

# Impact of the Faculty of Medicine: Achievements and Opportunities

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Healthcare in Newfoundland and Labrador  
Forum on health outcomes and healthcare costs: What Can We Afford?

St. John's, Newfoundland and Labrador  
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# Faculty/Presenter Disclosure

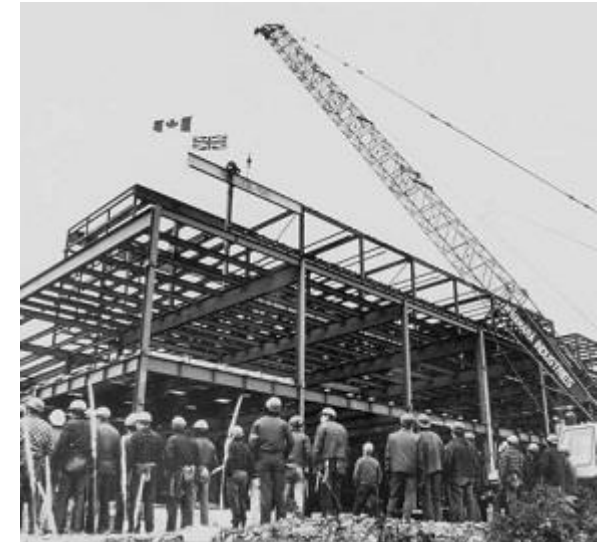
- Relationships with commercial interests:  
*Not Applicable*
- Potential for conflict(s) of interest:  
*Leader in the Faculty of Medicine  
Memorial University of Newfoundland*
- Mitigating Potential Bias:  
*Not Applicable*

# Objectives:

- At the end of the presentation, participants will be able to:
  - Describe the origins of the Faculty of Medicine (FoM), Memorial University of Newfoundland (Memorial) and the composition of the FoM now
  - Outline some of the key achievements and impacts the FoM has had on the health of the people and communities of Newfoundland and Labrador and beyond
  - Discuss the mission, vision and goals of the FoM in the next 5 years and the opportunities

# Memorial University's Faculty of Medicine

- 1967
  - Lord Brain's Royal Commission on Health identified a need for a teaching hospital and a medical school
  - Smallwood government announced support to build the Health Sciences Centre and a medical school
  - Faculty of Medicine established



# Memorial University's Faculty of Medicine

- First class of undergraduate medical students started in 1969
- First class of 23 medical students graduated in 1973



# Memorial University's Faculty of Medicine

- 80 medical students per year
- 299 postgraduate residents
- 360 graduate students per year
- 350 staff
- **1,363 faculty**
  - 278 Full - time
  - 219 Part – time stipendary
  - 866 Part – time non-stipendary



# Socially Accountable Medical Schools

“..the obligation to direct their education, research and service activities towards addressing the priority health concerns of communities, region and/or nation they have a mandate to serve. The priority health needs are to be identified jointly by governments, healthcare organizations, health professionals and the public” (Boelen & Heck, 1995, In Bolen et al, Medical Teacher, 2016)



# Socially Accountable Medical Schools

- World Health Organization suggests there are four principles that delineate social accountability
  - Relevance
  - Quality
  - **Cost-effectiveness**
  - **Equity** (Leinster, Medical Teacher, 2011)



# Social Accountability

- Schools should be meeting workforce needs
- Schools should be understanding the health issues of the region (Preston et al, BMC Medical Education, 2016)
- "To be fully socially accountable, an institution needs to claim the right to question whether its 'products' (graduates, service models or research findings) are being used in the best interest of the public." (Boelen & Woollard, 2009 In Boelen et al. Medical Teacher, 2016)

# Strategies to Increase Recruitment of Graduates to Practice in Rural Newfoundland and Labrador



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- **Admission priorities:**

- 60 of our 80 students per year are from Newfoundland and Labrador

- Diversity priorities:

- Indigenous students (3 dedicated spots per year)
- Students from rural communities
- Students from low socioeconomic families

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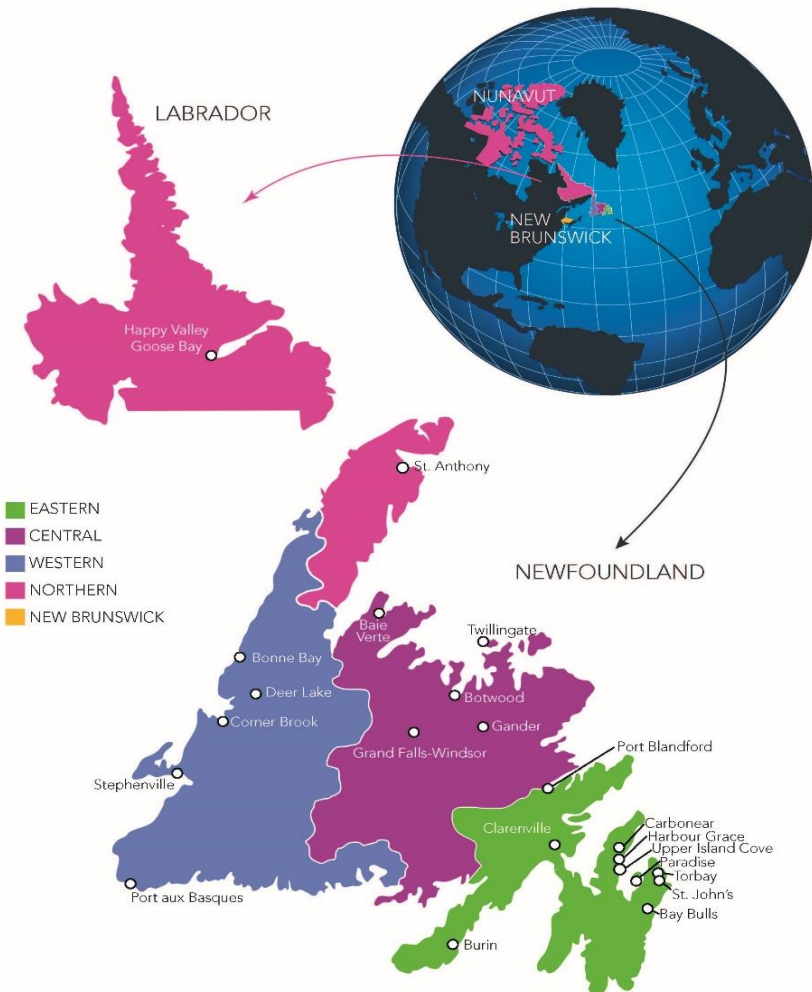
- Diversity priorities:

- Indigenous students (3 dedicated spots per year)
- Students from rural communities
- Students from low socioeconomic families

# Strategies to Increase Recruitment of Graduates to Practice in Rural Newfoundland and Labrador

## Undergraduate Medical Education:

- Studies indicate that a curriculum with a rural orientation combined with rural clinical placements has a positive impact ( Grobier L et al, 2009; Strasser R & Neusy AJ, 2010; Blue AV et al, 2004 In: Murray et al, MJA, 2012)





# Strategies to Increase Recruitment of Graduates to Practice in Rural Newfoundland and Labrador

- **Undergraduate Medical Education:**
  - Medical education is embedded in the health system and takes place in the community and clinics instead of predominantly in university and hospital settings (THEnet In Murray et al, MJA, 2012)
  - Curriculum integrates basic and clinical sciences with population health and social sciences (THEnet In Murray et al, MJA, 2012)



# Strategies to Increase Recruitment of Graduates to Practice in Rural Newfoundland and Labrador

- **Postgraduate Medical Education**

- Postgraduate rural training was a predictor of rural practice for rural and urban students (Rourke JTB, et al. 2005 In: Mathews M, et al, Can J Rural Med, 2008)
- Memorial established family medicine residency programs in 1973 (Krupa LK & Chan B, Canadian Family Physician, 2005)
- NorFam began in Happy Valley Goose Bay, Labrador in 1992
- NunaFam began in Nunavut in 2011
- Rural Family Medicine Streams (Eastern Regional Health Authority (RHA), Western RHA, Central RHA) began in 2012





# Strategies to Increase Recruitment of Graduates to Practice in Rural Newfoundland and Labrador

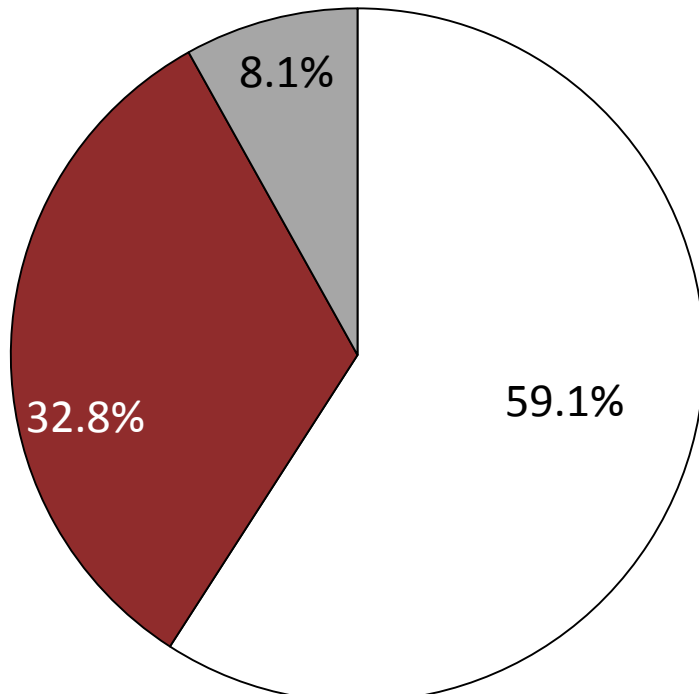
## Postgraduate Medical Education

- Family Medicine programs at Memorial consider the following selection criteria:
  - Rural Family Medicine exposure
  - Interest in rural Family Medicine training
  - Interest in Family Medicine



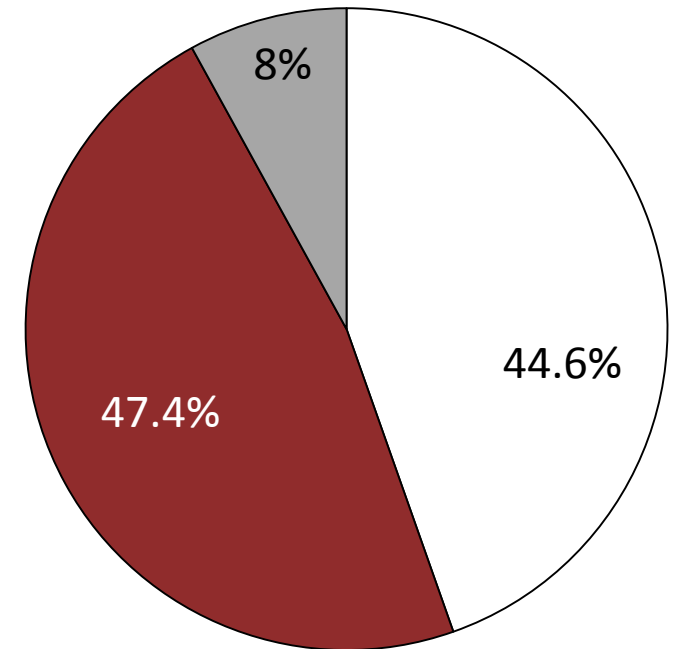
# Achievements: Memorial University's contribution to Newfoundland and Labrador physician workforce

**2004**



- Other Physicians
- MUN Urban Physicians
- MUN Rural Physicians

**2014**



- Other Physicians
- MUN Urban Physicians
- MUN Rural Physicians

(Mathews M, Ryan D, Samarasena A, CMAJ Open, 2015)

# Continuing Medical Education

- Task Force has been created to draft a proposal for establishing programs, resources and/or services for physician re-entry, remediation, retraining and oversight



# Achievements: Research

- **Arrhythmogenic ventricular cardiomyopathy (ARVC)** - Dr. Terry Lynn Young and Dr. Kathy Hodgkinson
- **Hepatitis** - Dr. Thomas Michalak
- **Multiple Sclerosis** - Dr. Craig Moore
- **Stroke recovery** - Dr. Michelle Ploughman
- **Low back pain** - Dr. Diana DeCarvalho
- **Short-term memory** - Dr. Ben Zendel
- **Head and neck cancers** - Dr. Thomas Belbin
- **Translational Genetics** - Dr. Proton Rahman

# Research: Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC)

Dr. Terry Lynn Young  
Professor, Discipline of Genetics



Dr. Kathleen Hodgkinson  
Associate Professor of Medicine  
(Clinical Epidemiology)



# Research: ARVC in Newfoundland and Labrador

- Discovery of a hitherto unknown disease gene (TMEM43) and a causative mutation (p.S358L)
- Definition of the disease natural history
  - 50% of males deceased by 40 years
  - 5% of females deceased by 40 years
  - 80% of men deceased by 50 years
  - 20% of females deceased by 50 years
- Use of the implantable cardioverter defibrillator alters disease course adding up to 31 years of life to recipients

# Research: Hepatitis B

**Dr. Thomas Michalak**

Professor of Molecular Virology and Medicine  
(Hepatology), Division of Biomedical Sciences

Previous Canada Research Chair (Tier One) in Molecular  
Virology.

- 1985: established laboratory for studies on hepatitis B
- Uncovered connections: asymptomatic infection with hepatitis B virus and the development of liver cancer
- Research group recently discovered that hepatitis B virus integrates into human genome within the first hour after infection





# Research: Multiple Sclerosis (MS)

**Dr. Craig Moore**

Canada Research Chair (Tier Two) in Neuroscience  
and Brain Repair

Assistant Professor, Division of Biomedical Sciences

Dr. Moore and his team are researching a newly discovered method of cell-to-cell communication that may lead to new drug therapies for MS, and other brain diseases.



# Research: Stroke and MS

**Dr. Michelle Ploughman**

Canada Research Chair (Tier Two) in Rehabilitation,  
Neuroplasticity and Brain Recovery

Assistant Professor, Discipline of Medicine

Developing novel methods to promote repair and restoration of function in stroke and multiple sclerosis with new rehabilitation techniques to reduce disability and improve quality of life.



# Research: Back Pain

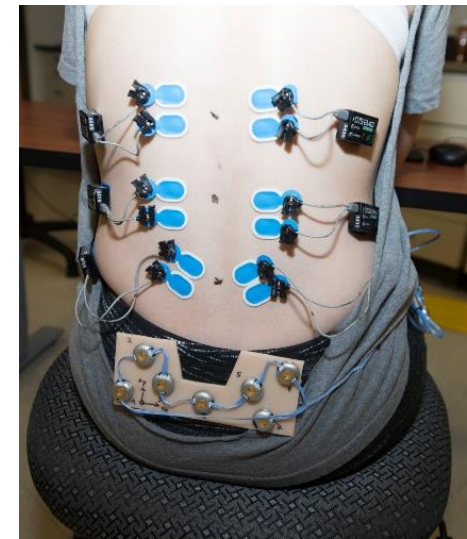
**Dr. Diana DeCarvalho**

Canadian Chiropractic Research Foundation

Professor in Spine Biomechanics

Assistant Professor, Discipline of Medicine  
Cross-appointed to the Faculty of Human Kinetics  
and Recreation

Researching biomechanical and neuromuscular responses to prolonged sitting with the goal of developing improved prevention and intervention strategies for back pain — especially at work.



# Research: Aging and Short Term Memory

**Dr. Ben Zendel**

Canada Research Chair (Tier Two) in Aging and Auditory Neuroscience

Assistant Professor, Division of Community Health and Humanities

Playing a 3D-video game (Super Mario World) for 6 months improved short-term memory performance and caused enhancement to the region of the brain involved in memory in older adults.



# Research: Head and neck cancers

**Dr. Thomas Belbin**

GlaxoSmithKline (GSK) Chair in Oncology Research

Associate Professor, Discipline of Oncology

Dr. Belbin and his team are utilizing machine learning coupled with statistical modeling to develop unique “molecular signatures” that can distinguish clinically aggressive behavior from non-aggressive behaviour in head and neck cancers.



# Research: Translational genetics

**Dr. Proton Rahman**

Associate Dean, Clinical Research

Professor of Medicine (Rheumatology)

Very active in translational genetics research, and has identified several novel susceptibility genes in spondyloarthritis as well as new genetic markers for disease progression and pharmacogenetics in psoriatic arthritis.

Also involved with the establishment of JANL-HIP and is focusing on research related to patients with psoriatic arthritis.



# Health System Research: BETTER and BETTER WISE

Introduction to the BETTER Program and BETTER WISE

- Kris Aubrey-Bassler, Donna Manca, Eva Grunfeld, Aisha Lofters, Denise Campbell-Scherer



# What is BETTER?

- Elements of the BETTER Approach
  - Building on Existing Tools
  - To ImprovE chRonic disease prevention and screening
  - In primary care
- WISE
  - for Wellness of cancer SurvIvorS and PatiEnts

# BETTER Toolkit

Patient Initials: \_\_\_\_\_

Date completed: \_\_\_\_/\_\_\_\_/\_\_\_\_  
(month) (day) (year)

## BETTER Health Survey First Visit

Thank you for completing the BETTER Health Survey!

Your answers will help us understand your health and the screening tests you need. During the visit, you and your healthcare provider will create a plan that works for you. Later, your healthcare provider will use your answers to create a plan that works for you. If you wish to make a change, please let us know.

**INSTRUCTIONS: Please complete this survey for each of the questions as needed.**

Your answers will help us understand your health and the screening tests you need. You are free to refuse to answer any question if you wish to make a change. Please complete this survey for each of the questions as needed.

**PREVENTION VISIT FORM** Page 1 of 5

PATIENT ID: \_\_\_\_\_ PATIENT INITIALS: \_\_\_\_\_

Record the most recent details in each section as recorded on the patient's chart/record or Health Survey that occurred:

- Between the date of the previous Prevention Visit (date 1) and the date of the current Prevention Visit (date 2) OR
- If this is the patient's first Prevention Visit (date 2), record details that occurred up to 2 years prior to the Prevention Visit (date 1), unless otherwise specified by a question.
- Complete Sections A1 and B-3 prior to the visit and Sections A2, K and L during the visit.

Today's DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_ Type of Visit:  In-person  Telephone  Video

DATE RANGE  
DATE 1: \_\_\_\_/\_\_\_\_/\_\_\_\_ DATE 2: \_\_\_\_/\_\_\_\_/\_\_\_\_

**SECTION A1: General Patient Information (As per chart/record)**

Not Recorded Details recorded

1. Gender: \_\_\_\_\_ Male \_\_\_\_\_ Female \_\_\_\_\_

2. Date of birth: \_\_\_\_/\_\_\_\_/\_\_\_\_

3. Ethnicity: \_\_\_\_\_

4. Height: \_\_\_\_\_ cm OR \_\_\_\_\_ in

5. Weight: \_\_\_\_\_ lbs OR \_\_\_\_\_ kg

6. BMI: \_\_\_\_\_

7. Waist Circumference: \_\_\_\_\_ cm OR \_\_\_\_\_ in

8. Blood Pressure: \_\_\_\_\_ systolic / diastolic

**SECTION A2: General Patient Information (As per chart/record)**

Not Measured

1. Height: \_\_\_\_\_ cm OR \_\_\_\_\_ in

2. Weight: \_\_\_\_\_ lbs OR \_\_\_\_\_ kg

3. BMI: \_\_\_\_\_

4. Waist Circumference: \_\_\_\_\_ cm OR \_\_\_\_\_ in

5. Blood Pressure: \_\_\_\_\_ systolic / diastolic

© The BETTER 2 Coalition (v-19MARCH2013)

## Prevention Prescription

THE BETTER PROJECT

Your Initials: \_\_\_\_/\_\_\_\_/\_\_\_\_

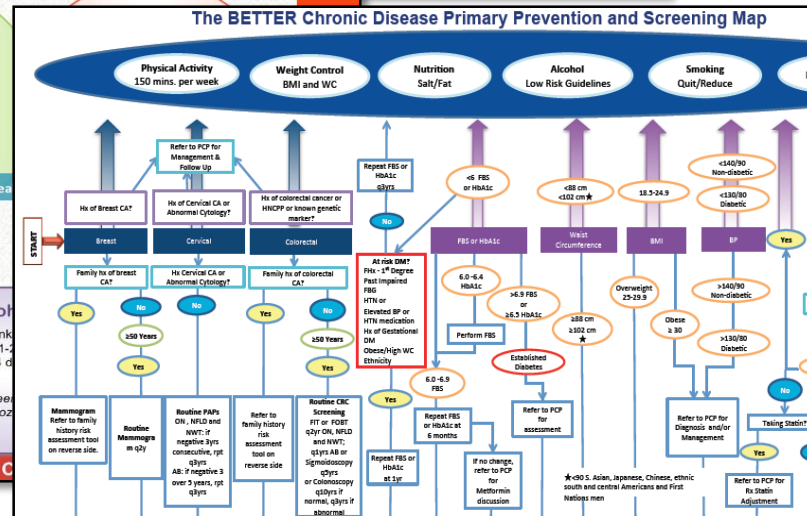
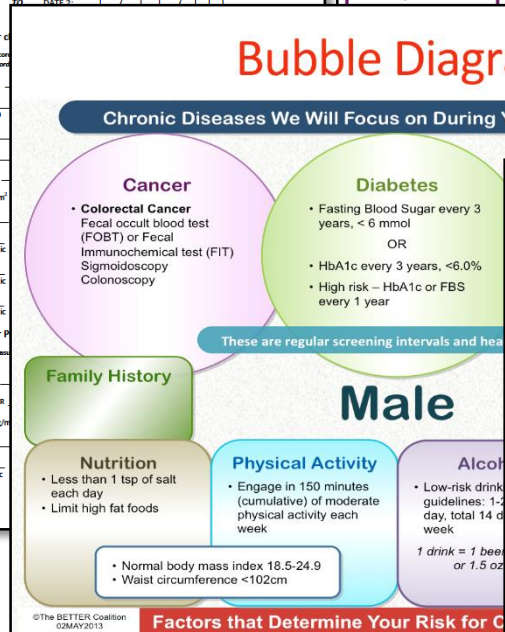
Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ (month) (day) (year)

Patient Identifier: \_\_\_\_\_

### Your Health Care Team and You Working Together: THE PREVENTION PRESCRIPTION

At your visit, we worked together to identify a number of important actions you can take to help prevent chronic disease. This tool can be used to increase your understanding of the recommended guidelines for regular screening around some of the following potential lifestyle concerns and chronic diseases. Together, we can take steps to support and improve your health and well-being!

Screening For:	Your Status/Results	When to Re-Check	Referral's/Actions
<b>Cardiovascular Disease</b>			
BMI			
WC			
Blood pressure			
Cholesterol			
<b>Diabetes</b>			
FBS/HbA1c			
<b>Cancer Screening</b>			
FOBT/FIT			
Sigmoidoscopy			
Colonoscopy			
Pap test			
Mammogram			



# CHRSP

THE CONTEXTUALIZED  
HEALTH RESEARCH SYNTHESIS PROGRAM



Evidence *in* Context

for decision makers in Newfoundland & Labrador healthcare

Newfoundland & Labrador Centre for  
**APPLIED  
HEALTH  
RESEARCH**  
[www.nlcshr.mun.ca](http://www.nlcshr.mun.ca)





# Evidence *in* Context

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**APPLIED  
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RESEARCH**  
www.nlcahr.mun.ca



**Collaborating**  
with provincial decision makers

**Identifying**  
priority research questions

**Gathering**  
relevant research

**Synthesizing**  
the best available evidence

**Interpreting**  
for a Newfoundland and Labrador context

**Supporting**  
evidence-informed decisions

**Answering**  
important questions about health

**Communicating**  
the results of our work

Contextualized Health Research Synthesis Program

# CHRSP

Health research - synthesized and contextualized for use in Newfoundland and Labrador

[www.nlcahr.mun.ca/chrsp](http://www.nlcahr.mun.ca/chrsp)

## About CHRSP

- Every year, CHRSP research questions are submitted from across the provincial health system and voted on by the 6 provincial health system leaders, based on their priorities.
- CHRSP works quickly by synthesizing high-level systematic review evidence
- CHRSP uses local and national/international expertise: its studies are led by recognized subject experts who work with local academic researchers and health system partners.

# Evidence in Context

Newfoundland & Labrador Centre for  
**APPLIED  
HEALTH  
RESEARCH**  
www.nlcahr.mun.ca



**Collaborating**  
with provincial decision makers

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Contextualized Health Research Synthesis Program

# CHRSP

Health research - synthesized and contextualized for use in Newfoundland and Labrador

[www.nlcahr.mun.ca/chrsp](http://www.nlcahr.mun.ca/chrsp)

## About CHRSP

- CHRSP contextualizes the synthesis results by attuning them to the specific characteristics and capacities of Newfoundland & Labrador, recognizing that what works in Toronto might not work as well in Wabush.
- CHRSP has developed three products:
  - *Evidence in Context* Reports (10-12 month studies, fully contextualized syntheses)
  - *Rapid Evidence* Reports (overviews completed in 30 days) and
  - Snapshot Reports (jurisdictional scans of programs and policies implemented elsewhere)

# Newfoundland and Labrador Center for Applied Health Research

- Research Exchange Group on Cost and Value in Healthcare
- Goals:
  - **Informing health policy** to reduce costs and increase value in healthcare
  - Reviewing research in progress/existing research literature on cost and value in healthcare
  - Building research teams on issues identified by the group and looking for research funding to support their work
  - Networking with peers
  - **Examining best practices around the world**
  - Looking at collaborative research to examine challenges in healthcare
  - **Identifying programs that have been a good use of healthcare dollars**
  - Ensuring that any new health care initiatives include evaluative components to assess new programs





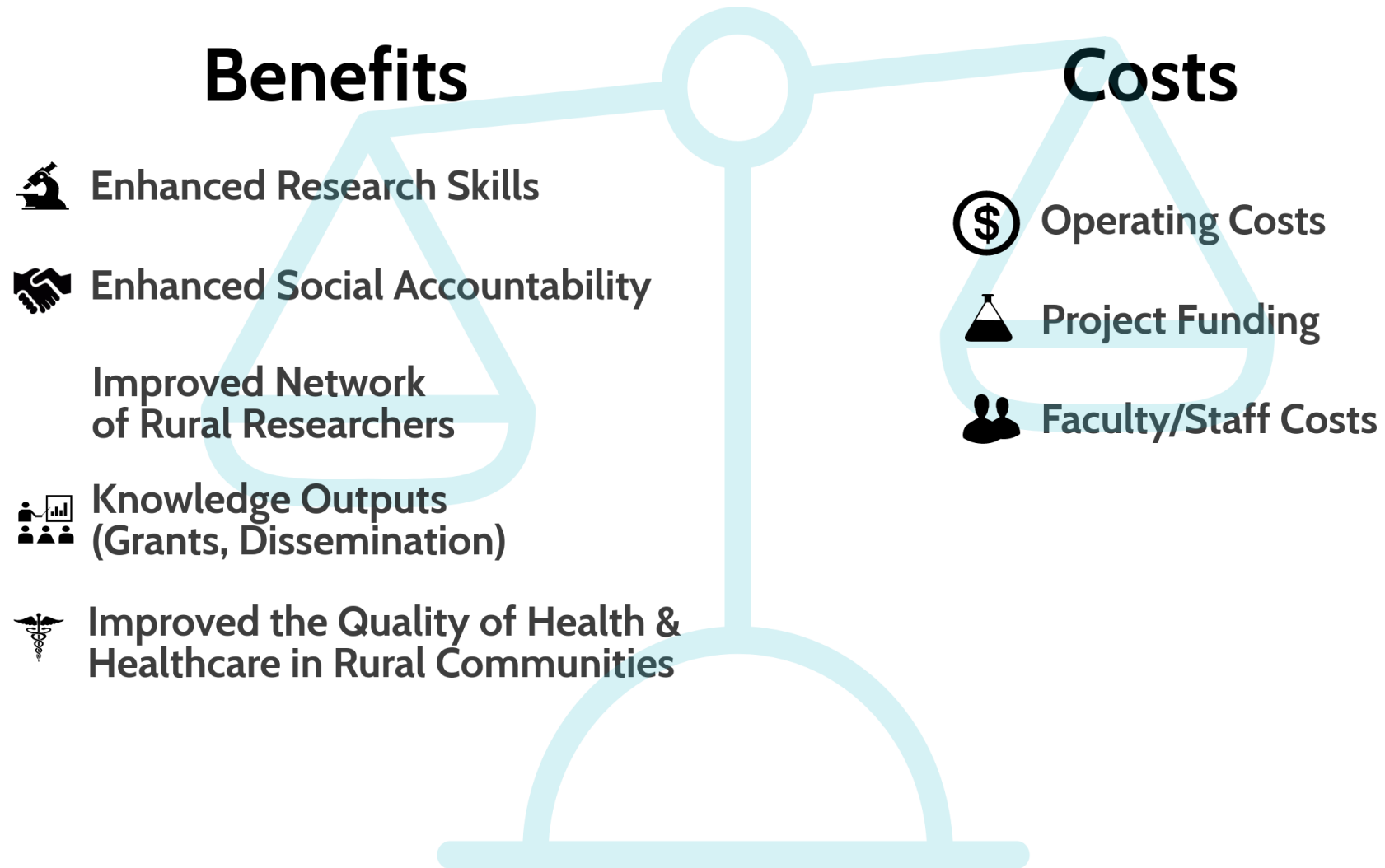
Faculty of Medicine

# 6 *for* 6

A Research Skills  
Program for Rural and  
Remote Doctors



# Cost-Benefit Analysis Components



# Economic Impact of Canadian Medical Schools

- A study was completed in 2013 of the impact of Canadian medical schools and affiliated teaching hospitals
- The study measured:
  - the direct economic impact as a result of education, research and clinical services performed
  - the direct and indirect employment generated in Canada
  - government revenues that are generated by the presence and operations of faculties of medicine and affiliated teaching hospitals (Tripp Umbach, 2014)

# Economic Impact of Canadian Medical Schools

- The economic contribution was estimated at **\$66.1 billion**
- **One in 60 jobs** in the country is attributable to academic medicine
- **More than \$13.9 billion** in government revenue is generated as a result of academic medicine (Tripp Umach, 2014)

# Economic Impact of Canadian Medical Schools: Memorial

- The FoM and its primarily affiliated teaching hospitals (ie Eastern Health) affect business in two ways:
  - Direct expenditures for goods and services by the FoM and the primary affiliated teaching hospital employees, learners and visitors.

- **\$843.1 million**

- Indirect spending within Newfoundland and Labrador. The businesses and individuals that receive direct payments re-spend this money within the province, thus creating the need for even more jobs

- **\$927.4 million** (TrippUmbach, 2013)

# DESTINATION EXCELLENCE

OUR 2018 – 2023 STRATEGY MAP

# 1 MISSION AND VISION

What is our Mission and Vision for the next five years?



## OUR FOUNDATION



## OUR MISSION

Working in the spirit of partnership and respect, the Faculty of Medicine is committed to delivering integrated excellence in education, research and evidence informed care; meeting the unique health needs of our rural, remote and urban communities; and advocating for health, equity, Indigenous health and healthy populations.

## OUR VISION

Through excellence, we will integrate education, research and social accountability, to advance the health of the people and communities we serve.



## 2 PILLAR #1: STRATEGIC STAKEHOLDER OUTCOMES

To achieve our Mission and Vision, what outcomes must we achieve for the stakeholders we serve?

# IMPROVING LIVES

# Three Main Outcomes

- **Thriving learners and Graduates**

- Graduates are prepared to respond to population needs and to be tomorrow's scientific and clinical leaders
- Graduates are equipped with the competencies needed to thrive in the 21<sup>st</sup> century health system

- **Impactful Research**

- Our research addresses pressing and emerging needs of local, regional, Indigenous and global populations
- Our inter-dependent research projects are community informed and inspired

- **Healthier Communities**

- The communities we serve are actively engaged in identifying community needs, influencing education, research and service priorities and evaluating new models of practice
- We participate in sustainable regional, provincial, national, and global partnerships to shape and improve health equity and the health system



### 3 PILLAR #2: STRATEGIES OF EXCELLENCE

To achieve these outcomes, what processes and practices must we excel at?

# EXCELLENCE IN ALL WE DO

# EDUCATIONAL EXCELLENCE

## *We must excel at:*

- Delivering high quality, dynamic and innovative academic programming
- Enabling faculty to be exceptional teachers and learner advocates
- **Providing learners with active, engaged, empowering and authentic community-based experiences that include longitudinal learning activities**
- Incorporating competency-based learning, programmatic assessment and inter-dependent practice
- Accelerating the effective use of education technologies across all programs and teaching spaces
- Teaching, mentoring, assessing and supporting learners
- Providing learners with career planning services and support

# RESEARCH EXCELLENCE

## *We must excel at:*

- Identifying focused areas of research strength where we can lead and maximize return on investment
- Empowering researchers with appropriate resources, support and efficient processes
- Embedding an integrated and coordinated research curricula across all programs
- Promoting and nurturing the development of inter-dependent research teams to accelerate scientific discoveries
- **Building robust academic and external partnerships and networks**
- **Effectively disseminating our research outcomes to the scientific and clinical communities and the public**



# SOCIAL ACCOUNTABILITY

## *We must excel at:*

- Inscribing global health and community engagement principles and competencies into academic programming
- Preparing learners to understand the determinants of health and health policy and to advocate for and with our patients and communities
- **Actively listening to and collaborating with the populations we serve and our health and research partners**
- Evaluating and enhancing our education, research and service programs in alignment with community needs
- **Developing partnerships that strengthen community capacity in underserved populations**
- Building structures that expand our influence and presence in Canada and on the global stage
- Expanding philanthropic funding models to advance our mission

# Looking to the Future

- Establish a Community Advisory Board and other pertinent Reference Groups
  - Evolve curriculae to better address community needs
  - Establish a list of research priorities (Szilagyi PG, et al, Academic Medicine, 2014)
  - Develop and enhance elective\selectives for medical students and residents in public health departments and practicum experiences for graduate students in the health department (Akintobi TH et al, J Public Health management Practice, 2014)

# Looking to the Future

- Establish outcome metrics such as:
  - Health indicators of the communities we serve
  - Number of students who are involved in community projects  
(Szilagyi PG, et al, Academic Medicine, 2014)
  - Following the graduates to determine how they are serving their community after graduation (Szilagyi PG, et al, Academic Medicine, 2014)

# Looking to the Future

- Introduction of Longitudinal Integrated Clerkships across Newfoundland and Labrador
- Medical students would spend the majority of their clerkship year in one rural\underserved area
- The students have the opportunity to develop a connection with the clerkship host community and to better understand **systems-based practice** (Poncelot A et al, 2011 In Poncelet AN et al, The Permanente Journal, 2014; Ogur B & Hirsh D In Poncelet AN et al, The Permanente Journal, 2014 )

# Looking to the Future

- Work with the Department of Health and Community Services and RHAs to better determine the physician workforce needs and develop more fulsome strategies and initiatives to recruit locally trained specialists (Fleming, P, 2009)
- The FoM to host a social accountability event, or workshop and invite key stakeholders to attend (Boelen C, et al, 2016)
- **More studies looking at the economic impact** of the discoveries, innovations and the overall FoM are needed

# QUESTIONS?



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