A National Standard for Stage in Canada:

Early Results from Selected Canadian Provinces for Collaborative Stage in Breast & Colorectal Cancer

NAACCR Annual Meeting Presentation

June 22, 2010 – Quebec City

Prince Edward Island Cancer Treatment Centre
Guiding your journey through cancer care

CancerCare MANITOBA

Cancer Care Nova Scotia

Outline

- Stage Collection in Canada
- Project Overview
- Results
- Observations

Canadian Staging Activity

- Long history of cancer registration
  - 1935~1970 Provinces/Territories
  - 1964 National
- 1992 – national registry overhaul
  - New standards; move to person-based database
  - No agreement on stage data standard
    - Some stage data at provincial levels
- 2003 – decision to establish first stage data standard
  - Coincided with development of CS

Canadian Staging Activity

- Making it happen
  - Setting the standard was the easy part....
- Significant increase in data collection
  - Limited new resources
    - No hospital registrar infrastructure in Canada
    - Access to stage data at population level a challenge in some jurisdictions
    - No Canadian staging 'experts' to assist with training and support
- Data systems largely home grown and not built to support CS
- So it has taken time to move forward...

Project Overview

- **Proud of our accomplishments**
  - Time to show our progress
- **Stage data not yet available nationally**
  - Contacted provinces with multiple years of data for at least 3 disease sites (breast, colorectal, lung)
  - Outlined study dataset - individual level records (e.g. disease/histology, age at diagnosis, sex, diagnostic method, all CS variables)
  - Set up data release agreements
  - Central analysis in NS

Results – Summary

- 3 Provinces – dataset represents all incident cases, 26,500 + cases
  ~7.4% of national incident cases (2009)
  ~6.7% sample of Canadian population (2009)

- Manitoba (MB) 2004 – 08 100%
- Prince Edward Island (PE) 2005 – 08 100%
- Nova Scotia (NS) 2004 – 08 97%

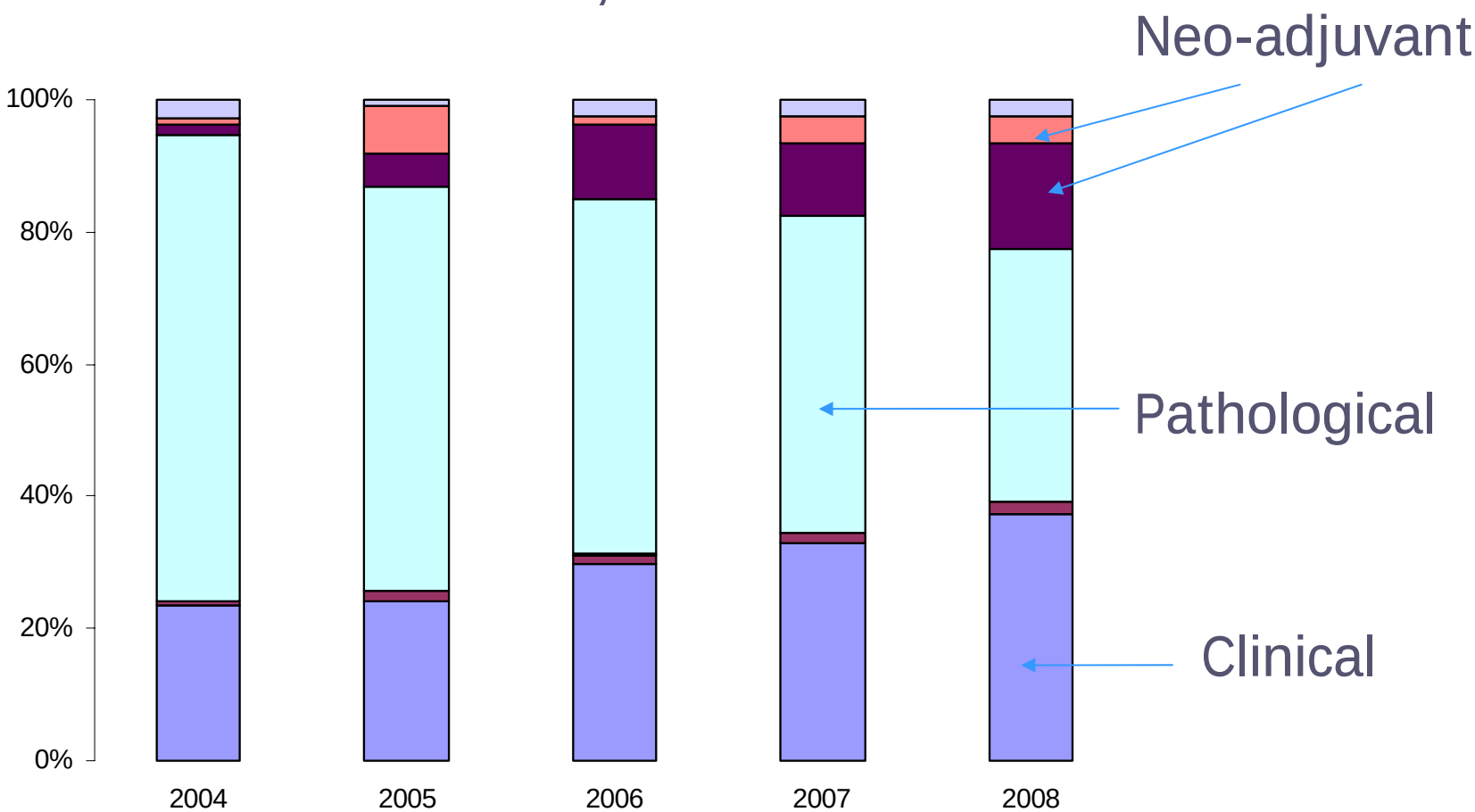
CS Core Variables

- 6 data variables combine to compute TNM, and stage groupings

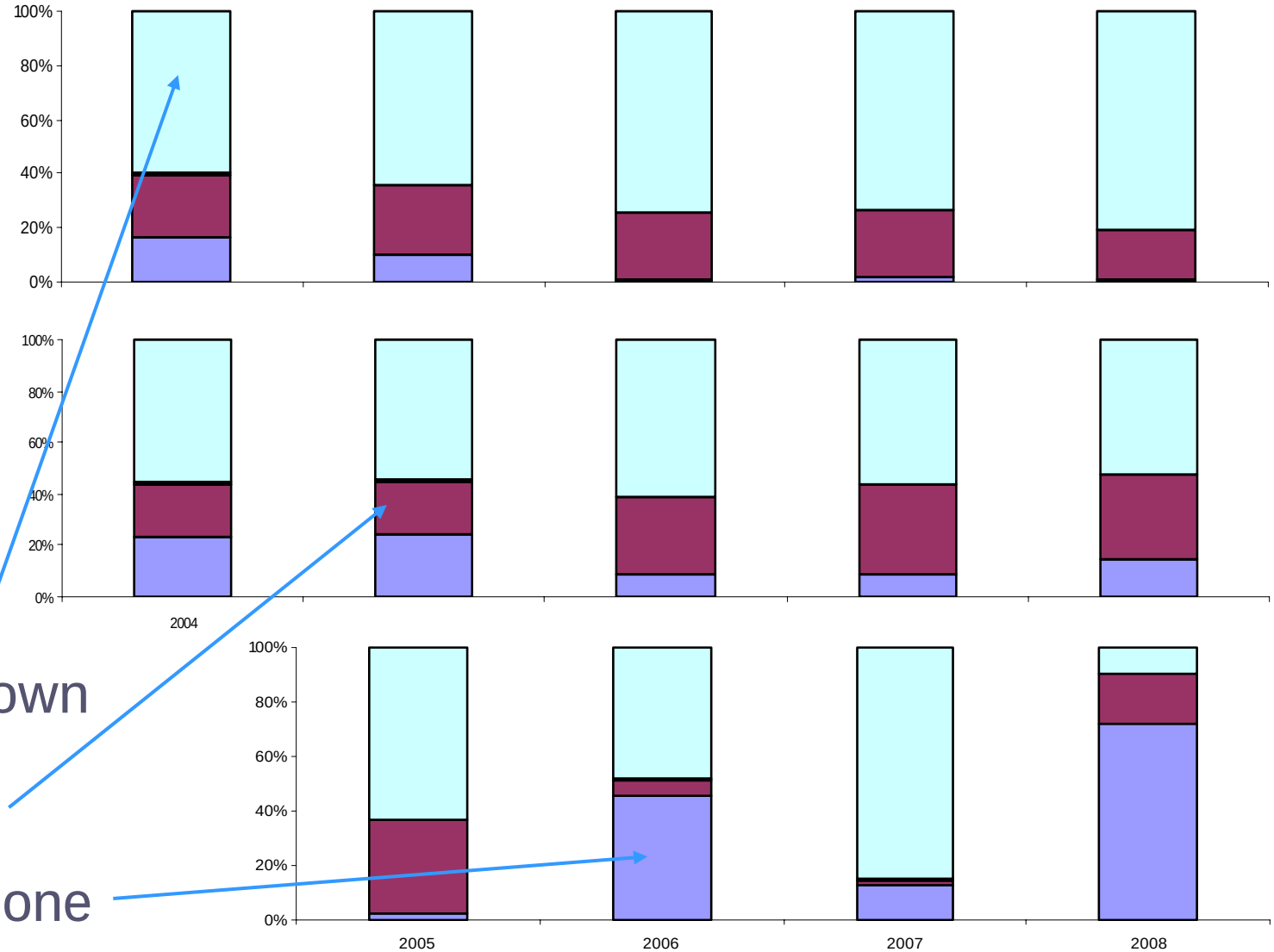
- 3 evaluation variables used to determine source of information: clinical, pathological, etc.

Results – Data Variable Level

Regional Nodes Evaluation: Rectal Cancer
Manitoba, 2004 - 2008



Results – CS SSF Variables
example: CEA in Colorectal Cancer



MB (4,015)

NS (3,838)

PE (418)

Unknown

Done

Not Done

Results – Median Nodal Harvest

Colorectal Cancer

	200	2005	2006	2007	2008
NS	9	11	13	15	15
MB	14	17	16	15.5	17
PE		11	8	11	12

Breast Cancer

	2004	2005	2006	2007	2008
NS	10	10	11	10	9
MB	11	6	4	5	4
PE		9	10	12	11

Median Nodal Harvest – MB (Breast)

	Stage I	Stage II	Stage III	Stage IV	UNK
2004	8	12	15	4	18
2005	3	8	16	12	8
2006	3	5	17	10	8.5
2007	2	7.5	18	8.5	4
2008	2	7	16	13	10

Results – Variable Combinations

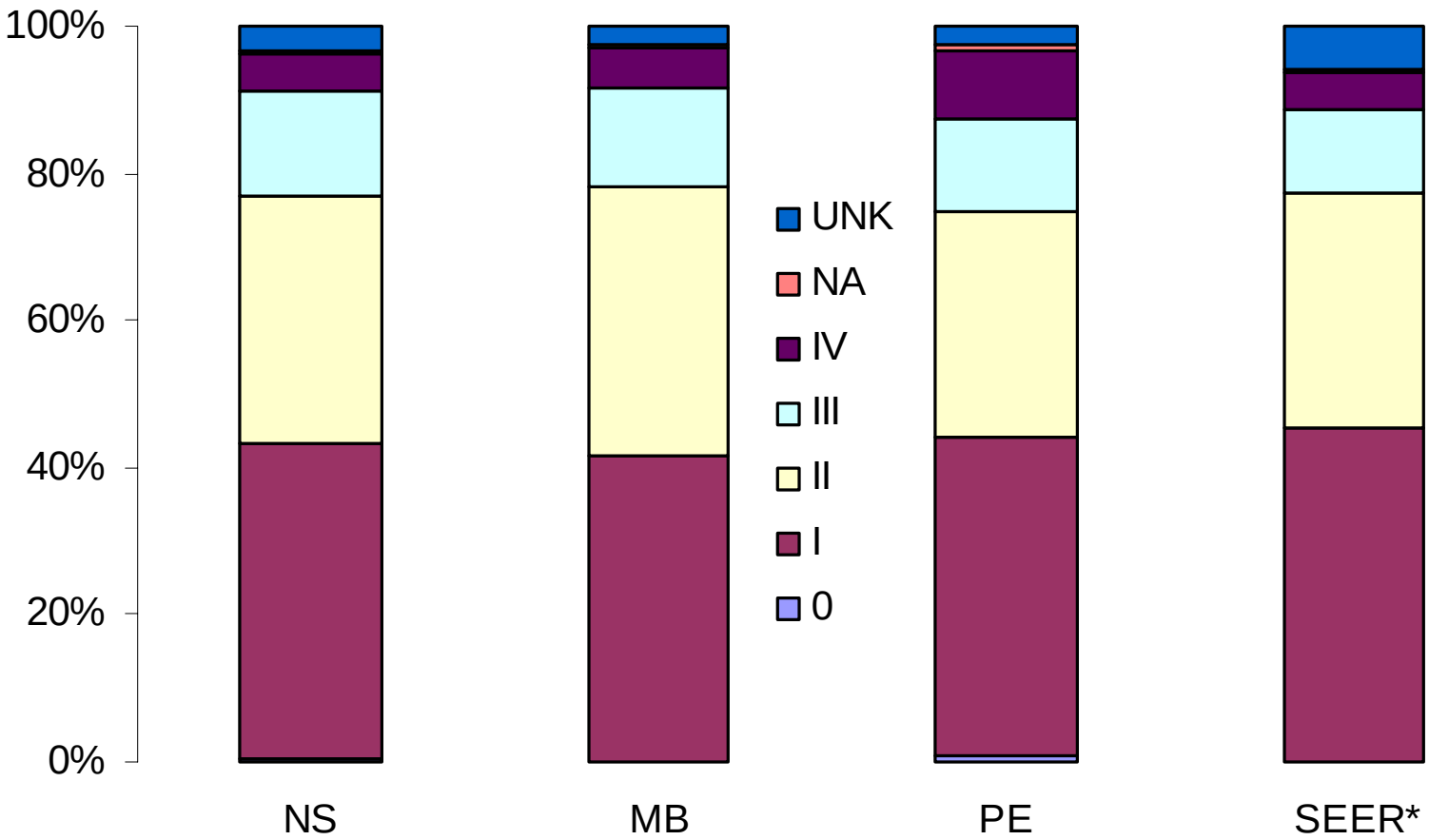
Most Common TNM descriptor combinations,
Nova Scotia (%)

Colon		Rectal		Lung		Breast	
p p c	72	**p p c**	49	**c c c**	54	**p p c**	80
c c c	14	**c c c**	30	**p p c**	18	**c c c**	8
p c c	6	**p c c**	10	**p c c**	14	**p c c**	8
p p p	5	**c y c**	4	**c p c**	7	**c y c**	1
c c p	2	**y y c**	2	**c c p**	6	**c c p**	1
other	1	**other**	6	**other**	2	**other**	2
% Histo	92		93		76		98

Results – Rectal Cancer: TNM Assignment Combinations by Year

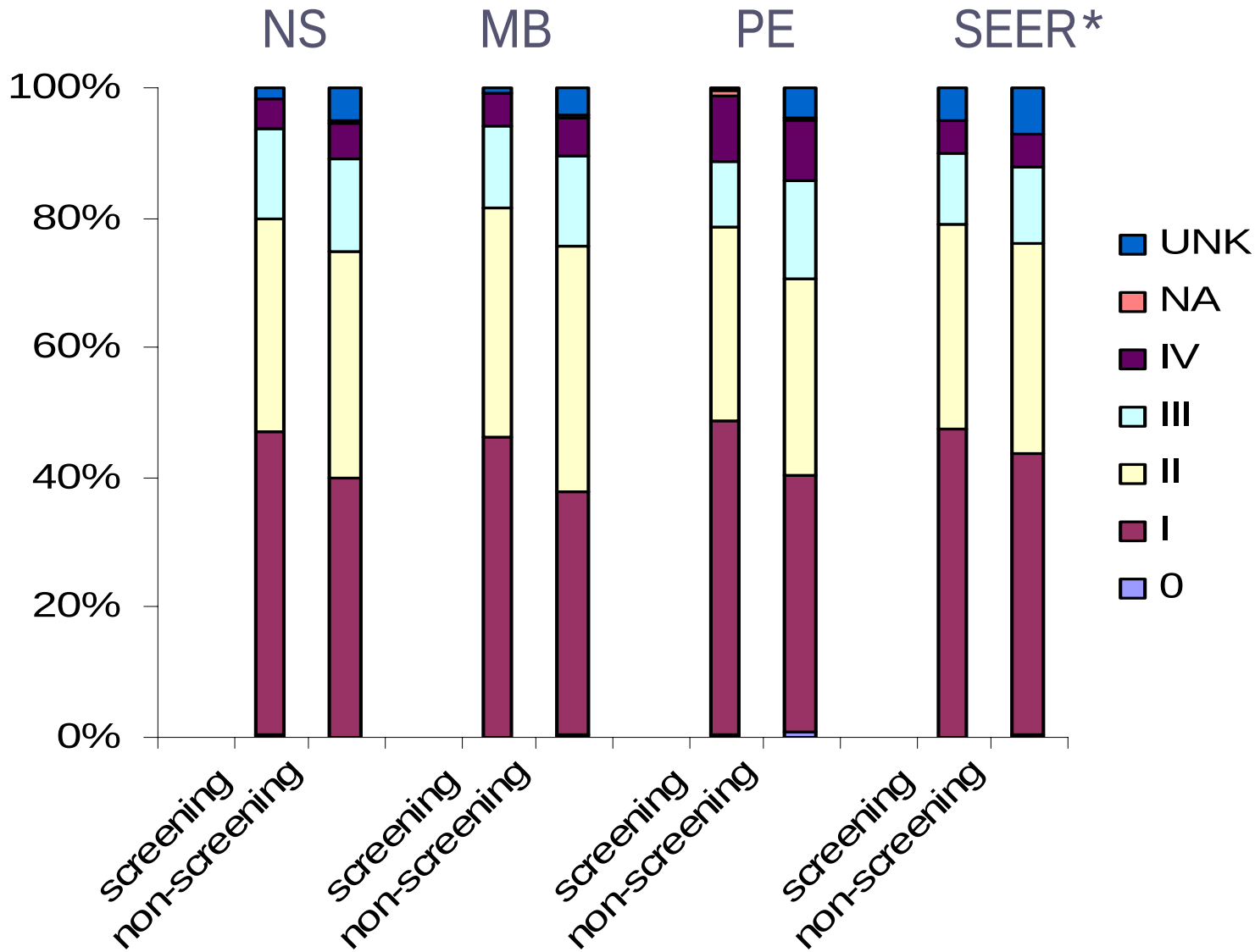
Site	Pathological (%)			Clinical (%)			Others* (%)			NA: Carcinoid cases (%)		
	NS	MB	PE	NS	MB	PE	NS	MB	PE	NS	MB	PE
2004	65	69		21	18		13	11		2	2	
2005	62	66	59	21	22	32	16	10	5	1	3	5
2006	54	54	41	28	34	37	17	7	22	2	5	0
2007	43	52	38	40	36	48	15	10	4	2	3	10
2008	44	41	24	35	42	59	18	16	18	3	2	0

Results – Stage Distribution for Breast

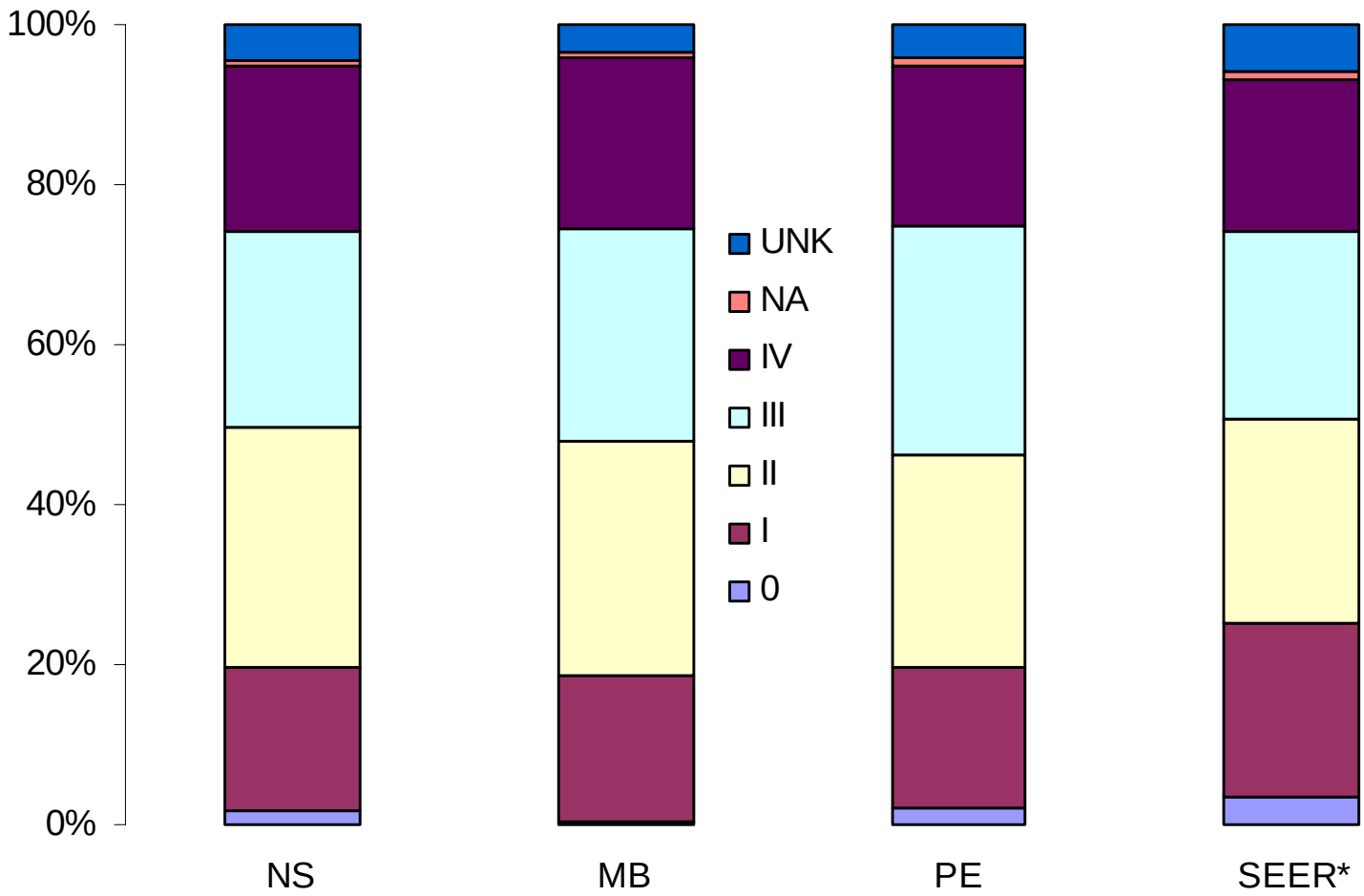


* SEER 17, 2004 - 2007

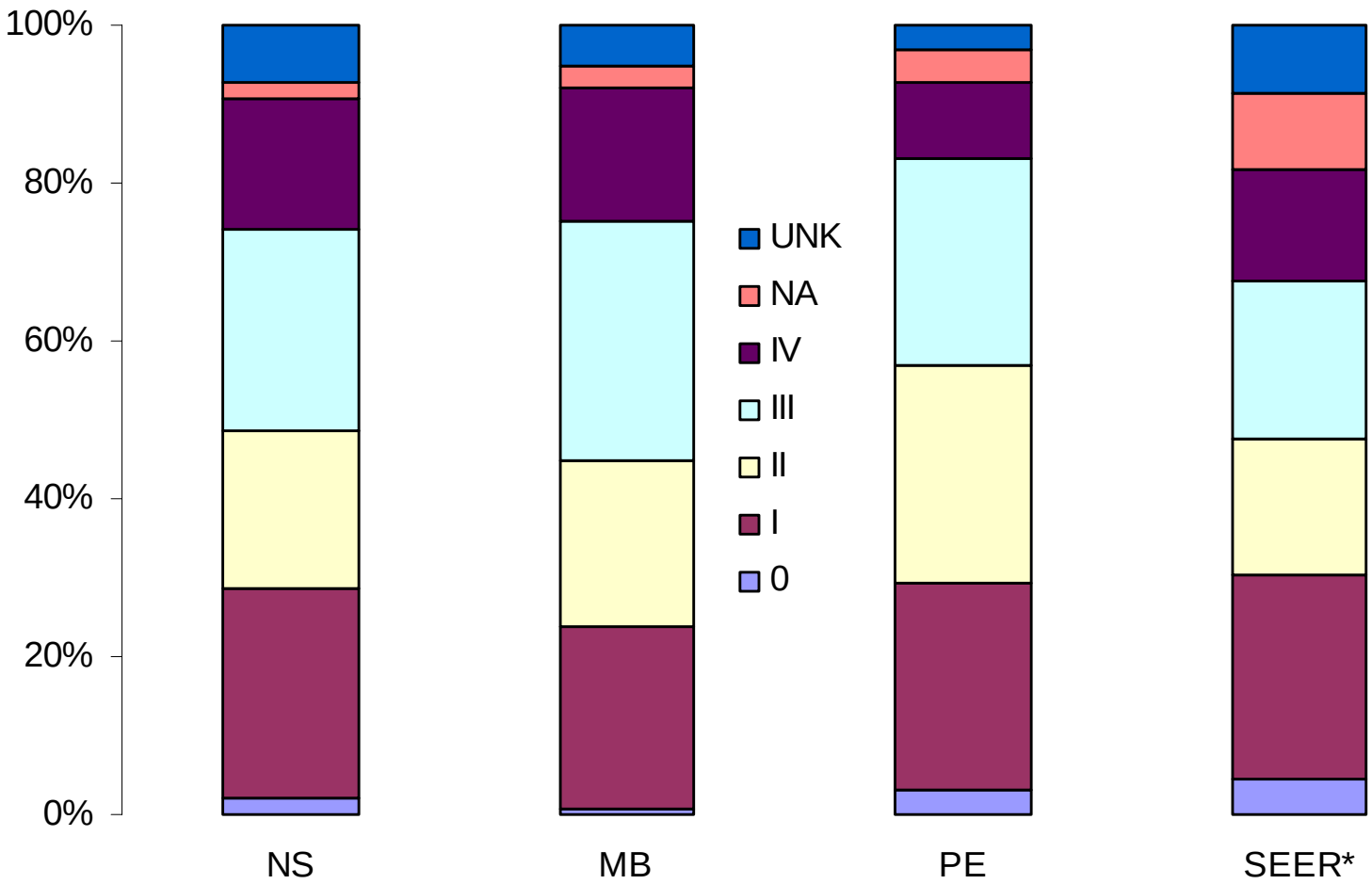
Results – Stage Distribution for Breast by age



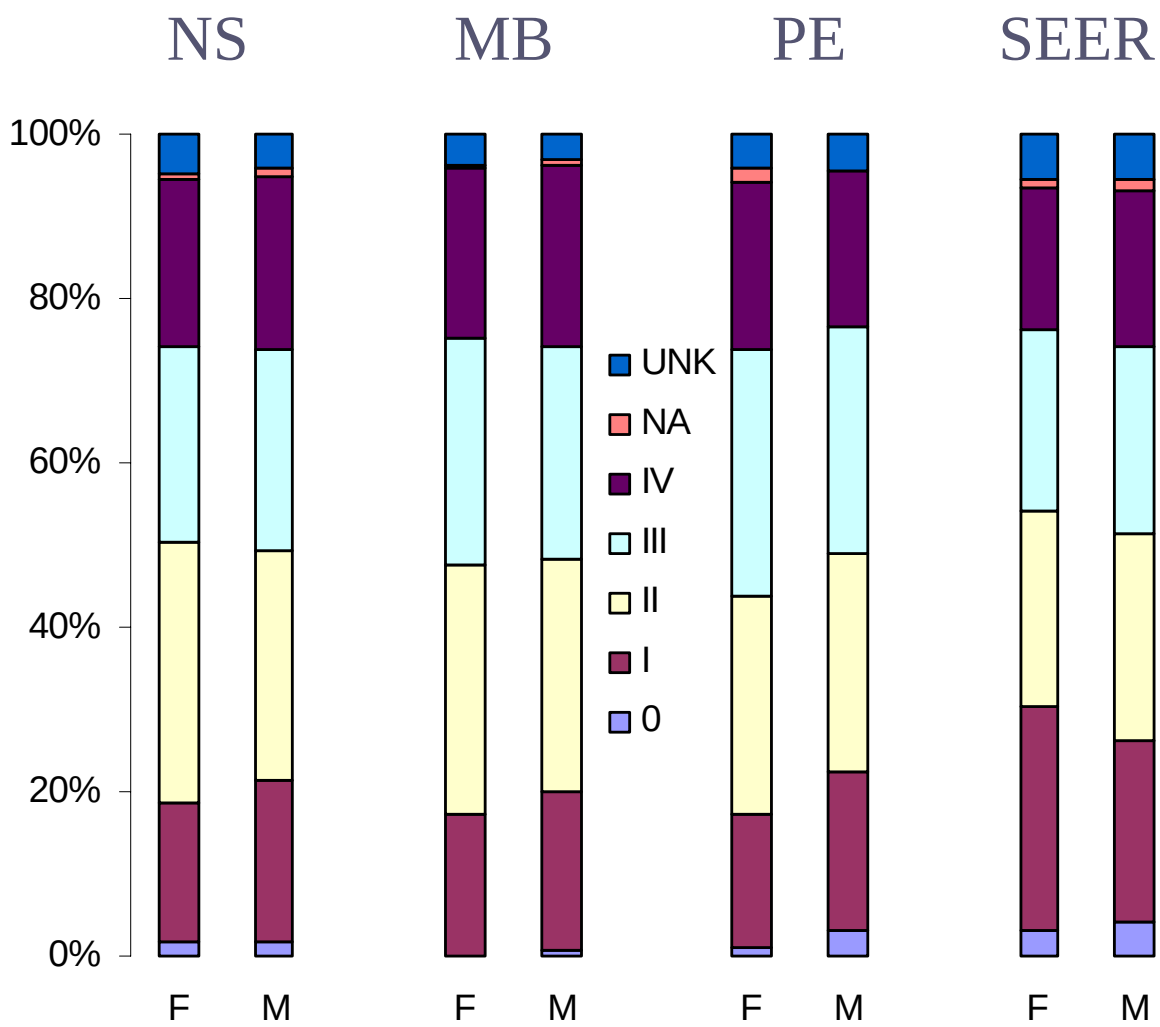
Results – Stage Distribution for Colon



Results – Stage Distribution for Rectum



Results – Stage Distribution for Colon Cancer by sex



Observations

- Population based stage data is available and complete for analytic purposes
- Examine data at the variable level to explore potential quality issues
- Substantial consistency exists across provinces examined
- Overall stage comparison in Canada & with other jurisdictions is possible
- Scope of CS data set provides macro level indicators of changes in standards of care