

# Using RDC micro- data to study the characteristics of the Canadian physician workforce

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Statistics  
Canada

Statistique  
Canada

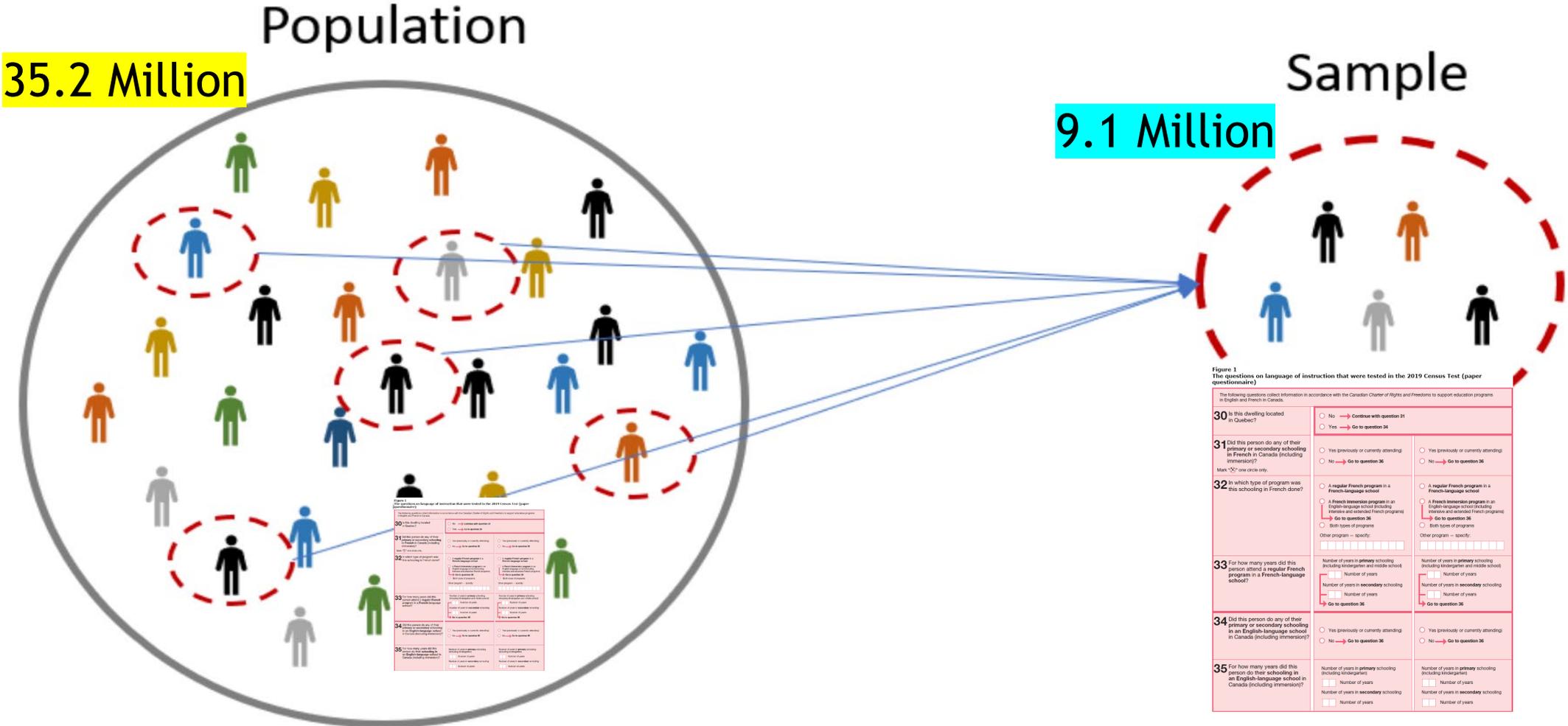
# Why Physicians?

- MDs are a very small group - about 95,000 nationally and 35,000 in Ontario - compared to populations of about 40 million & 15 million respectively
- Health expenditures are a large part of gov't budgets, about 40%
- MDs (publicly funded) are a small share of health budgets (15%), but impact other expenditures such as drugs, diagnostics & testing, hospital admissions/discharges, etc
- MDs are small but carry a large impact - draw attention from gov't/policy makers

## RDC Microdata Sources for Physicians:

- Statistics Canada Census of Canada
- Statistics Canada Labour Force Survey (LFS)

# Census Of Canada 2021

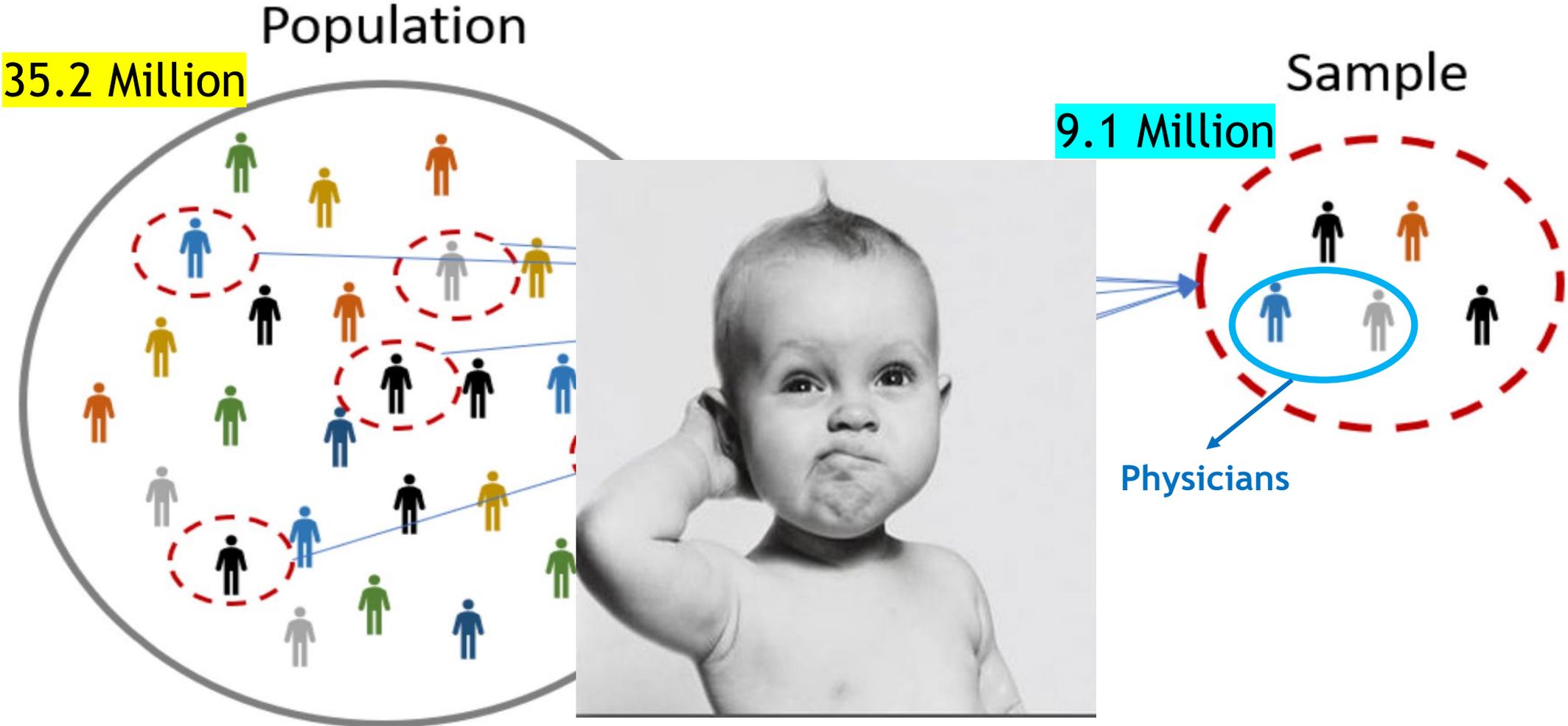


**Figure 1**  
The questions on language of instruction that were tested in the 2019 Census Test (paper questionnaire)

The following questions collect information in accordance with the Canadian Charter of Rights and Freedoms to support education programs in English and French in Canada.

<b>30</b> Is this dwelling located in Quebec?	<input type="radio"/> No → Continue with question 31	
	<input type="radio"/> Yes → Go to question 34	
<b>31</b> Did this person do any of their primary or secondary schooling in French in Canada (including immersion)? Mark "X" one or more only.	<input type="radio"/> Yes (previously or currently attending)	<input type="radio"/> Yes (previously or currently attending)
	<input type="radio"/> No → Go to question 36	<input type="radio"/> No → Go to question 36
<b>32</b> In which type of program was this schooling in French done?	<input type="radio"/> A regular French program in a French-language school	<input type="radio"/> A regular French program in a French-language school
	<input type="radio"/> A French immersion program in an English-language school (including immersion and extended French programs) → Go to question 36	<input type="radio"/> A French immersion program in an English-language school (including immersion and extended French programs) → Go to question 36
	<input type="radio"/> Both types of programs	<input type="radio"/> Both types of programs
	Other program – specify: _____	Other program – specify: _____
<b>33</b> For how many years did this person attend a regular French program in a French-language school?	Number of years in primary schooling (including kindergarten and middle school) <input type="text"/> Number of years	Number of years in primary schooling (including kindergarten and middle school) <input type="text"/> Number of years
	Number of years in secondary schooling <input type="text"/> Number of years	Number of years in secondary schooling <input type="text"/> Number of years
	Go to question 36	Go to question 36
<b>34</b> Did this person do any of their primary or secondary schooling in an English-language school in Canada (including immersion)?	<input type="radio"/> Yes (previously or currently attending)	<input type="radio"/> Yes (previously or currently attending)
	<input type="radio"/> No → Go to question 36	<input type="radio"/> No → Go to question 36
<b>35</b> For how many years did this person do their schooling in an English-language school in Canada (including immersion)?	Number of years in primary schooling (including kindergarten) <input type="text"/> Number of years	Number of years in primary schooling (including kindergarten) <input type="text"/> Number of years
	Number of years in secondary schooling <input type="text"/> Number of years	Number of years in secondary schooling <input type="text"/> Number of years

# Census Of Canada 2021- Physicians?



# Identifying & Extracting Physicians in Census

## Occupation (NOC)

- NOC 31100: Specialists in Clinical and Laboratory Medicine
- NOC 31101: Specialists in Surgery
- NOC 31102: General Practitioners and Family Physicians

## Industry (NAICS)

- NAICS 6211 Offices of Physicians
- NAICS 6213 Offices of Other Health Practitioners
- NAICS 6214 Out-patient Care Centers
- NAICS 6215 Medical and Diagnostic Laboratories
- NAICS 6216 Home Health Care Services
- NAICS 6219 Other Ambulatory Health Care Services
- NAICS 6220 Hospitals (general medical & surgical, psychiatric & substance abuse, and specialty hospitals)
- NAICS 6230 Nursing and Residential Care Facilities
- NAICS 6241 Individual and Family Services
- NAICS 6243 Vocational Rehabilitation Services



# Physician Specialty Identification

## Education (CIP)

60.0411 Diagnostic radiology residency programs

60.0412 Emergency medicine residency programs

60.0413 Family medicine residency programs

60.0414 General surgery residency programs

60.0415 Internal medicine residency programs

60.0416 Neurological surgery residency programs

60.0417 Neurology residency programs

60.0418 Nuclear medicine residency programs

60.0419 Obstetrics and gynecology residency programs

60.0420 Occupational medicine residency programs

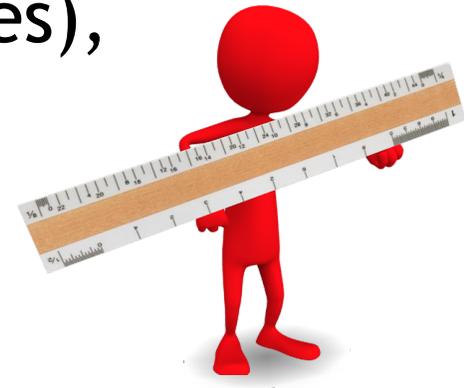
60.0421 Ophthalmology residency programs

60.0422 Orthopedic surgery residency programs



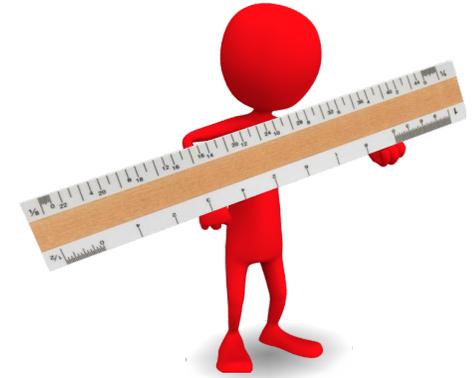
# Census Microdata – Variety & Completeness

- Earnings - linked from CRA taxation T1 files (not self-reported) for 2016 & 2021 Census
- Labour supply - employment status, hours worked(current) and weeks worked (previous year), occupation and industry (detailed)
- Demographics - rich array: age, gender, visible minority, immigrant, disability, family structure (marital status, children and ages), education, location, ancestry, languages spoken, etc



# Labour Force Survey Data

- Monthly household survey, representative of population aged 15 and over
- Sample size is approximately 56,000 households (100,000 individuals)
- Conducted at same time in month (week that includes 15<sup>th</sup> day of month)
- Households remain in sample for 6 consecutive months
- Socio-demographic and labour market information
- Actual hours, usual hours, and overtime hours worked
- Physicians extracted based on NOC and NAICS codes
- Annual samples (aggregated monthly data) of physicians currently is about 3,800



# Some Census 2016 Study Result

From our recent publication\* on gender pay gap in Canadian medicine using full-time full-year physicians in 2016 Census.

Work effort and earnings by gender and specialty group, mean, (SD).

	Male Physicians			Female Physicians		
	All Physicians (n = 37,890)	Family Physicians (n = 19,345)	Specialists (n = 18,545)	All Physicians (n = 25,770)	Family Physicians (n=15,395)	Specialists (n=10,375)
Hours/week	47.90 (18.62)	46.70 (17.65)	49.15 (19.5)	43.69 (18.8)	42.70 (18.24)	45.14 (19.5)
Weeks/Year	48.29 (3.49)	48.47 (3.31)	48.11 (3.67)	48.40 (3.56)	48.58 (3.42)	48.13 (3.75)
Annual Hours	2,319 (931.92)	2,270 (888.49)	2,370 (972.6)	2,118 (932.03)	2,079 (908.17)	2,176 (963.4)
Annual Net Earnings	\$217,082 (\$205,242)	\$186,253 (\$163,406)	\$249,244 (\$237,043)	\$173,631 (\$126,953)	\$153,429 (\$108,116)	\$203,610 (\$145,551)

**Adjusted net earnings gap of 9.3% for all MDs, 10.2% for specialists, and 8.5% for GP/FPs**

\* Kralj, B., O'Toole, D., Vanstone, M., and A. Sweetman (2022). "The Gender Earnings Gap in Medicine: Evidence from Canada", Health Policy, Volume 126, Issue 10, pp. 1002-1009.

# Some Census 2016 Study Result



Adjusted Gap in Canada = 10%



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■ Unadjusted  
■ Adjusted

# Some Census 2021 Physician Data

- Weeks worked does not appear to be impacted by COVID - compare 2016 Census to 2021 Census for Ontario MDs.
- Weeks in 2015 = 45.53 (se=0.0573)
- Weeks in 2020 = 45.28 (se=0.0715)

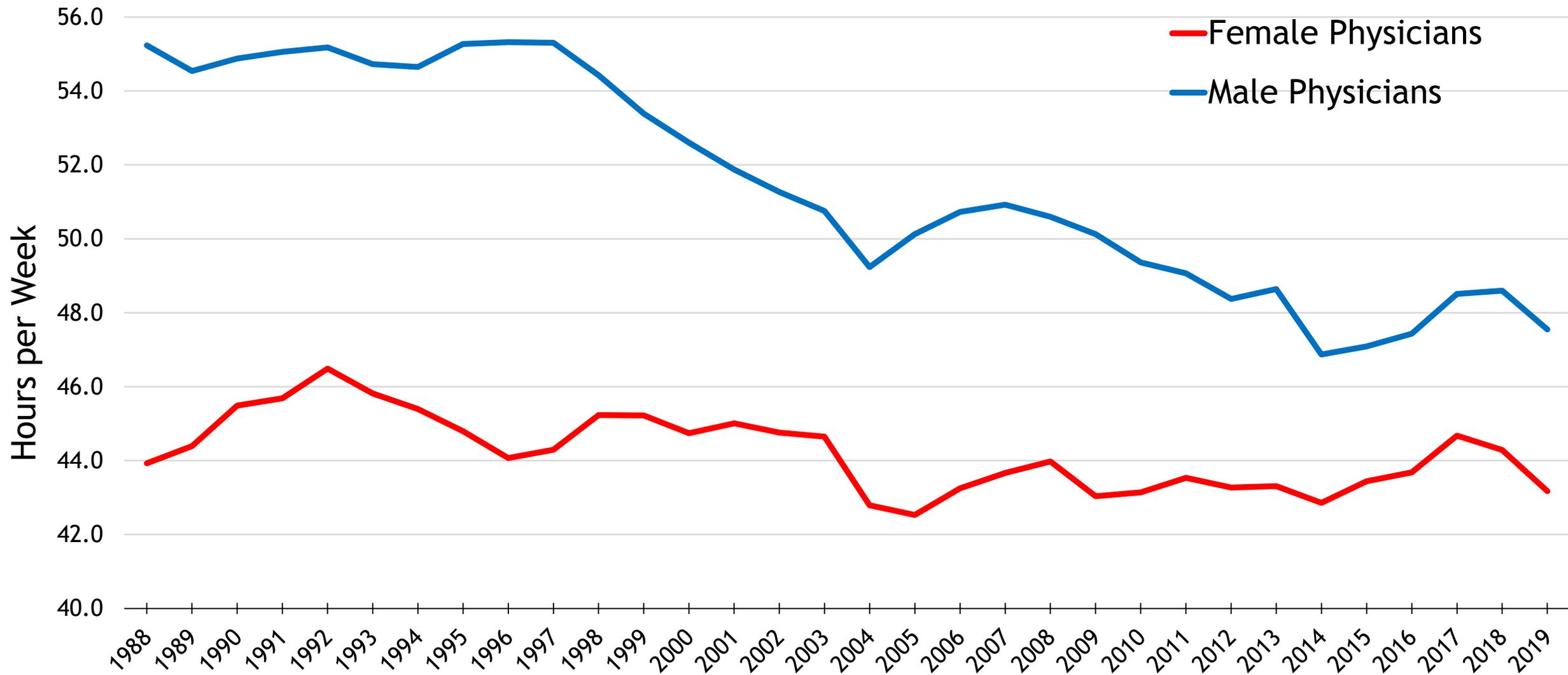
# LFS – Physician Workforce Characteristics

## Physician Workforce Characteristics, 1987-2021

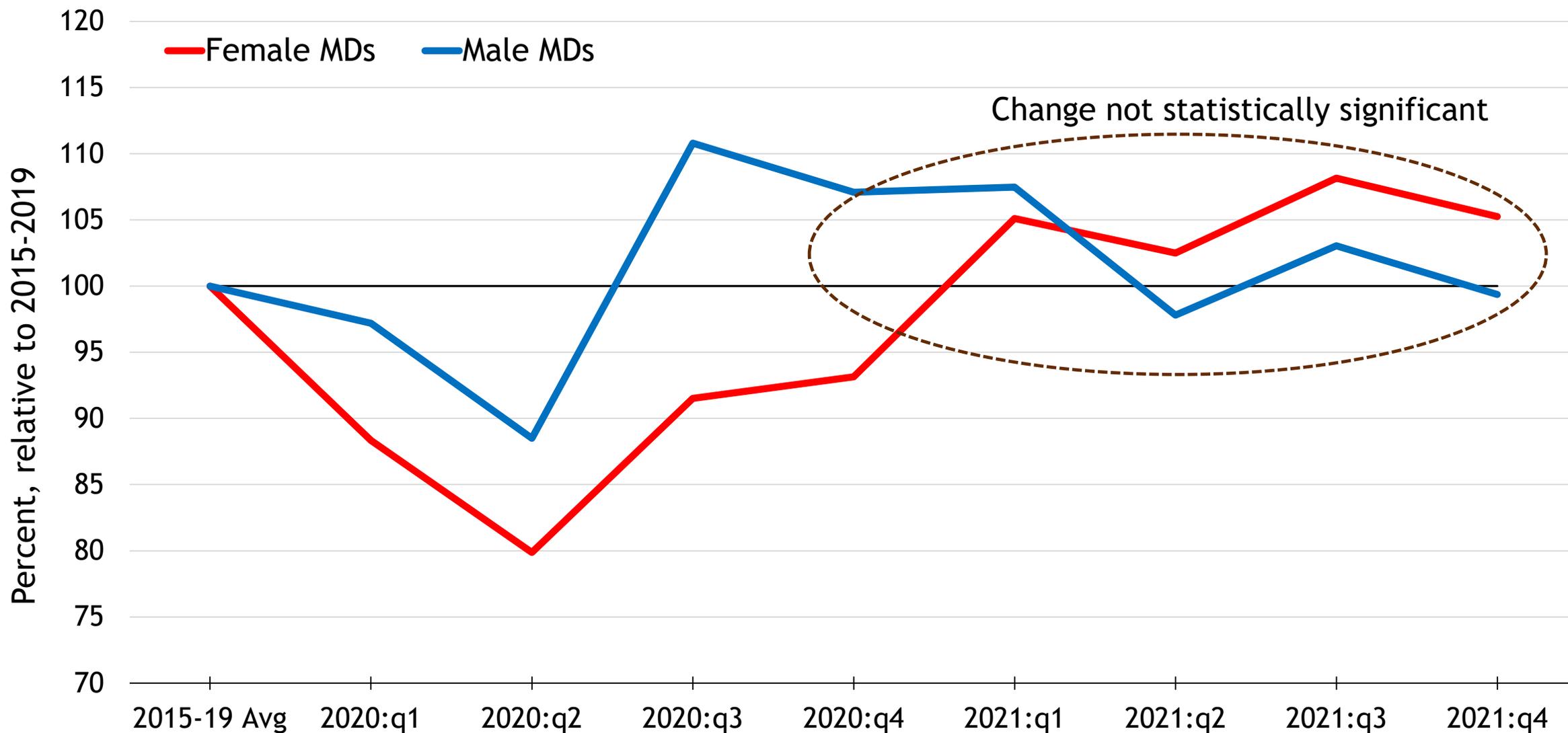
Characteristic	Time Period			
	1987-91 (n=1769)	1997-2001 (n=2419)	2007-11 (n=3187)	2017-21 (n=3425)
Tenure (yrs)	12.1	12.5	13.5	11.7
Female (%)	23.5	33.0	35.5	44.8
GPs (%)	55.0%	58.5%	53.1%	60.2%
Full-time (%)	92.8%	91.5%	91.4%	91.3%
Age (yrs)	43.3	44.6	47.3	46.2
Married (%)	91.8%	86.7%	81.0%	79.5%
Ontario (%)	41.4%	38.6%	40.0%	44.9%
Urban (%)	n/a	87.4%	88.3%	90.4%
Incorp* (%)	16.8%	15.0%	34.3%	50.9%
Child<=5 yrs (%)	22.7%	23.4%	19.3%	18.0%
Born in Canada (%)	n/a	n/a	61.8%	59.7%

\* Self-employed & incorporated; n/a data not collected by LFS

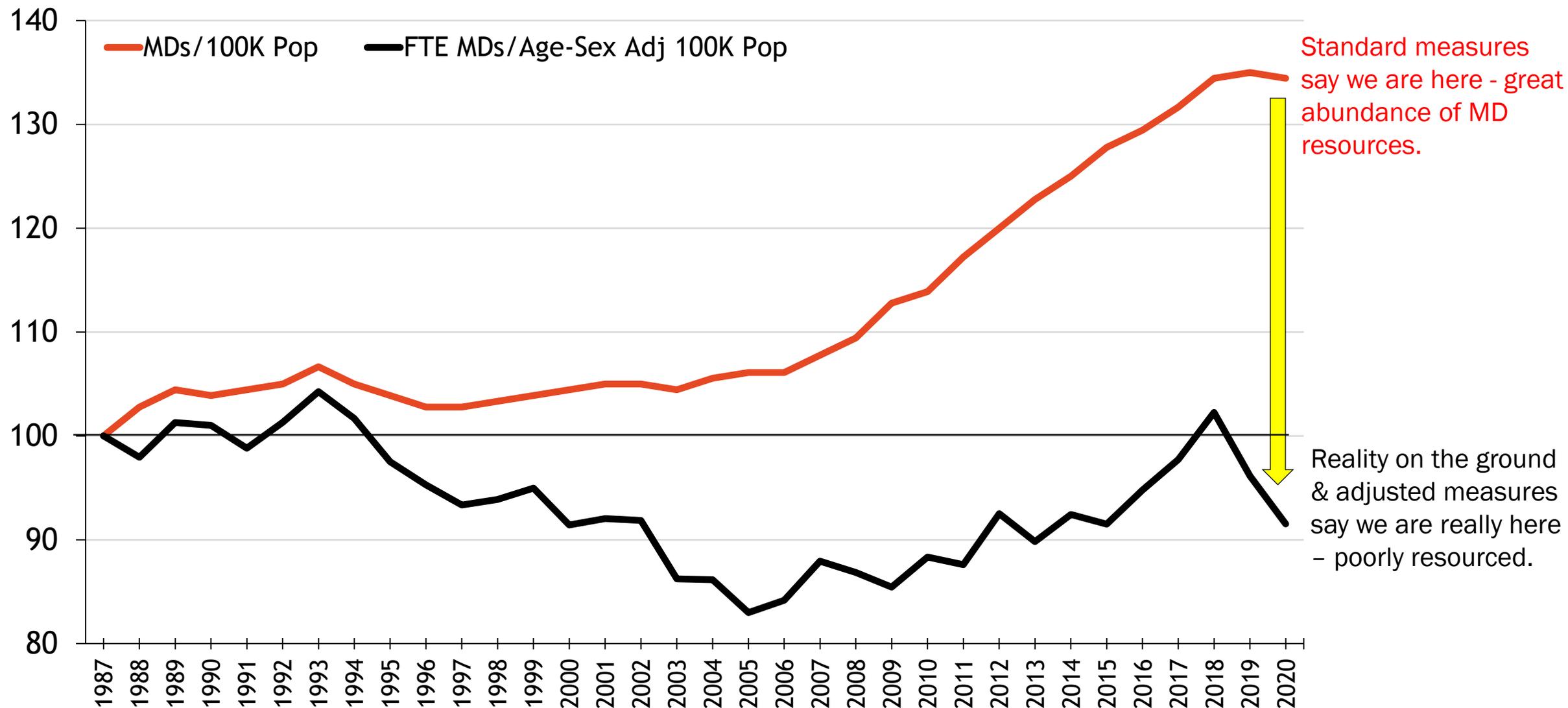
# LFS – Physician Hours of Work, by Sex



# LFS-Weekly MD Hours Worked Pre- & Post COVID



# Canada: Physician to Population Indexes (1987=100)



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# Thank you!

## Questions/Discussion



Stay Hungry.