processing equipment; preventative maintenance and repair of imaging equipment; routine safety checks, maintenance and cleaning of equipment (e.g. cassettes).	Standard Time	
2230	Radiopharmaceutical preparation for Generator elution including QC to evaluate, including aluminum ion checks and molybdenum breakthrough. Does not include incubation time (E.g. time from reconstitution to time of use) since waiting time is not counted as workload.	10	Each Occurrence
2232	Radiopharmaceutical preparation for “Add and shake” kits, colloid without boiling. Does not include incubation time (E.g. time from reconstitution to time of use) since waiting time is not counted as workload.	5	Each Occurrence
2234	Radiopharmaceutical preparation for “Add and shake” kits, colloid without boiling with particle sizing of macro-aggregates. • MAA particle sizing where performing full counting/sizing of 100 particles • Generalized sizing verification check Does not include incubation time (E.g. time from reconstitution to time of use) since waiting time is not counted as workload.	5 2.5	Each Occurrence
2236	Radiopharmaceutical preparation for a cardiolite kit. • Add + Shake Kits (boil) (MIBI) Does not include incubation time (E.g. time from reconstitution to time of use) since waiting time is not counted as workload.	18	Each Occurrence
2238	Radiopharmaceutical preparation for colloid requiring boiling.	18	Each Occurrence

Code	Activity	Unit Values	Item for Count
	Includes calculations, preparing injection and administering the radiopharmaceutical. (E.g. Sulfur Colloid, MIBI) Does not include incubation time (E.g. time from reconstitution to time of use) since waiting time is not counted as workload.		
2240	Radiopharmaceutical preparation for chromatography. Includes column filtration method using Sep-Pak® or strips for MIBI. Does not include incubation time (E.g. time from reconstitution to time of use) since waiting time is not counted as workload. If QC fails and must be repeated, count each attempt separately.	5	Each Occurrence
2245	Receipt, verification, and stocking of radiopharmaceutical unit doses	15	Each Occurrence
2250	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.	Actual or Standard Time	Each Occurrence
2260	QC activities related to the management of image quality.	Actual or Standard Time	Per Activity
2262	QC activities related to the management of an occupationally safe environment.	Actual or Standard Time	Per Activity
2264	QC activities related to the management of a radiation safe environment for service recipients and non-occupationally exposed individuals.	Actual or Standard Time	Per Activity
2266	QC activities related to equipment testing (i.e. HARP, Acceptance).	Actual or Standard Time	Per Activity
2268	QC activities related to the management of maintaining an image quality in an	Actual or Standard Time	Per Activity

Code	Activity	Unit Values	Item for Count
	electronic environment (i.e. PACS).		
2270	QC related to Radiation Protection Officer (RPO) and Radiation Safety Officer (RSO) activities.	Actual or Standard Time	Per Activity
2272	QC of gamma counter.	Actual or Standard Time Per Camera	Per Day
2274	QC of radiopharmaceuticals.	Actual or Standard Time	Per Day
2276	QC activities related to lab monitoring.	Actual or Standard Time	Per Week
2278	QC activities pertaining to collimator changes.	Actual or Standard Time Per Camera	Per Day
2280	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.	Actual or Standard Time	Each Round Trip
2286	Copy/Digitizing Images	10	Per Exam
Organizational/Professional Activities			
2305	Board/Committee Functions Activities performed during worked hours relating to the preparation, attendance and follow-up of health service organization board/committee functions.	Actual or Standard Time	Each Occurrence
2310	Program Management Management activities related to multidisciplinary program(s) and program management activities related to the organization as a whole.	Actual or Standard Time	Each Occurrence

Code	Activity	Unit Values	Item for Count
2315	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.	Actual or Standard Time	Each Occurrence
2320	Advocacy-Professional Activities Includes services provided to the professional, scientific and local communities, agencies and service groups during worked hours.	Actual or Standard Time	Each Occurrence
2325	Travel Includes any travel associated with organizational/professional activities.	Actual or Standard Time	Each Round Trip
Teaching/In-Service			
2405	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.	Actual or Standard Time	Each Occurrence
2410	Teaching of professionals Activities involved in the preparation, orientation, presentation and/or instruction of health service organization personnel.	Actual or Standard Time	Each Occurrence
2415	Academic teaching Activities involved in the preparation and presentation of course/lecture material to	Actual or Standard Time	Each Occurrence

Code	Activity	Unit Values	Item for Count
	students, evaluation of students as part of their academic curriculum.		
2420	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.	Actual or Standard Time	Each Occurrence
2425	Travel Includes any travel associated with teaching/in-service activities.	Actual or Standard Time	Each Round Trip
Research			
2505	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.	Actual or Standard Time	Each Occurrence
2510	Travel Includes any internal or external travel associated with research activities.	Actual or Standard Time	Each Round Trip

Return to Chapter Section Sub-Topics