

Overuse of Healthcare Interventions

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Lecture Outline

- Is overuse a healthcare problem?
- How can we measure overuse?
- What can we do about it?

Quality of Care Problems

Underuse

Misuse

Overuse

Do We Have a Quality Problem?

Underuse

- US hospitals provide only about 50% of recommended care (McGlynn et al, NEJM, 2004)

Misuse

- Adverse events affect 7.5% of Canadian hospital inpatients (Baker et al, CMAJ, 2004)

Overuse?

OVERUSE

- Use of a health service when the potential for harm exceeds the possible benefit
(ie, **inappropriate**)

Example

- antibiotic prescription for upper respiratory tract infections

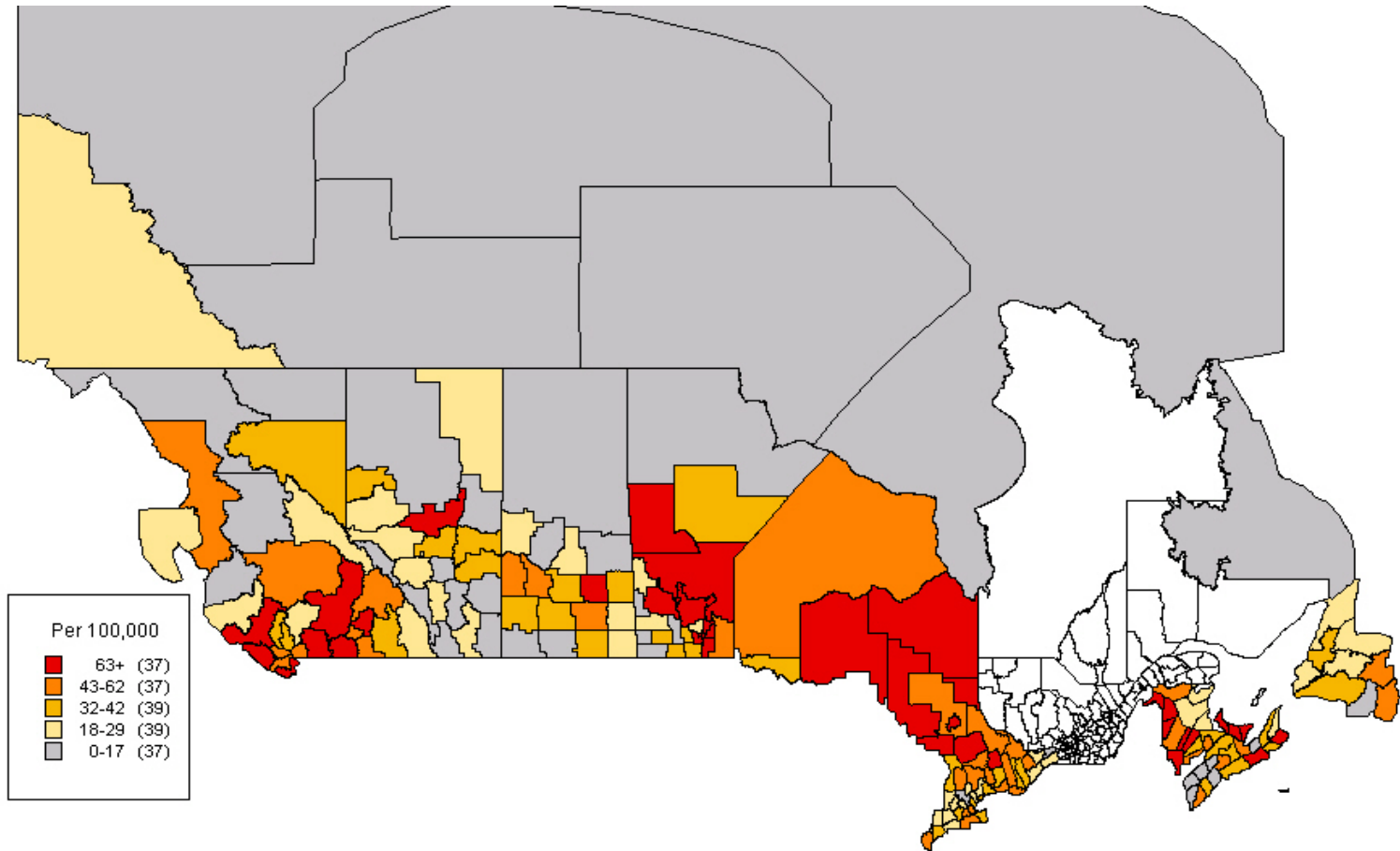
Small Area Variations in Health Care Delivery

Science 182, 117, 1102-8, 1973

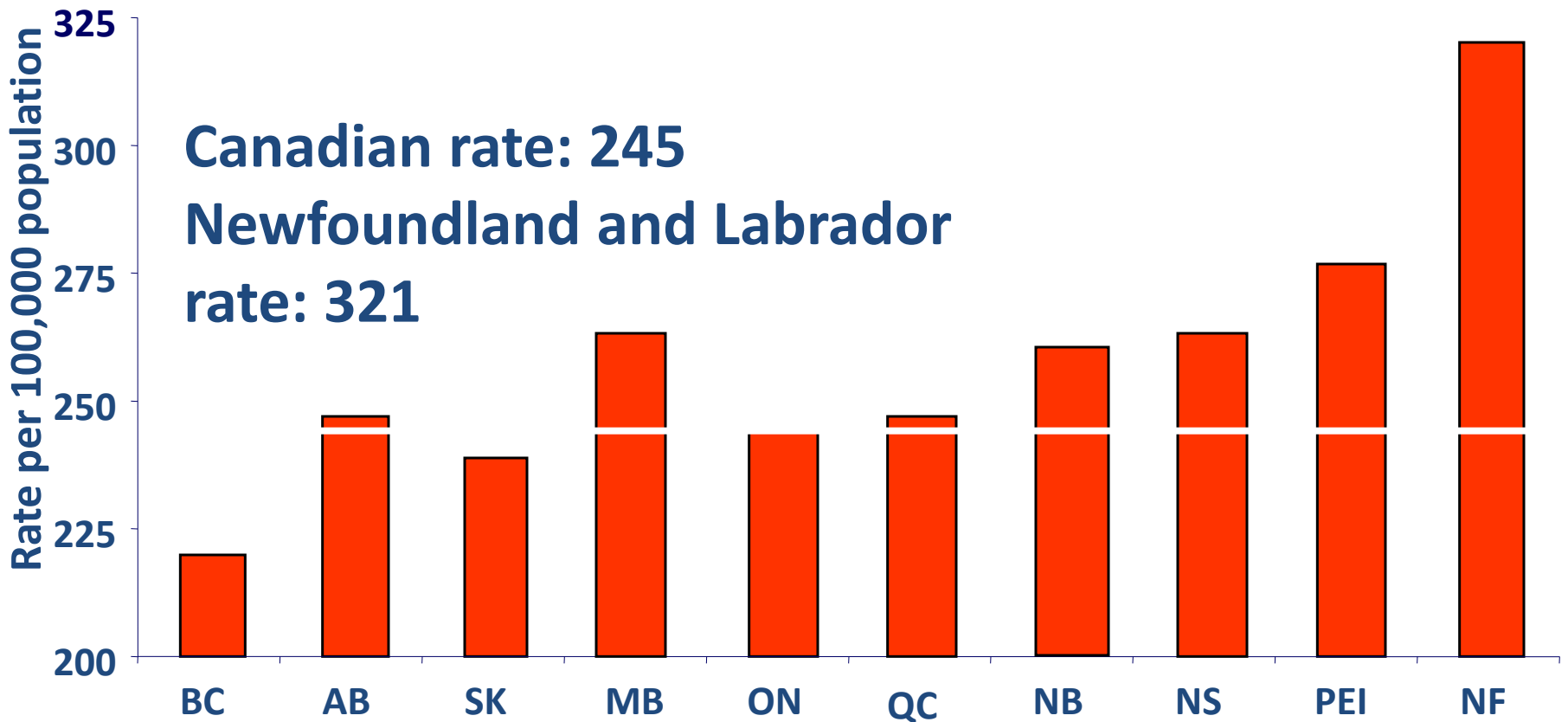
Wennberg, John and Gittelsohn, Alan

- Compared disease incidence with care provided in 13 regions in Vermont
- **3-5 fold variations** in the rates of low back surgery, hysterectomy, mastectomy etc, **but little variation in disease incidence**
- **Why?**

Rate of Carotid Endarterectomy in Canada by census division for 1996, age and sex- adjusted, ≥ 40 yrs



Age standardized Cardiovascular Disease (CVD) Mortality Rates per 100,000 adults in Canada, 1995-1997



W.A. Filate et al. Can J Cardiol
Vol 19 No 11 Oct 2003

Data from Statistics Canada

Question

Does more healthcare
spending produce better
health?

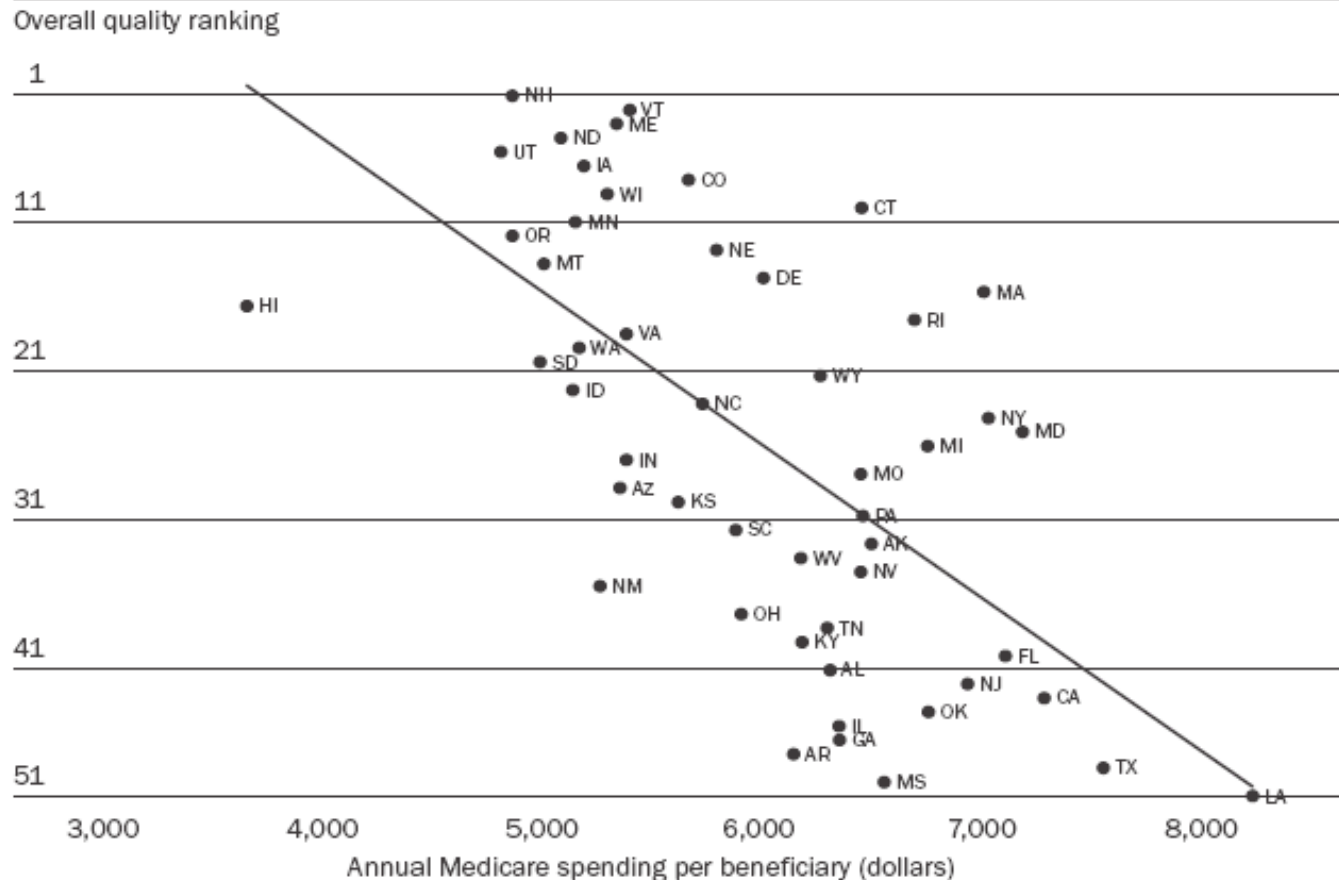
McAllen, Texas



Spending vs Outcome in McAllen, Tx

- 2nd highest Medicare spending per capita in US
 - McAllen - \$15,000
 - US average - \$7,450
 - El Paso - \$7,504
 - Rochester, MN - \$6,688
- McAllen's health status is far below average
- **“The most expensive piece of equipment is a doctor's pen”.**

EXHIBIT 1
Relationship Between Quality And Medicare Spending, As Expressed By Overall
Quality Ranking, 2000–2001



SOURCES: Medicare claims data; and S.F. Jencks et al., "Change in the Quality of Care Delivered to Medicare Beneficiaries, 1998–1999 to 2000–2001," *Journal of the American Medical Association* 289, no. 3 (2003): 305–312.

NOTE: For quality ranking, smaller values equal higher quality.

How do we measure Overuse? The Appropriateness Method



RAND/UCLA APPROPRIATENESS METHOD

- evidence from the literature is reviewed, rated and summarized
- set of scenarios is prepared covering all possible indications for the procedure
- expert panel rates the indications in two rounds, with discussion but no obligation to achieve agreement

RAND/UCLA APPROPRIATENESS METHOD

RATINGS

- 7-9 Appropriate (expected net benefit)
- 4-6 Uncertain (net effect uncertain)
- 1-3 Inappropriate (expected net harm)

MEASUREMENT

- retrospective chart review

The Appropriateness of Lumbar MRI



The Appropriateness of MRI

- Long wait times despite increased investment
- High utilization
- Difficult to determine appropriateness from the literature
- Clinical experience does suggest frequent inappropriate use

The Appropriateness of MRI

- Study done in 2 hospitals each in Edmonton and Ottawa
- Standard RAND/UCLA Appropriateness Method
- Patient data from requisitions and follow up as necessary with referring physicians
- Only MRIs of the head for headache and low back were assessed
- 500 cases in each centre for each condition

MRI Appropriateness Results

Appropriate Uncertain Inappropriate

Head for Headache	82.8%	8.2%	9%
Low back	44.3%	27.2%	28.5%

Emery, Shojania, Forster, Mojaverian & Feasby, JAMA Int Med 2013



How Can We Do Better in Healthcare?

Factors Driving Inappropriate Use

- Uncertainty as to the best intervention increases variation in use
- Physician incentives to do more, ie fee for service
- No disincentive for patients or doctors
- Patient demand

Patient Preferences for MRI Drive Consumption

Why do patients want MRIs?

- May provide the answer to troubling symptoms
- Free
- Safe
- Sexy

Therefore, let's have one!

What's a doctor going to do?

Improving Appropriateness

- “cockpit management”
 - prospective application of appropriateness criteria
 - no patient deemed inappropriate proceeds to surgery or imaging
- education, audit and feedback

Regional Auditing of Carotid Endarterectomy

- Appropriateness measured in 4 sequential audits of regional performance over 7 years in Edmonton, Alberta
- feedback to the surgeons of individual and group results plus educational sessions and provision of guidelines

Carotid Endarterectomy Audit

Year	'94-5	'96-7	'97-8	'99-'00
n =	291	184	249	222
Appropriate	33%	49%	47%	57%
Uncertain	49%	47%	51%	42%
Inappropriate	18%	4%	2%	0%
30 day M/M	5.2%	4.9%	4.4%	2.3%

Improving Appropriateness

- Change the incentives so that overuse is not rewarded and may be penalized
- Requires changing the reimbursement system
- Guidelines are **not** sufficient



RAND/UCLA APPROPRIATENESS METHOD

WHY?

- marked regional variation in procedure rate
- high quality evidence is lacking for many indications for medical interventions
- method needed to blend best evidence with expert opinion
- provide a contemporary measure of what is appropriate treatment