

Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. Datasets from CPSO and ICES used in the present study.

Database	Description	Data Elements	Available Range
College of Physicians and Surgeons of Ontario (CPSO)	Information about all physicians who initially registered for a license to practice medicine in Ontario.	Physician identifiers (encrypted), gender, date of initial registration, registration status, registration class, medical school, graduation year, practice information, specialty, language of practice	January 1, 1990 – November 26, 2018.
Registered Persons Database (RPDB)	A vital statistics registry; provides basic demographic information about anyone who has ever received an Ontario health card number. Data supplied by the Ontario Ministry and enriched with information from other ICES in-house datasets. April 1990 onwards.	Date of birth, sex, date of death, date of last contact, best known postal code, health care eligibility	April 1991 – January 2020
Ontario Health Insurance Plan (OHIP) Claims Database	Includes most claims paid by OHIP to physicians, groups, and laboratories from July 1991.	Physician and patient identifiers (encrypted), codes for services provided, date of service, associated diagnosis, fee paid	July 1991 – February 2020
Canadian Institute for Health Information (CIHI) Discharge Abstract Databases (DAD)	Contains patient-level data for acute, rehab, chronic and day surgery institutions in Ontario. Also contains information on patient co-morbidities at the time of admission. Includes ICD-10 codes.	Patient demographics (sex, date of birth, postal code, county/residence), clinical information (diagnoses, procedures, physicians), administrative data (institution number, admission category, length of stay, discharge disposition)	April 1988 – December 2019
CIHI National Ambulatory Care Reporting System (NACRS)	Captures information of patient visits to hospital and community-based ambulatory care, including day surgery, outpatient clinics, and emergency department from July 2000 onwards.	Emergency room visits	July 2000 – March 2019
CIHI Same Day Surgery Database (SDS)	Contains information on same-day surgical procedures.	Institution, procedures	April 1991 – March 2019
ICES Physicians Database (IPDB)	Includes information from the Ontario Health Insurance Plan (OHIP) Corporate Provider Database (CPDB), the Ontario Physician Human Resource Data Centre (OPHRDC) database and	Physician demographics (age, sex); specialty; location; measures of physician activity (billings, workload, types or services provided)	January 1992 – December 2017

	the OHIP database of physician billings. It contains yearly information about all physicians in Ontario on a fiscal-year basis.		
Ontario Census Area Profiles (CENSUS)	Information on constituent income and other demographic information, collected by Statistics Canada.	Income quintile	Up to 2016
Ontario Mother-Baby Linked Database (MOMBABY)	Data on all inpatient admission records to mothers and their newborns delivered since 1988.	Perinatal health information, pregnancy information (includes stillbirths, terminations, live births)	April 1988 – March 2019
Immigration, Refugees and Citizenship Canada (IRCC)'s Permanent Resident Database (CIC)	Contains landing records for every permanent legal immigrant to Canada from 1985-2012.	Date of landing, immigration class Canadian language ability, level of education	January 1985-May 2017

eTable 2. List of Johns Hopkins Aggregated Diagnosis Groups (ADGs), with examples of common included diagnoses. Adapted from the Johns Hopkins ACG® System Technical Reference Guide, Version 10.

Aggregated Diagnosis Group (ADG)	Examples
1. Time Limited: Minor	Non-infectious gastroenteritis, diaper rash
2. Time Limited: Minor-Primary Infections	Viral infection, croup
3. Time Limited: Major	Phlebitis of lower extremities, impaction of intestine
4. Time Limited: Major-Primary Infections	Hepatitis, pyogenic arthritis
5. Allergies	Allergic rhinitis, urticarial
6. Asthma	Extrinsic asthma, intrinsic asthma
7. Likely to Recur: Discrete	Gout, backache
8. Likely to Recur: Discrete-Infections	Chronic tonsillitis, urinary tract infection
9. Likely to Recur: Progressive	Type II diabetes with ketoacidosis, central thrombosis
10. Chronic Medical: Stable	Type I diabetes, essential hypertension
11. Chronic Medical: Unstable	Sickle cell anemia, cystic fibrosis
12. Chronic Specialty: Stable-Orthopedic	Cervical spondylosis without myelopathy, other joint derangement
13. Chronic Specialty: Stable-Ear, Nose, Throat	Central hearing loss, cholesteatoma
14. Chronic Specialty: Stable-Eye	Myopia, disorder of conjunctiva
15. No Longer In Use*	
16. Chronic Specialty: Unstable-Orthopedic	Spinal stenosis of lumbar region, osteochondritis dissecans
17. Chronic Specialty: Unstable-Ear, Nose, Throat	Meniere's disease, chronic mastoiditis
18. Chronic Specialty: Unstable-Eye	Unspecified glaucoma, scleritis/episcleritis
19. No Longer In Use*	
20. Dermatologic	Viral warts, non-neoplastic nevus
21. Injuries/Adverse Effects: Minor	Neck sprain, injury to trunk
22. Injuries/Adverse Effects: Major	Intracranial injury, poisoning by cardiotoxic glycosides
23. Psychosocial: Time Limited, Minor	Cannabis abuse, brief depressive reaction
24. Psychosocial: Recurrent or Persistent, Stable	Panic disorder, bulimia
25. Psychosocial: Recurrent or Persistent, Unstable	Catatonic schizophrenia, alcohol withdrawal delirium tremens
26. Signs/Symptoms: Minor	Headache, pain in limb
27. Signs/Symptoms: Uncertain	Effusion of lower leg joint, malaise and fatigue
28. Signs/Symptoms: Major	Cardiomegaly, syncope and collapse
29. Discretionary	Inguinal hernia, sebaceous cyst
30. See and Reassure	Hypertrophy of breast, localized adiposity
31. Malignancy	Malignant neoplasm of breast, Hodgkin's disease
32. Prevention/Administrative	Routine infant or child health check, gynecological examination
33. Pregnancy	Pregnant state, delivery in a normal case
34. Dental	Dental caries, chronic gingivitis

* Only 32 of 34 markers are currently in use

eTable 3. Baseline characteristics of nulliparous physicians and non-physicians at the date of licensing.

Characteristic	Physicians (N=5,227)	Non-physicians (N=26,135)	Standardized difference
Age at index date (years)			
Median (IQR)	26 (25-28)	26 (25-28)	0.00
Era of cohort entry, No. (%)			
1995-2006	783 (15.0%)	3,947 (15.1%)	0.01
2007-2018	4,444 (85.0%)	22,188 (84.9%)	
Residential income quintile, No. (%)			
Urban quintile 1 (lowest)	691 (13.2%)	4,515 (17.3%)	0.11
Urban quintile 2	826 (15.8%)	4,832 (18.5%)	0.07
Urban quintile 3	871 (16.7%)	4,875 (18.7%)	0.05
Urban quintile 4	961 (18.4%)	4,888 (18.7%)	0.01
Urban quintile 5 (highest)	1,683 (32.2%)	4,808 (18.4%)	0.32
Rural residence	152 (2.9%)	2,144 (8.2%)	0.23
Missing	43 (0.8%)	73 (0.3%)	0.07
Immigration status, No. (%)			
Canadian-born	4,425 (84.7%)	23,040 (88.2%)	0.10
Immigrant	802 (15.3%)	3,095 (11.8%)	
Comorbidities (Johns Hopkins ADGs), No. (%)			
0	360 (6.9%)	2,843 (10.9%)	0.14
1-5	3,304 (63.2%)	14,057 (53.8%)	0.19
6-9	1,338 (25.6%)	7,304 (27.9%)	0.05
10+	225 (4.3%)	1,931 (7.4%)	0.13
Previous livebirths, No. (%)			
0	5,227	26,135	0.00

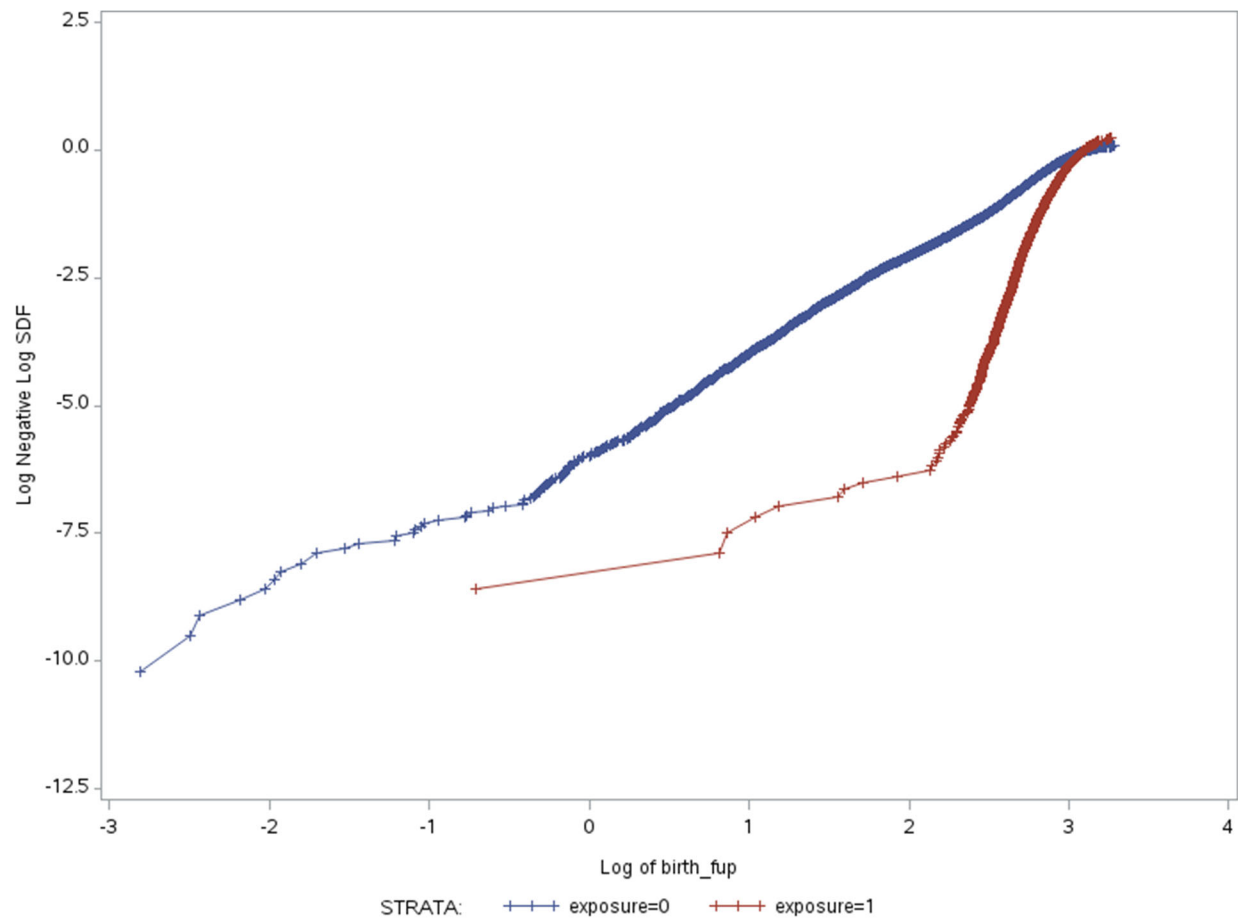
Abbreviations: ADGs (Aggregated Diagnosis Groups); No. (number), IQR (interquartile range)

eTable 4. Childbirth in nulliparous physicians and non-physicians after their actual or simulated licensing date respectively.

Physician Status	Physicians vs. Non-Physicians		Family Physicians vs. Non-Physicians		Other Specialists vs. Non-Physicians	
	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value
Non-physician	Ref	–	Ref	–	Ref	–
Postgraduate trainee	0.79 (0.74, 0.85)	<0.001	0.93 (0.83, 1.03)	0.17	0.71 (0.64, 0.79)	<0.001
Independent practice	2.23 (2.10, 2.36)	<0.001	2.18 (2.03, 2.35)	<0.0001	2.13 (1.92, 2.36)	<0.001

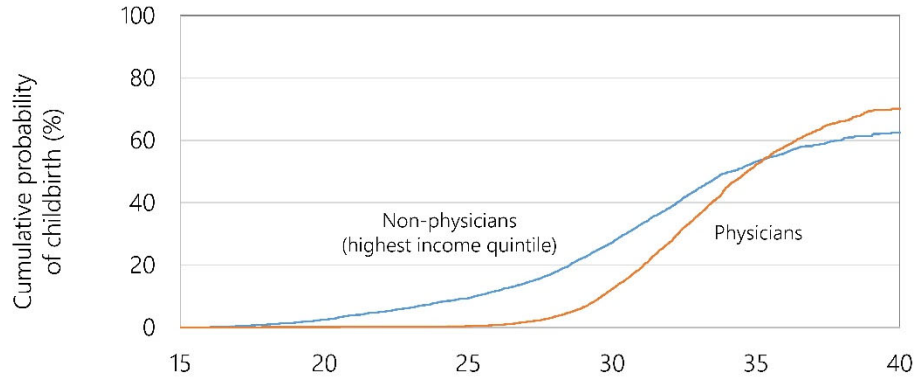
* Excludes N=785 physicians with specialty not yet determined and N=100 physicians who could not be categorized due to missing specialty

eFigure 1. Plot of $\log[-\log(\text{survival})]$ versus $\log(\text{time})$ for assessment of the proportional hazards assumption.

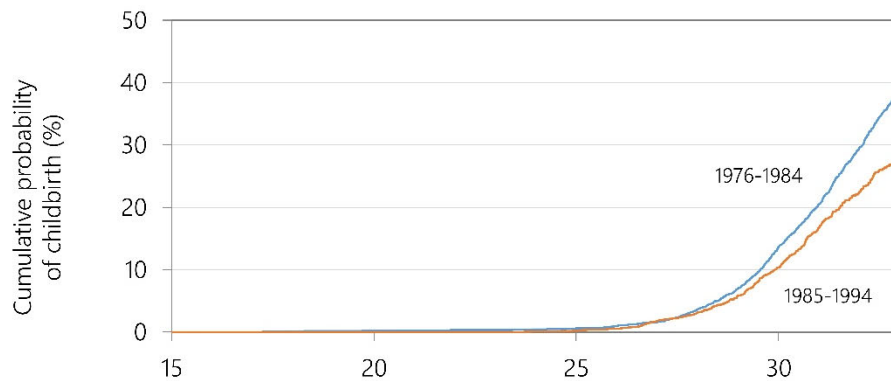


eFigure 2. Sensitivity analyses comparing the cumulative probability of childbirth between: (a) physicians to non-physicians in the highest income quintile; (b) physicians born 1976-1984 to physicians born 1985-1994; and (c) family physicians to surgical and non-surgical specialists.

a) Physicians versus non-physicians restricted to highest income quintile



b) Physicians born 1976-1984 versus physicians born 1985-1994



c) Family physicians versus surgical specialists versus non-surgical specialists

