

Reporting Pathology Protocols for Colorectal Cancer

2005 NAACCR Conference: June 9, 2005

Ken Gerlach: CDC-NPCR

Bette Smith: Ohio Cancer Registry

Kathleen Davidson-Allen: PHI/California
Cancer Registry



Purpose

- Encourage standard exchange of data between two key public health partners
 - Anatomical Pathology Laboratories
 - Cancer Registries: California and Ohio
- Evaluate the use of national data standards to transmit data: HL7 with LOINC/SNOMED CT
- Evaluate completeness, timeliness, and quality of cancer checklists with text-based narrative reports

Collaborators

- State and hospital cancer registries
- Cancer registry information system vendors
- Pathologists and pathology labs
- Anatomical pathology laboratory information system vendors (AP LIS)
- College of American Pathologists (CAP)
 - Principal organization of board-certified pathologists
- SNOMED International
- Experts in vocabulary and messaging standards

Colon and Rectum Cancer Checklist

Colon and Rectum

Protocol applies to all invasive carcinomas of the colon and rectum. Carcinoid tumors, lymphomas, sarcomas, and tumors of the vermiform appendix are excluded.

Protocol revision date: January 2004

Based on AJCC/UICC TNM, 6th edition

Procedures

- Incisional Biopsy (No Accompanying Checklist)
- Excisional Biopsy, Polypectomy
- Local Excision (Transanal Disk Excision)
- Segmental Resection
- Rectal Resection (Low Anterior Resection; Abdominoperineal Resection)

Colon and Rectum Cancer Checklist

COLON AND RECTUM: Polypectomy

Patient name:

Surgical pathology number:

Note: Check 1 response unless otherwise indicated.

MACROSCOPIC

Tumor Site

- Cecum
- Right (ascending) colon
- Hepatic flexure
- Transverse colon
- Splenic flexure
- Left (descending) colon
- Sigmoid colon
- Rectum
- Not specified

SNOMED CT Encoded CAP Checklist

TUMOR SITE [R-0025A, 371480007] Tumor site (observable entity)

___ Cecum [T-59100, 32713005] Cecum structure (body structure)

___ Right (ascending) colon [T-59400, 51342009] Right colon structure (body structure)

___ Hepatic flexure [T-59438, 48338005] Structure of right colic flexure (body structure)

___ Transverse colon [T-59440, 485005] Transverse colon structure (body structure)

___ Splenic flexure [T-59442, 72592005] Structure of left colic flexure (body structure)

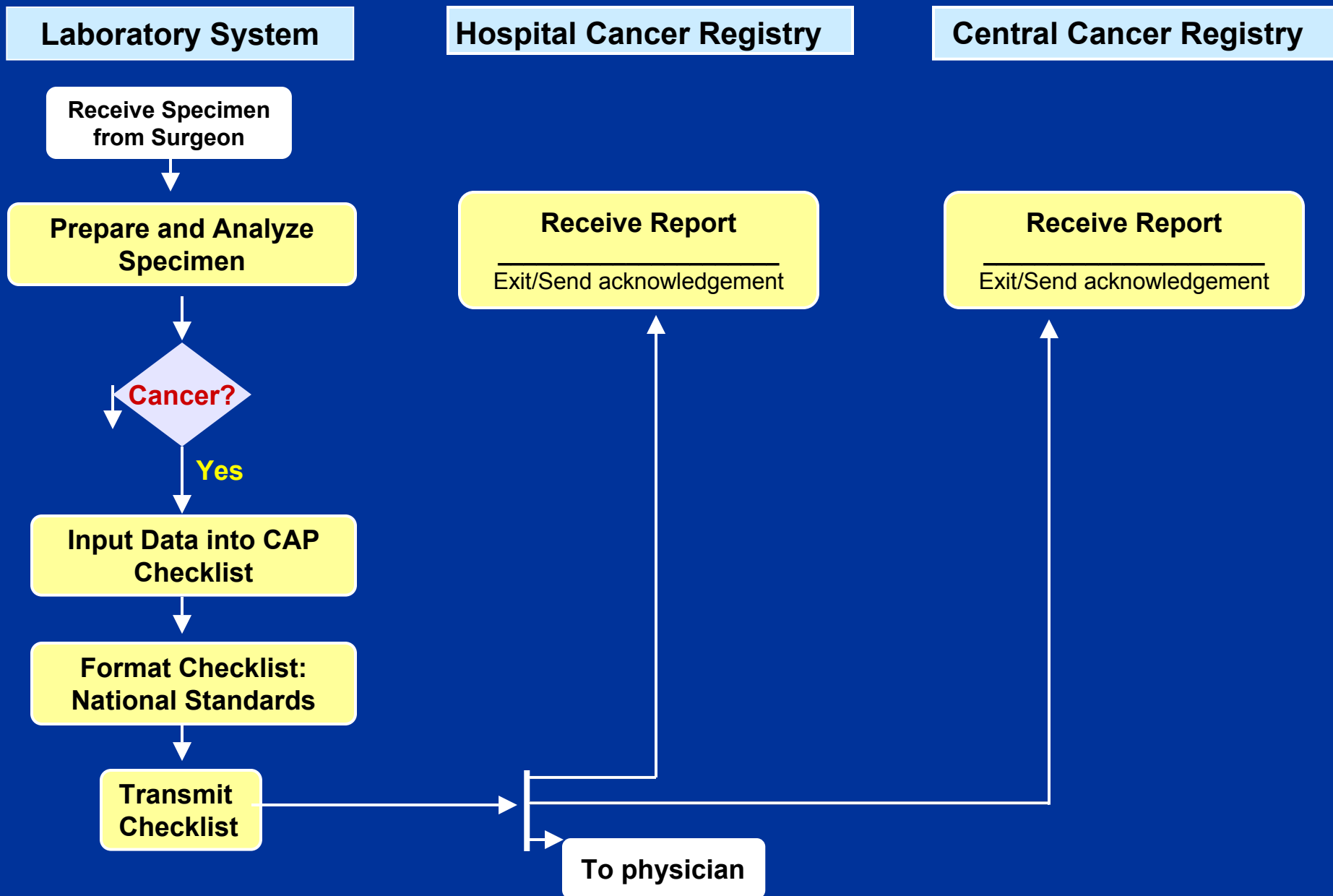
___ Left (descending) colon [T-59450, 55572008] Left colon structure (body structure)

___ Sigmoid colon [T-59470, 60184004] Sigmoid colon structure (body structure)

___ Rectum [T-59600, 34402009] Rectum structure (body structure)

___ Not specified [T-59000, 14742008] Large intestinal structure (body structure)

Cancer Protocols Project Workflow



California: Quality/Accuracy Measure

- Does using the checklist format enhance the quality of the data?
 - Process: Using narrative pathology reports from the previous year, complete a checklist for each report
 - Analysis: Identify the data items on the checklist that could not be completed using the narrative

California Preliminary Results

- Analysis: Identify data items on checklist that could not be completed using narrative
 - Resection Checklist (N=50):
 - 17 required data items – 96% were completed
 - 13 non-required data items – 63% were completed

Resection Checklist – Items Unable to be Coded

Checklist Concept	Number	Percentage
Specify Margin (Orientation by Surgeon)	11	1.3
Lymphatic (Small Vessel) Invasion	8	0.9
Venous (Large Vessel) Invasion	8	0.9
Other	8	0.9
Total	35	4.0

N = 50

Number of Reports by Missing Data Items

Missing Required Data Items	Number	Percentage
None	30	60
1	9	18
2	8	16
3	2	4
4	1	2
Total	50	100

California: Quality/Accuracy

- Are the codes generated for certain data items from the CAP checklist as accurate as the codes produced by cancer registry staff?
 - Process: Compare cancer registrar staff coded data items with the synoptic reports created by the pathologist: primary site, histology, and AJCC staging (T and N only)
 - Analysis: Compare data items using 15 reports.

California Preliminary Result – Histologic Type

- Cancer Registrar Codes from Narrative
- 3 Cases: Adenocarcinoma arising in an adenoma
 - 2 – Adenocarcinoma arising in a tubulovillous adenoma (8263/3)
 - 1 – Adenocarcinoma in a tubular adenoma (8210/3)
- Pathologist Codes from Checklist
- 3 - Adenocarcinoma (8140/3)
 - 1 – Contained the more specific code in a narrative section

Ohio Evaluation Measures

■ **Completeness/Quality:**

- Lab/OCISS Assessment of Quality, Completeness
- Physician Assessment of Quality
- Pathologists Assessment of Quality

■ **Timeliness:**

- Survey pathology staff and cancer registrars entering data to determine time saved by using checklists

Ohio Data Field Quality Review

- **Primary Site, Histology, Grade, Stage (TNM)**
- **Process**
 - Two Certified Cancer Registrars coded four data items from retrospective narrative pathology reports
 - Cerner sent the HL7 messages to Rocky Mountain
 - Rocky converted to the NAACCR format and sent a line listing for each case to the OCISS
 - OCISS staff compared the registrars coded data and the checklist data

Ohio Identified Discrepancies:

- OCISS staff coded site/type, histology, grade, stage from 76 narrative pathology reports
- These codes were compared to the Checklist output
- Discrepancies found included:
 - 15 site (19.7%)..... Location of tumor
 - 20 histology (26.2%)... Tumor “arising in” issues
 - 2 grade (2.6%) 2 or 4 grading system
 - 10 stage (13.2%).....Conversion had two digit T
 - 47 total (15.5%) (47 / 304 chances for discrepancies)

Ohio Timeliness

- Survey physicians, pathologists and registrars to determine if the checklist report would save time.
 - Timed studies not performed
 - An Ad hoc survey was conducted in four hospitals and OCISS staff
 - Unanimous agreement that the checklist format saves time

Ohio Unresolved Issues

- HL7 messages contained a 2-digit pT category
 - Discrepancy between Checklist pT codes and AJCC Cancer Staging Manual
- Neuroendocrine tumor, transfer was text
 - Other (specify) has no associated code
 - Needs human intervention
- HL7 message for 2 records for pTpN stage was blank
 - Need intrafield edit

Lessons Learned - Questions

- Not all procedures or cancers included in the Colorectal Checklists
 - Incisional Biopsy – not included
 - In situs, carcinoids, sarcomas, lymphomas - not included
 - Cannot use exclusively for case-finding
- Checklists evolved: e.g. Checklist Identifier, Type of Polyp
- pTpN Stage Differences
- What type of text? Clinical History?
- Loss of histology, lymph node chain specificity

Acknowledgements: Project Team

■ California

- Kathleen Davidson-Allen, PHI/California Cancer Registry
- Barry Gordon, C/NeXT Software – LOINC Clinical Committee
- Linda Jund, Louella Herrmann, Fritz Lin, University of California, Irvine

■ Ohio

- Michele Connors, Zeke Holland, Linda Coles, Mark Jordan, and Dieter Thum, Cerner Corporation
- Larry Derrick, Rocky Mountain Cancer Data System

■ Ohio (continued)

- Georgette Haydu and Bette Smith, OCISS
- Pat Patterson, Mary Abbuhl, Joseph Willis, University Hospitals of Cleveland

■ SNOMED

- Mary Kennedy, Monique van Berkum, and John Kilborne, SNOMED International

■ CDC-NPCR

- Warren Williams, Ken Gerlach