Central Health

"Healthy People,

Healthy Communities"

ENVIRONMENTAL SCAN

CORPORATE IMPROVEMENT DEPARTMENT

DECEMBER 2013

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INTRODUCTION

Central Health's Environmental Scan 2013 is a comprehensive assessment and current state analysis, focusing on the health status of citizens and the performance of the health system. The region of focus is the central region of Newfoundland and Labrador, more specifically the catchment area of the Central Regional Health Authority (herein referred to as Central Health). The information found herein will be utilized to assist strategic and operational planning within Central Health.

The scope of environmental scanning is broad. An environmental scan can be defined as the analysis and evaluation of internal conditions, external data and factors that affect an organization. An environmental scan is useful in identifying the trends and drivers of change affecting an organization's performance and provides information to focus a plan for improvement.

The analysis and evaluation of the internal conditions of Central Health involved an extensive review of corporate documents as well as internal reporting systems and databases. Input into the development of the scan was solicited internally from senior leaders, directors, managers, frontline employees, and physicians. Central Health's leaders were consulted throughout the scanning process to attain updates for their area of responsibility. They were also given the opportunity to provide any pertinent information that could be used to inform strategic planning.

External feedback was solicited from community partners and municipalities/service districts to gain an understanding of the health needs of citizens across the region. Questionnaires were distributed to these groups over the summer and early fall of 2013. A summary of the feedback can be found in *Appendix A*. This input supplements information provided from community groups such as the Community Advisory Committees and information gathered from the Central NL Citizen Engagement Project.

The majority of the external data utilized in the scan was derived from the following sources: *Canadian Census 2006* (Statistics Canada); the *Canadian Community Health Survey* (CCHS) 2005-2012; *Newfoundland and Labrador Centre for Health Information* (NLCHI); *Community Accounts*; and the *Canadian Institute for Health Information* (CIHI) *Health Indicators 2013*. The most up-to-date statistics available were used and where possible comparisons provided.

The 2014-2017 Strategic Directions set forth by the Provincial Government of Newfoundland and Labrador are outlined in *Appendix B*. These Strategic Directions are intended to guide the development of Central Health's new Strategic Plan. These Strategic Directions must be considered as a part of the organizations strategic planning process and must be reflected as appropriate in the Central Health Strategic Plan, Operational Plans and also divisional work plans.

This report uses the *Health Indicator Framework*, developed by CIHI and Statistics Canada, to organize and present the information from both the internal and external review.

The framework utilizes many indicators which are organized into four categories:

- **Community and Health Systems Characteristics**
  Provides useful contextual information, rather than direct measures of health status or quality of care

- **Health Status**
  Provides insight on the health of Canadians, including well-being, human function and selected health conditions

- **Non-Medical Determinants of Health**
  Reflects factors outside of the health system that affect health, such as income and education

- **Health System Performance**
  Provides insight on the quality of health services, including accessibility, appropriateness, effectiveness and safety

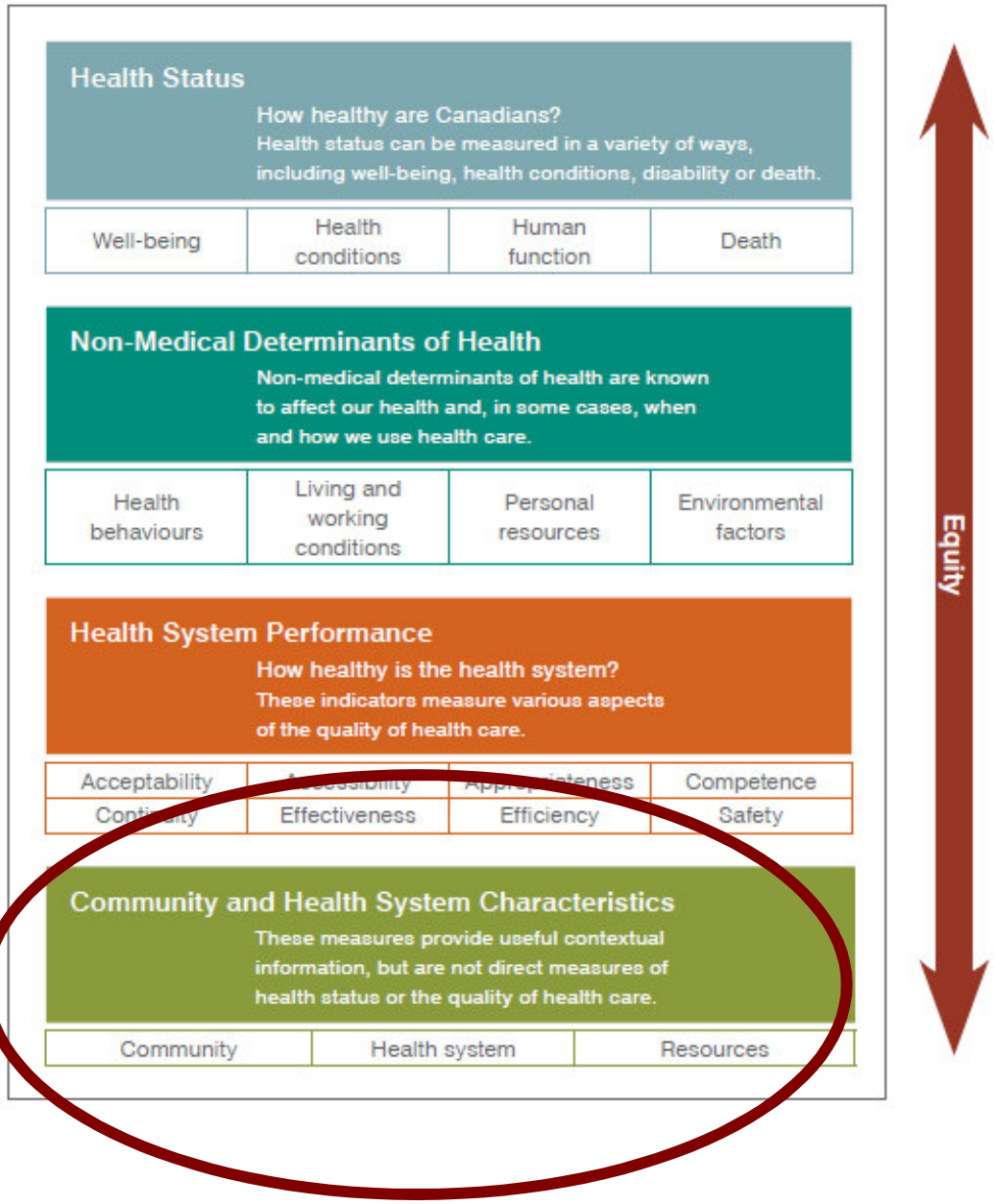
This report attempts to answer the following questions:

- How healthy are the residents of the central region of Newfoundland and Labrador?
- How healthy is 'Central Health' as a health care system?

It is hoped this report will provide the information required to assist the Board of Trustees in identifying the priorities and Strategic Directions for 2014-2017.

The Health Indicator Framework is provided on the next page of this document. In addition, the framework is inserted at the beginning of each section and can be used as a guide to locate information.

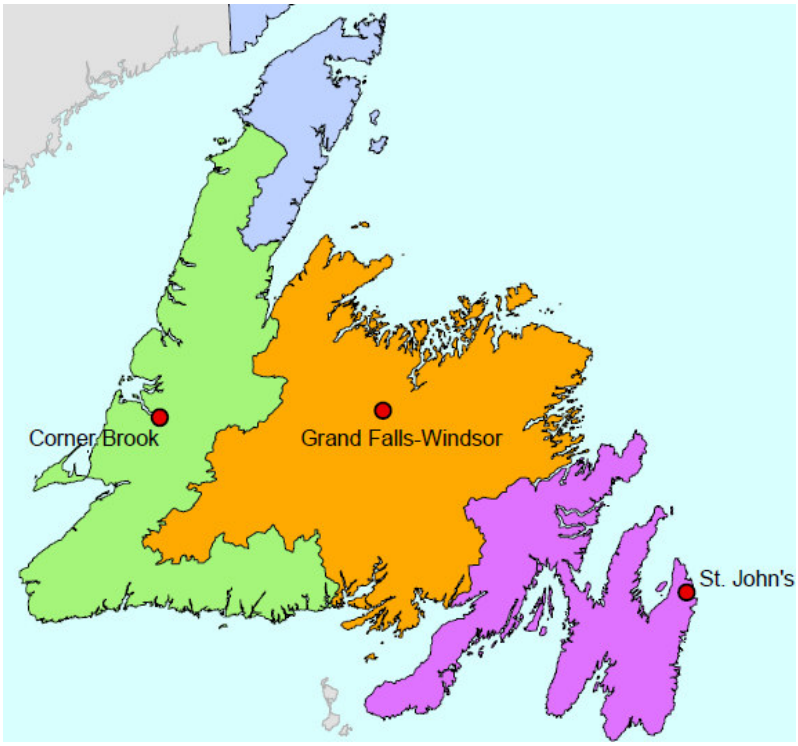
COMMUNITY AND HEALTH SYSTEM CHARACTERISTICS



Source: CIHI Health Indicators (2013)

HEALTH SYSTEM – ABOUT CENTRAL HEALTH

Central Health is the second largest health region in Newfoundland and Labrador serving a population of approximately 94,000 in 177 communities. The service district extends from Charlottetown in the east, Fogo Island in the north, Harbour Breton in the south to Baie Verte in the west. This geographical area encompasses more than half of the total landmass of the island and services nearly 20 per cent of the provincial population.



VISION

Central Health's vision is for healthy people and healthy communities.

MISSION STATEMENT

By March 2017, Central Health will have provided quality health and community services and programs which respond to the identified needs of the people of central Newfoundland and Labrador within available resources.

VALUES

Central Health's values offer principles and a guiding framework for all employees, physicians and volunteers.

Accountability - *Each person is responsible for giving their absolute best effort to achieving the success of the organization's vision of healthy people in healthy communities.*

Collaboration - *Each person works as a team and partners with other providers and organizations to best meet the holistic needs of clients and the organization.*

Excellence - *Each person contributes to quality improvement and a culture of safety through the life-long development of their knowledge, skills and use of best practices.*

Fairness - *Each person engages in practices that promote equity and adherence to ethical standards.*

Privacy - *Each person respects privacy and protects confidential information.*

Respect - *Each person is committed to fostering an environment that embraces respect, dignity and diversity and encourages honest, effective communication.*

LINES OF BUSINESS

Central Health accomplishes its mandate through five lines of business:

- ***Promoting health and well-being***
- ***Preventing illness and injury***
- ***Providing supportive care***
- ***Treating illness and injury***
- ***Providing rehabilitative services***

Within Central Health, there is a diverse array of primary, secondary, long term care, community health and various enhanced secondary services. These are provided through 11 health care facilities, including two regional referral centers, 24 community health centers and four long term care (LTC) facilities. In total, Central Health has 811 beds, operational and staffed, throughout the region including 247 acute care, 510 long-term care, 13 palliative care, 9 respite, 5 restorative care, 3 residential units, and 24 bassinets.

Central Health is committed to a Primary Health Care (PHC) model of service delivery. A multidisciplinary team of health professionals, support staff, and partners provide the care and services required to meet the mandate of Central Health.

Select utilization data is presented in the table below which indicates that there has been an increase in the patient days and admissions to acute care, along with emergency room visits.

Table 1: Central Health Key Statistics (2010-2013)

Key Statistics	2010-11	2011-12	2012-13
Patient Days for Acute Care	74,805	75,508	79,941
Admissions to Acute Care	7,144	6,820	8,223
Acute Care Beds	264	264	247
Long Term Care Resident Days	182,728	179,791	181,919
Admissions to Long Term Care	375	369	388
Long Term Care Beds	518	518	510
Operating Room Procedures	8,442	8,735	8,091
Emergency Room Visits	96,487	90,462	99,939
Total Employees	3,279	3,153	3,115

Source: Central Health Finance Department (2013)

Central Health is also responsible for the licensing of 25 personal care homes in the central region with 1197 beds. Four of the homes are licensed for Level I clients only and the additional 21 homes are licensed for Level I/II. The regional vacancy rate as of November 1, 2013 was 30 per cent. Vacancy rates for personal care homes are based on the total number of beds occupied and the staffing levels that are required to provide care to clients. A vacancy rate of 30 per cent may initially indicate that there are beds available throughout the region however, this rate should be interpreted with caution as some personal care homes cannot operate to maximum capacity due to staffing levels (1).

Central Health partners with the *Miawpukek First Nation* to support health care service delivery at the Conne River Reserve. This partnership includes the provision of primary and secondary health care services including health promotion and protection, supportive care, treatment of illness and injury as well as access to emergency services (2).

RESOURCES & INTERNAL ENVIRONMENT

The total workforce for Central Health is approximately 3,115 employees including 173 physicians, with 111 of these fee-for-service physicians. Central Health staff and physicians are the organizations greatest resource. Unionized employees in the organization are represented by both the Newfoundland Association of Public Employees and Newfoundland Labrador Nurses Union. As detailed later in this report, the *Central Health Human Resource Plan 2010-2014* sets out a strategy to address key human resource areas including leadership, talent management, transition, safety and

wellness. The goals of the plan are to ensure priorities are acted on and strategies are developed to sustain human resources and services.

Central Health is undergoing a period of significant change and the internal environment has shifted considerably since the 2010 Environmental Scan. At the present time there are numerous review processes examining organizational efficiency, and a management restructuring process is underway. Central Health has been working diligently with the Department of Health and Community Services to generate the greatest value for the substantial investment the Provincial Government makes in healthcare. The process has and will continue to generate efficiencies particularity in non-clinical areas while improving the overall quality of healthcare. As detailed in the *Health System Performance* section of this report, clinical efficiencies will also need continued focus.

This section of the report attempts to detail the current internal environment and examines: organizational culture, leadership, efficiency, resource allocation and infrastructure, and quality improvement.

ORGANIZATIONAL CULTURE

Central Health acknowledges that organizational culture plays a significant role in the quality of work, client experience and staff engagement. In 2009, Central Health contracted a consulting firm, Deloitte, to complete a Cultural Assessment of Central Health. The purpose of the CulturePrint™ was to examine what areas of the organization were working well, where improvements were needed, what employees desired in terms of an organizational culture, and what critical actions needed to be taken to enhance organizational performance. A total of 1300 surveys were completed for a response rate of 41 per cent. Results of the survey revealed a gap between the current culture and desired culture, particularly in the following cultural dimensions:

- *Involvement:* The level of contact and input with others and the ability to rely on others. The will to involve others in decisions and problems.
- *Openness & Trust:* The degree to which trust and open communication exists in the organization.
- *Encouragement & Learning:* The value placed on learning and development. The opportunities available that allow people to grow, develop, and meet their full potential.
- *Embracing Change:* The ability to adapt and manage change within the organization.
- *Propensity for Risk:* How well the organization supports risk-taking amongst employees and responding to new situations.
- *Shared Goals and Objectives:* A clear understanding of the organization's goals and objectives and alignment of efforts to achieve those goals.

Seven recommendations were made for investment into the culture of Central Health including: the development of a plan for culture, senior leadership and director level

team development, performance management, learning and growth, change management, communication and collaboration. An action plan was developed and work has been ongoing in the organization in all areas.

In 2012, the *Guarding Minds @ Work* survey was administered to staff throughout the region. *Guarding Minds @ Work* is a unique, evidence-based, comprehensive set of resources designed to effectively assess and address psychological health and safety in the workplace. A psychologically healthy and safe workplace is one that promotes employees' psychological well-being and actively works to prevent harm to employee psychological health due to negligent, reckless or intentional acts. The results of the assessment corroborated the findings of the cultural assessment and provided further insight into the actions and improvements needed.

Central Health also assesses the patient safety culture every three years by administering the Patient Safety Culture Survey. This survey, developed by Accreditation Canada, measures employees' perceptions, attitudes, and activities associated with patient safety. The survey allowed Central Health to identify successes and opportunities for improvement, and monitor changes within the organization (3).

A comparison of the 2009 and 2012 surveys was conducted in an effort to understand the changing climate of patient safety within Central Health (3). This analysis produced the following central themes:

- The importance of patient safety within Central Health is reinforced by managers, directors, and senior leadership
- Improvements can be made in the areas of talking about errors and communicating actions from reported safety incidents, such as occurrences, to frontline staff
- Frontline employees report a higher level of patient safety within their own departments/units than in the organization as a whole
- There has been an improvement in the overall perceptions of patient safety

The results of the 2012 survey have been shared with managers and frontline employees. Over the next year, the Patient Safety Officer will be working with managers to review the results of the survey with employees to develop a culture improvement plan.

Attendance management is a factor impacting organizational culture and performance. The *Central Health Human Resource Plan* addresses this significant reality in healthcare organizations. Central Health has been challenged by employee sick leave rates and the significant costs. In 2011-2012, as part of a strategy to contain and reduce the costs of sick leave, Central Health implemented a practice of not replacing the first sick call unless there were demonstrated patient safety concerns as a result of this action. In the *Human Resource Plan*, Central Health projected a decrease in sick leave by 2 per cent by 2012 and a further 2 per cent by 2014.

Central Health's Employee Wellness/Health and Safety Division promotes a holistic approach to attendance support which includes monitoring attendance, counseling employees who exceed the organizational average, and offering supports to employees to increase their attendance at work, where appropriate. Misuse of sick leave, when recognized, is dealt with through the Labour Relations process. Through these efforts, Central Health reduced sick leave by 5.34 per cent in 2012. A reduction in sick leave cost was not realized as wages increased at the same time. Sick leave use at Central Health is consistent with sick leave use in the province and industry; however Central Health does consider this to be an area where management control may impact positive change. In 2011, sick leave costs totaled $7,369,773 and in 2012 cost $7,452,062 with an increase of 1.12 per cent. Relief costs for 2011 and 2012 were $3,947,866 and $3,989,402 respectively, with an increase of 1.05 per cent.

LEADERSHIP

In 2011, Central Health approved the new Medical Staff By-Laws which replaced by-laws that were in place for many years. The by-laws provide an administrative structure for the governance of medical staff affairs and promote a focus on quality. Currently, there are four well established Medical Advisory Committees, one of which is a Regional Committee, in place at Central Health. Physicians are engaged in a number of quality processes, wait time committees and safety initiatives. Several physician leaders have completed or are completing the Physician Management and Leadership Program. This program is a collaboration between the RHAs, Department of Health and Community Services and Memorial University. This university certificate program is designed to equip physicians in the Newfoundland and Labrador healthcare system with the skills and expertise to excel as effective leaders. Since the enactment of the new by-laws with a focus on quality, a change in the responsibilities and remuneration for physician leaders, physician education and a shift in the physician leadership in the organization significant progress has been made.

In the 2013 Accreditation Report it is noted that, "physician engagement is recognized by the organization as a key element necessary to the success of the quality management program. Adjusting communication and education sessions to suit physicians' schedules have greatly improved participation. Plus, clearly stating role expectations for Chiefs of Staff and the Medical Chief of Rural Services as well as the implementation of a single set of by-laws have all contributed to increased physician engagement". (4).

Clear accountability is required for effective leadership. In October 2013, Central Health hosted a Management Forum for all managers to come together to discuss the development of a *Leadership Accountability Framework*. This framework will provide Central Health with an understanding of responsibilities and expectations throughout all areas of the organization and will address many of the issues identified during the leadership focus groups noted in the next section (5). Physicians will also be engaged in the development of the accountability framework.

The draft *Leadership Accountability Framework* encompasses the directions set by the organization's governance and strategic directions and incorporates the values and organizational culture of Central Health. The framework focuses on six leadership domains including: resource management, quality and safety, client-centered care, collaboration and partnerships, leading and developing people and performance and results.

To support leaders to lead in a caring environment, Central Health has adopted LEADS, the Health Leadership Capacities Framework, as a foundational element for health leadership development at Central Health. The *LEADS in a Caring Environment Framework* represents key skills, behaviors, abilities and knowledge, required to lead in all sectors and all levels of the health system. It presents a common understanding of what good leadership entails. A key foundation for the LEADS framework is CARING – for clients, for staff, for the health of citizens. This training process will assist leaders to fulfill their roles and responsibilities identified in the draft *Leadership Accountability Framework*.

EFFICIENCY

Central Health's financial environment has changed in the recent past. Previously, the focus was on stabilization of existing systems and containment of growth in expenditures. Since the delivery of the 2012 budget, as provided by the Department of Health and Community Services, Government of Newfoundland and Labrador, the focus has shifted to a containment in the overall cost of providing health care. Central Health has shifted into a period of intense analysis to identify areas to improve efficiency and find ways to contain costs and improve productivity. This analysis was primarily achieved through the *Health Care Management* (HCM) review process which is detailed in the section below.

In 2012, consultants from *Health Care Management* (HCM) facilitated an operational improvement process by which Central Health scrutinized its expenditures and were benchmarked, or compared, to peer organizations both within Newfoundland and Labrador and throughout Ontario. Central Health managers and directors were engaged in a process to examine operations and identify efficiencies. Numerous recommendations were prepared and analyzed for feasibility ensuring there were no negative impacts on the quality and access to services. Central Health has implemented a number of the recommendations while others are requiring further planning prior to proceeding to implementation.

In addition to the HCM review, the Regional Health Authorities (RHAs) participated in a *Healthcare Management Review*. To inform the process at Central Health, focus group sessions were held during the spring of 2013 with the organization's leadership including management and physician leaders.

Overall themes identified through the focus groups to be considered when restructuring included: improved communication and teamwork; improved technology and support; standardization; continuous quality improvement and safety,

continued education for managers; consolidated programs and services; autonomy and accountability; evidence-based practices, and the utilization of indicators for ongoing monitoring and improvement.

The changes planned or implemented to date from the HCM review process and the management review will increase productivity and efficiency at Central Health and result in savings of approximately $8.7 million annually. Based on the results of the review and subsequent actions, it was determined that Central Health could phase out 76 full time equivalents, including 21 management positions (6). In order to achieve this reduction, positions will be eliminated through attrition. Changes are underway to restructure the organizational management structure with an emphasis on program management and alignment of services to best meet client needs.

In addition to the operational improvement initiatives to focus on efficiencies detailed above, other efficiency review processes are currently underway including the *Deloitte Strategic Procurement Project* and the *Health Shared Service Strategy and Supply Chain Assessment*.

In April 2013, the *Strategic Procurement Project* commenced at Central Health. This provincial project is looking across all core government bodies for opportunities to implement process improvements and procurement savings. There are a number of streams involved in this process ranging from commodities to corporate processes. Representatives from Central Health's Finance and Materials Management Departments, along with other program managers and directors, have been meeting with members of the provincial project team(s) to inform the work of the project. This project is still ongoing and is expected to result in significant savings and efficiencies (6).

The *Shared Service Strategy and Supply Chain Assessment* project is a feasibility study to explore new areas for potential improvements in service quality and optimization of resources. The scope of the project includes the identification of potential opportunities for shared services across and within RHA's and the development of a strategy and implementation plan.

The project scope will also include a supply chain assessment, which is the examination of the flow of goods and processes in the areas of planning and inventory management: sourcing and procurement; distribution and logistics; and identification of potential opportunities to sustain savings already realized in the *Strategic Procurement Project*. This project will identify potential opportunities to increase quality, accuracy, availability and timelines of healthcare services, promote more integrated communication and collaboration across and within RHAs, and reduce operating costs in non-clinical areas (6).

Over the past number of years, Central Health has formalized financial analysis through a variance reporting process. Each month, directors are expected to review their financial records and prepare their variance reports to identify current or potential financial pressures and also propose solutions to mitigate these pressures.

This has led to greater accountability and understanding of financial information by the leaders in the organization (7). The finances of the organization are overseen by Planning and Finance, a committee of the Board of Trustees. Central Health had a strong performance in the areas of finance and resource management during the 2013 Accreditation process. Financial indicators are also monitored quarterly on the Board of Trustees Scorecard.

RESOURCE ALLOCATION & INFRASTRUCTURE

Making resource allocation decisions that affect care and services is challenging given the complexity of health needs of residents and the available resources. Accreditation Canada assessed that Central Health is a good steward of its resources during the on-site survey of 2013 (3). This assessment was based on a number of factors and processes in place in the organization. There is a well-documented policy and procedure to support the capital equipment and capital renovation allocation decisions. There is good communication between Central Health and the Health Foundations, the main fundraising entities in the region. As a result of this relationship, the boards of the Foundation are able to clearly understand resource requirements and are able to clearly communicate the organizations needs to the funders. This relationship results in appropriate resource allocation and ensures that the most pressing needs are met (3).

Central Health uses the *Accountability for Reasonableness* approach, which is an ethical decision-making framework for fair priority setting. This framework identifies five conditions of a fair priority setting process: relevance, publicity, revision, enforcement, and empowerment. The *Accountability for Reasonableness* approach allows Central Health's leadership to establish its own process for identifying the "right mix" of individuals to be involved in a decision. Additionally, it allows for the establishment of its own tools, templates and processes as well as ensuring the incorporation of core values into the decision-making process.

To support infrastructure and equipment, Central Health has established a comprehensive Preventative Maintenance (PM) Program designed to support the safe delivery of service to clients and staff. This program is tracked through a regional Computerized Maintenance Management System (CMMS) and customized PM programs are established in accordance to manufacturers' guidelines. In addition to the PM system, processes are in place for identifying broken equipment, equipment problems and product alerts and recalls. This is achieved through the Clinical Safety Reporting System (CSRS), communications from manufacturers, Health Canada and the Emergency Care Research Institute. An electronic tracking program for alerts, the Risk and Safety Management Alert System (RASMAS), is also in place.

Central Health is committed to moving toward a capital planning and priorities process that is based on the criteria of equipment condition and useful life guidelines as set out by the American Society for Health Care Engineering. In keeping with this commitment, Central Health has engaged VFA, a software package utilized to manage, track, and assess facility infrastructure. VFA is considered to be a rolling tool as it

facilitates long term planning for infrastructure maintenance while maximizing the allotted expenditures. The VFA process involves a Facility Condition Assessment (FCA) and is designed to provide accurate infrastructure data that can be used by the organization for planning and resource management (8).

With respect to physical structures and resources, Central Health has performed considerable work on infrastructure needs in the past number of years. Criteria have been developed for infrastructure priorities that are based upon audit and inspection of facilities allowing for multi-year planning. Currently there are a total of 122 ongoing projects being completed in facilities throughout Central Health. The types of projects range from flooring upgrades to the facilities in New-Wes-Valley, at Brookfield Hospital and Bonnews Lodge, to the redevelopment and relocation of the dialysis unit at the Central Newfoundland Regional Health Centre (CNRHC) (9).

As part of the redevelopment of CNRHC, the Provincial Government provided Central Health approximately $22 million to redevelop the operating suites. The new operating rooms are expected to be completed by early winter 2014 and then work will begin on the redevelopment of the old operating suites. This will represent a significant milestone in the redevelopment of the physical structure at CNRHC (9).

Redevelopment of the Lewisporte Health Centre, specifically North Haven Manor, has been ongoing since 2012. Phase 1 was completed in 2013. In Phase 1, North Haven Manor and a Protective Care Residence (PCR) was completed. The PCR provides a home-like secure environment for individuals with mild to moderate dementia. The focus of care within the PCR is for residents to experience life as much as possible in the same manner as it had been experienced prior to the onset of the disease. Supervision and support for residents is provided by personal care attendants 24 hours a day. Professional staff are accessible to provide care coordination, leadership and recreation. Phase 2, with completion expected in 2014, involves the redevelopment of the administrative offices, laboratory, x-ray and support services departments.

QUALITY IMPROVEMENT

Central Health has made significant progress in the area of quality improvement. In 2011, Central Health approved an *Integrated Quality Improvement Framework* for the organization. As a part of the QI Framework, the Board Performance and Improvement Committee (BPIC) of the Board of Trustees, is responsible for overseeing the quality of care, patient safety and clinical service provided by the organization. Reporting to the BPIC is the Quality Improvement Oversight Committee (QIOC) with a mandate to ensure processes are in place to continuously improve the quality of care provided by Central Health. The committee is also responsible for the coordination and oversight with respect to accreditation and quality improvement projects/initiatives.

To fulfill one of its objectives, the QIOC developed a "*Step-by-Step Guide to Implementing Quality Improvement Initiatives at Central Health*" in the spring of 2013. This nine step process guides the user from problem/issue identification through to

project completion which provides a coordinated, collaborative approach for quality improvement projects/initiatives organization wide.

In recent years, the organization has also adopted several processes that contribute to overall quality and safety of health care programs and services including appropriate investigation of occurrence reports, concise case reviews, quality case reviews and patient safety leadership walk rounds, which are detailed further in this report. Education and training sessions related to the Model of Improvement, Plan-Do-Study-Act (PDSA) and process mapping has also been provided.

In the May 2013 Accreditation Report, the surveyors noted that, "the organization does well with supporting quality improvement, safety initiatives and risk assessment and mitigation across the region. The organizations' attention to quality and safety as one of its three strategic goals has resulted in a shift in the culture of the organization." (4).

Although there has been a shift in culture with significant gains realized, efforts are required to embed quality improvement into everyday practice. To achieve this, the organization will need to focus on building the capacity of staff to lead quality improvement initiatives by delivering education and training on improvement theory, methods, tools and techniques. One quality improvement approach that is receiving national attention in health care is Lean. Lean management principles have been used effectively for decades in the automobile industry and have successfully been applied to the health care industry. Lean education through training sessions, workshops, webinars and article dissemination has been ongoing at Central Health for the past year. Lean methods and tools have been used to a limited degree throughout the organization.

In healthcare, "Lean is a client-focused approach to managing and delivering care embedded in continuous improvement. Lean is based on the concept of servicing a greater volume of clients, with improved quality and more satisfied staff … with the same or fewer resources… using creativity before capital" (10). Lean is about focusing on value-added activities while eliminating non-value added activities. Examples of how Lean has been used in health care includes: enhancing flow in the Emergency Department, reducing wait list procedures, reducing medical errors by standardizing and streamlining processes, and decreasing health care costs due to inefficient use of time and wasted supplies. Many health care authorities across the country have trained staff in Lean methodologies and tools to help transform their health care system.

The key principles of Lean encourage a focus on processes that deliver value, eliminate waste, promote flow, and continuously improve the processes and the people. Lean principles, when applied consistently, can have dramatic effects on productivity, cost and quality. In order for Lean principles to take root, leaders must first work to create an organizational culture that is receptive to Lean thinking. The commitment to Lean must start at the very top of the organization, and all staff should be involved in helping to redesign processes to improve flow and reduce waste (11).

There are a number of key elements that facilitate improvement work in an organization (12). The following are required:

- A reliable flow of information
- Education and training for staff in improvement theory, methods and techniques (every employee has basic quality improvement methods and how to apply methods in their work)
- Understanding time and change management necessary to change core processes
- Alignment of strategic goals and improvement goals
- Leadership to guide and inspire change (12)
- All staff need to see their role as providing care/services as well as improving care/services.
- Facilitators who have knowledge in quality improvement methods, approaches, tools and techniques to support quality improvement initiatives.

With respect to a reliable flow of information required for quality improvement processes, measurement, along with tracking and monitoring of indicators is required. In the *Healthcare Management Review*, participants identified that the utilization of indicators for ongoing monitoring and improvement was a requirement. One of the domains of the draft *Leadership Accountability Framework* is performance and results. Access to performance information is required for managers to be effective in this domain.

At Central Health there are significant amounts of data collected and stored. Retrieving the data and turning that data into usable information is often a resource intensive activity. At the present time, there is no one location in the organization identified to receive and process requests for information required for indicator development, improvement initiatives, monitoring and auditing, etc.

Central Health is challenged at times to produce the data, information and in turn the knowledge to focus improvement efforts and to inform decision making without the expenditure of significant human resources. Business intelligence tools, discussed later in this report, and a structured process to request and retrieve data/information in the organization, need consideration. Recently, Central Health has partnered with the Newfoundland and Labrador Centre for Health Information (NLCHI) to obtain performance information to inform improvement efforts. This partnership should be enhanced.

COMMUNITY – WHO WE SERVE

DEMOGRAPHICS

The population of the central region is 94,415, indicating a population decrease of 5.9 per cent since 2003. This is compared to a provincial decline of 3.5 per cent during the

same time period (13) (14) (15) (16). Considering the current population figures, the overall decline in the population has slowed.

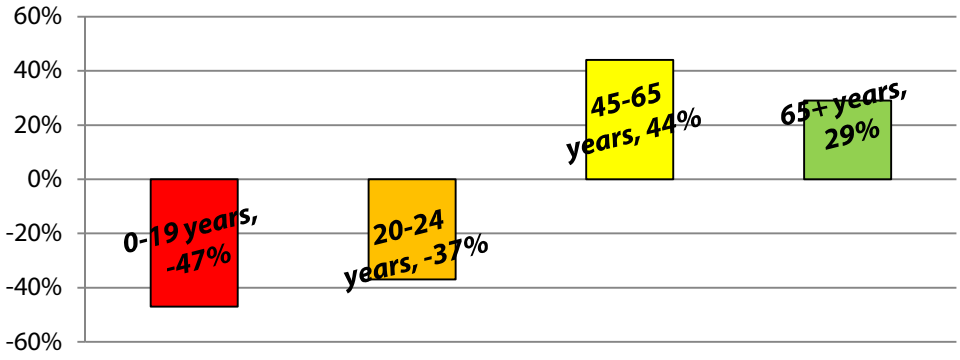
Table 2: Central Health and Provincial Population Change 1996-2006

Year	Central Health		Newfoundland and Labrador	
	Population	Change in Population (%)	Population	Change in Population (%)
1996	111,335	-	551,792	-
2001	99,865	-10.3 %	512,930	- 7.0 %
2006	95,460	- 4.4 %	505,470	- 1.5 %

Source: Statistics Canada Census (1996-2006)

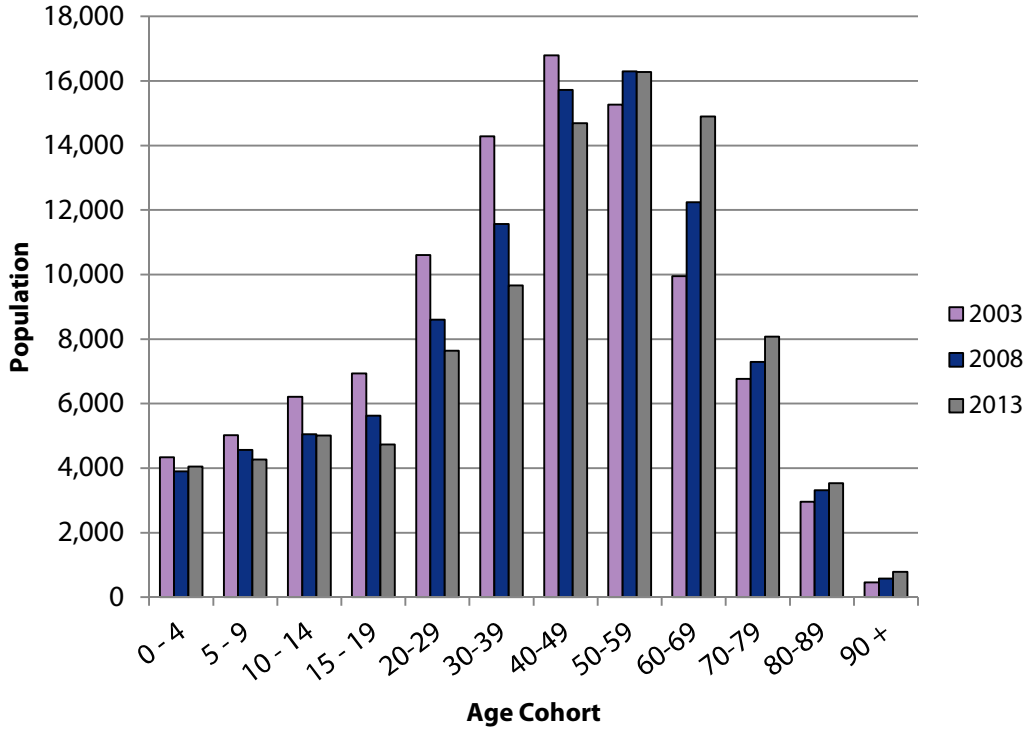
The following figures demonstrate the shift in the age of the population over time.

Fig. 1 Central Health Population Change by Age Cohort (1991-2006)



Source: Statistics Canada Census (1991-2006)

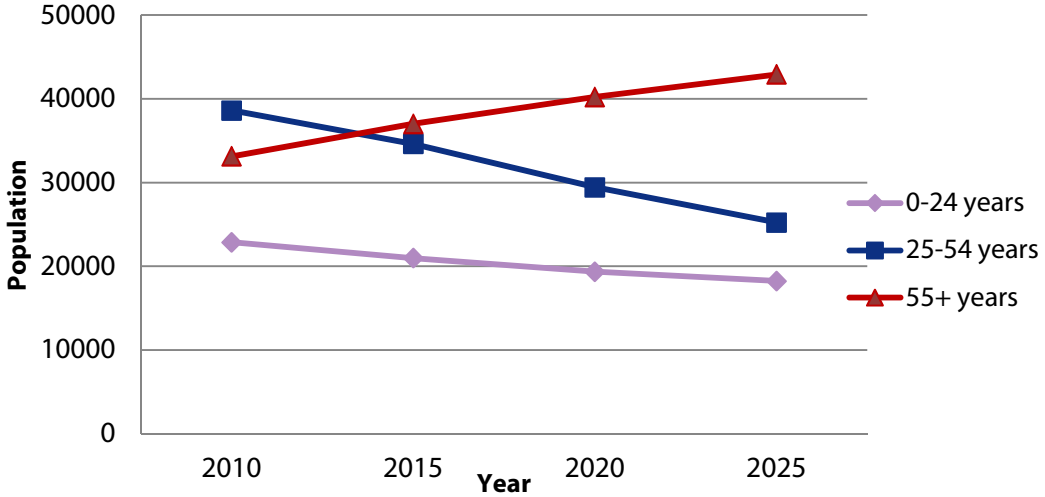
Fig. 2 Central Health Population Changes by Age Cohort (2003-2013)



Source: Government of Newfoundland and Labrador, Economic Research & Analysis Division, Department of Finance (2012)

Note that information provided below is the projected population or an estimate of how the population will trend in the coming years. The trends noted above are expected to continue over the next 15 years. Illustrated below are the population projections for the central region up to the year 2025. Not only will the age distribution change, but also the population is expected to decline from 94,415 in 2013 to 85,513 in 2025 (17).

Fig. 3 Central Region Population Projections 2010-2025

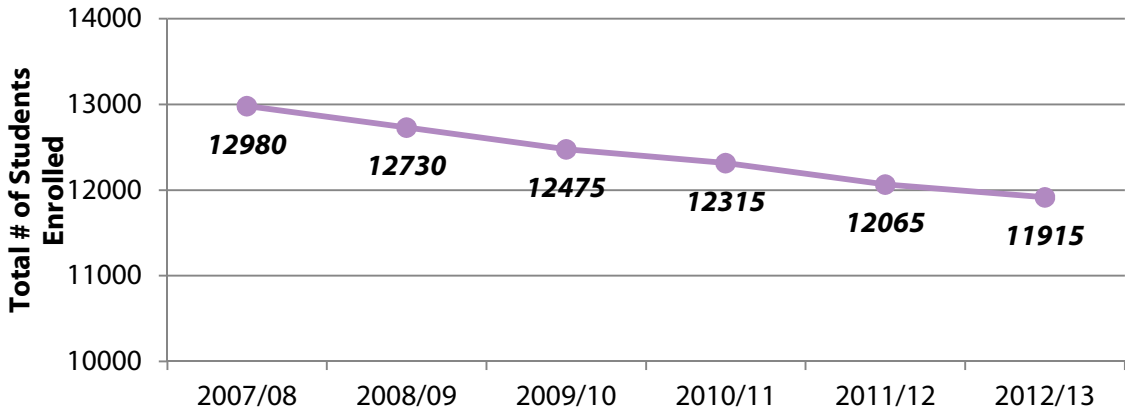


Source: Government of Newfoundland and Labrador, Economics and Statistics Branch of the Department of Finance (2012)

SCHOOL ENROLLMENT

Data from Community Accounts indicates that there has been a steady decline in the total number of students enrolled in schools in the central region. There has been a 3.4 per cent decrease in the number of students enrolled in Kindergarten to grade 12 since 2010 (18). The number of schools throughout the central region has declined from 75 in 2004-2005 to 65 in 2012-2013 (19). The trend of fewer schools and decreased enrollment may be contributed to out-migration, low birth rates and the aging population in the region.

Fig. 4 Central Region Total Number of Student Enrollments (2007-2013)



Source: Community Accounts (2013)

DEPENDENCY RATIO

The dependency ratio is the ratio of the combined population aged 0-19 years and 65 years and older to the population aged between 20 to 64 years (20).

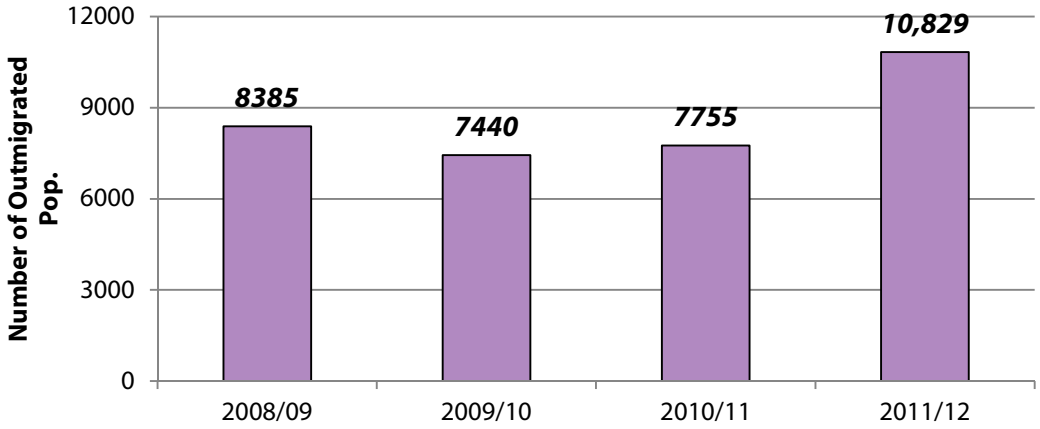
(0-19 years) + (65 years plus) compared to (20-64 years)

This ratio is usually presented as the number of dependents for every 100 people in the working age population. In 2012, the dependency ratio of the central region was 66.7 per cent, compared to the provincial ratio of 58.7 per cent and the Canadian ratio of 59.5 per cent (20).

MIGRATION CHANGES

According to data available through Statistics Canada, in 2011-2012 the out-migration numbers reached 10,829 for the province (21). Recent challenges in the fishery and forestry industries, and the increased number of attractive high paying jobs in other provinces, particularly Alberta, have provided strong incentives for people to migrate.

Fig. 5 Newfoundland and Labrador Outmigration 2008-2012



Source: Statistics Canada (2012)

Furthermore, the geographic distribution of the population has changed and generally the population of rural communities has declined, while the population of urban areas has grown. For example, between 2006 and 2011, the population of metropolitan areas in Newfoundland and Labrador increased from 58 per cent to 59 per cent of the province's total population while the population in the rural areas declined by approximately 1 per cent.

Due to migration changes, factors that need to be considered are:

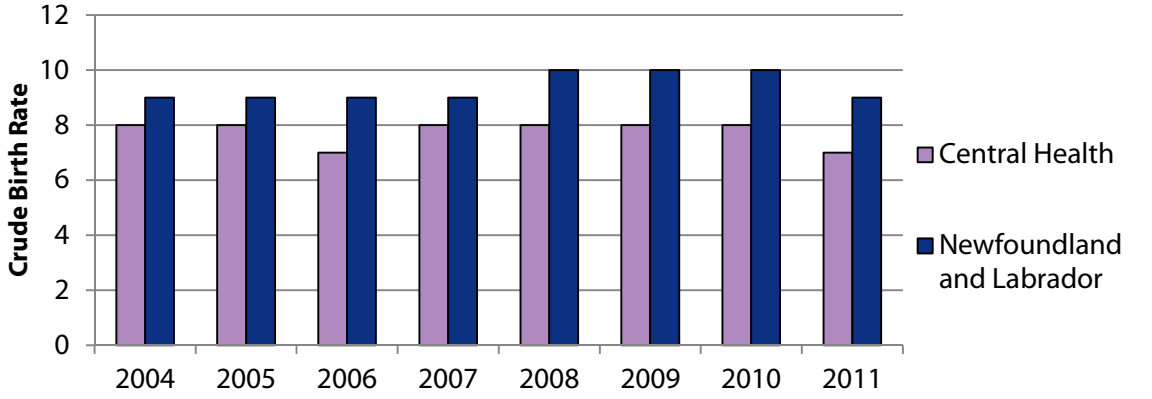
- Social and emotional implications for families
- Overall impact on family structure
- A shift in the demand for services and access to these services
- Impact on citizens available to be community volunteers
- Impact on resources in the community (i.e., snow clearing, childcare, home support workers, etc.)

BIRTH RATES

In 2011, approximately 4,463 live births were reported in Newfoundland and Labrador; 670 in Central Health indicating a 13.0 per cent decrease since 2010 when there were 770 births in the central region. The number of live births in the province has decreased 10 per cent since 2009 when 4856 births were recorded.

In 2011, the total birth rate for the central region was 7.0. The total birth rate for the province in 2011 was 9.0 (18). The total birth rate is defined as the ratio of live births to the population expressed per 1,000.

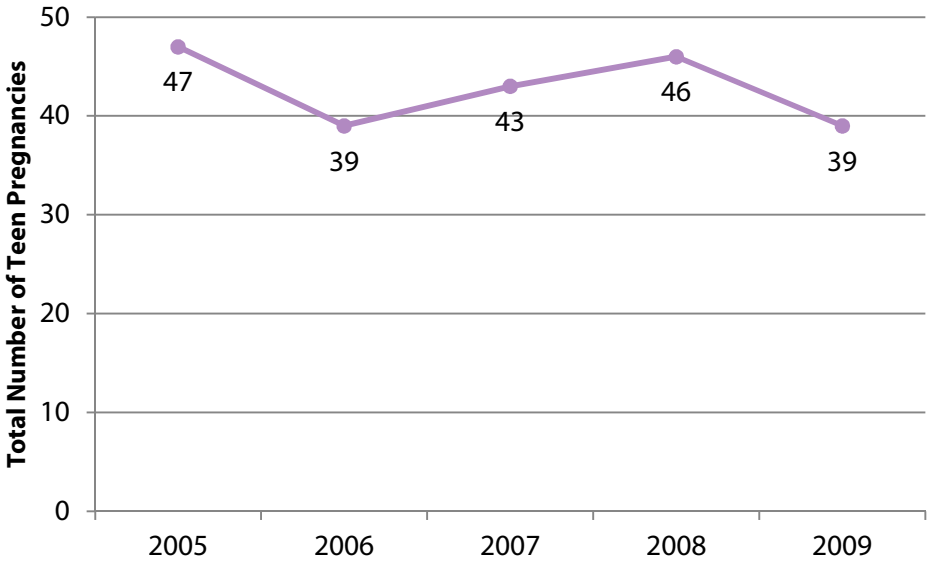
Fig. 6 Central Health and Provincial Crude Birth Rates



Source: Community Accounts (2012)

Teen pregnancy is defined as the number and rate of pregnancies per 1,000 women aged 15 to 19. The pregnancies include live births, induced abortions and fetal loss, including stillbirths (at least 20 weeks gestation or fetal weight of at least 500 grams) and cases of spontaneous abortion, illegally induced abortion, other and unspecified abortion treated in general and allied hospitals in Canada (20). The figure below shows the total number of reported teen pregnancies in the central region from 2005 to 2009. The trend has been relatively stable since 2005.

Fig. 7 Central Health Total Number of Teen Pregnancy 2005-2009



Source: Central Health Population and Public Health Department (2013)

ABORIGINAL/IMMIGRANT AND MINORITY POPULATIONS

Identifying aboriginal, immigrant and minority populations is important to ensure that the most appropriate health services are provided since health status characteristics and the determinants of health affecting these populations groups are different.

The following table summarizes the population of Aboriginal individuals as well as immigrants and visible minorities in the region and how they compare to the province and the country as well. The information presented is the most recent available, however, given the current trend to employ immigrant workers in the province, more current data may indicate an increase in this population since 2006 (16).

Table 3: Aboriginal, Visible Minority and Immigrant Populations (2006)

	Central Region	***Newfoundland & Labrador***	***Canada***
Aboriginal	3.1%	4.7%	3.8%
Visible Minority	0.7%	1.1%	16.2%
Immigrant	0.8%	1.7%	19.6%

Source: Statistics Canada Census (2006)

Based on these population demographics highlighted in the section above, the following factors must be considered:

- There is an aging population
- There is a declining workforce
- There are fewer youth and family members available for providing support of aging or sick loved ones
- There has been a decline in school enrollment
- There may be a shift in requirements for services, location, access, and resource allocation considering the changing demographics

INFLOW/OUTFLOW RATIO

The inflow/outflow ratio is the number of separations (discharges and deaths) from acute care/same day surgery facilities within a given region divided by the number of acute care/same day surgery separations generated by residents of that region (20). The inflow/outflow ratio is a measure of the utilization by residents of a specified region and whether they are accessing care within or outside the region. The following points describe how to interpret ratio values when determining the inflow/outflow in a health center.

- ***A ratio less than one*** → Health care utilization by residents in a region exceeds care provided within that region, suggesting an outflow effect. In other words, residents traveled outside the region for health care services.

- ***A ratio of greater than one*** → Health care provided by a region exceeds the utilization by its residents, suggesting an inflow effect. In other words, residents from other regions are utilizing health care services from the region.

- ***A ratio of one*** → Health care provided by a region is equivalent to the utilization by its residents, suggesting that inflow and outflow activity are equal.

- ***A ratio of zero*** → None of the institutions in the region are able to provide desired services and residents received care outside of their region.

At times, residents of the central region are required to travel outside of the Central Health region for services due to geographic location or more accommodating wait times. For example, residents from the Coast of Bay region may travel to Burin due to the closeness of the communities by boat. In contrast, residents from outside the region are sometimes referred to Central Health due to shorter wait times. For example, some residents of the Eastern region travel to Gander for hip replacement procedures as the wait times are shorter than those of Eastern Health. *Table 4* provides overall inflow/outflow ratios as well as figures for specific surgical procedures (20).

Table 4: Inflow/Outflow Indicators 2009-2011

Hip Replacement			
Region	***2009***	***2010***	***2011***
Central	0.95	0.91	0.93
Eastern	1.07	1.02	1.01
Western	0.95	1.00	1.08
Labrador-Grenfell	0.71	0.94	0.85
Knee Replacement			
Central	1.07	1.07	1.05
Eastern	1.01	0.99	0.98
Western	0.95	0.98	1.06
Labrador-Grenfell	0.77	0.82	0.83

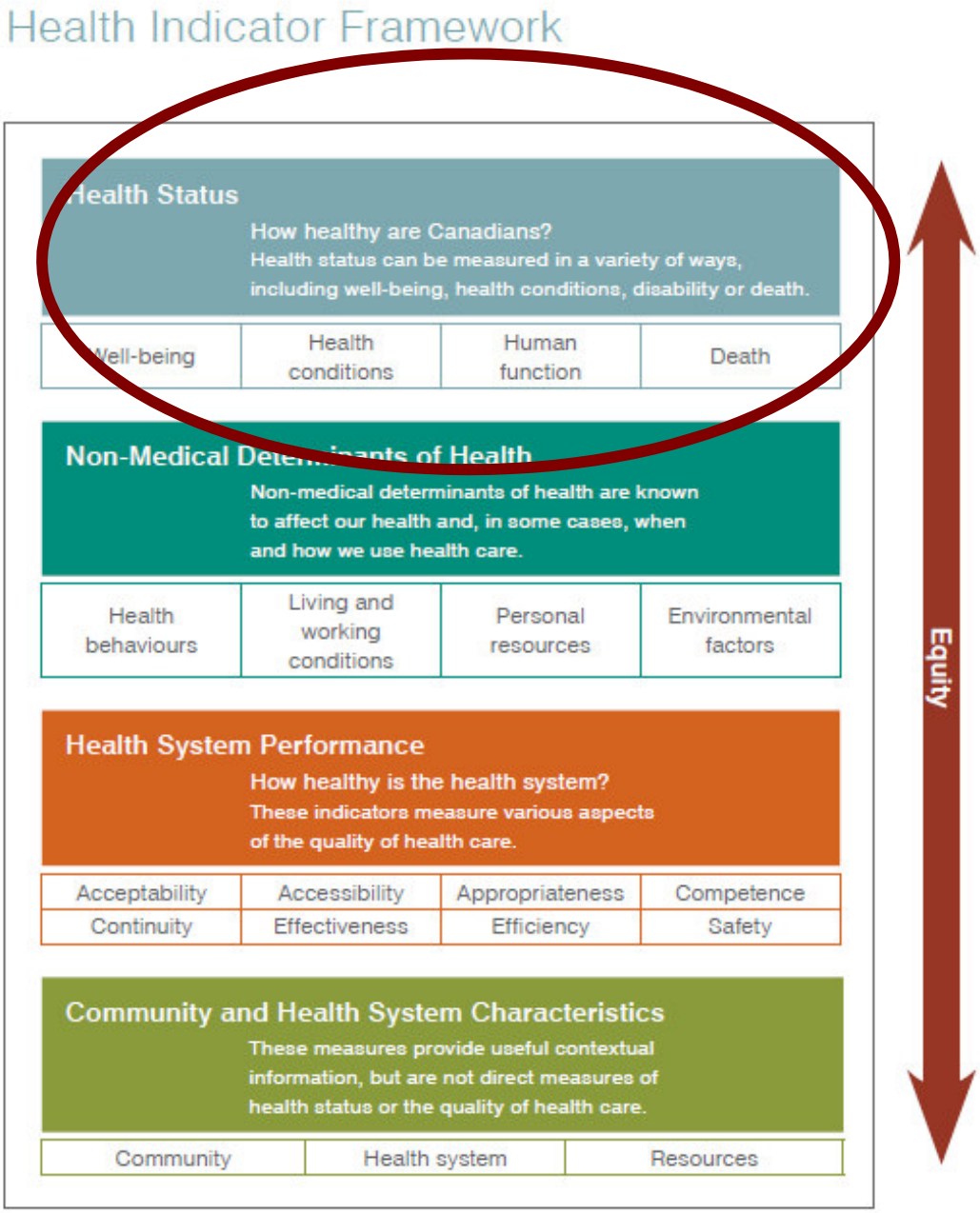
Hysterectomy			
Central	0.96	0.91	0.91
Eastern	1.06	1.06	1.08
Western	0.98	1.01	0.99
Labrador-Grenfell	0.83	0.75	0.76
Overall Inflow/Outflow Ratio			
Central	0.85	0.84	0.84
Eastern	1.11	1.10	1.10
Western	0.94	0.94	0.93
Labrador-Grenfell	0.85	0.83	0.81

Source: CIHI Health Indicators (2009-2011)

In 2011, Central Health had an inflow/outflow ratio for hip replacements of 0.93. To explain this indicator further, if the residents of central region had 100 hip replacements in 2011, then Central Health performed only 93 of those hip replacements. This indicates that 7 of the central region residents traveled outside the region for service (20).

Alternately, in 2011, Central Health had an inflow/outflow ratio for knee replacements of 1.05. During this timeframe, if Central Health performed105 knee replacement surgeries the five knee replacements were performed on residents living outside the central region (20).

HEALTH STATUS



Source: CIHI Health Indicators (2013)

WELL-BEING

Well-being is defined as broad measures, both cultural and biological, of the physical, mental and social conditions of individuals (22). In this section, various measures of well-being are presented for the central region as well as provincial and national comparative information. Additionally, Central Health is committed to optimizing the well-being of employees, recognizing that staff are members of the larger central region population, through participation in the Excellence Canada's Mental Health at Work Project. Information on this award winning initiative is detailed in this section.

PERCEIVED HEALTH

Perceived health refers to the perception of a person's health in general, where health means not only the absence of disease or injury but also physical, mental and social well-being. In 2012, approximately 62 per cent of the population aged 12 and over in the central region reported their own health status as either excellent or very good; this has increased since 2009 when 57 per cent reported their own health status as either excellent or very good. The results for 2012 are comparable to the provincial and the national average of 60 per cent (22).

MENTAL HEALTH STATUS

Self-reported mental health status provides a general indication of the population suffering from some form of mental disorder, mental or emotional problems or distress, not necessarily reflected in self-reported perceived health. In 2012, approximately 78 per cent of the population aged 12 and over in the central region reported that their mental health was excellent or very good. This is comparable to the provincial average of 73 per cent. There was a small variance among men and women with females rating 79 per cent and males rating 77 per cent (22).

LIFE STRESS STATUS

Life stress status refers to an individual's perception of the level of stress in their life ranging from not at all stressful to extremely stressful. In 2012, approximately 14 per cent of individuals age 15 and older reported having lives that were quite a bit or extremely stressful. This rate is similar to the rates found in the 2009 survey, which reported 15 per cent and slightly higher than the provincial rate of 13 per cent in 2012 (22).

BIRTH-RELATED INDICATORS

The indicators described below are key determinants to both the health and well-being of an infant and a new mother. Low birth weight, small for gestational age, and preterm births are key determinants of infant survival, health, and development (23). Furthermore, high birth weight and large for gestational age may result in complications for the infant and mother during birth and may be associated with an

increased risk of diabetes. In the central region, high birth weight and large for gestational age babies may be related to rates of overweight/obesity and diabetes which are discussed later in this report.

Table 5: Birth-Related Indicators (2005/2007)

Indicators	Central Health	Newfoundland & Labrador	Canada
Low Birth Weight	4.8%	6.4%	6.0%
Small for Gestational Age	5.2%	6.6%	8.4%
Pre-term Births	7.7%	10.0%	7.8%
High Birth Weight	3.4%	3.0%	1.9%
Large for Gestational Age	15.0%	15.7%	10.9%

Source: Statistics Canada Canadian Vital Statistics Birth Database (2005-2007)

EXCELLENCE CANADA'S MENTAL HEALTH AT WORK

The Employee Wellness/Health and Safety Division of Central Health provides services to ensure the health and safety of all employees and to promote individual and organizational wellness. One initiative of this division, in partnership with Mental Health and Addictions Services, was the establishment of the Workplace Wellness Committee. This group is currently leading Central Health in a national pilot project involving the promotion of mental health and psychological safety in the workplace. The committee recognized that workplace strategies which integrate mental health promotion with job stress intervention hold particular promise in building a healthy workplace, as they address mental health problems regardless of cause, while simultaneously reducing work-related factors contributing to ill mental health (5).

Central Health's participation in Excellence Canada's *Mental Health at Work* provides a foundation for a healthy and safe workplace. The impact of worklife on overall well-being is well established. Central Health recognized that improving the well-being of employees also means impacting the well-being of the larger population (5).

The *Mental Health at Work* project involves various levels of certification and in 2011 Central Health achieved Level 1. Central Health's efforts to promote and protect mental health in the work environment were rewarded in March 2013 when Central Health received Level 2 certification. To achieve Level 3 certification, Central Health has identified priorities for future action including, but not limited to, continued training for managers, staff training, dissemination of information and development of work-related mental health policy (5).

At the 2013 *Awards for Excellence* ceremony in Toronto, Ontario on October 30, 2013, Central Health was honored to receive *Excellence Canada's Mental Health at Work Bronze Award*.

HEALTH CONDITIONS

Health conditions are alterations or attributes of the health status of an individual which may lead to distress, interference with daily activities, or contact with health services; it may be a disease (acute or chronic), disorder, injury or trauma, or reflect other health related states such as pregnancy, aging, stress, congenital anomaly, or genetic predisposition (20).

CHRONIC CONDITIONS

The World Health Organization (WHO) and Centers for Disease Control and Prevention (CDC) defines chronic disease as a "disease of long duration and generally slow progression" (24). There are many different chronic diseases including, but not limited to arthritis, cancer, chronic pain, diabetes, heart disease, lung disease and stroke.

In the central region, between 2005 and 2012, there was a reported increase in all chronic conditions noted below in *Table 6*, with the exception of asthma and mood disorders (25) (26).

Table 6: Percentage (%) of Population (age 12 and over) with Chronic Conditions

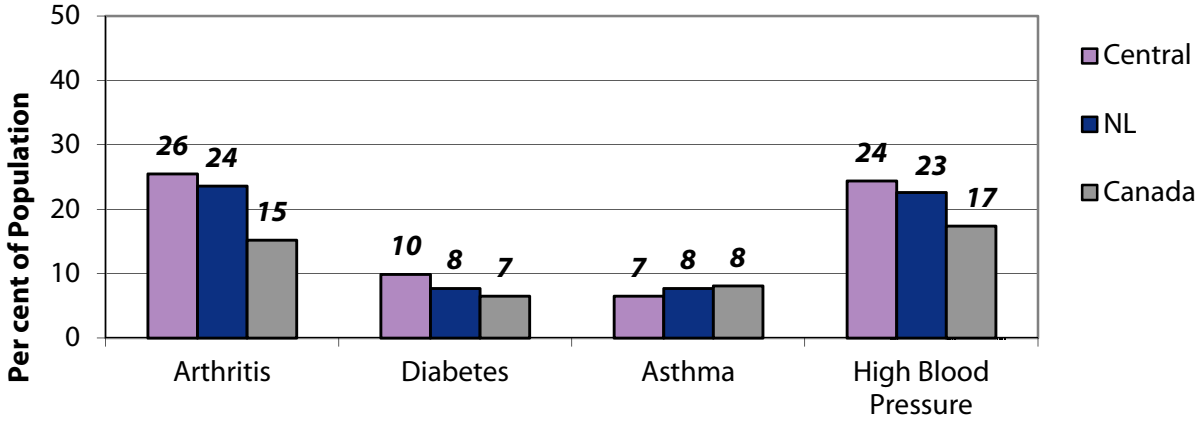
Region	Arthritis	Diabetes	Asthma	High BP	COPD	Mood Disorders
Central Health (2005)	24.7	8.1	7.6	20.4	5.8 [E]	4.5 [E]
Central Health (2012)	25.5	9.9	6.5 [E]	24.4	-	4.4 [E]

[E] Use with caution

Source: Statistics Canada, Canadian Community Health Survey (CCHS) (2012)

Not only are the rates of chronic disease increasing in the region, but central Newfoundland and Labrador is leading the country with its high incidence of arthritis, diabetes, and high blood pressure as displayed in *Fig. 8* below (22).

Fig. 8 Comparison of Chronic Disease Rates 2012

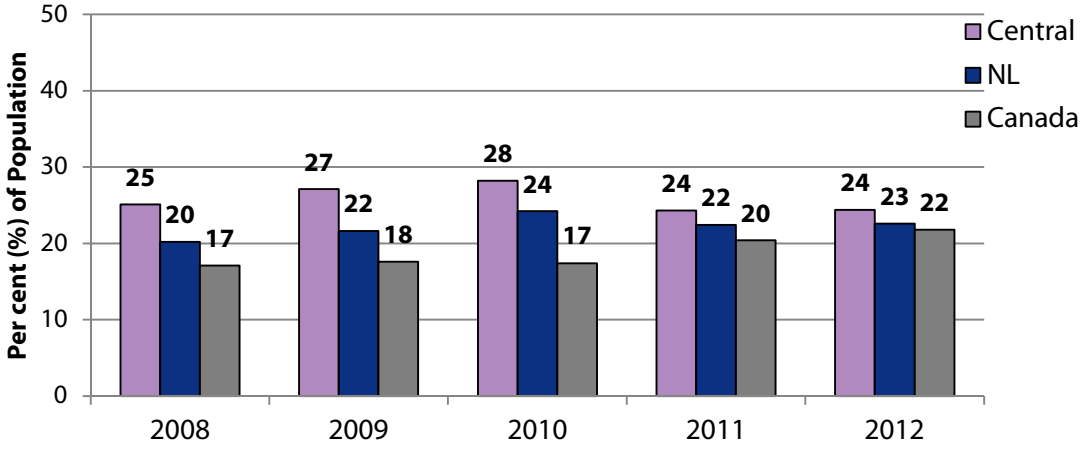


Source: Statistics Canada CCHS (2012)

Risk factors associated with the development of chronic disease include smoking, physical inactivity, unhealthy diet, and excessive alcohol use (27) (28), which contribute to high blood sugar, blood pressure, cholesterol and excess body fat. Though these factors contribute to the development of chronic conditions, there is also an increased risk for developing chronic disease as we age. It has been found that about 95 per cent of the province's residents aged 65 years or older have at least one chronic condition (29).

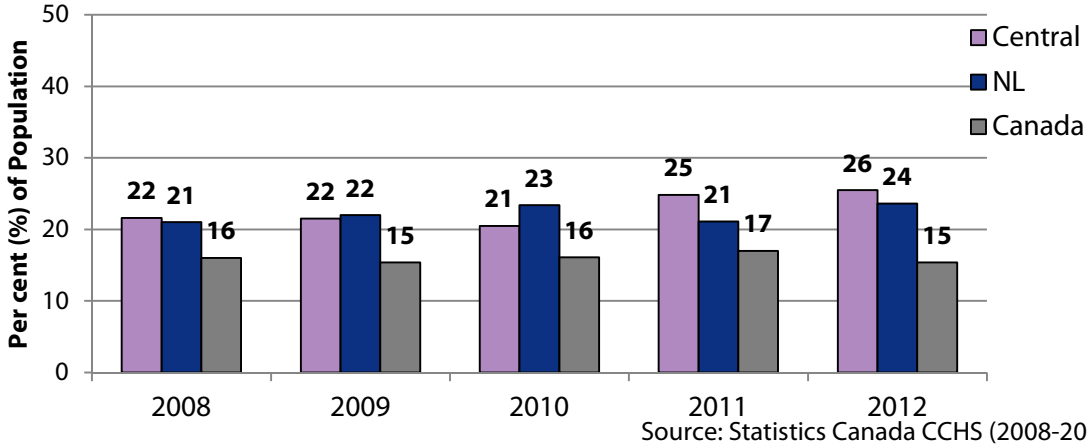
The following figures present the percentage of the population aged 12 and over reporting having a chronic condition from 2008 to 2012 for arthritis, diabetes, and high blood pressure. Notice the continual upward trend of increasing rates of chronic conditions in the central region. Historically the population of the central region has a higher incidence of arthritis, diabetes, and high blood pressure as compared to the provincial and national rate with the exception of arthritis in 2010.

Fig. 9 Comparison of Incidence of High Blood Pressure 2008-2012



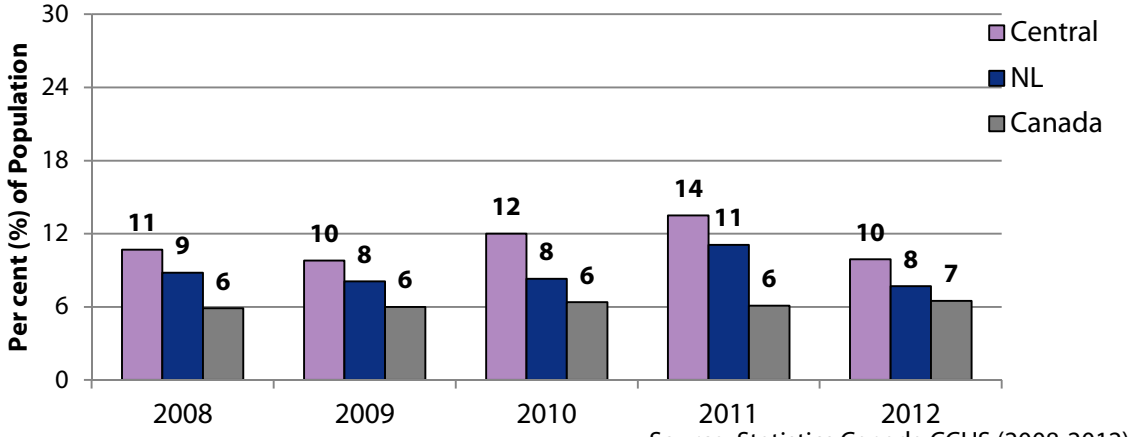
Source: Statistics Canada CCHS (2008-2012)

Fig. 10 Comparison of Incidence of Arthritis 2008-2012



Source: Statistics Canada CCHS (2008-2012)

Fig. 11 Comparison of Incidence of Diabetes 2008-2012



Source: Statistics Canada CCHS (2008-2012)

HIGH BLOOD PRESSURE

Blood pressure, the force of blood against the walls of arteries, is measured as systolic and diastolic pressures, with the systolic pressure recorded above the diastolic number. Blood pressure lowers and rises throughout the day, with activity and emotions, and tends to rise with age. Risk factors for high blood pressure, also known as hypertension, include unhealthy lifestyle, other medical problems, medications, race/ethnicity, and heredity. There are typically no symptoms associated with high blood pressure itself, though it may be causing damage to the heart, blood vessels, kidneys and other body parts (30).

High blood pressure is a serious condition that can lead to chronic health conditions, such as coronary heart disease, heart failure, stroke, and kidney failure. High blood pressure can often be prevented or controlled by reducing sodium intake, being active, and keeping a healthy weight. Excess sodium intake is estimated to attribute to almost 30% of hypertension cases. Medications, such as Beta Blockers and ACE Inhibitors, are often included in treatment plans for those with high blood pressure.

High blood pressure is the most common reason for a physician visit and for taking medication. In Canada, high blood pressure affects more than one of five people. Women with blood pressure higher than normal (120/80mmHg), are at least 2.5 times at greater risk of developing cardiovascular disease. In Canada in 2003, over 2.3 billion dollars was spent on physician, medication and laboratory costs related to hypertension. As noted in the graph, 24 per cent of the central region aged 12 and over, have high blood pressure, which is slightly higher than the province and country (31).

DIABETES

Diabetes is a serious chronic condition that has become increasingly common in Canada. Persons living with diabetes are at risk for heart disease, stroke, circulatory problems, nerve damage and blindness (32). In the province, approximately 34,235 people reported having diabetes in 2012, with females reporting slightly higher rates of the disease. In the central region, the prevalence of diabetes for those 12 and over was 9.9 per cent in 2012, the highest in the province (22).

The impact diabetes can have on clients living with the chronic condition, and the health care system, is alarming and widespread. Due to comorbidities associated with diabetes, clients have a higher likelihood of hospitalization than those without diabetes. For example, individuals with diabetes are three times more likely to be hospitalized with cardiovascular disease, 12 times more likely to be hospitalized with end-stage renal disease, and almost 20 times more likely to be hospitalized with lower limb amputations. Additionally, diabetes is a chronic condition that is often accompanied by other chronic conditions such as Chronic Obstructive Pulmonary Disease (COPD) and heart failure. In Canada, over 36 per cent of individuals living with diabetes have two chronic conditions and over 12 per cent are living with three or more chronic conditions. Statistics Canada estimates that by 2018 there will be 3.7 million individuals in Canada living with diabetes (33).

Since individuals living with diabetes are required to access health care services at a rate higher than individuals living without the condition, there is an economic impact of diabetes on the health care system. For example, individuals living with diabetes access their family physician twice as often and specialists three times as often, as those without the condition. Higher utilization of services indicates a higher cost associated with treating and monitoring diabetes (33).

HEART FAILURE

Heart Failure, often called congestive heart failure, occurs when the pumping action of the heart is not sufficient to maintain blood flow to meet the needs of the body (34) (31) (35). Risk factors include hypertension, ischemic heart disease, valvular heart disease, diabetes mellitus, heavy alcohol consumption, chemotherapy, family history, smoking, obesity and hyperlipidemia (34) (35).

Heart failure is a serious condition and there is no cure but with lifestyle changes and treatment options, individuals can manage the condition very well. Treatment depends on the severity and cause of the disease. In a chronic patient in a stable situation, treatment commonly includes medications with lifestyle changes, such as smoking cessation, dietary changes, and light exercise. In some cases, heart failure may be treated with implanted devices, such as pacemakers, or a heart transplant (34) (35).

It is estimated that approximately 500,000 Canadians live with heart failure and it is rising as more people survive heart attacks and other acute heart conditions (35). In

Canada, chronic heart failure hospitalizations occur frequently and accounts for a large number of hospital bed-days and re-admissions (36). According to internal data, there were 885 admitted patients with a diagnosis of heart failure between April 2011 and April 2013 in Central Health (37). In both fiscal years, 70 per cent of all patients admitted with heart failure were admitted to either JPMRHC or CNRHC, as indicated in the table below. The average length of stay for heart failure at Central Health is 11.98 days.

Table 7: Number of Patients Admitted with Heart Failure 2011-2013

Heart Failure - Central Health Congestive Heart Failure, Left Ventricular Failure and Heart Failure Unspecified, I500 – I51		
Facility	**April 1, 2011 – March 31, 2012**	**April 1, 2012 – March 31, 2013**
Central Newfoundland Regional Health Centre	197	189
James Paton Memorial Regional Health Centre	120	117
A.M. Guy Memorial Health Centre	1	2
Baie Verte Peninsula Health Centre	23	23
Green Bay Health Centre	19	22
Connaigre Peninsula Community Health Centre	23	13
Brookfield Bonnews Health Centre	36	12
Fogo Island Health Centre	5	17
Notre Dame Bay Memorial Health Centre	29	37
TOTAL	**453**	**432**

Source: 3M, Central Health, 2013

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Chronic Obstructive Pulmonary Disease (COPD), the fourth leading cause of death in Canada, is a chronic disease characterized by shortness of breath, cough, and sputum production. COPD is an umbrella term for a number of progressive pulmonary diseases including chronic bronchitis and emphysema. COPD is most frequently diagnosed in individuals, male and female, aged 55 years or older and in many cases the individual has both chronic bronchitis and emphysema (38). As the disease progresses, the severity of symptoms and the risk of premature death increase. Individuals with COPD often report difficulty getting a good night sleep, doing chores and errands, participating in daily activities, and maintaining regular working hours (39). In the 2010-2011 fiscal year, there were 125 COPD inpatient acute cases in Central Health (40).

The economic burden associated with COPD exacerbations on the Canadian health care system has been estimated in the range of $646 to $736 million dollars per

annum (41) and COPD as a whole, is estimated to cost the system up to $1.5 billion per year. In Canada, patients admitted to hospital with a COPD lung attack, spend an average of 10 days, costing an average of $10,000 per stay (42). According to data from NLCHI, the average length of stay at Central Health for a patient with COPD as the most responsible diagnosis is 9.16 days.

There are several modifiable risk factors for COPD. In approximately 80 to 90 per cent of COPD cases, cigarette smoking is the primary underlying cause of the disease (38). Other risk factors include exposure to second hand cigarette smoke, exposure to environmental or workplace dusts (e.g., coal dust, grain dust), history of chronic childhood lung infections, and heredity. Although there is no cure for the disease, it is preventable and can be best managed through smoking cessation. Smoking cessation prior to the onset of disease reduces the risk of developing COPD and smoking cessation after the onset of the disease helps slow the progress of the disease. In addition to smoking cessation, maintaining a healthy lifestyle, medication adherence and annual influenza vaccinations can help individuals with COPD achieve better symptom control, reduce illness and hospitalizations and, therefore, improve their quality of life (39).

CANCER

It is estimated that there will be 187,600 new cases of cancer and 75,300 deaths from cancer in Canada in 2013. The following table illustrates the most commonly occurring types of cancer which are prostate, lung, breast and colorectal cancers (43).

Table 8: Cancer Incidence 2005-2007 (Age-standardized Rate per 100,000 Population)

Region	Colorectal	Lung	Breast	Prostate	Other	Total
Central Health	**62.5**	**46.5**	**80.9**	**102.1**	**57.8**	**349.8**
Eastern Health	72.2	54.7	92.8	137.4	55.5	412.6
Western Health	69.2	42.5	80.8	105.7	66.3	364.5
Labrador/Grenfell	52.5	34.6	50.0	74.9	60.8	272.8
NL	68.7	49.7	85.8	120.3	58.1	382.6
Canada	49.9	56.9	98.4	124.3	75.4	404.9

Sources: Statistics Canada, Canadian Cancer Registry (CCR) Database (July 2011 file)

Lung, breast, colorectal and prostate cancer continue to be the most common types of cancer in Canada, excluding non-melanoma skin cancer. Based on 2013 estimates, these cancers account for 52 per cent of all cancer cases; prostate cancer accounts for 26 per cent of all new cancer cases in men; lung cancer accounts for 14 per cent; breast cancer accounts for 26 per cent; and colorectal cancer 13 per cent.

The following table provides the age-standardized rate of death per 100,000 population for residents of the central region as compared to other RHAs, the province and Canada (44).

Table 9: Cancer Related Rate of Death 2005-2007 (per 100,000 Population)

Region	Colorectal	Lung	Breast	Prostate	Other	Total
Central Health	**33.6**	**61.0**	**14.2**	**10.0**	**140.4**	**259.2**
Eastern Health	30.5	63.5	20.0	12.1	122.1	248.2
Western Health	31.4	83.8	18.4	19.7	134.1	287.4
Labrador/Grenfell	27.5	46.2	11.5	8.0	99.5	192.7
NL	31.0	65.0	18.0	12.7	125.9	252.6
Canada	22.6	55.4	15.1	10.9	103.2	207.2

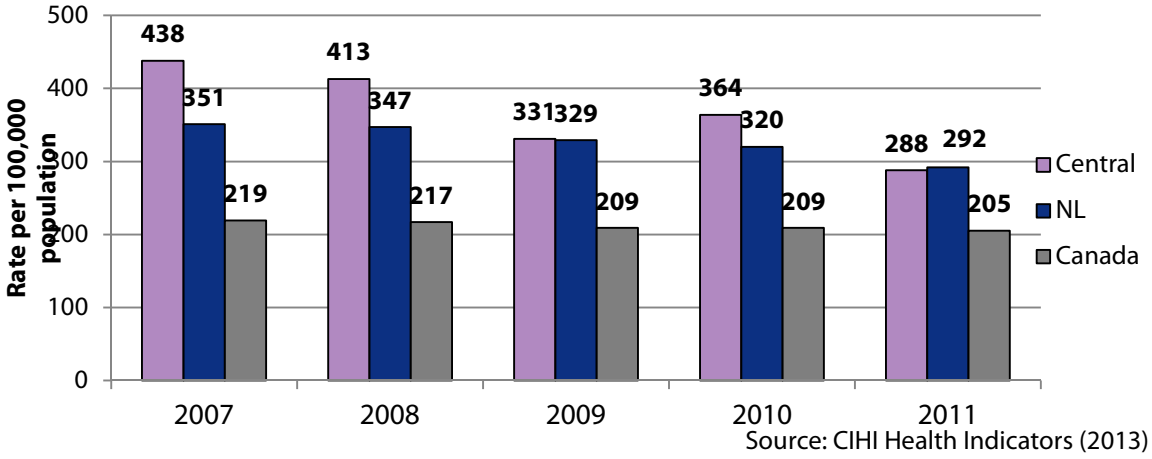
Source: Statistics Canada Canadian Vital Statistics Death and Demography Database (2005-2007)

HOSPITALIZED STROKE AND ACUTE MYOCARDIAL INFARCTION (AMI) RATES

Health indicators are helpful in assisting organizations, such as Central Health, to focus on areas of improvement such as hospitalization from stroke and acute myocardial infarction (AMI). AMI is more commonly known as heart attack. CIHI calculates rates of hospitalization for both of these conditions. Both rates are defined as the rate of new events admitted to an acute care hospital per 100,000 population age 20 and older. For both conditions, a new event is defined as a first-ever hospitalization or a recurrent hospitalization occurring more than 28 days after the admission from the previous event in the reference period (20).

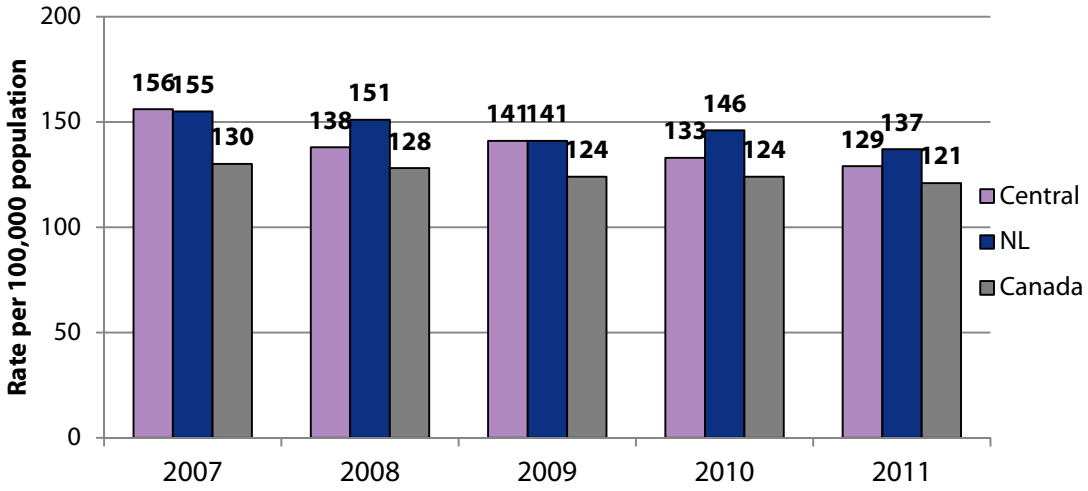
This data is significant as AMI is one of the leading causes of morbidity and death. The rates of AMI and stroke are one of the leading causes of long-term disability and death. Measuring both is useful in developing health promotion strategies, estimating costs and allocating health care resources. However, measuring both AMI and stroke that are admitted to acute care does not reflect all cases as there are also non-diagnosed events and fatal events outside the hospital. The following two figures display the trend in AMI and stroke hospitalizations from 2007 to 2011 for the central region, the province and the country (20).

Fig. 12 Comparison of AMI Hospitalizations (per 100,000 Population)



Source: CIHI Health Indicators (2013)

Fig. 13 Comparison of Stroke Hospitalizations (per 100,000 Population)



Source: CIHI Health Indicators (2013)

From the numbers presented in *Figs. 12 and 13* it is evident that overall in 2011, Central Health had slightly fewer hospitalizations from AMI and stroke than the province as a whole. For AMI, 2011 was the first year that the rate for the central region was lower than the provincial rate. However, it is noteworthy that the central region and Newfoundland and Labrador hospitalizations for both conditions are significantly higher than the national average, particularly for AMI (20).

HUMAN FUNCTION

Levels of human function are associated with the consequences of disease, disorder, injury and other health conditions. They include functional health, disability/ability, activity limitations, and life expectancy (20).

FUNCTIONAL HEALTH

Functional health is defined as the population, aged 12 and over, reporting measures of overall functional health, based on 8 dimensions of functioning (vision, hearing, speech, mobility, dexterity, feelings, cognition and pain).

In 2010, of the respondents in the central region, 79.3% reported to have good to full functional health. This compared to 79.4% of the provincial respondents and 81.2% of the national respondents reporting good to full functional health (22).

DISABILITY-FREE LIFE EXPECTANCY

Disability-free life expectancy distinguishes between years of life without any activity limitation and years of life with at least one activity limitation. Thus the emphasis of this indicator is not based solely on the length of life but the quality of life. The residents of the central region have a disability-free life expectancy at birth of 69.2 years as compared to the provincial rate of 68.1 years and national rate of 68.6 (45).

DISABILITY-ADJUSTED LIFE EXPECTANCY (DALE)

Disability-adjusted life expectancy, DALE, not only measures the quality of life but assigns four states of health including:

- No activity limitations
- Activity limitations in leisure activities or transportation
- Activity limitations at work, home and/or school
- Institutionalization in a health care facility

In 1996, the residents of the central region had a DALE rate of 74.3 years which compares to a provincial rate of 73.7 years and national rate of 74.5 years (45).

LIFE EXPECTANCY AND HEALTH-ADJUSTED LIFE EXPECTANCY (HALE)

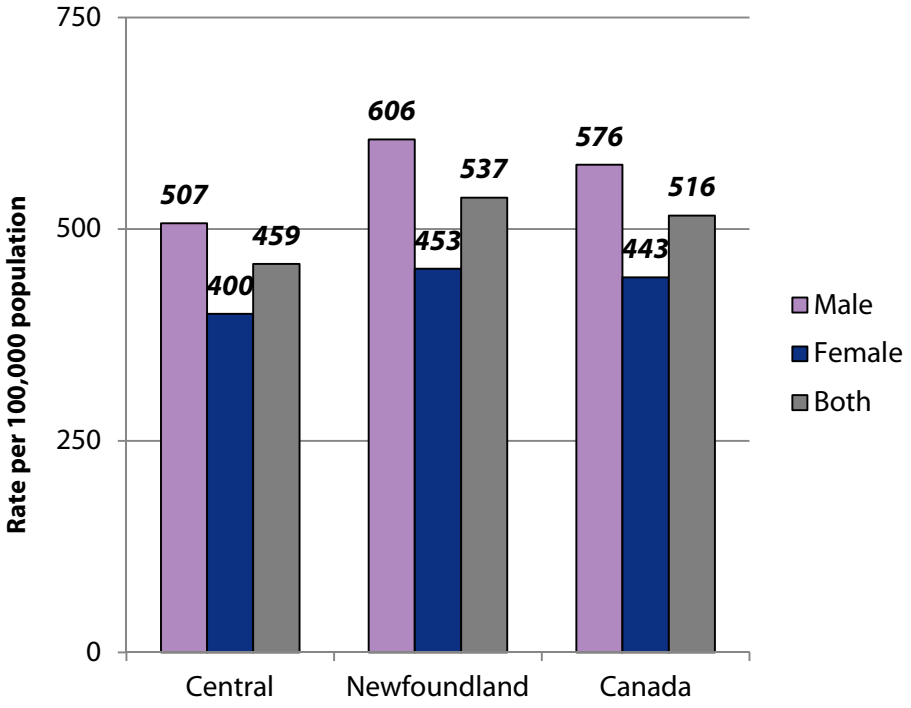
Life expectancy refers to the number of years a person would be expected to live based on mortality statistics (45). The life expectancy in 2007-2009 for the province was 78.9 years; 76.5 years for males and 81.2 years for females (46). Where life expectancy measures quantity of life, the Health Adjusted Life Expectancy (HALE) measures quality of life by examining the number of years a person would be expected to live in full health. In 2006, males in Newfoundland and Labrador were expected to live in full health for 66.3 years and females for 69.4 years (46). Note that regional numbers are not available for this measure.

INJURY HOSPITALIZATION

Injury hospitalization is defined as the age-standardized rate of acute care hospitalization due to injury resulting from the transfer of energy (excluding

poisoning and other non-traumatic injuries), per 100,000 population (20). In 2011, the injury hospitalization rate for Central Health was 507 per 100,000 population as compared to 606 for the province. This indicator is important as it can guide injury prevention programs such as public education, product development and use, community and road design, and prevention and treatment resources. In 2007, Central Health hired an Injury Prevention Coordinator. This position has been instrumental in providing education in the area of accident and injury prevention.

Fig.14 Injury Hospitalization Rate (Central Health, Newfoundland, and Canada) 2011



Source: CIHI Health Indicators (2012)

DEATH

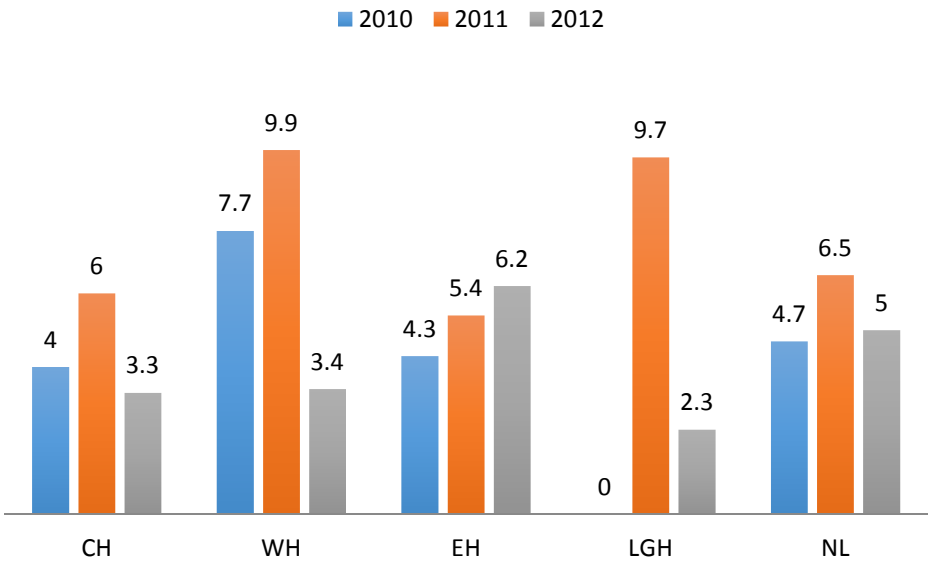
Death indicators are a range of age-specific and condition specific mortality rates as well as derived indicators (20).

INFANT MORTALITY AND PERINATAL MORTALITY

Infant mortality is a long established measure of the well-being of a society. This indicator reflects the level of mortality, health status, and health care of a population, the effectiveness of preventive care and the attention paid to maternal and child health. Perinatal mortality reflects the standards of obstetric and pediatric care as well as the effectiveness of public health initiatives (46).

Infant mortality – infants who die in the first year of life, expressed as number per 1,000 live births.

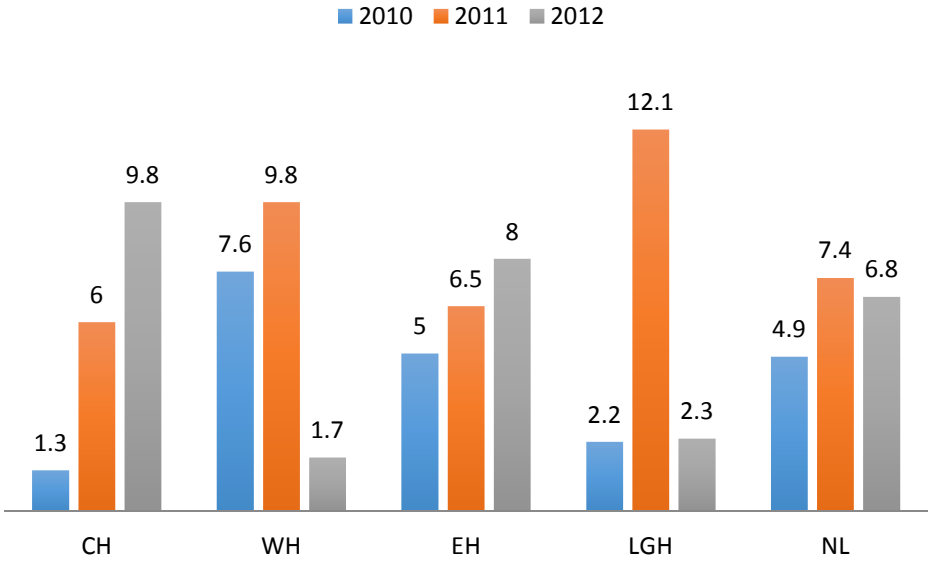
Fig. 15 Comparison of Infant Mortality Rate (per 1,000 Population) 2010-2012



Source: Live Birth System and Mortality System, 2010-2012, Centre for Health Information

Perinatal mortality – late fetal deaths (stillbirths with a gestational age of 28 weeks or more) and early neonatal deaths (deaths of infants aged less than one week) per 1,000 total births (includes stillbirths).

Fig. 16 Comparison of Perinatal Mortality Rate (per 1,000 Population) 2010-2012



Source: Live Birth System and Mortality System, 2010-2012, Centre for Health Information; Stillbirth Database, 2010-2012, Centre for Health Information

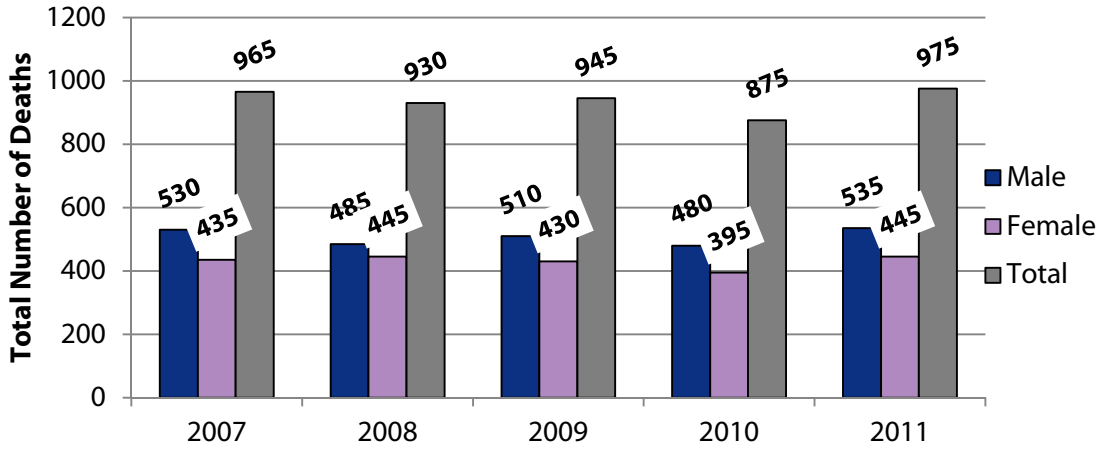
As illustrated in the graph above, the rates of infant mortality for Central Health have been lower than the provincial rate for the three years noted. In 2010 and 2011, the infant mortality rate for Central Health was lower than the Canadian rate which was 5.0 and 4.8 respectively.

With respect to perinatal mortality, Central Health has seen a significant increase from 2010 to 2012. The 2012 rate exceeds all other RHAs in the province and the provincial rate.

CRUDE MORTALITY RATES

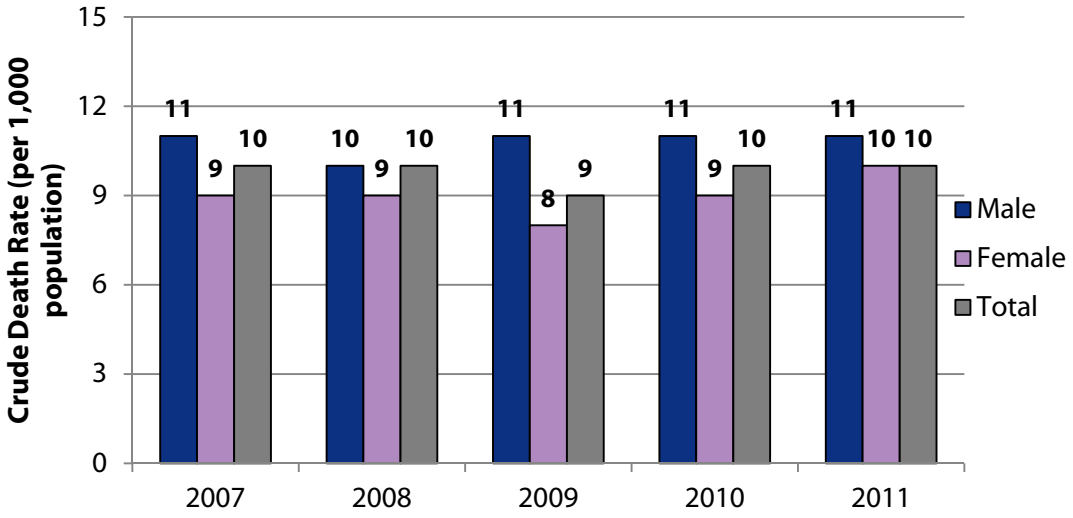
Crude mortality rate refers to the number of deaths that occur per 1,000 population (20). Below, *Fig. 17* shows the total number of deaths while *Fig. 18* shows the crude mortality rate by sex for the central region from 2007-2011. This indicator measures the overall health of the population and represents data that correlates with life expectancy. As illustrated by the graphs below, males consistently have a higher mortality rate than females. This trend is found throughout the province and the country.

Fig. 17 Central Region Total Number of Deaths by Sex 2007-2011



Source: Community Accounts (2007-2011)

Fig.18 Central Region Crude Death Rate by Sex 2007-2011



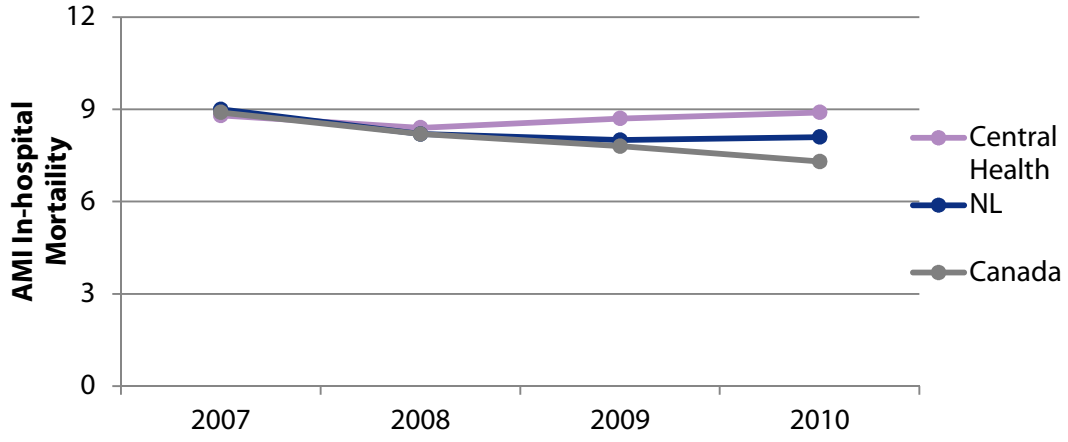
Source: Community Accounts (2007-2011)

ACUTE MYOCARDIAL INFARCTION (AMI) AND STROKE IN-HOSPITAL MORTALITY RATES

The 30-Day Acute Myocardial Infarction (AMI or heart attack) In-Hospital Mortality Rate is defined as the risk adjusted rate for all causes of in-hospital death occurring within 30 days of first admission to an acute care hospital with a diagnosis of AMI (47). The 30-Day Stroke In-Hospital Mortality Rate is defined as the risk adjusted rate for all causes of in-hospital death occurring within 30 days of first admission to an acute care hospital with a diagnosis of stroke.

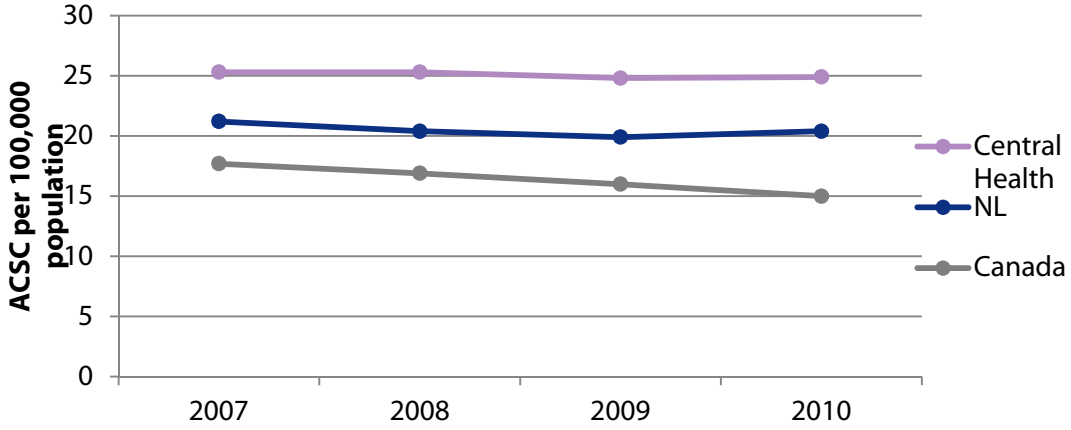
Some suggest that because AMI and stroke are leading causes of death, there is a possibility that a lower risk-adjusted mortality rate following each event relates to the underlying effectiveness of treatment and the quality of care provided (47).

Fig. 19 30-Day AMI In-Hospital Morality Rate Comparison (Regional, Provincial, National) 2007-2010



Source: CIHI Health Indicators (2013)

Fig. 20 30-Day Stroke In-Hospital Morality Rate Comparison (Regional, Provincial, National) 2007-2010



Source: CIHI Health Indicators (2013)

5-DAY & 30-DAY POST-OPERATIVE ICU MORTALITY RATE FOR SURGERY PATIENTS

The 5-day and 30-day post-operative mortality rate is often used as an indicator of quality in surgical care. Presented below are the 5-day and 30-day Post-Operative ICU Mortality Rates for surgery patients. In the first two fiscal years presented, Central Health had the highest rate in the province, but the rate dropped in 2011-2012 below the provincial average (20).

Table 10: 5-day and 30-day Post-operative ICU Mortality Rate for Surgery Patients, Fiscal Year 2009/10 – 2011/12

			5-day Mortality		30-day Mortality	
Fiscal Year	**Hospital**	**Number of Patients**	**Number of deaths**	**Mortality Rate**	**Number of deaths**	**Mortality Rate**
2009-2010	Province	2335	180	7.71%	319	13.66%
2009-2010	Eastern Health	1224	93	7.60%	178	14.54%
2009-2010	**Central Health**	**503**	**46**	**9.15%**	**77**	**15.31%**
2009-2010	Western Health	449	33	7.35%	54	12.03%
2009-2010	Labrador-Grenfell Health	159	8	5.03%	10	6.29%
2010-2011	Province	2388	193	8.08%	314	13.15%
2010-2011	Eastern Health	1265	100	7.91%	163	12.89%
2010-2011	**Central Health**	**520**	**44**	**8.46%**	**78**	**15.00%**
2010-2011	Western Health	436	41	9.40%	64	14.68%
2010-2011	Labrador-Grenfell Health	167	8	4.79%	9	5.39%
2011-2012	Province	2383	208	8.73%	339	14.23%
2011-2012	Eastern Health	1301	121	9.30%	200	15.37%
2011-2012	**Central Health**	**497**	**44**	**8.85%**	**69**	**13.88%**
2011-2012	Western Health	409	37	9.05%	56	13.69%
2011-2012	Labrador-Grenfell Health	176	6	3.41%	14	7.95%

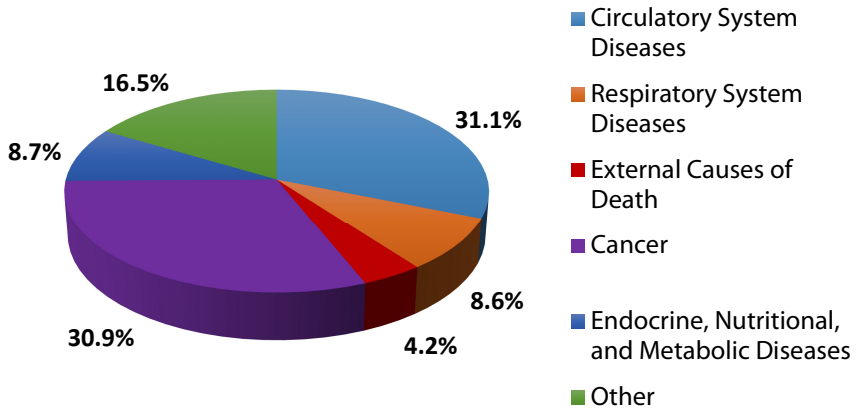
Data Source: NL Centre for Health Information, Clinical Database Management System, 2009/10-2011/12

LEADING CAUSES OF DEATH

In 2009, the leading causes of death reported for the central region were (48):

- ***Circulatory system diseases*** (31.1 per cent of all deaths, as compared to 31.7 per cent for Newfoundland and Labrador)
- ***Cancer*** (30.9 percent of all deaths, as compared to 32.2 per cent for the province and 29.8 per cent for the country)
- ***Endocrine/nutritional/metabolic diseases*** (8.7 per cent of all deaths, as compared to 6.1 per cent for the province)

Fig. 21 Leading Causes of Death in the Central Region (2009)



Source: NLCHI (2013)

For comparison purposes, the three leading causes of death reported for the central region in 2006 were:

- ***Circulatory system diseases*** (36.3 per cent of all deaths)
- ***Cancer*** (26.3 per cent of all deaths)
- ***Endocrine, nutritional and metabolic diseases*** (6.8 per cent of all deaths)

From 2006 to 2009, there was a decrease in the deaths due to diseases of the circulatory system and an increase in the deaths related to cancer and endocrine, nutritional and metabolic diseases. The top five causes of death have remained the same.

There is a strategy underway within Central Health to implement best practices regarding stroke care. There is no established cardiac rehabilitation program at Central Health.

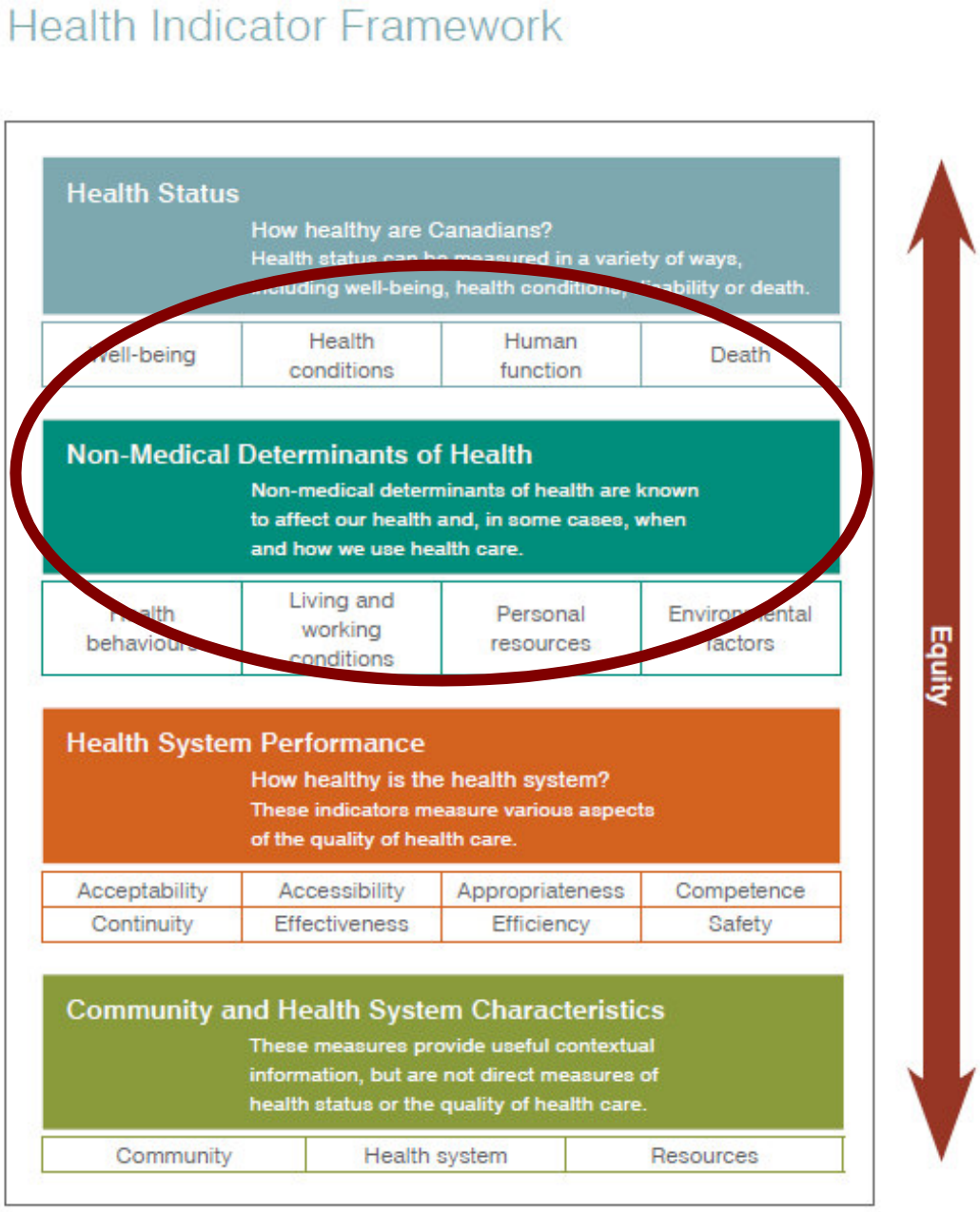
HOSPITAL STANDARDIZED MORTALITY RATIO

The Hospital Standardized Mortality Ratio (HSMR) is broad system-level indicator of healthcare quality that measures whether the death rate at a hospital is lower or higher than would be expected. The HSMR compares the actual number of deaths to the number that would be expected based on the types of patients a hospital or region treats. The HSMR = observed deaths/expected deaths x 100, with the benchmark for adjusted hospital death rates being 100 (49).

In 2011-2012, Central Health's HSMR was 127, which was the highest HSMR in the country. A HSMR Steering Committee was established in 2012 to investigate and facilitate the use of the HSMR data as a quality indicator for the evaluation of hospital mortality rates. Significant work has been undertaken to create an awareness of HSMR, improve data quality, and physician documentation. As a result of these efforts, in 2012-2013, Central Health's HSMR dropped to 112 (50).

There is a significant time commitment required to understand and act upon the HSMR data once it is deemed to be valid. To be successful in measuring, evaluating and reducing hospital mortality rates chart review processes, such as the "Move Your Dot!" and the "Global Trigger Tool for Measuring Adverse Events", developed by the Institute of Healthcare Improvement (IHI), will need to be implemented at Central Health (50).

NON-MEDICAL DETERMINANTS OF HEALTH



Source: CIHI Health Indicators (2013)

HEALTH BEHAVIOURS

Health behaviors are aspects of personal behavior and risk factors that epidemiological studies have shown to influence health status (20). Personal health practices or coping skills are the individual actions taken by people and the lifestyle choices in which individuals engage to prevent disease, maintain health status, promote or enhance self-care, cope with challenges, make decisions and problem solve for themselves and dependent family members.

BREAST FEEDING

According to the World Health Organization, the best way to get young infants the nutrients needed for healthy development is through breastfeeding (20). From 2007-2009 the breastfeeding initiation rates for the central region have consistently remained in the 50-60 per cent range. These rates are slightly lower than the provincial rates for the same period, which remain around 63 per cent (51). Recent regional data on breast feeding rates in Newfoundland and Labrador are not available from *Statistics Canada Canadian Community Health Survey* (CCHS). However, in 2012, results of the CCHS determined that, nationally, 90 per cent of respondents indicated initiation of breast feeding at birth. In the same year only 59 per cent of respondents from Newfoundland and Labrador indicated initiating breast feeding at birth (22).

In the community health sector, public health nurses support new mothers through breast-feeding education, programming and support. Central Health employs Lactation Consultants who provide timely support to mothers in the community and at the acute care health setting if required. Family Resource Programs throughout the central region have also been key in providing support and encouragement for breast-feeding.

SMOKING

In 2012, 23.1 per cent of the population aged 12 and over in the central region reported they smoke daily or occasionally. In 2005 and 2007, the rate was 24 per cent indicating a slight decline in the number of individuals in the central region who self-reported using tobacco. This is lower than the provincial rate of 26.1 per cent in 2012 (22).

In addition, in 2011, 5.8 per cent of the non-smoking population aged 12 and over in the central region reported that at least one person smoked in their home and 15 per cent reported exposure to second-hand smoke in a vehicle and/or public places in the past month (22).

In 2009, Central Health developed a *Smoke Free Properties Initiative* and offered a supportive environment for transition to a healthier lifestyle. Currently all Central Health facilities are smoke-free and patrons of the facilities are requested not to smoke on Central Health property. This initiative was in line with the provincial government's

strategic direction of improving population health by decreasing smoking rates and protecting citizens from second hand smoke.

In 2012-2013, the *Central Tobacco Awareness Coalition*, a community group which includes representatives from Central Health, has been working on a Tobacco Prevention Toolkit Project for children ages 10 to 12 years in the central region with funding from a Department of Health and Community Services Wellness Grant.

ALCOHOL CONSUMPTION/OTHER DRUG USE

Heavy drinking is defined as individuals in a population aged 12 and over who reported having five or more drinks on one occasion, at least one time a month over the past year. In 2012, information for the central region revealed that 25.9 per cent of respondents were classified as heavy drinkers. This is compared to the provincial average of 26.8 per cent and a national average of 17.4 per cent. Central Health region had the lowest rate in the province. It should be noted that in all areas, men had a higher percentage of heavy drinking compared to women. In the central region, 31.7 per cent of men and 18.3 per cent of women reported heavy drinking (22).

In 2012, a Student Drug Use Survey was conducted in Newfoundland and Labrador that targeted students from grades 7-12. The survey revealed that in the previous 12 months, 46.6 per cent of students had not used alcohol, cigarettes or any other drugs. Between 2007 and 2012, there was a 5.6 per cent decrease in the number of students who reported using alcohol, cannabis and tobacco. However, during the same time period, there was an increase in the number of students who reported using cocaine and ecstasy (52).

GAMBLING

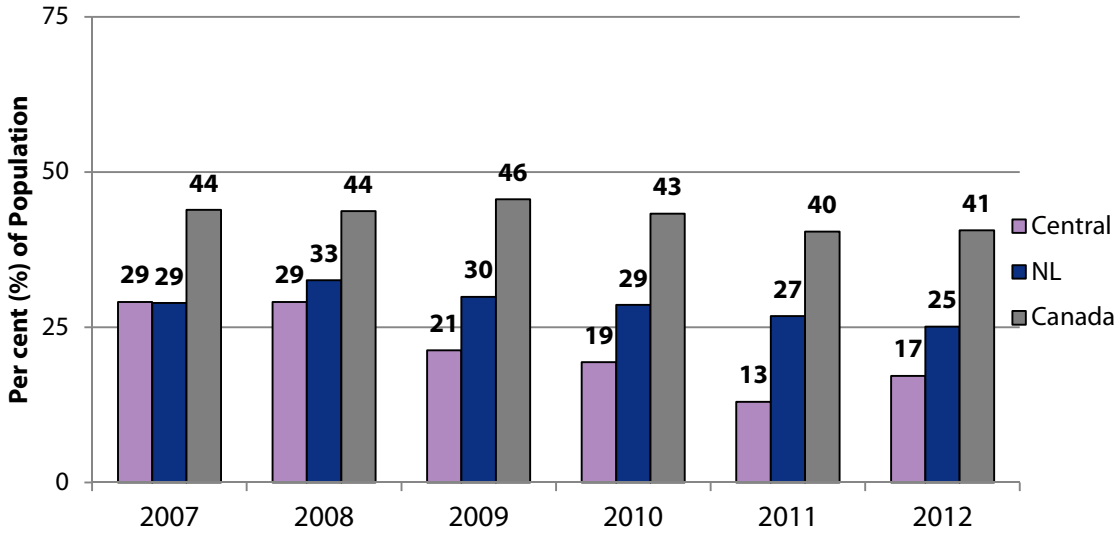
The Newfoundland and Labrador Gambling Prevalence Study indicates that in 2009, 71 per cent of residents in the central region were classified as gamblers (individuals who use lotto tickets, raffles, slot machines, etc.) which compares to 77 per cent provincially (53). This is a decrease compared to the 2005 data where the central region had a rate of 78 per cent and the province a rate of 84 per cent. Gamblers were equally split between males and females and the typical gambler was between age 35 and 54, employed and had some post-secondary education. According to the study, the rate of problem gamblers for the province has decreased from 1.2 per cent to 0.7 per cent. A more recent study has not been conducted.

FRUIT AND VEGETABLE CONSUMPTION

The *Canadian Community Health Survey* also measures nutritious food consumption of fruits and vegetables, five or more times a day. This indicator measures the percentage of the population who report to consume five or more fruits and vegetables per day and is a measurement of healthy eating habits. The figure below displays statistics for the central region, the province, and the country. In 2012, only 17 per cent of residents in the central region reported eating fruits and vegetables 5 or more times a day as

compared to 25 per cent of the province and 41 per cent of Canadians. Since 2007, citizens in the central region reported consuming far less fruits and vegetables than the province or the country (25) (26) (22). When this indicator is viewed with the information on overweight/obesity and levels of physical activity below this information is of concern.

Fig. 22 Comparison of Fruit and Vegetable Consumption Five or More Times a Day (Central Health, Newfoundland, and Canada) 2007-2012



Source: Statistics Canada CCHS (2007-2012)

PHYSICAL ACTIVITY

In the *Canadian Community Health Survey*, physical activity is defined as the population aged 12 and over who reported a level of physical activity based on responses to questions about nature, frequency and duration of their participation in leisure-time activity. The responses to these items were rated active, moderately active or inactive based on activity over the past three months. In 2012, the central region respondents reported that 38.8 per cent were either active or moderately active indicating a 10 per cent decrease in self-reported activity level since 2009. Therefore a greater proportion of the population are considered to be inactive at 61.2 per cent. This compares to provincial data of activity at 50.7 per cent and Canadian data at 53.9 per cent. Physical inactivity has been linked to high rates of chronic disease and obesity (22).

There have been multiple initiatives funded though the Provincial Wellness Grants, since 2012, to address the level of physical activity in the region (54). Many of these programs are provided in partnership with other organizations and community groups.

OBESITY/OVERWEIGHT

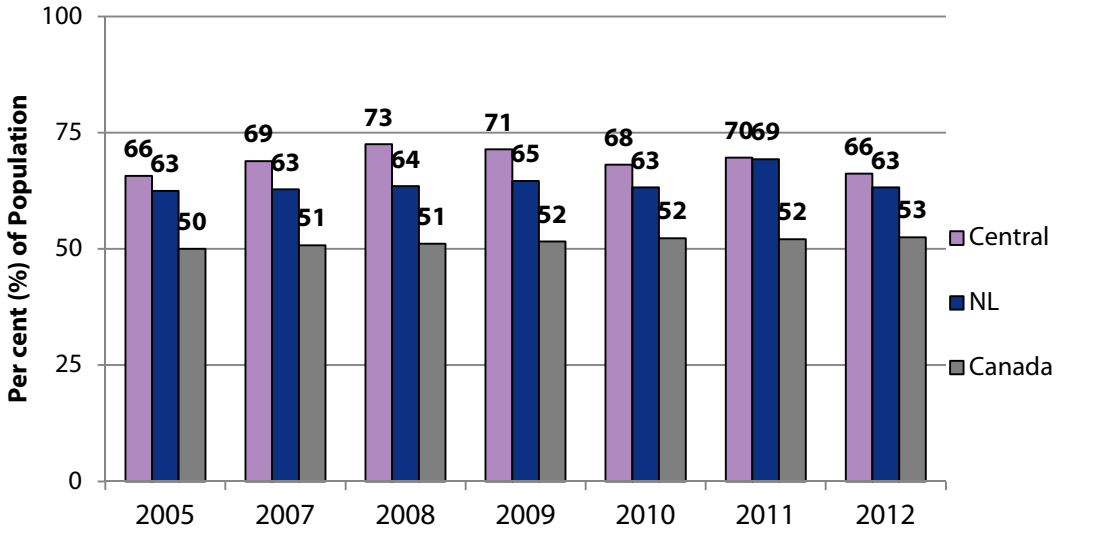
Body weight is a result of many factors. Some of the factors, such as lifestyle habits, are modifiable. Metabolism, family history and genetics cannot be changed. With the right treatment, whether lifestyles changes or medical treatment, it is possible to lose weight and lower risk of chronic diseases related to overweight and obesity.

According to the World Health Organization, individuals who are overweight or obese are at an increased risk for cardiovascular disease, hypertension, type II diabetes as well as other diet-related chronic diseases (22). Body Mass Index (BMI), a method of classifying body weight according to health risk, is typically used to measure overweight and obesity. Overweight is defined as those individuals who have a self-reported BMI between 25 and 29.9. Obesity is defined as having a BMI over 30.

In 2012, approximately 66 per cent of individuals aged 18 and over in the central region reported themselves to be either overweight or obese (41 per cent overweight, 25 per cent obese) (22). This is a significant increase from 2005 and is higher than the provincial average as presented in the graph below (26). This data should be used with caution as women are inclined to underestimate their weight, while men tend to overestimate their height. In addition, as BMI increases, respondents are inclined to underreport their weight.

The figure below indicates a higher rate of overweight and obese individuals in the central region when compared to the province and the country.

Fig. 23 Comparison of Overweight/Obese Incidence in Adults (Central Health, Newfoundland, and Canada) 2005-2012

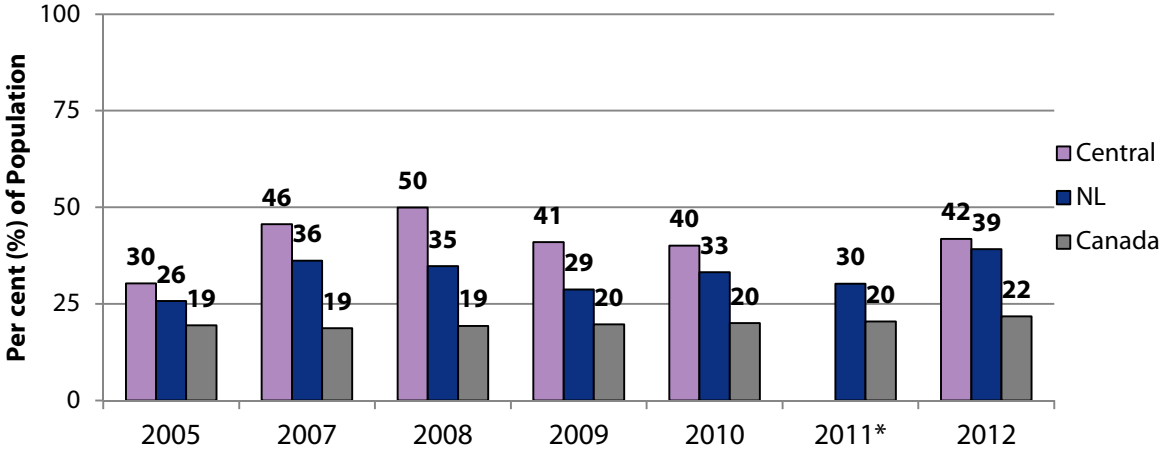


Source: Statistics Canada CCHS (2005-2012)

The survey also measured youth obesity rates in the 12-17 age population. As illustrated in *Fig. 24*, youth obesity in the central region is significantly higher when compared to rates in the province and in Canada. This trend can be found since 2005 with a peak in 2008. The number may be underestimated as reported height tends to

be overestimated, and reported weight underestimated. These biases would affect the validity of the way overweight and obesity is measured. Also, the statistics in the figure below should be interpreted with caution. For the year 2011, there is no statistic provided in *Fig. 24* for Central Health as the data was too unreliable to be published (22).

Fig. 24 Comparison of Youth Overweight/Obese Incidence (Central Health, Newfoundland, and Canada) 2005-2012



Source: Statistics Canada CCHS (2005-2012)

On a positive note, a study completed by Memorial University concluded that childhood obesity rates for preschool children in the central region in 2009-2010 returned to where they were 20 years ago. In the other three RHAs, the rates in 2009-2010 were significantly higher than 20 years ago (55).

LIVING AND WORKING CONDITIONS

Living and working conditions are indicators related to the socio-economic characteristics and working conditions of the population that epidemiological studies have shown to be related to health (20).

EDUCATION

Educational attainment is positively correlated with economic status and health outcomes including healthy lifestyles and behaviors (32). Education increases the opportunity for employment and income, and contributes to self-esteem and well-being. Educational attainment is measured in the population aged 25 to 54 years and is presented in the following table. The highest level of education in the central region is compared to the province in the table below. As illustrated, in 2006, the central region had a higher incidence of residents without a high school certificate (30 per cent) compared to the provincial average (22 per cent) (16).

Table 11: Comparison of Highest Level of Education Central and Provincial (2006)

Education	Central Region	NL
Without High School Certificate	30 %	22 %
High School Certificate only	22 %	20 %
Apprenticeship or Trade	16 %	15 %
College or Non University Certificate or Diploma	24 %	24 %
University	11 %	19 %

Source: Statistics Canada Census (2006)

EMPLOYMENT/UNEMPLOYMENT

Unemployment is defined as the proportion, or percentage, of the population aged 15 and over who did not have a job during the timeframe indicated (18). Newfoundland and Labrador has the highest unemployment rate in the country at 13 per cent compared to the national average of 7 per cent. In 2012, 18 per cent of individuals in the central region were unemployed (56).

Table 12: Comparison of Unemployment Rate 2012 (Regional, Provincial, and National Data)

Region	2010	2011	2012
Central Health	20%	17%	18%
Eastern Health	12%	10%	10%
Western Health	20%	21%	20%
Labrador-Grenfell Health	10%	7%	10%
Newfoundland and Labrador	14%	13%	13%
Canada	8%	8%	7%

Source: Statistics Canada, Labour Force Survey, special tabulations. The CANSIM table 109-5324 is an update of CANSIM table 109-5304

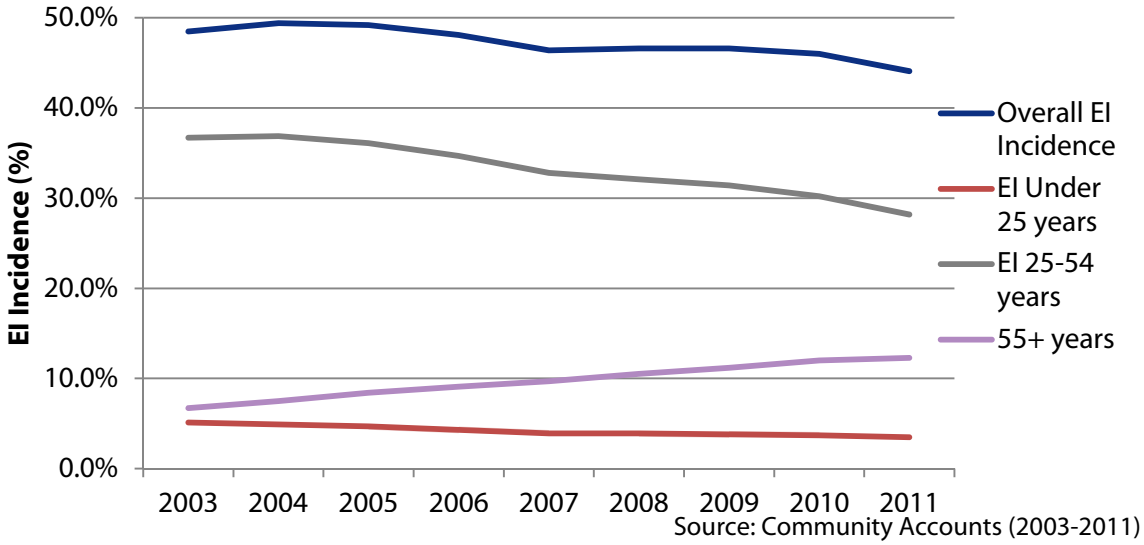
Unemployment, underemployment, stressful or unsafe working conditions are associated with poor health. People who have more control over their work circumstances and fewer stress related demands from their job are healthier and often live longer than those in more stressful or riskier work environments. Employment has positive effects on the community as a whole as it increases well-being, decreases the gap between rich and poor and improves social networking (32).

EMPLOYMENT INSURANCE INCIDENCE

The employment insurance (EI) incidence reflects the number of people receiving EI benefits in the year divided by the total number of people in the labor force. In 2011, the central region had an EI incidence of 44 per cent compared to the provincial incidence of 31 per cent (16).

It is worthwhile to note the age distribution of those receiving employment insurance benefits. From 2003 to 2011, the percentage of youth (under 25) receiving EI benefits declined from 5.1 per cent to 3.5 per cent and there was a decline in the 25-54 age group during the same period. The over 55-year age group showed a large increase from 6.7 per cent in 2003 to 12.3 per cent in 2011 (18).

Fig. 25 Employment Insurance (EI) Incidence by Age for Central Region (2003-2011)



Source: Community Accounts (2003-2011)

PERSONAL RESOURCES

Personal resources measure the prevalence of factors, such as social support, that epidemiological studies have shown to be related to health.

SELF RELIANCE

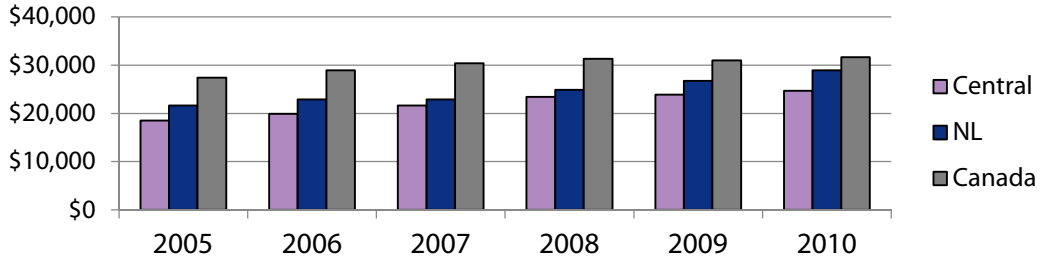
A community's level of self-reliance is an indicator of the ability to earn income independent of government transfers, such as Canada Pension, Old Age Security, Employment Insurance and Income Support. A high ratio is indicative of less reliance on government transfers or support. In 2010, the self-reliance ratio for the central region was 72.5 per cent, as compared to the provincial rate of 78.5 per cent. The central region experienced a slight increase from a rate of 71.1 per cent in 2006 (18). It is worth noting that the aging population may influence this rate over time if trends in outmigration and the aging population continue.

PERSONAL INCOME PER CAPITA

Health status improves at each step up in the income and social hierarchy. Adequate income determines living conditions such as safe housing and the ability to buy sufficient and adequate food. Coupled with these social conditions is the ability to access timely health care and sustain personal health and overall well-being. Income contributes to an individual's ability to maintain a healthy lifestyle (32).

Personal income per capita is defined as income from all sources received by an individual including employment, as well as government transfers, and is calculated by dividing the total income by the population. In the central region, the average personal income per capita for 2010 was $24,700, which is below the provincial average of $28,900 and the Canadian average of $31,600. In addition, in 2010 the average couple family income for the central region was $69.500. This is compared to the provincial average income of $85,700 and the Canadian average of $96,700 (18).

Fig. 26 Comparison of Personal Income Per Capita 2005-10



Source: Community Accounts (2013)

INCOME SUPPORT ASSISTANCE INCIDENCE

Income support assistance incidence, formerly known as social assistance incidence, reflects the number of people (including dependents) receiving income support during the year divided by the total population. In 2012, 9.2 per cent of the population in the central region received income support at some point, which is comparable to the provincial average of 9.1 per cent (16).

The following facts are associated with income support in the central region:

- Number of individuals on income support has decreased in the central region from 14,085 in 2002 to 8,725 in 2012
- Number of families receiving income support (including unattached individuals) has decreased from 6,945 in 2002 to 5,490 in 2012
- Number of children aged 0-17 in families receiving income support has steadily decreased from 4,495 in 2002 to 2,125 in 2012
- Average benefit for families collecting income support was $7,600 annually in 2012

LOW INCOME LEVELS

The low-income cut-off is an income threshold determined by the portion of income spent on necessities such as food, shelter and clothing compared to the average family. Statistics Canada predicts that low-income families spend on average 20 per cent more than average on those necessities (16).

The following table presents data on the incidence of low income in the central region as compared to the province (57). The incidence of low income measures the proportion of families with income below the low-income threshold.

Table 13: Incidence of Low Income for the Central Region (2009)

Family Type	Gander/New-Wes-Valley	GFW/Baie Verte/Harbour Breton	Province
Total Families	12.9%	14.4%	15%
Female Lone-Parent	36.8%	38.1%	35%
Non Family Persons	20.6%	23.5%	24.7%

Source: Community Accounts (2013)

ENVIRONMENTAL FACTORS

Determinants of health are factors that together contribute to the state of health and well-being of populations and individuals (32). Physical environments are identified as one of these determinants of health and include human built factors such as housing, roads, transportation, safety and natural factors such as air and water quality, all of which have the potential to influence human health.

TRANSPORTATION

In Newfoundland and Labrador, the vast geography, dispersed and aging population, harsh weather conditions, growing health care demands, and transportation to and from health care services is a growing challenge. This is especially relevant for the central region given the relatively small population dispersed over a large geographic area with more than 4 out of 10 clients living more than 60 minutes from a major site (16). Unfortunately there is limited documentation regarding transportation in the central region, but anecdotal evidence supports the notion that in many areas there is limited availability to public transportation such as public bussing and taxi services. In addition, due to the significant number of islands, some residents are reliant on the operation of a ferry to access health services, which further compounds the accessibility issues within the region.

Community Wheels

The *Community Wheels Project* (CWP) began in Twillingate-New World Island in the fall of 2011. The project was initiated as a result of the Community Profile (Isles of Notre Dame) which indicated that transportation was an issue for citizens in the area. At the time, Central Health was operating a facility bus that was not being used to full capacity. LTC residents were utilizing the bus for trips approximately once a week and

occasionally by community members who were wheelchair dependent. An application was put forward to hire a coordinator for a project that would see the bus used more often by seniors and others in the community who had difficulty accessing transportation (58).

The initial phase of the CWP was very successful with many individuals in the community, the majority of who were seniors, utilizing the bus for grocery trips, to attend medical appointments, as well as participate in community functions or special trips for the purpose of engaging in the community. Regular monthly calendars were developed and distributed. Volunteer drivers were recruited and trained. Individuals using the bus provided very positive feedback, expressing how the project had lessened their isolation in their own homes, made them more independent in attending to their own needs, and improved their overall mental well-being. Phase one of the CWP was completed in January 2013 (58).

In May 2013, the CWP partnership committee was successful in securing funding from the Provincial Wellness Grant to extend the project for another year. Phase 2 of the project is now well underway with new clients (as well as former clients) utilizing the community bus. There has been a continuous increase in the uptake of this service. Funding for this project will expire again in May 2014 with efforts continuing to obtain sustainable funding in the future (58).

Community busing is also available in the area of New-Wes Valley. This area utilizes a Community Seniors Support Worker (formerly the Recreation Therapy Worker at Bonnews Lodge) to engage seniors to participate in programs and services that target the 65+ population. Throughout the year, the support worker uses the bus to transport seniors to and from community events that are planned and sponsored by Central Health, such as the Healthy Aging Celebration. The event is hosted in the fall of the year and, on average, there are approximately 90 seniors in attendance. The support worker also offers ten scheduled trips in the summer to regional destinations for local seniors. The trips are advertised to local seniors and priority is given to those who lack their own transportation and/or don't get an opportunity to socialize with their peers (59).

AIR QUALITY

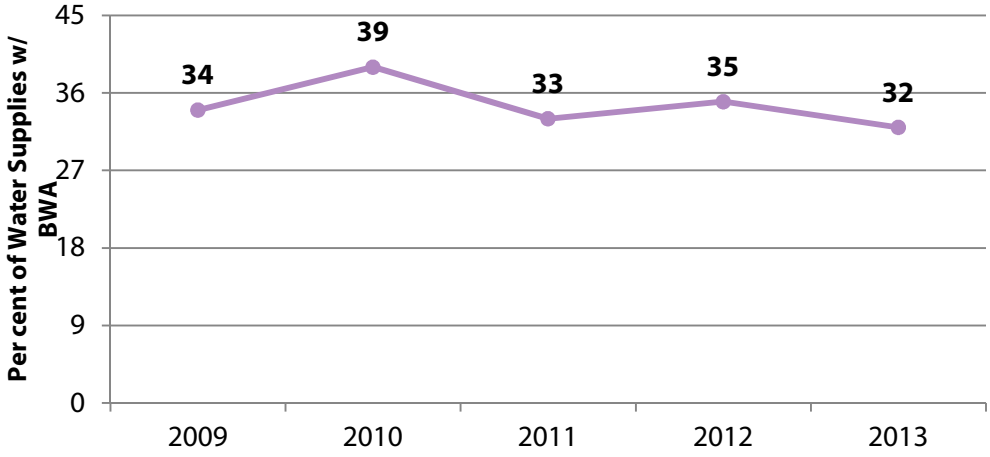
The Air Quality Health Index (AQHI) is a public information tool that helps Canadians protect their health on a daily basis from the negative effects of air pollution. Health Canada and Environment Canada have developed this tool, in collaboration with provincial, health, and environment key stakeholders. The AQHI is rated on a scale of 1-10; 1 being the least risk and 10 being the greatest. Provincial and regional daily updates of this index are available daily on the AQHI website for the areas of St. John's, Marystown, Grand Falls-Windsor, and Corner Brook. On November 14, 2013, the AQHI for Grand Falls-Windsor was 2, or low risk. Similarly, the AQHI for other areas in the province was also 2 (60). Air quality does not pose a concern for the citizens of the region.

WATER QUALITY

Central Health is responsible for monitoring and communicating the quality of public drinking water supplies throughout the central region. In central, there are a total of 107 public drinking water supplies that require ongoing monitoring. The water is not tested by employees from Central Health. Rather an external agency tests the water quality and communicates the results to Central Health; a partnership known as the *Drinking Water Program*. At any given time there could be between 30 and 40 boil order advisories issued in the central region, or approximately 30 to 40 per cent of the public drinking water supplies. In the fiscal year 2012-2013 there were approximately 79 boil water advisories issued on public water supplies in the central region (61).

Statistical trends with respect to boil order advisories are often difficult to calculate based on the fluid nature of water quality. In other words, boil order advisories may change from one day to the next. The best way to interpret this information is by using a snapshot of the percentage of boil order advisories for one day over a number of years. The figure below shows the percentage of boil order advisories on March 31st from 2009 to 2013 (61).

Fig. 27 Percentage of Water Supplies with Boil Order Advisories for the Central Region (March 31st 2009-2013)



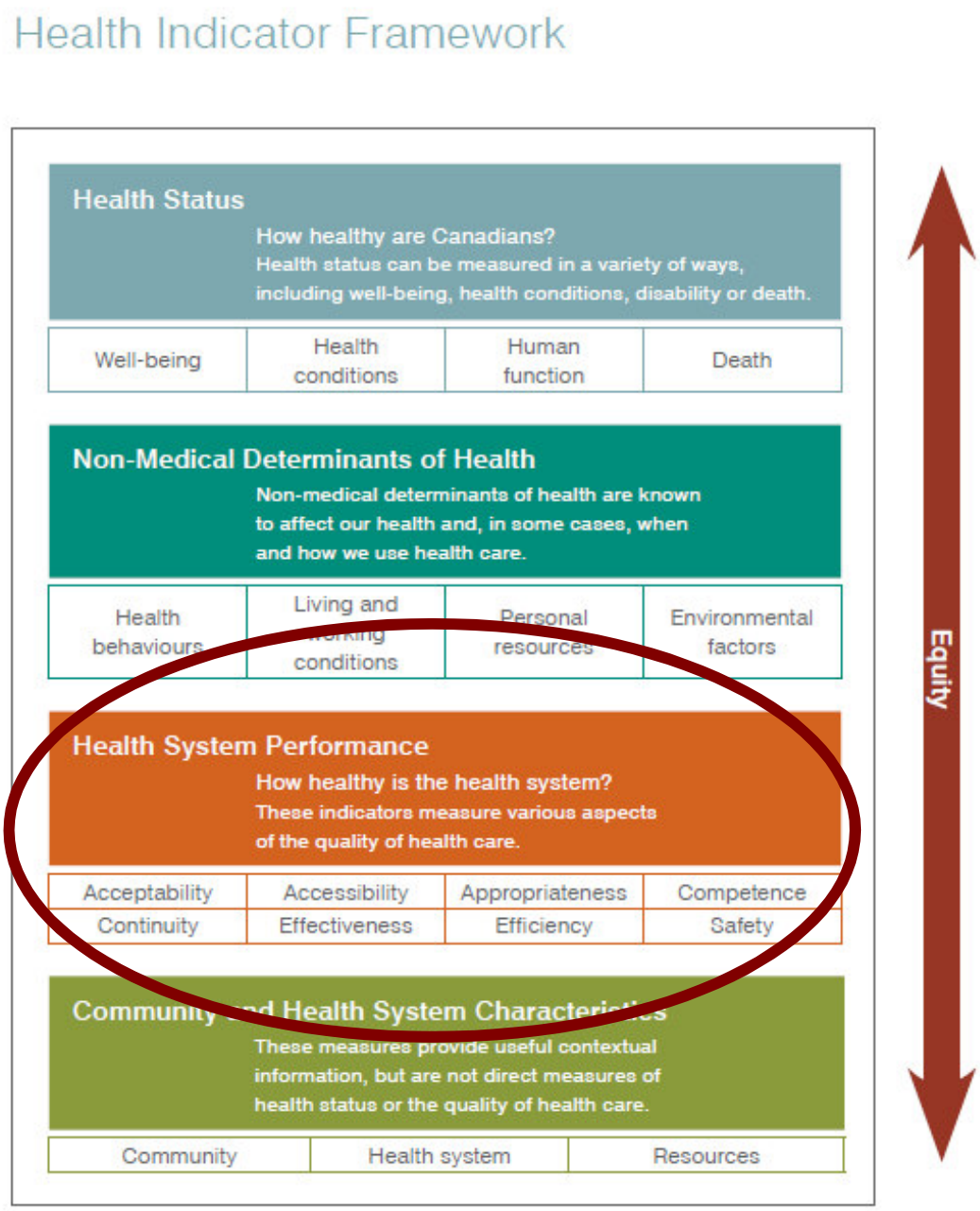
Source: Central Health Department of Health Emergency Management (2013)

SAFETY

One measure of safety is the use of bicycle helmets. In 2012, the population aged 12 and over in the central region who reported always wearing a bicycle helmet in the past 12 months was 17.4 per cent. This compares to a provincial rate of 34.4 per cent (18). There is no provincial legislation with respect to bicycle helmets.

An area of significant concern in the province in the past number of years has been all-terrain vehicle (ATV) safety. The practice of children and youth operating these machines, lack of helmet use and the number of accidental injuries and fatalities is of concern (62).

HEALTH SYSTEM PERFORMANCE



Source: CIHI Health Indicators (2013)

ACCEPTABILITY

Acceptability is the notion that clients are satisfied with the level of care offered within a health facility and that the organization provides respect for the clients' right to privacy, confidentiality, and dignity (20). In addition, acceptability encompasses the notion that the quality of work-life is acceptable to the staff and health care providers.

Furthermore, acceptability can be defined as the care/service provided meets the expectations of the client, community, providers and paying organizations, recognizing that there may be conflicting or competing interests between stakeholders, and that the needs of the clients are paramount (20).

ACCREDITATION

Central Health is committed to progressively improving the quality of the care and services delivered throughout the central region. As a part of this commitment, Central Health participates in the Accreditation Canada program. Central Health achieves an accredited status by meeting Accreditation Canada's national standards for health care quality (50).

Accreditation Canada is a national accrediting body that sets standards that organizations must achieve in providing care and services. Achieving the status of accreditation demonstrates to the public and clients that Central Health meets the standards set by Accreditation Canada which is a benchmark for organizations across Canada. To be an accredited organization means that the organization and its staff have undergone a series of evaluations and have been deemed to meet all necessary requirements. The process of Accreditation provides Central Health with the opportunity to incorporate quality into everyday work and helps to build a culture of quality improvement and patient safety throughout the organization (50).

At Central Health there are 17 Quality Improvement (QI) teams with strong representation from various levels of staff within the program or service area. The teams meet regularly to review Accreditation standards; identify areas for improvement, either through self-assessments, surveys, discussion groups, client concerns or identified risks; and identify and monitor indicators to improve performance. The QI teams also support the application and implementation of evidence-informed practice which contributes to the building of a culture of quality and safety and a systematic approach to quality improvement (50).

Central Health's commitment to continuous quality improvement and safety was highlighted during May 5-10, 2013 when an onsite accreditation survey was conducted by seven surveyors who reviewed services and programs across the continuum of care. The surveyors visited numerous locations and interviewed senior leaders, board members, staff, physicians and clients to evaluate service delivery. In addition, they reviewed a large volume of submitted documents as supporting evidence for the quality of care and services delivered at Central Health (50).

Central Health was successful in achieving 95.9 per cent compliancy or met 2426 of the 2530 evidence-based standards reviewed (4). Reaching this level of compliance highlights the commitment of senior leaders, staff, managers, physicians, including the QI Teams who strive to enhance the safety and quality of healthcare services in Central Health. There were several reports that were required for follow up and all were submitted in October 2013. The results of the report submissions escalated the organizations Accreditation rating from *Accreditation with Report* to *Accreditation with Commendation*. In 2012, Accreditation Canada surveyed 1,066 health and social services organizations, 23 per cent of those surveyed organizations reached this level of compliance. The next scheduled survey will take place May 2017.

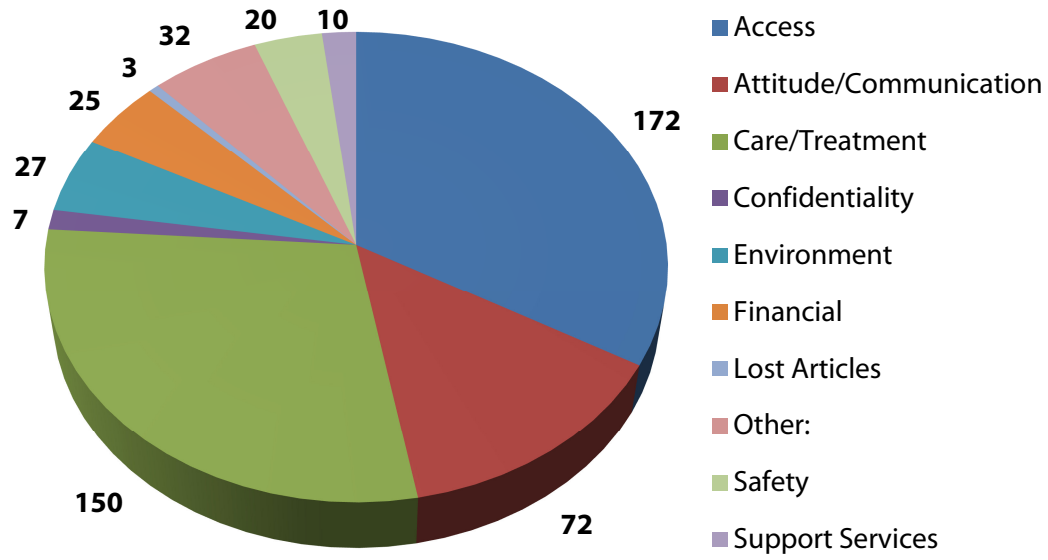
CLIENT SATISFACTION

Central Health has a well-established Client Relations Management Program. The Client Relations Coordinator (CRC), positioned within the Corporate Improvement Department (CID), oversees the follow-up and investigation process of client inquiries through the electronic Compliments/Complaints Reporting System. The CRC analyses the system's data and works closely with internal and external partners to identify trends, gaps in service delivery and opportunities for systemic improvement (50).

The majority of reports entered into the Compliments/Complaints Reporting System are expressed concerns or complaints. In the fiscal year 2012-2013, there were a total of 518 complaints and 78 compliments documented in the reporting system. These reports are investigated and are categorized according to the issue and seriousness of the complaint. A follow-up process is also established to communicate compliments to employees or groups who receive compliments from clients and family members. A thank you card is sent to the recipient of the compliment (50).

Once the investigation process is complete, compliments and complaints are classified and organized by category. For example, if a complainant expresses dissatisfaction with a waiting room in one of Central Health's facilities, this complaint would be classified as "Environment". Data from the Compliments/Complaints Reporting System is analyzed and trends in the classification of compliments and complaints indicate areas for improvement as well as areas of excellence (*see Fig. 28 and Fig. 29 for a breakdown of the classification of compliments and complaints*) (50).

Fig. 28 Total Number of Reported Complaints by Classification Apr. 1, 2012 – Mar. 31, 2013



Source: Central Health Compliments/Complaints Reporting System (2013)

Fig. 28 shows the total number of complaints by classification. From 2012-2013, the three most frequently occurring complaints were classified as:

Access – 172 (or 33 per cent) *of all reported complaints*
Access is defined as *concerns that relate to a person's access to treatment or diagnostic services being offered at Central Health. This includes concerns regarding wait times and inability to contact appropriate staff.*

The most frequently occurring type of access complaint relates to timely access to a physician or clinic, i.e. internist service. Also numerous complaints were received regarding wait times for diagnostic procedures, blood collection services and emergency room care.

Care/Treatment – 150 (or 29 per cent) *of all reported complaints*
Care/Treatment is defined as *issues relating to deficiencies in actual care provided by health care professionals.*

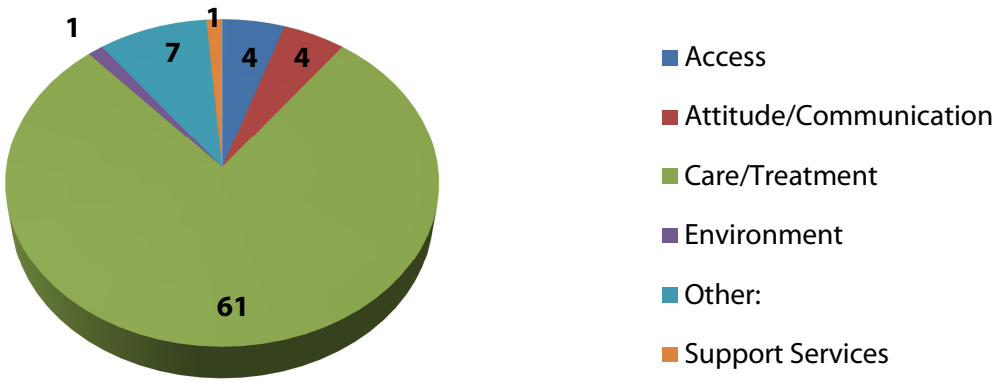
When complaints are classified as care/treatment, complainants perceive their care to be insufficient or inappropriate. The majority of complaints would relate specifically to care provided by physicians. A portion of these complaints are concerning the overall care/treatment provided by frontline employees.

Attitude/Communication – 72 (or 14 per cent) *of all reported complaints*
Attitude is defined as *an individual's response to a situation*. Communication is defined as *a breakdown in pathways of communication or lack of information*.

The majority of complaints which are classified as attitude/communication relate to the manner in which Central Health employees or physicians communicate with clients. These complaints sometimes detail perceived disrespectful interactions between staff and clients.

Note that 394 (or 76 per cent) of all reported complaints fall into the categories of *Access, Care/Treatment*, or *Attitude/Communication* highlighting areas for improvement and ongoing monitoring (71).

Fig. 29 Total Number of Reported Compliments by Classification Apr. 1, 2012 – Mar. 31, 2013



Source: Central Health Compliments/Complaints Reporting System (2013)

Fig. 29 shows the total number of compliments by classification. From 2012-13, the most frequently occurring compliments are classified as:

Care/Treatment – 61 (or 78 per cent) *of all reported compliments*
Other – 7 (or 9 per cent) *of all reported compliments*
Access – 4 (or 5 per cent) *of all reported compliments*
Attitude/Communication – 4(or 5 per cent) *of all reported complaints*

Note that 76 (or 97 per cent) of all reported compliments fall into the categories of *Care/Treatment*, *Other, Access* or *Attitude/Communication* highlighting areas of excellence and high satisfaction with the quality of services and care received (63).

CONNECT, APPRECIATE, RESPOND AND EMPOWER (C.A.R.E.)

Many healthcare organizations face the challenge of ensuring that all employees interacting with clients utilize effective communication skills. When clients have positive experiences with healthcare professionals they tend to also experience better health outcomes. When clients are treated with courtesy and respect they are more understanding of their health condition and the importance of follow-up care. Additionally, client experience is significantly improved when employees communicate effectively with clients (64).

Central Health is currently piloting the *Treating Patients with C.A.R.E.* program aimed at improving communication with clients and enhancing client experience. This program provides a conceptual model and communication techniques that can be used as a guide for all employees regardless of the area. C.A.R.E. is a model consisting of four points: CONNECT, APPRECIATE, RESPOND, EMPOWER. The program is delivered through short presentations, interactive group work, case studies, and simulated interactions with clients (64). Through the implementation of the C.A.R.E. program in select areas, Central Health is hoping to increase the use of effective communication among all employees and therefore improve client experience and outcomes.

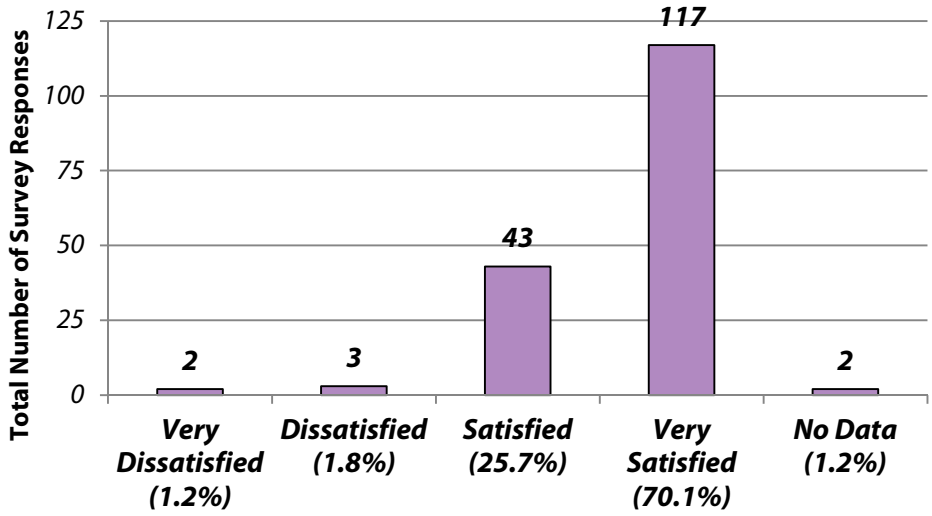
PATIENT CARE EXPERIENCE SURVEY

In 2012, over a two month period, the *Patient Care Experience Survey* was distributed to patients discharged from Central Health's acute health care centers (50). In 2012, there was an Accreditation Canada requirement to assess patient experience in acute inpatient services.

A total of 167 surveys were returned to Central Health for a response rate of 13.6 per cent. Over half of the surveys (99 or 59.3 per cent) were returned by patients discharged from CNRHC (50).

The Patient Care Experience Survey assessed five dimensions of client experience – respecting client values, expressed needs and preferences; patient safety; sharing information, communication and education; coordinating and integrating services; and enhancing quality of life in the care environment. Overall, patients who responded to this survey rated Central Health's acute care services very highly, indicating a high level of performance (*see Fig. 30 for results to survey question 'Overall, how would you rate the quality of care received?'*) (50).

Fig. 30 Central Health Patient Care Experience Survey: Overall Rating of the Quality of Care Received



Source: Central Health Corporate Improvement Department (2013); SPSS/PASW2010 May 30, 2013

Note that 83.9 per cent of survey respondents indicated the overall *quality* of care was either "Very Good" (20.4 per cent) or "Excellent" (63.5 per cent) demonstrating a high level of satisfaction with the quality of care received as an inpatient at Central Health (50) (65).

Patients rated performance in the areas of general services (i.e. cleanliness, and directions); patient safety; and coordinating and integrating services as needing some improvement. The results and trends found in the analysis provide insight into the patient experience and highlight areas for improvement. Throughout the organization, various QI teams are in the process of developing action plans for their specific area.

Some areas in the organization have well established client feedback mechanisms in place, Food Services is such an area. In this service area leaders monitor and report client experience on a regular and consistent basis and make improvements and changes based on the results of the surveys. Client experience overall is positive.

Central Health does not currently have a comprehensive plan for monitoring client experience in all areas of care and service delivery. A plan for monitoring and improving client experience needs to be a part of an organization's overall quality improvement strategy.

CENTRAL NL CITIZEN ENGAGEMENT INITIATIVE

The Central NL Citizen Engagement Initiative was a collaborative project to learn how to better engage and involve citizens of the central region in providing input on matters that influence decision making that impacts them. The partners included Central Health, Office of Public Engagement, Central West Regional Council, Gander New-Wes-Valley Regional Council, College of North Atlantic – Grand Falls-Windsor Campus, and Memorial University – Facility of Medicine.

In 2013, 134 citizens from the central region participated in the community engagement initiative, with a range in age from 15 to 75+ years, with 55-64 age range representing 29 per cent of the participants.

The population of the region is changing and as the demographics change, services need to change in order to meet the needs of the residents. By encouraging citizen engagement, policy makers can ascertain which values are more important to citizens when decisions that affect them are being made. The initiative was guided by two main questions: what values are most important when making decisions and what methodologies are optimal for encouraging engagement.

Focus groups and online group formats were used to solicit information to answer the questions posed. With respect to the question, what values are most important when decisions are made as to what services should be available in the local area, the common themes were:

- Accessibility to quality services

- Sustainability
- Quality
- Affordability
- Closeness to family/community supports
- Privacy/respect/communication

When asked what perspectives or concerns should be considered when making decisions, there was great diversity in the participant responses. The general themes were:

- Citizens perspective/information need to be used, including those most affected by the decisions
- Socioeconomic and demographics of the population has to be considered
- Sustainability and maximizing utility needs to be considered

This information provides a good basis for moving forward with a client engagement strategy. Clients are currently engaged at various levels in the organization; however there is no formal strategy. A formal strategy would help Central Health as it strives to be more client-centered. To achieve this dimension of quality, involvement and engagement of clients is required in all aspects of healthcare, including design and re-design of services, quality improvement, patient safety initiatives and the evaluation of services.

PRIVACY

Central Health is committed to respecting privacy and safeguarding confidential information in its custody and control in accordance with legislation. Central Health considers personal/personal health/business information that is not publically available as confidential and has an obligation to protect this information. All employees of Central Health have a responsibility to support the processes developed to safeguard confidential information. As the development of Central Health's privacy policies and processes in the protection of confidential information is ongoing, its goal is to examine the current knowledge and practices surrounding privacy and confidentiality and identify gaps to enhance further the privacy and confidentiality to support a culture of privacy (37).

In 2013, to date, there has been an average of 16 privacy breaches reported per month at Central Health (37). A privacy breach occurs when there is unauthorized and/or inappropriate access, collection, use, disclosure or disposal of personal/personal health or business information. Such activity is "unauthorized" if it occurs in contravention of *ATIPPA* or *PHIA*. The most common privacy breaches occur when personal information of clients, employees or a corporation is stolen, lost or mistakenly disclosed. For example, a privacy breach occurs when a computer/laptop containing personal information is stolen or personal information is mistakenly emailed or faxed to the wrong person.

Of the privacy breaches that are reported or identified each month, on average, there are 3 notifications to clients that are required. The Health Information Management and Privacy Department oversees all privacy incidents and notifications (37).

CENTRAL*SPEAKS*: BUILDING CONNECTIONS IN LONG TERM CARE (LTC)

In May 2011, Central Health held an event called Central*Speaks*. Approximately 125 participants, representing staff, residents, physicians, family members, volunteers and community partners from the central region spent the day discussing LTC services. The purpose of Central*Speaks* was to help determine if the delivery of LTC services in the region met identified needs of residents, families, volunteers, partners and staff. Central*Speaks* was designed to explore a new vision with those involved in the delivery of LTC services.

The event was a success and laid the foundation for moving forward to make LTC a better place to live and work. From the Central*Speaks* event a number of actions followed. One significant action was the development of the LTC Council in 2012 and subsequently the development of the LTC Philosophy of Care.

LONG TERM CARE (LTC) COUNCIL & LTC PHILOSOPHY OF CARE

In 2012-2013, a LTC Council was established consisting of representatives from families, volunteers and staff who provide LTC services. The purpose of Central Health's LTC Council is to facilitate an evidence informed and consistent approach to the provision of quality care in LTC facilities throughout the central region. The LTC Council strives to support a collaborative approach to LTC across disciplines with the input of residents, families, and community partners. This group monitors and evaluates the quality of LTC care throughout the region and ensures consistency in policy development and LTC practices.

The philosophy of care for LTC was developed with input from staff, leaders, residents and families. Central Health has committed to providing the best possible health care services in all areas throughout the central region. In keeping with this goal, Central Health believes that residents who live in LTC and their families must be cared for with compassion, dignity, and respect thus ensuring that needs are met and optimal quality of life is achieved.

FAMILY COUNCILS

The Lakeside Home Family Council was established in September 2012 with the objective of improving quality of life and care for the residents. To achieve this objective, the Family Council provides its members with a common voice to engage in advocacy, communication, education and support. Membership is made up of residents and their families and if requested friends of residents may also be appointed by a resident to speak on their behalf. Members are encouraged to bring their issues and concerns to the table to achieve meaningful and long-lasting

solutions through discussion and positive action (66). The meetings cover subjects which affect the daily lives of residents and their friends and family including: safety and security of the facility; changes to the model of nursing; development of a newsletter; etc. (66).

COMMUNITY ADVISORY COMMITTEES (CAC)

Community participation is one of the pillars of the primary health care service delivery model. To increase client engagement and participation in Primary Health Care, Community Advisory Committees (CAC) are in place in all primary health care areas. The CACs are directly linked to Central Health's Board of Trustees with a board member co-chairing each of the committees. Public participation includes community groups, non-profit agencies and community boards. Central Health strives to have a diverse representation with respect to geography, age, gender, community connections, and experience related to health issues in the community. There are approximately 75 community volunteers who participate in the CAC's across the region. These committees provide valuable community input and feedback to Central Health with respect to community needs and local priorities. See more information on the work of the CAC's in the Primary Health Care section below.

PRIMARY HEALTH CARE

As outlined in the mission of the *2011-2014 Central Health Strategic Plan*, Central Health will have the best possible integrated health and community services and programs that respond to the identified needs of the people of central Newfoundland and Labrador within available resources (2). In keeping with this mission, every year the Primary Health Care Facilitator of each primary health care area completes a comprehensive profile, involving research and consultation with community members, to inform stakeholders of the health care activities and needs of the citizens. The information presented below is a summary of the information collected in the primary health care community profiles and identified priorities for each area.

Coast of Bays

The Coast of Bays region is home to 22 communities with populations ranging from115 to 1905 citizens (16). In terms of geography, the Coast of Bays zone is broken down into three sub-regions: Fortune Bay North Shore, Connaigre Peninsula, and Bay D'Espoir, with a total population of 7,905 (67).

The Coast of Bays CAC is a dedicated group consisting of 11 members that meet on average six times per year. The CAC has participated in several activities to educate the committee on understanding primary health care and the determinants of health. Since January 2010, the main focus of the team has been to work towards developing an action plan utilizing information from the community profile and needs assessment. The action plan is aligned with Central Health's strategic directions and reflects the information contained in the community profile (67).

The committee began development of an action plan to address mental health issues including an inventory of the existing programs and services and building on current community assets. The committee's plan is to develop a survey to be administered in all schools in the Coast of Bays region to identify the stressors in youth's lives (67).

Kittiwake Coast

The Kittiwake Coast geographic area extends from Hare Bay to Fredericton, a distance of 130 kilometers. The CAC meets approximately five times per year to identify and discuss areas of concern in the large geographic area. The committee often consults and coordinates with the Primary Health Care Leadership Team and the Mental Health & Addictions Team at the Brookfield/Bonnews Health Centre (68).

The priorities of the primary health group in the Kittiwake Coast area are guided not only by the community profile and needs assessment, but also by the Strategic Directions of Central Health. This is the case for all primary health care areas. The core focuses of the priorities for the Kittiwake Coast fall under the strategic issues of *Access to Services* and *Healthy Aging*. The following strategic issues, priorities, and initiatives are currently underway; greater utilization of Telehealth, bed utilization in the Acute/LTC environment, access to physician services, education pertaining to healthy aging, and socialization opportunities for seniors (68).

Green Bay & Area

The Green Bay & Area CAC committee has established priorities that are reviewed regularly and include education on healthy eating, substance abuse/addictions, health education to prevent chronic diseases, accessibility to medical services and programs for seniors. After consultation with community members the primary health care group in the Green Bay area agreed upon the following priorities for 2013-2014 (69):

- Programs and services for the aging population particularly clients with dementia
- Expand on programs and services for children and youth aged 7-11 years
- Mental Health and Addiction Services
- Communication and awareness
- Programs and services for unpaid caregivers
- Chronic disease prevention and self-management

Fogo/Change Islands

The Fogo/Change Islands CAC meet approximately 4 times per year and consists of various community and health care representatives. The primary health care team in this area developed various areas of focus to highlight strengths and challenges (70).

The primary health care team and CAC have been actively involved in several initiatives including; mental health, healthy living, chronic disease prevention and management, options for children, youth and families, employment, safety, cervical screening, care for seniors and their families, access to services and transportation.

Exploits Area
The CAC in the Exploits area meets on a monthly basis to set priorities and initiate community projects related to health and wellness. The following are the top three priorities for the CAC; improving health and wellness for children and youth, chronic disease prevention and management, and mental health (71).

In addition, there are various population health initiatives throughout the Exploits area including:

- Exploits community garden promoting active living and healthy eating
- Delivery of mental health public education sessions
- Provision of evening clinics to increase community access to a physician
- Lifestyle clinics offered in various communities throughout the area
- Food and Fun Camps for students to teach healthy eating
- Provision of education sessions for people living with diabetes

Twillingate/New World Island
The Twillingate/New World Island CAC meets regularly and consists of various community and health care representatives.

Through meetings with the Primary Health Care Team and the CAC for the Twillingate/New World Island area priorities based on the needs of the population were identified. The next stages in this process will involve the development of a shared action plan for the primary health care team and the CAC with clear, measurable objectives leading toward the vision of a healthier community. The priority areas include; mental health, health promotion related to healthy lifestyle options, chronic disease prevention and management, options for children, youth and families, supports for seniors and their families, access to and awareness of services and transportation (72).

HEALTH FOUNDATIONS

Central Health has two registered charities which make additional investments in health programs and services throughout the central region: the Central Northeast Health Foundation and the South and Central Health Foundation (73).

The Director of Development is knowledgeable of capital equipment needs throughout Central Health's region as a member of the Capital Infrastructure Review Committee. Requests are brought to the attention of the Foundation Board of Directors for further discussion, presentations and voting. The magnitude of the amount of equipment purchased through the health foundations is quite remarkable. In the fiscal year 2012-2013, over $735,000 was contributed from the health foundations to purchase equipment and supplies throughout the region (73).

The Foundations have a long history of investments in health care equipment and technologies, along with enhancements to the physical environment encountered by

clients. In the past 12 months, some of the projects successfully completed with the help of Foundation donors include:

- The Lakeshore Healing Garden at JPMRHC (*pictured below is the official opening of the garden*)

Source: Central Health On the Pulse (2013)

- Funding for Sentinel Node Biopsy equipment for the operating rooms at JPMRHC and CNRHC
- Revitalization of the Mental Health Unit at the CNRHC
- Ground breaking for the construction of the Therapeutic Wander Garden for residents of the LTC Unit at the Baie Verte Peninsula Health Centre (BVPHC)
- Revitalization of numerous family comfort rooms and palliative care rooms throughout all health care facilities

There is significant support in the community and amongst the employees of Central Health for the work of the Health Foundations. The Foundations do recognize that current challenges include donor fatigue, competition for the donor dollar and staff retention (73).

Central Health staff also contributes to the Foundation in very special ways. As an example, every year employees at the BVPHC ensure their guests are treated to an authentic Victorian experience by dressing in costume at their annual Victorian Tea fundraiser. The money collected is used to support health care services in the area and to further develop the wander garden located at the BVPHC (74).

Source: Central Health On the Pulse 2012

VOLUNTEERS

Central Health's volunteer program consists of very committed and passionate volunteers. From 2010 to 2013 the number of volunteers increased from approximately 840 to 900 individuals. Central Health recognizes the impact volunteers have on the quality of care and services provided to clients and families, as well as the immeasurable support afforded to Central Health staff. Central Health commends the tremendous support by the volunteers with the Improving Health: My Way, Chronic Disease Self-Management Program, seasonal influenza vaccination clinics, auxiliary groups within the authority and the volunteer services provided in all LTC and acute care facilities. These partnerships are facilitated by the staff of Central Health in collaboration with the dedicated volunteers (75).

ACCESSIBILITY

Accessibility can be defined as the ability of clients to obtain care/service at the right place and right time, based on respective needs (18). In addition, accessibility refers to health care services available to all Canadians regardless of their geographic location (76). Understanding the distribution of health professionals in rural, remote and urban communities is vital to the principle of accessibility. Central Health has identified that accessibly is a challenge to the region due to a multitude of factors.

Some of the examples provided below represent gaps, while others show how accessibility to services has enhanced the health of the population in the central region. More than 4 out of 10 of residents in the Central Health region live more than 60 minutes away from a major health facility, this compares to less than 1 in 10 for the Eastern Health region (16). In a region challenged by such an expansive geography, strategic decisions must take into consideration the best use of available resources. Community partnership is crucial; the importance of collaboration among health care professionals in Central Health is vital to the delivery of quality health care to the residents throughout this region.

PHYSICIAN SERVICES

In 2012, 82.9 per cent of the population of Newfoundland and Labrador reported consulting a medical doctor. This compares to 78.7 per cent of the national population. Statistics for the central region are not available. Physician Services are measured by the population aged 12 and over who reported having consulted a medical doctor in the past 12 months (16). This includes family or general practitioners, surgeons, allergists, orthopedists, gynecologists, psychiatrists and pediatricians.

The total number of physicians located in an area can indicate whether or not the specified area is either resource rich or resource poor. The following table displays the 'doctors rate' by health authority as well as overall figures for the province and the country. The 'doctors rate' is defined as the rate of physicians (both general practitioners and specialists), per 100,000 population, found for a specified area (18).

This data suggests that Central Health is performing quite well with respect to the rate of general practitioners. The Newfoundland and Labrador 'doctors rate' is 123 as compared to 106 for Canada.

Table 14: Doctors Rate 2013 per 100,000 (National, Provincial, and Regional Figures)

Region	***Doctors Rate (per 100,000 population)***	
	General Practitioner	***Specialist***
Central Health	123	69
Eastern Health	126	136
Western Health	116	74
Labrador-Grenfell Health	114	42
Newfoundland and Labrador	123	108
Canada	106	103

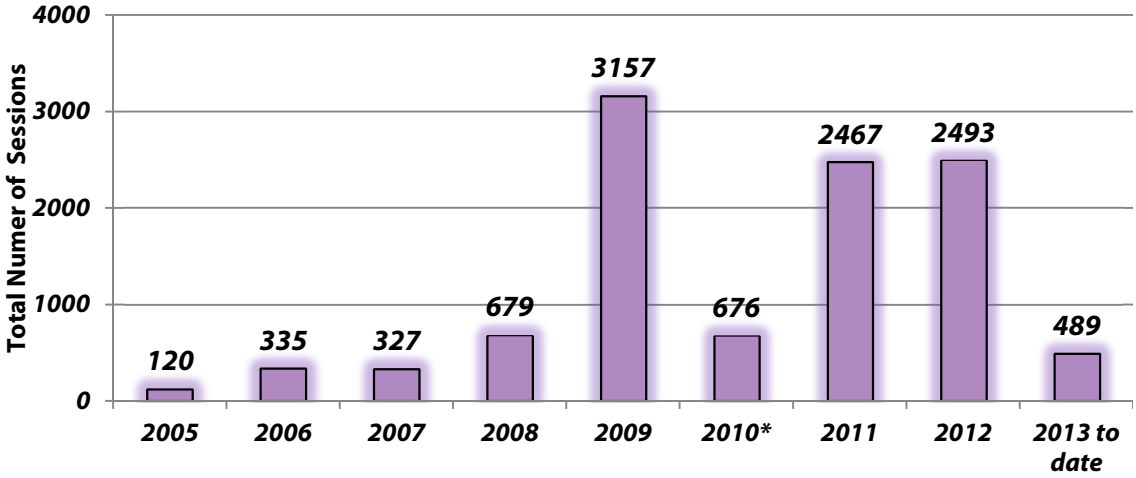
Source: CIHI Health Indicators (2013)

TELEHEALTH

Since 2005, Telehealth has helped increase access to specialized and critical health care services for residents across the province. Telehealth improves capacity and continuity of health care delivery and reduces professional isolation by providing health care providers greater access to consulting opportunities. The technology allows clients to consult with specialists from across the province without leaving their communities thus saving time, money and increasing access to care in addition to reducing wait times. A Telehealth benefits evaluation showed that 79 per cent of providers and 81 per cent of clients surveyed agreed that, "Telehealth has made it easier for my clients/me to obtain an appointment with the specialist or other provider at the provider site" (77).

Since 2009, the utilization of Telehealth services and therefore accessibility has increased. In 2009-2010, there was an average of 60 Telehealth sessions per week or 240 per month. In 2012-2013, the number of sessions increased to approximately 75 per week, or 300 per month (78). A Telehealth indicator is tracked quarterly on the Board of Trustees Scorecard.

Fig. 31 Central Health Total Number of Telehealth Sessions per Annum (2005-2013)



NOTE: Reliable data for the year 2010 is not available due to modification of database

Source: Central Health Information Management & Technology Department (2013)

Table 15: Central Health Telehealth Appointments Q4 2012-13 (January-March 2013) by Service and Site

SITE	Oncology	Dialysis	Mental Health	Genetics	Respiratory	Physiotherapy	Haematology	Endocrinology	Palliative Care	Cardiology	Wound Care	TOTAL
Gander	97	315	6	-	-	-	2	-	-	-	-	420
Grand Falls-Windsor	133	-	6	1	-	-	4	1	-	-	-	145
Green Bay	27	-	-	-	-	-	-	2	1	-	-	30
Baie Verte	19	-	4	-	-	-	1	-	-	-	-	24
Baie d'Espoir	14	-	1	-	1	2	-	-	-	-	-	18
Twillingate	16	-	1	1	-	-	-	-	-	-	-	18
New-Wes-Valley	10	3	-	-	1	-	-	-	-	-	2	16
Lewisporte	13	-	-	1	-	-	-	-	-	-	-	14
Harbour Breton	10	-	-	-	-	-	-	-	-	-	-	10
Fogo Island	9	-	-	-	-	-	-	-	2	-	2	13
Conne River	5	-	-	-	-	-	-	-	-	-	-	5
Glovertown	4	-	1	-	-	-	-	-	-	-	-	5
Botwood	-	-	-	-	-	-	-	1	-	1	-	2
Buchans	1	-	-	-	-	-	-	-	-	-	-	1
TOTAL	358	318	19	3	2	2	7	4	3	1	4	721

Source: Central Health Information Management & Technology Department (2013)

From the data presented above it is clear that the top three areas of high utilization are:

- ***ONCOLOGY*** – The greatest number of Telehealth sessions are provided in the area of oncology with almost half (358 or 49.7 per cent) of all sessions offered in the specified timeframe, falling into this service.
- ***DIALYSIS*** – Utilization of Telehealth is also apparent in dialysis services, particularly in the Gander region since JPMRHC is a satellite location for this

service overseen by Eastern Health. Approximately 44.1 per cent (or 318) of all Telehealth sessions are for dialysis services.

- ***MENTAL HEALTH*** – Although there is a significantly lower utilization of Telehealth for mental health services (2.6 per cent, or 19, of all Telehealth sessions) it is worth noting that there are alternative pathways to treatment. Traditionally, these mental health and addictions clients would be required to travel for services. These clients can now avail of treatment in their own communities where Telehealth equipment is available for use.

Within the past year, services have been enhanced in the region, including the addition of two new sites. The launch of the video-conferencing bridge, at Central Health, which allows multi-point calls, has improved access. In addition, Central Health is currently piloting the use of individual provider web-cameras in the areas of palliative/end of life and mental health and addictions. This will improve ease of use for providers and improve access to the network given that an individual office can be used as opposed to booking a meeting room space. Furthermore, in January 2014, a "Tele-Stroke" pilot project that will see improved access for stroke consultation and care will commence at JPMRHC.

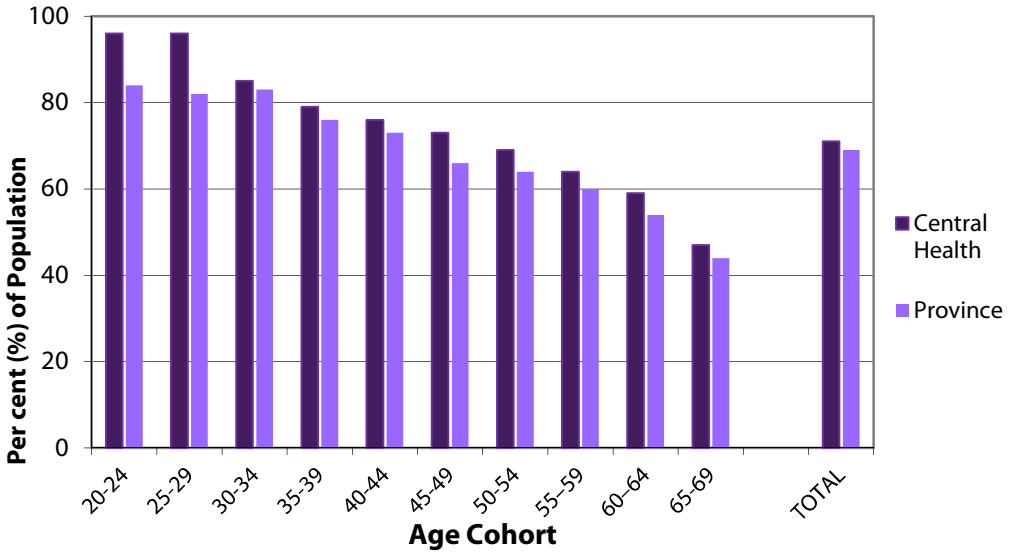
CERVICAL SCREENING INITIATIVE (CSI)

The goal of the Provincial Cervical Screening Program is to implement and sustain the elements of an organized prevention program thereby reducing the incidence of cervical cancer in Newfoundland and Labrador. A regular Pap test is recommended by health care providers as it can detect changes in the cervix which can develop into cancer (43).The program is coordinated provincially and is implemented in the four RHAs within the province. In the central region the program was launched in 2003. Each year provincial benchmark data is released and provides the participation rate of women 20-69 years of age. For 2012, the provincial benchmark was 69 per cent.

Women in Newfoundland and Labrador continue to have cervical cancer rates comparable to the rest of the country. In 2012, 71 per cent of women in the central region were reported to have at least one Pap test within three years (2010-2012) compared to the provincial average of 69 per cent (22). At Central Health, this indicator is tracked on an annual basis on the Board of Trustees Scorecard.

Fig. 32 shows the percentage of women across various age groups that were screened in the central region and within Newfoundland and Labrador in 2010-2012. These women received at least 1 Pap within this 3 year period. Notice that within each age category the rate for cervical screening is slightly higher in Central Health than the provincial rate (43).

Fig. 32 Rate of Cervical Screening (in women ages 20-69)



Source: Provincial Cervical Screening Initiatives Program (2012)

Each year, the last week in October marks *Pap Test Awareness Week*. At this time education, promotion and awareness activities are launched that target at risk populations and women with a low participation in screening activities. The CSI continues to be creative and innovative in its approach to reach all women in all communities of the province (43).

PROSTATE SCREENING

Since 2005, the central region has experienced an increase in the number of men who have engaged in prostate screening. In 2009, 57 per cent of men in the central region indicated receiving a Prostate Specific Antigen (PSA) Test compared to 45 per cent in 2005 (18). Previously the central region did not experience the same rate of prostate screening as the rest of the province. It is suggested that increased awareness of prostate screening in the central region has led to an increase in the number of men who are screened.

COLORECTAL SCREENING

Newfoundland and Labrador has the highest rate of colorectal cancer mortality in Canada (43). Due to the high incidence of, and mortality from, colorectal cancer, it is imperative that efforts are made to address this growing health concern. Early detection of colorectal cancer can improve client outcomes and increase survival rates.

The *Newfoundland and Labrador Colon Cancer Screening Program* (NLCCSP) is a population-based screening program for colorectal cancer. The goal of this program is to reduce mortality from this form of cancer among individuals ages 50-74 in the province who are at average risk for colorectal cancer (79).

The program was launched in the summer of 2012 in Western Health. In June 2013, the NLCCSP expanded to offer *fecal immunochemical test* (FIT) screening to average risk individuals in Central Health. The NLCCSP is using an automated FIT test which replaces the more invasive and traditional screening method of colonoscopy. Note that FIT testing is available only to clients who fit the criteria (79).

With the launch of the NLCCSP at Central Health, clients who were currently on a colonoscopy waitlist for average risk screening were contacted and invited to consider participating in the screening program by completing a FIT kit. Individuals who choose to complete a FIT kit were removed from the screening waitlist with consent. Central Health received funding for a 16-week position to contact clients on the screening waitlist. Through this process, Central Health was able to reduce the colonoscopy screening waitlist by approximately 33 per cent with 273 clients removed from the waitlist (50).

Central Health's *Bowel Health Initiative*, launched in 2005, has now been incorporated and transitioned into the NLCCSP. It is anticipated that the implementation of FIT testing will have an impact on the utilization of Central Health's resources and decrease the number of individuals waiting for a screening colonoscopy thus improving access for clients who need the procedure (50).

ENDOSCOPY SERVICES

Central Health provides endoscopy services at CNRHC and JPMRHC and continues to be challenged to provide timely access to non-urgent services. Access to urgent colonoscopies has improved significantly as a result of wait time initiatives. A regional Endoscopy Wait Time Committee has been in place since 2011 that involves key stakeholders. With support from the Access and Clinical Efficiency Division of the Department of Health and Community Services, a number of initiatives to impact access have been undertaken.

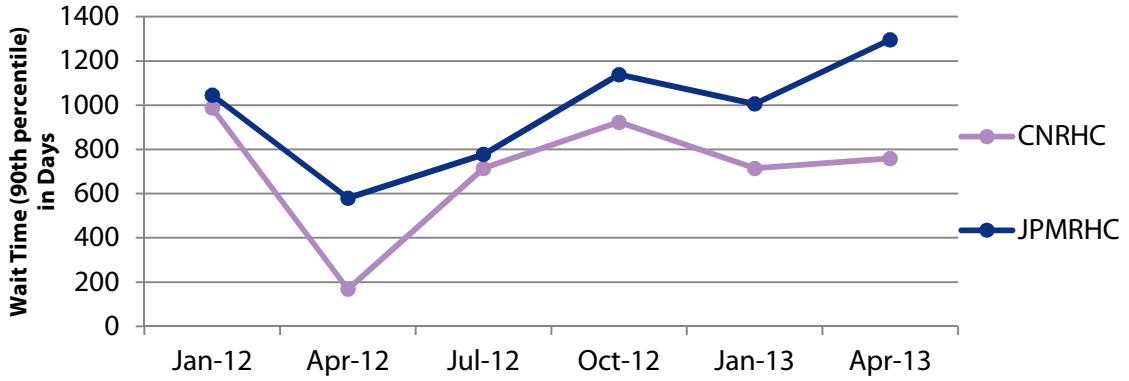
The figures below provide an overview of the wait times for selected endoscopy services. The growing wait time is indicative of an increased demand on endoscopy services and the ability of Central Health to meet the demand. This is especially critical given the growing incidence of colorectal cancer in the central region referenced earlier.

Wait lists also experience growth as the number of no show appointments increase. Since April 2013, Central Health has been required to report no show rates for endoscopy services to the Department of Health and Community Services. Since reporting began, no show rates have fluctuated from 0 per cent to 25 per cent. It is particularly difficult to have a standby list of clients who may be able to fill the appointment slots for endoscopy procedures given that preparation for these procedures is time consuming and may take up to two days depending on the procedure. To alleviate the challenges associated with no show appointments, not only for endoscopy but also for diagnostic imaging and cardiopulmonary services,

Central Health is in the initial stages of implementing an electronic telephone appointment notification system.

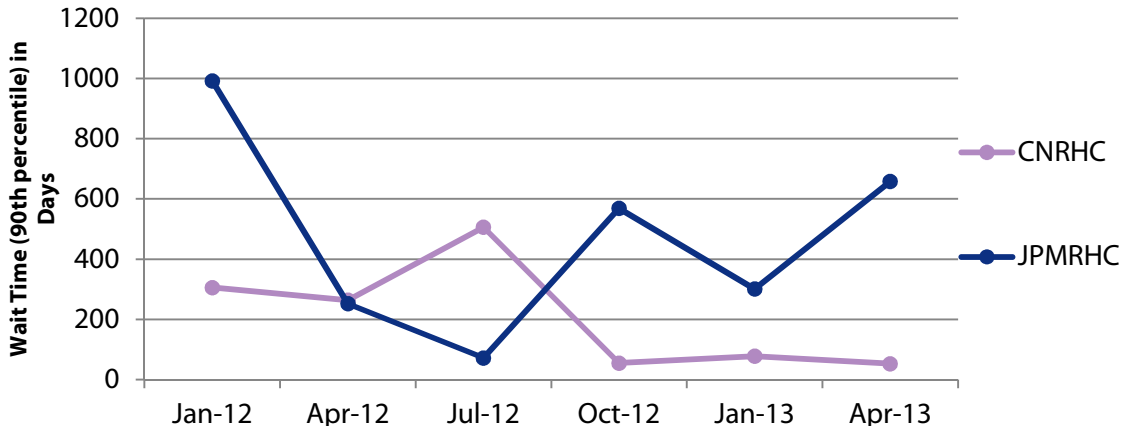
The data below is presented according to the 90th percentile. This calculation is a representation of the total wait time (in days) for 90 per cent of the clients who received an endoscopy procedure in the specified timeframe. For example, if the 90th percentile wait time for a colonoscopy is 500 days, this indicates that 90 per cent of the clients, who had a procedure, were seen within 500 days. This calculation is referred to as a *retrospective* wait time (50).

Fig. 33 Wait Time (90th Percentile in Days) COLONOSCOPY (2012-13)



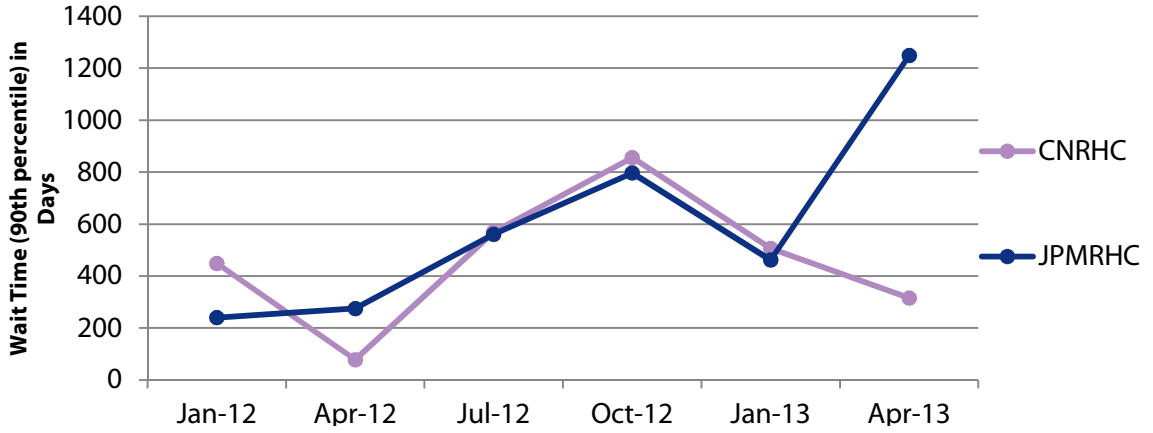
Source: Central Health Corporate Improvement Department (2013)

Fig. 34 Wait Time (90th Percentile in Days) EGD/OGD (Upper GI) (2012-13)



Source: Central Health Corporate Improvement Department (2013)

Fig. 35 Wait Time (90th Percentile in Days) Double Procedure (COLON + OGD) (2012-13)



Source: Central Health Corporate Improvement Department (2013)

BREAST SCREENING PROGRAM

There are a number of Breast Screening Programs throughout Newfoundland and Labrador, including a program at JPMRHC. Funding has been provided by the Provincial Government to expand the program which will see the program move to a site in the community. The catchment area for the Breast Screening Center covers the area of Terra Nova to Glenwood, including all coastal communities (80).

In the fiscal year 2011 to 2012, 74 per cent of eligible women in the screening program catchment area had a mammogram (the target for breast screening is 70 per cent). Clients who require a mammogram in Grand Falls-Windsor and surrounding area do not have access to a formal breast screening program. These clients access mammograms at CNRHC but must be referred by a physician. Wait times for mammography services are noted in the section below (50).

DIAGNOSTIC IMAGING

Central Health currently has two multi-service regional health centers, CNRHC and JPMRHC, with the following diagnostic imaging (DI) services available (81):

- General X-Ray (CR)
- Ultrasound (US)
- Computed Tomography (CT)
- Mammography (MG)
- Fluoroscopy (RF)
- Bone Density (BD)

In addition, Interventional (IV) Radiology, Nuclear Medicine (NM) and Magnetic Resonance (MR) are provided at JPMRHC.

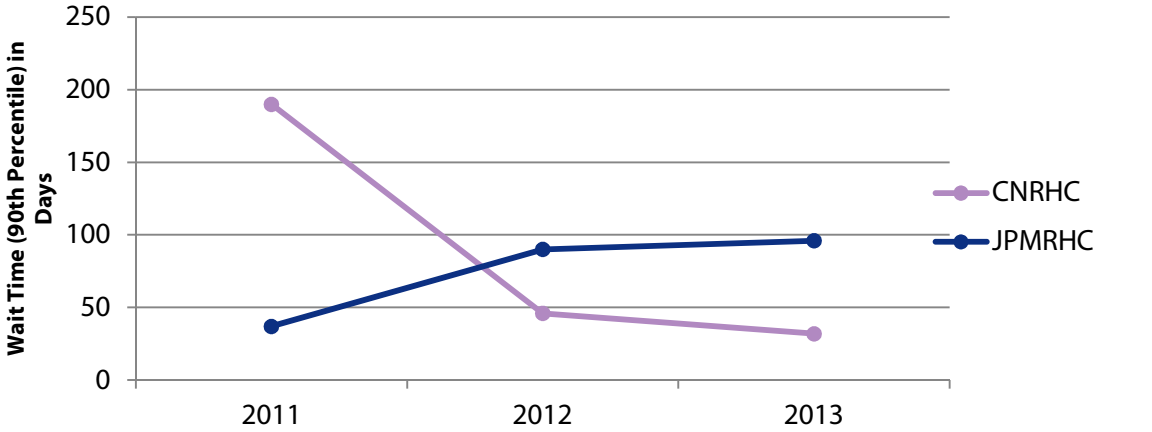
In Baie Verte and on Fogo Island, general x-ray and ultrasound services are provided. General x-ray services are provided at eight additional sites throughout the region.

The wait times for select diagnostic imaging procedures have increased over the past number of years, impacting access to care and services (*see figures below*). CT wait times at CNRHC have decreased significantly as a result of wait time strategies implemented in 2011-2012.

The following figures present the trends in wait times over the past three years for selected procedures including CT, mammogram, ultrasound, bone scan, and MRI. The following should be kept in mind when reviewing this information:

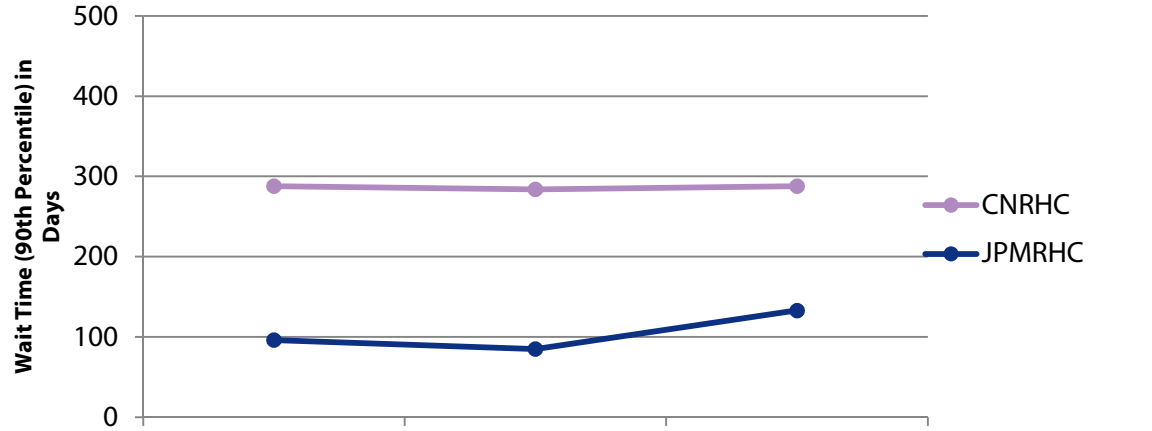
- The data is presented according to the 90th percentile. This is the same calculation used for endoscopy procedures noted earlier. All wait times presented below are specific to NON-URGENT (NU) procedures.
- Note that MRI data is only available for the years of 2012 and 2013.

Fig. 36 Wait Time (90th Percentile in Days) Computed Tomography NU (2011-13)



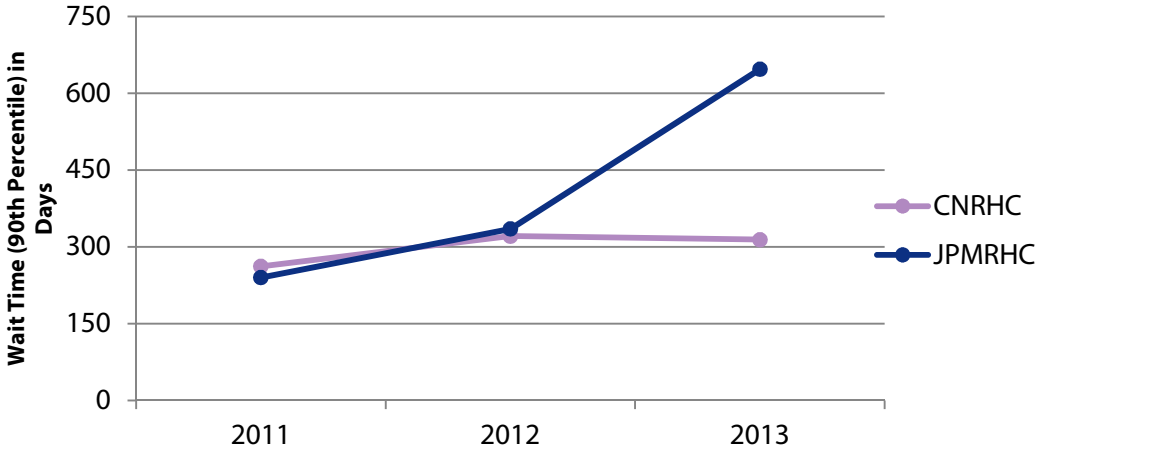
Source: Central Health Corporate Improvement Department (2013)

Fig. 37 Wait Time (90th Percentile in Days) Mammography NU (2011-13)



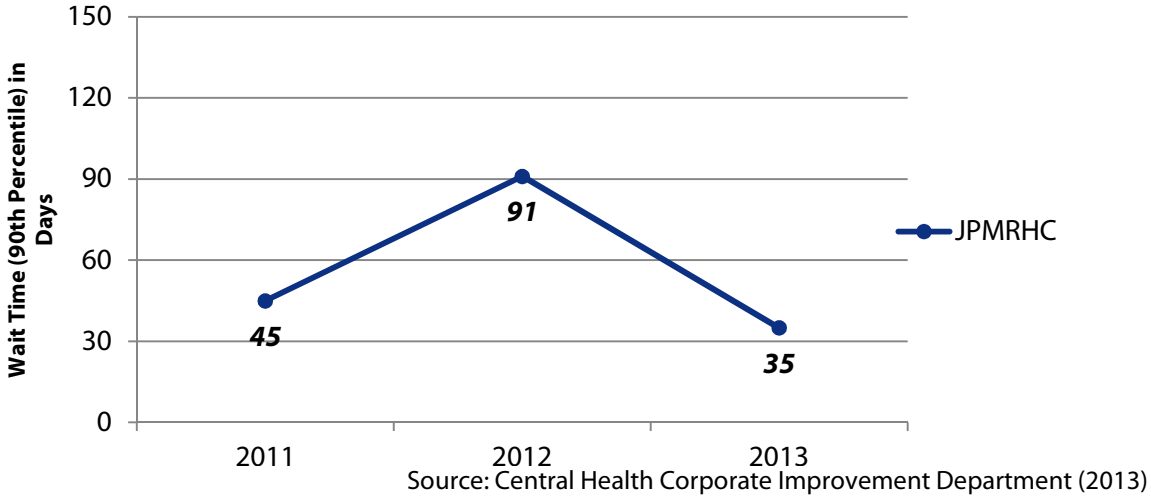
Source: Central Health Corporate Improvement Department (2013)

Fig. 38 Wait Time (90th Percentile in Days) Ultrasound NU (2011-13)



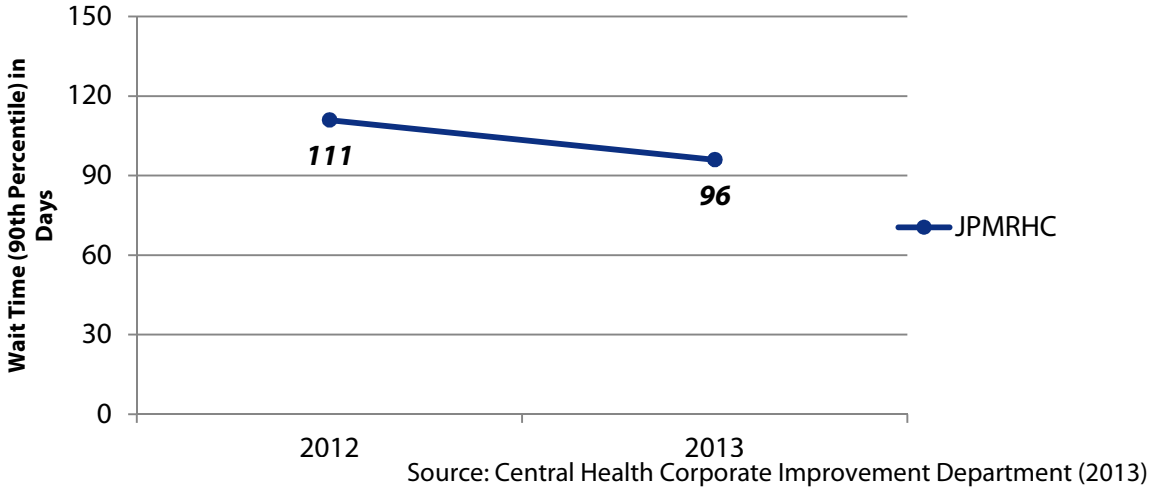
Source: Central Health Corporate Improvement Department (2013)

Fig. 39 Wait Time (90th Percentile in Days) Bone Scan NU JPMRHC Only (2011-13)



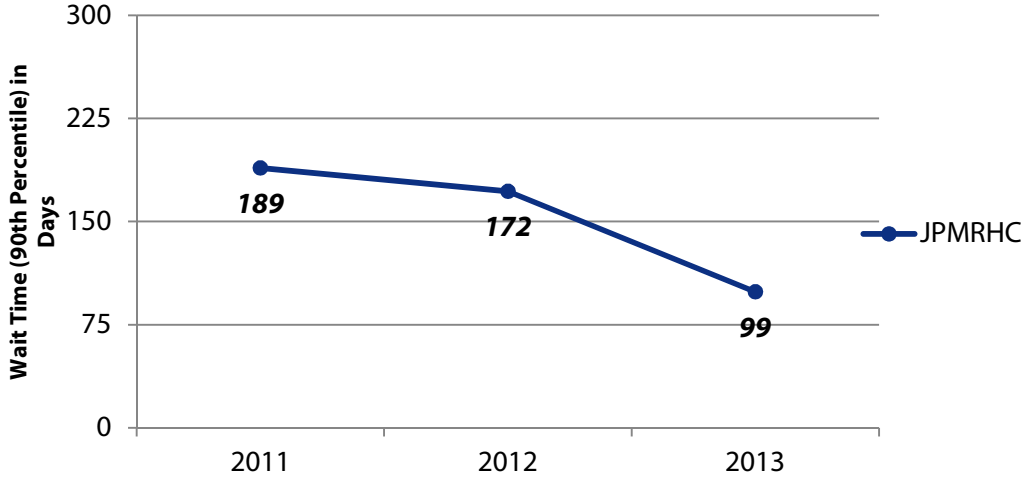
Source: Central Health Corporate Improvement Department (2013)

Fig. 40 Wait Time (90th Percentile in Days) MRI NU JPMRHC Only (2012-13)



Source: Central Health Corporate Improvement Department (2013)

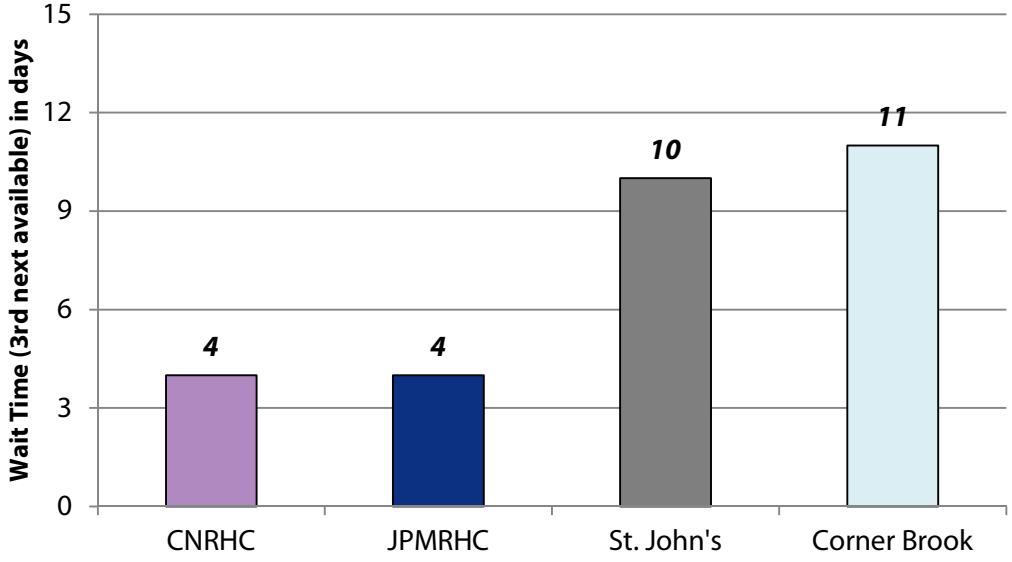
Fig. 41 Wait Time (90th Percentile in Days) Cardiolite NU JPMRHC Only (2012-13)



Source: Central Health Corporate Improvement Department (2013)

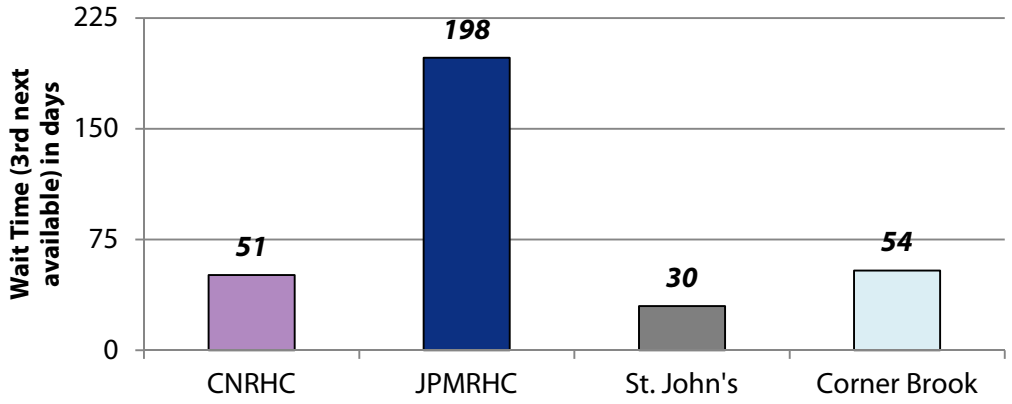
In addition, the following graphs provide a snapshot of Central Health's wait times for one particular month (September 2013) in comparison to that of other regions in the province. This calculation differs from the previous wait time information where the data was presented as the 90th percentile. The data below is calculated based on a Third Next Available Methodology and is defined as the length of time (in days) between the last working day of the month and the next day where there are three consecutive appointments available. This calculation is understood as a *prospective* wait time and is calculated for various types of procedures depending on body part (50).

Fig. 42 Wait Time (3rd Next Available in Days) CT HEAD NU Regional Comparison September 2013



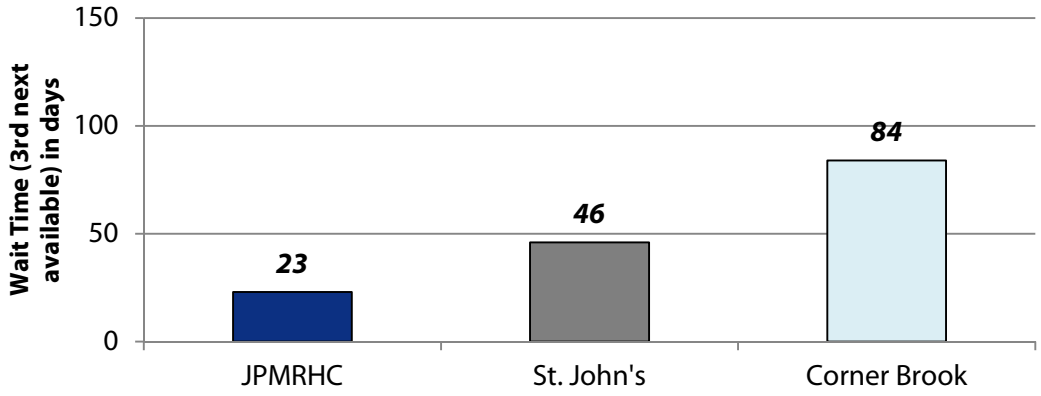
Source: Central Health Corporate Improvement Department (2013)

Fig. 43 Wait Time (3rd Next Available in Days) US ABDOMEN NU Regional Comparison September 2013



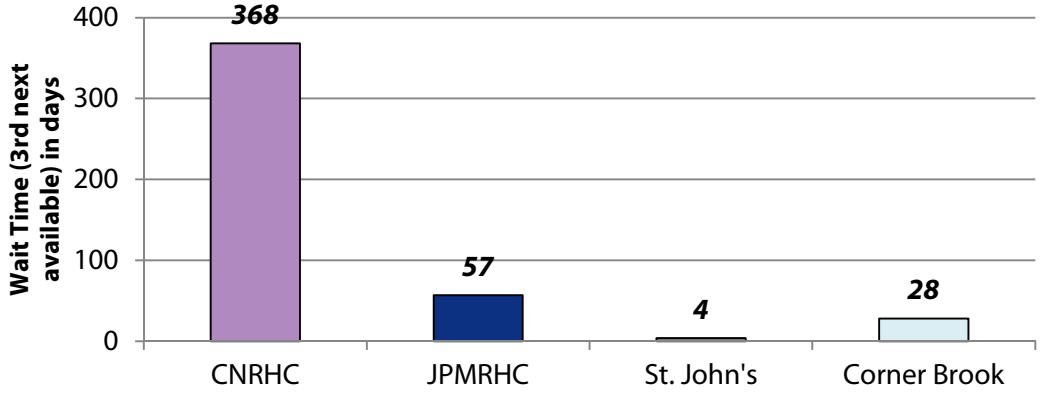
Source: Central Health Corporate Improvement Department (2013)

Fig. 44 Wait Time (3rd Next Available in Days) MRI ABDOMEN NU Regional Comparison September 2013 (JPMRHC Only)



Source: Central Health Corporate Improvement Department (2013)

Fig. 45 Wait Time (3rd Next Available in Days) MAMMOGRAPHY Regional Comparison September 2013



Source: Central Health Corporate Improvement Department (2013)

At CNRHC, there is no formal breast-screening program and as such, women of all ages are included in the wait time calculation presented in *Fig. 45*. At JPMRHC, there is a breast-screening program for women aged 50-69 years, as previously noted, therefore only diagnostic procedures are counted in the wait time.

The DI Department has engaged in various quality improvement activities to address the challenges identified (81). Several initiatives are ongoing.

No-shows have an impact on the number of appointment slots that are available to clients and is a lost opportunity to provide effective and appropriate care to clients who require diagnostic procedures. No-shows place a burden on the health system as clients who are no shows must often be rescheduled for a future appointment.

To understand the significance of this factor on access and wait times, for the modality of ultrasound at one site in Central in 2012 there were 555 no-shows out of a total of 7432 booked appointments. This translates into a no-show rate of 7.5 per cent which is equivalent to one ultrasound technologist working 46.25 days (assuming there could be 12 ultrasounds completed per day which is generally accepted as the standard). From January to August 2013, there have been 484 no shows with a total of 5796 ultrasound appointments booked at one site. This means that the no show rate has actually increased from 7.5 per cent to 8.3 per cent (81).

In 2011, a pilot project by the Corporate Improvement Department in Diagnostic Imaging showed that the number of no shows could be significantly reduced with reminder calls (50). In the 2013-2014 budget, funding in the amount of $50,000 was provided for the implementation of an electronic telephone appointment notification system. This system will be piloted in the Cardiopulmonary Services Department and will be rolled out to other areas, such as DI, in the future as resources are available. The DI department has initiated reminder calls for Mammography appointments in JPMRHC. The DI Wait Time Committee has established as a goal the implementation of reminder calls for all appointments.

CARDIOPULMONARY SERVICES

Cardiopulmonary services provides a broad range of high quality cardiopulmonary and diagnostic neurophysiology care to meet the inpatient and the outpatient needs of the clients of Central Health, at JPMRHC and CNRHC. Consultative services to all other sites in Central Health are provided as required. Services include diagnostic neurophysiology, echocardiography, non-invasive cardiology, and respiratory therapy. The no-show rate for each service is noted for the period of April 1, 2013 to September 30, 2013 at the end of this section (82).

Diagnostic Neurophysiology

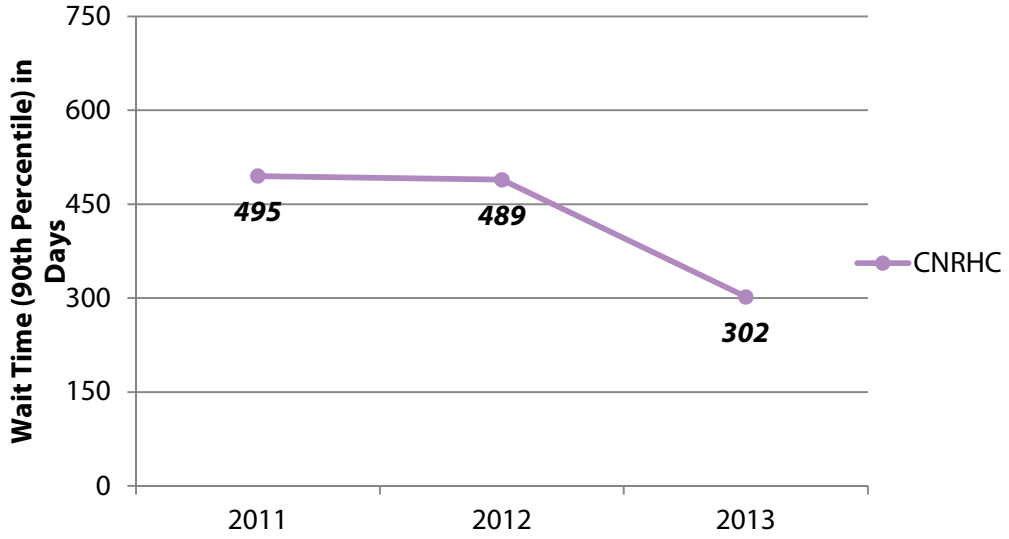
Wait lists for Electroencephalography (EEG), used chiefly in the diagnosis of seizures/epilepsy, are growing throughout the province. However, Central Health currently has capacity in this area and is exploring the possibility of assisting other RHAs to meet the demand for this service.

Echocardiography

An echocardiogram or cardiac echo is an ultrasound of the heart. Echocardiography (ECHO) is used to diagnose cardiovascular diseases (82).

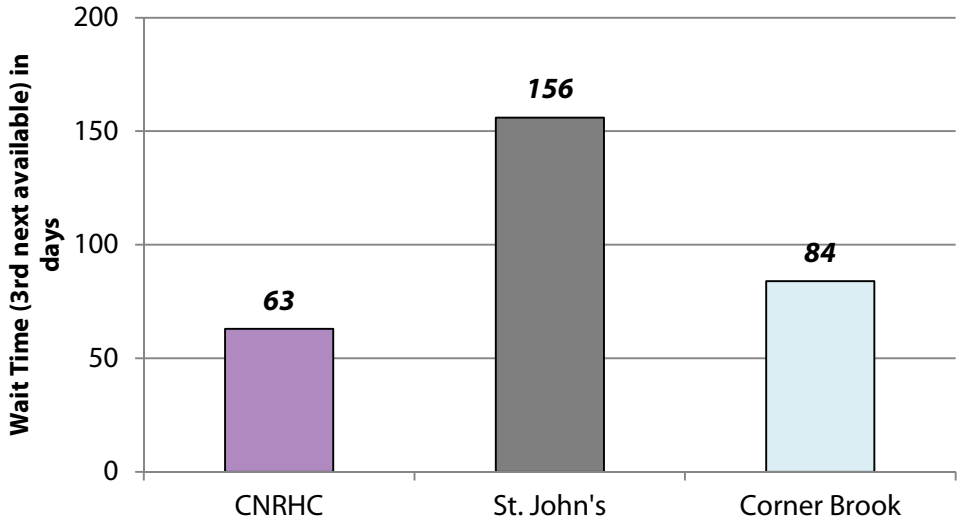
This service has experienced a reduction in wait times over the past several years (see *Fig. 46*); a trend expected to continue into the future. The reduction in wait times was a result of the hiring and training of an additional employee and receiving funding for additional equipment. Note the wait time information below mirrors the data found in the previous section relating to diagnostic imaging. The calculations are retrospective (or 90th percentile) and prospective (3rd next available).

Fig. 46 Wait Time (90th Percentile in Days) Echocardiogram NU (2011-13)



Source: Central Health Corporate Improvement Department (2013)

Fig. 47 Wait Time (3rd Next Available in Days) ECHO NU Regional Comparison September 2013



Source: Central Health Corporate Improvement Department (2013)

Non-Invasive Cardiology

Cardiology Technology involves non-invasive testing, monitoring, and functioning of the heart and assessment and programming of implantable cardiac devices. Cardiology Technologists provide test results and initial analysis to a physician for use in the prevention, diagnosis and treatment of cardiac disease. In this division, services include (81): EKG, treadmill stress testing, exercise myoview and persantine stress testing, ambulatory monitoring (i.e. Holter monitor testing), and pacemaker analysis.

Central Health is experiencing a growing wait list for Holter monitor testing. Currently, consultations between the Cardiopulmonary Services Department and internal physicians are underway in an effort to address the growing wait list. A growing concern within Non-Invasive Cardiology is the staff mix specifically the number of specialists or physicians compared to the number of technologists.

Data from the results of EKG tests are stored in the Cardiology Data Management System (CDMS) similar to the PACS system used in DI. One important difference is the ability for physicians to chart in the CDMS. When the EKG has been completed, the results are automatically stored in CDMS and the physician can read the report in real time. Implementation of this new technology has significantly improved access to test results and thus have improved patient safety and timely appropriate care. The concerning backlog of unreported tests has been addressed through this technology. The department is working towards incorporating this technology in other areas, including Holter testing and stress tests (82).

Respiratory Therapy

Respiratory Therapy is the application of technology to assist physicians in the diagnosis, treatment, management, and care of clients with cardio-respiratory and other associated disorders. They also play a very important and crucial role in emergency care, for example, in the case of a code blue or cardiac arrest. Some of the services provided include: ventilation and airway management, physiological monitoring for sleep apnea screening, intubation, arterial line insertion, medical gas administration, home care assessment and discharge planning, client assessment and consultation, pulmonary diagnostics and asthma education (82).

Table 16: Wait List Data Cardiopulmonary Services JPMRHC as of October 15, 2013

Exam Type	Date of Oldest Requisition	Total Number of Pending Requisitions	Date of Next Available Appt
Sleep Studies	July 12, 2013	80	December 17, 2013
Holter Monitor	December 2, 2012	427	December 2, 2013
Ambulatory BP	October 17, 2013	4	October 31, 2013
PFT	NONE	NONE	November 6, 2013
Stress Test:			
Physician A	July 25, 2013	74	December 5, 2013
Physician B	October 9, 2013	17	December 3, 2013
Physician C	June 25, 2013	86	December 4, 2013
Asthma			
Physician D	NONE	NONE	May 6, 2014
Physician E	NONE	NONE	December 12, 2013
Adult Asthma	November 1, 2012	180	UNKNOWN

Source: Central Health Cardiopulmonary Services 2013

Table 17: Wait List Data Cardiopulmonary Services CNRHC as of October 15, 2013

Exam Type	Date of Oldest Requisition	Total Number of Pending Requisitions	Date of Next Available Appt
Sleep Studies	Apr. 25, 2013	106	Dec. 2,2013
Holter Monitor	Mar. 3, 2010	250	Nov. 5, 2013
Ambulatory BP	Jan. 24, 2013	11	N/A
PFT	N/A	8*	No wait list
Pacemakers	N/A	300*	No wait list
EEG	N/A	1*	No wait list
NCS	Jun. 5, 2013	210	Nov. 19, 2013

NOTE: These clients are to be booked for follow-up on specific dates

Source: Central Health Cardiopulmonary Services 2013

The wait time information presented in the previous tables represent the number of clients waiting for each cardiopulmonary service. These wait times are not calculated in the same manner as the previous diagnostic imaging and endoscopy wait times. The tables above show the total number of clients waiting for an appointment as of October 15, 2013. The tables also show a timeframe for how long clients have been waiting for the services. Note that the longest wait time is for Holter monitors.

No-shows also present a challenge in this service area as detailed in the table below. No-shows in some service areas are significant and are impacting the service. As previously noted, the newly funded electronic telephone appointment notification system will be implemented in Cardiopulmonary Services in 2014 (82).

Table 18: No Show Rates - Cardiopulmonary Services (April 1- September 30, 2013)

CNRHC		JPMRHC	
Respiratory Therapy		**Respiratory Therapy**	
Pulmonary Function Testing	11.5%	Pulmonary Function Testing	15.2%
Sleep studies	31.3%	Sleep studies	19.3%
Home Oxygen Assessments	11.7%	Home Oxygen Assessments	0%
		Asthma Centre	26.2%
Non Invasive Cardiology		**Non Invasive Cardiology**	
Ambulatory Blood Pressure	16 %	Ambulatory Blood Pressure	17.5%
Holter Monitoring	11.9%	Holter Monitoring	22.7%
Stress testing	8%	Stress testing	5.7%
Echocardiography	6.7%		
Diagnostic Neurology			
Nerve conduction Studies	12.7%		
EEG	8.6%		

LABORATORY SERVICES

Central Health maintains high standards for Laboratory Services through participation in internal and external proficiency programs including *Ontario Laboratory Association* (OLA) Accreditation (83).

A full range of laboratory services are provided at CNRHC and JPMRHC. In addition to these services, there are ten smaller laboratories located throughout the region providing blood collection services, emergency testing and limited routine testing. Furthermore, there are sixteen rural blood collection only sites throughout the region.

Given that laboratory services, specifically blood collection services, are dispersed throughout the region accessibility is enhanced. However, there are often concerns and complaints expressed with respect to the wait times for blood collection. This is especially an issue at JPMRHC and CNRHC. There have been some improvements made; however, this continues to be an area of challenge. At rural sites where blood is collected, there are also at times concerns expressed with respect to the number of blood collections that can be performed each day. An approach to this concern at some sites has been to take a list of names for collection and once the maximum number of slots is filled clients are asked to return another day. This approach to managing the service ensures that clients are not waiting for long periods and then turned away for service. The literature suggests that client experience improve when the wait time for a service is known at the outset.

CHILDHOOD IMMUNIZATION

Immunizations prevent serious infectious diseases and have saved more lives in the last 50 years than any other health intervention. The success of immunization programs is dependent upon accessibility and immunization coverage rates (84).

In the central region, Public Health Nurses (PHN) administers routine immunizations to infants and children as well as adults who have not been immunized in early infancy, in accordance with the Newfoundland and Labrador immunization schedule. The exclusive delivery of the immunization program by PHNs has resulted in Central Health's immunization coverage rates being among the highest in this province and country, consistently greater than 95 per cent which is the national target rate (85).

Table 19: Central Health Vaccine Coverage Rates at Age Two (Birth Years 2005 to 2010)

Birth Year	Vaccine					
	DTaP-IPV-Hib	MMR Dose #1	MMR Dose #2	Varicella	Men-C	Pneumococcal
2005	98.6%	99.4%	97.8%	96.8%	98.9%	98.4%
2006	98.4%	99.5%	97.0%	98.6%	99.8%	98.0%
2007	99.5%	99.5%	99.1%	98.6%	99.9%	99.2%
2008	99.1%	99.3%	98.0%	97.8%	99.3%	98.5%
2009	99.0%	99.5%	98.2%	98.8%	99.6%	98.5%
2010	99.3%	99.3%	98.7%	98.7%	99.3%	98.2%

*Not included in the immunization schedule

Source: Central Health Public Health Department 2013

COMMUNICABLE DISEASES

The Communicable Disease Control (CDC) program works to prevent and control the spread of communicable diseases by utilizing various strategies including public education and awareness, immunization, harm reduction, secondary prevention (treatment, screening, contact tracing), infection control, outbreak management, reporting and surveillance. The control of communicable diseases relies on the cooperation, collaboration and coordination among public health, acute care, infection control, laboratory and related health professionals at all levels (84).

The following tables reflect the number of individuals diagnosed with a particular communicable disease within Newfoundland and Labrador and in the central region for the years 2009 through 2012.

Table 20: Sexually Transmitted Infection (STI) Rates Central Health (CH) and Newfoundland (NL) 2009-2012

Year	Hepatitis C		HIV		Chlamydia		Gonorrhea		Hepatitis B		Syphilis Infectious+ Noninfectious	
	CH	NL	CH	NL	CH	NL	CH	NL	CH	NL	CH	NL
2009	3	86	0	6	49	535	1	10	0	24	2+1	3+5
2010	4	60	0	4	75	644	0	12	2	22	0+0	4+10
2011	6	63	0	3	56	688	0	26	4	29	0+0	6+4
2012	2	66	1	8	58	860	1	16	1	14	1+0	9+4

Source: Department of Health and Community Services (2009-2012). Communicable Disease Surveillance System.

Table 21: Communicable Disease Rates Central Health (CH) and Newfoundland (NL) 2009-2012

Year	Campylo-Bacter		E. Coli Enteritis		Giardiasis		Hepatitis A		Influenza A		Influenza B	
	CH	*NL*	*CH*	*NL*	*CH*	*NL*	*CH*	*NL*	*CH*	*NL*	*CH*	*NL*
2009	7	32	2	4	3	24	0	0	207	1171	3	24
2010	7	39	0	0	5	35	0	0	0	0	0	0
2011	12	61	1	6	5	43	0	6	25	207	16	43
2012	5	42	0	2	4	21	0	0	67	237	34	209
	Meningitis (Viral)		**Norwalk/ Noro Virus**		**Respiratory Syncytial Virus**		**Rotavirus Enteritis**		**Salmonella**		**Tuberculosis**	
2009	0	2	24	45	16	148	14	75	6	35	0	20
2010	0	6	50	164	19	155	1	8	9	46	1	7
2011	0	4	36	57	9	117	3	22	12	65	0	7
2012	0	5	13	101	?	?	?	?	17	74	0	4

Source: Government of Newfoundland and Labrador (2009-2012). Communicable Disease Control System

MENTAL HEALTH AND ADDICTIONS SERVICES

Accessibility to Mental Health and Addictions Services has improved over the past number of years, with services now available in many parts of the region. Although services are more accessible, there is a wait time for services in some areas. The waitlist for Mental Health and Addictions Services is actively managed. Wait time information is organized into two categories including clients waiting for intake (wait 1) and clients waiting for clinical assessment (wait 2). The data, as of September 2013, is presented below (86).

Table 22: Central Health Mental Health and Addictions (September 2013)

Clients Waiting for Initial Assessment									
Site	Total #	Child / Youth			Adult			Median Wait time	Range Wait time
		Mental Health	Addict-ions	Total	Mental Health	Addict-ions	Total		
GFW	33	7	0	7	26	2	28	4 weeks	0-7 weeks
Gander	15	2	0	2	10	0	10	10 weeks	3-14 weeks
Lewisporte	12	3	0	3	9	0	9	8 weeks	1-14 weeks
St. Alban's	0	0	0	0	0	0	0	0	0
Springdale	3	2	0	2	1	0	1	2 weeks	2-10 weeks
Baie Verte	0	0	0	0	0	0	0	0	0
New Wes Valley	0	0	0	0	0	0	0	0	0
Twillingate	4	2	0	2	2	0	2	2 weeks	1-4 weeks
Fogo	0	0	0	0	0	0	0	0	0
TOTALS	**67**	**16**	**0**	**16**	**48**	**2**	**50**		

Clients Waiting for Clinical Assessment									
Site	Total #	Child / Youth			Adult			Median Wait time	Range Wait time
		Mental Health	Addict-ions	Total	Mental Health	Addict-ions	Total		
GFW	100	16	1	17	71	10	81	7.5 weeks	0-17 weeks
Gander	38	10	0	10	22	6	28	4.5 week	3-12 weeks
Lewisporte	8	1	0	1	6	1	7	1.5 weeks	1-4 weeks
St. Alban's	5	3	0	3	2	0	2	1 week	1-3 weeks
Springdale	9	3	0	3	5	1	6	2 weeks	1-5 weeks
Baie Verte	15	3	0	3	11	1	12	2.5 weeks	1-4 weeks
New Wes Valley	9	0	0	0	9	0	9	1.5 weeks	1-2 weeks
Twillingate	1	0	0	0	1	0	1	2 weeks	2 weeks
Fogo	3	0	0	0	3	0	3	1 week	1-2 weeks
TOTALS	188	36	1	37	130	19	149		

Source: Central Health Mental Health and Addictions Department 2013

In Mental Health and Addictions Services, wait times are monitored by program managers, with a quarterly report submitted to the province. Reducing wait times, thereby improving access, for these services is a focus within the department and is achieved by monitoring clinical efficiencies and processes. For example, the initial intake process is completed via telephone to reduce the frequency of no show appointments. Further work in this area is ongoing with the goal of significantly reducing/eliminating wait times for clients of this service.

YOUTH ADDICTIONS TREATMENT CENTRE

The construction phase of the new Youth Addictions Treatment Centre to be operated by Central Health in Grand Falls-Windsor is nearing completion. Planning, to date, has included the following key components (86):

- Creating referral criteria and processes
- Developing operational policies and procedures
- Establishing a youth withdrawal management service
- Developing a model of care that is developmentally appropriate and culturally sensitive
- Formalizing an evaluation framework
- Extensive recruitment and hiring process
- Developing an extensive orientation and training program

Program planning and operational requirements are now in the process of being finalized with input from departmental staff of Central Health; the Department of Health and Community Services; the Department of Works, Services and

Transportation; and the Youth Treatment Centre facility in Paradise, under the operation of Eastern Health. The new facility is scheduled to open in the winter of 2014.

Presently, there are no withdrawal management services for youth available in the province. The opening of the Youth Addictions Treatment Centre in Grand Falls-Windsor will serve to bridge the gap in existing services for youth so that comprehensive treatment can be offered closer to home (86). This center will improve access to services for youth and support for their families.

REHABILITATIVE SERVICES

Rehabilitative Services encompasses audiology, occupational therapy, physiotherapy, recreation services, and speech-language pathology. These services are available at Central Health to pediatric, adult and geriatric populations (87). The Rehabilitative Services Department tracks wait time information in an effort to streamline services, improve access and provide service in a timely fashion.

Table 23: Rehabilitative Services Wait List Information as of September 30, 2013

Service/Location		***Total # of Clients Waiting***	***Total # of New Referrals (Sept 2013)***	***Date of Oldest Requisition***
Physiotherapy	***New-Wes-Valley***	27	3	October 2012
	Twillingate	*All referrals currently sent to JPMRHC*		
	Fogo Island	*All referrals currently sent to JPMRHC*		
	Harbour Breton	*All referrals currently sent to CNRHC*		
	Baie Verte	147	21	October 2012
	Green Bay	88	21	July 2012
	Gander	290		October 2012
	Grand Falls-Windsor	207	31	January 2013
Speech Language Pathology	***Gander***	60	N/A	N/A
	Grand Falls-Windsor	46	N/A	N/A
Occupational Therapy	***Gander (Outpatients)***	19	N/A	January 2013
	Gander (Community)	63	N/A	November 2011
	Grand Falls-Windsor (Outpatients)	34	N/A	November 2012
	Grand Falls-Windsor (Community)	69	N/A	January 2012

Source: Central Health Rehabilitative Services Department 2013

As noted in the previous table, Grand Falls-Windsor, Gander and Baie Verte have the most number of clients waiting for physiotherapy, with Green Bay having the longest waiters. There is also a demand for occupational therapy that is not being met.

In 2009, Eastern Health completed a study to identify gaps in the provision of inpatient rehabilitative services throughout Newfoundland and Labrador (88). Unfortunately, little progress has been made since that time in terms of developing a holistic rehabilitative services program throughout the province (87). The study identified provincial gaps, as the centers in Eastern Health are tertiary centers for the province. Due to factors such as the shift from institutional to community care, the focus on disease prevention and the increased demand, the aging population, and increase in chronic conditions, gaps in rehabilitation care reduces patient flow through the system and impairs the client's ability to live independently at home.

The study suggested that there is a well-established and long-standing need for designated rehabilitation beds within Central Health (88). These beds would need support from nursing and rehabilitation staff in order to provide the required level of care. The study suggests that clients would be best served by 10-12 general rehabilitation beds at either CNRHC or JPMRHC. The impact of the findings of this study for the residents of the central region needs consideration.

END OF LIFE (EOL) HOME CARE PROGRAM

In 2007, the Department of Health and Community Services implemented a program directed at addressing client's end of life care needs for the purposes of avoiding or reducing the length of stay in an acute care facility during their end of life experience. This program is currently offered in five sites throughout Central Health and offers the following services to eligible clients during their last four weeks of life at no cost to the client:

- Up to 219 hours of home support above and beyond what they are (if they are) currently receiving home care support, over a four week period
- Home oxygen, if required
- Appropriate prescriptions and pharmaceuticals
- Equipment and other materials
- On-call nursing support during the last 48 hours when death is imminent

Clients receiving this community service must be aware of their diagnosis and have support both at home from their caregiver(s) and their family physician. The Regional Palliative/End of Life Care (PEOLC) Specialist Team coordinates this community service in conjunction with community nursing providers and collaborates on best practice end of life care.

Utilization of this program is currently among the highest in the province. From July 2012 to date, over 80 clients availed of the EOL Home Care Program with an average length of stay of 26 days on the program per client. This number has increased 25-30

per cent every year since the inception of the program in 2007 and this is expected to continue to climb considering the aging population demographics.

Despite the positive response to the EOL Home Care portion of integrated PEOLC, there are several gaps or barriers to care that influence accessibility of this service. They are as follows:

- Currently only five sites (six communities) have access to the program; this limits the amount of service available within Central Health. On a regular basis, clients have identified that they wish to remain at home for their EOL experience, but this portion of the program is not available in their areas, and so they are unable to do so, resulting therefore, in the utilization of their local palliative or acute care beds.
- The EOL Home Care program is only available for clients during their last four weeks of life. This service does not follow best practice considerations in palliative care. Services within the home should be made available throughout the remaining months of the client's life, not weeks. Clients regularly require services before their final four weeks but programming is not available to meet the request.
- Frontline social work support is imperative to help the family navigate through the complicated nature of end of life concerns such as financial support grief and bereavement issues, caregiver burnout, and advanced care planning, among others. Currently there are no primary community based social work supports available to end of life clients.
- Spiritual care at the end of life is identified as a best practice component of care. Currently there is no staff dedicated to address this complex end of life concern that requires specialized education to address.

CHRONIC DISEASE PREVENTION AND MANAGEMENT

Chronic diseases are significant cost drivers and present challenges to the people and community as well as the health care system. Contributing to this are the common risk factors such as smoking, physical inactivity, unhealthy diets, and excessive alcohol use, which give rise to chronic conditions such as high blood sugar, high blood pressure, high cholesterol, and diabetes (27) (28). The rates for these conditions in the central region were provided earlier in this document.

Though many factors contribute to the development of chronic conditions, they are more prevalent as individual's age. Newfoundland and Labrador has an aging population with over 16 per cent of its population 65 years of age or older. Studies indicate that about 95 per cent of the province's residents aged 65 years or older have at least one chronic condition (29). Currently the Newfoundland and Labrador provincial rates for chronic disease including heart disease, stroke, cancer and diabetes are among the highest in Canada and chronic diseases are among the leading cause of premature death and disability.

Central Health shares in the national challenge of finding efficient and effective strategies to prevent and manage chronic disease. In conjunction with the *Improving Health Together: Policy Framework for Chronic Disease Prevention and Management in Newfoundland and Labrador* (28) and evidence-based recommendations Central Health has developed a plan for Chronic Disease Prevention and Management. It employs the *Wagner Expanded Chronic Care Model* and works within a Primary Health Care Framework to deliver quality care based on best practices and a collaborative approach on all levels over a lifetime.

In keeping with this approach, a Regional Chronic Disease Prevention and Management Advisory Committee was formed in 2013 to provide leadership to the work that is underway in Central Health related to several chronic diseases. A communication process is envisioned and current priority areas are diabetes care, stroke care, chronic obstructive pulmonary disorder and chronic disease self-management. Efforts made by Central Health are focused on reducing dependence on the health care system and improving the quality of life of citizens (84).

Chronic diseases are, by their nature, ongoing and lasting medical conditions. It is because of this that individuals living with chronic disease(s) should be provided with, and avail of, a self-management program. The Department of Health and Community Services, through the RHAs, have implemented the *Stanford Chronic Disease Self-Management Program* for individuals living with chronic conditions (89). In Newfoundland and Labrador, the program is called *Improving Health: My Way*.

Improving Health: My Way brings people with different chronic diseases together to help them build the skills and knowledge regarding how to make healthy lifestyles changes and choose healthy behaviours. Self-management includes enhancing client skills regarding developing the confidence to deal with medical treatments, being an active participant in daily care, and learning to manage the emotional aspects associated with a chronic condition (84).

Since implementation in 2011, Central Health has facilitated 31 workshops with 256 participants successfully completing the program. Eleven workshops took place in the fall of 2013. The workshops are facilitated by clients of Central Health who are living with chronic diseases themselves. These volunteers are trained and supported by Central Health staff. Central Health is also working on initiatives around the self-management of COPD and is continuing to support providers who work with clients to encourage and use the self-management practices (84).

TRIPLE AIM IMPROVEMENT PROJECT

Central Health is currently participating in an improvement project with the *Canadian Foundation for Healthcare Improvement* (CFHI) and the *Institute for Healthcare Improvement* (IHI) in the United States. This project is aimed at enhancing the health of the population and delivering high quality health care at sustainable cost. Central Health will be using a specific population of those with chronic disease in the central region as a focus for improvement. This valuable learning opportunity extends from

September 2013 to June 2014 and consists of numerous webinars and access to Triple Aim faculty for assistance with problem solving and decision making.

Triple Aim is a change process implemented in over 100 organizations that is focused on reducing cost, improving population health and improving client experience. It involves identification of a population of focus, definition of system aims and measures, development of a portfolio of project work and rapid testing of change.

Clients can expect less complex and much more coordinated care and the burden of illness will decrease. Importantly, stabilizing or reducing the per capita cost of care for populations will lessen the pressure on publicly funded health care budgets (84).

DIABETES CARE PROGRAM

Central Health offers a standardized Diabetes Care Program for clients throughout the region. In 2012, Central Health received funding to initiate a "Tele-diabetes" service and Telehealth equipment was purchased for clinics in Gander, Grand Falls-Windsor and Mose Ambrose. This service improves access, reduces travel for clients as well as health care professionals which increases service efficiency.

In the past year, a satisfaction survey was distributed to diabetes clients throughout the region. Incorporating client feedback and experience into the planning and provision of diabetes services will aid in meeting the needs of clients (84).

In 2012, Central Health partnered with the Canadian Association of Wound Care (CAWC) on their initiative known as *Peer Education, or PEP Talk – Diabetes, Healthy Feet and You*. This program is an innovative workshop funded by the Public Health Agency of Canada (PHAC), targeting individuals living with diabetes. Given that the central region of the province has one of the highest rates of diabetes in the country, this opportunity added to the current population health focus and health promotion strategies utilized within the organization to create awareness of the disease (90) .

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) MANAGEMENT

Central Health has recognized the need to establish a coordinated approach to manage COPD clients in the central region. This disease poses a significant burden on the health care system due to client readmission and comorbidities.

In March 2013, focus groups were held with physicians, allied health professionals, and nursing staff to discuss current services for clients with COPD and identify service gaps. A core COPD project team was established and is represented on the Chronic Disease Prevention and Management Advisory Committee.

Furthermore, Central Health has partnered with the *Canadian Foundation for Healthcare Improvement* (CFHI) and other Atlantic Canadian health authorities to form an Atlantic Collaborative for Innovation and Improvement in Chronic Disease. Through the review of evidence-based programs, Central Health developed a comprehensive

project plan, in 2012-2013, which focuses on improving processes of care for clients living with COPD and it incorporates aspects of acceptability, efficiency, effectiveness, and sustainability. The evaluation framework and logic model are currently being finalized (82).

The next steps in the plan are implementation of inpatient standing orders, revamping of the clinic for patients with COPD and development of an advanced COPD outreach program.

STROKE STRATEGY

Central Health's Regional Stroke Strategy Committee is actively working on implementing the Canadian best practice recommendations for prevention and management of stroke. Central Health was able to secure temporary funding to hire a Chronic Disease Prevention and Management Facilitator to focus on standardizing stroke care, particularly at JPMRHC and CNRHC. New policies, procedures, and practitioner order forms have been created for stroke care and a plan for continuing education is in place. An acute care working group worked on clustering clients admitted with stroke to the medicine floor of the CNRHC. This is now in place. All full-time Registered Nurses working on the medicine units of JPMRHC and the CNRHC have been formally trained in stroke care by completing a practical stroke course offered through Eastern Health (91).

JPMRHC has recently been chosen as one of the three pilot sites in the province for a "Telestroke" project funded by the *Canadian Stroke Network*. This provides physicians in the JPMRHC emergency department with 24 hour, seven day a week access to consult with the on-call neurologist located in Eastern Health. This is another example of the implementation of evidence-based practice. Accessibility to services that follow best practice guidelines is the desired state for all residents throughout the central region (29).

The Regional Stroke Strategy Committee is represented on the Chronic Disease Prevention and Management Advisory Committee.

APPROPRIATENESS

Appropriateness refers to the expectation that the care/service provided to a client is relevant to their individual needs and based on established standards (20).

CENTRAL HEALTH MODEL OF NURSING CLINICAL PRACTICE (MoNCP)

Research indicates that environments promoting autonomy, accountability and effective interdisciplinary teamwork lead to greater work satisfaction in turn, better client outcomes. The Model of Nursing Clinical Practice (MoNCP) incorporates values and standards of nursing governing bodies, and although there is recognition that

change is difficult, successful implementation of the MoNCP will have positive outcomes on client care (92)

Upon implementation of the MoNCP, the goal is for the client to receive safe and competent care from the most appropriate nursing provider whether it is a Registered Nurse (RN) or Licensed Practical Nurse (LPN) (92). Continuity of care will be achieved by limiting the number of nurses assigned to a client. The model advocates for the client to be involved in the decision making process enabling them to make informed decisions while having their cultural beliefs and practices recognized and respected (93).

In order to achieve this level of care, the RN/LPN has the freedom to make decisions about client care within the scope of practice, in collaboration with the client (94). These decisions are based on the best available evidence and nurses will work to the full scope of roles and responsibilities as defined by their professional bodies and Central Health (93).

The RN/LPN has access to an assigned Clinical Nurse Expert to ensure immediate advice for technical problems, complications, decision making, or when facing an emergency. Access to diverse nursing expertise or specialist as needed (NP and other specialist roles) is available. In addition, there is continuity and access to administrative support 24 hours a day. Also, RN/LPNs have access to Clinical Nurse Educators for support.

A committee is guiding the implementation of the model and change management assessment and strategies have been employed to assist with the transition to this new model. The model has been implemented at the two regional health centers and all other facilities are in various stages of implementation. Evaluation of the model is currently ongoing (93).

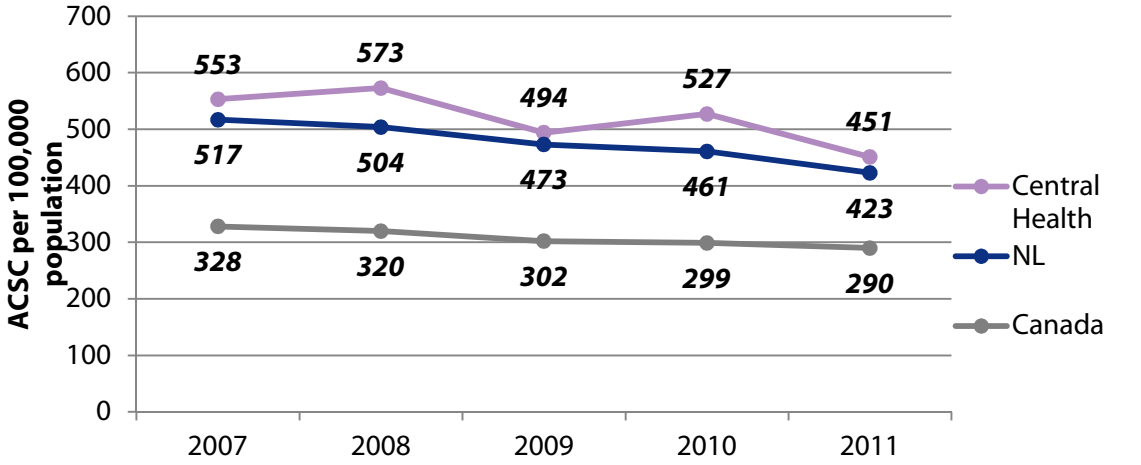
AMBULATORY CARE SENSITIVE CONDITIONS (ACSC) HOSPITALIZATION RATE

Access to primary health care is a priority for Central Health. The calculation of an *Ambulatory Care Sensitive Conditions* (ACSC) hospitalization rate is considered a measure of inappropriate health care. In other words, the client could have been managed in an appropriate ambulatory care setting that could have prevented the onset of the illness or condition or have controlled an acute episode of the condition. A high ACSC is presumed to reflect issues with obtaining access to primary health care (47).

ACSC is defined as the age-standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for admission to hospital, per 100,000 population under age 75 years. This includes conditions such as grand mal status and other epileptic convulsions, chronic obstructive pulmonary disease (COPD), asthma, heart failure and pulmonary edema, hypertension, angina, and diabetes (47).

As indicated in the graph below, Central Health has a higher ACSC hospitalization rate than the province and the country. In 2011-2012, the rate for Central Health was 451 per 100,000 population. This is compared to Western Health which was 518 and Eastern Health which was 374 per 100,000 (20).

Fig. 48 ACSC Hospitalization Rate Comparison (Regional, Provincial, National) 2007-2011

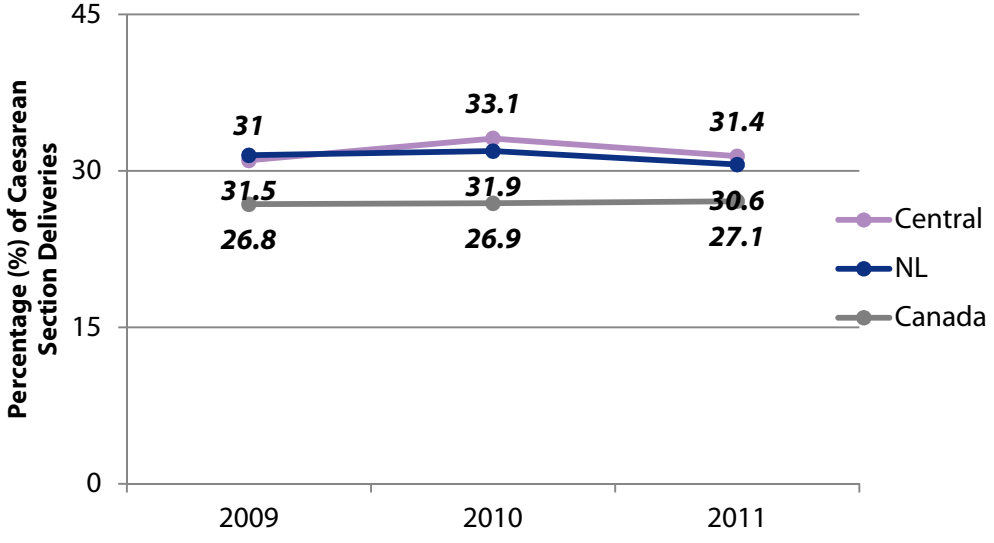


Source: CIHI Health Indicators (2013)

CAESAREAN SECTION

Caesarean section delivery is associated with higher costs and increased risk as it increases maternal morbidity and mortality (20). For the years 2009, 2010, and 2011, Central Health maintained a slightly higher rate of caesarean sections than Newfoundland and Labrador. Both the central region and the province have experienced a higher rate than Canada (see *Fig. 49*).

Fig. 49 Comparison of Caesarean Section Rates (Central, Provincial, and National) 2009-2011



Source: CIHI Health Indicators (2013)

Information on the rates of emergency caesarean section for both JPMRHC and CNRHC are available. The rates for JPMRHC were significantly higher than CNRHC in 2009-2010; however in 2011-2012 the rates are comparable.

Fig. 50: Emergency Caesarean Section Rates (%) by Facility, 2009-2010 to 2011-2012

Facility	Fiscal Year		
	2009/2010	2010/2011	2011/2012
James Paton Memorial Regional Health Centre (JPMRHC)	17.5	18.2	17.9
Central Newfoundland Regional Health Centre (CNRHC)	9.3	13.5	17.0

Source: NLCHI Clinical Database Management System 2009/10-2011/12

READMISSION RATES

Readmissions rates show the percentage of clients who were readmitted to an acute care facility post discharge. Readmissions are non-elective returns to acute care within 30 days post discharge. The percentage of readmitted patients is an important balancing measure to indicate if changes to patient flow through the system are negatively affecting care. While some readmissions are part of the planned care and are desirable, others may be indications of a quality issue related to shortened length of stay, premature discharge or discharge planning (95). Clients who are readmitted require additional care for their condition therefore utilizing health care resources. The following table shows the readmission rates for select areas for the central region, the province, and the country. Notice that in all cases readmissions are higher in the central region than in the province and the country.

Table 24: Risk-adjusted Readmission Rate (%) for Select Services 2011-2012

Indicator	Central	NL	Canada
30-day AMI Re-admission	13.6	11.6	11.5
30-day Medical Re-admission	13.7	12.7	13.4
30-day Surgical Re-admission	7.0	6.5	6.6
30-day Obstetric Re-admission	2.8	2.6	2.0
30-day Re-admission for Mental Illness	15.1	13.3	11.6

Source: CIHI Health Indicators (2013)

HOME SUPPORT PROGRAM

Growth within the Home Support Program has been staggering. Since March 2006, there has been an overall increase of 993 new clients availing of the Home Support Program. Of particular interest, the number of seniors who avail of home support services has increased by 772 individuals (or 250 per cent), since March 2006. In March 2006, there were 306 seniors receiving home support service; by August 2013, there were 1078 seniors receiving service. The number of clients receiving home supports with a physical or intellectual disability has increased but not significantly. In August

2013, there were 284 clients with physical disabilities and 368 individuals with intellectual disabilities in receipt of services. In total, there are1730 clients in the central region who are receiving services through the Home Support Program (1).

The growing demand for home support services may be attributed to the following factors:

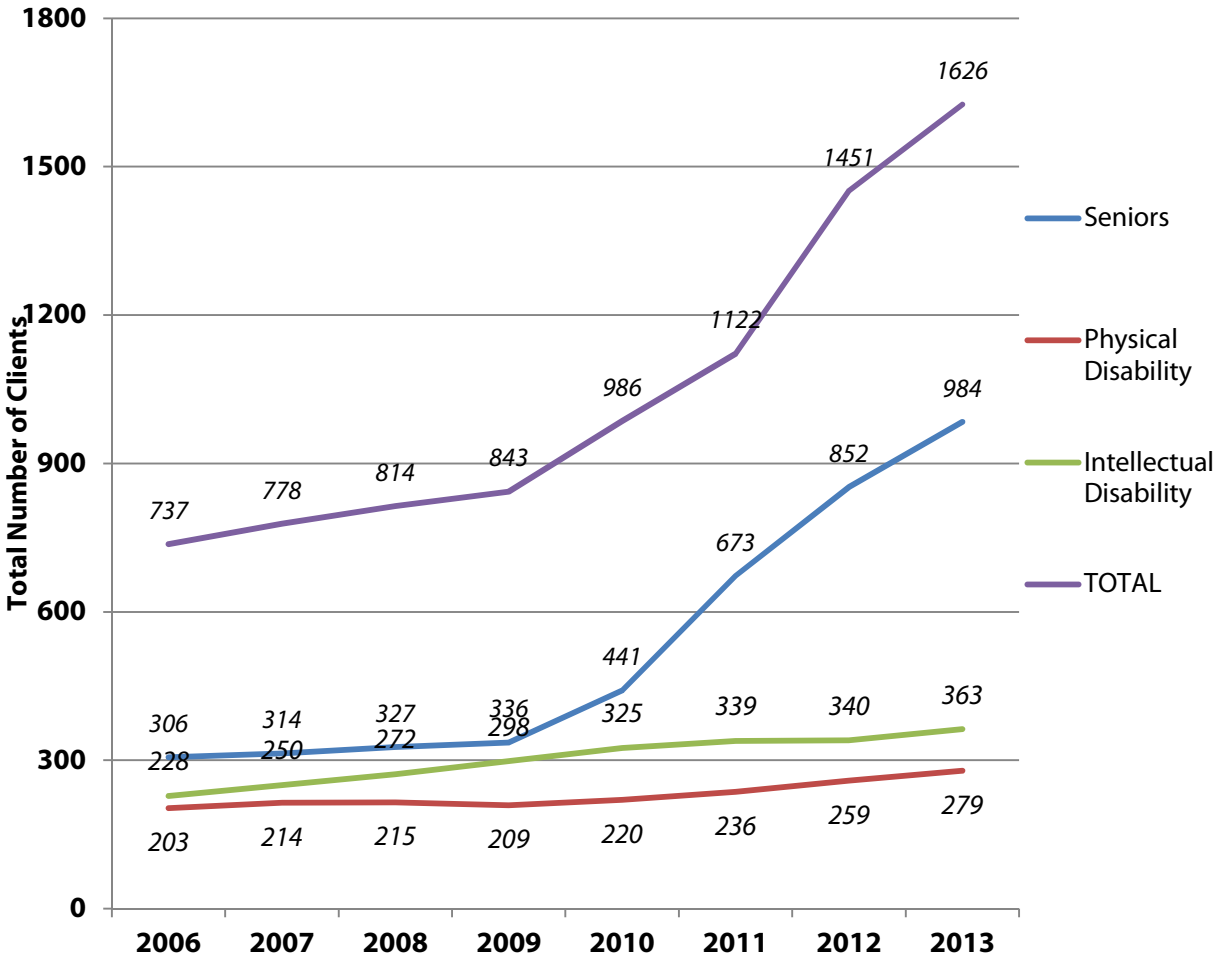
- The change in the provincial financial assessment process
- An aging population
- Unavailability of and/or stress of family and unpaid caregivers
- Longer waitlist for LTC placements (82 per cent increase since 2007)
- Increased demand for follow-up care at home following hospital discharge.
- Increased demand for palliative care (prior to eligibility for End of Life Program)

In addition to the increase in clients requiring home supports, there is evidence to support that clients are presenting with illnesses and conditions of increased complexity thus requiring higher levels of support services. This creates more demand on the home support program both from a human resources perspective as well as a budgetary perspective. In March 2006, home support direct client costs were 16.8 million and in March 2013 the cost had increased to nearly 40 million (1).

In keeping with this growth factor, the existing human resources and management of the Home Support Program are increasingly challenged. Overall program monitoring and evaluation has been challenging in itself, as it requires all available resources to keep the services flowing with regards to basic assessment, processing of requests, payments, etc. Despite the significant increases in the demand for this service, staffing increases have been minimal.

Fig. 51 below shows the significant increase of clients and costs associated with providing home support services at Central Health. Based on the demographic profile of the central region, projections estimate that these numbers will continue to rise in the coming years (1).

Fig. 51: Total Number of Central Health Home Support Program Clients (2006-2013)



Source: Central Health Community Supports and Residential Services (2006-2013)

ENHANCED HOME CARE SERVICES

Central Health strives to provide appropriate services for the population it serves. Over time, the manner in which health care is provided shifts as the characteristics of the population change. In keeping with a changing demographic, Central Health provides services in the community that could, at one time, only be delivered on an inpatient basis in an acute care setting. A specific example of this is the Enhanced Home Care Services Program within the Community Support and Residential Services Division which was implemented in 2007 (1).

Enhanced Home Care Services are available to clients requiring short term acute or end of life care. Some of the services provided include IV antibiotic therapy, negative pressure dressings, short-term home supports, follow-up chemotherapy care, injections and pharmaceuticals, and equipment and supplies for end of life care. Program growth is evident based on the total number of referrals received for Enhanced Home Care Services (1).

At present, Enhanced Home Care Services are provided in Grand Falls-Windsor, Gander, Lewisporte, Glovertown, and Botwood and area. There were no new sites announced for 2010, 2011, or 2012, and at present, there is no plan for program expansion in 2013. However, Vacuum Assisted Closure (VAC) treatment for wound care is now being offered in all community health districts. Additionally, end of life care services are provided to clients in their homes, outside of the designated sites. However, the level of nursing and social work services may vary slightly (e.g., evenings and weekends), due to human resources availability (1).

HOME CARE ASSESSMENT

The *International Resident Assessment Instrument* (interRAI) group in collaboration with the *Canadian Institute for Healthcare Information* (CIHI) has partnered to offer healthcare institutions an assessment tool for clients requiring home care. The interRAI is a brief standardized clinical assessment designed to inform home care intake from community or hospital, and screening of vulnerable populations in hospital Emergency Departments (1).

The benefits of the assessment are that it helps to identify persons at risk of adverse outcomes across care settings, provides real-time decision support for referral and service planning, may prevent hospital admissions, alternate level of care days or repeat visits to the Emergency Department, and provides comparable data on all referrals to home care.

The database will store information based on the clinical assessments completed by employees in Central Health and promises to be a useful tool that will help to ensure, among other outcomes, appropriateness of care. Central Health is planning to train relevant staff by summer 2014 (1).

PALLIATIVE/END OF LIFE CARE

In 2011, Central Health contracted an external consultant to complete a review of palliative/end of life care services. The results of this report identified steps that could be taken to address gaps in service and established an integrated approach to end of life care.

The Central Health Palliative Care Team is a regional multidisciplinary specialist team who provide secondary care support to the palliative/end of life client as they move through their final journey by engaging with the client, their family and their primary care practitioners. Clients can be seen in their homes, in an acute care facility, in a long-term care facility or in other settings. This team supports the client and the family who are living with a palliative diagnosis in addition to the primary care providers who provide care on a day to day basis for their client. Another major component of program's mandate is education of clients, staff and communities.

The team is comprised of a Regional Manager, a Physician Specialist, two nursing coordinators, one social worker and part-time clerical support.

Since the inception of the team in July 2012, over 360 referrals have been received by the team for clients who require secondary supports. The high number of referrals in the early stage of implementation of a new service demonstrates the vast need for integrated, effective, client-based palliative/end of life services in this region. Referrals come from all sources within the region, with a large portion coming from the acute facilities and Cancer Care, both in this region and in St. John's.

Best practice dictates that services for palliative/end of life care should be available up to one year from expected death. Due to current resource capacities, the team is only available to accept referrals up to six months from expected death. While the team has educated and encouraged stakeholders to refer clients as early to six months as possible, the current average referral time is 24 days prior to death. Oftentimes the referral is delayed due to either a family's willingness to accept the referral or a physician's willingness to cease active treatment of the disease and move towards comfort care.

Central Health currently has 14 palliative beds, located in both acute and long-term care facilities. After reconstruction is completed at JPMRHC, two additional palliative beds will be available. These palliative care beds are distributed as follows:

Site	***PEOL Facility Beds***
Baie Verte	1
Buchans	1
Connaigre	1
Botwood	2
Gander	2
GFW	1
Green Bay	1
Kittiwake Coast	1
Lewisporte	1
Twillingate	1
Fogo	(float)
GFW-Carmelite	1
Springdale- Valley Vista	1

Bed utilization in Central Health facilities is high with all facilities reporting an 80-100% occupancy rate for palliative clients. When dedicated beds are not available, clients are either admitted to another acute care bed, or kept waiting in another location until a suitable placement becomes available.

LONG TERM CARE PALLIATIVE SERVICES

The specific nature of LTC identifies that residents living in these facilities experience end of life with a different dynamic than those in other spectrums of care. In an effort to work towards an integrated perspective, a needs assessment of services and staff knowledge of the issue will take place in 2014 and this information will inform planning. Some of the challenges at present are:

- End of life care for clients with dementia. This makes communication and effective pain/symptom management very difficult since clients are often unable to communicate effectively their needs due to this illness.
- Education for staff who serve in these facilities needs to be very specific and sensitive to the nature of care. Attachments are often made to these clients and so bereavement and grief issues that are unaddressed over a period of time often manifests into other issues.

COMPETENCE

Competency is a knowledge, skill or attribute causally related to effective behavior (20). An individual's knowledge and skills need to be appropriate to the care/service being provided. Providing health care workers with usable information, organized around a specific content area that has the ability to produce a consistent response to situations or information, will provide the best client care.

PROFESSIONAL DEVELOPMENT & CONTINUING EDUCATION (PD & CE)

Central Health supports the education of staff to ensure competency and a safe environment for both clients and staff. Training is provided internally through in-house resources and externally through the financial support of employees to enroll in courses and attend educational conferences and workshops (96).

In 2010, Accreditation Canada identified an increased need in resources for education of staff, both internally and externally (97). Over the past several years, the Professional Development and Continuing Education (PD & CE) Department has made strides to enhance the educational opportunities available to employees and physicians. New courses include *Building a Better Tomorrow in Newfoundland & Labrador* (BBTNL) modules, Presentation & Facilitation Skills training, 5-Person Restraint and Behavioral Emergency Medication modules, and a variety of soft-skills training. Also in 2013, the department worked with the two former Continuing Medical Education (CME) Committees to merge into one regional committee with the goal of strengthening CME opportunities available to physicians.

Advanced Cardiac Life Support (ACLS) is now being offered on site in rural centres. New videoconference equipment will help further enhance access to sessions such as General Orientation and CME. An online general orientation and orientation for

managers is also under development. There is a recognized need for a manager's orientation and training program.

The PD & CE Department is also responsible for the Education Assistance Program. This program provides staff up to $500 or five paid education days per year when registered in a certified college or university. In 2012-2013, $15,210 was provided to 53 employees pursuing formal post-secondary education, and 40 employees were awarded up to five paid education days.

Central Health also has a regional library system with three locations in operation. The services available include literature searches, interlibrary loans, document delivery, teaching and a resource library. These services are utilized by staff and leaders throughout the organization and provide accessibility to evidence-based practice literature.

In the upcoming year, PD & CE will be involved in several new initiatives including the roll-out of the Gentle Persuasive Approach (GPA) training for LTC staff. Increased training will enhance competence in caring for clients with dementia and will enable staff to provide the best possible care.

Additionally, new CME opportunities, training in adult learning, Microsoft 2010 training, and ethics education are planned. In collaboration with other departments, PD & CE has recently been exploring the possibility of implementing a learning management system and will continue to work towards this goal (96). Alignment with the new strategic directions of the organization will need to be a focus for 2014.

TRAINING MATRIX

In 2008, Central Health implemented a training matrix as part of a WHSCC PRIME initiative. The training matrix has two main purposes: to identify mandatory training of each position within departments and to track which employees have or have not completed mandatory training. The training matrix is a tool to ensure that all employees in the organization have the training required to perform their work safely and ensures that training of employees remains up-to-date. In 2013, Accreditation Canada recognized Central Health for the comprehensive training matrix implemented throughout the organization.

PARAMEDICINE

Currently, each site lying within the central region has its own emergency phone number for accessing Emergency Medical Services (EMS). Pamphlets are distributed and widely available throughout the region listing the telephone numbers for area ambulances. Central Health provides a standard ambulance dispatch form at all sites as a tool for individuals who receive the ambulance call to document required information (98).

Central Health is working with the Department of Health and Community Services as well as Western Health to implement the *Ambulance Dispatch and Monitoring System* (ADAMS). ADAMS uses a global positioning system (GPS) to monitor ambulances throughout the region and is designed to provide optimal and efficient transfer of clients. Specific criteria are utilized to determine whether a nurse escort is required for transfers. By using ADAMS, Western Health experienced a significant reduction in the number of nurse escorts for client transfers, translating to nearly half a million dollars in cost savings (98). Central Health is currently in the process of building a command center to operate ADAMS.

Along with the development of ADAMS in Central Health, the Department of Health and Community Services is exploring the implementation of a provincial 911 emergency call system. With this development on the horizon, Central Health is ensuring the ADAMS command center will have the capacity to receive 911 calls should the central region be chosen to provide this service. The structure of the 911 call system is not finalized and all calls may be routed through St. John's.

Emergency medical dispatch training is available to employees of Central Health; however, not all individuals who receive calls are certified as a dispatcher. Many of these individuals work in roles such as Switch Board Operator, RN, LPN, etc. Provincial Medical Oversight required that all individuals who receive emergency calls have appropriate dispatch training by January 2013. Given the implementation of the ADAMS system, dispatch training has not been completed to date. Depending on the rollout of the ADAMS system, training will be provided as required.

In the absence of a Central Dispatch, the EMS Team will seek provincial and regional support to implement a standardized call taking system to ensure consistency in ambulance dispatching. The EMS QI Team is working with the Senior Leadership Team to alleviate this challenge (98).

TECHNOLOGY

Health care technology is a broad concept that can be defined as the set of techniques, drugs, equipment and procedures used by health care professionals in delivering health care to individuals and the systems within which such care is provided.

Standing Senate Committee on Social Affairs Science and Technology (2007)

Newfoundland and Labrador, since 2001, with strategic direction from the Department of Health and Community Services, has been working like many other provinces across Canada to deliver safe and effective health care through the Electronic Health Record (EHR). The goal is that whether the information originates from a doctor's office, clinic, hospital or pharmacy, it will appear as one record. The Newfoundland and Labrador Centre for Health Information (NLCHI) and the four regional authorities completed an initiative to assess EHR readiness. The objective of the assessment was to determine the level of awareness of clinical staff regarding the EHR/Labs Project. Work is progressing on this provincial initiative (99).

In order to gauge the technological capacity and productivity of the health care authority, Central Health participates in a benchmarking process through an American company called HIMSS Analytics. HIMSS Analytics assigns a numerical value on a scale of one to eight to the usage and capacity of technological systems within an institution; the higher the score the higher the technological capacity. Historically, Central Health has maintained a score of between 4 and 5, the highest score in the province. In addition, Central Health also scores highest in the province for measures of productivity indicating a high functioning, low-waste IMaT Department (78). Technological capacity is attained by providing Central Health employees with the proper tools. At Central Health, some examples of tools being utilized include, but are not limited to (78):

Client Registry
The client registry is a tool that holds demographic and administrative information related to individuals who receive health and community services in Newfoundland and Labrador.

Centralized Dictation
Central Health's Lanier dictation transcription system is a digital voice system used by clinicians and transcriptionists to dictate and transcribe medical reports and is equipped with speech recognition capabilities. In the past there were two outdated dictation systems located at JPMRHC and CNRHC. Access to these systems from other locations throughout Central Health was limited.

In 2010, regional implementation of the new Lanier dictation system began and included both Health Records and Diagnostic Imaging. This provided the ability to connect to facilities and transcriptionists from outside the region to the one system allowing for workload leveling.

Simultaneously back end speech recognition for physicians who dictated heath record reports was also implemented. With backend speech, the physician dictates as per usual and the transcriptionist receives a document for editing. In June 2013, this technology was also introduced to the Diagnostic Imaging Department at JPMRHC to provide the same technology to radiologists in the department. Using this technology, when the dictation is complete, the radiologist can provide an electronic signature and the report is completed without transcriptionist intervention. Implementation is currently underway at CNRHC for Health Records, DI, and Pathology. This technology improves accuracy and timely availability of reports and diagnostics.

Turnaround times for reporting have improved dramatically and Central Health is currently transcribing reports the same day they are dictated. In addition, the Health Information Management and Privacy Department has the capability to share workload across facilities reducing or eliminating the need for relief or overtime. It also provides an opportunity to educate staff and perform required data quality checks.

Meditech Consolidation – Central Health HUB

Before the amalgamation of the east and west health boards, Central Health utilized two separate information systems: Meditech East and Meditech West. On November 18, 2013, these two systems were merged to create one centralized information system in Central Health. This process involved mass training of and communication to employees throughout the organization. One Meditech system, now called Central Health HUB, will enhance standardization and storage of client information. Throughout the region, all employees will be able to access health records electronically regardless of the location of the client or employee.

BUSINESS INTELLIGENCE

In health care, information insights coupled with clinical collaboration can dramatically improve quality of care, patient safety and outcomes, while also improving the cost-effectiveness of care. This concept is referred to as business intelligence (78).

Central Health is embarking on a smarter approach to health care, one that turns data into clinical and organizational insights for better outcomes. Central Health began using these tools in 2013. The most recent initiative includes gathering insights from patient flow and bed utilization. With that information Central Health will be able to provide real-time client and bed status throughout the care teams. This will enable discharge planners to proactively manage the discharge planning process and better facilitate patient flow (78). Funding has also been secured to develop the wait time component that will assist with tracking and monitoring of wait times for care in select services.

ETHICS

The Ethics Framework for Central Health is based on an extensive review completed by an Ethics Task Force in 2007. The purpose of the Ethics Task Force was to gain an understanding of ethical issues faced by the organization and to determine the appropriate structure and process for guiding decision-making and promotion of core values. Based on the work of the task force, a single committee structure was recommended to address, educate, promote, and review all appropriate ethical matters (100).

In April 2008, a new committee was formed. In 2009, ethics resources within the Province collaborated to provide consistent and accessible support to each RHA. The success of this collaboration led to the establishment of the *Provincial Health Ethics Network of Newfoundland and Labrador* (PHENNL) in 2012. The Network consolidates ethics expertise within the province, ensuring access to expert resources, opportunity to participate in ethics related professional development and sharing of ethics experience and activities within the province. One example of this collaboration is the development of an ethics-specific framework that assisted decision-makers in the 2012 drug shortage (100). Additionally, leaders, employees, clients and families at Central Health have access to an ethics consultation service. Provision of this service

improves the competence with which staff and leaders can perform their duties with respect to the best possible care for clients when ethical issues arise in care provision.

DISCLOSURE OF ADVERSE EVENTS TRAINING

Central Health supports the process of disclosure of harm and adverse events to clients, families and substitute decision makers. Since 2010, Central Health has been building the competency of directors, managers, physicians, and lead hands in the area of disclosure. In 2012, three individuals from Central Health were trained by Faculty from the Institute of Healthcare Communication to become disclosure trainers to assist with the roll-out of disclosure education (50).

In 2013, a work plan was developed and disclosure education is now being provided to targeted health care providers in all Central Health's facilities. The disclosure education has recently been expanded to the frontline employees who provide direct care to clients. In total, 760 managers, directors, senior leaders, physicians and frontline staff have attended these education events. Central Health's disclosure policy was revised to incorporate the changes in occurrence reporting, education and the processes followed when disclosure is required (50).

MORE OB – EDUCATION IN OBSTETRICS

An obstetrical service requires highly competent healthcare professionals and is a high risk area. Central Health has committed to implementing the *MORE^{OB} Program* in the obstetrical units of JPMRHC and CNRHC. This program is a comprehensive, three year, patient safety, professional development and performance improvement program for providers and administrators. It integrates evidence-based professional practice standards and guidelines with current patient safety concepts, principles and tools (50) .

Source: More OB 2013

In the fall of 2013, twelve core team members including physicians, nurses, the Patient Safety Officer and a senior leader attended a two-day education session to learn about the MORE^{OB} framework and the processes to create an implementation plan. The core members are divided into two teams and they will roll out the three modules over the next three years to all obstetrical staff.

Obstetrical staff at both referral sites attended a launch day in November 2013 to learn about the MORE^{OB} Program and how they will be involved in this patient safety initiative. This commitment by the organization will, no doubt, have a positive impact on the obstetrical services provided by Central Health (50).

CONTINUITY

Continuity is defined as the ability to provide uninterrupted, coordinated care/service across programs, practitioners, organizations, and levels of care/service, over time (20).

PHYSICIAN RECRUITMENT

Continuity of care refers to a continuous relationship over time between clients and their health care providers (20). There is evidence to support that continuity of care improves preventive care, increases adherence to treatment and increases client satisfaction and experience. In addition, there is evidence to support that health status and chronic disease outcomes are improved with continuity of care (101). In the health care system, the implications of this evidence could potentially impact cost effectiveness; the frequency of emergency room visits; and the overall number of admissions to hospitals. At times, physician shortages make it difficult for Central Health to provide continuity of care.

Central Health has made great strides in the past number of years and has increased the number of physicians from 129 in 2007 to 173 in 2013.Central Health does continue to face challenges with recruitment and retention of family physicians and some specialty physicians in some areas (102). Central Health is also currently recruiting for positions in pediatrics, radiology, surgery, internal medicine and family medicine. Timelines for recruiting physicians pose major challenges with maintaining continuity of service. (102).

HUMAN RESOURCE PLANNING

In all positions throughout the organization, Central Health is committed to employing the best-qualified applicants who have the ability to provide the best possible care and highest quality services. Recruitment and retention efforts focus on best practices for quality of work life, workload measurement, professional development, succession planning, bursary and incentive programs and improved recruitment materials (103).

The Employee Relations Department, in consultation and collaboration with other departments in the organization, has developed a human resources plan for Central Health. There are a number of factors challenging the health sector workforce including: an aging and declining workforce; a need to build leadership capability; workforce shortages; changing health needs and increased public expectations; and advances in technology and tools. Within Central Health, these issues drive the need for a comprehensive human resource plan. This plan provides a framework for enhancing and managing human resources to support the goals and objectives of the organization (103).

The *Central Health Human Resource Plan 2010-2014* sets out a strategy to address key human resource areas including leadership, talent management, transition, and safety and wellness. The goals of this plan are to ensure priorities are acted on and strategies

are developed to sustain human resources and services. Central Health acknowledges that organizational culture plays a significant role in the quality of work and employee engagement. The strategies outlined are intended to foster a culture where employees are engaged and provide the best possible care to clients (103).

Central Health experiences a consistent movement or flow of new and existing staff through the organization. This of course has an impact on the continuity of care in some areas but strategies are in place to minimize this impact as much as possible. As an example of staff flow, the following table illustrates the number of separations and new hires in Central Health between July and September 2013.

Table 25: Central Health Total Number of Separations and New Hires July-September 2013

Employment Status	July 2013	August 2013	September 2013
Retirements	3	4	4
Resignations	16	16	12
Other	5	14	9
Total Separations	24	34	25
Total New Hires	34	24	15

Source: Central Health Employee Relations Department (2013)

EFFECTIVENESS

For effectiveness in health system performance, the care/services, intervention or action must achieve the desired results (47). The effectiveness of health care is the relationship between the level of resources invested and the level of results, or improvements in health. An evaluation plan outlining the methodology to evaluate the care/services, intervention or action will provide evidence as to whether the goals and objectives are met. In addition, it will highlight program effectiveness and identify system improvements in healthcare delivery.

PROGRAM PLANNING AND EVALUATION

With increasing pressure placed on healthcare to report information related to the efficiency and effectiveness of programs and services, the demand for program evaluation has never been greater. Management at all levels are responsible for planning, monitoring, and evaluating programs and services; however, the ability to fulfill this duty greatly varies across the organization. In order for Central Health to develop an evaluative culture, its' leaders need to have a solid foundation in program planning and evaluation and they must be able to work collaboratively with staff to ensure the necessary performance information is gathered to support decision-making needs across the organization.

At the Management Forum hosted in Gander in October 2013, a current state assessment with regards to the knowledge, skills and practices of leadership surrounding program evaluation was conducted. The results of the survey indicate that there are improvements needed at Central Health with respect to the evaluative culture.

The management skill level for various evaluation activities is low. The areas that received the lowest ratings were developing evaluation frameworks and program logic models, both of which are very important functions to ensure that programs and services are effectively designed and implemented to meet the needs of the population.

Recommendations from the report of the current state assessment include developing a process and framework for evaluation within the organization, making evaluation a priority and leadership accountability for evaluation, delivering education and training to management on program planning and evaluation, and investing in resources that increase the ability of management to gather and use performance information.

RESTORATIVE CARE SERVICE

Central Health believes a creative and innovative response is required to address the challenges associated with alternate level of care (ALC) and medically discharged clients; additionally Central Health is committed to ensuring accessibility to the appropriate level of care. The development of the Restorative Care Service at Central Health was as a result of a quality initiative of the LTC QI Team. The Restorative Care unit in Twillingate is an interdisciplinary, family centered, holistic approach to client care. This program focuses on maximizing an optimal level of functioning following a decline in functional ability as a result of an acute situation or chronic condition; thus enabling the client to regain/retain their independence. The focus is on assisting the client to achieve a level of independence such that they can either return home or to the most appropriate setting.

The five-bed restorative care unit located in Notre Dame Bay Memorial Health Centre in Twillingate, admits clients from all over the central region. Often clients are hesitant to travel a long distance to receive care, however once on the unit perception quickly changes. Through therapeutic intervention, such as occupational therapy and physiotherapy, many of the clients enjoy participating in typical daily activities that improve and expand their functional capabilities.

An evaluation plan, including a client survey, was utilized to answer questions regarding the implementation and specific outcomes of the Restorative Care Project and assist the organization in identifying and correcting program issues (50).

Since 2010, a number of clients of the Restorative Care unit have completed the satisfaction survey upon discharge. The results of this survey indicate the success of the Restorative Care Program. It was found that 97.5 per cent of clients would not have made the same progress had they remained at home. From March 2011 to December

2012, there were 55 admissions to the Restorative Care Unit. Of these admissions, 44 clients were discharged to the community, with 7 clients being transferred to acute care. The average length of stay was 27 days.

FALLS PREVENTION PROGRAM

The goal of the Falls Prevention Program at Central Health is to improve the quality and safety of patients, residents, and clients by optimizing opportunities for safe mobility and by preventing and managing falls. The Falls Prevention Program has been implemented in the areas of acute care and LTC since January 2011. The implementation and evaluation of a Falls Prevention Program is vital since falls is one of the most costly sources of injury among all adult age groups and is associated with an increase in mortality in the elderly population (50).

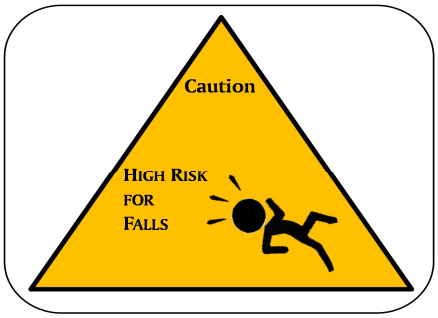
The Falls Prevention Program evaluation plan was designed to assess the program's processes and outcomes in acute care and LTC settings The gaps identified through evaluation were: the assessment tool was not completed in a timely manner over 60 per cent of the time, nearly 50 per cent of the time the falls interventions were not documented in the client's care plan, there was a lack of appropriate program training, to just name a few. The Falls Prevention Steering Committee continue to address these gaps and has focused on such improvements such as continued teaching/training, information sharing, development of pamphlets, and creation of the Falls Champions Network (50).

A Community Falls Prevention Program was developed and fully implemented in the community sector in April 2013. A Falls Prevention pilot project in a personal care home in 2012 highlighted the importance of having this program in place. A Falls Prevention Program policy has been approved for all sectors. Falls continue to be one of the top three reported occurrences in the Clinical Safety Reporting System (50).

The number of falls and injuries after a fall are collected quarterly from the Clinical Safety Reporting System and reported on the Board of Trustees Scorecard (50). In the second quarter of 2013-2014, the falls rate in acute care was 5.99 as compared to the benchmark of 5.82 per 1000 patient days, with 15.7 per cent of falls resulting in injury. The falls rate for LTC was 6.83 as compared to the benchmark of 5.54 per 1000 patient days, with 25.4 per cent of falls resulting in injury.

Successes in acute care and LTC areas are attributed to the implementation of a number of interventions and individualistic programs for the safety of clients to prevent falls and injury due to falls. A number of improvements in programming with the implementation of bed sensors, grip socks, chair sensors, hip protectors and prescribed Vitamin D in LTC, to name a few, appear to have decreased falls and injury. With continued efforts to utilize equipment, improve assessments, share successes and improve care plans to prevent falls a target rate of 10 per cent below the benchmark has been set as the new goal for 2013-14 (50).

The Falls Prevention Steering Committee is currently promoting safety huddles to assess clients who fall to develop individual fall prevention strategies. The Canadian Falls Prevention Curriculum was delivered to employees of Central Health in 2012 and will be offered again in 2014. Some clinical educators and care facilitators have been trained as falls champions. In this role, they will be content and practice experts in falls prevention and promote falls programming. This role is integral for the sustainability and continued success of falls prevention (50).



Source: Central Health Corporate Improvement Department 2010

ASSERTIVE COMMUNITY TREATMENT (ACT) TEAM

Mental Health and Addictions Services within Central Health have a variety of service options designed to meet the needs of individuals within communities. In 2010, Central Health implemented an Assertive Community Treatment (ACT) Team to advance provincial mental health initiatives and help meet the requirements of the newly proclaimed Mental Health Care and Treatment Act (86).

The ACT Team is an evidence-based model of community mental health care intended for individuals with severe and persistent mental illness who have not responded well to traditional mental health services. These individuals often have had lengthy and frequent admissions to hospital and are considered at risk for future hospitalizations. ACT is provided by an interdisciplinary team of eight individuals who share the care of all clients. The goal is to provide services within the team to avoid fragmented service delivery. ACT's broad aims include maximizing medication adherence, minimizing relapse, meeting basic and social occupational needs, enhancing quality of life, improving social and vocational functioning, promoting independent living skills, and decreasing caregiver burden and enhancing community tenure (86).

Central Health's ACT Team is located in Grand Falls-Windsor, and provides services to approximately 60 clients. ACT covers an area of approximately 40 km's from its headquarters. Since its inception, ACT has had a focus on evaluating both program implementation as well as its outcomes.

The main outcome measures were the number of readmission days and emergency department visits before and after ACT engagement. The average number of readmission days reduced from 14 to zero ($p<.05$) following engagement with ACT. The average number of visits to ER's also reduced from three to one ($p<.05$). The ACT team continues to engage in a continuous quality improvement framework and is currently engaged in using the World Health Organization Quality of Life Measure to determine individual quality of life.

In 2010, Accreditation Canada commended Central Health on this initiative and recommended that the program extend to operate on evenings and weekends based

on client need. The program has since expanded operations to evenings and weekends and is supported by an after-hours on-call system (97).

SAFE RESIDENT HANDLING PILOT PROGRAM

Central Health is currently participating in a pilot project supported by the Provincial Government to lower the injury rates of RNs, LPNs and PCAs related to resident handling and movement. The pilot is currently being implemented at three LTC facilities in the region, Bonnews Lodge in New-Wes-Valley, Carmelite Home in Grand Falls-Windsor, and North Haven Manor in Lewisporte.

Key components of the program include: training and educating employees; designating a program champion; and providing additional resident handling equipment (ceiling lifts, floor lifts, slings, friction reducing devices, etc.). It is anticipated that the implementation of this program at all acute and LTC facilities will significantly reduce the probability and severity of nursing injuries, thus reducing medical aid and lost time claims, making Central Health a much safer place to work and receive care. Preliminary results are showing a significant reduction in lost-time resident handling injuries. The lost time resident handling pre-implementation injuries were 38. The post-implementation injuries to date are reported to be 9. These preliminary results appear to confirm the effectiveness of the program. If this continues, the outcome of reduced injury and reduced lost time will be realized.

PATIENT ORDER SETS

PatientOrderSets.com is a transformative healthcare solution now used by over 260 health care organizations across Canada. Order sets are sophisticated evidence-based checklists used by clinicians to ensure that clients get the appropriate treatment at the right time to achieve the desired outcomes. Health care centers or institutions who implement a comprehensive order set strategy are expected to (104):

- See a significant improvement in patient safety and quality of care
- Optimize use of physicians' time by eliminating hand-written repetitive orders of medications, tests and treatments
- Improve and streamline work processes for nurses, pharmacists and other clinicians
- Observe a significant reduction in healthcare costs (one hospital study demonstrated a reduction in length of client stay and a 50% reduction in re-admissions by adopting the PatientOrderSets.com solution)
- Improve communication among health care providers
- Reduce the number of preventable medical errors that occur in relation to client orders and transfer of information

Central Health senior leaders and physician leaders have explored the usage and benefits of patient order sets and have decided to move forward with implementation of patient order sets throughout Central Health, starting in the rural sites. Planning is currently underway that will see initial implementation in early 2014 (105).

EFFICIENCY

Although effectiveness and efficiency are both concepts that add an economic dimension to health care, efficiency is a much broader term (47). Efficiency, regarding health system performance, refers to achieving the desired results with the most cost effective use of resources. Efficiency can be described as the relationship between the level of resources invested into the health care system and the volume of services, or improvements in health achieved. Several initiatives focused on efficiencies were discussed earlier in this report.

ALTERNATE LEVEL OF CARE (ALC)

Alternative Level of Care (ALC) refers to the utilization of acute care beds for clients who occupy an acute care bed after the acute phase of their inpatient stay is complete. In Canada, there is a growing concern over the number of ALC patients within acute care. The impact of this is significant as acutely ill clients remain in the ER when there are no inpatient beds available, surgeries are cancelled or postponed, and clients are discharged earlier than initially planned. This is currently the reality of Central Health; specifically at CNRHC and JPMRHC. This situation also has an impact on the rural sites.

It is important to note that although it is typically assumed ALC clients are waiting for placement in a LTC facility, over one third of clients are waiting for alternative services such as convalescence care, palliative care or because medical services are not available in their area (for example, chemotherapy) (106) . Increasing the number of LTC beds will not solely alleviate this challenge.

In 2007-2008, ALC cases accounted for 5 per cent of all hospitalizations in Canada and 14 per cent of all hospital days in acute care (106). Within Atlantic Canada during 2009-2010, 4 per cent of clients discharged from hospital had ALC days. This information needs to be considered along with the data presented on the average length of stay later in this report to target the specific groups of clients who would benefit most from enhanced discharge planning (106).

In 2009-2010, 42 per cent of patients in Atlantic Canada were discharged from hospital to LTC placements and 35 per cent where discharged home with or without supports. In this province, 29 per cent were discharged to LTC facilities and 44 per cent were discharged home with or without supports. The most common diagnostic reasons among all ALC patients are dementia and waiting placement (106).

In Newfoundland and Labrador, there are a number of factors that contribute to the ALC issue:

- Aging population
- Population dispersed across a vast area of geography
- Limited post-acute care options
- Expectations of clients and families with respect to placement options

- Limited number of LTC placements
- Incidence of chronic disease and co-morbidities

The table below shows the total number of clients with ALC days, the total number of ACL days and the bed equivalency for all Central Health acute care facilities for the fiscal years 2007-2008 to 2010-2011 (107).

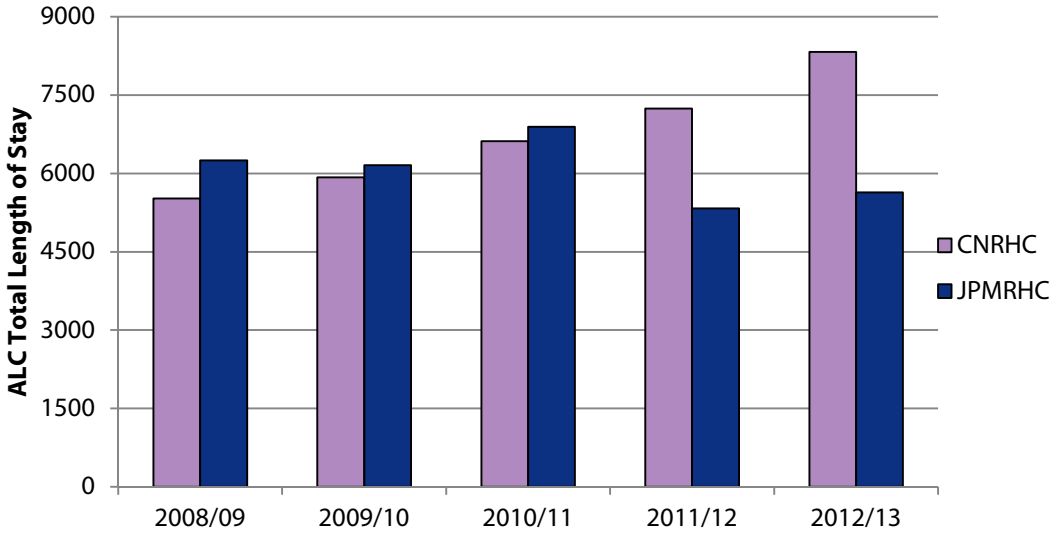
Table: 26 Total ALC Cases, ALC Days and Bed Equivalency (Based on 100% occupancy rate)

Facility Region	**Central Regional Health Authority**		
Discharge Fiscal Year	**Cases (SUM)**	**ALC LOS in Days (SUM)**	**Bed Equivalency**
2007-2008	495	12,481	34
2008-2009	612	12,864	35
2009-2010	518	14,689	40
2010-2011	536	14,557	40

Source: CIHI, Special Request, 2012

As indicated in the graph below, the length of stay for ALC clients in the central region, for the most part, has steadily increased from 2008 to 2013 most notably at the CNRHC. The increase in ALC length of stay indicates an increase in the utilization of beds for purposes other than acute care.

Fig. 52 Central Health ALC Total Length of Stay 2008 to 2013 (JPMRHC and CNRHC)



Source: NLCHI Special Request (2013)

LENGTH OF STAY (LOS) – AVERAGE LOS AND EXPECTED LOS

Average length of stay (ALOS) refers to the average number of days that patients spend in hospital. It is generally measured by dividing the total number of days stayed by all inpatients during a year by the number of admissions or discharges. Day cases are excluded (108).

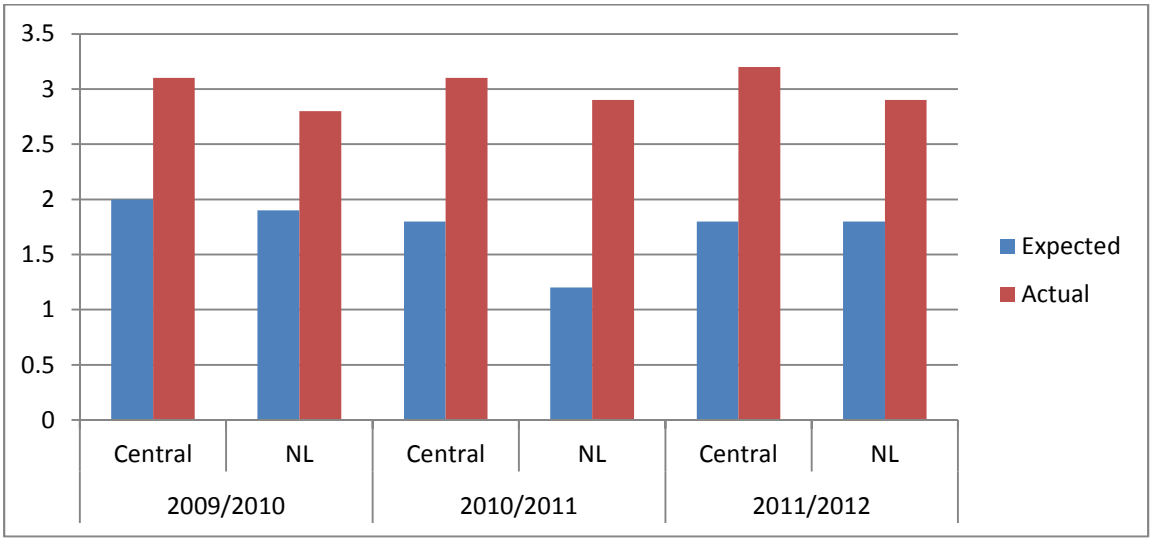
The average length of stay (ALOS) in hospitals is often used as an indicator of efficiency. All other things being equal, a shorter stay will reduce the cost per discharge and shift care from inpatient to less expensive post-acute settings. However, shorter stays tend to be more service intensive and more costly per day. Too short a length of stay could also cause adverse effects on health outcomes, or reduce the comfort and recovery of the patient which can sometimes lead to higher readmission rates and costs.

The expected length of stay (ELOS) is the length of time an individual is expected to stay in hospital, based on the patient's age, most current acute length of stay and case mix groups (CMG's) complexity. Expected length of stay does not account for ALC (non-acute) days.

The following information on ALOS and ELOS is presented for Central Health. Comparisons are provided when available. This data is a starting point for further exploration and analysis. Data on lengths of stay for specific conditions can be influenced by a number of factors, i.e. waiting for transfer to a tertiary center, data quality, etc.

ELOS and ALOS for Vaginal Delivery

Fig. 53 Average Expected Length of Stay (Expected) and Average Acute Care Length of Stay (Actual) (in days), Hospitalizations Involving Vaginal Delivery, by Central Health (both referral centres) and Newfoundland and Labrador, 2009/10-2011/12.



Source: NLCHI Clinical Database Management System 2009/10-2011/12

ELOS and ALOS for Acute Coronary Syndrome, Myocardial Infarction, Angina

Table 27: Average Acute Care Length of Stay (ALOS) (in days) for Acute Coronary Syndrome (ACS), Myocardial Infarction (MI), and Angina, facilities and Newfoundland and Labrador, 2009/10-2011/12

Facility	Fiscal year		
	2009/2010	2010/2011	2011/2012
James Paton Memorial Regional Health Centre (JPMRHC)	12.0	11.8	11.7
Central Newfoundland Regional Health Centre (CNRHC)	9.5	10.3	10.0
JPMRHC and CNRHC Combined	9.5	10.3	10.0
Newfoundland and Labrador	8.3	8.3	8.4

Source: NLCHI Clinical Database Management System 2009/10-2011/12

Table 28: Average Expected Length of Stay (ELOS)(in days) for Acute Coronary Syndrome (ACS), Myocardial Infarction (MI), and Angina, facilities and Newfoundland and Labrador, 2009/10-2011/12

Facility	Fiscal year		
	2009/2010	2010/2011	2011/2012
James Paton Memorial Regional Health Centre (JPMRHC)	5.6	5.8	5.0
Central Newfoundland Regional Health Centre (CNRHC)	4.9	5.7	5.0
JPMRHC and CNRHC	5.3	5.8	5.0
Newfoundland and Labrador	5.1	5.2	4.8

Source: NLCHI Clinical Database Management System 2009/10-2011/12

ALOS for Post-operative Surgery ICU Patients

Table 29: Post-operative Surgery ICU Patients and LOS (JPMRHC & CNRHC)

Fiscal Year	Hospital	Number of Patients	Total Hospitalizations	Post-ICU LOS Total (in Days)	Average Post-ICU LOS (in days) per Patient
2009-2010	CNRHC	165	173	693.92	4.21
2009-2010	JPMRHC	107	110	546.94	5.11
2010-2011	CNRHC	177	180	871.08	4.92
2010-2011	JPMRHC	121	123	736.48	6.09
2011-2012	CNRHC	191	196	1017.25	5.33
2011-2012	JPMRHC	106	107	643.21	6.07

Data Source: NL Centre for Health Information, Clinical Database Management System, 2009/10-2011/12

Table: 30: Post-operative Surgery ICU LOS for Health Authority of Residence & NL

Health Authority of Residence or Hospital	Average Post-Operative ICU LOS (in Days) per Patient
2009-2010	
Province	4.72
Eastern Health	5.11
Central Health	**4.45**
Western Health	4.31
Labrador-Grenfell Health	3.78
2010-2011	
Province	5.89
Eastern Health	6.36
Central Health	**4.9**
Western Health	5.54
Labrador-Grenfell Health	6.27
2011-2012	
Province	4.59
Eastern Health	4.23
Central Health	**5.4**
Western Health	4.88
Labrador-Grenfell Health	4.34

Data Source: NL Centre for Health Information, Clinical Database Management System, 2009/10-2011/12

ALOS and ELOS by Most Responsible Diagnosis (MRDx) Category for Central Health

Table 31: LOS and ELOS by MRDx Category for Central Health

MRDx Description	Total Acute Care Episodes	Average ELOS	Average LOS
Premature rupture of membranes	1,219	2.01	3.13
Gonarthrosis [arthrosis of knee]	1,218	4.58	6.80
Live born infants	1,617	1.87	2.56
Acute myocardial infarction	1,017	5.91	11.46
Other chronic obstructive pulmonary disease	884	6.34	9.16
Other medical care	752	6.78	11.62
Heart failure	731	6.97	11.98
Pneumonia, organism unspecified	643	5.80	8.71
Type 2 diabetes mellitus	617	7.84	10.82
Angina pectoris	523	3.99	9.11
Gonarthrosis [arthrosis of knee]	475	4.35	5.74
Cholelithiasis	468	3.41	4.49

Data Source: NL Centre for Health Information, Clinical Database Management System, 2009/10-2011/12

LOS and ELOS for Top 10 Patient Services & Top 10 Provider Services for Central Health

Table 32: LOS and ELOS for Top 10 Patient Services for Central Health

Patient Service Description	Total Acute Care Episodes	Average ELOS	Average LOS
General Medicine	9,190	5.81	10.59
General Surgery	4,549	6.16	8.23
Family Practice	3,986	5.20	11.94
OBS Delivered	2,078	2.36	3.58
Newborn	2,073	2.30	2.73
Orthopedic Surgery	1,728	5.04	6.98
Gynecology	1,149	2.67	2.97
Psychiatry	1,118	10.16	19.53
Pediatric Medicine	929	2.69	3.24
Urology	750	3.31	4.01

Data Source: NL Centre for Health Information, Clinical Database Management System, 2009/10-2011/12

LOS and ELOS for Top 10 Provider Services for Central Health

Table: 33 LOS and ELOS of Top 10 Provider Services for Central Health

Provider Service Description	Total Acute Care Episodes	Average ELOS	Average LOS
Family Practice/General Practice Medicine	9,386	4.91	10.75
Internal Medicine	5,140	6.25	10.05
General Surgery	4,301	5.79	7.70
Pediatrics	2,968	3.13	3.89
Obstetrics and Gynecology	2,861	2.48	3.42
Orthopedic Surgery	1,826	4.87	6.98
Psychiatry	1,140	10.09	19.36
Otolaryngology	822	2.26	2.84
Urology	750	3.30	4.01
Cardiac Surgery	478	9.87	10.78

Data Source: NL Centre for Health Information, Clinical Database Management System, 2009/10-2011/12

WAIT TIMES

According to Health Canada, wait time refers to the length of time it takes individuals to access health care services such as specialist's services, diagnostics and treatment services (109). In 2004, the First Ministers Report identified five priority areas that include cancer, heart, diagnostic imaging, joint replacement and sight restoration (110).

Information on wait times was also provided earlier in the *Accessibility* section of this report. Wait times continue to pose a significant challenge for Central Health and impacts the citizens of the central region in a number of ways.

Central Health has employed a Regional Wait Time Manager since 2011, who is responsible for the wait time submissions as noted below. This position is also responsible for the planning, development, implementation and evaluation of a Regional Wait Time Management Program. The focus of the position to date has been limited and focus has not been turned to the development of a regional wait time management program or regional strategy. The focus for 2014 will need to be on a current state assessment with respect to wait times, wait time management strategies, including booking and scheduling. Standardized policies are required in the region with respect to no-shows, cancellation, validation, scheduling including pending and booking. Waitlist management is required once a program or service develops a wait list; however this represents significant waste in healthcare if not managed in the most efficient manner.

The Corporate Improvement Department of Central Health, reports to the provincial Department of Health and Community Services wait times in a number of key areas. These wait times are also reported to the Board of Trustees through the quarterly scorecard. Quarterly reporting is required on four of the five priority areas mentioned above (*NOTE: Central Health does not perform Cardiac Bypass surgery*).

In addition to quarterly reporting of select wait time data which was noted earlier in the report, Central Health reports the Third Next Available appointment for select diagnostic imaging (DI) procedures (*see Table 36*), endoscopy volumes, and orthopedic surgery volumes on a monthly basis (50).

Table 34 displays selected Central Health wait time information for the fiscal year 2012-2013. The information shows the percentage of clients who received treatment within the benchmarks established.

Table 34: Percentage (%) of Clients Receiving Treatment with Benchmark Time in Central Health (2012-2013)

Procedure		Q1 Apr-Jun 2012	Q2 Jul-Sep 2012	Q3 Oct-Dec 2012	Q4 Jan-Mar 2013	Benchmark
Echocardiography (CNRHC only)		35%	24%	10%	21%	***30 days***
Hip Replacement (JPMRHC only)		90%	93%	83%	87%	***182 days***
Knee Replacement (JPMRHC only)		87%	89%	95%	87%	***182 days***
Emergency hip fracture repair (JPMRHC only)		100%	100%	100%	100%	***48 hours***
Prostate Surgery (CNRHC only)		100%	100%	100%	100%	***60 days***
Mammography	***CNRHC***	85%	43%	72%	67%	***30 days***
	JPMRHC	66%	68%	76%	89%	
Colonoscopy	***CNRHC***	45%	48%	54%	49%	***30 days***
	JPMRHC	25%	23%	26%	32%	
Cataracts	***CNRHC***	98%	90%	88%	93%	***112 days***
	JPMRHC	84%	94%	97%	91%	

Source: Central Health Corporate Improvement Department (2012-2013)

The wait times for DI procedures throughout other regions in Newfoundland and Labrador depend on the site within the region. For example, in Central Health, mammography screening and diagnostic wait times are significantly different at JPMRHC and CNRHC, as the latter does not have a formal breast-screening program as noted previously. To assist in the management of the demand for DI procedures, requests are classified and prioritized according to *Table 35* (81).

Table 35: Classification, Definition, and Ideal Timeframe for DI Procedures

Classification	Definition	Ideal Timeframe
EMERGENT	Immediate danger to life, limb, or organ	Less than **24 hours**
URGENT	Unstable/potential > emergent	Less than **14 days**
NON-URGENT	Minimal pain/dysfunction/ disability	Less than **30 days**
SCREENING	Non-symptomatic	N/A

Source: Central Health Department of Diagnostic Imaging (2013)

Table 36 displays DI wait time information (third next available appointment) for all RHAs in the province. Areas of concern for Central Health are mammography and ultrasound. Note that all types of requests (emergent, urgent and non-urgent) are grouped together in the following table.

Table 36: DI Third Next Available Wait Times in Number of Days by Region (October 2013)

DI Procedure	Region			
	Central	Eastern	Western	Labrador
Mammography	31-355	1-68	1-27	0-4
CT – Head	0-26	0-10	0-14	0-4
CT – Spine	0-22	0-10	0-14	0-4
CT – Chest/Abdomen	0-21	0-10	0-14	0-4
US – Pelvis	0-360	0-74	0-111	0-350
US – Carotid	0-109	0-39	0-56	0-350
US – Breast	0-89	0-54	0-21	0-350
US – Abdomen	0-166	0-52	0-80	0-350

Source: Central Health Corporate Improvement Department (2012-13)

There have been a number of successful wait time strategies implemented in the region. The DI Department at one site is in the process of completing a clinical validation project focusing on ultrasound referrals pended for greater than one year. These referrals were returned to the referring physician to determine if the ordered test was still required (50). A high percentage of the referrals were cancelled as the procedure was no longer required as determined by the physician.

The Endoscopy Services Program under the leadership and direction of the Regional Endoscopy Wait List Management Committee was successful in reducing wait times for clients referred for an urgent colonoscopy. The strategies to address the waitlist and access issues have been multi-faceted including implementing Central Intake, standardizing booking practices across both referral centers, and identifying necessary policies such as the recently approved no-show policy to address no-show rates.

WAIT TIMES FOR CARDIAC CATHETERIZATION

Cardiac catheterization, also known as coronary angiogram, is provided for residents of the province by Eastern Health. Urgent in-hospital wait times for this procedure impact length of stay in acute care at Central Health. From October 2012 to April 2013, the median wait time for urgent, in-hospital procedures at Central Health was two days with a range of 0-8 days. The median wait time for July through September 2013 was 5 days with a range of 0-10 days. From October 2012 to September 2013, there were 255 urgent, in-hospital procedures completed at Eastern Health as a result of referrals from Central Health facilities. There were an additional 36 patients who had this procedure whose home address was within the Central Health regional boundary but who were not referred from a Central Health facility. In total, for the same period, there were 634 cardiac catheterizations completed for Central Health's residents (111).

WAIT TIMES IN THE EMERGENCY DEPARTMENT

For many clients, the Emergency Department represents the 'front door' or the initial contact with the health care system. In Canada, almost 60 per cent of admissions to hospital are through an Emergency Department (20). There are 11 emergency departments operating throughout Central Health including two 24-hour emergency departments and nine callback emergency departments.

While there are no standardized Emergency Department wait time benchmarks, the *Canadian Association of Emergency Physicians* (CAEP) through its *Canadian Triage and Acuity Scale* (CTAS) guidelines, provide a reference point for ideal wait times. Depending on the severity of a client's medical condition when presenting to an Emergency Department, CTAS provides staff with guidelines on how quickly the client needs medical care.

In 2012, the Department of Health and Community Services, Government of Newfoundland and Labrador, announced a five year strategy to reduce Emergency Department wait times in the province. As part of this strategy the Emergency Department at CNRHC was selected as one of the 13 Category A sites to start implementation of the strategy. In 2012-2013, an external consultant (*X32 Healthcare*) was commissioned and a review was completed with recommendations and findings shared in August 2013 (112).

Lean methodology and tools have been employed to carry out the recommendations of the *X32 Healthcare Project* such as the 5S method of organizing work areas, reducing the various wastes, and increased visual management. The percentage of clients triaged in less than 10 minutes increased from 44 per cent before the review to 58 per cent following the changes recommended in the review. The external consultants found that the largest impact to the flow of the Emergency Department from a single project would be the implementation of a fast track service. A proposed quality improvement initiative has been developed with the goal of implementing a fast track service in the CNRHC Emergency Department staffed by a nurse practitioner and physician. Implementation of this service is expected to be realized in 2014 (112).

Central Health has supported several initiatives to increase wait time safety in the Emergency Department including, but not limited to:

- The Emergency Department at JPMRHC engages in an hourly wait room checklist and a folder system for reassessment management
- The Emergency Department at CNRHC is using a paper and label system to manage reassessments
- Emergency departments at both referral centers now use electronic triage with the ability to enter reassessment data electronically
- Emergency Departments at both referral centers use continuous video surveillance systems in the waiting rooms. Client waiting areas are visible from both the nursing station and inside the triage room to assist in monitoring

clients. This is a safety feature that aids in identifying any sudden situation that may occur in waiting areas.

The average time from arriving to the Emergency Department to seeing a physician continues to be a challenge at both CNRHC and JPMRHC. There has been some improvement in the door to triage time with the addition of a triage nurse at CNRHC. The Emergency Department at JPMRHC began electronic triage documentation in September 2013. This will allow for increased data collection and trending. A review of this Emergency Department is planned for 2014. Although triage is a routine practice in the care of clients presenting to Emergency Departments throughout the region, Central Health does not have a standardized triage practice/policy implemented across all sites.

Overcrowding in the Emergency Department continues to pose challenges (113). By utilizing Lean principles, patient safety has improved for clients in the hallways of the Emergency Departments by numbering stretchers, adding privacy curtains, and allocating dedicated staff to care for these clients. Supply carts and dedicated charting areas have also been provided (112).

In 2012, there were on average 60 patient visits per day to the Emergency Department at the CNRHC. Of the 22,000 visits in 2012, 1,884 patients were admitted which is a 9 per cent admit rate, or 5 patients per day. Currently there are no formal criteria for admission to the Emergency Department. The decision to admit is made by the consultant physician. Furthermore, there are no formal criteria established to indicate need for transfer. This high priority issue was identified in the 2013 Accreditation Report (4).

Improvements have been ongoing at rural sites, specifically with regards to AMI care. At the Green Bay Health Care Centre the Acute Myocardial Infarction (AMI) Team identified an issue related to access of timely treatment which was rooted in the registration process. A new process to increase safety and efficiency and access to services, was needed to improve the quality of care delivery. The team developed a new registration system whereby the patient is greeted by a staff member who inquires about their compliant and registers them for the appropriate service. Patients are then streamed to the appropriate treatment location and those requiring prompt treatment in the emergency department are quickly recognized and now receive their care in a much timelier manner. This new change required reorganizing of the processes in the Emergency Department and walk- in clinic as well as the roles and responsibilities of staff in several departments. The changes are currently being evaluated to ensure the change has resulted in an improvement.

CLIENT FLOW

Client flow is a challenge in many care/service areas at Central Health. This has been recognized as a challenge that has the potential to impact access, efficiency, effectiveness, and client experience. This is not a problem that is focused in a single department, but is an organizational issue. ED overcrowding, as an example, is a

system-wide challenge and its root cause is usually poor client flow (e.g. unavailability of inpatient beds, inappropriate admissions, delays in the decision to admit, delays in discharge, and lack of timely access to diagnostic services and care in the community). At Central Health, at any given time there are up to 30 per cent of inpatient beds occupied by ALC clients at the referral centers. In the community, there are long waiting lists for LTC beds which create a host of challenges and prompt complaints from clients and their families.

The Emergency Department tends to be most impacted and has undertaken some specific actions. Physicians and the leadership of the CNRHC and JPMRHC have negotiated the number of beds assigned to each service area in an effort to have better management of the beds and services. Research indicates that poor client flow often results from a mismatch between capacity and demand. By evaluating client flow data and considering all sources of demand, organizations can understand the pattern of demand. Once patterns of demand are understood, organizations can develop a strategy to meet variations in demand, reduce barriers to client flow and overcrowding (114).

Integral to solutions is the continuing education of the public and design of other options to divert clients away from the Emergency Departments. At CNRHC, in 2012, 80 per cent of Emergency Department visits were triaged at Canadian Triage Acuity Scale (CTAS) 4-5 level, this can overwhelm appropriate response to the grey area of CTAS level 3 clients (3). This percentage of low acuity clients is higher than similar sized rural hospitals. Accreditation Canada surveyors in their 2013 report to Central Health suggested that engagement of the public in this issue could be a partial solution along with developing further community options such as working with private clinics to extend hours (3). The integration of bed management for both rural sites and the referral centers requires sustained attention along with effective discharge planning processes.

The registration process at the CNRHC is currently under review. There are a number of factors that result in bottlenecks and thus problems with flow. There is currently a team assessing this situation and a statement of work has been completed to guide improvement in this area. Central Health has recently identified funding that will enable the hiring of an external consultant to guide the organization to address this area of concern.

Significant improvement work has been completed in the area of client flow in Endoscopy Services, particularly at the CNRHC, guided by the Central Health Endoscopy Services Wait Time Management Committee, with the assistance of external consultants. This work has resulted in many efficiencies being realized thus improving the quality of the service. Work is in this area continues to be ongoing.

ORTHO INTAKE & ASSESSMENT CLINIC

In 2012, the Government of Newfoundland and Labrador released *A Strategy to Reduce Hip and Knee Joint Replacement Surgery Wait Times in Newfoundland and Labrador.* The

Canadian Orthopedic Association recommends patients requiring hip and/or knee replacement surgery should wait no longer than 90 days from referral to initial orthopedic consult (wait 1) and no more than 182 days for surgery (wait 2). As a result of the provincial strategy, funding has been provided to RHAs throughout the province to develop interdisciplinary Central Intake and Assessment Clinics (OIA) to address wait times (115).

The strategy released in 2012, indicated five goals to reduce wait times (116):

- To shorten the wait time and improve the coordination of initial orthopedic assessment (wait 1) as well as the services required by patients before and after hip and knee replacement surgeries
- To improve the efficiency of the hospital services associated with hip and knee joint replacement surgeries (best practices)
- To address current backlog of patients waiting for hip and knee replacement surgeries
- To improve collection and use of wait time data for hip and knee replacement surgeries
- To reduce the number of patients who require knee and knee replacement surgeries in the long term

Central Health's Ortho Intake and Assessment Clinic opened in November 2013 and is located at JPMRHC. The clinic has a multidisciplinary team to assess clients to determine whether they are appropriate candidates for surgery, to provide education and support to patients to prepare them for surgery, and to improve coordination of waitlists for hip and knee joint replacements in the region. Clinic staff includes a part-time project lead/OT position (joint position), a full-time physiotherapist, a part-time nurse, a part-time social worker, and a part-time clerical support position.

SAFETY

Central Health is committed to integrating safety into all aspects of service delivery for clients in the central region, as well as for staff and visitors. In healthcare, patient safety and worker safety has emerged separately. However, safety for clients and staff is inextricably linked (117). Efforts have been made at Central Health to integrate both patient safety and worker safety, however for this to be most effective it must be linked at a strategic level.

The Baker et al. study of 2004 estimated that 7.5 per cent of clients admitted to acute care hospitals in Canada experienced one or more adverse events (118). The study also concluded that 36.9 per cent of those adverse events were judged to be highly preventable. The impact of adverse events on staff can be significant. Healthcare providers have been referred to as the second victims of adverse events given the trauma experienced by some providers following such an event. At Central Health there is a commitment from the board and senior leadership to make safety a priority. In this section of the document, there are numerous initiatives and information

detailed on how Central Health is promoting a culture of safety and monitoring safety issues throughout the organization.

BOARD COMMITTEES

The Board of Trustees has made great strides in supporting a culture of safety within Central Health through the implementation of board committees developed solely for the purpose of quality, risk and patient safety oversight including the Board Performance Improvement Committee (BPIC) and its subcommittees, Board Patient Safety Subcommittee (BPSS) and Quality Improvement Oversight Committee (QIOC). The role of BPSS is to ensure that Central Health has a comprehensive plan to address the priority issues affecting patient safety. The committee is responsible for the development of a comprehensive client safety plan for the organization. The plan focuses on patient safety with some indicators linked to worker safety, recognizing that worker safety is necessary for patient safety.

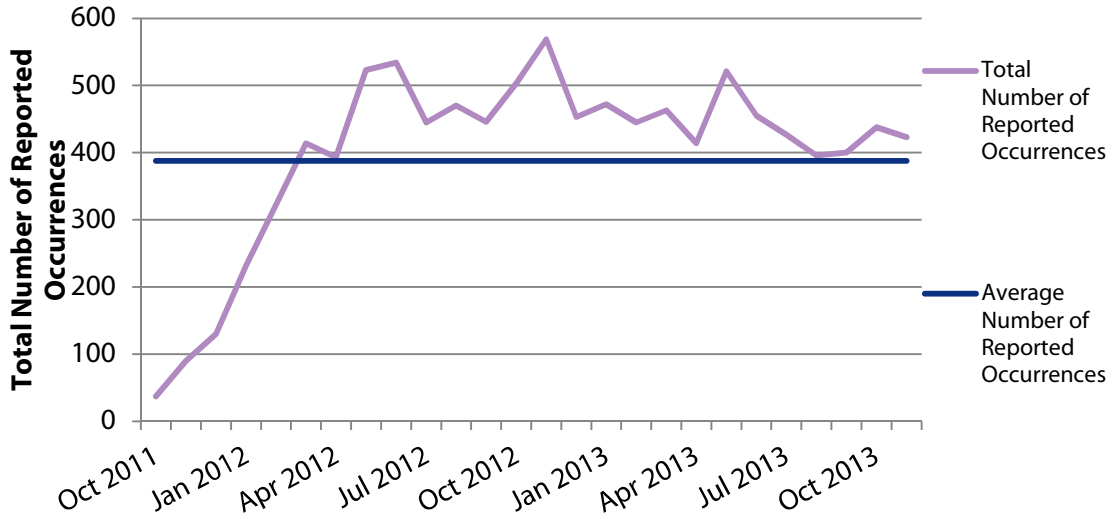
CLINICAL SAFETY REPORTING SYSTEM (CSRS)

A well-established Occurrence Reporting Policy is in place to meet the recommendations of the Cameron Report and the Report of the Task Force Report on Adverse Health Events, specifically pertaining to adverse health events management (118) (119).

In 2011-2012, a provincial occurrence reporting system, the Clinical Safety Reporting System (CSRS), was implemented at Central Health. CSRS trainers from the Corporate Improvement Department provided education to over 2500 employees (directors, managers, physicians, frontline staff) pertaining to CSRS, occurrence reporting, patient safety, and the importance of an organizational culture of safety. Occurrences and close calls are managed by managers or approvers throughout the organization. CSRS is monitored to ensure occurrences are investigated in a timely manner and the appropriate follow-up actions taken for high severity occurrences. CSRS is also monitored for trends in reporting. Historically the top three types of occurrences reported by staff of Central Health have been falls, laboratory occurrences, and medication. Most recently, the number of medication occurrences has increased slightly making it the second most reported occurrence. Falls are consistently the number reported occurrence in CSRS. As noted earlier, Central Health has a comprehensive falls prevention strategy. Safety and security is also a frequently reported occurrence that requires further assessment to determine the current state and desired state, along with the identification of gaps.

Fig. 54 below shows the total number of occurrences and close calls reported monthly since CSRS implementation in October 2011. Central Health employees report approximately 387 occurrences per month. On average, 15 per cent of reported occurrences are close calls indicating no harm to the client involved. About 10 per cent of reported occurrences are considered adverse events indicating a degree of harm experienced by the client and approximately 65 per cent of occurrences reach the client but do not cause harm (50).

Fig. 54: Central Health Total Number of Reported Occurrences October 2011 – November 2013



Source: Central Health Corporate Improvement Department (2013)

In May 2013, NLCHI completed a provincial evaluation of the implementation of CSRS. At Central Health, it was noted that there was a 25 per cent increase in reported occurrences post implementation when compared to data from the previous year (120). One of the expected outcomes of the CSRS implementation was increased reporting. Central Health was the only health authority that seen an increase in reporting post-implementation. Improved occurrence reporting suggests employees feel comfortable reporting patient safety events. Not only does this increase signify improved occurrence reporting, it also shows a growing patient safety culture throughout Central Health.

RISK ASSESSMENT CHECKLIST PROGRAM

Central Health is currently participating in the Risk Assessment Checklist Program, provided through Central Health's insurer, HIROC. This tool is designed to identify areas of risk and potential safety issues throughout the organization. The Risk Assessment Checklist Program is comprised of a three year cycle, with 2013 being year one. The main objectives of the program are to focus on top risks, focus on top mitigation strategies, and increase the impact on patient safety and decrease adverse events and claims (50).

The top three risks identified by the organization with support from HIROC were related to managing medications and obstetrical services. As noted earlier, obstetrical services are implementing the MORE^{OB} program which is a part of the organizations strategy to improve patient safety and reduce risk in this area. Medication management, another area of elevated risk, has many components. There are a number of initiatives underway to improve medication management i.e. Medication Reconciliation (50).

FAILURE MODE EFFECT ANALYSIS (FMEA)

To improve safety, Central Health uses the prospective analysis technique FMEA to examine processes within Central Health in an effort to identify areas for improvement. This analysis uses a multidisciplinary project review team to examine a process or procedure, identify all steps involved, and isolate where a potential breakdown or failure of the system could occur. The use of this system approach to risk management requires that preventive strategies be implemented in relation to the assigned risk priority, which identifies the areas of greatest concern (50).

In 2011, the FMEA team along with the manager of renal services completed a FMEA on the admission of dialysis clients to JPMRHC for an acute medical condition. To ensure safe and quality care is provided to these clients and is based on best practice, the FMEA team developed a pathway of care including standardized physician orders and a nursing intervention plan. The implementation of the order set and care plan is in progress (50) .

In 2012, the FMEA team completed a prospective analysis on the referral of clients from rural sites to the referral sites for emergent diagnostic imaging examinations during after-hours and weekends. A standardized pathway of care was developed which was detailed in a policy and is currently being reviewed by physicians. Embedding the developed pathway will require policy approval and communication to all involved stakeholders. This is expected to be completed by early 2014 (50).

The FMEA chosen for 2013 is a prospective analysis of the process for admission of an individual with sleep apnea to ensure Central Health is providing safe and quality care at the right time and in the right place. The FMEA team will identify process problems and determine system improvements to eliminate any potential failures before reaching the patient (50).

QUALITY CASE REVIEWS (QCR)

Central Health also conducts retrospective reviews such as the root cause analysis on occurrences that result in serious/severe harm to clients. This retrospective approach is utilized by a team of professionals who identify root causes and suggest recommendations for areas of improvement (50).

Implementation of QCR's has led to a greater understanding and learning as to why client harm occurs and how to prevent it from recurring. Development and approval of guidelines for QCR's over the last year has led to improvements in Central Health's quality assurance process. Precise criteria in these guidelines have created a more inclusive process to improve the delivery of safe, quality care (50).

Leaders and physicians continue to be engaged in the process. When a review is completed, senior leadership approves recommendations and the case is presented to the Board of Trustees. The outcome of the review and recommended actions are shared with the client and/or family and relevant Central Health employees. The

implementation of the recommendations is monitored to ensure success in enhancing patient safety and prevention of recurrence (50).

SAFER HEALTHCARE NOW INTIATIVES

Safer Healthcare Now (SHN) is the largest patient safety campaign in Canadian history and is the flagship program of the Canadian Patient Safety Institute. To date, Central Health has implemented five SHN initiatives. Some are fully implemented and others are still in progress in various stages throughout the region. Data is being collected quarterly on implemented initiatives and shared with key stakeholders. Results are measured against set goals and results that do not meet the established goals are investigated and changes made or recommended for improvement (50).

At Central Health, Safer Healthcare Now initiatives implemented include:

Surgical Site Infection (SSI)
The goal of the SSI initiative is to optimize the prevention of post-surgical infections as they are the most common health care associated infection among surgery clients. The SSI initiative has been implemented at JPMRHC and CNRHC for several years. Quarterly data is collected on various surgeries and results shared and used for continuous improvement (121). Targeted surveillance, or monitoring, is performed and reported on the following surgeries: c-sections, bowel surgeries, inguinal hernia repair with mesh at CNRHC and c-sections, bowel surgeries, inguinal hernia repair with mesh, and total abdominal hysterectomies at JPMRHC. At present, efforts are underway to reduce SSI rates for bowel surgeries at CNRHC.

Acute Myocardial Infarction (AMI** or heart attack**)
The AMI initiative involves the implementation of treatment protocols to ensure that reliable, evidence-based care is provided to AMI clients. The goal of the AMI initiative is to reduce the mortality of clients experiencing a heart attack who present to an emergency department. The AMI initiative is partially implemented in all applicable emergency departments in the region and fully implemented in several facilities. As a part of improving AMI care, AMI teams are working on implementing a medical directive for clients who present to the emergency department with suspected AMI symptoms in order to expedite care (122).

Venous Thromboembolism (VTE) Prevention
The VTE initiative aims to ensure that clients are assessed for their risk of VTE upon admission and prescribed VTE prophylaxis, or blood thinners, if necessary. VTE is a collective term used to describe the presence of a blood clot or pulmonary embolism and is one of the most preventable adverse events experienced by clients in the health care system. The VTE initiative is fully implemented in all acute care areas in Central Health. A regional policy/guideline has been put in place to achieve a standardized, reliable process (123). Quarterly auditing occurs in all acute care units throughout Central Health to monitor compliance with elements of the VTE initiative. Over time, there has been an improvement in compliance (50). Monitoring will continue until this evidence-based practice is completely embedded.

Ventilator Associated Pneumonia (VAP) Prevention
The VAP prevention initiative involves the implementation of four evidence-based elements known to reduce VAP and therefore mortality associated with VAP. This initiative has been implemented in Central Health for a number of years at CNRHC and JPMRHC. Since implementation, the rate of VAP has decreased dramatically in both Central Health referral centers (124).

Medication Reconciliation (Med Rec)
The purpose of this initiative is to reduce adverse drug events by developing a formal process to review and transfer medication information of clients at transitions of care (admission, transfer, and discharge). Central Health has made progress with this initiative; however an electronic solution is needed to move forward. This will require a substantial investment of resources. In May 2013, Accreditation Canada noted that Central Health needs to commit to accelerating the organizational plan for full implementation of Med Rec. At present, Med Rec is implemented upon admission, transfer and discharge in all 11 LTC facilities in the region. The initiative is also implemented to include admission, transfer and discharge in select acute care areas. Central Health is now working on a comprehensive implementation plan to spread Med Rec to all applicable areas in the region (125). Med Rec must be a priority for Central Health to improve patient safety with respect to medication management and to meet the Required Organizational Practice (ROP) tests of compliance for 2017 Accreditation.

PHARMACY

Central Health utilizes a Pharmacy and Therapeutics (P&T) Committee review process to establish protocols for limiting and standardizing medications throughout the organization. The Pharmacy QI Team also reviews high concentration medications, "look alike, sound alike" medications, and has published a list of prohibited abbreviations to all units and in the community (50). In addition, Central Health has adopted the inclusive list of the abbreviation, symbols and dose designation identified on the Institute of Safe Medication Practice (ISMP) Canada's "Do Not Use List". Education and distribution of information has occurred across the region. The committee also reviews CSRS occurrence data on a quarterly basis for the purposes of monitoring, trending, and actions required. To ensure safety is maintained throughout all areas of medication administration, the Pharmacy Department are engaged in a variety of initiatives including, but not limited to (126):

Tele-pharmacy
Utilizing Telehealth technology, pharmacists are able to consult with remote or rural health care centers to provide pharmaceutical support and intervention. During the 2013 Accreditation Canada Survey, Tele-pharmacy was awarded national recognition for this *Leading Practice*.

Falls Prevention
Pharmacy plays an important role in Central Health's Falls Prevention Program. The pharmacy receives referrals after a client experiences a fall. Medication history is then reviewed to ensure a change in drugs was not the root cause of the fall.

Ask. Listen. Talk.
Central Health is involved in the Canadian Patient Safety Institute's campaign Ask. Listen. Talk. This campaign encourages staff and clients to speak up if they do not understand any pertinent medical information. This is especially important in relation to medication orders (127).

Medication Reconciliation *(see previous information Safer Healthcare Now)*

Dangerous Abbreviations
The pharmacy is participating in an auditing process to track the use of dangerous and prohibited abbreviations in medication orders. There has been a significant reduction in the use of prohibited abbreviations as a result of the awareness, education and auditing.

Antimicrobial Stewardship
Antimicrobial stewardship is the practice of minimizing the emergence of antimicrobial resistance by using antibiotics only when necessary, by selecting the appropriate antibiotic, route of administration, and dose schedule to optimize outcomes while minimizing adverse effects.

Effective January 2013, Central Health was required to establish an Antimicrobial Stewardship Program as this was a new ROP identified by Accreditation Canada. In 2012, a Regional Antimicrobial Steering Committee was developed to focus on the required organization practices.

BARIATRIC PATIENT SAFETY

Approximately 10 per cent of the general population is morbidly obese. There are a number of challenges with respect to providing safe patient care for the bariatric client at Central Health: staff education/preparedness/expertise, resource availability, availability of equipment, discharge planning and lack of proper infrastructure planning (87).

At the present time, Central Health professionals respond to bariatric patients as they present, services are reactive and ad hoc for an individual client as opposed to there being a planned approach for this specific population. Consideration is being given to the development of a Bariatric Steering Committee to address this area of unmet need at Central Health.

BED MANAGEMENT

In 2012, in response to Health Canada's Notice to Hospitals regarding risk of entrapment of patients in hospital beds, Central Health created an inventory of the beds that put clients at potential risk for entrapment. Facilities that were equipped with these beds were put on alert and advised to implement recommended strategies to reduce bed entrapment. Central Health proceeded to purchase standardized beds and mattresses to ensure clients are provided with safe, age friendly equipment. Beds that posed the greatest risk for entrapment were taken out of service (50).

To formalize and continue this work, a terms of reference was developed for a Bed Management Committee. This committee will develop a bed management plan to mitigate risks associated with bed entrapment in acute and LTC settings. Furthermore, this committee will recommend that sites purchase a bed system measurement tool and devise a plan to do regular entrapment assessments on all hospital beds (50).

PATIENT SAFETY LEADERSHIP WALK ROUNDS

Patient Safety Leadership Walk Rounds demonstrate to staff senior leadership's commitment in building a culture of patient safety (128). The walk rounds are a process that fosters improved communication and teamwork around safety. The team is comprised of a member of the Senior Leadership Team or the Director of Health Services in rural areas, the Patient Safety Officer or designated scribe, the director/manager of the department/unit and front-line employees. These sessions provide an opportunity to discuss and facilitate an open atmosphere to share patient safety information (50).

The results of the Accreditation Canada's Patient Safety Culture Survey showed the most significant improvement was in the area of support from senior leadership for a safe and just culture. Walk rounds allow leaders to be visible throughout the organization therefore exemplifying Central Health's commitment to a culture of safety (50). The target of forty (40) walk rounds per year has been reached since implementation in 2010 (50).

SITUATION, BACKGROUND, ASSESSMENT AND RECOMMENDATION (SBAR)

Communication is noted as a root cause in 60 per cent of adverse events in healthcare. At Central Health, Quality Case Review teams have recommended the implementation of a verbal communication tool to improve communication among healthcare providers. Situation, Background, Assessment and Recommendation (SBAR) is an easy to remember verbal communication tool used to enhance communication between team members.

SBAR is an evidence-based framework that consists of standardized prompt statements or questions within four categories, to ensure employees are sharing

concise, accurate and pertinent information. It allows employees to communicate assertively and effectively, reducing the need for repetition. It can also help develop teamwork and foster a culture of safety (50).

The tool can be used when calling a physician, transferring a client between health providers, communicating with different health providers such as a nurse, paramedic, and physiotherapist or during a shift change in the maintenance department or on a nursing unit. SBAR is currently being implemented throughout Central Health in nursing services. In 2014, education sessions will continue with other professional groups throughout the organization. An organizational policy with respect to the use of SBAR will be developed in 2014 (50).

SBAR **Verbal Patient Report**
S → Situation
Describe briefly the situation. Give a clear, concise overview.
B → Background
State the medical history pertinent to current situation.
A → Assessment
Provide a clinical analysis. What is the problem?
R → Recommendation
Suggest what is required/ recommended for continued care.

Source: Central Health Corporate Improvement Department 2013

SAFE SURGERY CHECKLIST

The Safe Surgery Checklist (SSCL) is a communication tool utilized within the intraoperative setting consisting of a briefing, time out and debriefing (129). This tool, which is an Accreditation Canada ROP, was fully implemented in the operating rooms at JPMRHC and CNRHC on October 1, 2012. The appropriate surgical team members, including the registered nurse (RN), operating room technologist (ORT), surgeon or physician designate, anesthesiologist when applicable, and the client when appropriate, will complete the checklist and the three phases are documented in the nurse operative record (50).

Evaluation of the completion of the three phases of the checklist is conducted each quarter and reported on the Board of Trustees Scorecard. Recently, Central Health achieved an overall compliancy rate of 86 per cent. Areas for improvement are identified after each quarterly audit and are communicated to the physician and nursing groups. The policy for Safe Surgery Checklist has been drafted and is currently under review by the physician leadership. An evaluation of the implementation is currently underway given the checklist has now been in place for just over one year (50).

INFECTION PREVENTION AND CONTROL (IPAC)

The Infection Prevention and Control Department at Central Health has four dedicated positions including a regional coordinator and three infection control practitioners in the areas of Gander, Grand Falls-Windsor, and Lewisporte (130).

Infection Prevention and Control is a critical and vital part of patient safety and quality improvement. There have been significant improvements in the surveillance of Healthcare Associated Infections and Hand Hygiene Compliance over the last few years (130).

HAI (Healthcare Associated Infections)

Central Health is an active participant in the provincial surveillance of *Methicillin Resistant Staphylococcus Aureus (MRSA)* and *Clostridium Difficile (C-Diff)*. Rates of colonization and infection are monitored and reported quarterly by means of a provincial database. These rates are monitored quarterly and data is collected by means of microbiology reports, IPAC consults, antibiotic utilization reports and community surgical site infection referrals.

Hand Hygiene Compliance/Education

Central Health adopted *Canada's Hand Hygiene Audit Toolkit- Stop! Clean Your Hands* in 2009-2010 (131). All facilities have selected Hand Hygiene Auditors and delivered education in the auditing process. Hand hygiene audits are required annually but completed on a rotating basis thereby providing hand hygiene compliance rates per quarter. Hand hygiene compliance is extremely important in the reduction of organism transmission and overall HAI rates. Employees of Central Health are required to complete an online Hand Hygiene Module annually, as part of the hand hygiene education process. Over the past year the IPAC team has traveled to sites throughout the region for a Hand Hygiene Blitz. This endeavor involved the public as well as employees in hand hygiene education.

Outbreak Management

IPAC engages Infection Prevention and Control Nurse Liaisons at each rural facility. Central Health has outbreak management policies in place and best practice interventions are followed during an outbreak to ensure quick resolution and minimal negative client outcomes.

EMPLOYEE WELLNESS/HEALTH AND SAFETY

The Employee Wellness/Health and Safety Division, established in 2005, is an employee-focused division of the Employee Relations Department. Its objective is to facilitate a safe work environment and healthy lifestyle for all employees, while meeting the organization's strategic goals. Central Health's Employee Wellness/Health and Safety program contributes to the health and safety of its employee population through pre-employment health assessment. This includes immunization against transmittable diseases including influenza. In 2012, 62 per cent of Central Health staff received the influenza vaccine (5).

Employees are encouraged to contribute to the development of a safety culture through participation in and with their Occupational Health and Safety Committees, and to avail of services intended to support their health and attendance at work through accident and illness prevention. Employees can avail of assistance to return to work for either work or non-work related illness or injury, supported through an Employee and Family Assistance Program that recognizes the impact of an employee's personal problems on their work life (5).

Employee Wellness/Health & Safety Division tracks and trends various indicators relating to work-related injuries/illness and this information is communicated throughout the organization on an annual basis. The following information provides a summary of the indicators tracked for work-related injuries/illnesses and early and safe return to work.

Table 37: Early & Safe Return-to-Work Summary

Early & Safe Return-to-Work – Summary 2013		
Number of Lost Time Claims		147
Number of Lost Time Claims requiring ESRTW Programming		37
Top 5 Injury by Occupation		
1. LPN	31 %	Increase by 3%
2. PCA	16 %	Decrease by 4%
3. Domestic Worker	12 %	Decrease by 4%
4. RN	15 %	Increase by 5%
5. Food Service Worker	6 %	Decrease by 2%
Top Five Causes of Injury		
1. Overexertion	26 %	Decrease by 9%
2. Bodily reaction	7 %	Decrease by 10%
3. Other body reaction & execration	6 %	Decrease by 7%
4. Fall from same level (Slip and Fall)	11 %	Increase by 1%
5. Repetitive motion	6 %	Decrease by 3%
Top Five Injury by Body Type		
1. Multiple body parts	18 %	Decrease by 17%
2. Back	34 %	Increase by 4%
3. Shoulder	16 %	Increase by 4%
4. Arm	6 %	Increase by 1%
5. Neck	3 %	Decrease by 1%
***Average* Number of Weeks before starting an ESRTW Program**		19.45
***Average* RTW Plan Duration (Weeks)**		8

Some recent initiatives within the Employee Wellness/Health and Safety Division include (5):

Code White Development
Employee Wellness is partnering with Health Emergency Management to implement Code White in all facilities. In addition to assisting with the development of site specific codes, a training plan has been developed which includes two enhanced knowledge modules, 5-Person Restraint and Behavioral Emergency Medication. The Code White identifies key employees at each site to be part of a Code White Team. This initiative is part of Central Health's comprehensive Violence Prevention Program.

PRIME
Since 2008, Central Health has achieved the objectives of the Workplace Health, Safety and Compensation Commission's PRIME incentive program. This is a demonstration of the success of Central Health's Occupational Health and Safety (OH&S) Program.

Occupational Health and Safety
Directives, issued by Government Services, are mandatory processes that must occur within an institution in order for the institution to maintain a safe and stable working environment. Central Health is mandated to follow specific processes for its directives to ensure proper mitigation of risks to clients, employees, and property. The following list provides an overview of directives currently being addressed by Central Health (5):

- Compressed Gas Safety (Regional Directive – Ongoing)
- Working Alone Procedures (Regional Directive – Ongoing)
- Hazardous Medications (Regional Directive – Ongoing since 2009)
- Chemical Safety (Regional Directive – Ongoing)
- Asbestos Program Management (Directive for 10 specific sites – Ongoing)

As noted earlier, worker safety and patient safety are linked. The risks identified above that are the subject of current directives, for the most part, poses safety concerns for both workers and clients.

PATIENT SAFETY EDUCATION PROGRAM

The Patient Safety Education Program (PSEP) aims to advance the shift to patient centered, systems-based care through the education of health care professionals using the PSEP curriculum. In November 2012, the development of a PSEP trainer team was the first step at Central Health in facilitating and teaching peer health care professionals the patient safety concepts to foster patient safety thinking and practice to enhance safe health care delivery. Seventeen employees in Central Health have received the PSEP training and are guided by a detailed work plan to disseminate the curriculum. The PSEP curriculum is being utilized to address the themes identified in the 2012 Patient Safety Culture Survey (50).

PATIENT SAFETY DAYS

Central Health's third annual Patient Safety Days event was held on October 29, 2013 in Gander and October 30, 2013 in Grand Falls-Windsor. It was a great success with over 90 employees attending each day. Employees learned how their peers are making patient safety a priority every day (50).

One of the many highlights of this patient safety event was the recognition of Central Health employees for their efforts in actively enhancing patient safety in three different areas: good catches; safe practices; and prevention of patient harm. Over 25 employees were recognized for their contributions to patient safety and were awarded certificates for either a good catch or safe practice.

HEALTH EMERGENCY MANAGEMENT (HEM) PROGRAM

In 2006, Central Health established a Health Emergency Management (HEM) Program. The HEM program was developed in accordance with the nationally recognized "all-hazards approach" to emergency management ensuring consistency with the emergency management activities delivered by Health Canada, the Public Health Agency of Canada, and the health departments of other provinces and territories (61).

Central Health's HEM Coordinator works closely with the *Regional HEM Advisory Committee* who supports and oversees the development and ongoing maintenance of a comprehensive Health Emergency Plan for the Central Health. In keeping with the *Emergency Management Framework for Canada* Central's HEM team utilizes an *All-Hazards Emergency Management Approach*. This approach emphasizes the importance of identifying all potential risks and impacts, natural and human-induced (intentional and non-intentional) to ensure that decisions made to mitigate one risk do not increase vulnerability to, and the likelihood of, other risks occurring[91]. The *All-Hazards Emergency Management Approach* addresses the whole spectrum of emergency preparedness including pandemic influenza (132).

The members of the HEM Program at Central Health engage in a variety of emergency preparedness activities; assist in the development of policy related to emergency management; and contribute to the sustainability of a comprehensive HEM plan. The following items highlight some of the activities and initiatives currently in progress or completed since the last scan (61):

- Regional Emergency Management Framework development
- Ongoing Universal Code development
- Pandemic Influenza Plan
- Adverse Severe Weather Events Framework development
- Ongoing Training and Education
- Emergency Exercises and Evaluation

APPENDIX A – SUMMARY OF ENVIRONMENTAL SCAN INPUT QUESTIONNAIRES

In the fall of 2013, Central Health's senior leaders, directors, managers, physicians and frontline employees were engaged to provide input into the development of the 2013 Environmental Scan. Central Health also engaged community partners and municipalities, who represent citizens and clients in the region, as these groups have insight into the health needs of the population.

The Corporate Improvement Department developed a series of questionnaires which were available in an online or paper format. Questionnaires were developed for directors, managers, physicians, frontline employees, municipalities, service districts, and community partners such as schools or other not-for-profit organizations (i.e. YMCA).

The input questionnaires distributed to Central Health's senior leaders, directors, managers, physicians and frontline employees, included the following questions:

1. Central Health is committed to providing quality services. Quality services are services that are provided in a safe, effective, client-centered, timely, and efficient manner. How can we better provide services that are:
    a. SAFE? (keeping people safe)
    b. EFFECTIVE? (avoiding underuse or overuse of services)
    c. CLIENT-CENTERED? (putting clients and families first)
    d. TIMELY? (reducing waits and harmful delays in care)
    e. EFFICIENT? (making the best use of valuable resources)

2. What are the biggest challenges that face Central Health in fulfilling its mandate of "healthy people and healthy communities"?

3. Given Central Health's mandate of "healthy people and healthy communities", what do you think the three strategic directions should be for 2014-2017?

4. Do you have any additional comments, information, or ideas you would like to share at the time with respect to the completion of the Environmental Scan?

These questions were designed to allow respondents to provide their opinions and perceptions regarding the organization's overall directions and approach to delivering care in the central region. The questionnaires were analyzed and results are noted below.

It is noteworthy that the responses of all groups (i.e. senior leaders, directors, managers, physicians, and frontline employees), despite the level of the respondent in the organization, for the most part, were consistent. In other words, whether the respondent was a director or frontline employee, the overall responses and trends in the responses, were extremely similar.

Senior Leaders, Directors, Managers & Frontline Staff Input

The tables below show the top five themes for each question posed. These responses represent the senior leader, director, manager, and frontline employee groups (N=140).

1a. How can we better provide services that are *SAFE?*

Response	Percentage (%)
✓ *Expand human resources (i.e. hire more staff)*	16.6
✓ *Engage in quality improvement processes (i.e. Med Rec, audits, QCR, PDSA, CSRS) to monitor care and identify areas for improvement*	15.6
✓ *Improve training of staff (i.e. up to date on policies, procedures, availability of resources, etc.)*	14.9
✓ *OH&S, employee wellness, physical as well as psychological*	13.5
✓ *Provide appropriate equipment and assistive devices (i.e. ambulance, ensure buildings are wheelchair accessible)*	8.3

1b. How can we better provide services that are *EFFECTIVE?*

Response	Percentage (%)
✓ *Standardize practice and procedure (i.e. screening process)*	23.9
✓ *Monitor service usage; decrease waste*	14.0
✓ *Educate public (i.e. OPD vs. ER services) and improve communication with clients*	10.4
✓ *Provide appropriate public health services in the community (i.e. PT, after hours clinics)*	9.6
✓ *Clearly outline departmental and management responsibilities (i.e. acute care)*	9.0

1c. How can we better provide services that are *CLIENT-CENTERED?*

Response	Percentage (%)
✓ *Involve clients and families in their care/self-management*	22.7
✓ *Provide the most appropriate services for the population (i.e. walk-in clinics, primary healthcare, cardiac care, etc.)*	14.2
✓ *Educate staff on importance of respectable interactions with patients*	12.0
✓ *Involve clients on committees; ask for feedback (i.e. surveys)*	10.7
✓ *Educate clients (i.e. procedures, consent, documentation, etc.)*	7.9

1d. How can we better provide services that are *TIMELY?*

Response	Percentage (%)
✓ *Improve wait list management; increase responsibility*	17.6
✓ *Standardize and streamline services/programs (i.e. ER, Lab Services)*	16.2
✓ *Expand human resources (i.e. more staff)*	16.1
✓ *Allocate resources effectively (human and financial)*	9.5
✓ *Clarify decision-making processes; develop clears lines of accountability*	7.4

1e. How can we better provide services that are *EFFICIENT?*

Response	Percentage (%)
✓ *Allocate human resources effectively including positions*	15.5
✓ *Standardize and streamline services and programs (i.e. process mapping)*	12.1
✓ *Educate and train staff appropriately*	12.1
✓ *Foster a team approach emphasizing clarity of roles and responsibilities*	9.5
✓ *Trending analysis of patient data for evaluation*	8.6

2. What are the biggest challenges that face Central Health in fulfilling its mandate of "healthy people and healthy communities"?

Response	Percentage (%)
✓ *Budget, finances, money constraints, cut backs*	19.7
✓ *Lack of education for clients/public on healthy living, health promotion, chronic disease, healthy aging*	18.4
✓ *Provide the most appropriate services for the population (i.e. growing number of seniors)*	13.1
✓ *Geography – program and service delivery in a challenging area*	9.2
✓ *Lack of standardization in and between departments/programs; competing priorities*	8.5

3. Given Central Health's mandate of "healthy people and healthy communities", what do you think the three strategic directions should be for 2014-2017? (Currently Central Health's strategic goals for 2011-2014 are Access to Services, Healthy Aging, and Quality & Safety)

Response	Percentage (%)
✓ *Chronic disease self-management/ health promotion/health living*	17.0
✓ *Quality and safety*	16.0
✓ *Access to services (i.e. decreased wait times)*	15.5
✓ *All current priorities are important and should not change*	13.8
✓ *Provision of the most appropriate community health services (i.e. a holistic approach)*	11.8

Physician Input

Specific input was solicited from the physician leadership groups at the Medical Advisory Committee (MAC) meetings. This input included feedback on what the physicians thought were the greatest challenges facing Central Health and what the 2014-2017 Strategic Directions should be for the organization. Physician input is provided in the following table.

Table: Central Health Physician Input – Challenges and Directions

Challenges	***Directions***
✓ *Lack of long term care beds* ✓ *Lack of human resources (i.e. lack of staff)* ✓ *Access to care and long wait times* ✓ *Lack of financial resources* ✓ *Lack of 'healthy' community programs/activities* ✓ *Chronic disease management* ✓ *Utilization of beds for medically discharges and ALC patients*	✓ *Patient safety and quality* ✓ *Healthy aging (more long term care beds and programs)* ✓ *Fiscal responsibility* ✓ *Residential/community support* ✓ *Improved collaboration with internal and external stakeholders* ✓ *Improved internal communication* ✓ *Wait time management* ✓ *Access to long term care beds and services* ✓ *Improve services for chronic conditions*

In addition to the feedback solicited at the MAC meetings, the physician group in Central Health was engaged to provide input with use of a questionnaire. A paper questionnaire was sent to every physician and the electronic version was later sent to the Chiefs of Staff/Service. Overall, the response rate for the physicians input questionnaire was very low. The following responses were provided by the physicians who did reply:

- Diagnostic services and specialist referral pathways are OVERUSED and may be alleviated with stricter criteria and standards
- Accessibility (infrastructure improvement needed, i.e. ramps and automatic doors)
- Stop with new forms and software
- More staff, retention of staff and increased availability of equipment
- Better relationships between facilities needed
- LTC clients are using up acute beds (waiting for other options, not good lifestyle for LTC patient and decreases available beds for acute care patients)

The following were identified as required strategic directions:

- Better prevention strategies
    - Primary instead of tertiary care
    - Promotion of patient self-care
    - Help seniors stay at home or in senior homes (support out of hospital)
    - Education on available resources and healthy lifestyle
    - Look at longer-term fixes instead of short-term fixes

- Compensate for areas in short supply
    - Provide support to prevent burnout of health care providers
    - More Canadian-trained grads needed – IMGs also want to work with Canadian-trained doctors and some departments have only IMGS

- Improve working relationships

Community Partners and Municipalities/Service District Input

Input was solicited from a variety of community partners and municipalities. This input included feedback on what these groups thought were the global topics for Central Health to consider for the next strategic directions. Feedback was received from a total of 34 townships and community partners including:

- *Canadian Cancer Society*
- *Compassion HomeCare Inc*
- *Belleoram*
- *Town of Robert's Arm*
- *Pleasantview Manor*
- *Home Care Agency*
- *Twilight Manor, Embree*
- *Harbour Breton*
- *Burlington*
- *Northern Arm*
- *Brighton*
- *South Brook*
- *Local Service DIstrict of Jackson's Cove, Langdon's Cove and Silverdale*
- *Town of Point Leamington*
- *Tizzard's Harbour Local Service Area*
- *Town of Grand Falls-Windsor*
- *Avoca Collegiate*
- *St. Alban's*
- *Advanced Education and Skills*
- *RCMP Gander*
- *Cottrell's Cove Academy*
- *Provincial Homecare Agency*
- *Canadian Red Cross*
- *Leading Tickles Primary*
- *CARE Transition House*
- *Little Bay, NL*
- *Triton*
- *Millertown*
- *Gaultois*
- *McCallum*
- *Springdale*
- *Smith's Harbour*

The input from these groups regarding global topics that need to be addressed by Central Health can be summarized into the following themes:

- ***Healthy Living – Healthy Aging***
    - Healthy aging for seniors
    - Prevention of obesity/inactivity (especially in youth/children)

- ***Mental Health & Addictions***
    - Better services, better education (for staff dealing with patients with this population)

- ***Transportation***
    - Transportation to medical appointments (and other health-related appointments) – especially for seniors

APPENDIX B – PROVINCIAL GOVERNMENT STRATEGIC DIRECTIONS 2014 - 2017

Newfoundland Labrador

Government of Newfoundland and Labrador
Department of Health and Community Services
Office of the Minister

Mr. Kevin Manuel, Acting Board Chair
Board of Trustees
Central Health
P. O. Box 425
Lewisporte, NL
A0G 3A0

NOV 14 2013

Dear Mr. Manuel:

Re: 2014-17 Strategic Planning

As you know, the *Transparency and Accountability Act* requires entities reporting to the Minister of Health and Community Services to table a multi-year performance-based plan in the House of Assembly every three years. Given entities are now functioning in the third and final year of the 2011-14 planning cycle, I am writing to advise that Central Health will be required to table a new Strategic Plan (2014-17) no later than June 30, 2014.

I also want to take this opportunity to provide you with an enclosed copy of the Provincial Government's new Strategic Directions. Strategic Directions are intended to guide the development of your new Strategic Plan and were developed based on a review of all recent Government commitments. They articulate desired outcomes, and can often only be achieved through coordinated action between the Provincial Government, Regional Health Authorities and other entities.

In this regard, I am requesting that the enclosed Strategic Directions be considered as part of the strategic planning process at Central Regional Health Authority and that they be reflected, as appropriate, in your Strategic Plan, Operational Plan and divisional work plans.

Lastly, I want to advise that prior to tabling your Strategic Plan in the House of Assembly, your draft Plan must undergo various stages of internal government review to ensure continued success in meeting legislated timelines. While the specific time-lines and dates for these review processes have not yet been finalized, they will be communicated to you in the near future. Should you have any questions or concerns regarding these processes, please contact Mr. Seamus Breen, Director of Planning and Evaluation, via email at **SeamusBreen@gov.nl.ca** or via telephone at: 709-729-6866.

Thank you for your continued cooperation with Government's strategic planning process, and I look forward to reviewing your 2014-17 plan.

Sincerely,

Susan Sullivan

SUSAN SULLIVAN
Minister

c.c. Bruce Cooper
Karen Stone
Seamus Breen
Rosemarie Goodyear

P.O. Box 8700, St. John's, NL, Canada A1B 4J6 t 709.729.3124 f 709.729.0121

Annex A

STRATEGIC DIRECTIONS 2014-17

Strategic directions are the articulation of desired physical, social, or economic outcomes and normally require action by or involvement of, more than one government entity. These directions are generally communicated by government through platform documents, Throne and Budget Speeches, policy documents and other communiqués. They summarize the outcomes desired for the health sector and are communicated to entities that plan and report in collaboration with the Department. The directions and focus areas related to the health and community services sector for the planning period 2014-17 are as follows:

Strategic Direction 1

Title: Population Health

Outcome: Strengthened population health and healthy living

Population health refers not just to the health "status" of the population, but to the ability of people to adapt and respond to various aspects of life. Health is affected by many factors such as social, economic, physical and environmental conditions. A population health approach encompasses a range of services and supports that can help individuals, families and communities experience the best outcomes possible.

Initiatives that focus on social and emotional well-being, the prevention of illness and injury, as well as initiatives to support people in managing and maintaining their own health and lifestyle, form a solid foundation for addressing population health. The following focus areas target the key factors impacting population health in Newfoundland and Labrador.

Focus Areas of the Strategic Direction 2014-2017	Strategic Direction #1 is Addressed by			
	Other entities reporting to the Minister	strategic plan	operational plan	work plan of a branch/division
Aboriginal Health				
Cancer Care				
Chronic Disease Management				
Healthy Aging				
Healthy Living				

Strategic Direction 2

Title: Access

Outcome: Improved accessibility to programs and services meeting the current and future needs of individuals, families and communities, particularly those most vulnerable.

Making the appropriate services available at the appropriate place and time is the defining feature of accessible health and community services. Striking the right balance between fiscal abilities and planning for equitable access is the key challenge. Together with stakeholders, the Department engages in reviews and consultations to determine how and what services should be delivered to maximize access.

The following focus areas for the health and community services sector address priority needs in the province and also target primary and community services that can reduce the need for more intensive and costly acute care interventions for individuals.

Focus Areas of the Strategic Direction 2014-2017	**Strategic Direction #2 is Addressed by**			
	Other entities reporting to the Minister	**strategic plan**	**operational plan**	**work plan of a branch/ division**
E-Health				
Infrastructure				
Long Term Care and Community Supports				
Mental Health and Addictions				
Pharmacare Initiatives – NLPDP Plans				
Rural Health				
Wait Times				

Strategic Direction 3

Title: An Accountable, Sustainable, Quality Health and Community Services System

Outcome: Improved performance and efficiency in the health and community services system to provide quality services that are affordable and sustainable.

Currently, approximately 40% of the provincial budget is spent on health care. The current rate of spending must be slowed so that health care remains affordable into the future. The growth in health care spending can be attributed to a number of factors including the aging of our population, geographical layout of the province, new and more expensive treatments, increased incidence in chronic disease and increased health provider costs. These demands and growth characteristics require the Department, in partnership with the Regional Health Authorities, to work together to address cost containment and sustainability through innovation and the adoption of consistent evidence informed service delivery approaches.

Through a renewed focus on collaboration, innovation and best practices, health and community services will become more efficient. Improved efficiency means sustainable costs over the long term and the delivery of quality services in a more effective manner to better meet the needs of individuals, families and communities.

Focus Areas of the Strategic Direction 2014-2017	**Strategic Direction #3 is Addressed by**			
	Other entities reporting to the Minister	**strategic plan**	**operational plan**	**work plan of a branch/ division**
Clinical Efficiency Review				
Evaluation of Legislation, Policies, Programs and Services				
Evidence Informed research *in Health and Other Related* Areas				
Health Emergency Management				
Health Workforce Planning				
Operational Improvement Plans				
Quality and Safety				

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