

1. Do Rural Physicians Practice Differently Than Urban Physicians? Evidence From a Canada-Wide Survey of Family Physicians

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Rural-Urban Practice Differences

- Rural-Urban differences in medical practice characteristics have implications for:
 - Medical education
 - CME and professional development
 - Organization and delivery of health services
 - Nature of the services that support the delivery of medical care

Rural-Urban Practice Differences?

- Some evidence that rural physicians offer more medical services and perform more procedures than their urban counterparts
 - Small-scale studies
 - Anecdotal and case reports
 - Research in other countries

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Research Objectives

- Conduct a secondary analysis of a Canada-wide survey of family physicians to determine geographic variability of...
 - Physician characteristics
 - Medical services and procedures
 - Practice settings

(Part of a larger CIHR-funded study on rural medical education)

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Methods - Survey

- Survey conducted in collaboration with the College of Family Physicians of Canada
- Questionnaire sent in 2001 to all family physicians and general practitioners in Canada
- 13,088 replies
 - 51% response rate

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Methods -Geographic Categories

- Statistical Area Classification (SAC), developed by Statistics Canada
- Based on commuter flows to large urban areas
- Proxy for access to tertiary care institutions
- Postal codes matched to CSDs, to SAC type

Urban	Small Urban	↔	Remote
CMA 100,000+	CA 10,000- 99,999	Strong/ Moderate MIZ 5-50% commuter flow	Weak/ No MIZ 0-<5%

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Methods - Statistical Analyses

- Descriptive statistics
 - Chi-squared tests
 - One-way ANOVAs, post hoc tests
 - Tukey's HSD
 - Dunnett's C

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Physician Characteristics

	All Areas	<i>CMA</i>	<i>CA</i>	<i>S/M MIZ</i>	<i>W/N MIZ</i>
Male (65%)*	61%	57% ↓	67% ↑	69% ↑	67% ↑
Female (35%)*	39%	42% ↑	33% ↓	31% ↓	33% ↓

* Percent of eligible FPs/GPs across Canada
Chi-squared statistic =130, df =3, p<0.001
Arrows indicate statistically significant deviation from expected

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Physician Characteristics

	All Areas	<i>CMA</i>	<i>CA</i>	<i>S/M MIZ</i>	<i>W/N MIZ</i>
Mean Age	46.3	46.9 a	45.9 b	46.1 a b	43.8 c

- Same letter indicates that means were not significantly different ($p > 0.05$)

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Medical Services

	All Areas	<i>CMA</i>	<i>CA</i>	<i>S/M MIZ</i>	<i>W/N MIZ</i>
Number (out of 19)	10.1	9.4 a	11.1 b	11.1 b	12.0 c

- Same letter indicates that means were not significantly different ($p > 0.05$)

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Medical Services – Lower in CMA

	All Areas	CMA	CA	S/M MIZ	W/N MIZ
Emerg. Med.	55%	45% ↓	59% ↑	75% ↑	89% ↑

Chi-squared statistic =1231, df =3, p<0.001
Arrows indicate statistically significant deviation from expected

Similar results for...

- In-patient hospital care
- Visits to nursing homes
- Palliative care
- Occupational/industrial medicine
- Chronic disease management

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Medical Services

Lower in CMA

- Anesthesia
- Surgical assisting
- Substance abuse/addiction medicine
- Performing major surgery in hospital
- Walk-in care during regular hours
- Coordination of patient's use of other health services
- Preventative medicine
- House calls

NSD

- Alternative/complementary medicine
- Psychotherapy/counseling

Higher in CMA

- After hours clinic

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Procedures

	All Areas	CMA	CA	S/M MIZ	W/N MIZ
Number (out of 18)	6.4	5.7 a	6.8 b	7.6 c	9.0 d

- Same letter indicates that means were not significantly different ($p > 0.05$)

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Procedures – Lower in CMA

	All Areas	CMA	CA	S/M MIZ	W/N MIZ
Casting/splinting	45%	34% ↓	56% ↑	66% ↑	85% ↑

Chi-squared statistic = 1525, df = 3, $p < 0.001$

Arrows indicate statistically significant deviation from expected

Similar results for...

- Lumbar puncture
- Skin biopsy
- Musculoskeletal injection/ aspiration
- Needle aspiration
- Suturing
- Pap smears
- IUD insertion

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Procedures

Lower in CMA

- D+C aspiration
- Other endoscopy
- Other biopsy
- ECG interpretation
- Anoscopy

NSD in CMA, but higher in remote areas

- Pulmonary function testing
- Audiometry

NSD

- Refraction

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Workload

	All Areas	CMA	CA	S/M MIZ	W/N MIZ
Patients/ week	124	123 a	131 b	121 a	120 a

Remote physicians spend...

- More time in ED as MD on duty (10 h) or to manage own patients (2 h)
- 2 hours less time on direct patient care in office/ clinic

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Accepting new patients?

	All Areas	CMA	CA	S/M MIZ	W/N MIZ
Yes	28%	26% ↓	17% ↓	35% ↑	49% ↑
Conditional*		↑	↑	↓	↓
No	6%	6%	9% ↑	6%	4% ↓

Chi-squared statistic =403, df =12, p<0.001

Arrows indicate statistically significant deviation from expected.

*Three separate groups of "conditional" were summarized for ease of presentation.

For "conditional" groups, the arrows summarize trend for the geographic category.

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Organization of Main Practice Setting

	All Areas	CMA	CA	S/M MIZ	W/N MIZ
FP group	64%	62% ↓	61% ↓	65%	76% ↑
Solo	26%	25%	27% ↑	29% ↑	19% ↓
FP/SP group	11%	13% ↑	12%	6% ↓	6% ↓

Chi-squared statistic =123, df =6, p<0.001

Arrows indicate statistically significant deviation from expected

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Summary (1 of 2)

Physicians in remote areas (relative to CMAs)

- Are younger
- Proportionally more are males
- More likely to have received their undergraduate medical training outside of Canada
- Offer 2-3 more medical services (on average)
- Perform 3 more procedures (on average)

Summary (2 of 2)

- See 11 fewer patients/week than colleagues in CAs, but about the same number as any other location
- Spend more time in ED on duty (10h) or to manage own patients (2h)
- Spend 2 hours less time on direct patient care in office/ clinic
- Almost twice as likely to accept new patients
- More likely to be in a FP group practice

Caveats

- Disproportionate response rates to survey
 - 48% of males vs. 57% of females responded
 - 25% from PEI vs. 66% from YK/NWT/NU
- CMA, CA, S/M, W/N are categories along an urban-rural continuum
- Urban-rural differences are common, but may start in different categories
 - CMA vs. all other categories
 - CMA+CA vs. all others
- SAC accounts for 1-10% of variability in survey responses

Conclusions

Urban-rural differences exist for

- Physician characteristics
- Patient characteristics
- Practice setting and organizational characteristics

Implications for medical education

- Need to continue to teach to these differences
- But with the caveat that urban-rural differences may be a function of the interaction among several characteristics that may be interdependent

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