

# *Arthritis prevalence and health services use in the Métis population of Ontario*

*2014 Canadian Association for Health Services and Policy Research Conference, Toronto, ON*



**Métis Nation of Ontario**  
Healing and Wellness



Métis Nation  
of Ontario 

# Acknowledgements

- This study is part of an ongoing Chronic Disease Surveillance collaboration between the Institute for Clinical Evaluative Sciences (ICES) and the Métis Nation of Ontario (MNO)
- Funding provided by the Public Health Agency of Canada under the Enhanced Surveillance for Chronic Disease program

## Arthritis Study Team

MNO: Storm J. Russell, Yvon Allard, Whitney Montgomery

ICES: Saba Khan, Elizabeth Badley, Nathaniel Jembere, David Henry

# Previous ICES-MNO Chronic Disease Studies

DISEASE	MÉTIS VS. ONTARIO POP'N
<p><b>Diabetes</b>  <i>Shah BR, Cauch-Dudek K, Pigeau L.. Diabetes prevalence and care in the Metis population of Ontario, Canada. Diabetes Care. 2011; 34(12):2555-2556.</i></p>	<ul style="list-style-type: none"> <li>↑ Prevalence</li> <li>↑ All-cause hospitalizations</li> <li>↑ All-cause ED visits</li> </ul>
<p><b>Cardiovascular Disease</b>  <i>Atzema CL, Khan S, Allard YE, Russell SJ, Lu H, Gravelle MR, Klein-Geltink J, Austin PC. Cauch-Dudek K, Pigeau L.. Cardiovascular disease rates, outcomes and quality of care in Ontario Métis [under review].</i></p>	<ul style="list-style-type: none"> <li>↑ Prevalence of acute coronary syndromes, stroke, CHF, atrial fibrillation, hypertension</li> <li>↑ Hospital admissions after CHF or hypertension diagnosis</li> <li>↑ ED visits after CHF diagnosis</li> <li>↑ Beta-blocker use after ACS diagnosis</li> </ul>
<p><b>Cancer</b>  <i>Khan S, Klein-Geltink J, Saskin R, Manno M, Urbach D, Pigeau L, MacQuarrie J, Allard YE, Henry D. Cancer incidence and screening in the Métis population of Ontario [in preparation].</i></p>	<ul style="list-style-type: none"> <li>↓ Incidence of breast, cervical and ovarian cancer</li> <li>↓ Screening of breast and cervical cancer</li> </ul>
<p><b>Respiratory Disease</b>  <i>Gershon AS, Khan S, Klein-Geltink J, Wilton D, To T, Crighton EJ, Pigeau L, MacQuarrie J, Allard Y, Russell SJ, Henry DA. Asthma and chronic obstructive pulmonary disease (COPD) prevalence and health services use in Ontario Métis. PLOS ONE 2014; 9(4):e95899.</i></p>	<ul style="list-style-type: none"> <li>↑ Prevalence of asthma and COPD</li> <li>↓ GP and specialist visits</li> <li>↑ All-cause ED visits</li> <li>↑ All-cause hospitalizations</li> <li>↑ All-cause mortality for COPD cases</li> </ul>



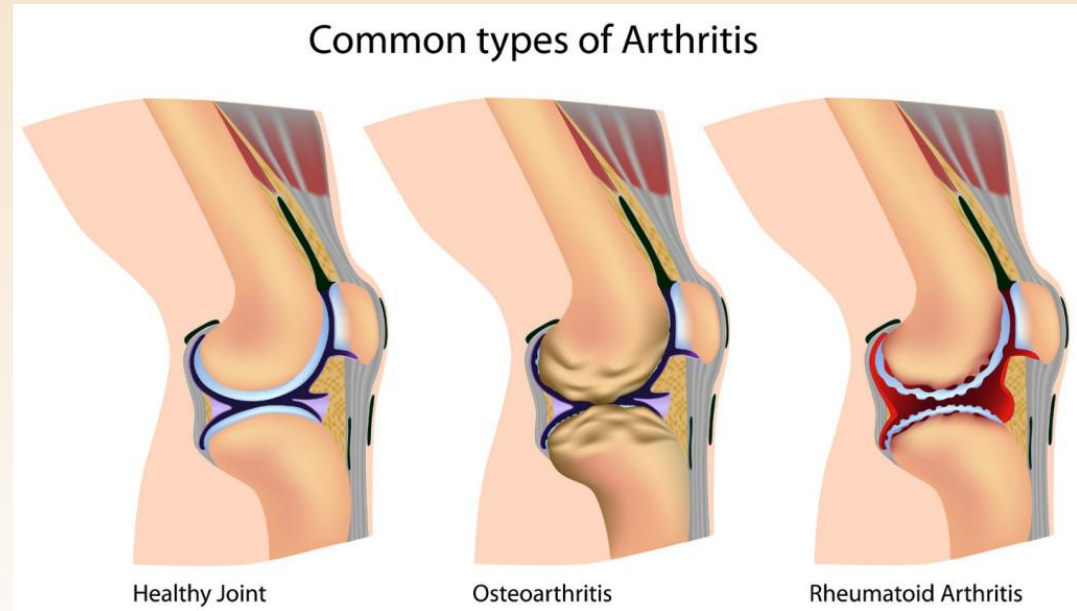
# Previous ICES-MNO Chronic Disease Studies

DISEASE	MÉTIS VS. ONTARIO POP'N
<p><b>Diabetes</b>  <i>Shah BR, Cauch-Dudek K, Pigeau L.. Diabetes prevalence and care in the Metis population of Ontario, Canada. Diabetes Care. 2011; 34(12):2555-2556.</i></p>	<p>↑ <b>Prevalence</b>            ↑ <b>All-cause hospitalizations</b>            ↑ <b>All-cause ED visits</b></p>
<p><b>Cardiovascular Disease</b>  <i>Atzema CL, Khan S, Allard YE, Russell SJ, Lu H, Gravelle MR, Klein-Geltink J, Austin PC. Cauch-Dudek K, Pigeau L.. Cardiovascular disease rates, outcomes and quality of care in Ontario Métis [under review].</i></p>	<p>↑ <b>Prevalence of acute coronary syndromes, stroke, CHF, atrial fibrillation, hypertension</b>            ↑ <b>Hospital admissions after CHF or hypertension diagnosis</b>            ↑ <b>ED visits after CHF diagnosis</b>            ↓ <b>Beta-blocker use after ACS diagnosis</b></p>
<p><b>Cancer</b>  <i>Khan S, Klein-Geltink J, Saskin R, Manno M, Urbach D, Pigeau L, MacQuarrie J, Allard YE, Henry D. Cancer incidence and screening in the Métis population of Ontario [in preparation].</i></p>	<p>↓ <b>Incidence of breast, cervical and ovarian cancer</b>            ↓ <b>Screening of breast and cervical cancer</b></p>
<p><b>Respiratory Disease</b>  <i>Gershon AS, Khan S, Klein-Geltink J, Wilton D, To T, Crighton EJ, Pigeau L, MacQuarrie J, Allard Y, Russell SJ, Henry DA. Asthma and chronic obstructive pulmonary disease (COPD) prevalence and health services use in Ontario Métis. PLOS ONE 2014; 9(4):e95899.</i></p>	<p>↑ <b>Prevalence of asthma and COPD</b>            ↓ <b>GP and specialist visits</b>            ↑ <b>All-cause ED visits</b>            ↑ <b>All-cause hospitalizations</b>            ↑ <b>All-cause mortality for COPD cases</b></p>



# Introduction – Burden of Arthritis

- Arthritis is a leading condition of pain and disability in Canada (16% affected)
- Impact of arthritis on physical ability and quality of life can be severe, resulting in high health services utilization and health economic burden



## Most common forms

- Osteoarthritis: deterioration of cartilage in one or more joint
- Rheumatoid arthritis: autoimmune condition attacking bodily joints



# Arthritis in Métis and other Aboriginal Populations

- Canadian Aboriginal populations at increased risk of developing arthritis
- 2006 Aboriginal Peoples Survey (APS)
  - 20% of First Nations/Inuit/Métis aged 15 and over reported having arthritis/rheumatism
  - Highest self-reported prevalence was in the Métis (21%), yet almost half reported no arthritis treatment
- Manitoba Metis study
  - Significantly higher arthritis prevalence vs. general Manitoba pop'n based on health administrative data (24% vs. 20%)
- Little information on specific forms of arthritis and related health services use for the Métis and for Aboriginal populations in general



# Objectives

- We sought to describe the burden of arthritis in Ontario Métis from 2006 to 2011, in comparison with the general Ontario population, using health administrative data
- Examined prevalence, physician visits, emergency department (ED) visits, and hospitalizations related to osteoarthritis, rheumatoid arthritis, and other related conditions



# Methodology – Study Population

- MNO Citizenship Registry linked to ICES health administrative databases in order to identify registered Métis citizens in health care data (97% linkage success rate)
- Study population
  - Alive on April 1, 2006
  - Aged 16 and older
  - Had an Ontario postal code
  - Eligible for and had contact with Ontario health care system in past 5 years
  - Grouped as Métis vs. General Ontario Population





# Methodology – Definitions

- Used validated case definitions from the Public Health Agency of Canada
  - Osteoarthritis (OA): 1 hospitalization or 1 physician claim with OA diagnostic code
  - Rheumatoid arthritis (RA): 1 hospitalization or 2 physician claims more than 8 weeks apart with RA diagnostic code
  - Arthritis and related joint conditions (ARJ): includes juvenile idiopathic arthritis, systemic autoimmune rheumatic diseases, gout and crystal arthropathies, and ankylosing spondylitis



# Methodology – Analysis

- Indicators
  - Prevalence (OA, RA): 5-year period from 2006-2011
  - Health services use (OA, RA, ARJ): disease-specific physician visits, ED visits and hospitalizations (within 1 year of index prevalent visit during study period)
- Analysis
  - Direct age- and sex-standardized prevalence and person-visit rates (# persons with a health services contact) calculated for Métis and general Ontario population using gamma method



# Demographics – Métis vs. General Population

Characteristic	Métis Citizens (n=12,061)	Ontario (n=9,390,202)
Age 65+ (%)	8.8	13.9
Sex		
Female	47%	51%
Male	53%	49%
Region		
Urban	69%	88%
Rural	31%	12%
Region		
Southern	35%	90%
Northern	65%	10%

The Métis population in this study are younger, more likely to be male, and more likely to reside in rural and northern regions of Ontario.





**Métis Nation of Ontario**  
Healing and Wellness

Métis Nation  
*of Ontario* 



**Métis Nation of Ontario**  
Healing and Wellness

Métis Nation  
*of Ontario* 



**Métis Nation of Ontario**  
Healing and Wellness

Métis Nation  
*of Ontario* 



**Métis Nation of Ontario**  
Healing and Wellness

Métis Nation  
*of Ontario* 

# Limitations

- MNO Citizenship Registry represents only 17% of Census-identified Métis in Ontario
  - May not be representative of all Ontario Métis
  - Small sample size for research
  - MNO working to expand Citizenship Registry by promoting Citizenship benefits and including more Métis families





# Discussion

## Prevalence

- OA prevalence of ~20% in Ontario Métis similar to self-reported arthritis prevalence from APS and health admin data-based prevalence in Manitoba Métis study
- Higher rates of arthritis overall and in younger age groups (25-64) in the Métis

## Patterns of service usage

- Higher rates of physician and ED service use in younger Métis population (25-64)



# Discussion

## Patterns of service usage

- Higher rates of arthritis-related physician visits in Métis overall
- However, lower rates of specialist visits and very high reliance on ED-based care
  - Lack of access to specialist services in northern and rural regions of Ontario likely an issue
  - Poor management of arthritis symptoms
  - Timing of entry into the health care system of interest – at what stage in the progression of the disease are Métis seeking and/or receiving care?
- Potential links with key risk factors should be explored e.g. physical inactivity, obesity



# Discussion

## What's Next?

- Implications for policy, practice and program development
- Implications for future research and knowledge development



# THANK YOU



**Métis Nation of Ontario**  
Healing and Wellness



Métis Nation  
of Ontario 