

MRI utilization: the Ontario perspective

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My perspective

- General internist in Hamilton
- Health services research/clinical epidemiology
- Appropriateness of diagnostic imaging use
- Ontario Wait Times MR/CT Expert Panel

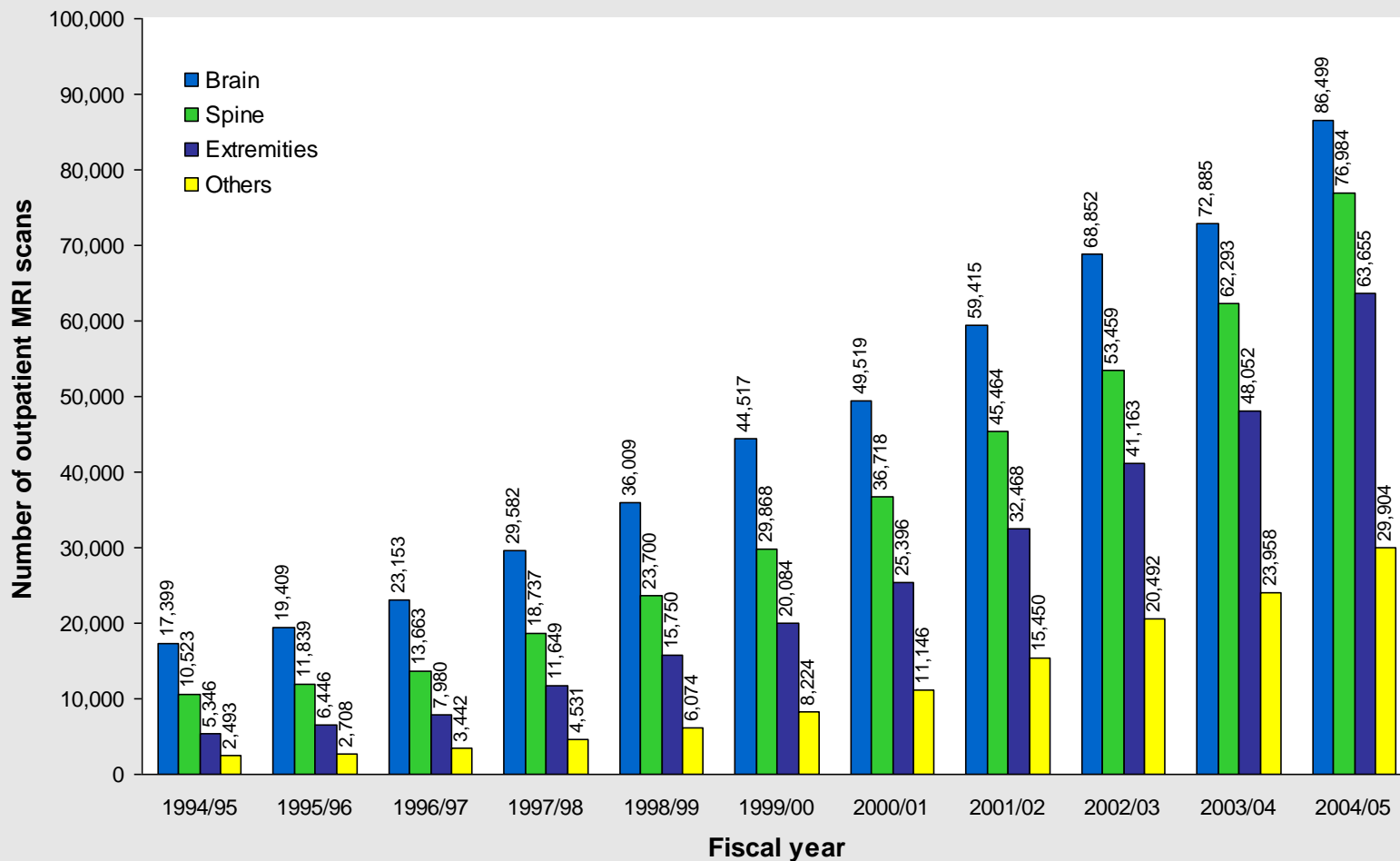
Concerns about wait times

- **Public and most docs:** since early 2000s major concerns about long waits in general, and CT and MRI scans in particular
- 10-year plan to strengthen health care (2004)
 - Cancer treatment
 - **Diagnostic imaging**
 - Cataract surgery
 - Cardiac procedures
 - Joint replacements

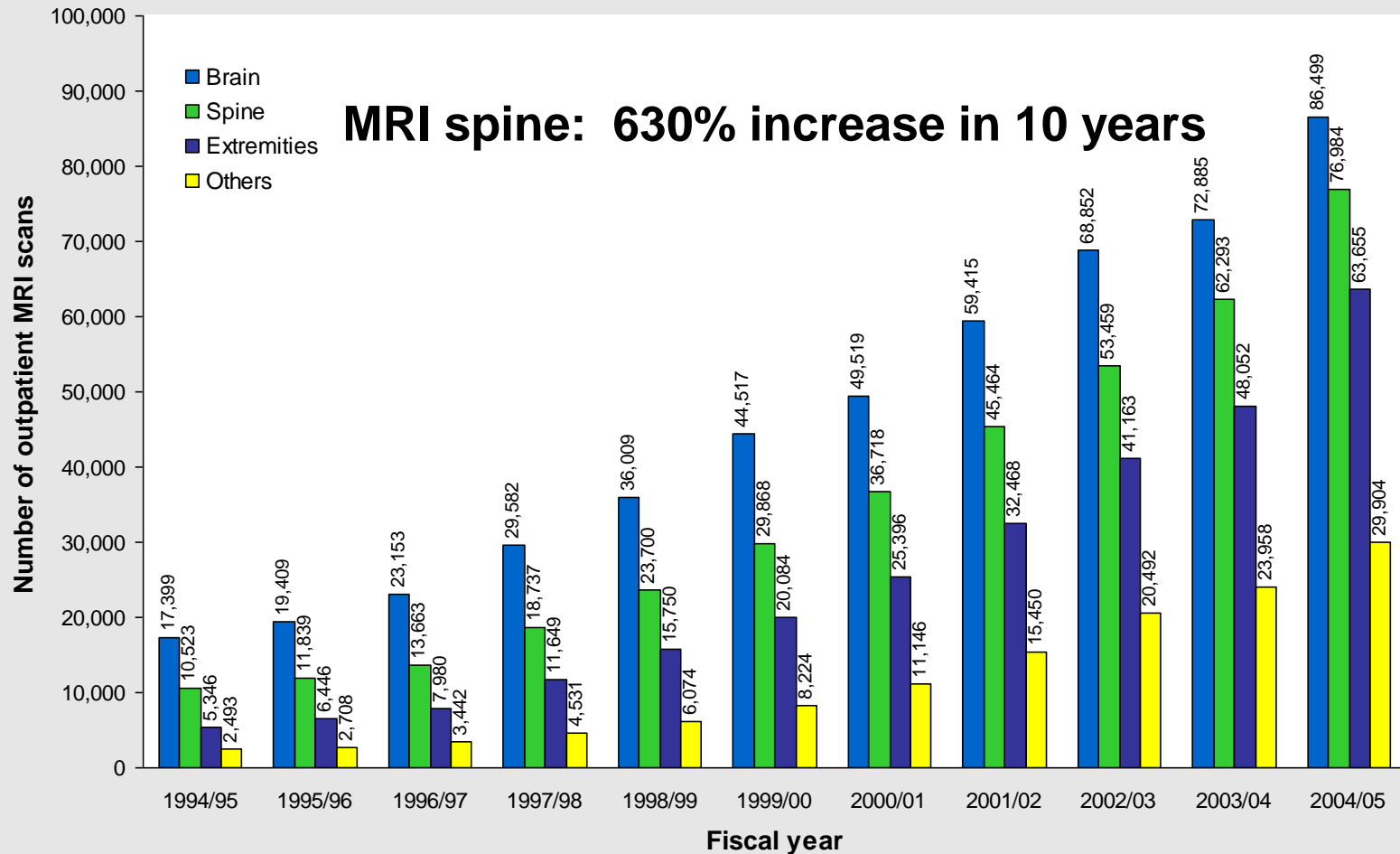
Efforts to improve access to CT/MRI

- Since 2004 in Ontario, \$118 million for MRI services
 - 8 new scanners in new locations
 - 7 new replacement scanners
 - Increased funding to increase efficiencies of existing scanners
- **However.....**

Annual number of MRI scans in Ontario 1994–2004 (“pre-Wait Times era”)



Annual number of MRI scans in Ontario 1994–2004 (“pre-Wait Times era”)



Ontario CT and MRI audit

- 20 hospitals providing CT
- 20 hospitals providing MRI
- From each hospital – 200 consecutive ***outpatients*** >18 y.o. (CT: brain, thorax, abdomen; MRI: brain, spine and extremity)
- 23,691 scans
- Recorded indications and results

Outpatient MRI audit

- MRI spine (approx 4,000 scans) ordered by:
 - Family physicians (40%)
 - Neurologists (20%)
 - Spine surgeons (20%)
 - Other (20%)

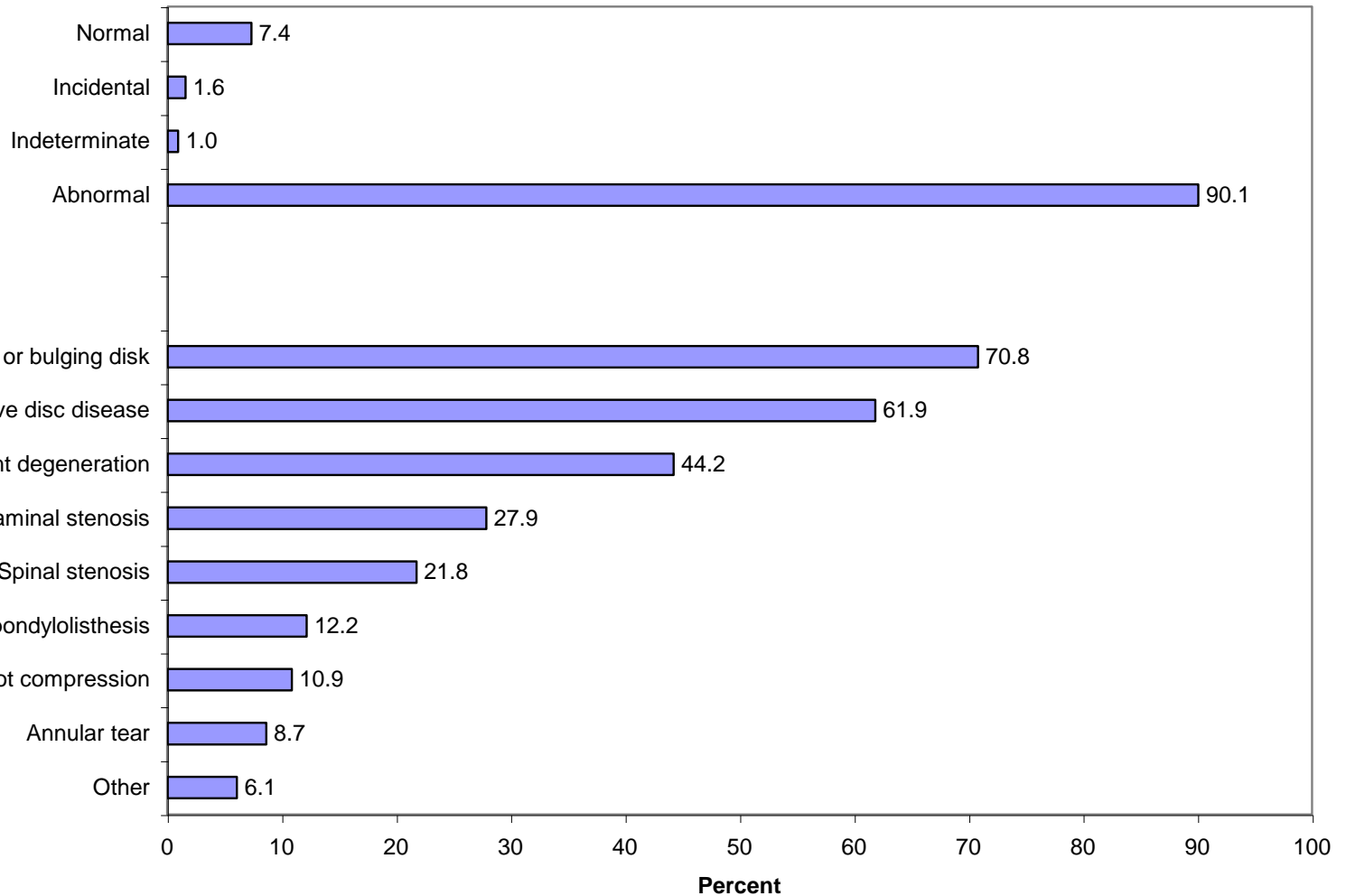
Ontario CT and MRI audit

Most frequent indications:

- MRI brain: suspected cancer
- **MRI spine: back pain**
- MRI extremity: knee pain / meniscus tear
- CT brain: headache
- CT chest: cancer follow-up
- CT abdomen/pelvis: cancer follow-up

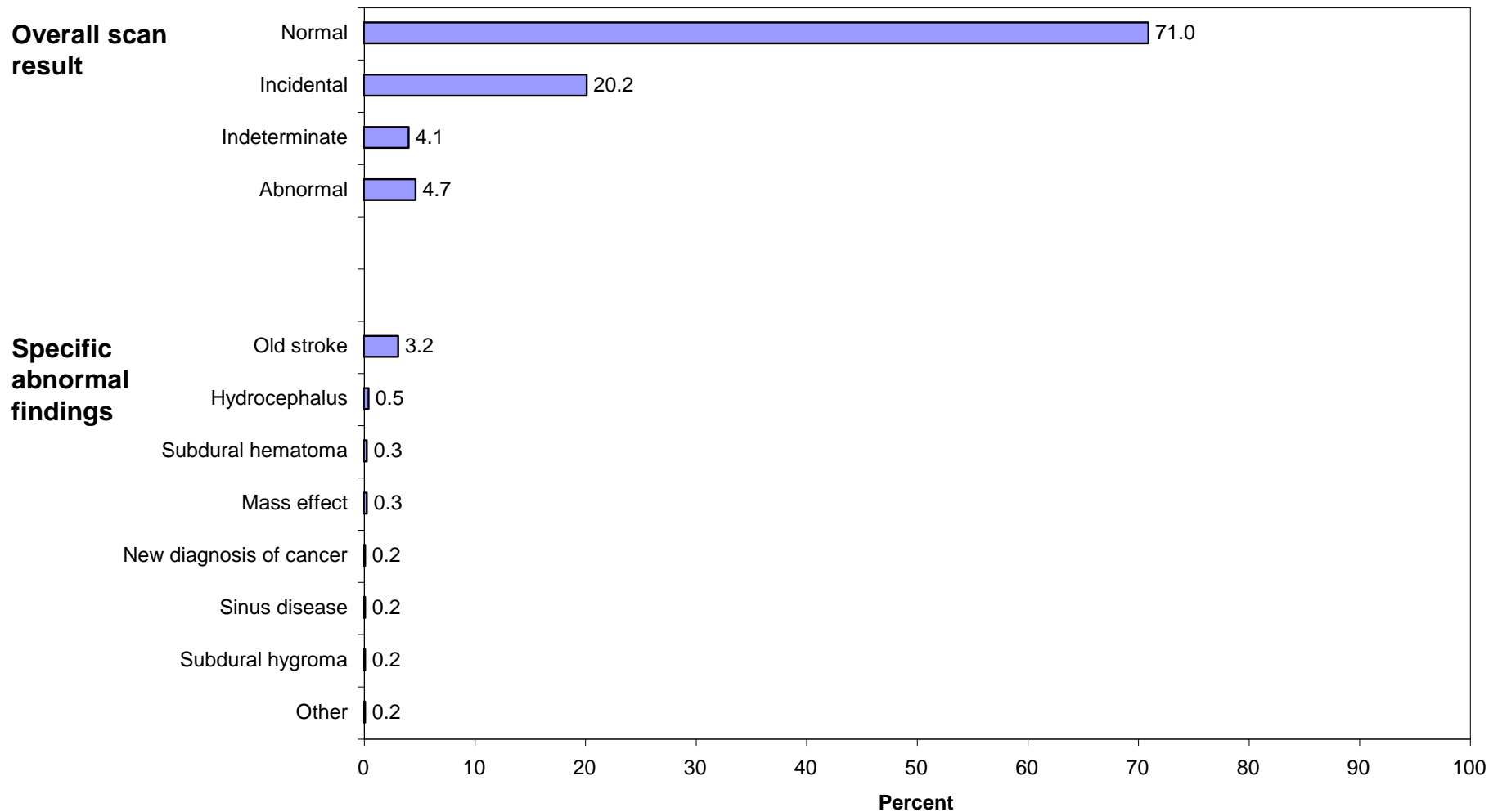
Scan results: MRI Spine for back pain (n=312)

Overall scan result

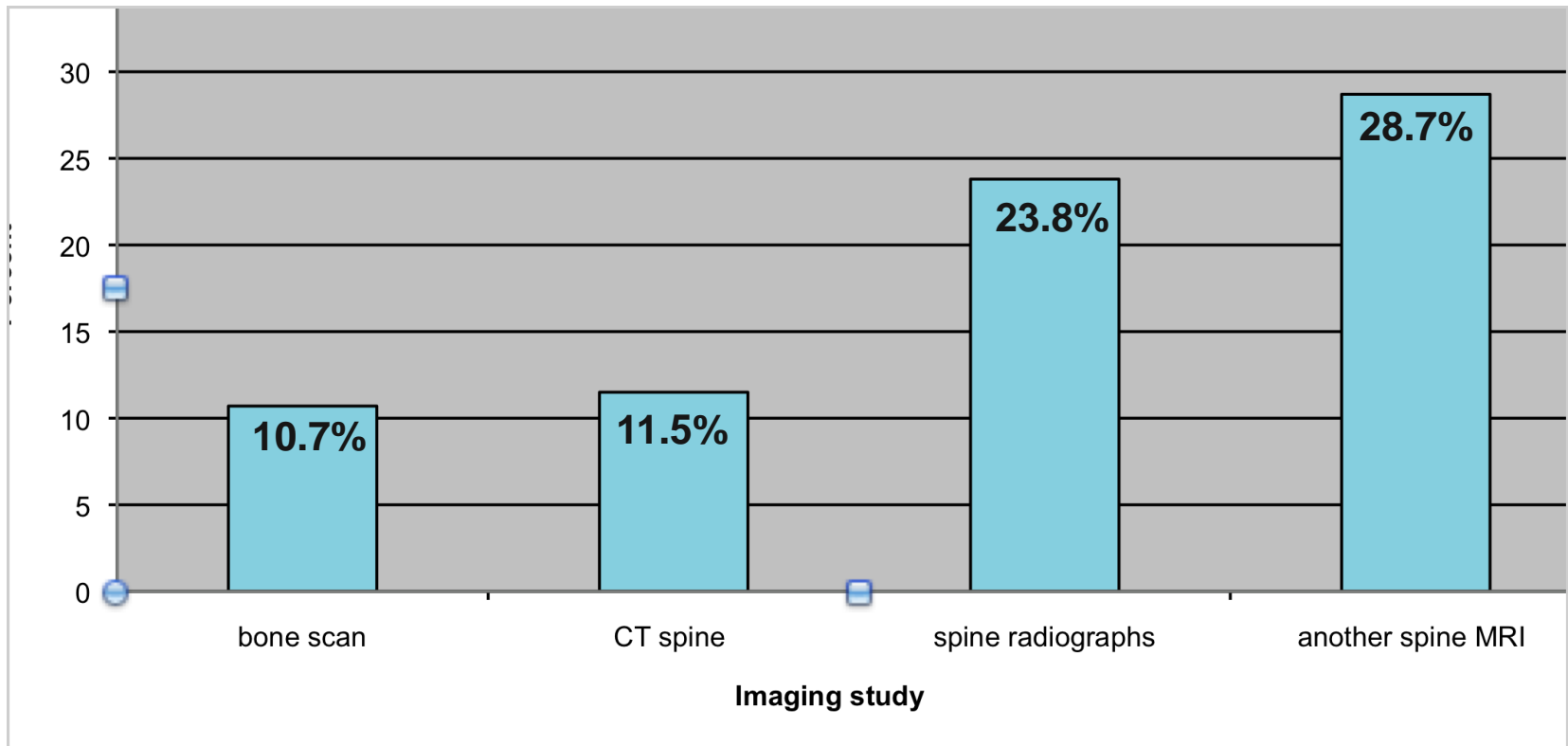


Specific abnormal findings

Scan results: CT Brain for headache (n=634)

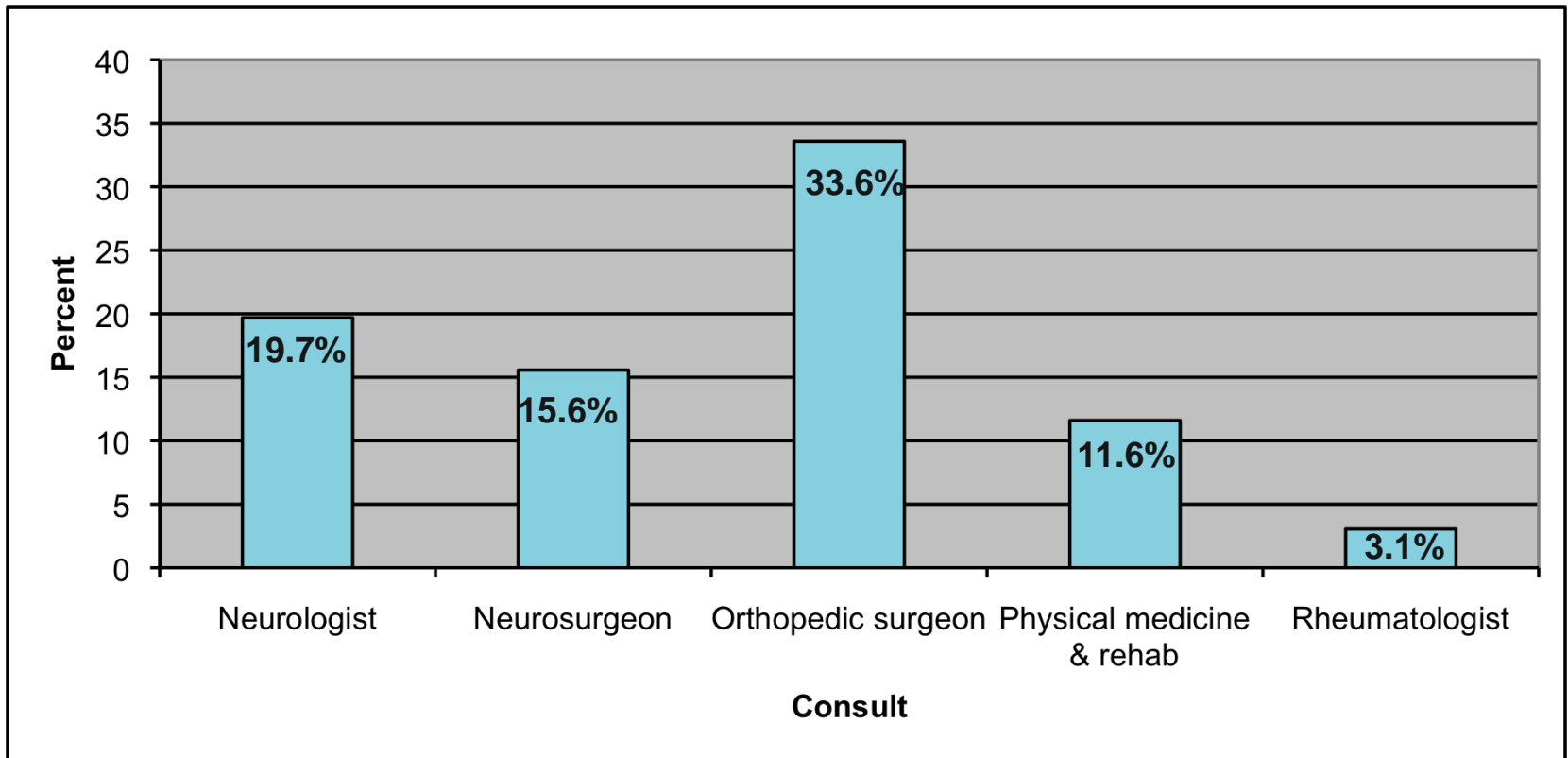


Subsequent Imaging to the Index MRI



Specialist Referral

Frequency of specialist referral during 3 years follow-up:



Surgical Intervention

- 6.7% of patients received spine surgery within 3 yrs of index MRI

Selected reactions to our results

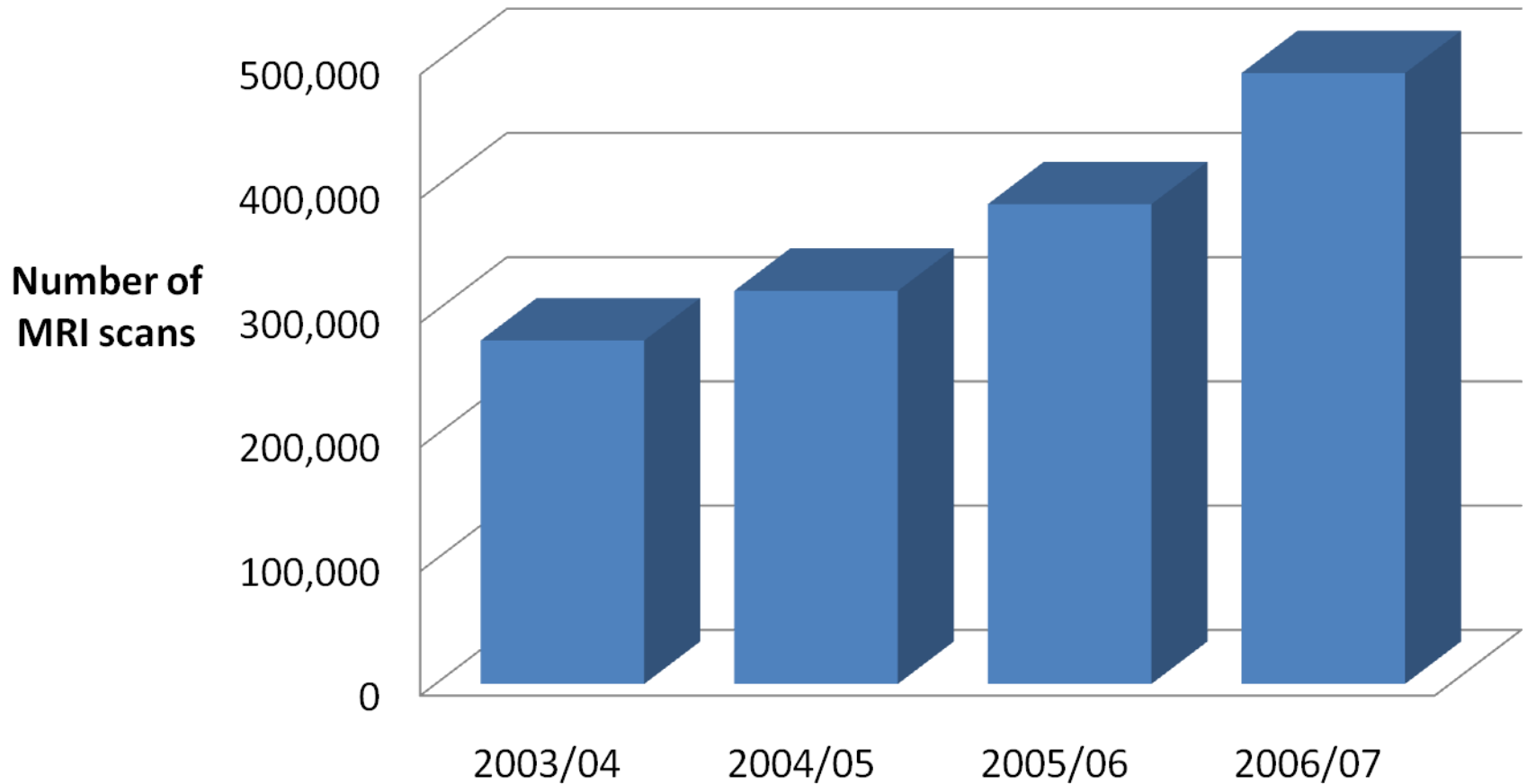
- “I am spending most of my time explaining to patients with back pain, who should never have had an MRI, why they do not need surgery”
- “The spine surgeons won’t see my patient without an MRI”
- A general sense of a poorly coordinated system, with the individual components blaming the others for the problems, not clearly leading to better care with increased capacity

Summary of phone interviews

Reasons for ordering MRI

- Patient demand / patient reassurance / persistent unexplained symptoms (e.g. chronic LBP)
- Very abnormal sounding imaging reports
 - Large disc herniation
 - Indentation of cauda equina
 - Severe degenerative disc disease, etc.
- Defensive medicine
- Replacement / requirement for surgical consult
- Supply-induced demand

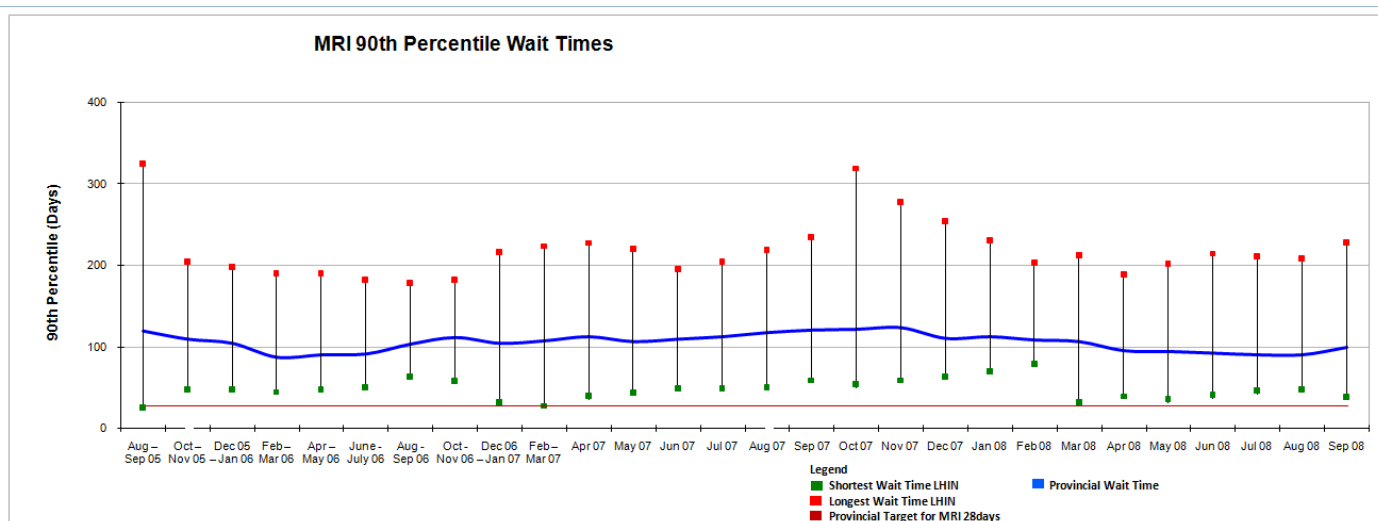
Supply sensitive care: MRI in Ontario?



Impact of increased capacity on wait times?

Very little

Impact of increased capacity on waits for MRI

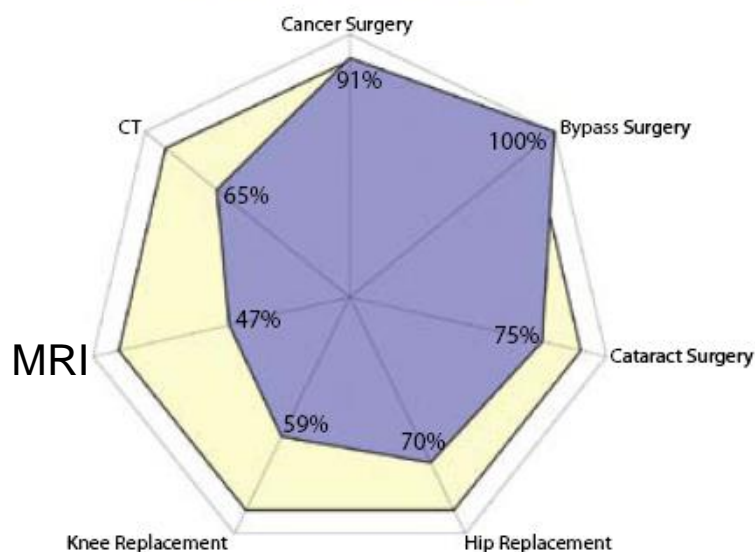


MRI LHIN Wait Times - Sep 08	
LHIN	90th Percentile Wait Time
Erie St. Clair	96
South West	139
Waterloo Wellington	70
Hamilton Niagara Haldimand Brant	73
Central West	39
Mississauga Halton	115
Toronto Central	87
Central	108
Central East	96
South East	105
Champlain	229
North Simcoe Muskoka	101
North East	76
North West	82

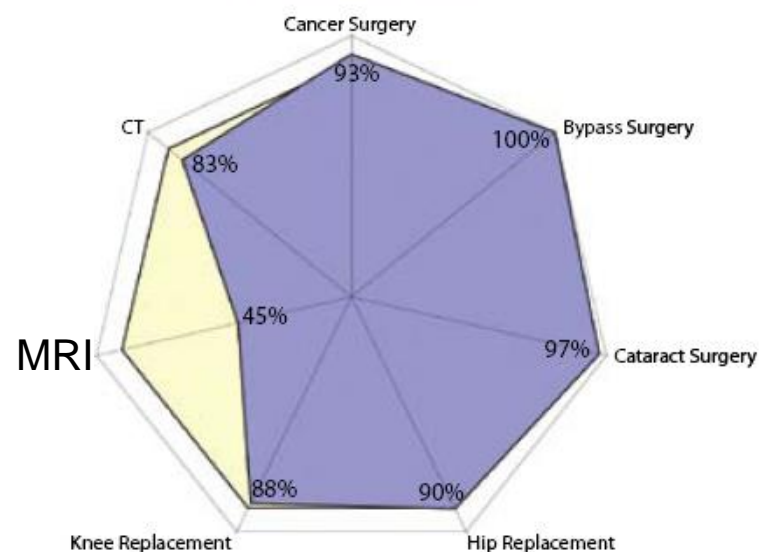
Wait Time Targets in Ontario

Procedures Completed Within Provincial Access Targets - 2005 vs 2008

August/September 2005



September 2008



Supply sensitive care:
“If you build it, they will come”



Increasing appropriateness of MRI use

Challenge

Solution

Failure of knowledge transfer

Computer decision support / Health IT

Weak evidence base

Change regulatory requirements

Wrong incentives

Re-align incentives

“Gizmo idolatry”

Education about pros and cons of diagnostic imaging

Failure to understand causes of “overuse”

Evaluate drivers of test-seeking and test-ordering behaviour

Conclusions

- Appropriateness is a very important issue to consider as we reduce waiting times
- Too much capacity could lead to more inappropriate procedures
- We need to invest more resources in collecting data to measure, and ultimately increase, appropriateness

CT and MRI in Ontario

- **Ministry of Health:** concerned about wait times but puzzled by apparent contrast between worsening wait times and increased capacity, and asking questions about appropriateness
 - “is this good value for money?”
 - “is more really better?”
- Wait times are a convenient political target, but what about *appropriateness*?