

SEER 2014 TNM Training Needs Assessment Study

Availability of Cancer Staging Information at the Time of Registration



Anne-Michelle Noone
NAACCR Annual Conference
June 16, 2016

Outline

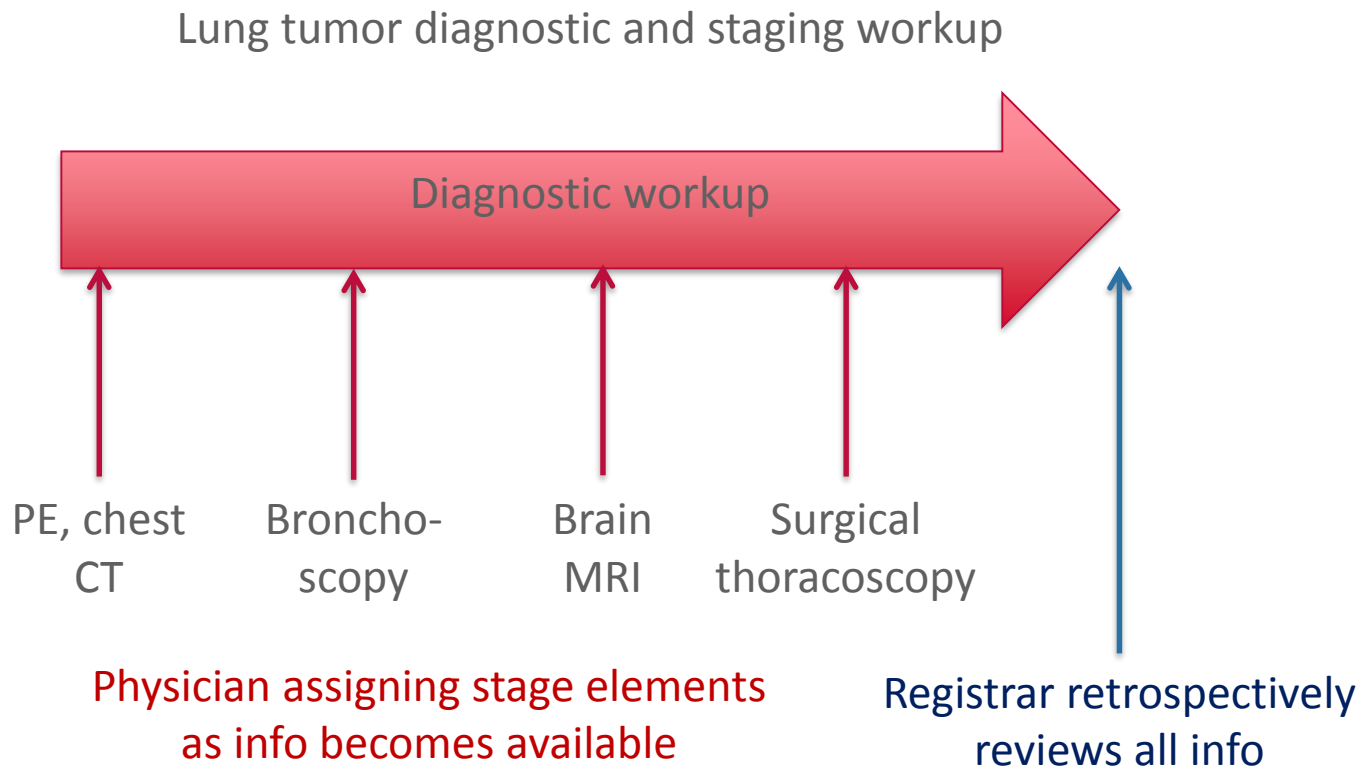
1. *Background*
2. *Goals of this analysis*
3. *Study design & Methods*
4. *Results*
5. *Discussion*

Background

- In 2016, the registry community began directly assigning staging elements based on AJCC staging system
- Stage reported by the physician is critical since it is the basis for clinical decision making
 - Cancer registrars obtain information from the medical records available to them at the time of registration
 - General guidance is to transcribe information given by the physician in the medical record
 - If the stage or an element is not available, then the registrar is to assign from available information

Background

- Challenge: Cancer stage evolving during diagnostic workup



Research Question

- Feasibility of using T, N, M and stage group available in the hospital medical record to automatically assign AJCC TNM stage
 1. Availability of these data elements in the medical record
 - Issues of selecting the best value among multiple
 2. Agreement between physician and registrar-assigned values
 3. What source documents may be most reliable

Study Design

Original case files: Breast, colon, lung, ovary, prostate
2013 diagnosis year
56 for each site, 280 total



Redact documented staging
info from medical records



Pathologic T, N, M
Clinical T, N, M
AJCC 7th group stage (P & C)
SS2000
PSA & Gleason (not redacted)

Keep redacted info for analysis



2 reviewers assign staging
elements

Participant reviews cases and
assigns staging elements

3rd reviewer adjudicates

100 cases for special review

Methods: T, N, M and Stage Group Data

- Consolidated answer
 - Determined by CTR panel by review of the full medical record
 - T, N and stage group experts provided clinical and pathologic stage separately
 - M
 - M1 is either cM1 or pM1
 - M0 otherwise

Methods: T, N, M and Stage Group Data

- Physician-assigned
 - If available, taken from the medical record
 - All data elements from each record were classified as
 - No occurrence
 - One occurrence: Same value could appear more than once
 - More than one occurrence: Different values

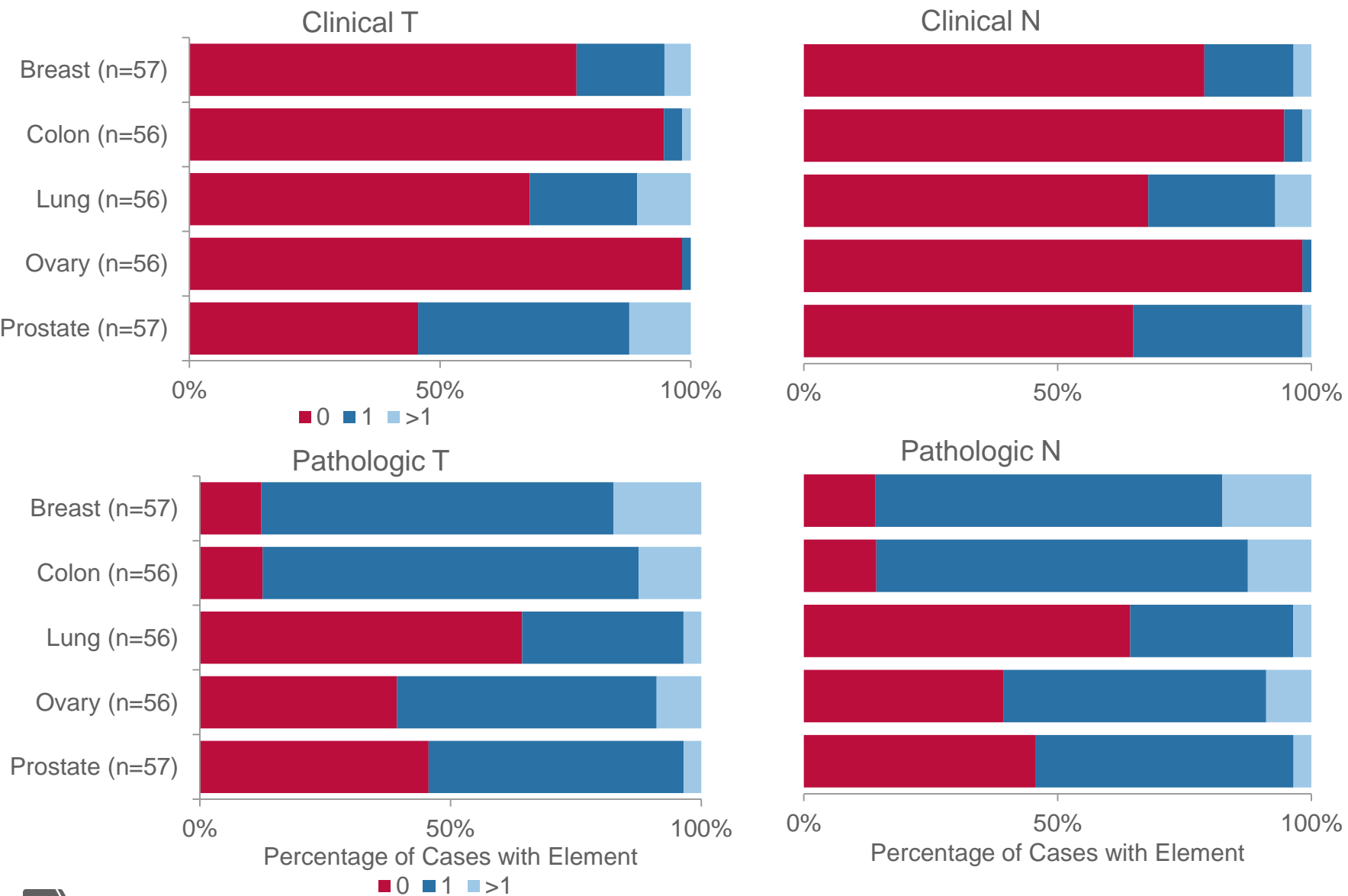
Methods: Source Document Classification

- For a random subset of 100 cases (20 per cancer site)
- Each physician-assigned T,N,M, stage group value was categorized according to the type of source document that included the value
- Source document categories
 - Oncology consult
 - Surgical consult
 - Radiation Oncology consult
 - Other consult, PE
 - Imaging reports
 - Invasive staging reports
 - Operative reports (resection)
 - Path report/ staging form
 - Discharge summary

Methods: Analysis

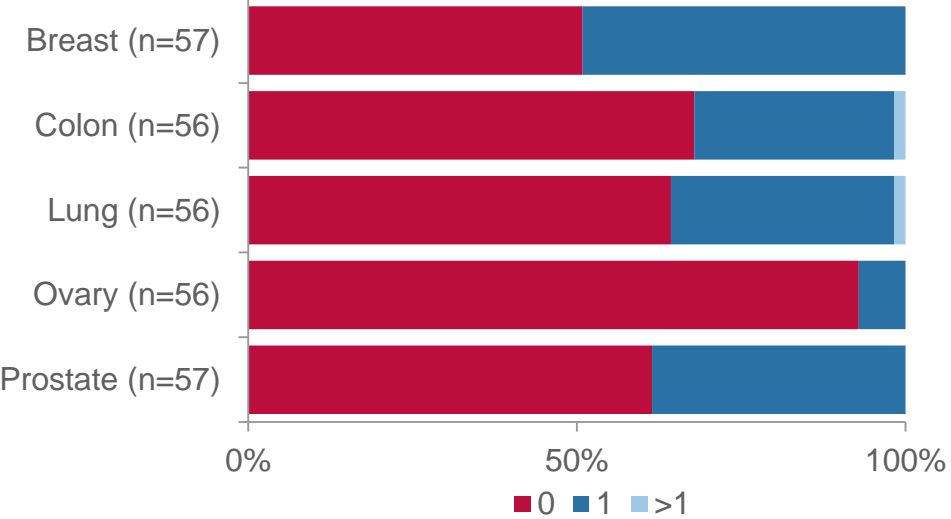
1. Frequency of physician-assigned stage elements
 - By stage and cancer site
 - Collected for each medical record (N=282)
2. Agreement between physician-assigned and consolidated answer
 - Among records with just one value
 - Number of records varies by data element
3. Agreement by document type
 - By document type and data element
 - Number of records varies by document type and data element

Results: Availability of data elements

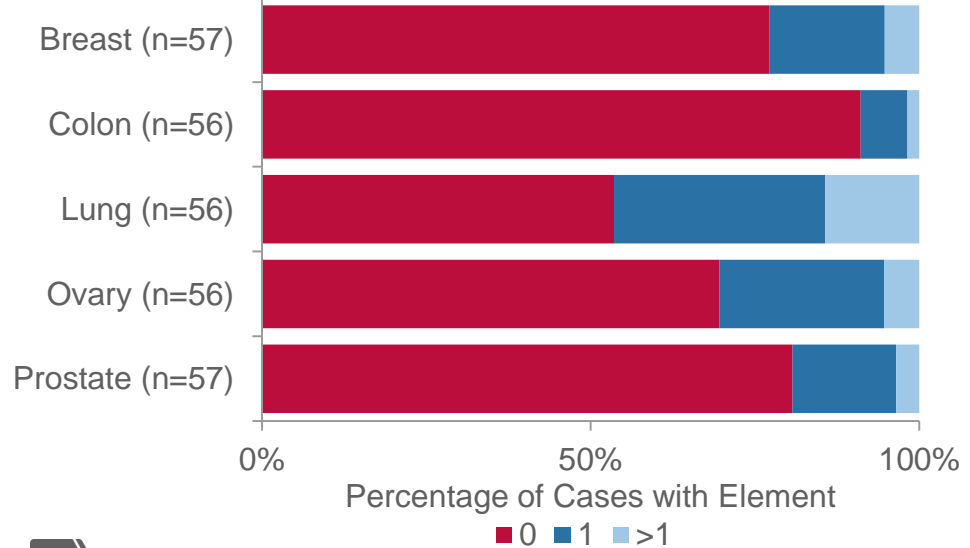


Results: Availability of data elements

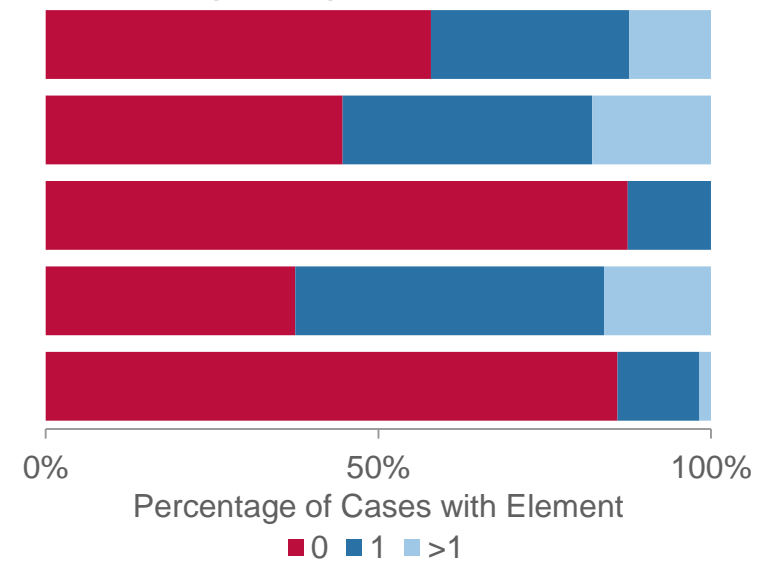
Clinical/Path M



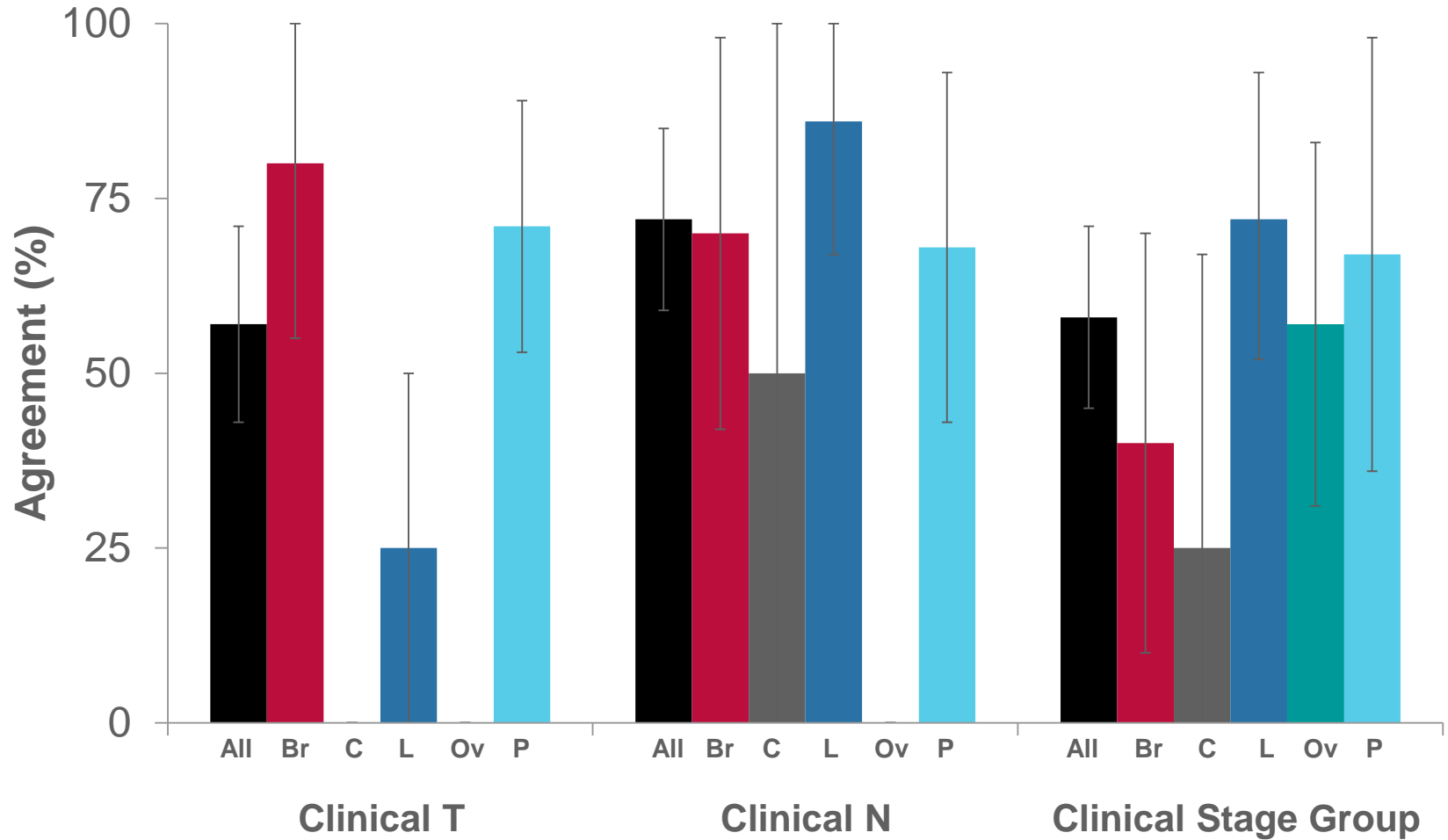
Clinical Stage Group



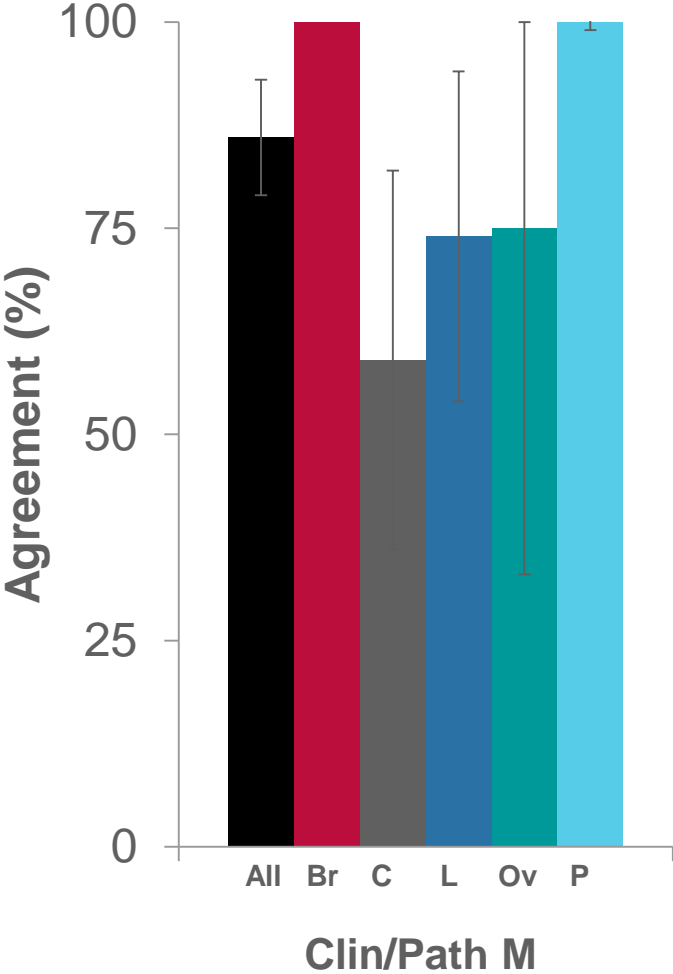
Pathologic Stage Group



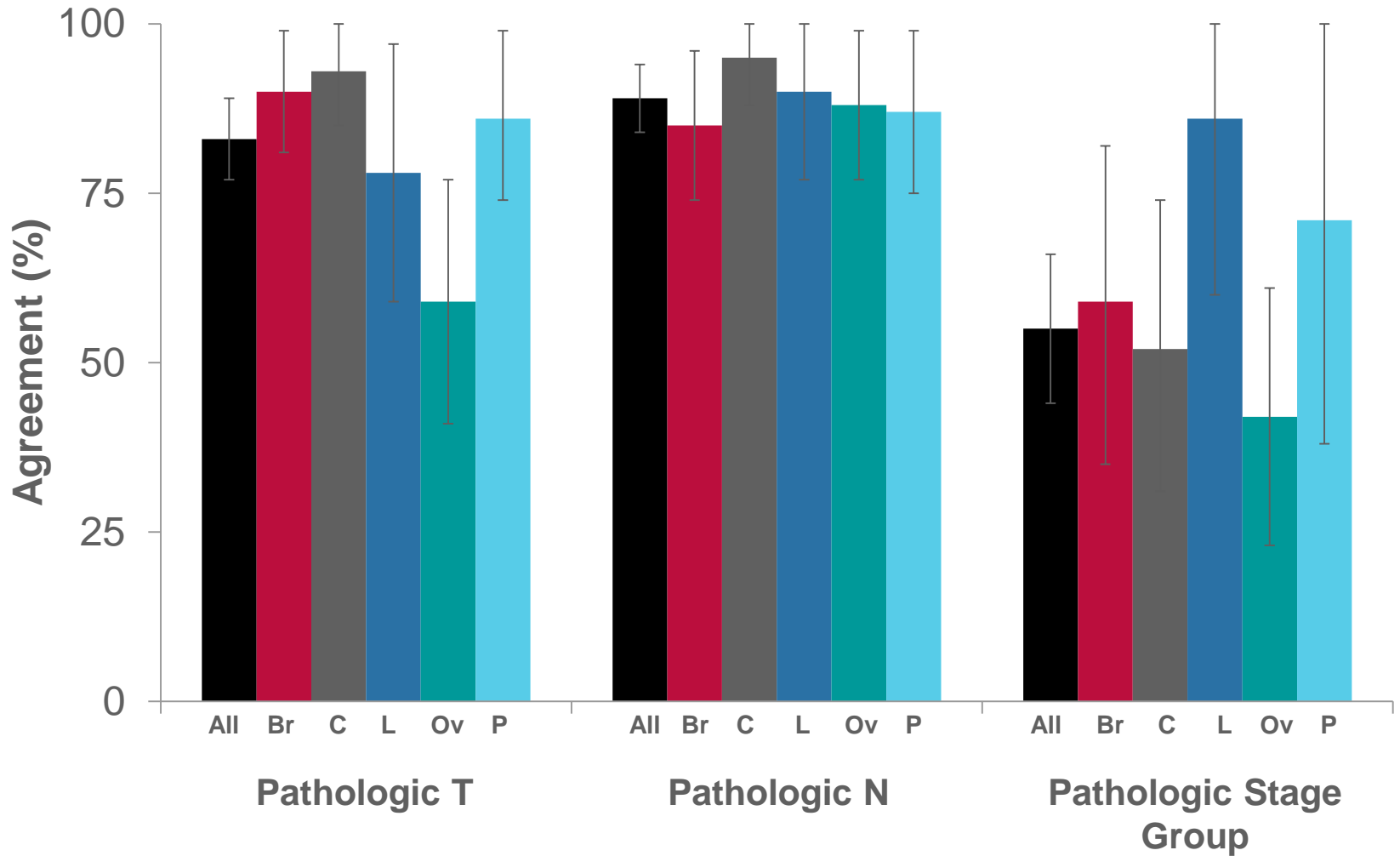
Results: Agreement between physician-assigned and consolidated answer



Results: Agreement between physician-assigned and consolidated answer



Results: Agreement between physician-assigned and consolidated answer



Results: Agreement by Source Document

Source Document Category	Clinical T		Clinical N		Clinical Stage Group	
	# reports	Agreement with consolidated answer	# reports	Agreement with consolidated answer	# reports	Agreement with consolidated answer
Oncology consult	6	83%	5	80%	6	33%
Surgical consult	8	50%	5	60%	6	67%
Radiation oncology consult	10	40%	9	78%	5	100%
Other consults, PE, notes	14	36%	3	33%	8	50%
Imaging reports	1	100%	0	N/A	1	100%
Invasive staging reports	2	0%	2	50%	2	50%
Operative report (resection)	1	100%	1	100%	4	25%
Path report/staging form	2	100%	3	33%	2	100%
Discharge summary	1	100%	1	100%	3	67%
TOTAL	45	51%	29	66%	37	59%

Results: Agreement by Source Document

Source Document Category	Pathologic T		Pathologic N		Pathologic Stage Group	
	# reports	Agreement with consolidated answer	# reports	Agreement with consolidated answer	# reports	Agreement with consolidated answer
Oncology consult	15	87%	13	77%	12	33%
Surgical consult	10	100%	11	91%	6	67%
Radiation oncology consult	7	100%	7	86%	4	25%
Other consults, PE, notes	6	100%	5	100%	8	38%
Imaging reports	0	N/A	0	N/A	2	50%
Invasive staging reports	2	100%	2	100%	1	0%
Operative report (resection)	1	100%	0	N/A	4	25%
Path report/staging form	58	79%	56	89%	17	53%
Discharge summary	6	67%	6	67%	10	40%
TOTAL	105	85%	100	87%	64	42%

Discussion

- Provider-assigned stage not available in general, less available for clinical stage, better availability for tumors with recommendation for surgical resection
- Registrars cannot simply transcribe information from the medical records because
 - Clinical or pathologic T,N,M, stage group most often not assigned by providers
 - Multiple, slightly different stage categories across various source documents of the same medical record
 - Inconsistencies between T,N,M and stage assigned across various source documents of the same medical record
- Using provider-assigned stage is unlikely to save significant time for registrars

Discussion

- Pathologic T and N higher agreement than clinical T and N
 - Reflection that pathologic staging occurs later and uses more information
 - Consistent with most reference manuals that recommended assigning the highest level of certainty to pathologist statements
- Sensitivity analysis of agreement after collapsing into broad categories of T, N, M
 - Some improvement but loss of granularity
 - Stage group did not improve much

Discussion

- Consultation notes
 - High agreement with consolidated answer
 - Not often in hospital record
 - Probably created later in the diagnostic process
 - Limited utility since often in the physician office
 - Unless hospital and physician on same EMR
- Pathology reports
 - MX is not a valid value but used in about 25% of assignments
 - Problems with T were mostly in the substages

Conclusion

- Cancer registrars abstracting new cases need to assign stage using all available information in the medical record
 - When available in certain source documents, registrars may use provider-assigned clinical stage, and should use provider-assigned pathologic stage
- Central registries often have no access to medical records, thus provider-assigned codes are not available (unless documented in text fields)

Acknowledgments

NCI

Peggy Adamo

Kathy Cronin

Carol Kosary

Benmei Liu

Leon Sun

Lynne Penberthy

Atlanta Registry

Kevin Ward

IMS

Nicki Schussler

Jean Cyr

Westat

Serban Negoita

Carmela Groves



**NATIONAL
CANCER
INSTITUTE**

www.cancer.gov

www.cancer.gov/espanol