

Analysis of Medical Imaging Services and Workforce Alignment in Newfoundland and Labrador

Objective

To compare the level of medical imaging services in Newfoundland and Labrador (NL) to those in Tasmania (TAS) and to assess the alignment of the workforce and level of service provided in each hospital and health centre.

Practice Points

- NL has among the highest use of CT imaging in Canada.

Results

Table 1. Number of Facilities in TAS and NL Providing Each Level of Medical Imaging Services

Level	Description	TAS	NL
1	Low-risk ambulatory care services during business hours and may provide some limited after-hours services	10	0
	Has access to or on-site single, mobile or fixed, general x-ray unit which is delivered by licensed operator		
2	Provides a low-risk inpatient service	3	17
	May provide a low-risk ambulatory care service		
	Service is predominantly delivered by a sole radiographer and support may be provided by licensed operators		
	Designated room on-site with a fixed x-ray unit and may also include digital radiography; however, depending on the range of services provided at the facility, a mobile image intensifier may be the only modality available		
	May also have access to ultrasound for non-complex conditions		
3	On-site ultrasound and Computed Tomography (CT) services	1	8
	Performs examinations involving contrast, such as intravenous pyelograms		
	On-site radiologists able to perform some biopsies and procedures		
4	On-site Magnetic Resonance Imaging (MRI) services	1	2
5	Limited range of specialized interventional radiology and nuclear medicine services	1	2
6	Provides complex, on-site interventional and neurointerventional procedures	1	1
	MRI available on-site		
	Interprovincial referral role		

- There are many more facilities providing Level 2 and Level 3 medical imaging services, including CT services, in NL compared to TAS.

Table 2. Description of Workforce Requirements to Provide Each Level of Medical Imaging Services

Level	Workforce Description
1	Access to a radiographer or if no radiographer available, then a licensed x-ray operator with 24 hour access to an appointed radiographic advisor for supervision
	Medical imaging interpreted by physician/health professional
	Radiologist readily contactable to discuss findings and provide a report
2	On-site radiographer available during business hours
3	Radiographer in attendance who has regular access to radiological consultation
	Physician must be on-site at all times when procedures involving contrast are performed
	Ultrasound performed by a sonographer or physician trained in ultrasound
4	After-hours access to consultant radiology for reporting
	On-site radiographer on-call 24 hours
	Registered radiographers and sonographers
	Registered Nurse (RN)/Licensed Practical Nurses (LPN) as required
5	Clinical Director of medical imaging and lead radiographer
	Radiologist on-site and on-call 24 hours
	May have radiology resident
	Registered and licensed nuclear medicine specialist present during radiopharmaceutical administration and available for consultation 24 hours
	Full-time supervision during procedures by a nuclear physician or radiologist with nuclear medicine qualification
	RN with evidence of ongoing clinical competency and experience appropriate to the service being provided on-site during the hours of operation of the department and available after-hours
	Access to an appropriately credentialed anesthesiologist as required
Registered nuclear medicine technologists	
6	Business hours access to a radiochemist/radiopharmacist
	Business hours access to technical support staff
	On-site imaging modality specialists during business hours
	Has radiology residents (2 minimum) and postgraduate fellows
	One or more full-time medical physicists
	A full-time radiopharmacist/radiochemist available if radiopharmaceuticals are manufactured inhouse
	An experienced/suitably qualified RN

Table 3. Level of Medical Imaging Services and Level of Workforce Providing Medical Imaging Services for Each Hospital in NL

Hospital	Service Level	Workforce Level
Eastern Health (EH)		
Health Sciences	6	6
St. Clare's	4	4
Janeway	4	4
Carbonear	3	4
Burin Peninsula	3	4
Dr. G.B. Cross	3	4
Waterford	2	2
Miller Centre	2	2
Central Health (CH)		
James Paton	5	4
Central NL	3	4
Western Health (WH)		
Western Memorial	5	4
Sir Thomas Roddick	3	3
Labrador-Grenfell Health (LGH)		
Charles S. Curtis	3	4
Labrador	3	4
Labrador West	3	4

- Two hospitals outside St. John's provide Level 5 medical imaging services, but do not have the workforce required for this level of service.

Table 4. Level of Medical Imaging Services and Level of Workforce Providing Medical Imaging for Each Health Centre in NL

Health Centre	Service Level	Workforce Level
Eastern Health (EH)		
Dr. Walter Templeman	2	2
Dr. William H. Newhook	2	2
Placentia	2	1
Dr. A.A. Wilkinson	2	2
Bonavista	2	2
US Memorial	2	2
Grand Bank	2	2
Central Health (CH)		
Connaigre	2	2
Dr. Y.K. Jeon Kittiwake	2	2
Fogo Island	2	2
Notre Dame Bay	2	2
Lewisporte	1	2
Dr. Hugh Twomey	1	2
Green Bay	2	2
Baie Verte	2	2
A.M. Guy	2	2
Western Health (WH)		
Calder	2	2
Dr. Charles L. Legrow	2	4
Bonne Bay	2	2
Rufus Guinchard	2	2
Labrador-Grenfell Health (LGH)		
White Bay Central	1	2
Strait of Belle Isle	1	2
Labrador South	1	2

- With the exception of the Placentia Health Centre, all health centres have an adequate workforce for the level of medical imaging service provided.

Conclusions

1. Access to medical imaging is more widespread in NL than in TAS.
2. In many cases the workforce appears to be at a higher level than the service provided. However, the same personnel may acquire images and also run laboratory tests in the smallest sites. It is not clear if this influences the data. This should be reviewed when planning services for each site.