

prifor 2015

patient-oriented research  
that matters

THE PRIMARY  
HEALTHCARE  
PARTNERSHIP  
FORUM

# Program & Abstracts

Sheraton Hotel Newfoundland • St. John's, NL • June 29–30, 2015





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## Welcome messages

### Dean of Medicine



It is my pleasure to welcome you to the seventh annual Primary Healthcare Partnership Forum. PriFor provides a venue for professionals across a variety of disciplines who have an interest in primary healthcare to come together and share research findings, ideas and questions in a collaborative environment.

As a family physician with over 35 years of experience, I understand how important it is to work with a team to improve primary health care delivery and to facilitate primary healthcare research.

A key component of primary healthcare is ensuring there is a sufficient supply of healthcare professionals, including physicians. However, reform in this area sometimes requires structural and supporting changes to the organization and delivery of health services. There is a growing consensus about the potential for team-based care to provide comprehensive prevention and treatment services which, in turn, will result in improved health.

At the recent shingles night for our Class of 2015 MDs, I shared some advice from Dr. William James Mayo. In addressing the graduating medical class of Rush Medical College in 1910, Dr. Mayo said: “The best interest of the patient is the only interest to be considered, and in order that the sick may have the benefit of advancing knowledge, union of forces is necessary.” He was about 100 years ahead of his time.

We now recognize that working as a team is so important for safe and effective patient care and also so that we each may have some time off.

PriFor 2015 offers the opportunity to network with professionals in difference disciplines that have similar interests. I wish you the best over the next two days and in the future as we all work together to inspire and achieve primary health care innovation.

*Dr. James Rourke*

### Chair of Family Medicine



On behalf of the Discipline of Family Medicine, I am very pleased to welcome you to PriFor 2015, the seventh annual Primary Healthcare Partnership Forum focusing on Patient-Oriented Research that Matters. What a great focus for such a broad audience—researchers, clinicians from a variety of fields and disciplines, administrators, decision makers, learners and more.

Primary healthcare is at an exciting stage in NL, and with the current interest in new models and working together for improved patient outcomes, this opportunity to come together to explore what matters is particularly timely. Our goal as an academic discipline of family medicine is to positively influence primary care in NL through education, research, innovation, and policy to better meet the needs of our population across the province. For half a million people, we should be able to identify what matters and how to achieve it. We welcome the opportunity that PriFor brings to engage a wide audience and showcase research that can make a difference—patient-oriented research that matters!

In a recent article in the *Annals of Family Medicine*, Bodenheimer and Sinsky encouraged us to think about the quadruple aim of healthcare: improving patient experience and population health at lower cost, as well as improving the work life of healthcare providers. I am confident this year’s conference will give us opportunities to reflect and address these aims as we move forward with primary care renewal in the province. We look forward to meeting you and learning with you throughout the conference!

Many thanks to Dr. Godwin and the PHRU team for their excellent work in bringing us together for PriFor 2015. Welcome to the conference on behalf of family medicine!

*Dr. Cathy MacLean*

## Welcome messages

### Director of the Primary Healthcare Research Unit



Evidence-informed practice and the national level organizations that help compile and synthesize evidence into practice guidelines are mainstays of providing quality and cost-effective care to patients. This year PriFor brings to our province, as keynote speakers, leaders in both the American and Canadian Task Forces on preventive care: Dr. William Phillips of the US Preventive Service Task Force, and Dr. Rick Birtwhistle of the Canadian Task Force on Preventive Health Care. They will share with us the process they use, the directions they are taking, and the current controversies in prevention guidelines.

2015 represents a major turning point for PriFor. We have moved the timing of the conference to the end of June instead of November. In June, Newfoundland has on display some of its key attractions of whales and icebergs; we hoped to provide an opportunity for people who live outside our province to combine attendance at a conference with a sightseeing vacation. It seems to have worked: the number of abstract submission doubled compared to our previous best year, and we are anticipating an increase in attendance from about 110 to between 150–200 participants. We have received five international abstracts and 20 non-Newfound-

land, Canadian abstracts.

I want to welcome everyone in attendance; those from our province, our country, and the rest of the world. For those from away, I hope you take some time to visit: travel around the bays, explore our trails, and enjoy our traditional food and well known hospitality. For everyone, I believe you will find this a very exciting and educational conference with our many posters, workshops, and concurrent oral presentations. And, of course, our three keynote speakers, Dr. Phillips and Birtwhistle, who I have already mentioned, but also our very own Dr. Gerrard Farrell, who will be speaking on social media and health.

So enjoy this year's conference, go home and tell your friends about it, and come again next year!

*Dr. Marshall Godwin*

## Highlights and key points

- Thank you to our sponsors; please visit their booths in Salon A.
- Breaks are in Salon A with the posters and exhibitors.
- The conference starts with registration and continental breakfast at 7:30 a.m. on Monday. Tuesday is a hot breakfast, which starts at 8 a.m.
- Breakfast and lunch are served in Salon A; seating is available in the pre-function area and Salon B.
- The award for Primary Healthcare Researcher of the Year will be presented to Dr. Leslie Rourke during breakfast on Monday.
- **Posters:** There are four half-day poster sessions. Those presenting posters in the morning should have them up on their designated board in Salon A by the end of breakfast and take them down before lunch; those presenting in the afternoon should have them up by the end of the lunch break (after the morning posters have been taken down) and down by the end of the conference day. Presenters are asked to stand by their posters during the designated time.
- **Oral presentations/workshops:** There are three rooms with presentations/workshops running concurrently on each day. The rooms are Salons B, C, and D. All presenters should have received a letter indicating the room and time of their presentation. Please give your presentation (on USB flash drive or CD/DVD) to your room monitor or one of the IT people at least an hour before the block of sessions in which your presentation is scheduled.
- **Plenary sessions:** There are three keynote addresses in Salon B:
  - On Monday, our keynote speakers (Dr. Rick Birtwhistle, vice chair of the Canadian Task Force in Primary Healthcare, and Dr. Bill Phillips, member of the U.S. Preventive Services Task Force) are doing things a little differently: rather than speaking separately, they are teaming up to share perspectives on their respective national prevention task forces. In the morning, Drs. Birtwhistle & Phillips will give us an introduction and discuss task force methods; in the afternoon, they'll delve deeper and talk about some of the issues and controversies.
  - On Tuesday morning, Dr. Gerard Farrell, director of Memorial University's eHealth Research Unit, will speak about strategies for being a health professional and having a presence on social media.
- Following lunch on Tuesday afternoon is the **Dangerous Ideas Soapbox** in Salon B. This will be the second time we have held this event; see page 8 for more details.
- **Cocktail reception:** On Monday, at the end of the afternoon sessions for the first day, there will be a cocktail reception for all registrants. This runs from 4:30–6 p.m., and will be held in the hotel's court garden. Set to relaxing live entertainment, delicious hot and cold hors-d'oeuvres will be served, and a complimentary beverage provided. This event offers a great chance to unwind and converse with your fellow conference attendees.
- **As an accredited provider, Professional Development and Conferencing Services, Faculty of Medicine, Memorial University of Newfoundland designates this continuing medical activity for 9.75 Mainpro-M1 credit hours of the College of Family Physicians of Canada.**
- Please feel free to approach any of the conference staff if you need help. They will be wearing **RED** name tags.

## Plenary sessions

Monday morning, June 29

8:30–9:30 a.m.

Room: Salon B

### Guidelines for Prevention:

### Perspectives from the Canadian and American Task Forces – Part I

Drs. Rick Birtwhistle & Bill Phillips



Rick Birtwhistle is a family physician and clinical epidemiologist. He is a professor of family medicine and public health sciences and is currently director of the Centre for Studies in Primary Care at Queen's University. He is the vice chair of the Canadian Task Force in Primary Healthcare, which produces evidence-based guidelines for primary care practitioners.

His primary care research interests are in the primary care of hypertension, chronic disease management and the evaluation of primary care models. Since 2008, his main research interest is as principal investigator and the current chair for the Canadian Primary Care Sentinel Surveillance Network (CPCSSN) which is a national project funded by the Public Health Agency of Canada (\$11.8 million) to develop a network of primary care practitioners using electronic medical records, and to do quarterly extracts of routinely collected de-identified data on patients with chronic disease.

He was awarded the Family Medicine Researcher of the Year Award in 2010 by the College of Family Physicians of Canada to recognize the success of CPCSSN as a force for primary care research.

He currently is leading an application for a CIHR SPOR in chronic disease, which will focus on multimorbidity using CPCSSN EMR data as its foundation.

## Plenary sessions

Monday afternoon, June 29

1:30–2:30 p.m.

Room: Salon B

### Guidelines for Prevention:

### Perspectives from the Canadian and American Task Forces – Part II

Drs. Rick Birtwhistle & Bill Philips



Bill Phillips has worked with medical education and primary care research in the Department of Family Medicine, University of Washington since 1979 and holds the title of Theodore J. Phillips Endowed Professor of Family Medicine.

A native of Seattle, he graduated from UW School of Medicine and earned an MPH at the UW School of Public Health. He is residency-trained and board-certified in family medicine and in preventive medicine. For 20 years, he practiced full-spectrum family medicine in Seattle. He serves as co-director of the National Research Service Award Family Medicine Research Fellowship Program at UW for graduating residents or family physicians with practice experience to gain formal research training in preparation for an academic career.

Dr. Phillips has served in scientific and professional leadership roles at the national and international levels, including president of NAPCRG, chair of the AAFP Commission on Science, and on advisory panels to ACIP, NIH, AHRQ, Medicare and major insurers. Dr. Phillips is a founder and currently Senior Associate Editor of the *Annals of Family Medicine*.



## Plenary sessions

Tuesday morning, June 30

8:45–9:45 a.m.

Room: Salon B

### Social Media and the Digital Professional

Dr. Gerard Farrell



Gerard Farrell graduated from medical school at Memorial University of Newfoundland in 1984. In 1986, he bought his first computer and found something useful to do with it shortly thereafter. He has spent the last 29 years trying to find other useful things to do with a computer in the area of medicine, with mixed success.

He is the director of the eHealth Research Unit in the Faculty of Medicine at Memorial, investigating what works and what doesn't when computers are used in health education and care delivery. He lectures on medical informatics in the Faculties of Medicine and Computer Science and has co-supervised graduate students in computer science. He was the associate dean for undergraduate studies with the faculty of medicine at Memorial, responsible for the four-year MD education program.

His clinical work is as a general practitioner involved in the care of cancer patients.

# Dangerous Ideas Soapbox

Tuesday afternoon, June 30

1:15–2:30 p.m.

Room: Salon B

Monitor: Allison Maybank

Dangerous ideas are controversial or revolutionary notions that encourage us to think about the way we currently do things from new angles, or stir us to explore altogether new approaches to addressing the problems faced in health-care. They may instigate the creation of new paradigms or even stimulate rebellion, but they must all demonstrate creativity and the kind of blue sky thinking that will allow us to grow our field.

This session, modeled on similar and wildly popular sessions offered by the UK's Society of Academic Primary Care and the College of Family Physicians of Canada offers PriFor participants an opportunity to share an important, innovative idea that hasn't been heard or practiced in the healthcare community.

Each speaker will be given five minutes to present their idea. Audience members will then have 10 minutes to ask questions and critique or challenge your idea, with a final vote to decide the most potent of the dangerous ideas presented.

# Conference agenda

Monday

Monday, June 29			
7:30–8 a.m.	Registration & continental breakfast Salon B		
8–8:30 a.m.	Welcome & opening remarks Salon B		
8:30–9:30 a.m.	<b>“Guidelines for Prevention: Perspectives from the Canadian and American Task Forces – Part I”</b> Rick Birtwhistle & Bill Philips Salon B		
9:30–10:30 a.m.	Healthcare Coordination I Salon B	Practice & Research Networks I Salon C	Systematic Reviews and Meta Analyses Salon D
10:30–11:15 a.m.	Research poster viewing/exhibitor viewing/refreshment break Salon A		
11:15 a.m.–12:15 p.m.	Healthcare Coordination II Salon B	Practice & Research Networks II Salon C	Secondary Data Workshop Salon D
12:15–1 p.m.	Lunch Salon A		
1–2 p.m.	<b>“Guidelines for Prevention: Perspectives from the Canadian and American Task Forces – Part II”</b> Rick Birtwhistle & Bill Philips Salon B		
2–2:45 p.m.	Research poster viewing/exhibitor viewing/refreshment break Salon A		
2:45–4:25 p.m.	Chronic Condition Screening and Management Salon B	Variety Pack Salon C	Publishing Research Workshop Salon D
4:30–6 p.m.	Cocktail reception Court garden		

# Conference agenda

Tuesday

Tuesday, June 30			
8–8:45 a.m.	Hot breakfast Salon B		
8:45–9:45 a.m.	<b>“Social Media and the Digital Professional”</b> Gerard Farrell Salon B		
9:45–10:30 a.m.	Research poster viewing/exhibitor viewing/refreshment break Salon A		
10:30 a.m.–12:30 p.m.	Models of Primary Healthcare Delivery Salon B	Electronic Healthcare and Research Salon C	Family Medicine Education Workshop Salon D
12:30–1:15 p.m.	Lunch Salon A		
1:15–2:30 p.m.	<b>Dangerous Ideas Soapbox</b> Salon B		
2:30–3:15 p.m.	Research poster viewing/exhibitor viewing/refreshment break Salon B		
3:15–4:15 p.m.	Mental Health Salon B	Newborn Health Promotion Salon C	
4:15 p.m.	Conference adjourns		

## Sessions in detail

Monday morning (pre-break)

## Healthcare Coordination I

<b>Room:</b> Salon B	<b>Facilitator:</b> Gary Tarrant	<b>Monitor:</b> Krystal Pike
9:30 a.m.	Working Without a Waitlist - System Redesign in Outpatient Physiotherapy	Cathy Hoyles See abstract on page 43
9:50 a.m.	Changes in Registration Process to Improve Outcomes for Patients presenting with Acute Myocardial Infarction	Patricia Pobihushchy-Lawlor See abstract on page 23
10:10 a.m.	The Smokers' Helpline CARE Fax Referral Program Provides a Tool to Address Tobacco Use and Link to Effective Smoking Cessation Support	MaryLynn Pender See abstract on page 40

## Practice &amp; Research Networks I

<b>Room:</b> Salon C	<b>Facilitator:</b> Roger Butler	<b>Monitor:</b> Shannon Aylward
9:30 a.m.	The CIHR Primary and Integrated Health Care Innovations Network: Opportunities for National and Atlantic collaboration	Kris Aubrey-Bassler See abstract on page 39
9:50 a.m.	Sustainability and Scalability of TAPESTRY	Lisa Dolovich See abstract on page 38
10:10 a.m.	Using developmental evaluation methodology to develop and implement the TAPESTRY community-based primary healthcare program	Lisa Dolovich See abstract on page 42

## Systematic Reviews and Meta Analyses

<b>Room:</b> Salon D	<b>Facilitator:</b> Marshall Godwin	<b>Monitor:</b> Jacques Van Wijk
9:30 a.m.	Diabetes and the Association of Skin and Soft Tissue Infection: A Systematic Review of Observational Studies	Waseem Abu-Ashour See abstract on page 26
9:50 a.m.	Diabetes is Associated with an Increased Risk of Respiratory Tract Infections: A Systematic Review of Observational Studies	Waseem Abu-Ashour See abstract on page 27
10:10 a.m.	Safety and Efficacy of Incretin-based Therapies in Patients with Type 2 Diabetes Mellitus and Renal Impairment: Systematic Review and Meta-analysis	Patricia Howse See abstract on page 36

## Sessions in detail

Monday morning (post-break)

### Healthcare Coordination II

<b>Room:</b> Salon B	<b>Facilitator:</b> Gary Tarrant	<b>Monitor:</b> Krystal Pike
11:15 a.m.	Community Rapid Response Team - Eastern Health	Dawn Gallant See abstract on page 23
11:35 a.m.	Evaluation of Staff Regarding Relocation of a Residential Long Term Care Facility	Anne Kearney See abstract on page 28
11:55 a.m.	Innovative Access to Care for People with Chronic Disease	Sarah Randell See abstract on page 31

### Practice & Research Networks II

<b>Room:</b> Salon C	<b>Facilitator:</b> Roger Butler	<b>Monitor:</b> Shannon Aylward
11:15 a.m.	Patient Advisory Councils in the Patients Medical Home Model	Cathy MacLean See abstract on page 33
11:35 a.m.	Establishing a practice-based research network: The Canadian Chiropractic Guideline Initiative	André Bussi�eres See abstract on page 27
11:55 a.m.	Preliminary Reflections on the Emergence of Hearing Voices Network - Atlantic Canada	Ryan Norman See abstract on page 35

### Secondary Data Workshop

<b>Room:</b> Salon D	<b>Monitor:</b> Ricky Cullen
11:15 a.m.	Secondary Use of Personal Information in Health Research in Newfoundland and Labrador (NL): Introduction to Creating Population-based Databases for Research Shabnam Asghari See abstract on page 44

## Sessions in detail

Monday afternoon

## Chronic Condition Screening and Management

<b>Room:</b> Salon B	<b>Facilitator:</b> Kris Aubrey-Bassler	<b>Monitor:</b> Nicole Shea
2:45 p.m.	How is low back pain managed in primary care? A global scoping review	Amanda Hall See abstract on page 30
3:05 p.m.	Patient characteristics associated with successfully completed chronic disease prevention and screening (CDPS) activities in primary care physician practices: findings from the BETTER RCT	Paul Krueger See abstract on page 34
3:25 p.m.	It is Time to Reconsider Population-based Mammography Screening	Anne Kearney See abstract on page 32
3:45 p.m.	BMI Trajectories among Middle-Aged to Older Adults and Health Outcomes	Meng Wang See abstract on page 22
4:05 p.m.	Developing Primary Care Investigation and Management Guidelines for Iron Deficiency Anemia Designed for Newfoundland and Labrador Practitioners	Tom Dunne See abstract on page 26

## Variety Pack

<b>Room:</b> Salon C	<b>Facilitator:</b> Cathy MacLean	<b>Monitor:</b> Sara O'Reilly
2:45 p.m.	Comparing three dual task tests to detect cognitive interference in MS patients and controls	Megan Kirkland See abstract on page 24
3:05 p.m.	Performing with stimulants: Does Ritalin alter brain activity during fatigue?	Michael King See abstract on page 34
3:25 p.m.	Facilitators and barriers to participation in colorectal cancer screening: A systematic review and Meta-study synthesis of qualitative studies	Gladys Honein See abstract on page 29
3:45 p.m.	Retrospective Review of Outcomes with Active Surveillance and Active treatment for Early Stage Prostate Cancer	Jinka Sathya See abstract on page 35
4:05 p.m.	Sudden Cardiac Death (SCD) in young people (2y–50y) in Newfoundland and Labrador	Rahaf Alkhateb See abstract on page 37

## Research Publishing Workshop

<b>Room:</b> Salon D	<b>Monitor:</b> Jacques Van Wijk
2:45 p.m.	Publishing Your Research Report William Phillips See abstract on page 43

## Sessions in detail

Tuesday morning

### Models of Primary Healthcare Delivery

<b>Room:</b> Salon B	<b>Facilitator:</b> Pauline Duke	<b>Monitor:</b> Jacques Van Wijk
10:30 a.m.	Family Health Teams in New Brunswick	Bronwyn Davies See abstract on page 29
10:50 a.m.	The TAPESTRY Volunteer Program: An Innovative Volunteer Initiative to Connect Patients to their Primary Care Providers	Lamkin Lamarche See abstract on page 40
11:10 a.m.	The Role of a Kinesiologist as Part of a Primary Health Care Team	Thomas Dymond See abstract on page 39
11:30 a.m.	A Need to Promote the Role of the Professional Dietitian	Barbara Roebathan See abstract on page 20
11:50 a.m.	Finding a BETTER Way: Clinical Results from the BETTER2 Implementation Study in Newfoundland and Labrador	Kris Aubrey-Bassler See abstract on page 30

### Electronic Health Tools

<b>Room:</b> Salon C	<b>Facilitator:</b> Shabnam Asghari	<b>Monitor:</b> Nicole Shea
10:30 a.m.	Adoption Assessment of a Provincial Electronic Health Record	Kimberly Bonia See abstract on page 21
10:50 a.m.	SURPHER: A SecUre Revocable Personal HEalth Record System	Mitu Kumar Debnath See abstract on page 37
11:10 a.m.	Using a Personal Health Record and associated health volunteer and self-management applications to connect people in their homes to their health care team	Dena Javadi See abstract on page 41
11:30 a.m.	A Primary Health Care Electronic Medical Record Content Standard: Supporting clinicians at the point of care and beyond	Mary Byrnes See abstract on page 21
11:50 a.m.	Strongest Families Institute - Web-Based Parenting Intervention	Patricia Lingley-Pottie See abstract on page 36
12:10 p.m.	Data Inventory for Healthy Aging Research	John Knight See abstract on page 25

### Family Medicine Education Workshop

<b>Room:</b> Salon D	<b>Monitor:</b> Sara O'Reilly
10:30 a.m.	Hub and Spoke Models for Family Medicine Education and Primary Care in NL Cathy MacLean See abstract on page 43



## Sessions in detail

Tuesday afternoon

### Mental Health

<b>Room:</b> Salon C	<b>Facilitator:</b> Gary Tarrant	<b>Monitor:</b> Allison Maybank
3:15 p.m.	The therapeutic choir: A holistic approach to family-centred palliative care	C. Jane Gosine See abstract on page 41
3:35 p.m.	Music and Memory: Personalised music for dementia patients	Aaron McKim See abstract on page 33
3:55 p.m.	Interacting with youth through drama - Family Medicine Behind the Scenes	Stephen Darcy See abstract on page 32

### Newborn Health Promotion

<b>Room:</b> Salon B	<b>Facilitator:</b> Scott Moffatt	<b>Monitor:</b> Shannon Aylward
3:15 p.m.	Informed consent for newborn bloodspot screening parents and healthcare professionals experiences in practice	Daryl Pullman See abstract on page 31
3:35 p.m.	Creation of a Breastfeeding Management Resource for Physicians	Amanda Pendergast See abstract on page 25
3:55 p.m.	"Not Fully Satisfied": Intent to Exclusively Breastfeed and In-Hospital Supplementation	Julia Temple Newhook See abstract on page 20

# Poster presentations

## Monday morning

**Room: Salon A**

**Monitor: Andrea Pike**

<b>1</b>	Identification and assessment of frail elderly at risk of hospital admission and returning to emergency in rural settings in Newfoundland and Labrador	David Thomas See abstract on page 59
<b>2</b>	Social context and distress severity in Canadian seniors: Exploring the influence of social support and community belongingness	Emilia Bartellas See abstract on page 71
<b>3</b>	The Effect of Talking on the Measurement of Blood Pressure Using A BpTRU Device: A Randomized Controlled Trial	Douglas Dorward See abstract on page 73
<b>4</b>	Sleep Duration and Development of Hypertension: A Systematic Review and Meta-analysis	Douglas Dorward See abstract on page 70
<b>5</b>	Memorial's Life Cycle Approach to Rural Family Medicine	James Rourke See abstract on page 63
<b>6</b>	The long-term effect of a resistance-based physical activity program in the treatment of adolescents with insulin resistance: A protocol for a RCT	Sarah Critch See abstract on page 74
<b>7</b>	Assessment of Laboratory Testing for Monitoring the Safety and Effectiveness of Antihyperglycemic Medications	Terri Genge See abstract on page 48
<b>8</b>	Physical activity and pediatric obesity: A literature review - Recommendations for future interventions in primary care in NL	Alison Coleman See abstract on page 66
<b>9</b>	Role of depression on perceived and actual disability in older adults with Multiple Sclerosis	Tanaya Chatterjee See abstract on page 68
<b>10</b>	Atlantic Canada Children's Effective Service Strategies (ACCESS-MH)	Cathy Peyton See abstract on page 49
<b>11</b>	Impact of a First Diagnosis of Cancer on Mental Health and Use of Psychoactive Drugs	Samantha Foster See abstract on page 60
<b>12</b>	Comparison of the Effectiveness of Group and Individual Therapy for University Students with Symptoms of Anxiety and Depression	Emily Fawcett See abstract on page 52
<b>13</b>	Predicting Adolescent Readmission to Acute Psychiatric Care Services in Atlantic Canada	David Miller See abstract on page 66
<b>14</b>	Mental Health-Related Hospitalizations by Youth in New Brunswick	Amanda Slaunwhite See abstract on page 63
<b>15</b>	Environmental Scan of Big Data in Addressing Mental Health Care in Atlantic Canada	Scott Ronis See abstract on page 56

# Poster presentations

## Monday afternoon

**Room:** Salon A

**Monitor:** Andrea Pike

1	The Effectiveness of a Concussion-U Educational Presentation on Knowledge and Attitudes of Concussion amongst elite Bantam and Midget Hockey Players	David Bradbury-Squires See abstract on page 74
3	Designing a functional exercise training intervention that increases aerobic endurance capacity in chronic stroke survivors	Liam Kelly See abstract on page 52
4	A Community-Chosen Intervention the Green Light Program	Vivian Ramsden See abstract on page 45
5	Dyslipidemia in Newfoundland and Labrador: An Exploration of Genetics Community Factors and Life Style	Erfan Aref-Eshghi See abstract on page 54
6	Do Memorial University Family Medicine residents completing longitudinal rotations preferentially choose rural practice?	Peter Barnes See abstract on page 53
7	Medical Student Distress Personal Health Care Practices and Barriers to Care	Janet Bartlett See abstract on page 62
8	Resuscitating the Family Medicine Curriculum - A Novel Approach to Postgraduate Advanced Life Support Skill Acquisition and Maintenance	Taft Micks See abstract on page 68
9	2014 work locations of Memorial graduates: Where are the family doctors?	Dana Ryan See abstract on page 44
10	Social Accountability Considerations for the Restructuring of a Family Medicine Residency Training Program	Danielle O'Keefe See abstract on page 71
11	Do scores on the new Psychological Social and Biological Foundations of Behavior section of the new Medical College Admissions Test predict medical students academic performance in behavioral and social sciences courses?	Wanda Parsons See abstract on page 54
12	A comparison of the simulated clinical encounter with the Medical Counsel of Canada National Assessment Collaboration and Medical Counsel of Canada Evaluating Exam results in selection of IMG candidates for the MUN Family Medicine Program	Roger Butler See abstract on page 45
13	Group Medical Appointments for Innu Patients with Well Controlled Diabetes	Yordan Karaivanov See abstract on page 58
14	Proactive Care for Innu Patients with Poorly Controlled Diabetes	Yordan Karaivanov See abstract on page 67
15	Epidemiology of injury mortality by intent in Labrador and Newfoundland from 1996 to 2009	Jennifer Woodrow See abstract on page 57

# Poster presentations

## Tuesday morning

**Room: Salon A**

**Monitor: Andrea Pike**

1	Health Care Professionals' Perceptions of and Experiences with Disclosing Adverse Events	Charlene Reccord See abstract on page 58
2	Insights Into Organizational Learning: Investigating the Adoption of a Clinical Information System in a Hospital Family Medicine Department	Jamie DeMore See abstract on page 61
3	Development of an MVC Clinical Reporting Tool	Elizabeth Faour See abstract on page 53
4	A pilot project to foster interprofessional collaboration and comprehensive care for community-based patients with loss of autonomy.	Mark Yaffe See abstract on page 46
5	Interdisciplinary Collaboration for Improved Maternal-Fetal Outcomes Central Newfoundland	Taft Micks See abstract on page 62
6	Patient-Oriented Indicators for the Evaluation of an Inter-professional Tuberculosis Clinic in Northern Labrador	Gabriel Woollam See abstract on page 65
7	Status Dramaticus: Spotlight on Medical Slang and its Implications Toward Patient Care and Medical Learning	Kelly Milton See abstract on page 72
8	An observational study of aeromedical evacuations in northern and central Labrador	Margo Wilson See abstract on page 47
9	An Ecological Model Promoting Access to Community-Based Primary Health Care for Vulnerable Populations	Ryan Mallard See abstract on page 46
10	Professional over-the-phone interpretation to improve the quality of primary care for migrants: a feasibility study	Emily Parkinson See abstract on page 67
11	Enhanced and Integrated Pathways to Wellness Programs: A Teams Advancing Patient Experience to Strengthen Quality initiative with Sturgeon Lake First Nation	Vivian Ramsden See abstract on page 56
12	Increasing Quality of Life and Reducing Pulmonary Exacerbations in COPD by Providing Pharmacist-driven Improvement in Medication Adherence: A Pragmatic Cluster Randomized Control Trial Protocol	John Hawboldt See abstract on page 61
13	Effect of Spine Manipulation and Stretching on Sitting-Induced Low Back Pain	Diana De Carvalho See abstract on page 55
14	The Effect of Temperature and Exercise on Corticospinal Excitability in Multiple Sclerosis: a Pilot Study	Geetika Grover See abstract on page 73

# Poster presentations

## Tuesday afternoon

**Room: Salon A**

**Monitors: Andrea Pike**

1	Assessment of the Impact of the Vascular Risk Reduction Program for Women A Pilot Study	April Manuel See abstract on page 49
2	Change in risk factor status following first diagnosis of coronary artery disease: A primary care Canadian cohort study	Jacques Van Wijk See abstract on page 50
3	Validation of an electronic medical record data algorithm for assessing the epidemiology of dyslipidemia in Newfoundland	Justin Oake See abstract on page 75
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# Abstracts

## Oral Presentations

### **“Not Fully Satisfied”: Intent to Exclusively Breastfeed and In-Hospital Supplementation**

Julia Temple Newhook, Laurie Twells, Leigh Anne Newhook, William Midodzi, Janet Murphy-Goodridge, Lorraine Burrage

**Context:** Many regions of the world have very low rates of exclusive breastfeeding (EBF). Newfoundland and Labrador (NL), has the lowest 6-month exclusive breastfeeding rate in the country, at an estimated 17%. A recent chart review of the primary healthcare centre in NL indicated that just 26% of all healthy newborns were fed exclusively breast milk in hospital. However, few studies have examined predictors of the in-hospital introduction of non-breast milk fluids (NBF) to infants of mothers/parents who intended to exclusively breastfeed. **Objective:** The objective of this study was to examine both statistical predictors of and participants' own perspectives on the reasons for in-hospital introduction of non-breastmilk fluids. **Design:** This presentation draws on a province-wide, population-based, representative birth cohort study, the Feeding Infants in Newfoundland and Labrador (FiNaL) Study. **Participants:** This longitudinal birth cohort study was initially administered in the third trimester of pregnancy (n= 1091) and at 1-3 months post-partum (n=604). (A third phase of the survey was administered at 6-12 months postpartum, and a fourth phase involves recontact to examine the child's health outcomes child at 12 months and 4 years.) In this presentation, I discuss a sample of interest narrowed to participants who had completed these first two stages of the survey, who had reported intention to EBF for a minimum of 6 months, and who had given birth to healthy, full-term, singleton infants (n=362). **Intervention/Instrument:** N/A **Outcome measures:** In multi-variate logistic regression analyses we evaluated predictors of in-hospital introduction of non-breastmilk fluids. **Results:** Overall, 23.7% of infants (n=82) were introduced to non-breastmilk fluids during their hospital stay following delivery. The strongest predictors of introduction of non-breastmilk fluids were not being breastfed as an infant (OR 2.03, 95% CI, 1.13-3.67), negative first impression of breastfeeding (OR 3.02, 95% CI, 1.72-5.31), and length of breastfeeding parent's hospital stay in days (OR 1.30, 95% CI, 1.00-1.69), while controlling for mode of delivery. From the mother/breastfeeding parent's perspective, the majority of infants were introduced to non-breastmilk fluids (75.4%, n=64) for non-medical or unknown reasons. **Conclusion:** Measures of the hospital experience and of self-efficacy are determinants of in-hospital introduction of non-breastmilk fluids among Newfoundland and Labrador mothers/birthing parents intending to exclusively breastfeed for 6 months.

### **A Need to Promote the Role of the Professional Dietitian**

Barbara Roebbothan, Miranda Polgar, Yanqing Yi

**Context:** Nutritional status and dietary intake are important risk factors associated with the chronic diseases responsible for so many deaths in North America today. 'Dietitian' is the term protected by provincial legislation to designate members of the regulatory NL College of Dietitians practicing in the many disciplines of food/nutrition/dietetics in the province. Although food/nutrition/dietetics is accepted by many as important to health, nutrition misinformation is pervasive in our society. This may be related to a lack of awareness as to which sources of nutrition information are credible and which are not. **Objective:** To assess the knowledge of future healthcare providers as it pertains to the role of the dietitian. **Design:** Cross-sectional investigation via in-person questionnaire. **Participants:** 289 students registered in the professional schools of Pharmacy, Social Work and Medicine, Memorial University. **Intervention/Instrument:** A questionnaire developed and pretested for this study asked 21 questions addressing such issues as source of nutrition information, understanding of the terms 'dietitian' and 'nutritionist', and the role of the

dietitian. Outcome measures: Students' awareness and knowledge. Results: The primary sources of "healthy eating/nutrition information" of respondents were magazines (15.4%) and the internet (15.0%). Dietitians were ranked as #8 source at 5.3%. Less than 25% respondents understood the training required for practice in the field of dietetics and 96% stated the belief that self-identified 'nutritionists' needed formal education. Respondents appeared to associate the dietitian with a clinical setting (83%) and the 'nutritionist' with a community setting (65%). Although most respondents were unclear of the distinction between 'dietitian' and 'nutritionist' and did not often resort to dietitians as a source of healthy eating/nutrition information, they did identify the dietitian as the most effective health professional for managing body weight. Conclusion: Students of health care professional programs should be more aware of the training and thus potential value of the dietitian in providing credible nutrition information and associated healthcare. This is important as the dietitian is the member of the healthcare professional team trained specifically in food/nutrition/dietetics which is being increasingly linked to major causes of illness and death.

### **A Primary Health Care Electronic Medical Record Content Standard: Supporting clinicians at the point of care and beyond**

Mary Byrnes

Context: Comparative analysis of Primary Health Care Electronic Medical Record (EMR) data is challenging to use for analysis in its current state. The data is non-standard, unstructured and collected mostly as free-text fields. An EMR content standard provides a solution. Objective: The Canadian Institute for Health Information (CIHI), in collaboration with Canada Health Infoway and a range of Canadian stakeholders, has developed a Primary Health Care EMR Content Standard (PHC EMR CS). The standard consists of a set of priority EMR data elements and corresponding pick-lists (PLs) which are designed to improve the collection of structured, comparable EMR data, to support quality improvement at the practice and health system level. Target audience: The presentation is intended to inform clinicians and health system policy makers about a pan-Canadian EMR content standard aimed at improving the quality and comparability of primary health care information. Description: CIHI developed the priority set of EMR data elements in consultation with Canadian stakeholders. The associated PLs were validated as a collaborative effort with clinicians and decision support specialists. The PLs consist of clinician-friendly terms, commonly collected at the point of care, covering areas such as health concern, reason for visit and social behaviour. The scope of PLs terms is intended to support key information needs of clinicians and policy makers. Evaluation: Following the release of the CS products, CIHI is approaching jurisdictional partners to partner in piloting the CS. Each pilot project will have an evaluation component and the implementation and content insights will inform the evolution of content standard. A jurisdictional readiness assessment is being also being conducted in preparation for full scale implementation across Canada. Conclusion: CIHI's PHC EMR CS and associated CFPLs are tools intended to support the collection of high quality and comparable EMR data at the point of care and support its meaningful use at the clinic level and by system policy makers. Preliminary insights highlight the value of collaborative partnerships, as well as the need for capacity building and evaluation, to maximize success of a pan-Canadian implementation.

### **Adoption Assessment of a Provincial Electronic Health Record (EHR)**

Kimberly Bonia, Margarita Araoz

Context: The purpose of this presentation is to report on the results obtained from an evaluation of the deployment and adoption of the provincial EHR. Objective: 1. To describe the adoption of the EHR by user characteristics; 2. To understand factors influencing utilization of the EHR; 3. To examine active user behaviors in context of clinical benefits and workflow efficiencies; Design: Stakeholder involvement was essential and an evaluation team was created and comprised of evaluators and individuals from change management. The evaluation approach was

formative and informed improvements to the current EHR. Participants: Surveys were distributed to 431 users of the EHR across the four Region Health Authorities. The majority of respondents were nurses working in emergency departments. Key informant interviews took place with four users of the EHR. Including nurses, pharmacists and physicians working in emergency rooms and hospital pharmacies. Intervention/Instrument: 1. Review of the EHR user monitoring system that tracks information such as occupation, department, frequency of EHR use, adoption progress and user testimonials. 2. EHR adoption survey created to identify and measure key factors that influence utilization and user behaviors. 3. Key informant interviews to collect detailed information about user adoption behavior, the benefits or added value, and the challenges of the EHR. Outcome measures: To determine the relationship between users and factors influencing the adoption of the EHR. Results: The integration or 'adoption' of new technology is dependent upon a number of factors including, but not limited to ease of use, user friendliness, usefulness, training, and support. There is general agreement among users of the EHR that the system is easy to use and can positively impact workflow, patient safety, and clinical decision making. Early benefits of the system indicate that the EHR has increased productivity, communication between health care providers and has improved patient safety. Conclusion: The results will facilitate increase use and optimization of the EHR. An EHR adoption framework will be created to facilitate the implementation and adoption of future EHR components and systems in our province and across the country.

### **BMI Trajectories among Middle-Aged to Older Adults and Health Outcomes**

Meng Wang, Yanqing Yi

Context: Body mass index (BMI) trajectory analyses can better capture body weight change over time. However, most approaches typically use a single average pattern to present the whole population's BMI change. Latent class growth modelling (LCGM) is a powerful statistical approach, which can identify the heterogeneity of BMI development within a population by capturing different trajectories based on individual response patterns. Few studies have addressed the heterogeneity in BMI development and its association with adverse health outcomes in midlife. Objective: 1) To determine if there are distinct BMI developmental trajectories among Canadian adults and 2) to assess whether health consequences vary within different trajectory groups. Design: This study is a secondary analysis based on longitudinal data from the National Population Health Survey (NPHS, 1994-2011). Participants: Adults aged 40-55 in 1994/95 who responded to the NPHS. The study sample included 3,070 adults who provided at least four measures of BMI over an 18 year period based on the NPHS. Pregnant women were excluded. Intervention/Instrument: The longitudinal NPHS (1994-2011), which provides nationally representative health survey data. Outcome measures: LCGM was used to identify BMI trajectories and a series of bivariate regression analyses were conducted to examine if the relative risks of the selected health indicators (e.g., chronic conditions and cognitive problems) differ by BMI trajectory groups. Results: Four distinct BMI trajectories were identified: a Normal-Stable (N-S) group (23.7% of the sample), an Overweight-Stable (OV-S) group (45.4%), an Obese class I-Stable (OB I-S) group (24.9%), and an Obese class II-Stable (OB II-S) group (6.0%). People in the riskier trajectories (OV-S, OB I-S, and OB II-S) were more likely to have asthma, arthritis, hypertension, diabetes, heart disease, cognitive problems, and reduced self-rated health compared to normal weight counterparts. Conclusion: Awareness of discrete BMI trajectories may allow clinicians and policy professionals to tailor programs to specific groups who are at risk for poorer health outcomes due to obesity and to intervene at an earlier stage to alter the path of risky trajectories.



## Changes in Registration Process to Improve Outcomes for Patients presenting with Acute Myocardial Infarction (AMI)

Patricia Pobihushchy-Lawlor

**Context:** As part of a Safer Health Care Now initiative, an interdisciplinary AMI Team was formed at Green Bay Health Centre with a goal to improve the delivery of care to patients that present with symptoms suspicious for AMI. **Objective:** Patients presenting with symptoms of acute myocardial infarction receive timely and appropriate medical interventions to ensure the best possible outcome. **Target audience:** Physicians, Nurse Practitioners, Nurses, Paramedics, Licensed Practical Nurses, Primary Health Care Leadership Teams, Health Information and Registration Clerks, and any other health professionals **Description:** By using a model for improvement based on the principles of Plan, Do, Study, Act (PDSA) the AMI Team reviewed the current process for recognition and treatment of patients presenting with AMI symptoms. Issues were identified that caused delays in timely treatment of AMI patients and a test of change was implemented. Early recognition and interventions for patients with AMI was facilitated through a change in the registration process. **Evaluation:** The AMI Team developed an ongoing evaluation process to continuously improve early recognition and treatment of patients with AMI. The evaluation includes feedback from patients and staff in addition to regular chart audits and reviews. **Conclusion:** As a result of the AMI initiative, we developed a streamlined approach to patient registration that led to earlier recognition of patients reason for visit including AMI. Ultimately, this allowed for timely and appropriate medical care with the best possible patient outcomes.

## Community Rapid Response Team - Eastern Health

Dawn Gallant, Jennifer Williams

**Context:** Seniors comprise 25% of all Emergency Department visits and 44% of discharged seniors will return to the Emergency Department within six months. Discharge of seniors from the Emergency Department with no readily available caregiver or support system also leads to early re-admission. Findings suggest that seniors are able to be cared for at home, with the right supports in place (Data source CIHI, 2012). Assisting appropriate individuals in returning home upon presentation to Emergency Department not only avoids unnecessary hospital admissions but enables seniors to gain independence in activities of daily living and ultimately to age in place. The Community Rapid Response Team (CRRT) is an 18 month pilot project of strengthened & structured partnership between home & community services & the emergency departments in the Eastern, Central & Western Health Authorities. Eligible individuals who present to the Emergency Departments may receive an enhanced level of care/ service in the community setting to facilitate recovery at home by restoring/ maintaining client independence & function. **Objective:** The goal of the project is to provide quality, cost effective care to seniors in their own home as an alternative to acute or long term care. **Target audience:** The target population for the CRRT are individuals who present to the emergency department who are 65 years and older (may be under 65 based on complexity of needs & capacity of CRRT resources with manager's approval), medically stable, have multiple medical problems and / or are taking multiple medications. Individuals are also eligible for the program if they present to the Emergency Department due to a fall or caregiver burnout, are diagnosed with acute delirium that has been stabilized through intervention or have common diagnosis such as urinary tract infection or congestive heart failure. Recent expanded criteria includes Individuals who are assessed to be at risk for re-presentation to the emergency room or at risk to be admitted to hospital at present or in the near future, those who had an unplanned hospital admission in the previous 30 days or who have presented to the Emergency Department more than once in the past 14 days. Individuals presenting to the Emergency Department after the hours of operation for the CRRT and appear to meet the program criteria can be identified and referred to have the Geriatric Assessment completed in the individual's home and have services initiated from the home. **Description:** In Eastern Health the inter professional CRRT assesses patients in the Health

Sciences or St. Clare's Mercy Hospital emergency departments or in their home following presentation to the emergency department, after hours, to determine if medically stable clients can return to or remain in their home safely with enhanced community-based services. The inter professional team consists a Community Health Nurse based in each of the 2 adult emergency departments in St. John's, and a community based team consisting of a Community Health Nurse, Nurse Practitioner, Occupational Therapist, Physiotherapist and an Administrative Support person. Case conferences are held weekly or as needed with the team's collaborating physician & pharmacist to discuss complex cases. Services clients may receive in the home may include increased nursing care, priority access to occupational & physical therapy, short term home support for a maximum of 2 weeks and/or access to equipment, thereby avoiding hospital admission. The CRRT may provide service up to a 30 day period at which time the client is either discharged, if the client's care goals are met, or linked with other community based programs / services if necessary to facilitate the client to continue to remain in their own home. Evaluation: The Newfoundland & Labrador Center for Health Information (NLCHI) is leading the formal evaluation after the 18 month pilot with input from the Regional Health Authorities. Opportunities for revisions to the eligibility criteria and / or processes are considered during the pilot. Conclusion: As of March 31, 2015, 6 months following implementation of the CRRT in Eastern Health there are a total of 146 clients who have received service by the CRRT. Although the evaluation has not been completed it is anticipated there will be a positive impact on hospital admissions, return visits to the Emergency Departments, a reduction in the number of clients considered to be community emergencies in the Emergency Departments and increased client satisfaction as care is provided in the home.

### **Comparing three dual task tests to detect cognitive interference in MS patients and controls**

Megan Kirkland, Samantha N Rancourt, Michelle Ploughman

Context: Dual-tasking (combining a motor and cognitive task (DT)), is a new rehabilitation outcome measure that highlights subtle impairments in patients with multiple sclerosis (MS). There are several methods to measure DT and the optimal method is under debate. Objective: We compared three different DT conditions to determine which best measured changes in gait among people with MS in comparison to healthy controls. Design: Observational study of 3 methods of DT (randomized order) during gait compared to self-selected walking among people with MS and age, gender and education matched controls. Participants: Individuals with MS (N=20; mean age  $\pm$  SD, 45.25 $\pm$ 10.25y) that were relapse-free in previous 3 months and healthy age, gender and education matched controls (N=13; 45.92 $\pm$ 11.31y) were recruited following ethical approval. There was no significance between groups for any demographic variables. Intervention/Instrument: There were 3 different dual task conditions: ABC's (saying every second letter of the alphabet), 7's (serially subtracting 7's from 100) and 3's (counting upwards, leaving out multiples and numbers that include 3). These conditions were performed in randomized order following a self-selected walk. Outcome measures: Data for velocity, cadence, stride width, stride length and percent time in double support was calculated using an instrumented Walkway (Protokinetics, Havertown, USA). Results: Three out of five variables showed that 7's highlighted the most impairment, slightly more than 3's and significantly more than ABC's. The differences between 7's and ABC's were as follows; double support (p=0.02), stride width (p=0.01) and stride length (p=0.02). Velocity and cadence had no significant differences between conditions. Conclusion: Our results indicate that serially subtracting 7's is the most sensitive and consistent DT condition of the three tested. Velocity and cadence did not differ between conditions, therefore any test will measure cost for those variables. However, 7's produced slightly more gait impairment than 3's and significantly more than ABC's for the majority of variables, therefore, 7's is the most sensitive DT condition for detecting changes in gait.

### Creation of a Breastfeeding Management Resource for Physicians

Amanda Pendergast, Janet Fox-Ber, Rebecca Rudofsky, Janet Murphy Goodridge, Anne Drover

**Context:** Newfoundland and Labrador (NL) has one of the lowest breastfeeding initiation rates in Canada. Breastfeeding initiation rate is around 70% with an unacceptably high early cessation rate. Many factors contribute to a woman choosing to breastfeed and choosing to continue to breastfeed. Research has demonstrated that inaccurate and inconsistent information from health care providers about breastfeeding can undermine a mother's confidence in breastfeeding and lead to early cessation. Thus it is imperative for physicians to provide timely and knowledgeable breastfeeding support. In addition, reviews of medical curriculum have determined that many medical and nursing programs are deficient in high quality breastfeeding education for learners. Many physicians may be dealing with breastfeeding issues in their patients without the benefit of proper training. Physicians in Newfoundland and Labrador have voiced their concern over lack of adequate physician resources to assist new mothers with breastfeeding issues. Physicians expressed the need for a desk top resource that could be easily used in the office to answer some common questions with respect to breastfeeding management. **Objective:** The Breastfeeding Coalition of Newfoundland and Labrador worked with local breastfeeding experts to answer the need of local physicians to develop a resource called Breastfeeding Management: A Physicians' Tool Kit. **Target audience:** Primarily physicians, family doctors, pediatricians, obstetricians, and other medical specialists that are interacting and advising breastfeeding mothers. **Description:** The Tool Kit is a very user-friendly resource that can be used readily in the physician's office. Topics covered in breastfeeding management were: painful breastfeeding, slow weight gain, jaundice, medications in breastfeeding, poor milk supply, assessing latch and local resources for mothers. **Evaluation:** The Coalition is poised to release the Tool kit in the coming months. The next step in development will be the dissemination and evaluation of the tool kit. **Conclusion:** Breastfeeding families in Newfoundland and Labrador deserve to have physicians who are knowledgeable about breastfeeding management issues. Physicians want to be able to assist their patients have a successful breastfeeding experience. We believe Breastfeeding Management: A Physicians' Tool Kit will help achieve this.

### Data Inventory for Healthy Aging Research

John Knight, Sonya Bowen, Kerry LeFresne

**Context:** In Canada, the proportion of the population over the age of 65 is growing and is expected to increase. Thus monitoring and research into characteristics of the elderly population is important for policy and program planning. Secondary data holdings contain a vast amount of information and can be a valuable resource for this purpose. However, a lack of knowledge of these data sources can impede their use. **Objective:** The objective of this study was to conduct an inventory of data sources for research and policy and program planning related to healthy aging in Newfoundland and Labrador (NL). **Design:** Discussion groups and interviews were conducted with health stakeholders and representatives of data custodians. **Participants:** Stakeholder groups included government decision-makers, researchers, health professionals and consultants. **Intervention/Instrument:** Discussion groups and interviews were used to gather information and aid in the following tasks/measures below: **Outcome measures:** 1. Identification of stakeholder data needs 2. Identification of available data holdings 3. Systematic assessment of data quality of identified data holdings using a data quality assessment tool 4. Identification of gaps and limitations in identified data holdings 5. Identification of potential strategies to acquire missing information 6. Production a data inventory document with descriptions and data quality assessments of data holdings which will be available to stakeholders **Results:** Themes emerging from discussions of stakeholder data needs included: Improved Definition of Healthy Aging, Aging Throughout the Life Course, Diversity of the Population, Risk and Protective Factors, Health Outcomes and Health Care Services. Many different relevant data sources were identified, along with data gaps and strategies to acquire missing information. **Conclusion:** Though data needs for research and policy and decision-mak-

ing related to healthy aging NL are great and diverse, many different data sources exist which could be better utilized to inform this very important area. It is hoped that the data inventory document produced from this study will facilitate awareness of, access to and use of available health-related data sources in NL and act as a useful reference for researchers, policy-makers and program planners in the area of healthy aging.

### **Developing Primary Care Investigation and Management Guidelines for Iron Deficiency Anemia Designed for Newfoundland and Labrador Practitioners**

Tom Dunne, Mary-Frances Scully

**Context:** Concern has developed in the Adult Division of Hematology/Oncology of MUN/Eastern Health and their colleagues within MUN Family Medicine, Gastroenterology, Laboratory Medicine, nurse practitioners, Obstetrics/Genecology Paediatrics and Pharmacy regarding the very high prevalence of mild, moderate and severe iron deficiency anemia, in our province. The Adult Division of Hematology/Oncology of Eastern Health is developing a long-term project to better understand and address the factors underlying this condition in Newfoundland and Labrador (NL) and the challenge this poses for primary care practitioners. As a starting point, new primary care guidelines are being developed to guide practitioners in investigation and management of this condition. **Objective:** These new guidelines target improvement in early and accurate diagnosis and treatment of iron deficiency anemia in the primary care setting with a resulting overall reduction in progression of iron deficiency anemia requiring management outside the primary care setting. **Target audience:** These guidelines are intended to guide primary care best practice for family doctors, nurse practitioners, and pharmacists practicing in NL. **Description:** The primary objective of this policy is to develop a consensus, evidence-based Guideline of Investigation and Management of Iron Deficiency Anemia for NL in collaboration with the disciplines of Family Medicine, Gastroenterology, Laboratory Medicine, Obstetrics/Genecology and Paediatrics based on similar guidelines developed in British Columbia. **Evaluation:** This program will be evaluated on the basis of feedback from primary care practitioners and patients. Initially the program will be evaluated by monitoring the rates of suboptimal ferritin levels in different patient populations. The overall project is seeking to work with NLCHI to link iron deficiency to health care utilization. **Conclusion:** These guidelines are currently in development and we anticipate that the guidelines will be ready for release at PriFor in June.

### **Diabetes And The Association Of Skin And Soft Tissue Infection: A Systematic Review Of Observational Studies**

Waseem Abu-Ashour, Amy Randell, Laurie Twells, James Valcour, Kelly Hatch, John-Michael Gamble

**Context:** It's generally accepted that individuals with diabetes are more likely to suffer from skin and soft tissue infections than individuals without. Yet controversy still exists. **Objective:** To summarize and quantify the association between diabetes and the risk of skin and soft tissue infections (SSTIs). **Design:** A systematic review and meta-analysis. **Participants:** Adults with diabetes mellitus. **Intervention/Instrument:** Two reviewers independently screened articles identified from PubMed, EMBASE, Cochrane library, IPA, and Web of Science databases. **Outcome measures:** Studies evaluating the incidence of SSTIs in adults with diabetes using either a cohort (CS) or case-control (CCS) design were included. Study quality was assessed using the Newcastle-Ottawa Scale. Summary crude odds ratios (cOR) and adjusted odds ratios (aOR) with 95% confidence intervals (CIs) were calculated using random effects models, stratified by study design. Heterogeneity was measured using the I<sup>2</sup>-statistic and explored using subgroup analyses by type of surgery (cardiothoracic, general, orthopedic, skin, spinal, gastrointestinal, plastic and gynecology surgery). **Results:** A total of 71 studies (43 CS and 28 CCS) were eligible to be included. Combining results from all cohort studies, diabetes was associated with an increased incidence of an SSTI (cOR 2.26, 95%CI 1.88-2.72; aOR 1.99, 95%CI 1.57-2.52), albeit with considerable heterogeneity (I<sup>2</sup>=93.6% for crude and I<sup>2</sup>=84%

for adjusted estimates). A stronger association was observed among case-control studies: cOR 3.10, 95%CI 2.34–4.12, I<sup>2</sup>=78.5%; aOR 2.44, 95%CI 2.16–2.76, I<sup>2</sup>=78.5%. Similar results were observed for total SSIs (CS: cOR 2.33, 95%CI 1.88–2.88, I<sup>2</sup>=93.4; aOR 2.04, 95%CI 1.59–2.62, I<sup>2</sup>= 84.4%; CCS: cOR 3.45, 95%CI 2.58–4.62, I<sup>2</sup>=74.4%; aOR 2.44, 95%CI 2.14–2.77, I<sup>2</sup>=0%). Heterogeneity was reduced within subgroups: cardiothoracic (I<sup>2</sup>=0%), general (I<sup>2</sup>=85.9%), orthopedic (I<sup>2</sup>=84.6%), skin (I<sup>2</sup>=43.3%), spinal (I<sup>2</sup>=0%), gastrointestinal (I<sup>2</sup>=0%) and plastic (I<sup>2</sup>=0%). Conclusion: Diabetes is associated with an approximately 2-fold increased risk of SSTI. The majority of the skin and soft tissue infections reported were due to surgical site infections. Results were generally consistent across types of surgeries with cardiothoracic, orthopedic and spinal surgery having the strongest associations.

### Diabetes Is Associated With An Increased Risk of Respiratory Tract Infections: A Systematic Review Of Observational Studies

Waseem Abu-Ashour, Amy Randell, Laurie Twells, James Valcour, Kelly Hatch, John-Michael Gamble

Context: Although people with diabetes are thought to be at a potentially higher risk for respiratory tract infections (RTIs), there is a lack of substantive evidence supporting this relationship. Objective: To summarize and quantify the association between diabetes and the risk of RTIs. Design: A systematic review and meta-analysis. Participants: Adults with diabetes mellitus. Intervention/Instrument: Two reviewers independently screened articles identified from PubMed, EMBASE, Cochrane library, International Pharmaceutical Abstracts, and Web of Science databases. Outcome measures: Studies evaluating the incidence of RTIs in adults with diabetes using either a cohort study (CS) or a case-control study (CCS) design were included. Study quality was assessed using the Newcastle-Ottawa Scale. Summary crude odds ratios (cOR) and adjusted odds ratios (aOR) with 95% confidence intervals (CIs) were calculated using random effects models, stratified by study design. Heterogeneity was measured using the I<sup>2</sup>-statistic and explored using subgroup analyses by 2 main categories of respiratory tract infection (pneumonia and tuberculosis). Results: A total of 24 studies (15 CS and 9 CCS) were eligible to be included. Combining results from all CS, diabetes was associated with an increased incidence of RTI (cOR 1.52, 95%CI 1.32-1.75; aOR 1.39, 95%CI 1.26-1.54), with considerable heterogeneity for crude estimate (I<sup>2</sup>=93.3%), and moderate heterogeneity for adjusted estimates (I<sup>2</sup>=49.7%). A stronger association was observed among CCS: cOR 2.09, 95%CI 1.66-2.64, I<sup>2</sup>=96.1%; aOR 1.62, 95%CI 1.33-1.96, I<sup>2</sup>=87.3%. Similar results were observed for the subcategories: A) Pneumonia, CS: cOR 2.09, 95%CI 1.24-3.52, I<sup>2</sup>=96.1%; aOR 2.2, 95%CI 1.23-3.63, I<sup>2</sup>= 20.8%; CCS: cOR 1.66, 95%CI 1.60-1.71, I<sup>2</sup>=0.0%; aOR 1.26, 95%CI 1.21-1.31, I<sup>2</sup>=0%; B) Tuberculosis, CS: cOR 1.24, 95%CI 1.10-1.40, I<sup>2</sup>=87.0%; aOR 1.36, 95%CI 1.24-1.49, I<sup>2</sup>= 45.5%; CCS: cOR 2.55, 95%CI 1.90-3.42, I<sup>2</sup>=95.2%; aOR 1.75, 95%CI 1.33-2.32, I<sup>2</sup>=88.8%. Conclusion: Diabetes is associated with an increased risk of respiratory tract infection. The results were comparable when further examining the subcategories, mainly including pneumonia and tuberculosis. More research is needed to explore the effects of patient characteristics such as BMI and HbA1C on the risk of respiratory tract infections.

### Establishing a practice-based research network: The Canadian Chiropractic Guideline Initiative

André Bussi eres, Sil Mior, Darrell Wade, PBRN Advisory Committee

Context: Musculoskeletal disorders (MSD) are associated with significant social and economic burdens on society. Despite available evidence for optimal management of these conditions, low adherence to guidelines and wide variation in services persist across health professions, including chiropractic. To address this variation, the Canadian Chiropractic Guideline Initiative (CCGI) has established supporting strategies that aim to: i) transform the culture of the profession toward one that is guided by evidence-informed practice; ii) engage stakeholders; iii) produce, adapt, or endorse recommendations related to the management of MSD; and iv) apply innovative knowledge trans-

lation strategies to influence chiropractic practice. Recently a national chiropractic practice-based research network (PBRN) was established, bringing together researchers and clinicians across multiple disciplines with the aim of improving health services delivery and closing the gap between research and practice. Objective: The overall project aim of CCGI is to improve patient care and health outcomes among individuals with MSD. One vital component of this project is to explore the factors critical to establishing and implementing a Canadian chiropractic PBRN. Target audience: Researchers, clinicians, decision makers. Description: A review of optimal strategies for planning, structuring and implementing a PBRN was first conducted and findings summarized. Based on an integrated knowledge translation framework and a participatory approach, key stakeholders, including academics, elected provincial and national leaders, clinicians, and patient representatives met in December 2014 to draft the ethics and governance structure of the PBRN. Evaluation: A national network was established and three local PBRNs (British Columbia, Quebec, Nova Scotia) have started pilot studies. Seed funding will be made available to local PBRNs for projects aligned with the CCGI mission to support research coordinators. Local PBRNs are expected to improve information sharing, strengthen research capacity and engage decision-makers more directly. They will also provide a structure to recruit partners, clinicians and their patients, and to identify knowledge-practice gaps and evaluate practice change. Key indicators of program success include organizational, process of care and patient outcomes measures. Conclusion: The establishment of a national PBRN provides a unique opportunity to engage its members in common quality improvement activities to improve patient care.

### **Evaluation of Staff regarding Relocation of a Residential Long Term Care Facility**

Anne Kearney, Patricia Grainger, Glenda Compton, Arthur Morgan

Context: A strong primary health care system is composed of acute care, long term care, public health and community-based components. There is little documentation in the academic literature about relocation of patients/residents and staff in an institutional move. This presentation will present the findings of the evaluation of a relocation of a residential long term care facility in St. John's. Objective: To evaluate the impact of the relocation of a residential long term care facility on staff involved in the move. Design: All staff were surveyed about their perceptions of the relocation process two months after the move using a newly created 51-item questionnaire containing both open- and closed-ended questions (5-point Likert scale). Participants: All staff (about 628) were eligible to participate in the survey. Of these, the majority were nursing staff (RNs, LPNs, and PCAs), as well as allied health such as Therapeutic Recreation and Social Work, and support staff including infrastructure, housekeeping, dietary and laundry. Managers were also invited to respond. Intervention/Instrument: The survey questions reflected three time periods of the relocation. The pre-move section asked about the quality and comprehensiveness of information and support provided to staff before the move. The second section asked about organization, support, and general satisfaction during the actual move days. The final section asked about their current work situation including comfort level with the new building, support in the new location, and ability to do their job. Outcome measures: Staff satisfaction with the relocation process. Results: The results were positive for the three subscales of the survey with average scores for pre-, mid-, and post- move items of 3.67, 3.94 and 3.66 respectively. Staff were very positive about the move itself, the orientation provided and overall planning, and support from coworkers and management. Some concerns were raised about staffing shortages, involvement of residents, and preparedness of the units and building. Conclusion: This article describes a very well planned and executed relocation of a long term residential care facility and can provide guidance and lessons learned to assist other administrators who are planning a similar endeavour.

## Facilitators and barriers to participation in colorectal cancer screening: A systematic review and Meta-study synthesis of qualitative studies

Gladys Honein

**Context:** Screening for colorectal cancer (CRC) can improve disease outcome yet participation tend to be low, especially among ethnic minorities, low socio-economic status (SES) individuals and men. **Objective:** To identify determinants of CRC screening participation and factors acting as facilitators and barriers to participation and sought explanations for lower participation among certain population groups. **Design:** We performed a systematic review and meta-study synthesis of qualitative studies **Participants:** Systematic searches of MEDLINE, EMBASE, CINAHL, and PsycINFO databases were undertaken from inception to February 2015. We identified studies that elicited views, perceptions, and beliefs towards CRC screening participation among adults at average-risk for CRC. **Intervention/Instrument:** The selected primary qualitative studies were appraised for quality and relevance by 2 independent reviewers and then synthesized using a two-stage meta-synthesis approach **Outcome measures:** Patterns and themes were identified across three levels of analysis while preserving the original context, followed by synthesis to generate new theory around the phenomenon. **Results:** 94 studies were included in the meta-study. Whether individuals decide to participate in CRC screening is determined by: awareness of CRC disease, screening tests and purpose of screening; fear of cancer; fatalistic views, and aversion to CRC screening tests. Four cross cutting factors act as facilitators, and their lack of as barriers: public education, physician recommendation and approach, spouse and social network support, and self-motivation. Public education is critical for raising awareness. Physician recommendation prompts individuals to get screened despite their aversion to screening tests and their approach can affect unrealistic fear of cancer and fatalistic views. Based on their experiences and beliefs, spouse and social network can motivate or deter individuals from getting screened. **Conclusion:** We identified factors affecting the decision to participate in CRC screening. This synthesis provided a greater conceptual understanding of how these factors are connected. This understanding is needed to direct future interventions aimed at raising overall participation rates.

## Family Health Teams in New Brunswick

Bronwyn Davies, Robert Boulay

**Context:** The vision of the Primary Healthcare Framework for New Brunswick “better health and better care with engaged individuals and communities” will be achieved through an enhanced integration of existing services and infrastructure. It will involve the creation of patient-centered and community focused interdisciplinary teams composed of physicians, nurse practitioners, nurses, social workers, dieticians, etc. These teams will use an electronic medical record, offer extended hours, same-day/next-day appointments and report on outcomes annually. **Objective:** To improve primary health care access through patient-centred interdisciplinary teams. To enhance chronic disease management, reduce hospital admissions and improve community health integration. **Target audience:** Patients, primary health care providers including family physicians, health administrators and policy decision makers. **Description:** This presentation will detail the living lab that is the Miramichi Family team, the first of its kind in New Brunswick. Established in 2010, it consists of 6 family physicians, support staff, family practice nurses, mental health social worker, dietician, respiratory therapist, diabetic nurse and a family health team coordinator. It provides care for close to 12,000 patients and offers health education programs, an after-hours arrangement through Telecare 811, and same day, next day appointments. **Evaluation:** A comprehensive evaluation of this family health team has just been completed. Evaluation components included process and system indicators like ER visits and hospitalization rates, quality indicators as well as patient and provider satisfaction rates. **Conclusion:** The work of this primary health care team in collaboration with Region Health Authorities and Department of Health civil servants and policy developers exemplifies the transformational health care changes that are possible for the patients and the communities where they live.

## Finding a BETTER Way: Clinical Results from the BETTER2 Implementation Study in Newfoundland and Labrador

Kris Aubrey-Bassler, Richard Cullen, Donna Manca, Eva Grunfeld, Carolina Aguilar, Chris Meaney, Rahim Moineddin, Julie Baxter

Context: Chronic disease is becoming increasingly prevalent. Although primary care is the ideal place to target chronic disease prevention and screening activities, family physicians do not have the additional time that these activities require. The BETTER randomized controlled trial showed that a prevention practitioner operating within a family practice significantly improved patient prevention and screening activity achievement. Objective: To expand BETTER approach to broader clinical settings and compare to results achieved in the BETTER trial. Design: We followed an implementation trial approach. The intervention delivery was adapted to suit each clinical situation. Patients were invited by letter, telephone, advertisements, and posters in the clinic waiting areas. Participants: Three NL clinics participated. Patients aged 40 to 65 were eligible upon the approval of their physician. Clinic 1 n = 57; Clinic 2 n = 23; Clinic 3 n = 74. Mean age was 56 years; participants were 77% female. Intervention/Instrument: Patients complete the BETTER Health Survey. Data from the survey was combined with chart information prior to the visit. The intervention involved a motivational interview and goal setting via a “prevention prescription.” Follow up visits were held at 6 months and, where possible, 12 months. Outcome measures: There were 27 potential chronic disease prevention and screening activities. The SQUID (summary quality index) measured the proportion of prevention and screening activities achieved out of the total for which the patient was eligible. Results: Overall SQUID was 49.3%. Conclusion: The BETTER approach of having clinical visits with a non-physician provider that is dedicated entirely to chronic disease prevention and screening achieves much higher rates of prevention and screening activity achievement than the rates currently seen in a typical family practice.

## How is low back pain managed in primary care? A global scoping review

Amanda Hall, Professor Robyn Norton, Professor Jane Latimer

Context: Low back pain (LBP) is the leading cause of disability worldwide and is associated with high disease burden. Clinical Practice Guidelines (CPGs) exist, however, little is known about their use by Health Care Professionals (HCPs) in practice. Objective: To identify and synthesize the evidence-practice gaps in LBP management to facilitate and improve knowledge translation. Design: A scoping review. Participants: A sensitive search of the terms “Clinical practice guidelines” and “Low Back Pain” was performed in MEDline, CINAHL and Pubmed. Studies including both HCPs and patients with LBP were selected. Studies were included if they assessed at least one of the following outcomes: HCPs practice behaviours, adherence to CPGs, or barriers to CPG use. Intervention/Instrument: n/a. Outcome measures: The methodological design and features of included studies were described. Studies were narratively synthesized based on the outcomes listed above. Furthermore, CPG implementation quality was assessed using the AGREE quality checklist. Results: Included studies were predominantly cross-sectional surveys (n=22) with <50% response rates, reporting health-professional’s preferences or self-reported treatment rather than actual behavior. In a smaller set of medical-record reviews (n=11); over-prescription of NSAIDs, opioids and referrals for X-rays/MRIs was commonly reported and inconsistent advice given regarding prognosis, physical activity and rest. Qualitative studies (n=6) and surveys (n=7) reported the following barriers to implementation; (i) CPG vagueness and poor generalizability, (ii) low expectations of desired outcomes, (iii) patient factors conflicting with CPG, and (iv) a lack of time to negotiate/reassure patients. CPG implementation quality was low and could be improved by: decreasing ambiguity, providing application tools, discussing organizational barriers and cost implications, and presenting key monitoring criteria. Conclusion: While the studies included in this review had significant limitations, a number of important evidence-practice gaps in LBP management were identified. Barriers to imple-



mentation of CPGs included CPG specific characteristics as well as the patients' views on appropriate care. Future research should determine the most appropriate and targeted implementation strategies to overcome these barriers and reduce evidence practice gaps.

### **Informed consent for newborn bloodspot screening parents and healthcare professionals experiences in practice**

Daryl Pullman, Holly Etchegary, Lesley Turner, Stuart Nichols, Charlene Simmonds, Laure Tessier, Beth Potter, Pranesh Chakraborty, Robin Hayeems, Brenda Wilson

**Context:** : Despite the longevity of newborn screening (NBS) programs in Canada, we know little about the actual process for obtaining consent for screening, nor how this is experienced by parents and healthcare professionals (HCPs). **Objective:** This study will present the first empirical data comparing the opinions and experiences of parents and HCPs regarding consent practices to newborn screening. **Design:** Qualitative interview study **Participants:** Parents who have been offered newborn screening and healthcare professionals with experience in providing that offer **Intervention/Instrument:** Semi-structured interview **Outcome measures:** Parents' and professionals' recounting of informed consent in practice **Results:** Most parents were only vaguely aware of NBS prior to giving birth, though attitudes were largely positive towards it. The consenting process was highly variable within and between provinces and attitudes varied regarding appropriate models. HCP experiences and attitudes were marked with assumptions about the roles of other HCPs in obtaining consent. While all participants supported the idea of consent, most highlighted the timing of the process. In particular, both parents and HCPs suggested information about NBS be provided before the birth, sometime during pregnancy. **Conclusion:** : Findings highlight variability in the processes of obtaining informed consent and further our understanding of attitudes toward consent. Findings may also have specific application to the development of parent and professional education materials for NBS, as well as to policy discussions about the process for obtaining consent and the provision of information to parents.

### **Innovative Access to Care for People with Chronic Disease**

Sarah Randell, Valerie Pritchett

**Context:** Chronic diseases are significant cost drivers on the health care system, and present challenges to people and communities. Innovative strategies are required in today's healthcare environment to ensure care which is timely, effective and efficient for people living with chronic disease. **Objective:** The main objectives of these programs are to improve the care for patients with chronic disease, and improve self management skills thereby decreasing healthcare utilization and the overall burden to the healthcare system. **Target audience:** People living with chronic disease and their families. Two new programs have been developed to specifically target patients living with either COPD or Heart Failure. The programs also target healthcare providers through a collaborative care approach. **Description:** Grounded in the Chronic Care Model, Central Health is utilizing innovative strategies which include partnerships with external stakeholders, alternative access models, and self management collaborative approaches to care, in order to better meet the needs of people living with chronic disease. The COPD Outreach Program focuses on advanced COPD and the provision of home based education, self-management skill development, psychosocial support and advanced care planning. The Heart Failure Outreach Program is specifically designed, utilizing a unique telehealth chronic disease management system, to provide remote access to care through telephonic system contact. **Evaluation:** Each program has a performance measurement plan outlining four main quality domains with evaluation indicators attached. The quality domains include: access, patient and family centred care, coordination of care and efficiency of the healthcare system. **Conclusion:** Both programs are in the early implementation phase. The Aim of the COPD

Outreach Program is to reduce hospital utilization of patients with advanced COPD within the 4 designated health services areas serviced by JPMRHC by 15%. The aim of the Heart Failure Outreach Program is to enroll 40 patients in the program by September 2015.

### **Interacting with youth through drama - Family Medicine Behind the Scenes**

Stephen Darcy, Lisa Bishop

**Context:** This project is part of a family medicine community based participatory research study involving youth mental health and wellness. It describes an attempt to help young people express their concerns through participation in the dramatic arts which can have a positive effect on mental health and well-being. Some noteworthy effects include increased confidence, increased self-esteem, a sense of achievement, empowerment, social skills and positive behavioural changes. **Objective:** (i) To determine the effectiveness of drama as a tool for the exploration of youth mental health and wellness issues within the community (ii) To recognize the highlights and lessons learned from a youth drama project. **Design:** Before/after program evaluation through the use of survey instruments and audience feedback. **Participants:** Grade 7-9 students recruited from the community school. **Intervention/Instrument:** The students are participating in a rendition of scenes from Shakespeare's Romeo and Juliet which is led by a qualified artistic director. The youth are expected to take a leadership role in the program, with responsibilities ranging from staging their play to advertising the production using effective methods. They will be given the opportunity to promote the play, and will perform it at their school for parents, fellow students, and the community at large. **Outcome measures:** Measures will include: number of youth who participate; attitudes of youth towards drama; knowledge/perception of mental health and wellness; perceptions of teachers and artistic directors involved in the production; evaluation of audience on production night. **Results:** We anticipate that youth participation in this drama experience will increase their knowledge and skills of drama and their appreciation of mental health issues. It is also anticipated to increase the student's confidence and communication skills that can be transferable to other aspects of their life. **Conclusion:** By giving the youth ownership of this dramatic production, they will develop a skill set that will be supportive of positive mental health and well-being. The unique aspect to this project is the linkage to the family physician who is a resource to the youth about mental health information and services.

### **It is Time to Reconsider Population-based Mammography Screening**

Anne Kearney

**Context:** Early detection for breast cancer through mammography screening has been widely promoted for decades and population-based screening programs have been established in all provinces and two territories in Canada as well as in many countries in the western world. Over the past 15 years, there has been substantial evidence that the harms of mammography screening outweigh the benefits. It is time to reconsider policy governing population-based mammography screening. **Objective:** Our province offers organized population-based breast screening at three screening centres. The goal of the program is to reduce morbidity and mortality of breast cancer through early detection. **Target audience:** The Breast Screening Program offers services to women 40-74 years of age who live in the catchment areas of the screening centres. Eligibility is based on age alone for women 50-74 and women receive a letter of invitation to begin screening and a reminder letter to continue screening at 1 to 2 year intervals. Women 40-49 years of age are screened upon a referral from a physician. **Description:** This paper will present the findings from the latest systematic review of mammography randomized trials conducted by the Cochrane Collaboration and the Canadian National Breast Screening Study 25-year follow up. The authors of both reports conclude there is no reliable evidence that population-based mammography screening reduces mortality but there is good evidence of harm in the form of false positive findings, overdiagnosis and unnecessary treatment, and associated psychological distress. The authors of these reports conclude it is time to reconsider current population-based mammography screening for

breast cancer. They further stress the need for women to receive balanced information about the potential benefits and harms of mammography screening to enable them to make an informed decision about whether or not to have this screening. Evaluation: Important indicators are reduced breast cancer mortality, false positive rate, overdiagnosed cancers and treatment for the same including associated morbidity and mortality, and psychological distress. Conclusion: It is time for policymakers to discontinue population-based mammography screening and shift to a more individualized approach to early detection, especially for women who are assessed to be at higher risk.

### **Music and Memory: Personalised music for dementia patients**

Aaron McKim, Rebecca Small

Context: Eastern Health, the largest Regional Health Authority in the province, has 19 Long Term Care facilities. A significant proportion of residents in these facilities are elderly (>65 years) and display symptoms of dementia. While few rigorous studies exist, some research has suggested music interventions may decrease agitation and aggression in patients with dementia (Clark et al 1998;Gerdner, 2000). As such, personalized music may present as a low cost, non-invasive alternative to more traditional behavior modification mechanisms such as restraint usage or antipsychotic drug administration. Objective: To assess the effectiveness of a personalized music intervention on residents with dementia residing in the long term care setting. Design: A mixed methods design, including pre/post survey administration, interviews and an examination of medication administration records was utilized to assess the impact of a personalized music intervention on dementia residents. Participants: Approximately 80 residents with dementia from three long term care facilities in the urban Eastern Health region participated in the pilot. Intervention/Instrument: The intervention comprised a personalized music intervention delivered via iPod. The Neuropsychiatric Inventory (NPI) was administered pre- and post-intervention to assess change in specific behaviors such as aggression, agitation, and delusions as well as occupational disruptiveness. A semi-structured interview protocol was utilized to garner further insight into the impact of the intervention on residents and staff Outcome measures: We are measuring the use of iPods, in what way staff are using them with residents, what impact the intervention is having. This study also measures the impact on nursing staff in terms of care burden. The use of medication is also being measured through the Medication Admin. Record (MAR). Finally we are doing qualitative interviews with nursing staff to gain further insight into the effect of this intervention. Results: Preliminary results suggest limited impact of the personalized music intervention on behaviors as measured by the NPI at two sites; however, qualitative feedback provided via staff interviews suggested the intervention was beneficial for some residents. Further analysis to be conducted to assess the impact of the intervention on antipsychotic drug administration. Conclusion: Ascertaining the impact of the music intervention on specific behaviors proved difficult using the NPI. Hence, eligibility screening is recommended. Furthermore, staff indicated personalized music impacted behaviors in certain residents and may present as a low cost, non-intrusive recreational activity that residents can enjoy.

### **Patient Advisory Councils in the Patients Medical Home Model**

Cathy MacLean, Alex States

Context: Engaging patients in health care and research Objective: To explore the opportunity to develop more PACs in NL Target audience: Family Physicians and RHAs and researchers Description: A new PAC has been implemented in the academic family medicine clinics Evaluation: This is a new initiative that has yet to be evaluated. Establishing PACs and exploring potential methods of evaluation need to be developed. Conclusion: There is a need for more patient input in primary care settings and in primary care research. PACs might be a means to access their voice. How to spread this innovation in NL and to evaluate their impact will be required.

## Patient characteristics associated with successfully completed chronic disease prevention and screening (CDPS) activities in primary care physician practices: Findings from the BETTER RCT

Paul Krueger, Krueger P, Meaney C, Moineddin R, Aguilar C, Manca D, Grunfeld E

**Context:** The improvement of chronic disease prevention and screening (CDPS) activities within primary care settings is needed to improve patient health outcomes. Evidence suggests that multifaceted interventions tailored to patients' needs will improve CDPS outcomes. The BETTER pragmatic cluster randomized controlled trial concluded that a one hour patient level intervention by an allied health care professional (termed prevention practitioner or PP) was effective in improving adherence to recommended CDPS preventive activities. **Objective:** Determine the extent of variability in successfully completed CDPS activities attributable to patient demographic and clinical characteristics (such as sex, social support, mental health, comorbidities) after receiving a PP intervention. **Design:** Bivariate and multivariable analyses of data from the intervention arm of the BETTER trial. Patient data were obtained from electronic medical records and patient health surveys. **Setting:** 32 primary care physicians offices from 8 practices located in Toronto, Ontario and Edmonton, Alberta. **Participants:** Adults aged 40 to 65. **Intervention/Instrument:** One hour visit with a PP tailored to the patient's CDPS needs. **Outcome measures:** A composite index of 28 prevention and screening activities (e.g. smoking cessation, cancer screening, weight loss) expressed as the ratio of eligible CDPS actions (denominator) that were met at follow-up (numerator) multiplied by 100. **Results:** Bivariate analyses suggest that both demographic factors (such as increasing age, non-white ethnicity, increasing income, employment and social support systems) and clinical factors (such as better self-reported health status, fewer comorbidities, number of prescription medications, and being free of mental health conditions) were associated with greater success in completing CDPS activities. Many of these factors remained independently associated when multivariate linear regression (GEE) models were used. **Conclusion:** The effectiveness of interventions to improve CDPS activities varied depending on patient characteristics (demographic and clinical). This information should be helpful for primary care practitioners who are implementing interventions to improve patient CDPS outcomes.

## Performing with stimulants: Does Ritalin alter brain activity during fatigue?

Michael King, Rauch, H. G., Brooks, S.J., Skowno, P., Stein, D.J. and Lutz, K.

**Context:** Stimulants, such as Ritalin (Methylphenidate, MPH), can improve motor performance. Yet, the underlying performance enhancement mechanisms of MPH are unknown. Central fatigue theory proposes that motor drive is limited to maintain homeostasis. **Objective:** The objective of this study was to investigate the potential role of cortical mechanisms for the ergogenic effects of MPH. **Design:** In a double-blind, crossover design participants ingested MPH or placebo prior to a fatiguing handgrip task. **Participants:** Fifteen right-handed participants (9 male, 6 female) without a history of neuropsychological disease or recent use of drug or prescription medication participated in the study. **Intervention/Instrument:** Participants completed the fatiguing handgrip task during functional magnetic resonance imaging (fMRI). **Outcome measures:** We measured force production, brain activity and effective brain connectivity prior to exercise termination (i.e. task failure) and during the task. **Results:** In MPH conditions, subjects increased mean grip force during the task but not during task failure. In placebo conditions, task failure was associated with activation in the right insula and inferior frontal gyrus while MPH conditions were associated with activation in the left insula and right anterior cingulate, area 3a,18, 6, and 3b. In placebo conditions, grip was associated with activation in bilateral cerebellum, area 6 and 4p, while MPH conditions were associated with activation in the left area 6 and 4a. MPH increased effective connectivity between the insula and hand motor cortex during grip but not during task failure. **Conclusion:** Our study demonstrates: 1) the inferior frontal gyrus may be supporting an insula-based task failure decision 2) MPH increased mean trial force and alters connectivity between the insula and hand motor cortex during grip but not during task failure. This study reveals a previously unknown mechanism for the ergogenic effect of MPH and shows that persons using ergogenic stimulants have altered brain activity.

## Preliminary Reflections on the Emergence of Hearing Voices Network - Atlantic Canada

Ryan Norman

**Context:** Hearing Voices Networks are regional networks that exist internationally for people who hear voices, see visions, or have other unusual perceptions. While each regional network has its own organizational structure, there are several core principles guiding all HVNs. These principles are shared by HVN Atlantic Canada and include: the acceptance that voices and visions are real phenomena for those experiencing them; that people are no less for having these experiences; self-help; self-determination; mutual support; valuing of ordinary language; free interpretation of one's own experiences; free expression of ideas that may challenge social norms. **Objective:** The current presentation aims to outline some of the developments in Hearing Voices Network - Atlantic Canada over the past year. **Target audience:** It is hope that this description and following discussion should provide a general familiarity with the principles and practices of HVN - Atlantic Canada to those unfamiliar with the HVN, and will help facilitate better linkages with those working within the mental health system. **Description:** Meetings around the development of the HVN Atlantic Canada were at first driven primarily by Dr. Brenda LeFrancois. Meetings began with a community in Moncton, NB in 2014, with a second community quickly developing in St. John's later in the year. Early in the development of the HVN Atlantic Canada a participatory Democratic approach was adopted, modelled after the vision of Lanny Beckman and the Mental Patients Association founded in Vancouver in 1971. Challenges emerged in balancing the desire for a participatory democratic approach with the need for an effective administrative structure and funding mechanism that would not put the autonomy of the network at risk. After several options were considered this tension was reconciled with a decision to work towards registered charity status, utilizing crowd fundraising options. **Evaluation:** Differences in the NL and NB groups that are emerging will be discussed. **Conclusion:** Commentary from members of HVN - Atlantic Canada will be presented around the development of HVN - Atlantic Canada, its role in relation to other mental health programs and services, and how we see the network developing in the future.

## Retrospective Review of Outcomes with Active Surveillance and Active treatment for Early Stage Prostate Cancer in a contemporary series at DrHBMurphy Cancer Centre StJohns Newfoundland Canada and discuss the pros and cons of screening for Prostate Cancer

Jinka Sathya, Catherine Nicholson, John Thoms, Asim Kamran, Veeresh Gadag

**Context:** Prostate Cancer is the most common cancer diagnosed in North American Men and majority of them present with early stage cancer. Do they all need treatment? **Objective:** To assess if active surveillance is a good option for patients with Early stage prostate cancer **Design:** Retrospective review of outcomes with active surveillance and active treatment for Early stage Prostate Cancer in a contemporary series at Dr HBMurphy cancer centre **Participants:** All patients with early stage prostate cancer seen between January 2004 to December 2010 at Dr H B Murphy Cancer Centre **Intervention/Instrument:** Patients were given the option of Active Surveillance(AS) or Active treatment(AT) of their choice including Prostatectomy, External beam radiation or Brachytherapy. Patients on AS were followed with serial PSA and serial biopsies at predetermined intervals. If there was PSA progression or Grade progression or patient was anxious about surveillance, they were treated with active treatment of their choice. **Outcome measures:** Data on 447 patients has been collected so far. 132 were on AS and 315 patients have received AT. The follow up ranges fro 4 to 10 years with a median follow up of 6 yaers and 8 months. Average PSA was 6.1 and 7.3, Gleason score of 6 in 95% and 98% and T1 stage OF 69% AND 82% respectively in AS group vs AT group **Results:** 85 of 132( 64%) patients are still on Active Surveillance. The overall survival is 88.6% for the AS group and 90.8% for the AT group. Of 44 deaths between the 2 groups, only 2 deaths are due to Prostate cancer,

both of whom were in the AT group. Conclusion: Active Surveillance is a valid treatment option and should be considered for every patient with low and favorable intermediate risk patient. The issue of screening for prostate cancer will be discussed with this data in mind.

### **Safety and Efficacy of Incretin-based Therapies in Patients with Type 2 Diabetes Mellitus and Renal Impairment: Systematic Review and Meta-analysis**

Patricia Howse, Lyudmila Chibrikova, Brendan Barrett, Laurie Twells, John-Michael Gamble

**Context:** There is limited evidence about the relative clinical effectiveness and safety of incretin-based therapies (dipeptidyl peptidase-4 (DPP-4) inhibitors and glucagon-like peptide-1 (GLP-1) receptor agonists) in patients with diabetes and chronic kidney disease. **Objective:** To investigate the safety and efficacy of incretin-based therapies in patients with type 2 diabetes and moderate to severe renal impairment. **Design:** We conducted a systematic review and meta-analysis of randomized controlled trials. Two reviewers independently screened studies identified through bibliographic databases (Cochrane Library, PubMed, Embase, IPA), trial registries, and references from pertinent articles and clinical practice guidelines. **Participants:** We included studies in which patients had type 2 diabetes; were  $\geq 18$  years of age; and had moderate to severe renal impairment, defined as an eGFR  $< 60$  mL/min/1.73m<sup>2</sup>. **Intervention/Instrument:** Included studies compared incretin therapy, as monotherapy or add-on therapy, to a placebo or other anti-diabetic agent. **Outcome measures:** Primary outcomes were change in glycated hemoglobin (HbA1c) and hypoglycemia. Secondary outcomes included all-cause mortality, fasting plasma glucose, cardiovascular events, and end-stage renal disease (ESRD). Random effects models were used to calculate weighted mean differences (WMD) for continuous outcomes, and relative risks (RR) for dichotomous outcomes. **Results:** Of 899 non-duplicate records screened, 13 studies were included. Compared to placebo, incretin-based therapies significantly reduced HbA1c (n=8; WMD -0.53; 95%CI -0.64, -0.42; I<sup>2</sup>=0%); however, they did not reduce HbA1c compared to active comparators (AC) (n=6; WMD 0.11; 95%CI -0.15-0.37; I<sup>2</sup>=71%). Incretin-based therapies were not associated with hypoglycemia (Placebo control [PC]: n=8; RR 0.73; 95%CI 0.36-1.47; I<sup>2</sup>=66%; AC: n=6, RR 0.75; 95%CI 0.30-1.90; I<sup>2</sup>=38%). Incretin-based therapies were not associated with an increased or decreased risk of mortality (PC: n=5; RR 1.02; 95%CI 0.50-2.06; AC: n=5; RR 0.76; 95%CI 0.39-1.47), myocardial infarction (PC: n=5; RR 1.02; 95%CI 0.50-2.06; AC: n=4; RR 0.76; 95%CI 0.39-1.47), stroke (PC: n=2; RR 1.02; 95%CI 0.50-2.06), or ESRD (PC: n=2; RR 1.02; 95%CI 0.50-2.06); I<sup>2</sup>=0% for all. **Conclusion:** Incretin-based therapies are effective in reducing HbA1c, without causing hypoglycemia, relative to placebo in patients with reduced kidney function. More data is needed to precisely quantify associations with all-cause mortality, cardiovascular events, and ESRD.

### **Strongest Families Institute - Web-Based Parenting Intervention**

Patricia Lingley-Pottie

**Context:** Disruptive behaviour disorders are common. If not treated early, these conditions will exacerbate overtime causing significant child, parent and family impairment. Although evidence-based face-to-face parenting programs exist, often families encounter insurmountable barriers (e.g., cost, inconvenience and burden of travel; impacts of taking time off from work or school; stigma) that lead to high attrition rates and low intervention completion rates. Families living in rural and under-resourced areas can be particularly affected. **Objective:** The Strongest Families innovative technology provides easy access to evidence-based services delivered to families in the comfort and privacy of their own homes. Parents can access the information at any time. **Target audience:** Primary healthcare practitioners, professionals, researchers, policy makers, administrators and other individuals interested in learning about evidence-based ehealth applications. **Description:** The smart web-based technology is called IRIS (Intelligent Research and Intervention Software). Parents access the web-based parenting program via a secure website. Each week the

parent will have a telephone coaching session, scheduled at a convenient time (i.e., day, evening, night). The coach works closely with parents to help them learn and successfully implement skills. The smart technology informed content enables the coach interface to interconnect with the parent interface. During the session call, the coach entered information informs the parent-facing curriculum content, setting the parent-up for success when completing the online session content. The parent content is personalized and customized (e.g., content examples, exercises and media). A message system is a communication tool between the coach and parent. Electronic reminders are set to automatically send to the parent. Automated tasks and triggers alert staff. Letters are automated and attached for the parent to retrieve from their secure home page. Referring sources receive a copy of the graphically depicted end of intervention outcome letter. Evaluation: Strongest Families is committed to outcome measurement using validated measures including parental service satisfaction. Conclusion: Strongest Families ehealth services bridge the access gap, getting help to families when and where they need it.

### **Sudden Cardiac Death (SCD) in young people (2y-50y) in Newfoundland and Labrador**

Rahaf Alkhateb, Rahaf Alkhateb, Simon Avis, Fiona Curtis, Terry-Lynn Young, Sean Connors Kathleen Hodgkinson

Context: Sudden cardiac death (SCD) is a catastrophic event in young people and often has a genetic etiology. We know of several founder mutations which cause SCD in the Newfoundland and Labrador (NL) population. In countries where the incidence of SCD in the young has been reported, the results are 8.6/100,000 person-years (Denmark), 1/100,000 py (Sweden), and 2.85/100,000 py (Ireland). Research question: Does NL have a higher incidence of young SCD? Objective: 1) To identify the NL prevalence of SCD in people aged 2-50 years and 2) to describe the SCD cases based on age, gender and underlying cardiac pathology. We hope to ultimately: a) include all years from 1997-2013 and b) extract and sequence DNA from fixed tissue. Design: This is a retrospective population-based study in NL for autopsy cases that are categorized by the coroner as "natural", "accidental", or "undetermined". All cases were reviewed by the team and classified as likely, or not likely SCD. All de-identified demographics, internal examination findings and body organ weights were recorded and maintained on an SPSS.V22 dataset. The NL incidence was compared with previous studies where similar ascertainment methodology was employed. Participants: All cases reported to the coroner for the years 2006, 2007, 2009 and 2010 were ascertained. Coroner's cases are those where the death is unexplained and an autopsy is required to ascertain cause of death. In NL autopsies are done at local hospitals, but all results are validated by the provincial coroner (SA) and kept on a centralised database. Intervention/Instrument: N/A Outcome measures: N/A Results: There were 422 deaths in 2006, 2007, 2009 and 2010 from which we identified 144 SCD cases. The annual incidence rate of SCD for ages 2-50 yrs was 10.5/100,000 py ( $p \leq 0.029$ )\*, 15-35 yrs was 5.82/100,000 py, ( $p \leq 0.0002$ )\*, 14-35 yrs was 5.6/100,000 py ( $p \leq 0.00074$ )\* compared with Denmark, Sweden and Ireland respectively\* for same age group. Conclusion: In a NL cohort of young people the annual incidence rate was significantly higher than the incidence reported in Denmark, Sweden and Ireland. The reason for the difference is unknown. Genetic causes might be implicated.

### **SURPHER: A SecUre Revocable Personal HEalth Record System**

Mitu Kumar Debnath, Saeed Samet

Context: Patient-Oriented Research has brought a new set of challenges into the existing healthcare systems, including Personal Health Record (PHR). In contrast to Electronic Health Record (EHR), that is maintained and operated by health organizations, PHR is maintained and managed by patients, which escalates the importance of security and privacy challenges. Objective: Preserve patients' data security and privacy, and give them ability to revoke accesses, which have been previously given to different health professionals. Design: A PHR system with Fine-Grained Access Control has been proposed such that patients can securely share their health data with various people in

their circle of health in a hierarchical scheme, starting from different health regions in the province, to health organization and departments in each region, to health professionals working in each healthcare unit. Furthermore, patients are able to revoke users' access to their information, selectively at any time by updating access policy in their profile. Health professionals can register to the system to be able to see the health information of the patients who gave them such access. The framework uses advanced cryptographic techniques to protect patients' health data and prevent illegal and malicious access into it. Participants: This framework consists of various entities: Patients who own their data, Health Professionals, Trusted Authority and Mediator that generate and manage access keys, and Storage Providers. System has been populated and tested with synthetic data analogous to real health information and healthcare hierarchy. Intervention/Instrument: N/A Outcome measures: N/A Results: Patient's health related documents in various format are securely encrypted and stored by the storage provider. Eligible data users can access to those documents after receiving access key from the trusted authority and mediator. Although some users are still using desktop and laptop devices, many people, especially health professionals, are willing to have such access from their mobile devices. Therefore, system is implemented in both desktop and mobile-based platforms. Patients are also able to share or revoke access of existing healthcare personnel to their data using these devices. Conclusion: The framework allows patients to share and administer their PHR using a fine-grained access control mechanism.

### **Sustainability and Scalability of TAPESTRY**

Lisa Dolovich, Monika Kastner, Radha Sayal, Sharon Straus, Doug Oliver, Lisa Dolovich

Context: TAPESTRY (Teams Advancing Patient Experience: Strengthening Quality) was created to optimize health care delivery. It was pilot tested with four family physicians and their selected patients of the McMaster FHT, which showed positive impacts. Prior to testing the intervention more broadly in a randomized controlled trial (RCT), it was important to assess TAPESTRY's sustainability and scalability potential. Objective: To understand how to optimize the context, intervention, capacity and processes necessary to sustain and scale-up TAPESTRY. Design: We used a mixed-methods design to address our objectives: 1) A validated survey to assess sustainability across 10 factors and 3 dimensions of an intervention or program; and 2) qualitative interviews. Participants: The survey was administered to 38 TAPESTRY team members (across a wide range of stakeholder groups including program, research, clinic staff and leads; and volunteer organization) who were actively involved in the development, implementation and evaluation of TAPESTRY. For the qualitative interviews, 42 TAPESTRY team members (including volunteers) were invited to participate. Intervention/Instrument: TAPESTRY is a novel approach that integrates care of adults with community volunteers and an inter-professional primary health care team. It uses innovative technology to transfer health information and objective risk assessments collected by volunteers at patients' homes with the use of iPads that are integrated with the McMaster electronic Health Record system. Outcome measures: Factors influencing sustainability of TAPESTRY across sustainability dimensions of the National Health Service model, including factors with the highest potential for improvement (Survey); perceptions of the facilitators/barriers influencing sustainability and scalability of TAPESTRY (qualitative interviews) analyzed by two reviewers using content thematic analysis. Results: Twenty participants completed the survey (response rate 53%). The overall mean sustainability score was 64.6 (range 22.8-96.8), which was above the threshold of what is considered a potentially sustainable intervention (i.e., score > 55). More specifically, we identified that the best opportunities for improving the sustainability of TAPESTRY were staff involvement and training to sustain the process, clinical leadership engagement, and infrastructure for sustainability. Twenty-five TAPESTRY members participated in a telephone interview. Major themes across determinants of sustainability were the need for better communication among the TAPESTRY stakeholder groups, to anticipate financial and human resources needed to sustain TAPESTRY, and to develop a user manual to facilitate implementation and scale-up. Conclusion: Findings were further distilled by the core decision making team to identify the top 20 critical sustainability factors. These were addressed during a stakeholder meeting,



where potential solutions were derived and subsequently implemented. TAPESTRY is currently being evaluated in a randomized controlled trial across the McMaster Family Health Team. Next steps are to conduct another round of investigation (survey + interviews) to identify additional critical factors, and to develop a guide to facilitate spread and scale.

### **The CIHR Primary and Integrated Health Care Innovations Network: Opportunities for National and Atlantic collaboration**

Kris Aubrey-Bassler, Baukje Miedema

**Context:** CIHR is working on funding a national “Primary and Integrated Health Care Innovations Network.” All provinces will likely be participating, and the Atlantic Provinces have agreed to work closely together to meet our shared research goals. **Objective:** To discuss Atlantic Province primary health care research and program development priorities. **Target audience:** Researchers, program planners and decision makers **Description:** We will briefly introduce this funding opportunity, and summarize progress to date on establishing our shared research priorities. There will be opportunity to discuss other priorities and outline the process to submit a project idea and apply for funding from CIHR through the Network. **Evaluation:** CIHR will conduct an evaluation of this network in approximately 18 months time. **Conclusion:** We look forward to the opportunity to discuss our shared research and program development goals.

### **The Role of a Kinesiologist as Part of a Primary Health Care Team**

Thomas Dymond, Cathy MacLean, Duane Button

**Context:** It has identified that there is a growing need to include a physical activity specialist, such as a Kinesiologist, within the primary health care system. Given that Newfoundland and Labrador has the highest rate of obesity in Canada, the implementation of such a program would aim to increase motivation among practice populations to become physically active. **Objective:** This presentation will address the plausibility and practicality of having a Kinesiology graduate student working as part of a primary health care team. This development is a partnership between the School of Human Kinetics and Recreation and Discipline of Family Medicine at Memorial University. Additionally, a Kinesiology graduate student will be responsible for providing formal presentations about physical activity to both staff physicians and family medicine residents. **Target audience:** This presentation will target a wide array of health care professionals such as physicians, faculty, educators, researchers, and policy makers. **Description:** The role of a Kinesiologist is to work alongside residents and staff physicians to determine which patients would be willing to, or benefit from, an independent session with a Kinesiologist for physical activity counselling. From here, a Kinesiologist will perform a basic assessment of a patient’s current physical activity level with the potential for follow-up appointments. Follow-up appointments can be geared at modifying or increasing current physical activity, and counseling patients on the benefits of physical activity, especially those with chronic conditions, including obesity. Working as part of an interprofessional team will enable a two-way learning dynamic where the residents can educate a Kinesiologist on certain conditions affecting someone’s ability to be physically active, and the Kinesiologist can educate the resident on physical activity counselling techniques. **Evaluation:** No formal evaluation has been developed to date. However, Drs Cathy MacLean and Duane Button will be responsible for periodically reviewing the progress and patient interactions of a Kinesiology graduate student. Following the placement, a review of barriers and facilitators within the clinic will be addressed. **Conclusion:** The possibility of having a Kinesiology graduate student working in primary health care is currently underway and this placements sustainability will be evaluated in the coming months.

## **The Smokers' Helpline CARE Fax Referral Program Provides a Tool to Address Tobacco Use and Link to Effective Smoking Cessation Support**

MaryLynn Pender

**Context:** While smoking rates have declined significantly over the years, the smoking prevalence in this province has remained stable at around 20% since 2005. The majority of smokers are interested in quitting, however many are unaware of supports available. Clinical practice guidelines recommend that health care providers ask all patients whether they smoke, advise smokers to quit and offer follow-up. **Objective:** The primary objective of the CARE Fax Referral Program is to increase the number of tobacco users who access treatment from the Newfoundland and Labrador Lung Association's Smokers' Helpline through referrals from health care professionals. **Target audience:** The Helpline services are available to all smokers within the province. The Referral Program was first launched with physicians in 2004 and has since expanded to include a wide variety of health care providers. **Description:** The CARE Program provides a quick and simple way to link patients to the Smokers' Helpline. Once the form is faxed, a trained smoking cessation counselor calls the individual within 72 hours to complete intake. Supports available include telephone-based counselling, web-based counselling, a self-help information package and group programs. The Program is incorporated in the Smoke-Free Properties Policies of regional health authorities. **Evaluation:** The Program accounts for 65% of the Helpline's clients. A recent Health Canada evaluation of provincial/territorial quitlines highlights that this province stands out in terms of its success in reaching tobacco users. The Helpline's work in building partnerships and the success of the Referral Program are believed to be key factors to this success. An evaluation by the University of Waterloo indicates that use of the Helpline significantly boosts success rates in quitting--23% of clients successfully quit (compared to 3-5% of those who try quitting without support). Referred clients have slightly higher success rates than those who call the Helpline directly. Recent feedback from surveys and interviews with health care providers have provided valuable information about experiences in using the Program, training needs, and effective promotional strategies. This will inform the Program's future direction. **Conclusion:** The Smokers' Helpline CARE Fax Referral Program has proven to be a successful tool to assist patients with overcoming tobacco addiction.

## **The TAPESTRY Volunteer Program: An Innovative Volunteer Initiative to Connect Patients to their Primary Care Providers**

Lamkin Lamarche, Doug Oliver, Ernie Avilla, Mehreen Bhamani, Katharine May, Jeanette O'Leary

**Context:** Healthcare volunteers play an important role in supporting health and social services in our communities, a role that often goes unnoticed by funders and policy makers. The potential importance of volunteerism seems understated in Canadian primary care models. **Objective:** The primary goal of the TAPESTRY volunteer program is to integrate trained community volunteers into the interprofessional primary healthcare team to add to (not replace) the work being done by healthcare staff. In addition, it is hoped that involvement within TAPESTRY will lead to growth in knowledge, skills and confidence for the volunteers. **Target audience:** existing volunteer programs, interprofessional healthcare teams, policy makers. **Description:** The volunteer program within TAPESTRY (Teams Advancing Patient Experience: Strengthening Quality) offer insights into how to best develop and integrate trained volunteers within the primary care setting. TAPESTRY is a health and social care approach that centres on meeting a person's health goals by integrating technology, community volunteers, an interprofessional team, and making better connections to community organizations. TAPESTRY volunteers are considered an extension of the primary healthcare team. In TAPESTRY, trained volunteer pairs go into the home of older adult patients to gather information using structured tools, provide support for people's use of the Master Personal Health Record, and build a relationship with patients as an extension of the healthcare team. Information gathered is summarized on a report and sent to the healthcare team for review and action. **Evaluation:** Using a mixed-methods approach, several aspects

of the program will be assessed, including: the fidelity of the program, the quality of the volunteer training program, the effectiveness of the volunteer matching process, role satisfaction of volunteers, the impact of volunteering in TAPESTRY on the attitudes of volunteers toward older adults, and the cost and workload implications for a community organization wanting to develop a primary healthcare volunteer program. Conclusion: Several phases of the recruitment and application process have been completed. The training program has been evaluated by volunteers via surveys. Currently, there are sixty-three active volunteers. To date, 111 volunteer home visits have been completed and 15 finished reports have been sent to the clinic for review.

### **The therapeutic choir: A holistic approach to family-centred palliative care**

C. Jane Gosine, Ray Travasso

**Context:** This study examines the health benefits of singing in a therapeutic choir that consists primarily of mothers whose children are receiving treatment for life-threatening conditions or end-of-life care at the East Anglia Children's Hospice (EACH), as well as recently bereaved mothers and staff at the hospice. **Objective:** The World Health Organization identifies a sense of belonging and a feeling of community as being core concepts essential to enabling individuals to feel empowered to live healthy, meaningful lives, and that such empowerment can arise from 'a sense of shared experience and connectedness with other people' (User Empowerment in Mental Health and the Ottawa Charter). The Treehouse Choir, run by the music therapist at the children's hospice and open to all service users and staff, reflects a holistic and family-centred approach to care. It offers a therapeutic and cathartic experience in which members of the choir receive emotional support from each other through singing and socializing in a non-threatening environment. The therapeutic goals include providing an environment in which choir members can share life experiences and build meaningful relationships to create a network of support that is distinct from the more traditional parent-staff supportive relationship. **Design:** Our research findings are based on a mixture of methodological tools, but primarily qualitative description and phenomenological analysis used to examine data collected by the music therapist during interviews and observations. **Participants:** Participants were drawn from members of the Treehouse Choir, including families and staff who attend the choir on their own time. **Intervention/Instrument:** n/a **Outcome measures:** n/a. **Results:** The Treehouse Choir provides families using the hospice with a unique form of music therapy – with its focus primarily on the mothers of children using the hospice, but also including other family members. Singing in the choir is a socially-embedded activity that enables choir members to explore emotions and establish supportive relationships. Since its inception, there has been a high level of attendance both at practices and at choir performances. In conjunction with the formation of the choir, the group has also used social media as a vehicle for support. **Conclusion:** Many parents caring for a child with a life-threatening condition and bereaved parents feel socially isolated. Participation in the choir has provided a positive experience in which members refer to a sense of belonging, fulfillment, increased confidence and being uplifted.

### **Using a Personal Health Record (PHR) and associated health volunteer and self-management applications to connect people in their homes to their health care team**

Dena Javadi, Gina Agarwal, Anubha Sant, Julie Richardson, Tracey Carr, David Chan, Doug Oliver, Ernie Avilla, Raied Siddiqui, Linda Xie, Julie Makarski, Larkin Lamarche, Dena Javadi

**Context:** A personal health record (PHR)-centred digital ecosystem to better connect people to their interprofessional (IP) health teams is one of the core elements used in the TAPESTRY approach (Teams Advancing Patient Experience: Strengthening Quality) to ensure person-centred primary care and to empower people to be more involved in their own health management. **Objective:** Explore the importance of a PHR as a patient engagement tool; Explore how persons living with chronic diseases use self-management applications within the PHR; Discuss potential implementation challenges and solutions. **Target audience:** Healthcare professionals, administrators, volunteers,

and the public. Description: With the shift to patient-oriented care and collaborative care models, PHRs have recently generated considerable interest and investment. PHRs allow users to assign a team of advocates, by providing members in their circle-of-care to access information available within their PHR. PHRs offer many opportunities, including patient engagement, self-management of chronic conditions, convenience, and improved office efficiency; however, they are not without challenges (i.e., impact on workflow, privacy legislation, and liability). Additionally, there is interest in using the PHR to provide people with high-quality health information online and to better link them to community resources. To address this, TAPESTRY-Cardiometabolic has developed a self-management software application (App) for integration into the PHR. The App connects people with health management information and community resources tailored to their survey responses. Areas incorporated in the self-management App include diabetes, hypertension, exercise and sleep. TAPESTRY also developed an App focused on articulating a person's life and health goals. Responses recorded within the Apps are provided to the person's interprofessional (IP) team through a TAP-report on their Electronic Medical Record (EMR), resulting in further follow up where necessary. Evaluation: The evaluation of uptake and usability of the technologies will be described. Furthermore, the evaluation of communication between patients and their IP teams will be described based on mixed-methods exploring patient outcomes (surveys, interviews, chart audits) and focus groups with IP teams. Conclusion: Technologies developed and used within TAPESTRY are being tested. PHR integration with specialized TAPESTRY Apps is in development. In the near future, TAPESTRY's digital ecosystem will allow for health information to be entered directly into the PHR and automatically shared with IP teams via the EMR, ensuring improved sustainability.

### **Using developmental evaluation methodology to develop and implement the TAPESTRY community-based primary healthcare program**

Lisa Dolovich, Doug Oliver, David J. Price, Kalpana Nair, Mehreen Bhamani, Jennifer Longaphy, Larkin Lamarche, Dena Javadi

Context: Complex, multi-faceted interventions are often used to improve the primary healthcare system. TAPESTRY (Team Advancing Patient Experiences: Strengthening Quality) is a primary healthcare based program aimed at keeping older adults healthy at home by explicitly focusing on people's health related needs and goals and using that information to focus team activities, volunteer visits, system navigation, community resources and improvements in technology. Objective: The aim of this study was to understand key decisions made during the formative development of TAPESTRY and the data that validated these decisions. Design: Sixteen week pilot study using developmental evaluation; data collected using sequential mixed methods approach. The pilot study used pairs of volunteers to collect health information from patients in their homes, transmit this information to the health care team for follow-up, and help patients activate their Personal Health Record. Participants: Older adults aged 70 years and older with primary providers at the two Hamilton Health Sciences clinics were included. This pilot involved 11 participants. Intervention/Instrument: Decisions related to intervention development and implementation and were tracked at research and program meetings, with 8 and 16 week data informing these decisions. Outcome measures: The primary outcome of the developmental evaluation methodology was the documentation of major decisions made. Results: Over 20 major decisions were documented during the study. These decisions related to volunteer recruitment and training, tools for data collection, personal health record support, interprofessional team activity, and how to facilitate effective flow of information. Aspects of the intervention were changed based on the emerging data, and allowed for understanding how changes impacted patient, clinician, and volunteer experiences. Conclusion: A developmental evaluation approach provided an explicit methodology to rapidly gather data, document effects and refine the intervention during initial implementation.

## Working Without a Waitlist - System Redesign in Outpatient Physiotherapy

Cathy Hoyles, Lorie Paterson

**Context:** Primary care outpatient Physiotherapy services; rural Newfoundland; sole-charge clinician **Objective:** To improve efficiency of service delivery and system transformation by eliminating waste and enhancing health outcomes for clients. **Target audience:** All primary care health care providers that use the traditional means of “wait-listing” to organize access to their services. **Description:** The Physiotherapy outpatient services in Bonavista were re-designed to remove the waitlist as a central point for access to this service. A new process was designed using LEAN principles that saw clients calling to access this service at a time that was right for them. Service efficiency was enhanced, access for clients improved and no new resources were required. **Evaluation:** Waitlist numbers were 70-90 people, now they are 0. Wait time was 6 months, now it is 5 days. Actual return rate of people to the service is 40% of those holding a referral. Time wasted because of client cancellations of “no-shows” is minimal. **Conclusion:** A non-traditional approach to organizing access to primary service allows for self-selection of motivated clients, saves time spent on scheduling, and maximizes the clinical time of sole clinicians in rural areas.

## Workshops

### Hub and Spoke Models for Family Medicine Education and Primary Care in NL

Cathy MacLean

**Objective:** 1. describe how both the Triple C curriculum and the Streams model are designed to enhance recruitment 2. Identify opportunities for medical education and health services delivery research with new models **Content:** Description of Streams and the Triple C Curriculum in Family Medicine and how this model might address physician resource needs in primary care in NL **Method:** Presentation and small group discussion; with brainstorming and interactive exercises to explore opportunities to implement and evaluate this model **Prerequisite knowledge:** none

### Publishing Your Research Report

William Phillips

**Objective:** At the end of this workshop participants will be able to strategically craft research reports for successful publication and effective communication. **Content:** We will describe the editorial functions of scientific journals and their processes for the submission, review, revision and acceptance of reports of original research. We will discuss strategies for success in how to: focus your report, select appropriate journals, prepare manuscripts, write cover letters, manage authorship, disclose conflicts of interest, interpret reviewer and editor comments, revise, resubmit, and disseminate your published work. (We will not cover scientific writing or critical appraisal of research.) **Method:** This workshop will combine presentation, Q&A and group discussion. We will use examples from the presenter’s editorial experience at the Annals of Family Medicine. Participants can bring their questions or works in progress for discussion. **Prerequisite knowledge:** None. All new and experienced authors are welcome.

## Secondary Use of Personal Information in Health Research in Newfoundland and Labrador (NL): Introduction to Creating Population-based Databases for Research

Shabnam Asghari, John Knight, Oliver Hurley, Tao Chen, Andrea Pike, Adam Pike, Richard Cullen, Kris Aubrey, Marshall Godwin

**Objective:** 1) To discuss the process of creating population-based databases for research using existing health data from different institutions in NL including methodological, technical, organizational and ethical aspects of secondary use of data; (2) To discuss data acquisition challenges, data preparation and validation issues; (3) To discuss a series of strategies to maximize the value of secondary data and to transform and link raw data from different sources into suitable information for healthcare research. **Content:** Existing health data have been suggested as efficient and effective sources for conducting research in healthcare. Numerous advantages of these data including large sample size, representation of real-life practice, electronic format and the potential of linkage to other databases enhance the utility of these data in cross-institutional research; and, further, make them suitable for answering the research questions which are not feasible and cost-effective using primary data. Nevertheless, several methodological and technical challenges should be addressed in using secondary data to accurately develop a database for scientific research. **Method:** Participants will engage in small group activities and large group discussions. They will identify challenges in the secondary use of data and discuss strategies to address those challenges. Participants will be given the opportunity to critique a model on developing a population-based cohort of persons living with HIV, exploring barriers to identify data sources, accessing data, linking data as well as methodological approaches. This workshop will allow participants to gain insight into the steps involved in accessing the data sources, using the data accurately and the methodological approach to appropriately answering research questions. Participation in this workshop will provide the attendees with an opportunity to enhance their understanding of secondary data; develop a conceptual framework on the effective use of secondary data for their research; and build strategies to overcome challenges using secondary data. **Prerequisite knowledge:** Participants should share an interest in using secondary data for their research and seek to effectively use these data in primary healthcare research.

## Posters

### 2014 work locations of Memorial graduates: Where are the family doctors?

Dana Ryan, Maria Mathews, Asoka Samarasena

**Context:** Due to continuing concern over physician shortages and poor retention, particularly in rural areas, closer examination into the migration patterns and practice locations of medical school graduates is warranted. **Objective:** This study updates information about the contribution of the Memorial University of Newfoundland (MUN) medical school to physician supply in Newfoundland and Labrador (NL) and in Canada. It will also describe any changes to the distribution of the physician workforce over time, and identify predictors of practice location. **Design:** The study conducts a cross-sectional evaluation of medical school graduates over time. **Participants:** Our sample included all MUN graduates from the class of 1973 to 2008, with the exclusion of those who had died or retired, those who were sponsored by the military or Malaysian government, and those whose 2014 practice locations were unknown. Following the exclusions, there were a total of 1864 physicians remaining in the sample. **Intervention/Instrument:** Data were linked from graduating class lists, the alumni and post-graduate databases with Scott's Medical database. Using this, a new database was then created for the purposes of the study. **Outcome measures:** We examined the 2014 practice locations of MUN medical graduates to identify the predictors of working in 1) Canada, 2) NL, 3) rural Canada, and 4) rural NL. **Results:** In 2014, 88.1% of MUN graduates were working in Canada, 34.2% in NL, 11.6% in rural Canada, and 4.9% in rural NL. Graduates with rural backgrounds, Newfoundlanders, and 1980s-2000s graduates were more likely to work in Canada. Physicians with rural backgrounds, Newfoundlanders,

2000s graduates, and former MUN residents were more likely to work in NL. Graduates with rural backgrounds, and family physicians were more likely to work in rural Canada. Lastly, physicians with rural backgrounds, Newfoundlanders, former MUN residents and family physicians were more likely to work in rural NL. Conclusion: Although MUN graduates comprise a growing proportion of the NL physician workforce, they form only one-fifth of the rural physician workforce in NL (unchanged since 2004). The study highlights the downstream work location impacts of the changing characteristics of medical school graduates in NL.

### **A Community-Chosen Intervention the Green Light Program**

Vivian Ramsden, Shari McKay, Shirley Bighead, Carrie Bourassa, Peter Butt, Andrea Clinton, Jackie Crowe, Fred Felix, Derek Jorgenson, Nora McKee, Irene Nketia, Norma Rabbitskin, Tara Turner

Context: The Green Light Program, celebrating smoke-free homes, is a community chosen, evidence-informed program. Objective: To increase the number of smoke-free homes and thereby reduce the impact that environmental tobacco smoke has on children and older adults in communities that have high rates of tobacco mis-use/non-traditional use of tobacco. Design: The overall design of this study was informed by the integration of community-based participatory processes, transformative action research and program evaluation. Participants: Environmentally-friendly “green coloured lights” and decals were provided to 1943 smoke-free homes. Intervention/Instrument: Communities considered the results of community-based surveys and selected the Green Light Program as an intervention. Outcome measures: Number of homes that are smoke-free. Number of children and older adults/Elders that are protected from environmental tobacco smoke in the home as a result of the Green Light Program. Results: Residing within these homes and subsequently protected from environmental tobacco smoke, as a result of having a smoke-free home, were: 1961 children under the age of 18 years; and, 2006 older adults/Elders. In 91% of the households, children and/or elders are being protected from environmental tobacco smoke. Conclusion: Celebrating smoke-free homes builds upon individual and community strengths and as a result individuals are interesting and becoming free from tobacco mis-use. This has the potential to reduce the number of children starting; as well as, the rates of asthma, heart disease, stroke, and lung cancer over time.

### **A Comparison of the simulated clinical encounter with the Medical Council of Canada National Assessment Collaboration and Medical Council of Canada Evaluating Exam results in selection of IMG Candidates for the MUN Family Medicine Program**

Roger Butler, Pamela Snow

Context: The MUN Family Medicine program developed the simulated clinical encounter to assess the clinical skills of IMGs. The NAC and MCCEE now are offered as national screening tools for IMG's. This correlation of results will help our program decide if we shall continue to use the SCE. Objective: To determine if the SCE offers a superior assessment (value added) at the entry point to the MUN Family Medicine residency training program for IMG's versus the national screening IMG assessment tools the NAC and MCCEE. Design: Retrospective analysis of IMG candidates to the MUN FP residency program comparing their SCE scores and their NAC, MCCEE scores. Participants: IMG's who we have screened with the SCE annually. Intervention/Instrument: Comparison of scores. Outcome measures: How well to they correlate? If not why? What do the tools actually measure? Results: In progress, preliminary observations suggest the SCE is picking up significant noncognitive attributes. Conclusion: Pending further evaluation as we compile significant numbers to determine outcomes.

### **A pilot project to foster interprofessional collaboration and comprehensive care for community-based patients with loss of autonomy.**

Mark Yaffe, Cindy Starnino, Ronald Ludman, Anne Fournier

**Context:** Quebec health and social service centers (CSSS) provide home care services to individuals with loss of autonomy. Family physicians (FPs) are often not aware of the extent of such services. **Objective:** (1) to develop an English / French check off List of Services (LoS) for CMs' completion and mailing to patients' FPs; (2) to assess CMs' and FPs' experiences completing / reading the LoS, assessment of its utility, and contribution to knowledge about patients and CSSS services. **Design:** Tool development, implementation, and descriptive evaluation **Participants:** Community-dwelling adults 65 years or older with loss of autonomy; CSSS CMs (nurses, social workers, occupational therapists, physiotherapists); FPs of study patients. **Intervention/Instrument:** An interdisciplinary committee met 7 times to reach consensus on LoS inclusiveness of information and terminology. Over the 4 month study an estimated 112 CMs received project orientation at 2 staff meetings. Following random home care visits CMs completed LoS that were then mailed to respective FPs. One week later an 11 item questionnaire was sent to CMs to evaluate their experience and impressions using the LoS. FPs received a different questionnaire 3 weeks after receiving the LoS, and were offered financial compensation for its completion. **Outcome measures:** (1) Frequency of completion of LoS, and CMs' and FPs' questionnaires; (2) FPs' and CMs' perception of LoS pertinence, utility, clarity, content, format, and future potential. **Results:** 10 CMs completed LoS that were sent to 15 FPs, of whom 6 completed evaluation questionnaires. 5/10 CMs completed their evaluation questionnaires. All CMs found completion of LoS somewhat to very easy, the majority within 1-5 minutes. LoS completion helped 3/5 CMs to update or seek additional information. 4/5 CMs moderately agreed LoS completion was reasonable use of time, while no one saw need for content change. All FPs found the LoS easy to understand. 4/6 were open to receiving more LoS, felt it somewhat added to knowledge of patients and future management, and added somewhat to a lot to their knowledge of CSSS services. **Conclusion:** Low participation limits conclusions. Reasons will be addressed in the presentation, along with implications for interdisciplinary collaboration.

### **An Ecological Model Promoting Access to Community-Based Primary Health Care for Vulnerable Populations**

Ryan Mallard, Mallar, R. W.

**Context:** Vulnerabilities (e.g., poverty, language and cultural barriers, and living in an area with few health services) can result in unmet needs for care, delayed or inappropriate treatment, and avoidable emergency department consultations and hospitalizations. Therefore, increasing access to community-based primary health care (CBPHC) for vulnerable populations is a priority for the Innovative Models Promoting Access-to-Care Transformation (IMPACT) research program. **Objective:** To determine whether a four-part ecological model promoting community development and capacity building can be used to promote access to CBPHC for vulnerable populations. **Design:** We will use a mixed method, action research approach. First, publically available quantitative data (e.g., census data) will be collected and used to map the vulnerabilities in the community. Second, we will engage community services leaders and key informants from the vulnerable population in dialogue about the information collected in relation to their experiences. Third, an iterative, deliberative, and qualitative approach will be employed in order to make meaningful and sustainable change to CBPHC. **Participants:** Community services leaders will be from organizations serving vulnerable populations and key informants will be from vulnerable populations. **Sample size** will be 30-40 for both groups. **Intervention/Instrument:** A four-pillared ecological model that focuses on: 1) community outreach services, 2) community development services, 3) sharing of physical and educational resources, and 4) providing adapted physical space and specialized instruction. We believe the principles frame an empowering and engaging approach to looking at CBPHC innovation across various vulnerable populations, while also necessitating community service



provider involvement at the environmental, interpersonal, and personal level. The implementation of the model will be done using an institutional ‘scaffolding’ approach where by IMPACT will support existing community services in meeting the CBPHC needs of the community, while gradually exiting as community capacity increases. Outcome measures: Outcome measures will focus on access to CBPHC and include community capacity for providing primary health care and CBPHC utilization by vulnerable populations. Results: Anticipated results are sustained, increased access to CBPHC for vulnerable populations. Conclusion: This research will provide insight at the individual, agency, community, and system level into meaningful and novel approaches that increase access to CBPHC for vulnerable populations.

### **An observational study of aeromedical evacuations in northern and central Labrador**

Margo Wilson, Nathaniel Pollock

Context: Coastal communities in northern and central Labrador have limited access to primary and emergency medical care. These communities experience elevated rates of injuries, psychiatric emergencies including suicidality, and high-risk pregnancies. Labrador-Grenfell Health uses the aeromedical evacuation or “medevac” service extensively to provide emergency medical services in this remote region. Despite the necessity and high cost, we have a limited understanding of how, why, and for whom the service is deployed. Objective: The aim of this study was to develop an understanding of the aeromedical evacuation service use patterns in coastal Labrador and to determine the patient subpopulations and conditions that most frequently required medevac transport. Design: In this chart review study, we used a retrospective case series design to describe the demographic and clinical characteristics of patients that required transfer via medevac to the Labrador Health Centre (LHC). Participants: Cases were eligible for inclusion if they: (a) were recorded in the flight transfer registry (b) originated in a community from the north or central coast; (c) flight destination was the Labrador Health Centre; and (d) took place between 2005 and 2014. Intervention/Instrument: We developed a chart abstraction tool to standardize data collection. Outcome measures: We examined demographic and clinical variables including age, sex, community, discharge diagnosis, and transport duration. We calculated proportions and frequencies with 95% confidence intervals. We also determined medevac utilization incidence rates and compared communities with rate ratios. Results: We have conducted initial consultations with various stakeholders including medical staff, the flight team, transportation department, the Nunatsiavut Government, and medical records at LHC. HREB and the research committees from Labrador-Grenfell Health and the Nunatsiavut Government have approved our project. We will be collecting and analyzing data from April-June 2015, and will prepare preliminary descriptive statistics for PriFor. Conclusion: This is a research project in progress.

### **Assessing the Health Outcomes for the Family Members of Disabled Newfoundlanders**

Alyssa Coombs

Context: As disabilities become a prominent cause of hospitalization and disease burden in the Canadian population the consequences of being disabled are becoming critical to the health care system. A large body of research focusing on the health of disabled individuals has led to an improved understanding of the health consequences inflicted by disability, but there is less information available concerning the familial consequences of being disabled. The available literature on the topic focuses on the outcomes for the individual and there is a dearth of information explaining how the effects of disability translate onto others (e.g. coworkers, friends or family members of those close to a disabled individual). Research on the effects of disabilities reveals detrimental health and social outcomes for disabled individuals and is beginning to indicate that others may also be affected by the disability Objective: This study determined if exposure to disability manifests poor health outcomes, via increased health service utilization rates, for the family members of disabled individuals. Design: This is a retrospective cohort study that utilized secondary use of the Newfoundland Adult Health Survey data linked with the Medical Care Plan (MCP) fee-for service claims,

Clinical Database Management System (CDMS), and Mortality Surveillance System (MSS) databases. Participants: Approximately 12000 Newfoundland adults, aged 20 year of age or older, were included in the 1995 Newfoundland Adult Health survey Intervention/Instrument: The Newfoundland Adult Health Survey (NAHS) was completed in 1995 as part of a larger project, the Newfoundland Panel of Health and Medical Care, with the primary goal of assessing the accessibility and variation of care across the province. Participants were also asked to provide their consent for the use of their survey information and medical utilization data via their provincial Medical Care Plan (MCP) number (Segovia et al., 1999). The survey was then administered via telephone to approximately 12000 adult residents of the island portion of the province. In 2010, the results of the NAHS were linked with 15 years of provincial health administrative data including the the Medical Care Plan (MCP) fee-for service claims, Clinical Database Management System (CDMS), and Mortality Surveillance System (MSS) databases. Outcome measures: The primary outcome measures of the study were the number of physician visits, hospital separations, as well as the length of stay in a hospital, or instances of premature death. Results: Familial burden increased the number of hospital separations and the number of physician visits, General Practitioner and Specialist ( $p < 0.1$ ) but there was no association found between premature death or lengths of stay ( $p > 0.1$ ). Conclusion: Family members of disabled individuals experienced increased rates of hospital separations and physician visits suggesting there is deleterious health outcomes introduced when exposed to disability in the family unit.

### **Assessment of Laboratory Testing for Monitoring the Safety and Effectiveness of Antihyperglycemic Medications**

Terri Genge, Lyudmila Chibrikova, Erin Davis, Shabnam Asghari, Heather Flynn, Marshall Godwin, John-Michael Gamble

Context: Diabetes is a chronic condition that requires multifaceted monitoring to assess disease progress, treatment response, adverse effects and complications. To date, there is limited published research assessing laboratory monitoring for the safe and effective utilization of antihyperglycemic medications. Objective: To examine the frequency, results and predictors of glycated hemoglobin (HbA1c) monitoring: i) Prior to and following treatment initiation among new users of antihyperglycemic medications; ii) Between treatment initiation and antihyperglycemic treatment modification. A second aim is to examine the frequency, results and predictors of laboratory testing to monitor for safety of these medications in a subset of the population. Design: Cohort Study. Participants: New users of antihyperglycemic medications, aged 20 years and older between January 1, 2008 and March 31, 2014 were included. Dialysis patients were excluded from the study. Intervention/Instrument: The Canadian Primary Care Sentinel Surveillance Network (CPCSSN) database was used to define our source population. A subset of patients was identified within the NL CPCSSN database because additional laboratory data (serum creatinine, vitamin B12, etc.) was available. Outcome measures: Our primary outcome measure for assessment of effectiveness of antihyperglycemic medications was HbA1c test results categorized as follows: 1)  $> 8.5\%$ , 2)  $7.0-8.5\%$ , 3)  $< 7.0\%$  and 4) unknown. Secondary outcomes included the proportion of patients who had at least one HbA1c measurement prior to and following initiation of antihyperglycemic therapy, mean time to testing, mean HbA1c result, and the frequency of HbA1c monitoring. Renal function was our primary outcome measure of safety categorized into the following chronic kidney disease (CKD) stages: CKD 1&2:  $eGFR \geq 60$  mL/min, CKD 3:  $eGFR 30-59$  mL/min, CKD 4:  $eGFR 15-29$  mL/min, CKD 5:  $< 15$  mL/min and Unknown. Other laboratory measures evaluated for safety included liver function tests and vitamin B12. Results: This study is currently in the data analysis stage. Preliminary results will be available at the time of the conference. Conclusion: Our findings will describe the utilization, results, and predictors of laboratory testing of antihyperglycemic medications within the context of everyday clinical care. Moreover, our study will inform the direction for further research.

### **Assessment of the Impact of the Vascular Risk Reduction Program for Women: A Pilot Study**

April Manuel, Sue Ann Mandville Anstey, Sandra MacDonald, Health Percy, Andrew Coffey

**Context:** Women in Newfoundland and Labrador (NL) are at a higher risk for developing vascular disease than the rest of Canada. In response to this population health problem, a Vascular Risk Reduction Program for Women (VRRP) was developed, implemented, and evaluated in NL. **Objective:** To describe the process and impact evaluation of the VRRP program and provide recommendations for future programs. **Design:** Mixed method: quasi-experimental design pretest and posttest design and interviews. **Participants:** Thirty-two women between the ages of 35 to 65 years with one of more of the following risk factors; smoker, diabetes, dyslipidemia, hypertension, obesity, peripheral vascular disease, coronary artery disease, cerebral vascular disease, and angina. Seven health care providers were involved in the VRRP development and delivery **Intervention/Instrument:** Women participated in four education sessions over a 4-week period. Feedback about the program and pre and posttest were collected using four questionnaires and two focus groups including: (1) True False Questionnaire, (2) Vascular Risk Survey, (3) Exercise and Smoking Survey, and (4) Dietary Recall . Health care providers' feedback was collected through interviews or written text. **Outcome measures:** Assessment of knowledge, behaviors, and attitudes related to vascular disease ( e.g., diet, exercise, smoking, alcohol consumption). **Results:** Women had a pre-existing high level of knowledge about their vascular risk prior to the VRRP, but they were searching for help to translate that knowledge into healthy behaviors. **Conclusion:** Key recommendations include: the implementation of standardized educational sessions that have more interactive activities (e.g., cooking classes, stress reduction strategies, and physical activities), providing participants with resource materials that they can take home, including a follow up component such as a help line, and extending the program to include a session to complete questionnaires. A review of the program resources revealed the need to ensure sustainable funding for the VRRP in the community, including the development of a VRRP advertising campaign, and continued engagement with health care providers and community leaders to deliver the program.

### **Atlantic Canada Children's Effective Service Strategies (ACCESS-MH)**

Cathy Peyton, R. Audas, S. Ronis, K. Tilleczek, M. Zhang, J. Richard, B. Bell

**Context:** Children with mental health disorders receive treatment and services through a myriad of service providers including health professionals, educators, social workers, and, in severe cases, the justice system. The provision of care is largely uncoordinated and results in poor outcomes, lengthy queues, and inefficiencies. The aim of this research program is to bring together a cross-sectorial and interdisciplinary team of researchers, health care providers, and decision makers from across Atlantic Canada (Prince Edward Island – PEI, New Brunswick – NB, Nova Scotia – NS, and Newfoundland and Labrador – NL) to take a diverse and innovative approach to studying how services are provided to children and youth identified with any of the following five mental health conditions: Anxiety, Depression, Autism Spectrum Disorders, Conduct Disorder, and Eating Disorders. We intend to document and analyze how treatment is received across government sectors including Health, Education, Social Development, Justice, Public Safety, and Youth and Family Services . **Objective:** Examining Barriers and Facilitators in Child and Youth Mental Health in Atlantic Canada **Design:** Analysis of large data sets, patient journeys and operations research **Participants:** parents, caregivers, children, youth, service providers **Intervention/Instrument:** administrative databases in four provinces and Statistics Canada datasets, Interviews and visual methods to understand child/youth journeys in mental health, Using advanced analytical techniques and computer models to make better decisions **Outcome measures:** What services are being accessed? What journeys are being taken through the system? What are the barriers and facilitators to access and services? Which services are effective/ineffective and why? Can the system be better integrated, coordinated, and funded **Results:** Research in on going **Conclusion:** Our hope is that through research and knowledge exchange, this project can improve the coordination of care and services for a patient group that has historically been under-funded and poorly managed.

### **Autism, pregnant women, and topical chemicals: A possibility to think about**

Harold Wight

**Context:** Pregnant women are exposed to multiple environmental chemicals including things they ingest and put on their skin. The safety of these chemicals is not known, including whether there is any potential relationship with the occurrence of autism. **Objective:** To begin a discussion about potential harmful effects of topical chemicals during pregnancy. **Design:** A general review of the available information on the potential harmful effects or safety of these chemical has been completed. The range of chemicals in commonly used products will be discussed. **Participants:** Anyone interested in the area of environmental effects on health. **Intervention/Instrument:** N/A **Outcome measures:** N/A **Results:** In general, the evidence suggests that the potential effects of these chemicals is unknown. They have not definitely been proven to be harmful in many cases, but also have not been shown to be safe. We just don't know most of the time. **Conclusion:** Pregnant women should be aware that there is a possibility that there may be harmful effects of these chemical on the fetus.

### **Better Beginnings: What are we missing for at risk moms?**

Allison Lamond, Anne Drover

**Context:** Since 2005, the number of infants born to mothers using substances has doubled in the province and these babies are at risk of a withdrawal syndrome- "neonatal abstinence syndrome". Previous research has shown that mothers using substances may also experience increased rates of domestic violence, mental illness and housing and food insecurity. Currently, these determinants of health are not recorded on pregnant patients charts. **Objective:** The primary goal of this study is to determine the prevalence of smoking, alcohol use, substance use, domestic violence and food/ housing insecurity in mothers delivering in a Newfoundland maternity hospital. **Design:** A quantitative study using an online questionnaire designed using FluidSurveys®. The questionnaire will be distributed in hospital 24- 48 hours after delivery. The survey will be accessed using a QR code which can be accessed on the participants phone or provided device to anonymously complete the survey. **Participants:** Mothers delivering at the Health Sciences Complex. All mothers will be invited to participate over the two month period of the study (N=250). **Intervention/Instrument:** Participants will be asked to complete a short, 40 question online survey about their food/ housing situation, domestic violence and substance use before and during pregnancy, as well as sociodemographic questions. **Outcome measures:** Self-report of participants behaviours before and during pregnancy. **Results:** The anticipated results include determining the population of infants born to mothers that use substances, experience domestic violence and/or food/housing insecurity. These numbers will give healthcare providers a better understanding of maternal situations to ensure both mothers and infants receive the highest quality of care. **Conclusion:** The findings of this research will be used to help healthcare professionals understand the population affected by these factors, leading to better healthcare for mothers and their infants.

### **Change in risk factor status following first diagnosis of coronary artery disease: A primary care Canadian cohort study**

Jacques Van Wijk

**Context:** Implementing a healthy lifestyle can be quite challenging, as evidenced by the still increasing prevalence of obesity and physical inactivity across Canada. It is possible that people do not adopt a healthy lifestyle because they feel well and have no sense of urgency about it. However, it seems that the occurrence of a health condition, such as being diagnosed with a chronic disease, may act as a trigger for individuals to change their lifestyle or become more concerned about their health. **Objective:** To assess how cardiovascular risk factors change in patients following an initial diagnosis of coronary artery disease (CAD), compared to patients without such a diagnosis, in a Canadian-based

population. Design: This is a retrospective cohort study involving secondary data analysis of Canadian Primary Care Sentinel Surveillance Network (CPCSSN) data. Participants: The study population will consist of adult patients enrolled in the CPCSSN database as of January 1, 2010 with no evidence of cardiovascular disease. The exposure group will be comprised of patients who receive a new diagnosis of CAD between January 1st, 2010 and December 31st, 2011. The control group will be chosen from patients from the same time frame who do not receive a diagnosis of CAD. Intervention/Instrument: The national component of the CPCSSN database will be utilized for this study. The database consists of de-identified, point of care data, retrieved on a quarterly basis from these practices. Outcome measures: The primary outcome for this study is change in LDL cholesterol level. Additional outcomes include blood pressure, HDL cholesterol level, smoking status, Body Mass Index, blood glucose level, and HbA1c level. Results: We expect a diagnosis of CAD to lead to decreased systolic or diastolic blood pressure, lower LDL cholesterol, higher HDL cholesterol, change in smoking habit, lower BMI, lower blood glucose, and a lower HbA1c level. Conclusion: The occurrence of a health condition may introduce a window of opportunity for individuals to adopt a healthier lifestyle, which clinicians may take advantage of to further exercise primary and secondary prevention efforts.

### Client Adherence and Perceptions of a Methadone Maintenance Treatment Program

Krista Butt

Context: The Methadone Maintenance Treatment Program (MMTP) was established in Newfoundland and Labrador in 2005. The aim of the program is to help clients reduce non-medical use of opioids and other drugs and to enhance client quality of life. Objective: To assess program adherence and the impact of the MMTP on client drug use, high risk behavior and quality of life. Design: Surveys were administered to assess client perceptions of the program and administrative data sources (including urinalysis test results) were utilized to assess program adherence. Participants: A total of 72 clients completed all or parts of the client survey. Complete urinalysis data were available for 81 participants and retention data for 169 individuals who participated in the program over a two year period were examined. Intervention/Instrument: A survey was developed in consultation with the MMTP team. Urinalysis data were derived from laboratory results and retention data were derived via a chart audit of client files. Outcome measures: This evaluation examined program adherence (drug use and retention) and various client outcomes such as satisfaction, criminal activity, family support, housing and employment. Results: A majority of respondents (n=27, 42.2%) indicated they were in the “maintenance” phase of the program, followed by “tapering” (n= 23, 35.9%) and “initiation” (n=14, 21.9%). A majority (n=46, 63.9%) indicated use of street or prescription drugs while engaged in the MMTP; however, cigarettes (n=30, 65.2%), and marijuana (n=29, 63.0%) were the most frequently cited, with few participants ( $\leq 6$ ) reporting any other drug use. Most (n= 41, 97.6%) reported their criminal activity decreased and 53% (n=38) indicated their housing situation and employment status improved, while 59% (n= 42) reported their family support also increased since engaging in the MMTP. Most (n=60, 83%) indicated they were satisfied with the treatment program and qualitative comments suggested participants felt their quality of life improved. On average, clients completed seven (M=7.15) urine screens. Urinalysis data revealed marijuana was the most commonly used drug. Finally, over a two year period, about 28% of participants voluntarily withdrew from the program due to a successful taper. Conclusion: In most cases, participation in the MMTP resulted in improved client outcomes.

## Comparison of the Effectiveness of Group and Individual Therapy for University Students with Symptoms of Anxiety and Depression

Emily Fawcett, Michele Neary, Peter Cornish

**Context:** There are growing concerns over the rise of mental health issues across university campuses. As the demand for services increases disproportionately to the availability of trained professionals, it is important to examine how services are implemented and the effectiveness of different treatment options. To date, individual and group therapy have not been directly compared within a university counselling centre population. **Objective:** (1) To compare the effectiveness of individual and group therapy in reducing symptoms of anxiety and depression among university students; (2) To explore the feasibility of conducting research in the university counselling centre. **Design:** A randomized trial comparing two psychological interventions was conducted, which used a pre-post design to measure outcome. **Participants:** University students who met the following inclusion criteria: 18 years of age or older, experiencing moderate to severe anxiety or depression, and not at risk of harm to self or others. We recruited 16 participants, with 8 randomly assigned to the group intervention and 8 randomly assigned to individual therapy. **Intervention/Instrument:** Six sessions of weekly individual therapy or 6 weeks of a closed Cognitive Behavioral Therapy group. **Outcome measures:** All participants went through a pre-screening interview to determine eligibility for the study and completed a demographic questionnaire, the Generalized Anxiety Disorder –7 (GAD-7) and Patient Health Questionnaire –9 (PHQ-9) to assess symptom severity, and a survey regarding expectancy and attitudes toward individual and group therapy. For the main outcome measures, participants completed the Beck Depression Inventory (BDI-II) and the Beck Anxiety Inventory (BAI) at the onset of the first session, and will complete these measures again in the last session. **Results:** The study is currently in progress but the full results of the study will be presented at the conference. Based on previous literature, it is hypothesized that individual therapy will show greater improvements in symptoms of depression and anxiety compared to group therapy. **Conclusion:** This study will help determine which interventions are most effective within a counseling centre population, the feasibility of conducting research within this population, and whether client's attitudes toward individual versus group therapy influence treatment outcome.

## Designing a functional exercise training intervention that increases aerobic endurance capacity in chronic stroke survivors

Liam Kelly, Wallack EM, Rancourt SN, Granter-Button S, Kirkland MC, Chatterjee T, McCarthy J, Hassan M, Ploughman M

**Context:** Poor aerobic endurance capacity ( $VO_{2peak}$ ) is characteristic of individuals who have a stroke, which is further exacerbated during recovery due to physical disabilities that limit their ability to perform activities of daily living. Although aerobic endurance training is encouraged to minimize risk for another stroke and the development of comorbid conditions, such strategies are not practical for many stroke survivors. Therefore, the development of exercise interventions using functional movement skills that challenges the cardiorespiratory and metabolic systems may be a feasible strategy in chronic stroke survivors. **Objective:** To evaluate the effects of functional exercise training (FET) compared to traditional aerobic endurance training (AET) on  $VO_{2peak}$  in chronic stroke survivors. **Design:** A two arm randomized study design was used to evaluate the effectiveness of FET at improving  $VO_{2peak}$  in chronic stroke survivors. Both groups performed maximal graded exercise tests (GXT) prior to, immediately after, and 12-weeks after completing 30 minutes of either AET or FET 3 times a week for 10-weeks. **Participants:** Currently, 7 (4 AET and 3 FET) of the anticipated 42 chronic stroke survivors (> 6 months) have completed pre, post and follow-up measurements. **Intervention/Instrument:** FET involves completing multi joint functional movements in sequential order with minimal rest time in order to achieve a mean heart rate 30-40 beats above resting. AET consists of 10% body-weight supported treadmill exercise at workloads corresponding to 65% of  $VO_{2peak}$ .

Outcome measures:  $VO_{2peak}$ , carbon dioxide production ( $VCO_2$ ), respiratory exchange ratio (RER), minute ventilation (VE), and ventilatory equivalent for oxygen ( $EqO_2$ ). Results: For the first 7 subjects, baseline measures for  $VO_{2peak}$ ,  $VCO_2$ , RER, VE and  $EqO_2$  were:  $18.0 \pm 3.8$  ml min<sup>-1</sup> kg<sup>-1</sup>,  $1646 \pm 632$  ml min<sup>-1</sup>,  $1.01 \pm 0.0$ ,  $56 \pm 16.5$  L min<sup>-1</sup>,  $35 \pm 4.5$ . Both the FET and AET groups increased their  $VO_{2peak}$  by  $2.8 \pm 0.63$  and  $5.4 \pm 5.5$  ml min<sup>-1</sup> kg<sup>-1</sup>, respectively. Conclusion: The preliminary findings indicate that FET is an effective strategy to increase  $VO_{2peak}$  in chronic stroke. Future work will focus on quantifying the cardiovascular and metabolic demands of FET.

### Development of an MVC Clinical Reporting Tool

Elizabeth Faour, Cathy MacLean

Context: There is no standardized medical approach to an ambulatory motor vehicle collision (MVC) patient, no standardized method for insurance and legal bodies to obtain physician reports for MVC patients, and a literature review revealed little research has been done on the topic. The current norm is for the patient's entire medical record to be released to an insurer, which may be problematic in terms of confidentiality, efficiency, and can raise barriers to receiving proper compensation. The process of obtaining a physician report can be time consuming and convoluted, causing distress for the patient. Evidence suggests a simplified process would facilitate patient recovery. Objective: This study aims to create a Clinical Reporting Tool for use by family physicians to standardize the collection of information from MVC patients in the office setting for medical, insurance, and potential legal purposes. Design: A draft tool has been created through consultations with a family physician, an insurance adjuster, and a personal injury lawyer. The components of this draft will be put through a Delphi process to generate a consensus on what should be included in the final tool. Participants: The expert panel will consist of 20 family physicians, 10 insurance adjusters, and 10 personal injury lawyers. "Experts" will be considered as those who have been practicing in their respective field for at least five years and who have relevant knowledge and experience in issues surrounding care of ambulatory MVC patients. Intervention/Instrument: The Delphi method will allow a consensus to be gained among 3 professions relevant to post-MVC patient care on what information should be collected during the patient's first visit to his/her family doctor in the office setting. Outcome measures: The mean and standard deviation of responses will be calculated for each component after each Delphi round to determine the group opinion and when a consensus has been gained. Results: It is anticipated that 3 iterations will be sufficient for a consensus to be reached on all components. Conclusion: When the Delphi is complete, the result will be a Clinical Reporting Tool for assessment of MVC patients presenting to the office for care. The goal is that this tool will help ensure proper medical treatment and follow-up while providing a standardized method of physician reporting to insurance adjusters and lawyers.

### Do Memorial University Family Medicine residents completing longitudinal rotations preferentially choose rural practice? A retrospective assessment as part of the 6for6 program

Peter Barnes

Context: Memorial University has moved towards educating Family Medicine residents in a single geographical area for the majority or even entirety of their training, a process known as "streaming". This has been promoted as a means to improve rural recruitment, although no research has been done on streaming in the Newfoundland context. Objective: To determine if students completing rotations of 6 months or more in a single rural geographical region are more likely to return to a rural area to practice at the end of residency. Design: This is the initial step of a two part project involving a retrospective assessment of the rotation choices of the previous 25 years of Memorial University's Family Medicine residents, as recorded by the Department of Family Medicine. Residents completing a six month rotation or longer in a defined geographic region of the province will then be contacted by survey to assess whether they chose rural practice at the end of residency. This will be compared to a representative sample of

residents from the same pool that did not complete longitudinal rotations. Participants: Memorial University Family Medicine residents completing rural rotations of 6 months or longer in a defined rural geographical region of the province of Newfoundland and Labrador. Comparison will be made to residents not completing extended rural rotations in a single rural area. Although total sample size is still unknown, it is anticipated that the overall numbers will be low. Intervention/Instrument: Residents will be contacted via mailout survey. Addresses of former residents will be obtained through the Office of Alumni Affairs at Memorial University, the Medical School itself, and Scott's Medical Database. Outcome measures: Decision to practice rural medicine at the end of residency as determined by the survey. Results: Based on research conducted elsewhere, it is anticipated that residents whom complete longitudinal rotations in a single rural area will preferentially choose rural careers over those whom do not complete the same rotations. Conclusion: Longitudinal rotations are recognized as a means to improve rural recruitment. Memorial University is expending considerable effort and resources towards utilization of rural longitudinal rotations, although no research has been done assessing the rural workforce benefits of this in the Newfoundland context. Such evidence may already exist in the form of the practice decisions made by residents choosing longer rotations at Memorial University.

### **Do scores on the new Psychological Social and Biological Foundations of Behavior section of the new Medical College Admissions Test predict medical students academic performance in behavioral and social sciences courses?**

Wanda Parsons, Janet McHugh, Cynthia Searcy

Context: The Medical College Admissions Test (MCAT) is changing in 2015 to reflect 21st century medical education, and one change is the addition of the new Psychological, Social and Biological Foundations of Behavior (PSBB) section which assesses knowledge that provides a foundation for learning in medical school about the behavioral and socio-cultural determinants of health and health outcomes. Objective: The goal of the PSBB study was to provide early evidence about the validity of the PSBB section in predicting academic performance in medical school in courses that teach about the behavioral and social sciences. Design: Memorial University in 2013-2014 participated in the PSBB validity study to learn how well PSBB scores predict students' academic performance in behavioral and social sciences (BSS) courses and clerkships. All first and second year medical students at Memorial University of Newfoundland were invited to take a prototype PSBB exam and short post-exam survey in fall 2013 and to give permission for their grades in courses that were conceptually related to PSBB content to be included in the study. Participants: Currently enrolled first and second year medical students were invited to participate. There were 2 cohorts First-year students (N=64) Second-year students (N=58) Intervention/Instrument: Participating students took a prototype version of the PSBB test in Fall 2013 (before the start of the semester) Outcome measures: Final grades in 3 pre-clinical courses Community Engagement 1 (Epidemiology/Public Health) Community Health 2 (Epidemiology/Public Health) Integrated Study of Disease: Neurosciences Integrated Study of Disease: Psychiatry Results: PSBB scores predicted academic performance in psychiatry, neuroscience, and epidemiology/public health courses Conclusion: PSBB scores appear to predict related academic outcomes in medical school.

### **Dyslipidemia in Newfoundland and Labrador An Exploration of Genetics Community Factors and Life Style**

Erfan Aref-Eshghi, Oliver Hurley, Guang Sun, Alvin Simms, Marshall Godwin, Pauline Duke, Shabnam Asghari

Context: Genetic predisposition is a key in the pathogenesis of cardiovascular diseases (CVD) in addition to environmental, community and lifestyle factors. A high prevalence of hypercholesterolemia, the most modifiable risk factor to CVD, has been reported in the province of Newfoundland and Labrador (NL), Canada. Objective: We aim



to document the lipid profiles and prevalence of dyslipidemia in NL and to describe its geographical variation by genetic variations, demographics, and community health indicators. Design: This cross-sectional study is a secondary analysis of individual and group level data from a number of existing databases. Participants: The study includes non-pregnant adults over 20 years of age within NL. Intervention/Instrument: NA Outcome measures: Data sources include: (1) NL laboratory database (cholesterol levels); (2) genetic data from an independent study, entitled “Complex Diseases in the Newfoundland Population: Environment and Genetics (CODING)”;

(3) Electronic Medical Records (EMR) of primary care clinics in NL; and (4) information from community health conditions from the Canadian Community Health Survey (CCHS). These databases will be combined using a geographic identifier (postal code). Demographic information (from the lab data), general environment and genetic factors (from the CODING study), medication profiles and comorbidities (from EMR data) and community health condition data (from CCHS data) will be extracted. Geographical variations in individual and community factors, as well as the variation in the frequency of the risk alleles of the single nucleotide polymorphisms (SNP) in candidate genes associated with dyslipidemia, will be determined in relation to the prevalence of dyslipidemia using Ordinary Least Squares (OLS) linear regression and Geographically Weighted Regression. Results: The project is currently in progress. It is anticipated that the geographical distribution and prevalence of dyslipidemia in NL will be determined. Individual factors (age, gender, place of residence), community health indicators (population health determinants, life style, and well-being), and common genetic variants (SNPs) contributing to a higher prevalence of dyslipidemia in NL will be identified. Conclusion: The study provides a model of genetic, individual and community factors affecting dyslipidemia in NL, which will assist policy development for improving CVD management, targeted primary prevention and intervention to higher-risk groups.

### Effect of Spine Manipulation and Stretching on Sitting-Induced Low Back Pain

Diana De Carvalho, Jack P. Callaghan

Context: Evidence in the literature suggests an association between prolonged sitting and low back pain. Spine manipulative therapy (SMT), a conservative treatment option for low back pain, may play a role in alleviating these symptoms. Objective: The purpose of this study was to investigate the effect of a lumbar spine manipulation and lumbar spine stretch on sitting induced low back pain. Design: Experimental research: random presentation of lumbar SMT and a control stretch (pre-tensioned set-up for manipulation with no thrust) after 40 minute blocks of prolonged sitting. Participants: Twenty participants (10 males and 10 females) with no recent history of acute low back pain were recruited for a one session laboratory experiment. Intervention/Instrument: Participants performed a standardized typing task at a computer workstation for 3, 40 minute blocks. After the first and second blocks of sitting, either a SMT or control stretch (identical to SMT, without thrust) was performed in a random order. Outcome measures: Ratings of perceived low back pain, measured using a 100 mm visual analogue scale were taken at baseline, at 7.5 minute intervals throughout the sitting trials, and immediately pre and post intervention. Results: Participants were subdivided into two groups based on their pain response in the first 40 minute block of sitting: an increase in perceived rating of pain greater than 20 mm classified as a “pain developer” and those with ratings less than 20 mm were classified as a “non-pain developer”. Fifty percent of the study population fell into each category, with an equal distribution of gender. A significant immediate reduction in perceived pain was found for the left low back (side treated) following both the control and SMT maneuvers in the pain developer group ( $p=0.0342$ ). There were no main effects of gender ( $p=0.4239$ ) or intervention type ( $p=0.5159$ ). Statistical differences in perceived pain differentials were not found for gender ( $p=0.9109$ ), intervention ( $p=0.3710$ ) or pain group ( $p=0.0997$ ) for the right low back. Conclusion: The results of this study demonstrate the induction of transient back pain in a non-clinical population and suggest that SMT and passive spine stretching (control maneuver) provide significant short-term relief from this sitting induced low back pain.

### **Enhanced and Integrated Pathways to Wellness Programs: A Teams Advancing Patient Experience to Strengthen Quality initiative with Sturgeon Lake First Nation**

Vivian Ramsden, Shirley Bighead, Norma Rabbitskin, Willie Ermine, Wesley Ballantyne, Shari McKay  
Lisa Dolovich, Doug Oliver, Doug Price

**Context:** First Nation populations are at higher risk than the Canadian population for all chronic diseases e.g. diabetes, cardiovascular disease, cancer and HIV/HCV. **Objective:** 1. To raise knowledge and awareness with Sturgeon Lake First Nation of the social determinants of health, risk factors, prevention and management of chronic diseases and the value of healthy lifestyle choices. 2. To support the development of an appropriately integrated approach to prevention and management of chronic diseases using Western & Indigenous models of care con-jointly with wellness (body, mind, spirit) promotion. **Design:** The overall design of this study was informed by the integration of community-based participatory processes, mixed methods and transformative action research. **Participants:** With the goal of having at least one adult from each of the 238 homes at Sturgeon Lake First Nation, all adults will be invited to participate. **Intervention/Instrument:** Community-chosen interventions that evolve from the community-based survey taking place over the next three months. Relevant interventions will be supported by an open source electronic medication record and a personal health record technology ecosystem; as well as, home visits and an interdisciplinary health care team. **Outcome measures:** 1. Health Status. 2. Current treatment and management of chronic diseases. **Results:** Community engagement will illuminate the assets and gaps for consideration; however, the results will be returned to the community at each step in the process during which discussion regarding the analysis, interpretation, validation and intervention choices will be facilitated using such tools as storytelling and consensus. **Conclusion:** For community engagement to be successful the interests of the community must be taken into account and researchers must become facilitators.

### **Environmental Scan of Big Data in Addressing Mental Health Care in Atlantic Canada**

Scott Ronis, David Miller, Amanda Slaunwhite, Ted McDonald

**Context:** Policy makers can examine barriers and facilitators in mental health service utilization by using large-scale survey and administrative data that are commonly collected on an ongoing basis. These data afford opportunities for real-time examination of policy changes over time and can be used to naturally compare the outcomes of various policies across jurisdictions. Despite the high relevancy of this information to health care policy, however, big data are underutilized. **Objective:** To identify and review datasets that can be used to estimate need and past utilization of mental health care in Atlantic Canada, and develop pertinent research questions that can be examined using the information contained datasets. **Design:** A systematic review of data that are either publicly available or that are accessible through government, non-government, and university sectors. **Participants:** . **Intervention/Instrument:** . **Outcome measures:** Available datasets will be evaluated for demographic information (e.g., age, race, language), indications of generalizability of samples (i.e., sample size, geographic regions, cohort patterns, linkability across cohorts), instructions in how to efficiently access the data, identification of the mental-health-relevant variables within each dataset, and indications of cross-provincial access to services. **Results:** It is expected that the results will demonstrate a certain mass of data that are already available to researchers and policy makers. In particular, survey data includes the Canadian Community Health Survey and the National Longitudinal Survey of Children and Youth. Administrative data are accessible through New Brunswick Institute for Data, Research, and Training; Health Data Nova Scotia, and the Newfoundland and Labrador Centre for Health Information. **Conclusion:** The outcomes of this project will provide a synthesis of all available patient-oriented data that pertain to access and use of mental health care in Atlantic Canada. Furthermore, future directions on how to expand our current knowledge base will be discussed.

## Epidemiology of injury mortality by intent in Labrador and Newfoundland from 1996 to 2009

Jennifer Woodrow, Nathaniel Pollock, Michael Jong, Shree Mulay, James Valcour

**Context:** Injuries, including suicide and accidents, are leading causes of death among Aboriginal children and youth in Canada, especially those in northern communities. Rural and northern populations appear to be at elevated risk for injuries associated with transportation, especially in off-road vehicles, and employment, in industries such as mining and fishing. **Objective:** 1) To investigate and measure differences in injury mortality in Labrador and Newfoundland by region and sub-region, injury intent, sex, age group, and over time. 2) To determine the potential years of life lost (PYLL) due to injuries in sub-regions in Labrador and Newfoundland. **Design:** Retrospective epidemiological study using administrative mortality data. **Participants:** We analyzed provincial vital statistics data for 1996-2009, including death by ICD code, age, sex, place of residence, and date of death. This dataset did not include Aboriginal identifiers, so we used 'geozones' as proxies for Labrador's three Indigenous populations. This resulted in five sub-regions of analysis for Labrador: South Coast, Upper Lake Melville, Inuit/Nunatsiavut, Lab West, Innu Communities. **Intervention/Instrument:** N/A **Outcome measures:** Preliminary analysis includes proportionate mortality by injury intent, region, sex, age, and season. Ongoing analysis will examine crude and age/sex-standardized mortality rates by injury intent, region and sub-region, and examine patterns in mortality rates over time. PYLL will be investigated for the cumulative period by sex, injury intent, region and sub-region. **Results:** The majority of injury deaths in the province were due to unintentional accidents, though Labrador has a much higher percentage of injury mortality (15.96%) than Newfoundland (4.11%). The majority of injury deaths in four of Labrador's sub-regions were due to unintentional injuries such as motor vehicle collisions or fires. The exception was Nunatsiavut, the Inuit subregion, where the major cause was suicide. Overall, males accounted for 70% of all injury deaths, with a mean age of 47 years (SD 22.3). By contrast, females had an average age of 63 years (SD 27.3). Additional outcomes will be available during the conference. **Conclusion:** Injury mortality varied by intent, region, and demographic factors, though it appeared to disproportionately impact Labrador and specific subpopulations. Unintentional injuries and suicide were leading causes of injury fatalities that warrant targeted public health interventions.

## Expectations of patients with low back pain seeking physiotherapy treatment

Amanda Hall, Jeannette Byrne, Alissa Setliff, Kathy Simmons, Tony Ingram, Jenna Roddick, Mike Kay, Steve Kamper

**Context:** Low back pain (LBP) is a common condition with an uncertain prognosis. It has been suggested that patient expectations might influence the course of LBP; that is, what people expect is going to happen, may actually affect what does happen to them. However, there is little empirical evidence outlining the nature of these expectations. Understanding what patients expect from their treatment will help clinicians ensure the therapeutic encounter addresses issues important to their patients. **Objective:** To provide a better understanding of LBP patient's initial expectations of physiotherapy. **Design:** cross sectional study **Participants:** Adult patients with LBP > 16 weeks referred for physiotherapy at two hospital-based physiotherapy departments in St. John's, Newfoundland were invited to participate. **Intervention/Instrument:** n/a **Outcome measures:** At initial assessment, consenting patients completed pain (0-10 NRS), and disability (RMDQ) questionnaires. Process expectations; which refer to specific treatment activities, were assessed using items from the Expectations Questionnaire developed by Bowling et al. **Results:** 65 patients (73% female) aged between 22-75years participated in the study. At initial presentation, average pain was 6.97 (SD 2.09) out of 10, and disability was 12.37 (5.6) out of 24 on the RMDQ, both of which are similar to average scores of LBP patients in other large studies. Almost all patients (> 90%) hoped for a physical examination, tests or investigations, a diagnosis, reassurance and advice about their condition, a clear explanation of causation, symptoms management and benefits/risks of treatment. About half of patients hoped for a prescription or specialist referral and about 60% hoped to be given the opportunity to discuss the problems in their life. **Conclusion:** Many patients

with LBP attend physiotherapy with clear expectations about what information should be provided by their treating clinician. Of interest, the vast majority expect tests or investigations leading to a diagnosis and explanation of causation. This presents a challenge for clinicians given the current understanding of LBP which classifies most patients' condition as idiopathic. A further important finding relates to the desire for more than half of patients for discussion about problems in their life. This points to the need for physiotherapists to consider LBP from a biopsychosocial perspective.

### **Group Medical Appointments for Innu Patients with Well Controlled Diabetes**

Yordan Karaivanov, Shabnam Asghari, Emma Cumming, John Graham

**Context:** Compared to the general population, diabetes incidence and prevalence rates are significantly higher among Indigenous people. The Innu community Sheshashui has seen a huge increase in the number of patients requiring hemodialysis in the last five years. New approaches to diabetes management for this population should be explored. Previous studies suggest Group Medical Appointments (GMA) models improve diabetes outcomes in urban settings. To our knowledge, these models have not been yet tested in Indigenous people living on-reserve. **Objective:** To assess the effect of the GMA on (1) HbA1C of (2) access to physician services (3) self-management skills and (4) sense of well-being of Innu patients with type 2 diabetes who receive this intervention compare to patients who receive usual care **Design:** An open parallel randomized controlled trial **Participants:** Participants include Innu patients diagnosed with type 2 diabetes, age between 18 and 65 with well-controlled diabetes over the past six months ( $HbA1c \leq 7.5$ ). Pregnant women are excluded **Intervention/Instrument:** Subjects ( $n=60$ ) are randomly assigned to the intervention (GMA) or control group. GMA includes medical review, diabetes education and group discussion every 45 days. The control group receive usual care, as per existing guidelines. During one-year study period, approximately 12 group sessions for two groups of around 15 people are held **Outcome measures:** Outcomes are measured at baseline and 12 months. Primary measures are change in level of HbA1c, frequency of no-shows. Change in diabetes self-care and sense of well-being are measured using a questionnaire **Results:** The research is in progress. We anticipate to have some results including description of study participants and details on the intervention to present at PriFor **Conclusion:** This study assesses the effectiveness of GMA for Innu patients at the Mani Ashini Health Centre. The findings could help in policy development for diabetes management in an Indigenous population.

### **Health Care Professionals' Perceptions of and Experiences with Disclosing Adverse Events**

Charlene Reccord, Alissa Setliff, MacKenzie Turpin

**Context:** Transparency and accountability are integral components of quality and risk management within health care organizations; however, the disclosure of an adverse event to patients and/or their families can be difficult for all those involved. **Objective:** To assess the impact of disclosure training on health care professionals' knowledge, skill and self-efficacy and to explore health care professionals' experiences disclosing adverse events to patients and/or their family members. **Design:** A mixed methods design was utilized including retrospective questionnaire administration and semi-structured interviews. **Participants:** A convenience sample of 59 health care professionals completed a questionnaire, 36 of whom received "Disclosing Unintended Medical Harm" training and 22 who did not. Nine health care professionals who had been involved in a disclosure were interviewed. **Intervention/Instrument:** A disclosure training session. **Outcome measures:** The outcomes of interest were disclosure knowledge, skill and self-efficacy. Interview participants were invited to describe their involvement in the disclosure of an adverse event. The influence of training was also explored. **Results:** There was no statistically significant difference between those health care professionals who received disclosure training and those who did not on knowledge, skill or self-efficacy. Interview themes revealed that health care professionals learned how to disclose adverse events through experience rather than

formalized training. Health care professionals also felt that an immediate, honest disclosure that included an apology was most effective. Greater involvement of frontline staff in the disclosure process was advocated as well as increased accountability. Specifically, participants saw value in providing feedback to patients and families regarding what corrective actions had occurred to prevent adverse event recurrence. Conclusion: This research demonstrated that disclosure training had limited impact on a small group of health care professionals' knowledge, skill and perceived self-efficacy to disclose. Nonetheless, health care professionals endorse a timely, sincere, apologetic approach to disclosure and desire better follow-up after an adverse event has occurred.

### **HPV Awareness and Vaccination Uptake Among Young Adults Attending NL Post-Secondary Institutions: A Mixed Methods Study**

Miriam Yonazi, Diana L. Gustafson

**Context:** Increasing the Human Papilloma Virus (HPV) vaccine uptake among young adults is crucial in reducing the incidence of cervical and other HPV-related cancers found in men and women. A 2013 National College Health Assessment survey found that only 26.5% of young adults' ages 18-26 attending Memorial University had received the HPV vaccine. Uptake at other provincial post-secondary institutions is unknown. Post-secondary institutions offer an accessible and concentrated population of young adults who are the target group for HPV vaccination. **Objective:** The primary objectives of this study are to (1) understand factors associated with post-secondary student's intent to receive HPV vaccines (2) shed light on the barriers to uptake among harder-to-reach students in post-secondary institution (3) and provide recommendation to post-secondary institutions for improving HPV programs and services in the province. **Design:** An advisory group will be assembled to guide recruitment, data collection and analysis and knowledge translation. A mixed methods inductive approach will be used to address the research objectives. **Participants:** A web-based survey of a stratified sample of 1827 eligible students aged 18-26 registered at five NL sites (Memorial University St John's campus, MUN Grenfell campus, Marine Institute, College of North Atlantic and Academy Canada). **Intervention/Instrument:** Focus group interviews will be conducted with diverse student groups including harder-to-reach population's at all five sites. **Outcome measures:** The research process intends to increase public participation and public awareness of HPV infections and HPV vaccination. The findings are expected to provide evidence to institutional decision makers about how to improve health education and health services, create supportive environments, and inform health policy relating to HPV vaccination in the province. **Results:** We anticipate that we will learn what young adults need and want to know to make an informed decision about adopting HPV vaccination. We predict that individual decision making about HPV vaccination is complex and culturally and temporally specific and can be influenced by factors such as parents and peers' attitudes towards the vaccine, physician recommendations, and beliefs regarding efficacy and effectiveness of the vaccine. **Conclusion:** We need to understand factors influencing young adults' intent to receive the HPV vaccines in order to improve our HPV programs and services in the province.

### **Identification and assessment of frail elderly at risk of hospital admission and returning to emergency in rural settings in Newfoundland and Labrador**

David Thomas

**Context:** Elderly patients frequently present to emergency department (ER) with symptoms of frailty and deterioration of health. Unfortunately, the ER departments are not apt at diagnosing this decline and early intervention is not available. Complete geriatric assessments initiated by ER visits have demonstrated mostly positive results worldwide. The first such program in NL has been the Healthy Aging Clinic at LeGrow Health Centre in Port aux Basques. **Objective:** To describe demographic and clinical characteristics of frail elderly at risk of hospital admission and returning to the emergency department at the Healthy Aging Clinic at LeGrow Health Centre between

July 1, 2013 and June 30, 2014. Design: A case-series using secondary data from patients screened with the Triage Risk Stratification Tool (TRST). The demographic and clinical characteristics of participants as well as uptake of the referral are presented. Participants: Elder patients, 75 years and older, presenting to the emergency room were screened with the Triage Risk Stratification Tool (TRST). Those who were TRST- positive ( $\geq 2$ ) were referred to the Healthy Aging Clinic and were included in the study. Patients admitted to hospital were excluded. Intervention/ Instrument: A comprehensive geriatric assessment by a nurse-practitioner including complete history and physical exam as well as screening for mood, cognition, mobility, functional decline, safety and medication review. Outcome measures: Primary outcomes included mini-mental state examination score, Montreal Cognitive Assessment score, Geriatric depression index, Timed-Up-And-Go and Barthel Index, number of medications and pharmacy recommendations, number and type of referrals. Secondary outcomes included ER presentations and admissions 6 months following complete geriatric assessment. Results: Research is still in progress (results will be ready for presentation at conference). Conclusion: ER departments are uniquely placed to identify frail elderly who are at high risk for deterioration. ER initiated complete geriatric assessment, such as the Health Aging Clinic at LeGrow Health centre, can identify those at risk and intervene to decrease frailty and promote healthy aging. More research is required to determine the effect of such a program.

### Impact of a First Diagnosis of Cancer on Mental Health and Use of Psychoactive Drugs

Samantha Foster

Context: According to Statistics Canada, cancer was the leading cause of death in 2011 and was responsible for the death of over 242 000 people. A diagnosis of cancer is often interpreted as a 'death sentence', instilling panic in the affected individual. Living in fear of their diagnosis, individuals with cancer can develop symptoms of mental health disorders such as depression and anxiety. Poor mental health has been known to negatively impact quality of life, increase hospital stays, and reduce the efficacy of treatment. This interference could conceivably diminish survival time. Objective: The primary objective of this study is to assess the impact of a cancer diagnosis on an individual's mental health. In order to determine the effect, diagnosis of mental health disorders and the use of psychotropic drugs will be considered. Design: This study will use a retrospective cohort design. It will examine the effect of a diagnosis of cancer on mental health as indicated by diagnoses of mental illness and use of psychotropic drugs in the CPCSSN primary care database. The exposure group (those with a diagnosis of cancer) will be compared with a group who did not receive a diagnosis of cancer (non-exposed group) in terms of mental illness diagnoses and use of psychotropic drugs. Participants: The study population will be obtained from the Canadian Primary Care Sentinel Surveillance Network (CPCSSN) database. Adults, aged 20-65, will be divided into exposure and comparison groups. The exposure group will contain individuals in the study cohort that received a diagnosis of cancer between January 1, 2011 and December 31, 2013. The comparison group will contain individuals who did not receive a diagnosis of cancer during that same study period. Intervention/Instrument: The exposure is a first cancer diagnosis. Outcome measures: The primary outcome to be examined is the occurrence of a mental illness and prescriptions of psychoactive drugs. Results: There are no results available at this time. Conclusion: No conclusions can be made at this time; however, the underlying hypothesis for this study is that patients who are diagnosed with cancer will experience more mental health problems than individuals without a cancer diagnosis.

### **Increasing Quality of Life and Reducing Pulmonary Exacerbations in Chronic Obstructive Pulmonary Disease (COPD) by Providing Pharmacist-driven Improvement in Medication Adherence: A Pragmatic Cluster Randomized Control Trial Protocol**

John Hawboldt, Erin Davis, JM Gamble, Carlo Marra, Jamie Farrell, Joe Lockyer, Mark Fitzgerald

**Context:** Chronic obstructive pulmonary disease (COPD) is preventable and treatable, however its management in Canada is suboptimal. Up to 50% of patients are not adherent to their medications and up to 75% use poor technique. The community pharmacist is an accessible health care professional with the skills and knowledge necessary to provide an intervention to improve adherence in these patients. **Objective:** To determine if a multifactorial intervention delivered by community pharmacists can 1) improve inhaler technique, 2) improve adherence and 3) improve quality of life in patients with COPD. **Design:** A pragmatic, cluster randomized controlled trial. **Participants:** Patients aged 45-75 years in Newfoundland and Labrador with confirmed COPD and documented spirometry. We have estimated that a sample size of 114 patients (calculation accounts for clustering effect) will provide 80% power to detect a 30% relative difference in adherence between the intervention and usual care groups. Assuming a 10% dropout rate, we will aim to recruit 125 patients (20 clusters with an average of 5 patients per pharmacy). **Intervention/Instrument:** The intervention will include evaluating and providing education on inhaler technique, education on COPD medications, adherence support strategies, written COPD action plan, referral to family physician or respirologist as needed and referral to a pulmonary rehab clinic, versus usual care. **Outcome measures:** Medication inhalation technique using a validated pharmacist-scored 10-point checklist and medication adherence via actual counts of medication refills over study period and using the Morisky Medication Adherence Scale (MMAS-8). **Results:** We anticipate that this intervention will result in an improvement in inhaler technique, medication adherence and quality of life for patients with COPD. **Conclusion:** Will a multifactorial intervention by community pharmacists improve inhaler technique, medication adherence and quality of life in patients with COPD.

### **Insights Into Organizational Learning: Investigating the Adoption of a Clinical Information System (CIS) in a Hospital Family Medicine Department**

Jamie DeMore, Charo Rodriguez, Nassera Touati

**Context:** In a knowledge-based economy, knowledge exchange is essential for organizational competitiveness; improved performance; day-to-day activities and processes; and even organizational survival. Advances in information technology have caused this transformation to occur and remains the driving force behind the growing importance of knowledge management. In a similar way as knowledge management, Organizational Learning (OL), defined as the creation, retention, and transfer of knowledge at the organizational level, has been described as a process that is critical for proper organizational functioning. OL has also been linked to significant improvements in organizational performance and effectiveness. In the healthcare industry, no research to date has been conducted regarding how the integration of a new Clinical Information System (CIS) can potentially affect OL in a hospital family medicine department. The conceptual framework that will guide this investigation is known as the Evidence in the Learning Organization (ELO) model, which is a model integrating OL concepts and Evidence-based Medicine (EBM) principles. **Objective:** To understand processes whereby the adoption of the CIS by the hospital family medicine stakeholders facilitates or hinders OL. **Design:** Longitudinal single embedded case study using a process approach and mixed-methods design (QUAL-quant). **Participants:** Fourteen to fifteen family medicine stakeholders (family physicians, nurses, managers) will be recruited at different moments in time over a 3-year period. **Intervention/Instrument:** Setting: Department of Family Medicine within a community university hospital in Montreal, Quebec. **Methods for Data Analysis:** Data collection will consist of individual semi-structured interviews, focus groups, observations, documentary sources, and various statistics that will be taken from the system (i.e. reports). **Outcome measures:** N/A **Results:** This study will elucidate how family medicine clinicians and managers integrate the new CIS

into their core business processes. More specifically, its results will help to understand and explain what OL processes are triggered by a CIS adoption and, in turn, how the CIS adoption impacts these processes. Conclusion: The results of this investigation will have important practical implications for decision-making relative to the integration and development of a CIS within a family medicine hospital setting. This study also has the potential to enhance the OL literature within a primary health care context.

### **Interdisciplinary Collaboration for Improved Maternal-Fetal Outcomes Central Newfoundland**

Taft Micks, Steve Parsons, John Campbell

Context: In 2005, the Women's Health Network was established. Prior to its inception, the rate of stillbirth at the Central Newfoundland Regional Health Centre (CNRHC) was three to four times the national average Objective: New strategies in maternal care were required for improved patient outcomes to bring our hospital up to par with national standards. New strategies included implementation of a "code pink", weekly labour and delivery audit meetings, and the creation of obstetrician led high- risk antenatal clinics. With these improvements in care, it was important we measured what impact this would have on delivery rates. Design: Retrospective analysis. Participants: Inclusion of all deliveries at CNRHC from 2001 to 2013. Intervention/Instrument: Information from every delivery was recorded in a log book on the labour and delivery (L&D) unit of the CNRHC. Outcome measures: Number of stillbirths, primary and overall Cesarean (C/S) sections as well as the number of vaginal births after Cesarean (VBACs) and operative vaginal deliveries (OVDs). Results: Since 2001 to 2013, the number of stillbirths per 1,000 deliveries decreased from 16.1 in 2001 to zero in 2013, on par with data on national stillbirth rates recorded until 2010. The number of primary C/S increased from 15.5% to 26.6%. The number of overall C/S increased from 25.2% to 38.9%. The VBACs performed decreased from 12.2% to 1.9% and the OVDs decreased from 15.8% to 5.7%. Conclusion: We have seen a decrease in the number of stillbirths, which is now on-par with national standards. However, during this time there has been a large increase in the number of primary and overall C/S performed. Consequently, there has been a decrease in the number of VBACs and OVDs. We need to be cautious with this increasing rate of Cesarean sections and decreased vaginal deliveries. Thus, our group has set future goals to decrease the overall Cesarean birth rate to <30%, primary caesarean to <20%, and VBAC to >20%. We have put strategies in place to achieve these measures.

### **Medical Student Distress Personal Health Care Practices and Barriers to Care**

Janet Bartlett

Context: Medical students experience higher levels of psychological distress than age-matched peers in the general population, yet are reluctant to seek help for mental health issues potentially resulting in inappropriate self-care practices and impairment. This trend increases throughout training and can lead to persistent, long-term mental health problems in practicing physicians. Barriers to care occur at individual, provider, and system levels and reflect issues related to stigma and the medical school environment. Objective: To determine the prevalence of psychological distress among medical students and compare to the general population; identify contributing factors; explore personal health care needs, practices, and barriers to care. Design: A cross-sectional design which involved administration of a survey in Spring 2014. Participants: Medical students in years one through four (N = 180) attending a university in Atlantic Canada. Intervention/Instrument: Kessler Distress Scale (K10) (Kessler et al., 2003); Canadian Community Health Survey Database (Statistics Canada, 2012); Perceived Medical Student Stress Scale (Vitaliano, 1984); Medical Student Health Care Survey (Roberts, Franchini, McCarty, & Warner, 2000). Outcome measures: Prevalence of distress among medical students in comparison to the general population, identification of contributing factors, reported health care needs, practices, and barriers to care. Results: Medical students reported significantly higher levels of psychological distress (20%) in comparison to age- and gender-matched peers in the general popu-



lation (4%). Factors which contributed pertained to the medical school curriculum and environment, restrictions on social and recreational activities, and training level. Students reported a preference for informal and off-site care including inappropriate self-care practices. Major barriers to care pertained to stigma, concern for confidentiality and academic vulnerability, and discomfort with the dual role of student-patient. Students reported structural barriers to care including schedule constraints, difficulty accessing care, and a general lack of knowledge around accessible, confidential mental health services. Conclusion: Medical students report high levels of distress yet are reluctant to seek help for mental health issues opting for informal care which can lead to inappropriate self-care practices and poor mental health outcomes. Medical school training factors and system-based barriers to care need to be addressed at both curriculum and policy levels.

### **Memorial's Life Cycle Approach to Rural Family Medicine**

James Rourke, Kristin Harris Walsh, Wanda Parsons, Katherine Stringer, Norah Duggan, Danielle O'Keefe, Mohamed Ravaliala, Janelle Hippe

Context: Memorial University of Newfoundland's Faculty of Medicine's social accountability mandate focuses on producing physicians for the province's large area and widely disbursed rural population. Memorial's "life cycle" approach includes: high school outreach, a holistic approach to admissions, emphasis on rural educational placements and educational supports for practicing rural physicians. Objective: This study explores the success of Memorial's life cycle approach to producing rural doctors in the province of Newfoundland and Labrador. Design: Data was drawn from the Learners and Locations database at Memorial and includes analysis of admissions, One45 data and Canadian Medical Directory data. Participants: This study includes anonymized data on all MUNMED graduates from 2011 to 2014 (N=247) and those practicing family medicine in NL as of August 2014 (N=1540). Intervention/Instrument: We used SPSS to analyze statistics, ArcGIS to produce maps, and Statistics Canada population data to classify students' backgrounds and education locations. Outcome measures: This study measures Memorial's success in recruiting rural students, providing rural educational opportunities, and producing rural doctors. Results: Of 247 students graduated from MUNMED in 2011-2014, 87 or 35% had predominantly rural backgrounds. For classes 2011-2014, 20% of MUNMED graduate and postgraduate educational placement weeks that took place in known or electronically tracked locations in Canada occurred in small rural communities and small rural cities, e.g., Year 1 (66% and 18% respectively); Year 2 Family Medicine (40% and 15%); Year 3 Family Medicine (86% and 7%); Family Medicine Residencies from July 2011-September 2014 (18% of all placement weeks in small rural communities and 24% in small rural cities). Canadian Medical Directory data indicates as of January 2015, of 305 MUNMED graduates practicing family medicine in NL, 68 (22%) are in small rural communities and 44 (14%) in small rural cities. Conclusion: External evidence indicates that Memorial's approach is effective and successful. The Society for Rural Physicians of Canada education award: 2008, MUNMED matching the most graduates to a rural family medicine program through CaRMS (26% - national average 7%); 2010 and 2013, Keith award, highest percentage of family medicine graduates (52% and 44% respectively) in rural practice 10 years after graduation.

### **Mental Health-Related Hospitalizations by Youth in New Brunswick**

Amanda Slaunwhite, Scott Ronis, Paul Peters, David Miller

Context: High rates of mental health-related hospital admissions have been identified by New Brunswick's Child and Youth Advocate as a significant challenge due to the negative implications of institutionalizing youth with mental health issues in adult acute care and psychiatric environments. Despite these efforts, however, rates of mental health-related hospital admissions among youth have continued to rise in New Brunswick to almost double the national average. In 2013-2014, 64 youth per 10,000 were admitted to hospital for mental health issues compared

to 35.5 per 10,000 nationally. Objective: The purpose of this project was to measure time series (2003-2014) and geographic trends in mental health-related hospital admissions by youth under 19 years of age to identify demographic, geographic and health service predictors of acute care utilization for common mental illnesses. Design: Negative binomial regression, multinomial regression, and spatial autocorrelation were used to examine time series trends and geographic variations in mental health-related hospitalizations. Participants: Persons under 19 years of age that have been admitted to hospital in New Brunswick from January 1, 2003-December 31, 2013 were the focus of this project. Intervention/Instrument: Hospital admissions data was sourced from the Discharge Abstract Database (DAD), and three additional databases (the Citizen Database, Provider Registry, and geocoded institutional address datasets) were used to examine geographic trends in hospital admissions in relation to distance to hospital and density of family physician practices. All data used for this project was accessed via the New Brunswick Institute for Data, Research and Training (NB-IRDT). Outcome measures: Time series data were modeled using innovative methods and tools that improve our understanding of trends in mental health-related hospital admissions across time (2003-2014) and space (postal codes or Forward Sortation Areas (FSAs)). Results: This project makes a significant contribution to the academic literature and health policy development by addressing the lack of information known about the increasing number of youth that are admitted to hospital for mental health-related issues in New Brunswick. The results of this study will be disseminated via workshops with health care and social service providers who will be asked to review and provide feedback into the major results of the project, and identify next steps for additional research projects focused on access and use of health services by youth with mental health issues in New Brunswick. Conclusion: The results of this study support further investigation into pathways to care for youth with mental health issues in New Brunswick, and the development of policies and programs that support youth in the community and reduce reliance on acute care services for treatment of psychiatric issues.

### **Metronome-timed bilateral hop test for individuals with mild Multiple Sclerosis (MS)**

Brett Holloway, Michelle Ploughman, Evan Lockyer, Natasha Buckle, Courtney Abbott, Megan Kirkland

Context: Clinical measures currently used to assess subtle impairments in individuals with mild MS are focused largely on identifying cognitive motor interference (CMI) through dual-tasking (DT). Most CMI assessment protocols use walking as the primary motor task, which does not yield sensitive enough measures when assessing this particular population. This presents the need for a more complex DT paradigm to provide a better measure of assessment. Objective: We compared the effects of the motor task of hopping to the beat of a metronome to the current clinical assessments in mild MS. This was done in order to determine whether this new variant provided more sensitive measures in distinguishing mild MS from healthy controls. Design: Observational study of two methods of DT involving metronome-timed hopping compared to self-selected hopping and walking among people with mild MS, and age, gender, and education matched controls. Participants: Individuals with MS (N=13; mean age $\pm$ SD, 42.00 $\pm$ 10.52y) that were relapse free in previous 3 months and healthy (N=9; 42.44 $\pm$ 11.13y) age, gender and education matched controls, as well as elderly controls. Intervention/Instrument: There were two different DT conditions; H40 (hopping to a metronome set at 40 bpm), and H60 (hopping to a metronome set at 60 bpm). Following a self-selected walking and hopping trial, these conditions were performed in randomized order and prior to completing the MoCA and T25FW test. Outcome measures: Data for velocity, stride length and absolute integrated pressure ratio was calculated using an instrumented walkway (Zeno Protokinetics, Peekskill, NY, United States). Results: Hopping parameters analyzed did not yield significant results distinguishing the MS group from matched controls. While analysis of the MoCA scores yielded no significant difference amongst all three subgroups, scores on

the T25FW test were significantly higher for the EC group ( $p=0.01$ ). Conclusion: Our results indicate that the DT parameters analyzed as well as current clinical measures (i.e. MoCA and T25FWT) may not yield sensitive enough measures in distinguishing mild MS from healthy controls.

### **Multi-disciplinary Approach to Psoriasis and Associated Co-morbidities Management**

Susanne Gulliver, Shane Randell

Context: Recent research suggests that psoriasis is more than a dermatological concern. Psoriasis is associated with cardiovascular diseases, diabetes, depression, obesity and other debilitating conditions. In order to properly treat the spectrum of co-morbid conditions, a team approach should be considered centering on the primary care provider. Objective: We are aiming to include a multi-disciplinary team in the treatment of psoriasis and its associated co-morbidities. Design: Policy Evaluation Participants: Psoriasis patients diagnosed by a certified dermatologist. Intervention/Instrument: No intervention, this is a discussion on improving health care delivery and patient outcomes. Outcome measures: The fostering of a multi-disciplinary approach with strong ties to primary care physicians. Results: None to Declare. Conclusion: Based on the eclectic needs of psoriasis patients, it is important for dermatology, cardiology, rheumatology, as well as other specialties collaborate. The primary care physician is instrumental to this collaboration and is the mortar which connects and supports this treatment approach.

### **Patient-Oriented Indicators for the Evaluation of an Inter-professional Tuberculosis Clinic in Northern Labrador**

Gabriel Woollam, Stacey Ramey, Rebecca Mitchell, Andrew Bresnahan

Context: In northern Canada, especially among Inuit populations, tuberculosis (TB) continues to be a major public health concern. Historically health system approaches to TB screening, diagnosis and treatment have been intrusive and disruptive for many Inuit communities, including those in northern Labrador. Treatment programs for northern patients often involved transfer and quarantine to southern hospitals. These were often lengthy separations, which dislocated patients from their families and culture. This legacy and the stigma related to diagnosis, has made many people reluctant to seek help, which in turn, threatens public health. In 2009, there was a TB outbreak in northern Labrador. At the time, the health authority did not have a coordinated approach to managing patients with active or latent tuberculosis. In response, Labrador Grenfell Health and the Nunatsiavut Government developed an inter-professional TB clinic to provide specialized care to patients in the region. Although the program appears to be meeting patient and community needs for culturally sensitive diagnostic and follow-up care, it has not been evaluated. Objective: To develop patient-oriented indicators for the evaluation of a TB clinic in northern Labrador. Design: We designed a qualitative study and used semi-structured interviews to explore patient perspectives on TB treatment and identify locally relevant indicators for program evaluation. Participants: We will recruit past and current patients of our clinic from communities in northern Labrador to be participants in this study. We will also seek key informant interviews with community members and health stakeholders not involved with our clinic. We will identify potential participants through purposive sampling. Intervention/Instrument: Semi-structured interviews based on an interview protocol. Outcome measures: We will transcribe interviews and conduct a thematic analysis to identify potential indicators. Results: We are currently in the early phases of this project including informal discussions with key stakeholders. Anticipated results will delineate themes in TB screening, diagnosis and treatment that are important to patients and local stakeholders. Conclusion: The anticipated results of this study will inform the future development of a patient-oriented evaluation tool for our tuberculosis program and possibly others serving Northern Canada.

## Physical activity and pediatric obesity: A literature review - Recommendations for future interventions in primary care in NL

Alison Coleman

**Context:** Newfoundland and Labrador (NL) has one of the highest rates of overweight and obesity in the country. Studies on NL preschool children have identified an increasing prevalence of overweight and obesity in children as young as 3.5 years of age. Physical activity (PA) has been demonstrated to play a key role in maintaining a healthy weight status. However, despite the abundance of research and targeted PA interventions, the level of success in decreasing pediatric obesity has been limited. **Objective:** To review and analyze past PA interventions to allow for the design and development of a comprehensive PA intervention program to target pediatric obesity in NL. In addition, this review aims to examine and review the roles and responsibilities of the primary care physician as a facilitator in this process. **Design:** An English literature review was performed using PubMed and CINNAHL search engines. **Keywords included:** youth physical activity, barriers to physical activity in rural regions, physical activity obesity interventions, and the role of family physician in obesity. **The review consisted of studies from 1998 to 2014; secondary sources were included. Participants:** N/A **Intervention/Instrument:** Physical activity **Outcome measures:** Pediatric obesity management **Results:** Successful PA interventions require: Tailoring to target population • Minimizing of barriers that overweight/obese youth experience regarding PA; identify via needs assessment and frequent monitoring • Involvement of school, community and family environment • Long-term follow-up of PA intervention to determine effectiveness • Use of mobile devices and technology such as active videogaming as tools to promote PA • Provision of user-friendly instructions and curriculum materials for school staff • Hiring of an on-site facilitator to help with program implementation, monitoring and follow-up • Collaboration between school, community officials, stakeholders and health professionals. Primary care providers can play an important role in the identification, treatment and management of pediatric obesity. Such areas include: weight monitoring and assessment • healthy lifestyle promotion • referral to community programs • community health education • advocacy towards public policy However, many family physicians feel unprepared to properly manage and treat childhood obesity. Identified barriers include: limited time, a lack of expertise, and lack of effective treatments and referral options. **Conclusion:** Future targeted obesity interventions need to be based on current research findings and recommendations. A successful intervention must be multifaceted and include involvement at the level of the school, home environment, community, government and health professionals. Interventions must be tailored to specific populations and barriers to adherence must be identified and minimized. Primary care physicians can be a significant ally in the prevention and management of childhood obesity when given necessary tools and additional education they may require. Changes at the level of government and health policy need to occur to support this.

## Predicting Adolescent Readmission to Acute Psychiatric Care Services in Atlantic Canada

David Miller, Amanda Slaunwhite, Scott Ronis

**Context:** There is a documented need for improved access to mental health care services for adolescents in Atlantic Canada—a problem that is exacerbated by adolescent readmissions to the already limited available services. Provincial data indicates approximately one in every five adolescents have a diagnosable mental illness, with associated empirical literature indicating overall adolescent psychiatric readmission rates ranging from 35 to 50 per cent. **Objective:** The objective of this study is to examine possible predictors of readmission to acute psychiatric care services in the province of New Brunswick. Existing literature indicates a number of predicting factors for adolescent readmission to acute-care psychiatric services including age of first hospitalization, sex, diagnosis, length of previous admission, geographic location in relation to hospital services, and a history of physical or sexual abuse. An examination of these factors within the context of New Brunswick will improve our understanding of adolescents' past and current use of psychiatric care in the province. **Design:** . **Participants:** Study participants consist of adolescents 19

years of age and under admitted to psychiatric care in a New Brunswick hospital from January 1, 2003 to December 31, 2013. The New Brunswick Department of Health administration database is being used to compile a readmission data set based on admissions and discharges within the provincial health care system. These data have been acquired through a data sharing arrangement with New Brunswick Department of Health and the New Brunswick Institute for Data, Research, and Training (NB-IRDT). Intervention/Instrument: . Outcome measures: . Results: This study will improve our understanding of adolescent mental health journeys throughout the New Brunswick health care system. The outcomes of this project will potentially influence public health policy by identifying risk factors for readmission to existing services in New Brunswick. Furthermore, regional similarities between New Brunswick and the rest of the Atlantic Provinces present an opportunity to generalize results to the rest of Atlantic Canada collectively, significantly contributing to the existing knowledge regarding adolescent psychiatric care patterns. Conclusion: .

### **Proactive Care for Innu Patients with Poorly Controlled Diabetes**

Yordan Karaivanov, Shabnam Asghari, Emma Cumming, John Graham

**Context:** In the last five years the Innu community of Sheshashiu has seen a huge increase in the number of patients with diabetes requiring hemodialysis. Recalling patients with poor diabetic control and providing them with dedicated access to clinical services may lead to improved HbA1c levels and higher satisfaction with care. **Objective:** To assess the effect of proactive appointment scheduling on (1) mean level of HbA1c (2) utilization of healthcare services (3) satisfaction with care among Innu patients with type 2 diabetes who receive this intervention compare to patients who receive usual appointment service. **Design:** A mixed-method study including an open parallel randomized controlled trial and qualitative study using semi-structure interview. **Participants:** Participants includes Innu patients diagnosed with type 2 diabetes with poor-controlled diabetes over the past six months (HbA1c  $\geq 7.5$ ). Pregnant women are excluded. **Intervention/Instrument:** Subjects are randomly assigned to the intervention (proactive appointment) or control group. For proactive appointment group, a database including basic demographic information and date of last visits is developed. Healthcare providers review the database monthly to identify patients who require an appointment and follow-ups. List of these patients is sent to booking staff to set-up an appointment if the patient did not book any. The control group makes their appointments according to routine system. Both groups receive usual care, as per existing guidelines. **Outcome measures:** Outcomes are measured at baseline and 12 months. Primary measures are change in level of HbA1c, frequency of no-shows. Satisfaction with care is assessed at the end of study using semi-structured interviews with participants in both groups. At least five interviews per study group will be conducted. The interviews will continue until saturation achievement. **Results:** The research is in progress. We anticipate to have some results including description of study participants and details on the intervention to present at PriFor. **Conclusion:** This study assesses the effectiveness of proactive appointment approach for Innu patients with poorly-controlled diabetes. The findings could help in policy development, and targeted intervention to aboriginal population.

### **Professional over-the-phone interpretation to improve the quality of primary care for migrants: A feasibility study**

Emily Parkinson

**Context:** In Canada, health disparities exist between limited language proficient (LLP) and English/French proficient patients, principally in quality and access to care. Providing professional interpreters (PIs) during medical encounters improves the quality of care and health outcomes of LLP patients. Despite the growing number of LLP patients, and evidence of the costs of care inequities, PIs are rarely engaged in Montreal primary healthcare (PHC) settings. The vital role of PHC in keeping populations healthy makes effective communication in PHC particularly important. In

PHC, where in-person interpreter intervention is less practical, over-the-phone interpretation (OPI) might provide a solution to overcoming communication barriers; however, little work has been done to shed light on the feasibility of using OPI in this context. Objective: To investigate the feasibility of OPI service use in Montreal primary care clinics by measuring care professionals' service usage during a three-month OPI integration, and identifying the factors that impact service usage. Design: Quantitative service evaluation: self-administered survey of primary care professionals before and after the three-month OPI integration. Participating clinicians will record the number of LLP patient encounters, and the service provider routinely tracks OPI usage (including language, call duration and cost). Participants: All (86) care professionals (staff physicians, residents, nurses, nurse practitioners, and social workers) at two Montreal primary care clinics. Intervention/Instrument: Unlimited (24/7), on-demand access to professional (remote) interpreters in over 180 languages. Standard examination room telephones with speaker function are used to access remote interpreters in the patient's preferred language. Outcome measures: Service usage is the main outcome measure. Care professionals' attitudes towards the service, opinions of the service, and demand for the service will also be used to evaluate OPI feasibility. Results: Information on the gap between the need for and use of (remote) PI services, as well as insight into the feasibility of OPI as a means of overcoming language barriers in PHC settings. Conclusion: This will be the first trial and evaluation of OPI in Quebec outpatient settings. This project will offer valuable information and strategies for future OPI/language service integration efforts. Demonstrating the demand for and benefits of language support will also help encourage its uptake and success.

### **Resuscitating the Family Medicine Curriculum - A Novel Approach to Postgraduate Advanced Life Support Skill Acquisition and Maintenance**

Taft Micks, John Campbell, Megan Sherman

Context: Evidence suggests that Advanced Life Support (ALS) courses leave medical residents unprepared for real life critical care scenarios. We reviewed the contemporary literature regarding the optimal methods for ALS skill acquisition and maintenance. Objective: We hypothesize that a small change in the sequence of current learning is feasible and is likely to significantly increase retention of ALS skills in family medicine residents at Memorial. Design: This is a systematic review that spans 15 years (1999-2014). Participants: 1,753 articles identified. Intervention/Instrument: A search strategy involving four literature databases, 12 search terms, four inclusion criteria, and two exclusion criteria were used. The author retrieved and reviewed all articles which met the criteria. Outcome measures: The papers were reviewed and the resultant studies considered for their applicability to postgraduate ALS training and Memorial University's current family medicine program. Results: Twenty-six articles were eligible. Thirteen met the inclusion criteria and 13 were excluded. Conclusion: While simulation-based life support training substantially increases resident knowledge and skills in real clinical practice, these benefits are lost in six months. However, with the addition of Deliberate Practice (DP) sessions to simulation-based medical training, ALS skills are maintained. We suggest that the relevant ALS course be offered directly before the associated clinical rotation and DP sessions be offered during the rotation to solidify the attained skills.

### **Role of depression on perceived and actual disability in older adults with Multiple Sclerosis**

Tanaya Chatterjee, Michelle Ploughman

Context: Apart from the neurological complexities, the unpredictability of Multiple Sclerosis (MS) poses significant distress in people with MS (PwMS) which also contributes to their disability status. The degree to which PwMS comes to terms with the distress and other life changing conditions depend on their perception of their disability. Depression affects the way people perceive themselves and their ability to function effectively. Objective: To study the impact of depression on perceived and actual disability in older adults with MS. Design: This study involves secondary analysis of data collected during the epidemiological cross-sectional study "Health, Lifestyle and Aging

with MS". Participants: The methodology and initial results were recently published (Ploughman et al., 2014) and includes 743 Canadians aged 55 years or older, who self-reported MS symptoms for 20 or more years, recruited by telephone and by public advertising. Intervention/Instrument: Depression- Hospital Anxiety and Depression Scale (HADS), Actual Disability- Barthel Index (BI), Perceived Disability- Multiple Sclerosis Impact Scale (MSIS), Health Behaviours- Simple Lifestyle Indicator Questionnaire- (SLIQ), Participation- Frenchay Activities Index (FAI). Outcome measures: Impact of MS and perception of disability- MSIS, Actual physical disability- BI and depression- HADS Results: On the HADS, 31% of participants self-reported depressive symptoms of some type. There is a statistically significant difference between participants with and without depressive symptoms on all outcome measures (MSIS, BI, SLIQ, and FAI) ( $p < 0.001$ ). There is a negative correlation between gender and depression with males reporting more depressive symptoms than females ( $p = 0.05$ ). PwMS who had more depressive symptoms using the HADS criteria reported greater impact of MS on their daily lives than their non-depressed counterparts. 31% of the variability in MSIS can be explained by variability in a person's score on HADS, while only 7.7% of variability in BI, is explained by HADS. Conclusion: Depression is common in PwMS and older males exhibit more depressive symptoms than older females which are not the same as in younger population. Depression adversely affects the perception of one's disability more than one's actual physical disability. PwMS reporting more depressive symptoms tended to perceive their disability as greater due to MS than when disability was measured by instrument to assess performance in activities of daily living.

### Rural-Urban Disparities in Diabetes Diagnosis and Outcomes in Newfoundland and Labrador

Ereny Ibrahim, Shabnam Asghari

Context: Rural-Urban Disparities in Diabetes Diagnosis and Outcomes in Newfoundland and Labrador Objective: To assess rural/urban disparities in getting diabetes diagnosis and outcomes (complications, mortality) for adult patients aged 20 years and older five years after getting diagnosed with diabetes through 1998 to 2008. Design: A population-based, retrospective cohort study using health administrative databases in NL. Subjects are followed from the date of diagnosis until their deaths or end of the study (2008) whichever comes first. Participants: Adults aged 20 years and older who have had contact with the health system in NL and who can be determined to have diabetes. Pregnant women are excluded. The incident cases of diabetes are identified using Canadian national case definition for diabetes and a clearance period of three years. Intervention/Instrument: N/A Outcome measures: Diabetes diagnosis is categorized to 'early' and 'late' based on the presence of diabetes-related comorbidities at the time of diagnosis. Diabetes outcomes include complications, mortality and number of visits with family physicians, specialists and hospitalizations. Complications defined as any record of cardiovascular disease, renal failure and amputation and other diabetes related complications during the study period. Results: Study is in progress. Results will be ready for the presentation at PriFor. Conclusion: Identifying potential individual risk factors and rural/urban factors affecting diabetes in NL could help inform intervention strategies to decrease the risk of diabetes and its complications in at risk populations.

### Secure HEalth STatistical Analysis (SHESTA): A privacy-preserving approach on design and analysis of Digital Epidemiology Chronic Disease Tool (DEPICT)

Saeed Samet, Shabnam Asghari, Ahoora Sadeghi Boroujerdi, Oliver Hurley

Context: Maintaining data privacy is an obstacle on accessing patient data, which is the main resource for health researchers. Therefore, manual and computerized pre-processing operations should be applied for data de-identification before releasing to the researchers to preserve privacy of patients' sensitive data. This often diminishes data utility and results reliability because of anonymization techniques such as data generalization and suppression. Data re-identification is also among the major drawbacks of this approach. Objective: To assess feasibility of cryptographic

techniques including computational and communication complexities for secure health statistical analysis; and to examine DEPICT performance in terms of accuracy, time efficiency, and security. Design: Statistical analysis including Count, Mean, Standard Deviation, Skewness, Kurtosis, Correlation, Percentiles, Chi-Square, and Logistic Regression are securely performed on shared data among two or more data providers. Two scenarios of different ways data stored by custodians are considered. In the first scenario, data custodian securely distributes every single data among two or more semi-trusted third agents, such that no proper subset of these agents can reconstruct the original data. After receiving a query from the researcher, those agents perform a set of local operations as well as some encrypted data exchange to generate and send the final query results to the researcher. In the second scenario, two or more data custodians, that are data users as well, maintain original data, and no third party is involved. After specifying the query by one or more data users, local operations are performed at each data owner, as well as encrypted data exchange among them. Final query results are shared among all the parties involved in the protocol. External researchers can also issue query in this scenario. Participants: DEPICT database includes de-identified health administrative data from the Canadian Chronic Disease Surveillance System linked with Census between 1998 and 2014 for adults 20 years and older determined to have chronic disease in Newfoundland and Labrador. Intervention/Instrument: N/A Outcome measures: N/A Results: Study in progress, a model and employed techniques are demonstrated at PriFor. Conclusion: A user-friendly information system, accessible online has to follow advanced security techniques to preserve privacy and confidentiality of health data.

### **Sleep Duration and Development of Hypertension: A Systematic Review and Meta-analysis**

Douglas Dorward, Jacqueline Fortier

Context: Hypertension is common, is a risk factors for many cardiovascular diseases, and is influenced by several lifestyle factors. Objective: To investigate whether sleeping  $\leq$  six hours a night compared to sleeping  $\geq$  seven hours a night affects the risk of developing essential hypertension in the general adult population. Design: Systematic review and meta-analysis. We searched PubMed, Embase and Cochrane Library for prospective cohort studies with follow up of  $\geq$  two years investigating the incidence of hypertension in adults aged  $\geq$  19 years according to average nightly sleep duration. Quality of studies was assessed using US Preventative Services Task Force Quality Rating Criteria for cohort studies. Data extracted from studies rated “good” or “fair” was used to calculate the relative risk and 95% confidence intervals of developing hypertension in each sleep duration category. Results were presented in a forest plot using the random effects model. Subgroup analysis was performed for men and women. Participants: Adults aged  $\geq$  19 years. Intervention/Instrument: Nightly sleep duration  $\leq$  six hours a night. Outcome measures: Development of hypertension. Results: Eight studies were included in the systematic review, and six in the meta-analysis. Men and women sleeping  $\leq$  six hours a night had increased risk of developing hypertension compared to those sleeping  $\geq$  seven hours a night (RR 1.12, 95% CI: 1.02, 1.22). In subgroup analysis, women sleeping  $\leq$  six hours a night had increased risk of developing hypertension compared to women sleeping  $\geq$  seven hours a night (RR 1.19, 95% CI: 1.13, 1.24). Risk increased when women sleeping  $\leq$  five hours a night were compared to the same reference group (RR 1.28, 95% CI: 1.11, 1.47). Men sleeping  $\leq$  five hours a night did not have significantly increased risk compared to men sleeping  $\geq$  seven hours a night (RR 1.08, 95% CI: 0.73, 1.60). Conclusion: Nightly sleep duration affects risk of developing hypertension differently in men and women. Women sleeping  $\leq$  six hours a night have higher risk of developing hypertension than women sleeping  $\geq$  seven hours a night. Short nightly sleep duration may be considered a risk factor for development of hypertension in women.



## Social Accountability Considerations for the Restructuring of a Family Medicine Residency Training Program

Danielle O'Keefe

Context: Family Medicine Residency Training Program Objective: To learn how social accountability considerations led to a significant change in resident training opportunities in one Family Medicine program. Design: Descriptive Participants: Family Medicine Residents Intervention/Instrument: Restructuring of training experiences into streams Outcome measures: Improved training opportunities Improved recruitment and retention Results: Increased resident and preceptor satisfaction – residents matching to training site of choice – 93% top 3 choice of training schedule in 2014. Increased resident scholarly work that focuses on issues of importance to the community. Improved recruitment that will hopefully lead to increased retention. Conclusion: Restructuring of training opportunities has already resulted in improved training opportunities, increase in number of resident projects focused on area of training, recruitment to some training sites.

## Social context and distress severity in Canadian seniors: exploring the influence of social support and community belongingness

Emilia Bartellas

Context: Psychological distress is a widely used indicator of the mental health of the population. This study examined the effects of 4 types of social support and sense of community belongingness on distress severity in Canadian seniors. Objective: To determine whether specific types of social support defined within the Medical Outcomes Study Social Support Survey (positive social interaction, emotional/informational support, tangible support and affection) along with sense of community belongingness are associated with severity of distress in Canadian adults aged greater than 65 years. Design: Survey research. Participants: The study population was comprised of respondents of the Canadian Community Health Survey. Inclusion criteria were age greater than 65 years, and fully answering the questions relating to the distress scale, social support module and sense of belonging to the local community. Participants who failed to answer questions within the modules, those who said the questions were not applicable, and those who gave no response were excluded. This resulted in a sample size of 7,392 participants (3,047 male and 4,345 female). Intervention/Instrument: Data associated with the respondents were extracted from the Canadian Community Health Survey (CCHS 3.1; Statistics Canada, 2005). Outcome measures: The Kessler Psychological Distress Scale (K10) is used to measure psychological distress in populations. It evaluates how often respondents experience anxiety-depressive symptoms, such as nervousness, sadness, restlessness, hopelessness, worthlessness in the last 30 days. Results: Univariate analysis was conducted using an independent samples t-test, and then stepwise multiple regression analysis was performed to assess the extent each of the four subtypes of social support, gender and sense of community belonging predicted distress severity in the study population. Positive social interaction, a sense of community belongingness and, tangible social support were associated with a statistically significant decrease in distress severity. Emotional/informational social support and gender were associated with a statistically significant increase in distress severity. Conclusion: Positive social interaction, a sense of community belongingness and tangible social support predicted lower reported distress severity in Canadian seniors. These findings provide helpful information for the management of psychological distress in this population.

## Status Dramaticus: Spotlight on Medical Slang and its Implications Toward Patient Care and Medical Learning

Kelly Milton, Pamela Hudson

**Context:** Medical slang refers to the colloquial use of medical jargon among health care professionals. Commonly, medical slang is used when referring to patients, for example through the use of such terms as “frequent flyer” or “status dramaticus”. While the use of medical slang may indeed serve to provide a coping mechanism for health care professionals in stressful situations, the use of this language may also pose harm and imply judgment to patient, impacting patient care. In fact, many patients targeted by the use of physician slang are members of vulnerable populations, including patients experiencing mental health concerns, addictions, and poverty. **Objective:** To conduct a systematic review of the literature in order to explore the following preliminary research questions: 1. In what ways and for what reasons do physicians, medical learners, and other health care professionals use medical slang in a clinical context? 2. What are the implications of medical slang on: a) patient care and b) the education of medical learners? 3. What are the most effective processes to encourage the appropriate use of medical slang among health care professionals and medical learners? **Design:** A systematic review of the literature will be conducted in order to explore the identified research questions. Studies will be identified using pre-defined inclusion and exclusion criteria, and relevant studies will be appraised by two reviewers. **Participants:** N/A **Intervention/Instrument:** N/A **Outcome measures:** Study findings will be qualitatively synthesized. Based on this synthesis, recommendations will be put forth to encourage the ethical and professional use of medical slang among health professionals and medical learners. **Results:** N/A **Conclusion:** This systematic review will synthesize existing literature on the impact of medical slang toward patient care and medical learning. As such, this research is relevant to all healthcare professionals and medical learners seeking to enhance professional competency and optimize patient care.

## Systematic Review: Attitudes towards the HPV vaccine

Victoria Law, Diana L. Gustafson

**Context:** Recent updates made to the HPV vaccination recommendations have likely changed public perceptions of the vaccine. What was once a vaccine exclusively for female cervical cancer prevention is now proven to be effective for cancer prevention in men (Langley et al., 2014). The HPV vaccine has an array of attitudes due to its relationship to sexuality and sexual health. This systematic review is a component of a larger project that is assessing parents’ intentions to get their sons vaccinated for HPV and physicians’ intentions to recommend the vaccine for their young male patients in Newfoundland and Labrador. **Objective:** This review will seek to fill a knowledge gap about existing attitudes towards the HPV vaccine. At the National HPV research priorities workshop in 2005, “knowledge, attitudes, beliefs, and acceptability of HPV vaccination programs in recipients, providers and parents”, was listed as the second highest research priority (Langley et al., 2014). This research will pull together lessons learned over the past decade and identify existing knowledge gaps. **Design:** Twelve databases will be used to search English language articles between 2005 and 2015 to identify past and current attitudes towards HPV. Articles will be included that use qualitative, quantitative and mixed methods approaches. Articles originating outside North America, the U.K, N.Z. and AU will be excluded due to the culturally specific nature of this research. **Participants:** There were no participants in this systematic review. **Intervention/Instrument:** N/A **Outcome measures:** This review will inform our investigation of physicians’ and parents’ knowledge, attitudes and beliefs toward HPV vaccination and ultimately provide high quality evidence for addressing boys’ and parents’ concerns and improve patient centered sexual health care. Specifically, the review may reveal gendered differences in attitudes toward sexual health and sexuality that influence physicians’ recommendations and parents’ uptake of HPV vaccine for their male children. We hope the results of the larger study will help improve the current understanding of HPV vaccine acceptability for male youth

in this province. Results: The results of the review of the literature will be presented and discussed. They will inform the existing project examining parental and physician intentions to vaccinate. Conclusion: The evidence presented in this review will seek to inform future research needs.

### **The Effect of Talking on the Measurement of Blood Pressure Using A BpTRU Device: A Randomized Controlled Trial**

Douglas Dorward

Context: No studies have been performed to date investigating the effect of speech on the measurement of blood pressure using a BpTRU device. Objective: In adults who have their blood pressure measured using a BpTRU device, does engaging in conversation during the measurement period compared to maintaining silence during the measurement period effect the recorded measurement of blood pressure? Design: Randomized controlled trial with crossover design. Participants: The study will be set in an academic family practice unit in St. John's NL, and the target population will be the patient population of this practice. Participants will be recruited opportunistically in the practice waiting room: patients will be informed of the study on arriving to the practice for a scheduled appointment, and will then have the opportunity to volunteer as a participant in the study. Inclusion criteria will be age >18 years and the capacity to consent to study participation. There will be no exclusion criteria. Intervention/Instrument: Informed consent will be obtained prior to participation. Each participant's blood pressure will be measured twice using a BpTRU device, once whilst alone in a quiet room maintaining silence and once whilst engaging in conversation. During the conversation measurement period, participants will be asked a series of health orientated questions to simulate a medical encounter. Information obtained from these questions will be used to describe the study population. Whether blood pressure is measured during conversation first or second will be randomized by calling an automated randomization phone line. Outcome measures: Data will be analysed to calculate the mean change in systolic and diastolic blood pressure when measured during silence and when measured in conversation. Results: With an  $\alpha$  of 0.5 and  $1-\beta$  of 0.95, the sample size required to detect a difference of 5 mmHg in systolic blood pressure between the study groups is 336 participants. This sample size will be adequate to detect a difference of 3 mmHg in diastolic blood pressure. Conclusion: The results of this study will guide best practice for the accurate measurement of blood pressure using a BpTRU device, and could potentially save time and resources in the primary care setting.

### **The Effect of Temperature and Exercise on Corticospinal Excitability in Multiple Sclerosis: A Pilot Study**

Geetika Grover, M Ploughman, S N Rancourt, L P Kelly, E M Wallack, S Granter Button, D T G Philpott, D C Button, K E Power

Context: Several lines of evidence suggest that abnormalities in corticospinal excitability (CSE) measured using transcranial magnetic stimulation (TMS) underlie central fatigue in MS. MS related fatigue could likely be due to the course of disease i.e. neurodegenerative (central fatigue mechanisms) or deconditioning due to inactivity or both. Increased core body and ambient temperature while exercising could further compound fatigability. To our knowledge, no research has looked at effects of ambient temperature (i.e. cold and room temperature) and different modalities of exercise on CSE in MS population Objective: The purpose of the study was to determine how the combination of temperature (cool vs room) and exercise (treadmill vs nustep) affect CSE and fatigue mechanism in MS patients. We hypothesized that CSE, irrespective of exercise modality, would be higher following exercise in cold environment than in a room temperature due to lower levels of fatigue Design: Randomized, cross-over trial. Participants: : Four heat sensitive MS patients with relapsing remitting disease in stable phase, with EDSS  $\leq 3.5$ . Intervention/Instrument: TMS of the brain was employed to assess excitability changes in plantar flexor muscles of the weakest limb. TMS induced motor evoked potentials (MEPs) were assessed in seated position with hips and

knees at 90° with their leg secured in a modified boot apparatus. Five MEPs were recorded with a torque of 10% of maximal voluntary contraction (MVC) maintained for 5 seconds followed by supra threshold stimulus to posterior tibial nerve to record maximal m-wave. Measurements were taken pre- and post-exercise session. In each experimental session (~1.5 hrs), participants exercised on treadmill or nustep in cool or room temperature environments. Environmental temperature was maintained at 16°C (cool temperature) and or 21°C (room temperature). Outcome measures: Corticospinal excitability and fatigue Results: Preliminary data suggest that CSE is variable between participants; data collection is ongoing. Subjective fatigue scores before and after exercise were less in cool environment. Conclusion: Our goals are to 1) outline how fatigue may be exacerbated by environmental temperature during exercise and the underlying changes in CSE of an MS population and 2) determine safe and effective environments to potentially institute and test aerobic training among people with moderate MS related disability.

### **The Effectiveness of a Concussion-U Educational Presentation on Knowledge and Attitudes of Concussion amongst elite Bantam and Midget Hockey Players**

David Bradbury-Squires, Graeme Campbell, Matt Eagles, Justin Murphy, Maria Powell, Falah Maroun

Context: The diagnosis of a concussion is often dependent on the athlete self-reporting their symptoms. It has been suggested that concussion education programs may be effective in improving athlete's short- and long-term concussion knowledge and attitudes; however, research in this area is inconclusive. Objective: The objective of this study is to determine if a Concussion-U educational presentation improves concussion knowledge and attitudes of youth hockey players. Design: The design used was a survey-based, pre-test/post-test design. Participants: 56 elite male Bantam and Midget hockey players (mean age = 14.52 ± 1.13 years) were recruited from the St. John's, NL area. Intervention/Instrument: Each participant completed a modified version of Rosenbaum and Arnett's Concussion Knowledge and Attitudes Survey (RoCKAS) questionnaire immediately before and after a Concussion-U educational presentation. Outcome measures: The outcome measures were concussion knowledge and attitudes scores as measured by the RoCKAS questionnaire. Results: Concussion knowledge and attitude scores significantly ( $p < .001$ ) increased from pre-presentation to post-presentation by 13.1% and 8.7%, respectively. End of season follow up using the RoCKAS score with the same outcome measures is in progress; we anticipate that knowledge and attitude scores will be significantly increased from pre-presentation scores. Conclusion: We concluded that a Concussion-U educational presentation resulted in increased knowledge and improved attitudes towards concussion in elite male Bantam and Midget hockey players from the St. John's, NL area. Future research should attempt to investigate how improving concussion knowledge and attitudes impact self-reporting behaviour.

### **The long-term effect of a resistance-based physical activity program in the treatment of adolescents with insulin resistance: a protocol for a RCT**

Sarah Critch, Tracey Bridger, Laurie Twells, Michelle Plougman

Context: An increasing number of adolescents in NL are insulin resistant, a precursor for type 2 diabetes and cardiovascular disease. Physical activity, in particular, resistance-based activity has been shown to increase insulin sensitivity, with or without changes in weight. The use of physical activity in managing insulin resistance long-term has not been shown. The Janeway Lifestyle Program (JLP), a chronic disease prevention program, uses a body positive approach to promote being active; an approach fostering body appreciation by promoting health behaviours rather than focusing on short term weight loss. A physical activity program focusing on the long-term management of insulin resistance needs to be designed. Objective: To assess changes in insulin sensitivity, cardiorespiratory fitness, muscle strength and physical activity level, up to one year, following completion of the program. Design: A single blind, RCT will be completed using a waitlist control. Participants: Members of the JLP (ages 13-18 years) with insulin resistance will be recruited based on inclusion/exclusion criteria. Intervention/Instrument: Participants will

attend the program three times per week for 12 weeks. There will be two, 60-minute community sessions per week. Resistance activities will include weight machines, free weight or body weight exercises completed individually or in pairs. They will participate in a 60-minute, resistance-based home program once per week. Outcome measures: Participants will complete pre and post program assessments and follow-up assessments at 3, 6 and 12 months post program. The primary outcome will be insulin sensitivity, measured by the Oral Glucose Tolerance Test. Secondary outcomes will include body composition, cardiorespiratory fitness, muscle strength, physical activity and quality of life. Results: It is hypothesized that there will be improvements in insulin sensitivity and participation in physical activity in adolescents with insulin resistance who participate in a 12-week resistance-based physical activity program. Conclusion: The goal of this program will be to improve insulin sensitivity in adolescents by increasing their long-term compliance to regular physical activity.

### **Understanding the Experiences of Fathers of Teenaged Children with Life-Threatening Food Allergies**

Karen Dobbin-Williams

Context: There are approximately 300,000 Canadian children under the age of 18 years with food allergies (Anaphylaxis Canada, 2014). Accidental exposure to food allergens may cause symptoms ranging in severity from hives, itching, and vomiting, to more serious symptoms, such as low blood pressure, swelling, and difficulty breathing. Without the vital lifesaving treatment of injection with epinephrine the reaction may progress to airway swelling, reduction in oxygen, and ultimately, anaphylactic shock, organ failure, and death. As a parent of a 13-year-old son with life-threatening allergies to all milk/dairy, beef, and egg products, I have intimate experience with this topic. However, my experience is in the gendered role of a mother and I am interested in understanding how fathers experience this. Objective: To engage with fathers of teenaged children with life-threatening food allergies and inquire into their experiences in an attempt to come to an understanding of this topic. I hope to use my position as a registered nurse, parent, and researcher to share my new understanding of this topic and to act as an advocate for supports and services these fathers may identify they need Design: This is an interpretive inquiry study guided by Gadamerian philosophical hermeneutics. In this research approach, the topic of the experience of fathers is the focus. Gadamer's philosophy about the understanding of human experience through genuine conversation is used as a methodological philosophy that guides the work of interpretive research. Data collection will be done through the use of semi-structured interviews with open-ended questions that will be transcribed and analyzed. Interviews and analysis will occur concurrently. Written interpretations will be supported by statements from participants and citations from other written literature to ensure validity. Participants: Fathers of teenaged children with life-threatening food allergies Intervention/Instrument: na Outcome measures: na Results: HREA ethics approval received with data collection to commence May 2015. To be disseminated via academic presentations and journals once the study is complete. Conclusion: na

### **Validation of an electronic medical record data algorithm for assessing the epidemiology of dyslipidemia in Newfoundland**

Justin Oake, Shabnam Asghari, Marshall Godwin, Kris Aubrey, Kayla Collins, Pauline Duke

Context: Dyslipidemia is a leading risk factor for cardiovascular disease (CVD). Newfoundland and Labrador (NL) has a higher level of CVD mortality than any other province in Canada. This high level may be partially explained by the lipid profiles of people in this province. Clearly there is a particular need for good dyslipidemia estimates in Canada, and especially in NL. In this study, we attempted to demonstrate how related medical data items can be used to improve classification accuracy in the identification of dyslipidemia. As dyslipidemia is generally treated with lipid lowering drugs, and frequently monitored by routine laboratory testing, the structured format of an

electronic medical record (EMR) is an ideal database to develop algorithms which will improve dyslipidemia estimation. Objective: To propose a novel algorithm which will provide a more accurate estimate of dyslipidemia using EMR data. Design: This was a cross-sectional analysis of 4,400 patients receiving primary care at four family medical clinics in St. John's, NL. We retrieved EMR data from the Canadian Primary Care Sentinel Surveillance Network (CPCSSN) database. We tested a number of different algorithms for identifying patients in the EMR with dyslipidemia using ICD coding data (individual has a diagnosis of abnormal lipids), patients on a lipid lowering drug, and an abnormal lipid level as reported in laboratory data. Participants: Patients aged 20 years or older who lived in NL. Pregnant women were excluded. Intervention/Instrument: N/A. Outcome measures: N/A. Results: Combining laboratory data together with patients on a lipid lowering drug yielded the highest sensitivity (99.6%), NPV (98.1%), kappa agreement (0.988), prevalence (80.8%), and area under receiver operating characteristic (ROC) curve (99.8%). Conclusion: We found that combining laboratory data together with patients on a lipid lowering drug within the EMR was the most optimum algorithm that could be used to identify patients with dyslipidemia. The use of ICD coding alone was the least accurate indicator. We anticipate that our results can be extrapolated to generate not only standardized information systems for lipid investigations using EMRs, but also to potentially investigate other chronic conditions such as diabetes and hypertension.



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