

College of American Pathologists electronic Cancer Checklists (CAP eCC): Cancer Pathology Data Flow into Cancer Registry Systems

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Division of Cancer Prevention and Control



Types of Pathology Reports

❑ Traditional Text-based

- Final Diagnosis
- Microscopic Description
- Macroscopic Description, etc.



❑ Synoptic Reporting

- College of American Pathologists (CAP)
Cancer Protocols and Checklists
- Others

College of American Pathologists (CAP)

- ❑ **In 1999, the CAP Cancer Committee published**
 - Reporting on Cancer Specimens Protocols and Case Summaries
- ❑ **Purpose**
 - To aid pathologists with completeness, accuracy, and uniformity in reporting of malignant tumors
- ❑ **The cancer protocols - site-specific**
- ❑ **The associated checklist format**

CAP Cancer Checklists

- ❑ **Consist of data elements structured as a set of questions and prospective answers**
- ❑ **Include reference information for intended use**
- ❑ **Iterative Development Process**
- ❑ **Content from CAP Cancer Committee**

- ❑ **Analogy: Pilot's checklist**
 - **When the cost of missing something critical is high**

Snippet: Breast Invasive Cancer Checklists

CAP Approved

Breast • Invasive Carcinoma of the Breast

Specimen Laterality

- Right
- Left
- Not specified

*Tumor Site: Invasive Carcinoma (select all that apply) (Note D)

- * Upper outer quadrant
- * Lower outer quadrant
- * Upper inner quadrant
- * Lower inner quadrant
- * Central
- * Nipple
- * Position: o'clock
- * Other (specify): _____
- * Not specified

Tumor Size: Size of Largest Invasive Carcinoma (Note E)

- Microinvasion only (≤ 0.1 cm)
- Greatest dimension of largest focus of invasion over 0.1 cm: cm
- *Additional dimensions: x cm
- No residual invasive carcinoma after presurgical (neoadjuvant) therapy
- Cannot be determined (see Comment)

Note: The size of the invasive carcinoma should take into consideration the gross findings correlated with the microscopic examination. In some cases, it may be helpful to use information about tumor size from imaging studies. If multiple foci of invasion are present, the size listed is the size of the largest contiguous area of invasion. The size of multiple invasive carcinomas should not be added together. The size does not include adjacent DCIS.

If there has been a prior core needle biopsy or incisional biopsy showing a larger area of invasion than in the excisional specimen, the largest dimension of the invasive carcinoma in the prior specimen should be used for T classification, if known.

†If there has been prior treatment and no invasive carcinoma is present, the cancer is classified as Tis if there is residual DCIS and T0 if there is no remaining carcinoma.

Challenges: Paper to Electronic

- ❑ **Today – Emphasis electronic health systems**
- ❑ **What's clear on a paper form may not translate to computer systems**
- ❑ **Different interpretations of the meaning**
- ❑ **Different discrete data item codes (not interoperable)**
- ❑ **Solution – An electronic checklist tool for developers/implementers and CAP Pathology Electronic Reporting Task Force (PERT)**
 - **Mission: "To advance the implementation of the CAP Cancer Checklists using health information technology"**

CAP electronic Cancer Checklists (eCC)

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About CAP electronic Cancer Checklists (CAP eCC)

Updated January 15, 2010

The CAP eCC is a tool used to enhance and advance cancer reporting. [Learn more](#) about the CAP eCC or [read the press release](#). The latest CAP eCC release (January 2010) contains all of the new and updated content in the CAP Cancer protocols posted October 2009 on the [CAP Website](#). The CAP eCC facilitate uniform cancer description and reporting, including elements from the AJCC Cancer Staging Manual 7th Edition. Content is also partially encoded with SNOMED Clinical Terms® (SNOMED CT®)—a globally recognized controlled medical vocabulary.

The amount of information pathologists provide in their reports on cancer specimens has increased in recent years, due to the expansion of scientific knowledge about cancer and continued advances in healthcare, such as molecular diagnostics and personalized medicine.

The CAP Cancer Protocols and Checklists, developed by the CAP Cancer Committee, aid pathologists in cancer reporting and are recognized as a "gold standard" in cancer case summary reporting worldwide. The synoptic, or standardized, checklist format provides consistent and meaningful information that enable healthcare professionals to manage and study clinical data necessary to help improve patient care.

The CAP eCC advance the management and interoperability of health information through its XML format that can be integrated easily into existing pathology and cancer registry systems. Health data coded with SNOMED CT allows multiple



Related Links

- [Learn more about CAP eCC \(PDF, 281 K\)](#)
- [Pathology Electronic Task Force \(PERT\)](#)
- [CAP Cancer Protocols](#)

Snippet: eCC Invasive Breast Checklist

INVASIVE CARCINOMA OF THE BREAST - Breast

CAP Approved

Surgical Pathology Cancer Case Summary (Checklist)

Protocol web posting date: 2009-10-09

Protocol revision date:

Protocol applies to all invasive carcinomas of the breast, including ductal carcinoma in situ (DCIS) with microinvasion.

Based on AJCC/UICC TNM, 7th Edition

INVASIVE CARCINOMA OF THE BREAST: Complete Excision (Less Than Total Mastectomy, Including Specimens Designated Biopsy, Lumpectomy, Quadrantectomy, and Partial Mastectomy With or Without Axillary Contents) and Mastectomy (Total, Modified Radical, Radical With or Without Axillary Contents)Radical, Radical With or Without Axillary Contents)

Patient Name:

Surgical pathology number:

Note: If there are multiple invasive carcinomas, size, grade, histologic type, and the results of studies for estrogen receptor (ER), progesterone receptor (PR), and HER2 / neu should pertain to the largest invasive carcinoma. If smaller invasive carcinomas differ in any of these features, this information may be included in the "Comments" section.

*Comment(s)

*CLINICAL

*Clinical History (Note Q)

The current clinical / radiologic breast findings for which this surgery is performed include:

- *Palpable mass
 *Nipple discharge
 *Other (specify)

Prior history

- *Prior history of breast cancer

*Specify Site, Diagnosis, and Prior Treatment

- *Prior presurgical (neoadjuvant) therapy for this diagnosis of invasive carcinoma

*Specify Type

*Radiologic Finding

- *Mass or architectural distortion
 *Calcifications
 *Other (specify)

Cancer Registry – Potential & Challenges

- ❑ Electronic checklists will enable automated processing of encoded data items**
- ❑ Improved cancer surveillance in terms of timeliness, accuracy, and completeness of data**
- ❑ More accurately capture the intent of the pathologist**
- ❑ How to receive and process cancer pathology reports in the eCC format?**

Ongoing Activities – Works in Process

- ❑ **Business analysis work group**
 - High level: eCC to Cancer Registries
- ❑ **Mapping Tables: CAP Checklist Data Items to NAACCR/CS Data Items w/ Validation**
- ❑ **Software to translate CAP Checklists Data Items to NAACCR Data Items**
- ❑ **NAACCR Volume V – enhance for CAP Checklists**
- ❑ **Tools for cancer registries to receive and process eCC**
- ❑ **Update NAACCR (E-Path) Reporting Guidelines (12-06)**
- ❑ **Transform Tool eCC export (XML) to NAACCR Volume V compliant HL7 format**
- ❑ **Other: Versioning – Conformance Testing**

Overview of Business Analysis Work Group

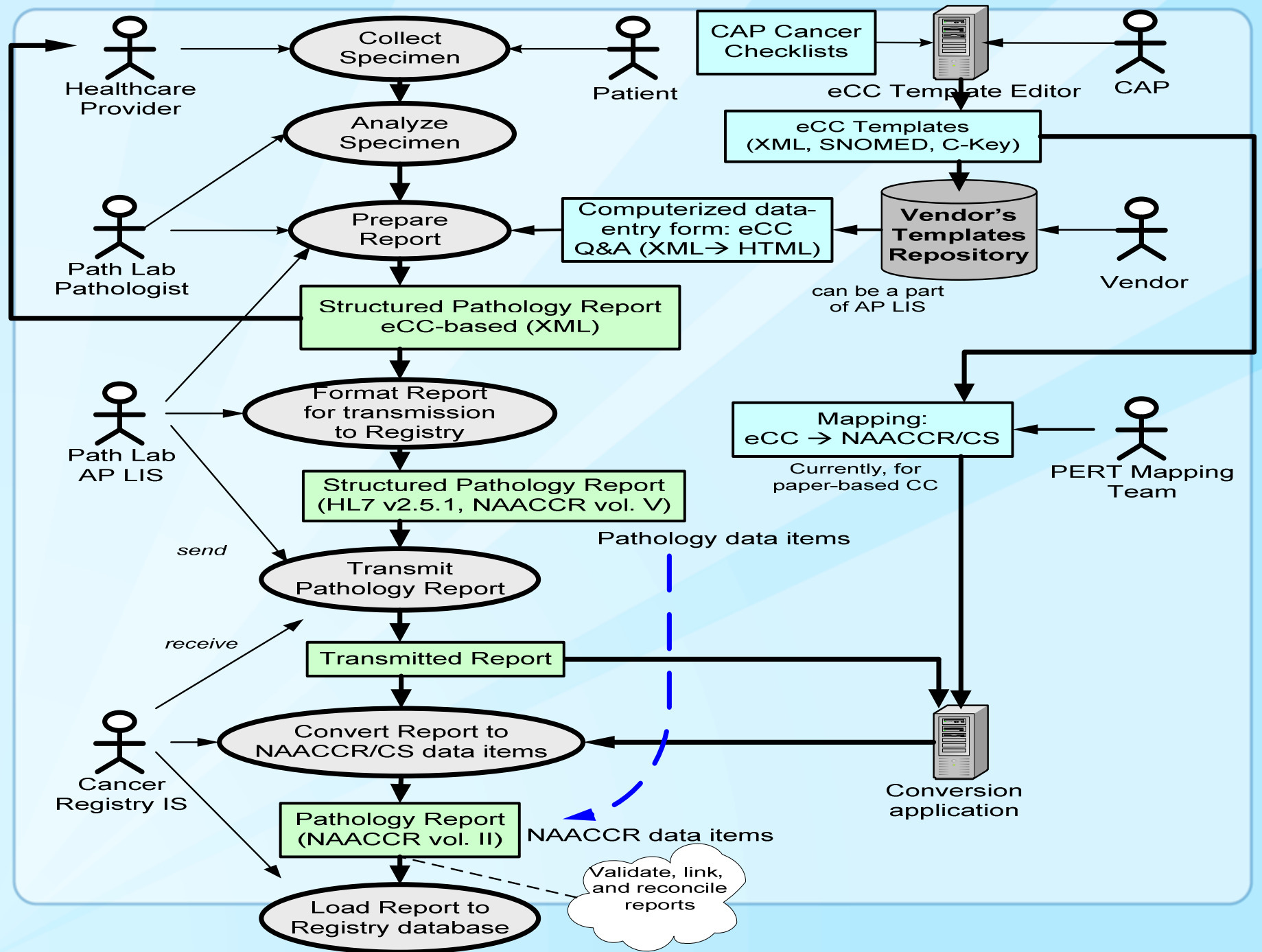
❑ Formed a Business Analysis Panel

- Purpose: To discuss and document issues and recommendations /requirements
- Approach: Create a model that describes the end-to-end process flow

❑ A workflow map used as an instrument to facilitate discussions and capture issues and recommendations /requirements

❑ Developed materials (a business analysis/requirements model) to be vetted with other groups

❑ Status – “Strawman” Phase nearing completion



**Examples:
Requirements,
Recommendations, and
Issues**

Requirement: Standardized terms and definitions (eCC data dictionary) should be utilized in the reporting process

Recommendations (excerpt):

- CAP in collaboration with other clinical communities should harmonize clinical terminology by developing and maintaining a data dictionary for standardized eCC terms and definitions
- CAP should provide a list of synonyms for terms for data mapping and integrity purposes. This list would be supplied to all path vendors and cancer registries that license the use of the checklists

Issues addressed (excerpt):

- Confusing terminology in the CAP eCC, e.g., do all clinicians have the same definition of a left hemicolectomy?

Requirement: Consistent implementation of HL7 messages should be developed, sustained, and supported by proper tools by all parties involved in the reporting process

Recommendations (excerpt):

- NAACCR Pathology Data WG should provide recommendations on the conformance testing approaches for the HL7 message

Issues addressed (excerpt):

- Role of standard semantic codes in HL7 messages (SNOMED, LOINC, etc.)
- Message system versioning (ex. version of HL7)
- Getting vendors to use a standard report format (ex. NAACCR vol. V)

Requirement: Synchronization of various versions of products and tools utilized in the CAP eCC pathology reporting process should be continuously maintained

Recommendations (excerpt):

- NPCR should develop, in collaboration with CAP and NAACCR ,versioning and synchronization approach with mapping software (from eCC data items to NAACCR data items)
- CAP DIHIT should implement an organizational change management solution

Notes (excerpt):

- While the paper versions of the checklists are easier to manage with respect to releasing updates and errata notices, the same is not true of the electronic versions. This needs to link somehow with the errata process that the CAP is developing.

Collaboration Partners

□ CAP

- PERT
- eCC development team
- CAP Cancer Committee

□ NAACCR

- Pathology Data Workgroups

□ NPCR

- Business analysis meetings
- Tool development meetings
- HL7 Technical Support for Volume V

□ CPAC

- HL7 Technical Support for Volume V
- Implementation: CAP Cancer Checklist reporting to Cancer Registries

Thank you!

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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