



Maritime SPOR SUPPORT Unit

REPORT TO THE COMMUNITY



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A Message From Our Co-Principal Investigators

The majority of patients who require healthcare in the Maritime provinces receive the care they need.

However, the complex interplay of aging populations and rising healthcare costs is leading to growing concerns about the ability to retain and strengthen a high performance healthcare system. Even today, pressing issues in the delivery of health services abound: underuse, overuse, and misuse of diagnostic and therapeutic procedures, unpredictable and long waiting times, fragmented care, and unanswered questions about the value of society's investment in healthcare. Led by the Canadian Institutes of Health Research, the Strategy for Patient-Oriented Research (SPOR) is a coalition of federal, provincial, territorial and other partners established to focus on these issues. Funded as part of the SPOR initiative, the Maritime SPOR SUPPORT Unit (MSSU) is dedicated to integrating research into healthcare.

The MSSU's mission is to lead the development and application of patient-centered outcomes research in the region to enhance the health and well-being of individuals and populations in the Maritimes. As the MSSU Principal Investigators, we are extraordinarily pleased to showcase in this report the groundbreaking work of the

MSSU. Since May 2013, the MSSU has taken shape with the active participation of the governments of New Brunswick, Nova Scotia, and Prince Edward Island, the health authorities in all three provinces, the New Brunswick and Nova Scotia Health Research Foundations, Health PEI, at least five universities, patient groups, and other concerned citizens. The MSSU is now fully functional and includes the following elements:

- 1 Key research supports available to all Maritime health researchers, including data access, evidence synthesis, knowledge translation, and patient engagement;
- 2 Integration of Maritime healthcare data and streamlining of ethical and secure access to the data. While health data are already being used to inform healthcare policy and decision-making at the provincial level in all three provinces, the MSSU seeks to develop a regional approach to research using these data for informing policy and decisions. This is now being operationalized through improved data access via the New Brunswick Institute for Research, Data and Training (NB-IRDT), Health Data Nova Scotia (HDNS), and the University of Prince Edward Island Secure Island Data Repository (SIDR);

- 3 Specific provincial and inter-provincial projects mandated by the three provincial governments and Maritime health authorities that reflect provincial and regional health research priorities;
- 4 Special focus on training a new generation of patient-centered outcomes and health services researchers; and
- 5 Close working relationships with the SPOR Networks.



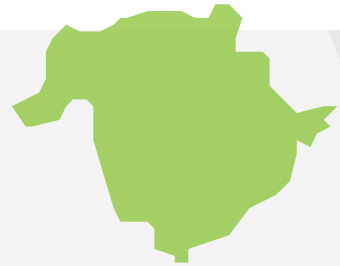
Through those elements, the MSSU’s innovative, collaborative and multidisciplinary infrastructure is becoming an indispensable component of the regional health research.

HIGHLIGHTS OF THE PAST YEAR FOR THE MSSU INCLUDE:

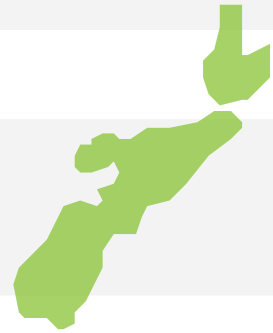
- The gathering of patient representatives, federal and provincial government ministers, health authorities, researchers, healthcare professionals, and MSSU staff to celebrate the establishment of the MSSU at l’Université de Moncton in May 2015;
- The completion of a number of projects including the Small Area Rate Variations study described within this report;
- The delivery of more than 30 training, professional development, and seminar events to several hundred individuals in the Maritime research community, including researchers, trainees, patients, and policy makers; and
- The facilitation of innovative consultations on health research including “Council of Advisors” sessions in New Brunswick and Nova Scotia to set research priorities for future research. New research projects from these sessions are already underway.

Never has the need been greater for evidence-informed decisions and policy-making. The MSSU is helping shed light on the trade-offs between quality, access, and value of healthcare by engaging patients and eliciting their values and priorities at all stages of research, including defining health research questions, participating in study teams, interpreting results, and, eventually, helping design improvements. At the provincial level, a number of important projects are underway:

New Brunswick: NB-IRDT has been expanding its data holdings from the Department of Health and Regional Health Authorities. Using these data, work has begun on a Small Area Rate Variation study, a study on alternate levels of care patients, and a study on surgical experience and patient outcomes.



Nova Scotia: A web-based Atlas of Health and Health Services for the province is now live. The next step is to extend it to include all three Maritime provinces.



Prince Edward Island: Health PEI is currently loading health research data into the Safe Island Data Repository at UPEI and a Small Area Rate Variation study is being performed.



As the stories in this report demonstrate, the many facets of the MSSU are working synergistically to link relevant stakeholders by building bridges among patients and researchers, data custodians and data users, and healthcare policy and healthcare decision makers, and across the geographic boundaries in the Maritimes. Each of these bridges is crucial for connecting the myriad stakeholders who strive daily for better patient outcomes and better health services delivery. Specifically, the report describes the contributions of:

- **Dr. Pam Jerrett** and the support she has received from MSSU for her research in New Brunswick;
- A post-doc studentship recipient, **Dr. Andrea Bishop**, and how MSSU is supporting her development as a patient-oriented health researcher in Nova Scotia; and
- A profile of the patient advisors who make our work, and the work of those we support, valid and representative of Maritime populations.

An external mid-term evaluation of the MSSU concluded that “the groundwork has been laid and the MSSU is on the right path towards achieving its objectives”. We continue to improve our processes and structure as we build on the momentum towards fulfilling the MSSU’s mandate. We sincerely hope that this report imparts the collective passion for patient-oriented and health services research, the strength and commitment of our partners, and the many talents of the MSSU multidisciplinary team. There is widespread agreement that fostering Maritime-wide cooperation in patient-centered outcomes research offers the best hope for addressing the pressing challenges facing the healthcare system.

We are intensely proud of the work of the patient leaders, MSSU staff, stakeholders, and other researchers.

Dr. Adrian Levy, Nominated Principal Investigator
Dr. Ted McDonald, Co-Principal Investigator
Dr. Juergen Krause, Co-Principal Investigator



Building Research Capacity with Data-Driven Patient Oriented Research and Training

Three MSSU researchers contribute to better patient outcomes with unique training programs for researchers, patients, and government policy makers working with health data.

For researchers like Dr. Dan Crouse, robust sets of administrative data can seem like treasure chests stuffed with precious metals and gems.

Having access to complete sets of data, the ability to link these rich data sets to each other, and the opportunity to take these findings to government and policy makers who influence how healthcare and social services are provided, is exciting. “It can’t just be interesting to me...it has to be able to make a difference,” Crouse says.

Mining health data for patient-oriented research

Crouse trained as an epidemiologist and geographer. Since joining the New Brunswick Institute of Research, Data and Training (NB-IRDT), housed at the University of New Brunswick (UNB) in Fredericton, he and fellow researcher Phil Leonard have carried out evidence-based research to provide government, academics, and other researchers with

information to influence policy decisions that will affect patients across the Maritimes. For example, he is currently working on two MSSU-supported research projects. One looks at possible links between a surgeon’s experience and patient outcomes, and the other analyzes whether women who’ve followed prescribed breast screening protocols may have different post-breast cancer diagnosis outcomes than those who’ve not adhered to screening protocols.

NB-IRDT is part of the New Brunswick component of MSSU’s data platforms and services. Along with Health Data Nova Scotia at Dalhousie University and the Secure Island Data Repository at University Prince Edward Island, NB-IRDT provides the data platform for access to health administrative data required for many MSSU-related research and training functions. It operates at arm’s length but with the full backing of government, providing unbiased, scientific results on questions related to health and social issues/prosperity.

NB-IRDT provides a central location for researchers to access many provincial administrative health data sets to facilitate research and answer questions that will empower government to stretch healthcare dollars, anticipate the needs of a changing

population, and encourage growth. These data sets are also linkable to allow for more research opportunities. NB-IRDT also offers workshops to build research capacity in others.

Bridging the gap between researchers and data through training

Jonathan Boudreau joined NB-IRDT in September 2015 as Database Analyst. Seeing an opportunity to build research capacity in others through his work, he—with support from Crouse—developed and delivered a course in R statistical analysis software. It was so popular they offered it three times in less than two months to satisfy the ever-growing wait list. R is an interpreted language used for statistical analysis. “It is becoming the lingua franca (common language) of academic analyses,” says Boudreau. Government representatives, researchers, and university students in programs as diverse as psychology, biology, and nursing signed up to learn R from Boudreau. “There’s a steep learning curve but the payoff is powerful,” Boudreau says, explaining that R allows for complex analyses. Boudreau goes on to say that administrative data for research purposes has been historically hard to access, but it is slowly become more readily available. There is a need for this data to bridge academia and government and ultimately influence creation of public policy, Boudreau says.

MSSU’s research support staff members across the Maritimes have been developing and supporting workshops to enhance patient-oriented

research capacity among their peers. Crouse has been a facilitator and speaker at the annual two-day MSSU clinical epidemiology workshop, and also developed a training program in ArcGIS spatial mapping and analysis software that he’s co-delivered to capacity crowds in all three Maritime provinces. ArcGIS is a geographic information system (GIS) for working with maps that allows researchers to use postal codes and lines of latitude and longitude to perform proximity analyses. For example, a researcher could study the distance between a patient’s residence to various healthcare centres, or could consider associations between disease incidence and pollution levels in a neighbourhood.

“It makes people aware they can add spatial elements to their studies,” says Crouse, something that may not have occurred to them before. The people who came to his ArcGIS course ranged from government employees in such departments as health and environment, to university students studying health sciences.

“Training is part of the MSSU mandate and I felt I could contribute,” says Crouse. He also lauds the one-on-one teaching and mentorship opportunities with graduate students at UNB that his position also affords him.

MSSU Research Project Showcases SPOR Collaborations: Highlighting High-Cost Healthcare Use in Nova Scotia and Beyond



PIHCI Networks in the Maritimes:
Nova Scotia - Building Research
for Integrated Primary Healthcare
(BRIC-NS) New Brunswick and
Prince Edward Island: Primary
and Integrated Healthcare
Innovations Networks (PIHCI).

The Strategy for Patient-Oriented Research (SPOR) is a Canadian Institutes of Health Research (CIHR) initiative focused on integrating health research more effectively into care.

Patient-oriented research engages patients as partners, focuses on patient-identified priorities and improves patient outcomes.

The SPOR Strategy is carried out through the work of SPOR Networks and SPOR Support for People and Patient-Oriented Research and Trials (SUPPORT) Units including the Maritime SPOR SUPPORT Unit (MSSU), and several national working groups.

SPOR Networks in primary and healthcare innovations function as a sort of network of networks that facilitate pan-Canadian collaboration.

In the Maritimes as elsewhere in Canada, a small percentage of the population accounts for the majority of public healthcare costs. In fact, in Nova Scotia the top five per cent of patients cost the province two-thirds of its healthcare resources — at least \$700 million each year.

Map of Maritime MSSU Offices and Listing of Consultation and Research Support Services in Each Area



- A** **Université de Moncton**
Moncton, NB

- B** **Saint John Regional Hospital**
Saint John, NB

- C** **UNB Fredericton**
Fredericton, NB

- D** **Nova Scotia Health Authority Centre for Clinical Research**
Halifax, NS (Central Office)














- E** **University of Prince Edward Island**
Charlottetown, PE

MSSU Can Support Your Research If You...

Are a patient-oriented researcher focused on improving the quality of healthcare by addressing accessibility, effectiveness, efficiency, equitability, safety and/or sustainability.

Plan to make use of health administrative data, seek to apply research to improve care quickly and appropriately, and/or actively engage patients, families, or citizens in the research process.

MSSU has research staff available to connect you to support for most stages of patient-oriented research

 Knowledge Translation	 Evidence Synthesis	 Patient Engagement	 Privacy & Ethics	 Literature Review
 Study Planning & Design	 Grant Proposal Preparation & Submission	 Data Analysis	 Data Preparation And Management (Including Data Entry Interfaces)	 Statistical Analyses
 Manuscript/Presentation Review	 Health Economics	 Epidemiology		

Understanding where high-cost users live—and why their costs are higher than expected—interests Dr. George Kephart, a Nova Scotia-based researcher and professor in Dalhousie University’s Community Health and Epidemiology Department. This past year, Kephart and his team of collaborators collected Small Area Rate Variation (SARV) data in partnership with the MSSU and BRIC-NS, to map out differences in health costs between small geographic areas in the province.

“We knew there was an incredible concentration of healthcare costs among such a small percentage of the population but still it’s striking,” Kephart says of the SARV findings. Mapping the stark differences in healthcare outcomes between regions of Nova Scotia is an important first step in ultimately finding ways to reduce the costs of treating patients and improve healthcare delivery to all.

Dr. Fred Burge is Director of the Primary Care Research Unit in the Department of Family Medicine at Dalhousie University. Burge is also the science lead for BRIC NS.

He lauded the SARV project as an example of how SPOR Networks and SUPPORT Units help and learn from each other in a cross-provincial, mutually beneficial way. It’s about “working well with each other to maximize resources, support and leverage each other,” says Burge. There’s

been lots of talk about strengthening patient-oriented research, he added, but actually making investments into mechanisms that do that is relatively new and a positive step. From the BRIC NS perspective, Burge says collecting small area rate variation data allows him and his co-researchers to question such things as: What’s behind these variations? How do we prevent the need for this amount of hospital use? How can we shift resources or work differently in a way that is better for the patient and the system?

Declining populations, especially in rural areas, and aging offers some demographic clues to the variations, as do disease patterns, but the researcher partners have already dug much deeper. For example, Kephart explains that end-of-life care can be a big contributor to healthcare costs, and costs can vary a lot depending on how end-of-life care is handled. Whether people die at home or in the hospital, and what efforts are made to keep them alive as long as possible could help explain cost differences by geographic area.

While the results of the SARV project were released in February 2016, this was just a beginning. Now Dr. Kephart and his research partners are drilling down into the data to look more closely at hospital in-patient care costs, which account for 87% of healthcare costs among the high-cost users in the province.

He will look at repeat hospitalizations, saying, “We do a really good job in our hospitals...but when people go back into the community they’re cared for by lots of people: family, healthcare workers, home care. The care is often not integrated, and key pieces may be missing.” Kephart says this lack of coordination can lead to re-hospitalization, something often seen amongst chronically ill people such as those living with one or a combination of conditions like COPD, heart disease, diabetes, and mental health issues. He also plans to look at lengths of hospital stays.

An important direction of this work is learning directly from patients who are high-cost users, and those who know them best, such as family and care providers. During the SARV project, Kephart and his team worked with the MSSU Patient Engagement Coordinator. From these discussions, it was suggested the researchers link up with patient navigators such as those in the Your Way to Wellness program, where lay people with chronic diseases are trained to work directly with other chronic care patients to support them in learning about and managing their conditions. Navigators provided ideas for what researchers should look at, and were able to offer many insights into reasons for differences in outcomes across areas in the province.



Experiences can be very different for people in different parts of the province. There are real, human stories behind these numbers.

Dr. George Kephart

“Many in this group of high-cost users are vulnerable and in need, and we’re looking at how best to learn from them while meeting their needs.” Identifying such patients at point of care, however, is challenging. They are often in distress, so ethical considerations are important. However, providing more intensive and coordinated care for such patients is needed, Kephart explains. “Learning from them at the same time can help us to make reforms that will help others.”

Using SARV to examine high-cost healthcare users in Nova Scotia offers a way to understand the use of healthcare and physician services while providing insight into policy needed to improve rates. It lays the groundwork for local innovation and targeted interventions. The project is also being replicated in NL, NB, and potentially PEI.

SARV is an example of what can be done through SPOR Network collaboration. “It’s a work in progress,” says Burge, but it’s a novel approach that will bring together researchers, scientists, and clinicians to ultimately influence policy makers who can make big-picture adjustments so that patient-oriented care models are the best they can be.

Patient Advisors Bridge the Gap Between Research and Patient Experience

Patient engagement is an integral component of the development and implementation of the Maritime SPOR SUPPORT Unit.

Patients include individuals with personal experience a health issue and informal caregivers, including family and friends.

Carla Heggie joined MSSU as a volunteer patient advisor a few years ago. As a life-long osteoarthritis sufferer and certified access and privacy professional, she brought first-hand experience and acquired knowledge to the role. “I’ve always been very involved as a member of my own healthcare team, managing my own disease, what surgeries and treatments I get and don’t get,” Heggie says. “I love the [SPOR] strategy and the concept of patient-oriented research. It’s so right.”

Through MSSU, patients like Heggie work with researchers, healthcare providers, and decision-makers to actively collaborate to build a sustainable, accessible, and equitable healthcare system and bring about positive changes in the health of Canadians.



Not all research projects have patient input and they should. It works.

- Carla Heggie

Patient advisors from across the Maritimes have a voice in almost all MSSU’s functions, not only as part of research teams but as members of its various committees, including the oversight committee. Heggie, for example, sits on the MSSU patient advisory committee, data and privacy committee, and was a member of the ethics working group. She says her own interests springboard to the needs of the greater patient population she represents. Many considerations, for example access to generic drugs, getting informed consent in medical treatment and health research, or privacy by design, affect a wide patient population. She also finds bringing the patient viewpoint forward can mean pointing out successes, and areas that need tweaking.

Heggie has also represented MSSU at the national SPOR meeting in Ottawa. This has convinced her that the Maritime SPOR SUPPORT Unit is not just keeping up with the other units in Canada, but is in step with or possibly leading them.

Brian Condran describes his role as MSSU Patient Engagement Coordinator as ensuring the MSSU has strong patient and public representation on all its advisory committees. “We also work to advise researchers on when to engage patients or on how to incorporate patient feedback in their research,” Condran says. “In this scenario, it’s best to engage early in the research process.”

MSSU recruits patient advisors from all three Maritime provinces, making sure they have orientation and training that teaches them the higher-level goals of what the Unit does and why. Condran says that patient advisors, having had a meaningful patient experience or being caregivers, want to volunteer. They’re often recruited via social media and job sites like Career Beacon. The aim is to have a representative sample of the Maritime population amongst about 12-16 appointed patient advisors, but this can be difficult to achieve due to who has time and the means to volunteer, Condran says.

The role of patient advisors really shifts the paradigm from investigator-centred research toward patient-centred research. “The nature of this work is relatively new. It’s a work in progress. Expectations and comfort levels have improved. It’s evolving. Going in the right direction,” Condran says.

MSSU Senior Health Policy Researcher Adrian MacKenzie explains that previously, there was concern nationally that health research in Canada overly emphasized 'bench science' (that performed in a laboratory), and that research

was not getting adequately translated into better care or better health outcomes. “Researchers only talking to each other using language only they understand is not ideal. The more patients are involved, the more applicable [research] outcomes will be. MSSU supports research that has patients in mind, and has patients included in the research since inception. They [patients] complete the team of experts,” MacKenzie says.

“The structure is more inclusive of the people this research is designed to help — patients and their healthcare providers,” MacKenzie says, adding that it’s necessary to do better at bridging the gap between research, policy, and healthcare.



Patients are participants, not subjects. They might even be co-investigators. [SPOR] makes that a possibility and is a great strength of what’s being done here.

- Adrian MacKenzie



MSSU Consulting Services Provide Value to Independent Researchers Doing Patient-Oriented Research

The Maritime SPOR Support Unit supports patient-oriented research in myriad ways.

One researcher with which the MSSU has partnered several times is Dr. Pamela Jarrett, a geriatrician with St. Joseph's Hospital in St. John, NB.

Jarrett is one of more than 350 clinicians and researchers from across Canada who came together to form the Canadian Consortium on Neurodegeneration and Aging (CCNA). The

CCNA is accelerating progress in understanding and treating patients with age-related neurodegenerative diseases.

“MSSU provided valuable resources [including] expertise and guidance to get us started,” Jarrett says, regarding the CCNA’s Comprehensive Assessment of Neurodegeneration and Dementia (COMPASS-ND) project.

COMPASS-ND researchers, including Jarrett, are recruiting patients with dementia who live in the community, and will follow them for about a

year as they receive care including clinical and neurological tests, imaging, and bloodwork. The data COMPASS-ND researchers collect will become part of a national database that will be available to hundreds more researchers, ultimately with the goal of addressing what can be done to help these patients and their families through their journeys, Jarrett explains.

“The [COMPASS-ND] project is not focused on drug-therapy but rather ‘How can we help people manage better for longer in their homes,’” Jarrett says.

Another area in which Jarrett’s work has overlapped with the MSSU is in the study of Alternate Levels of Care (ALC). ALC patients – often seniors with one or more morbidities – are those staying in acute care hospitals across Canada while waiting to be discharged to a setting more appropriate to their needs. Jarrett says she and her ALC research partner Dr. Rose McCloskey received instrumental support from MSSU, including Dr. Bryn Robinson from the Saint John office and Dr. David Stock out of Halifax. “They encouraged us to continue that work, to expand and improve it.”

The increased emphasis on patient-focused healthcare, especially in the last two years, is something Jarrett says she wholly supports as an academic (she’s an associate professor at the Dalhousie School of Medicine), administrator (she’s Medical Officer of Home Care in the New Brunswick Department of Health), researcher, and primary care physician.



The voice of the patient is important.

- Dr. Pamela Jarrett

She adds that her elderly patients are absolutely keen to be part of their own healthcare team. Respecting that, Jarrett says, healthcare providers today work hard to help patients achieve their care goals, which could impact where they live, how much help they receive at home, who provides their day-to-day care at home, and what medications they take. Sometimes if one of Jarrett’s patient’s dementia has progressed to the point that they can’t voice these preferences, their family is consulted on their behalf.

“They [patients] very much want a say in their own health,” says Dr. Jarrett, and working toward the common goal of providing this remains at the core of MSSU’s mission while also translating to its support of researchers throughout the Maritimes.

MSSU Research: a Combination of Public Consultation, Government Direction, and Researcher Talent

Adrian MacKenzie, MSSU's Senior Health Policy Researcher, studies what determines how health programs and services are offered to the public throughout the Maritimes.

He explains that an evidence-based approach to that process is an ideological shift toward looking at the needs of patients and away from what has been (and in some cases is still currently) offered out of history, habit, and tradition.

"MSSU projects come from different sources including the Department of Health and Wellness and provincial health authorities, consultations with independent researchers, and internal sources such as public consultations or MSSU committee recommendations," says MacKenzie. "Our biggest determining factor is what has the potential to be valuable to patients and their families." This year, MSSU struck out in new ways to ensure patients and health stakeholders had a say in what research was important. The Unit met with health stakeholders across the provinces in smaller meetings, Council of Advisors Sessions, and followed up with surveys. The feedback from these meetings was compiled and packaged for the MSSU's Annual Meeting in March 2016. MacKenzie led part of the consultation process in which MSSU's stakeholders identified a need for research in

four priority areas: alternative levels of care (ALC) (i.e. delayed inpatient discharge from hospital), unattached patients (i.e. people without a family doctor), interprovincial care (i.e. where patients travel outside their home province to get healthcare), and patient perceptions of the degree to which their healthcare needs are being met.

MacKenzie joined MSSU in February 2016. He enjoys the collaborative nature of the MSSU. "In smaller provinces, there's impetus for us to work together. We're each unique and special, yes, but we have lots in common," MacKenzie says. He cites small populations, and large proportions of patients living in rural areas who have difficulty accessing services as common challenges in PEI, NB, and NS. "Together we can attract more attention. We can pool for a richer base of evidence to draw from together."

Dr. David Stock is MSSU's Senior Health Services Researcher. Since moving to Halifax to join MSSU in March 2016 he's become acquainted with how Maritime health data is accessed, relationships with funders and governments, and data privacy issues. He is working on the ALC research project. "The ALC study encompasses delayed inpatient discharge from hospital," Stock explains, and the various reasons why people remain in hospital beds when they no longer need hospital care. It is usually because they cannot be discharged safely elsewhere or have nowhere else to go.

The causes vary, including having no one to care for them at home, constrained long-term care resources, or shortage of nursing home care.

The majority of ALC patients are seniors. Often they have co-morbidities like dementia. “The first step is understanding the problem as it exists here in the Maritimes. We are currently designing Maritime-wide research to address this, to be followed by devising strategies aimed to resolve identified barriers, in partnership with provincial governments and patient advocates,” Stock says. Like so many health challenges, the issue is complex and so are the solutions.

MacKenzie is currently helping create a Health Atlas for Nova Scotia, an interactive web-based tool that lets users explore and visualize data on the determinants of health (e.g., income), health status (e.g., rates of chronic diseases), and healthcare use (e.g., hospital costs), and how these differ across the province. The information in the Atlas can help inform policies to better align programs and services with the parts of the province that need them most. A spin-off from work on the Small Area Rate Variations Project, the Atlas project is set to be released later in 2017.

The Year in Numbers

From Aug 1, 2015 to Aug 1, 2016, almost **5000 viewers contributed to more than 42,000 page views** on www.mssu.ca. 50% of these were new users.

MSSU had more than **130 research support requests**. 48% of these were from academics, and 26 requests were for patient engagement support.

The top researcher service request in Nova Scotia was for support with patient engagement. In New Brunswick, it was proposal/grant/manuscript preparation, and in Prince Edward Island, researchers wanted support with data access and analysis.

The MSSU Twitter feed, started in July 2015, saw almost **20,000 unique impressions** (695 impressions per day), sent more than 500 tweets, and gained more than 500 new followers from the Maritime and SPOR research community.

13 patient advisors contributed to research projects in the Maritimes.

MSSU sent a tri-annual newsletter to their mailing list of **more than 700 people** in the Maritime research community.

Over 700 patients, researchers, and policy makers attended more than 33 promotional and training events.

The MSSU provided more than **\$350,000** in student and fellowship awards to 12 students in PEI, NB, and NS.

Data Holdings by Province

NB Health Administrative Data

Access to and linkages with administrative health data through partnership with New Brunswick Institute for Research, Data and Training at the University of New Brunswick.

DATA HOLDINGS INCLUDE

- Hospital Discharge Abstract Data
- Citizen Database
- Provider Registry
- Vital Stats (birth, gender, death)
- HFUMS
- Canadian MIS Database (CMDB)
- NB Facility Acute Care Profiles
- NB Cancer Registry

COMING SOON...

- BizNet Immigrant Landing Records
- Long Term Care
- Physician Billing

NS Health Administrative Data

Access to and linkages with administrative health data through partnership with Health Data Nova Scotia at Dalhousie University.

DATA HOLDINGS INCLUDE

- Patient Registry MSI Data
- Patient Geography
- Provider Registry MSI Data
- Provider Billings for physicians, optometrists, nurse practitioners & prosthetics
- CIHI Discharge Abstract Database
- Death Certificate Data from Vital Statistics
- Seniors PharmaCare
- Community Services PharmaCare
- CIHI National Ambulatory Care Reporting System (NACRS)
- Long-term Care Eligibility data

PEI Health Administrative Data

Access to and linkages with administrative health data through partnership with Secure Island Data Repository at the University of Prince Edward Island.

DATA HOLDINGS INCLUDE

- Patient Registry MSI Data
- Patient Geography

In each province, data is de-identified and prepared before use in research.