Original Version: June 2008

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Sunnybrook
TORONTO SUNNYBROOK REGIONAL CANCER CENTRE

CRC Surgery Educational Slide Deck

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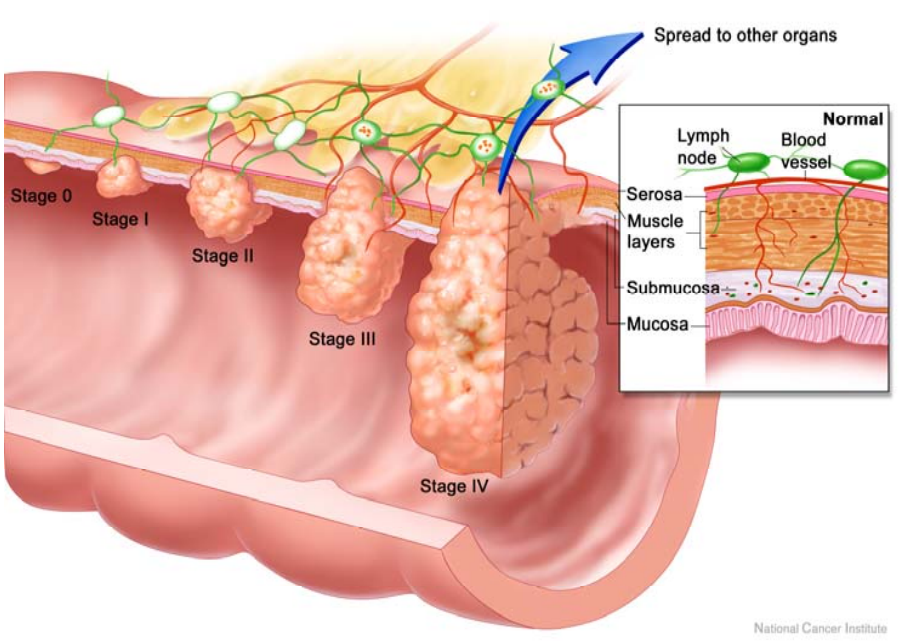
Better cancer services every step of the way

Staging

- Our group has made a major contribution re ‘N-issues’
- We are in the process of making a contribution re ‘T-issues’



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Guidelines for CRC Surgery

The minimum number of lymph nodes that should be assessed is:

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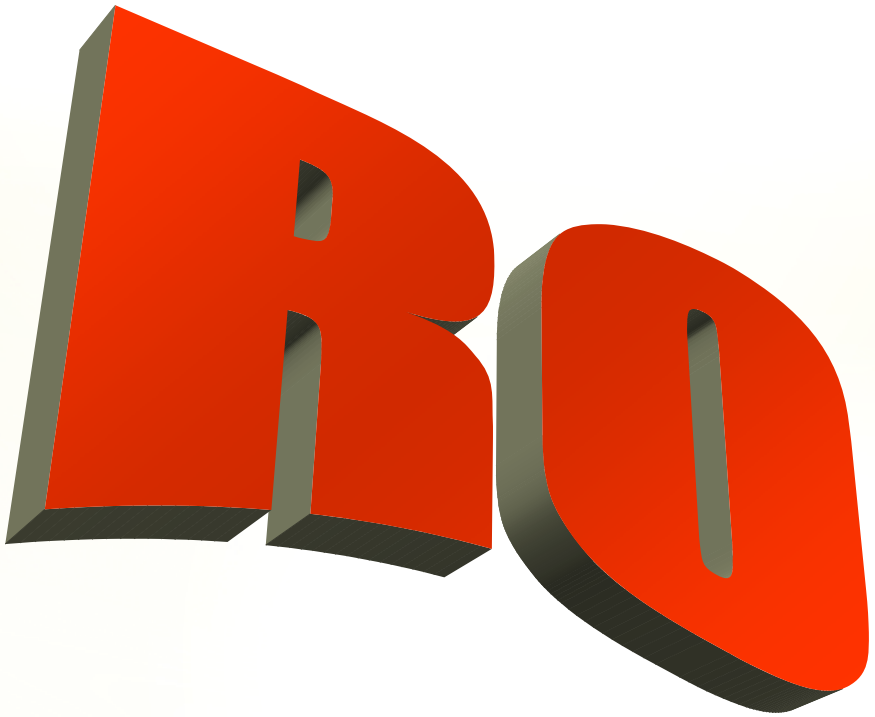
Guidelines for CRC Surgery

Your resection has to achieve:



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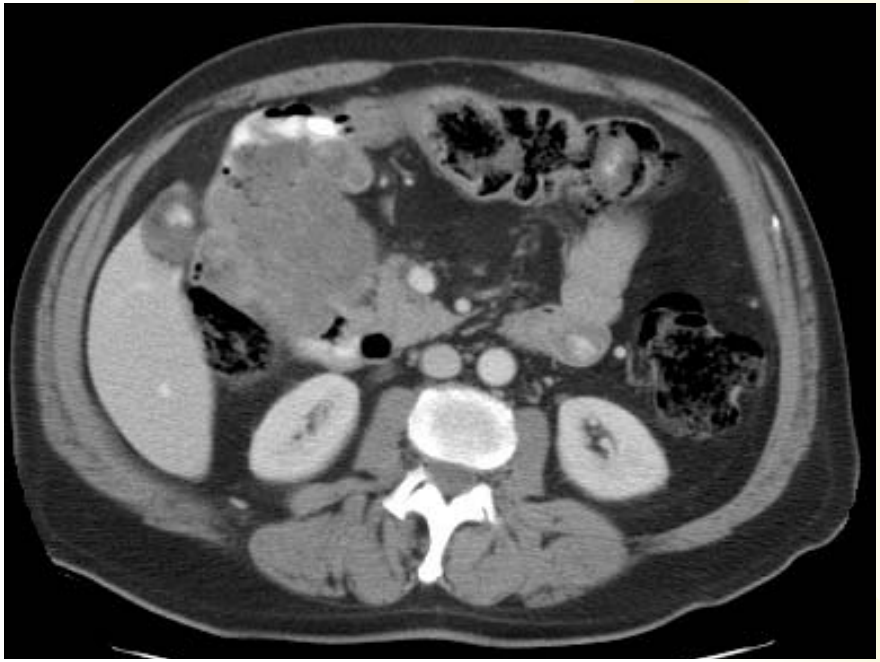
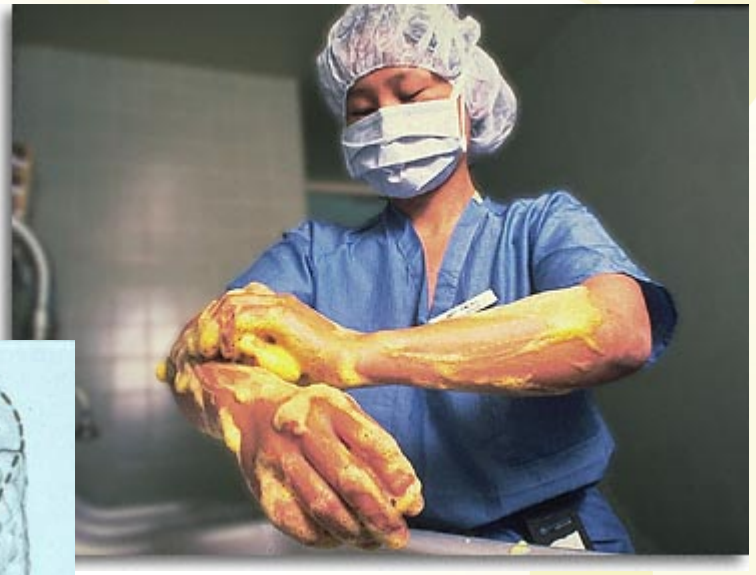
“T”Challenge: Margins

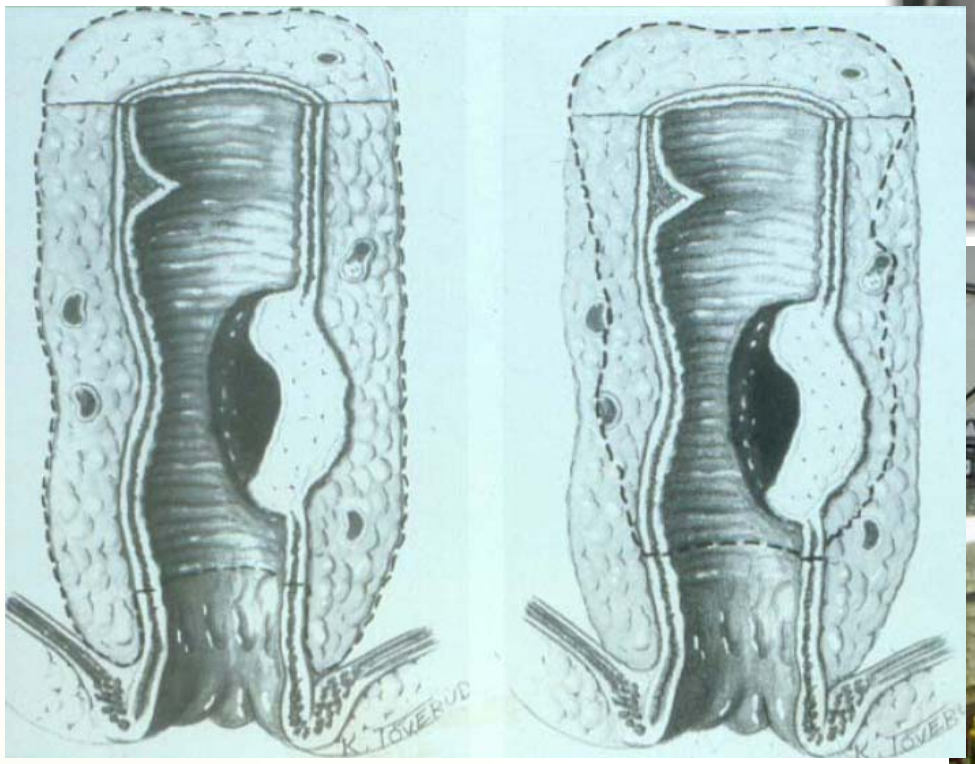
- **T4 CRC (AJCC 6th)**
  - Tumour located on the serosal surface as a result of direct extension through the wall of the colon or proximal rectum and/or lesions that directly invade other organs or structures
- 5 -15 % of patients with CRC have locally advanced disease at initial presentation



T4a N0 M0

It’s a Team Sport!





Barriers to Optimal Assessment

- Knowledge of guidelines re lymph node assessment is sub-optimal
- Is there a similar problem for margin?
  - Surgical decision making
  - Pathological assessment

Wright et al Am J Clin Pathol. 2004:121;663

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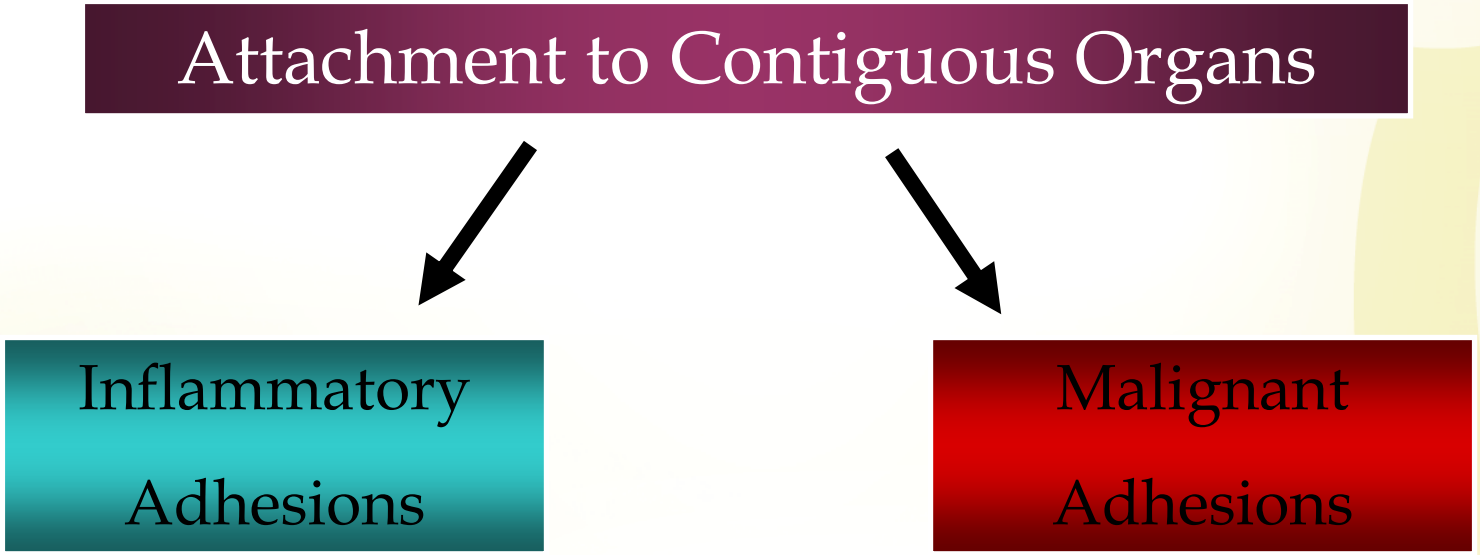
Conundrum

- This tumour is stuck to the duodenum.
- Can I ‘get away’ with ‘cracking the tumour off’ the adjacent organ?
- It’s probably just inflammation, right?

Does the CRC invade the adjacent organ?



- Malignant adhesions present in 25 - 84% of tumours
- A surgeon cannot reliably tell which adhesions are malignant before resection

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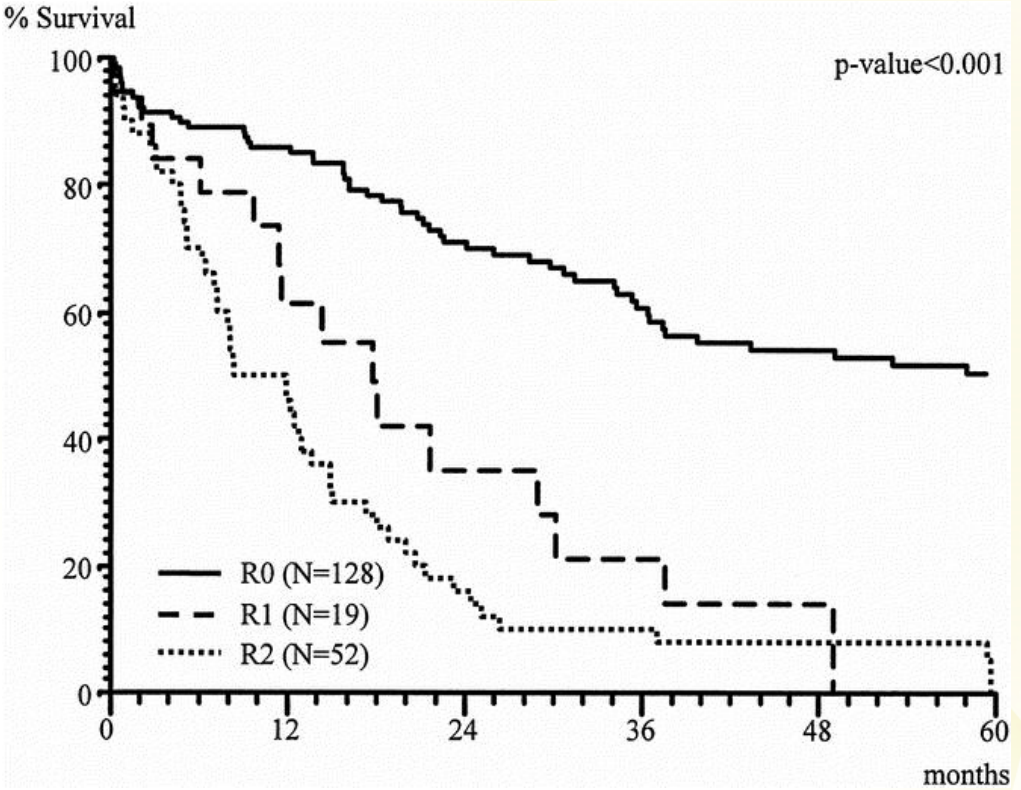
CRC cure requires R0 excision

- In-continuity multivisceral resection is required to achieve R0 (negative margin) resection[1]
- Poor results if adherent organs “chipped off”[2,3]
  - local recurrence: 69% vs. 18%
  - 5 yr survival: 17% vs. 49%



1.Lehnert et al. Annals of Surgery. 2002

2.Hunter et al. Am J Surg. 1987

3.Gall et al. DCR. 1987

Guidelines for *En Bloc* Resection of Adherent Tumors

- *En bloc* resection….
  - the ideal surgical method
  - can achieve survival rates similar to CRC that does not invade an adjacent organ
- If a tumor is transected at the site of local adherence
  - resection is not complete

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Guidelines 2000 for CRC Surgery JNCI 2001

JOURNAL OF THE NATIONAL CANCER INSTITUTE
JNCI CANCER SPECTRUM

Population-based Assessment of the Surgical Management of Locally Advanced Colorectal Cancer

Govindarajan A, Coburn N, Kiss A, Rabeneck L, Smith AJ, Law CHL

JNCI 2006

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Suboptimal management of T4 CRC in Ontario

..the small bowel was stuck down to this mass in the right lower quadrant. I gradually mobilized this cracking through very thickened tissue that looked as if it was probably a malignancy."

SSO 2006

Peter Stotland U of T GS 2007

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Major Findings

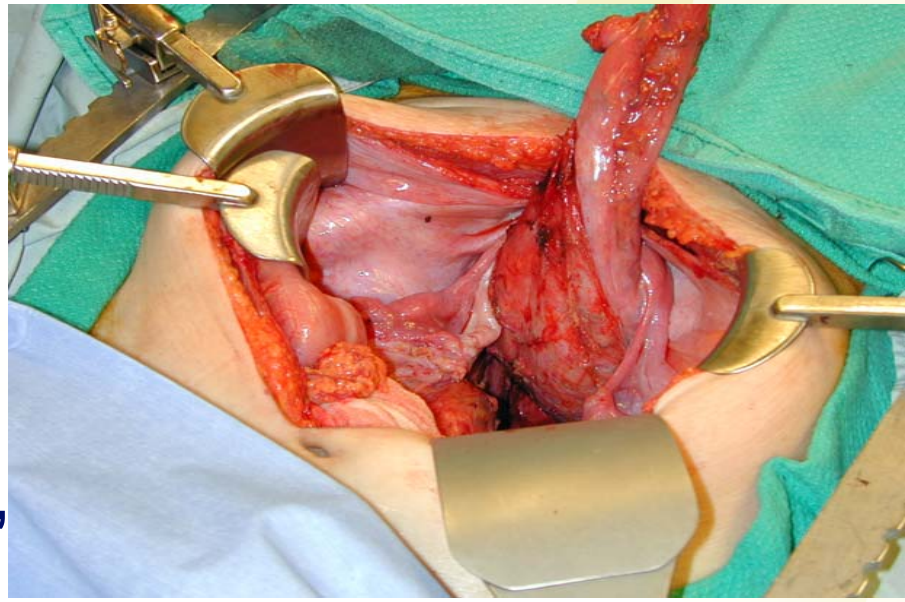
- Approximately 1 in 5 pT4 lesions were resected with a R1/2 excision and disease recurrence was more frequent in this group
- Operative reports frequently suggested violation of surgical oncologic principles
- Further study is needed to define factors that impact decision-making and surgical treatment of locally advanced CRC

Pitfalls observed in Ontario

1. Failure to recognize locally advanced nature of tumour
   - intra-operative surprise
2. Not using pre-operative therapy
   - rectal cancer
3. ‘Cracking’ or ‘chipping’ the tumour off contiguous organs
4. Failure to recognize resectability

Rectal cancer: Circumferential margin is the key

- TME technique impacts margin status
  - Reduce LR from 25-30% (blunt) to 10 to 15% (TME)1
  - “Single digit” rates of LR reported from large, speciality units with TME only



1. Havenga, Enker et al Eur J Surg Onc 1999

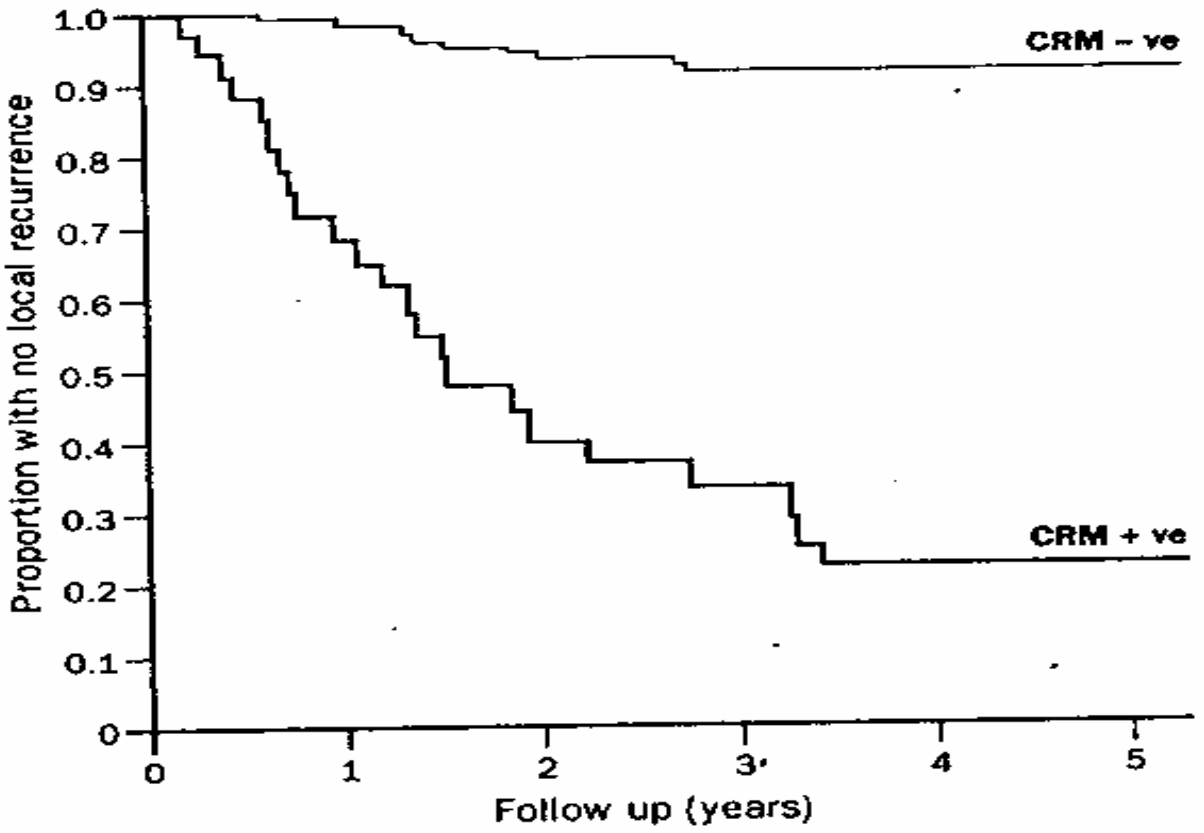
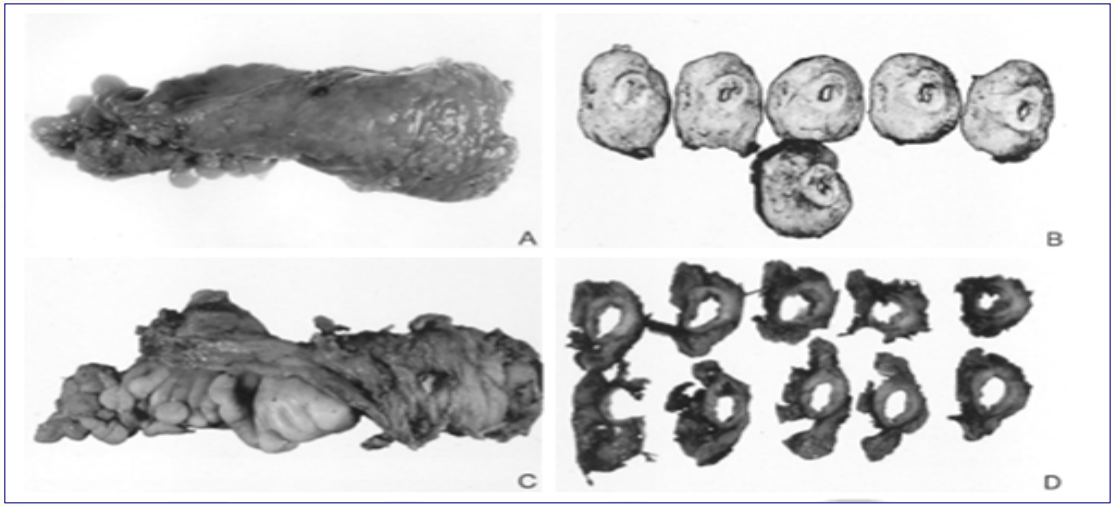


Figure 1: **Cumulative frequency of local recurrence comparing presence or absence of tumour at circumferential resection margin (CRM) in patients who had potentially curative resection**

Adam et al. Role of circumferential margin involvement in local recurrence of rectal cancer. Lancet 1994; 344:707-11.

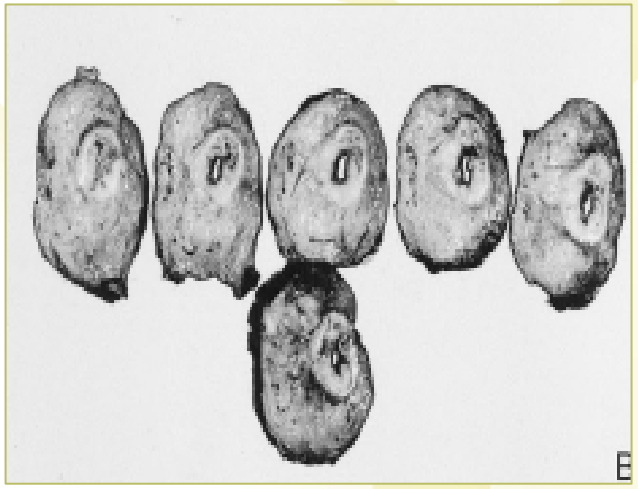
Operative quality is the most important aspect of rectal cancer management

- Local recurrence =
  - a failure to achieve clear margins
  - a failure to preserve an intact mesorectum
- Integrity of the mesorectum has evolved into a marker of operative quality



Grading the mesorectum

- 130 pts (2001-2003) curative TME resections
- Mesorectum graded:
  1. little bulk, defects down to muscularis propria
  2. moderate bulk, irregular surface, no visible muscle
  3. intact, smooth, no defect >5mm



MR grade vs Recurrence

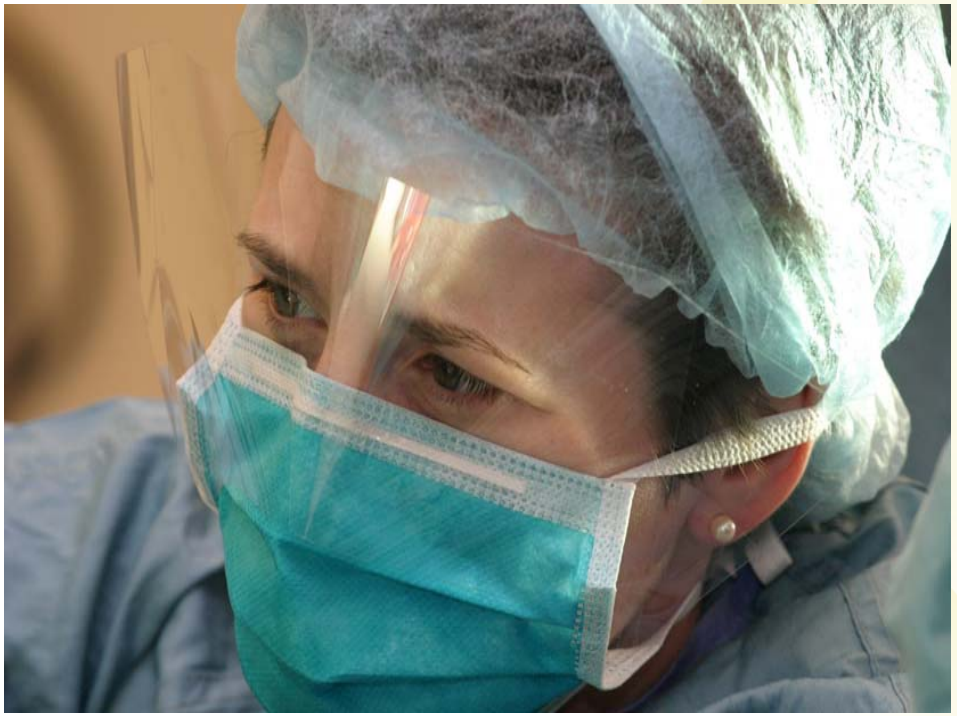
MR grade	Total patients	Local recurrence	Overall recurrence
1	17	7(41%)	10(59%)
2	52	3(5.7%)	9(17%)
3	61	1(1.6%)	1(1.6%)
p		0.0001	0.0001

Maslekar S, et al. Dis Colon Rectum 2007;50:168-175

Fixing the problem

We helped fix the lymph node problem in Ontario?

Can we help do the same for margin issues?



Frances Wright Queen's GS 2001

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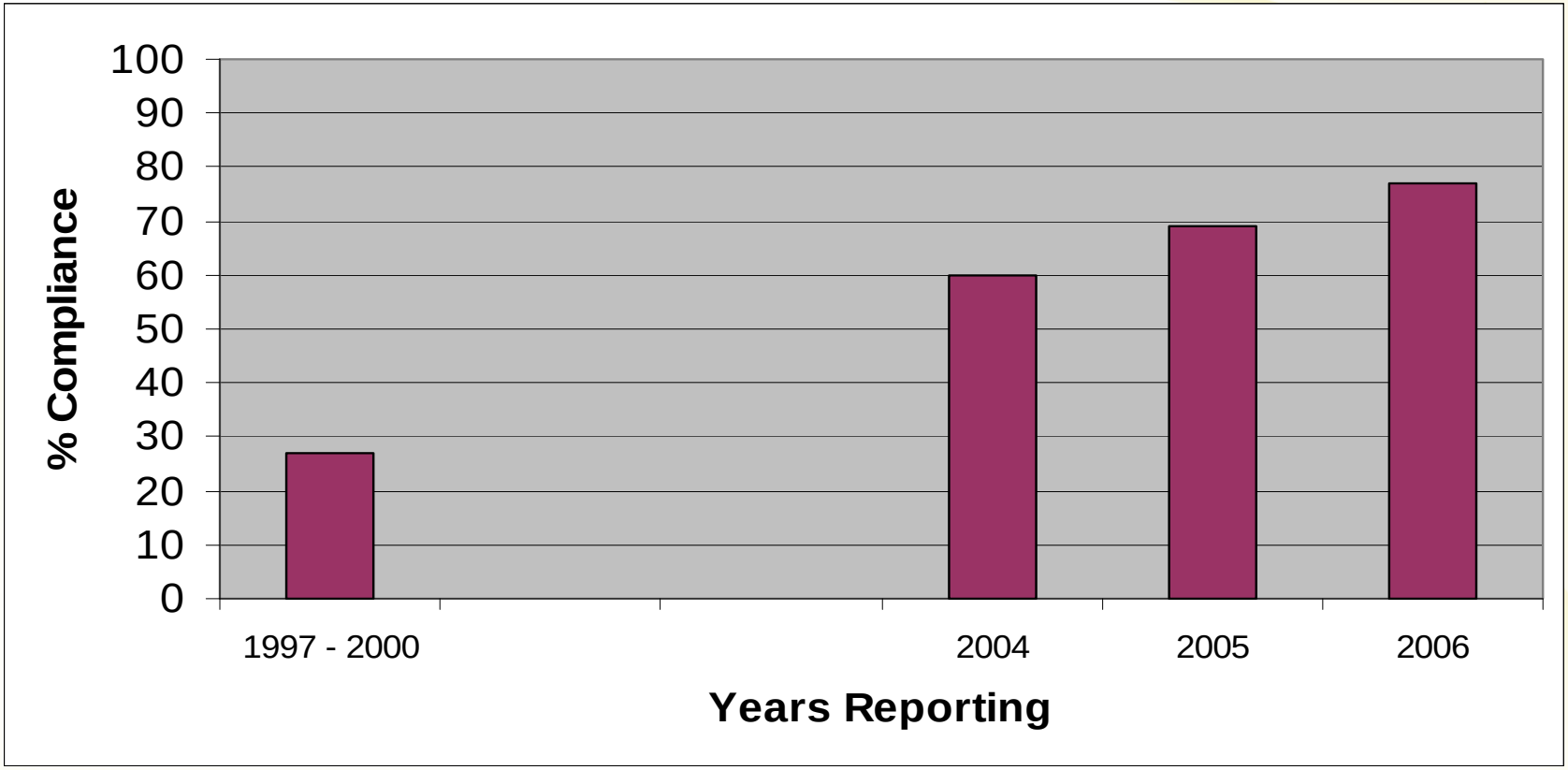
Compliance with Lymph Node Retrieval Guideline – Ontario Data



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program in evidence-based care
a cancer care ontario program

programme de soins fondé sur des preuves
un programme de action cancer ontario

Optimization of surgical and pathological quality performance in radical surgery for colon and rectal cancer: Lymph nodes and margins

Smith AJ, Driman DK, Spithoff K, McLeod R, Hunter A, Rumble RB, Langer B, and the Expert Panel on Colon and Rectal Cancer Surgery and Pathology

A Quality Initiative of the
Program in Evidence-Based Care (PEBC), Cancer Care Ontario (CCO)

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‘Knowledge Translation’ Initiative

- “Road show”
  - To be done by leaders in community/LHIN
  - Common talk
    - Video clips emphasizing interaction of surgeon and pathologist
  - Trained at central site
  - Training funded by grant
- Complementary on-line case presentation and discussion
  - Cases that emphasize key points

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‘Knowledge Translation’ Initiative

- Margin data presented to hospitals
- Emphasize surgeons, pathologists, administrators
  - Margin assessment rate
  - Quantitative, qualitative
    - M. Raby
- Co-ordinate with MCC initiative
  - Bring in radiology
  - M. Atri

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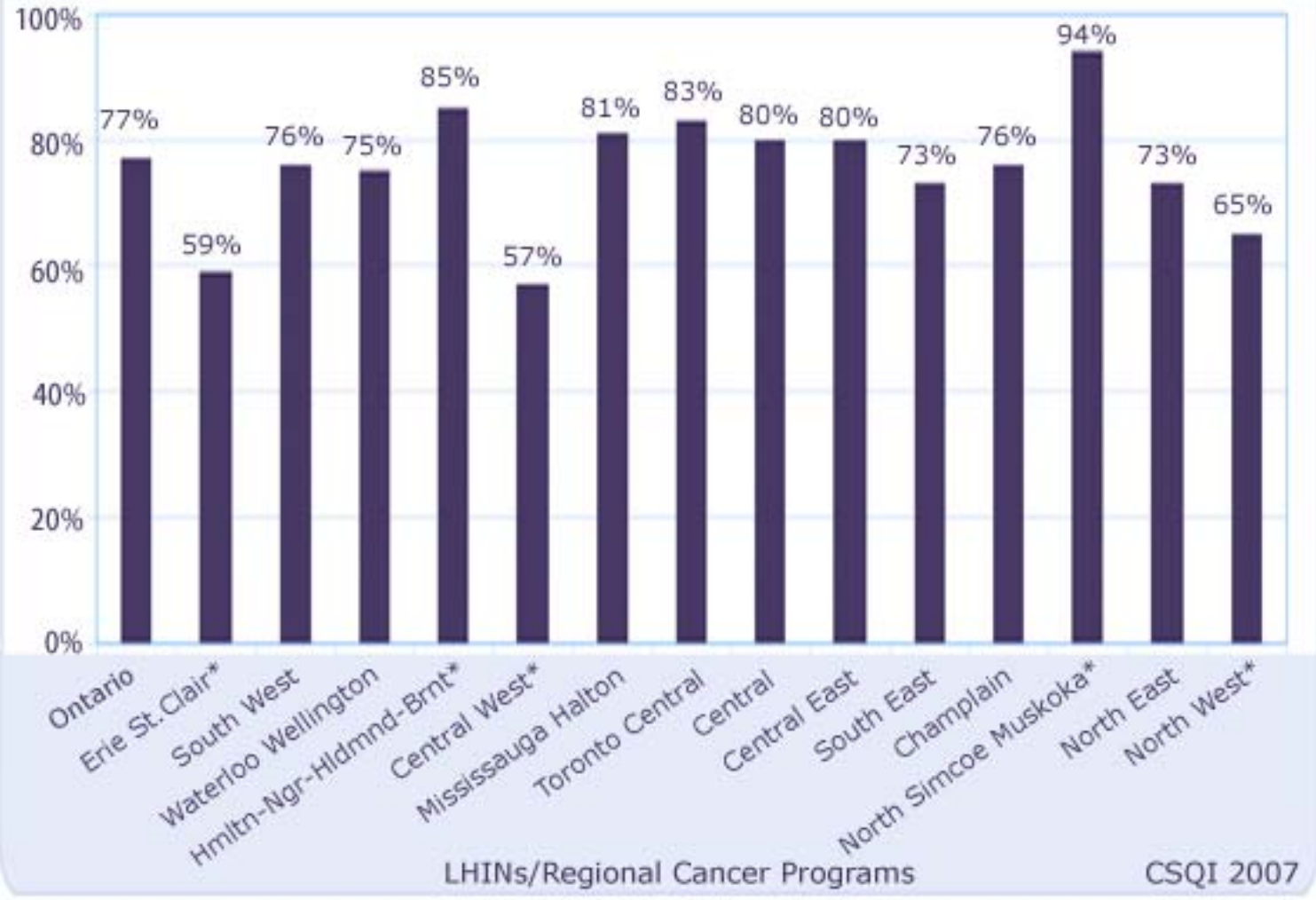
Use of Clinical Practice Guidelines - colorectal cancer surgery

Percent of colorectal cancer resections with 12 or more lymph nodes reported, by LHIN, Sept 1 - Oct. 31, 2006

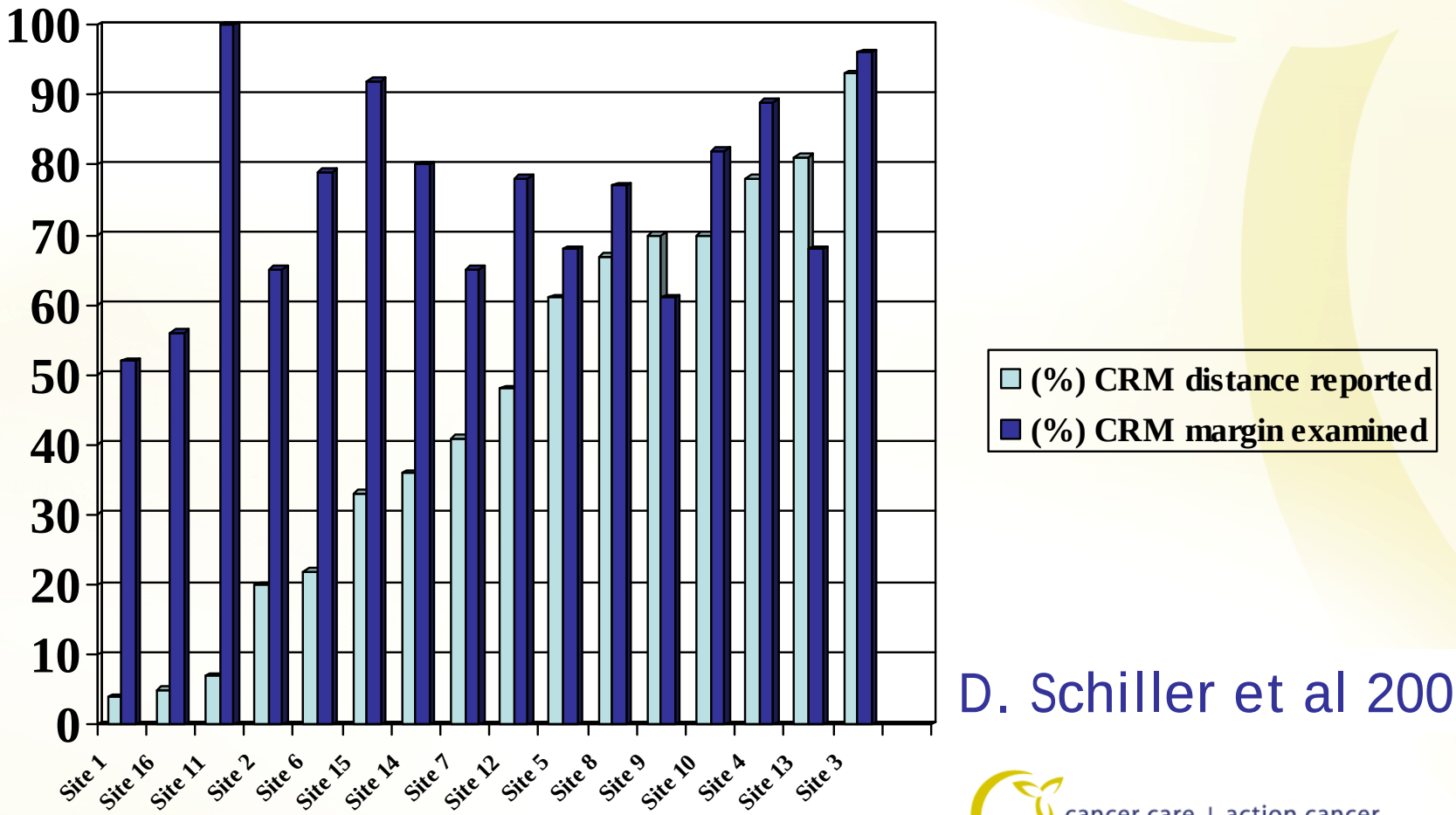


Source: Cancer Care Ontario, Pathology Information Management System (PIMS). Based on a sample of 772 pathology reports for colorectal cancer resections, Sept 1 - Oct. 31, 2006.

Notes:

1.*Significantly different from the provincial average

CRM reporting in Ontario pathology units



D. Schiller et al 2007

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What makes a good quality indicator?

- The indicator measures an intervention or treatment with potential health benefits for the patient
- The indicator is supported by adequate scientific evidence or professional consensus
- The elements of the indicator are under the control or influence of the health care provider
- The elements of the indicator is information typically found in the medical record, where absence would be considered poor quality