Electronic Pathology Project in North Carolina Central Cancer Registry

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Abstract

The North Carolina Central Cancer Registry (NCCCR) is making tremendous progress in recruiting pathology labs to report electronically (ePath). The implementation and success of this project is due to collaboration between the NCCCR, the University of North Carolina at Chapel Hill, Centers for Disease Control and Prevention (CDC)'s National Program of Cancer Registries, Public Health Institute (PHI) and pathology labs. To date, the NCCCR has received more than 50,000 electronic pathology reports from 18 labs.

The NCCCR uses the following systems to integrate the pathology reports into the NCCCR's Eureka database:

- Public Health Information Network Messaging System (PHINMS) to securely transmit data from pathology lab to NCCCR;
- CDC's eMaRC PLUS software to process, filter, auto-encode and auto-populate data into the NAACCR abstract format;
- Parser developed by PHI to parse pathology report data and integrate it into the Eureka database.

Introduction

- The NCCCR initiated the ePath project in 2008 to facilitate encrypted transmission of cancer data from pathology laboratories to promote electronic casefinding.
- The goal of this project is to implement the automated abstraction process to improve efficiency of data collection.
- The ePath project is implemented with the eMaRC PLUS software that allows the user to automatically encode and populate cancer pathology report data. Then, the data are parsed, processed, linked, consolidated and saved in the Eureka database.
- The NCCCR has received more than 50,000 cases from 18 pathology labs.
- In addition, five pathology labs are in the process of implementing ePath, and five pathology labs are in the planning phase.

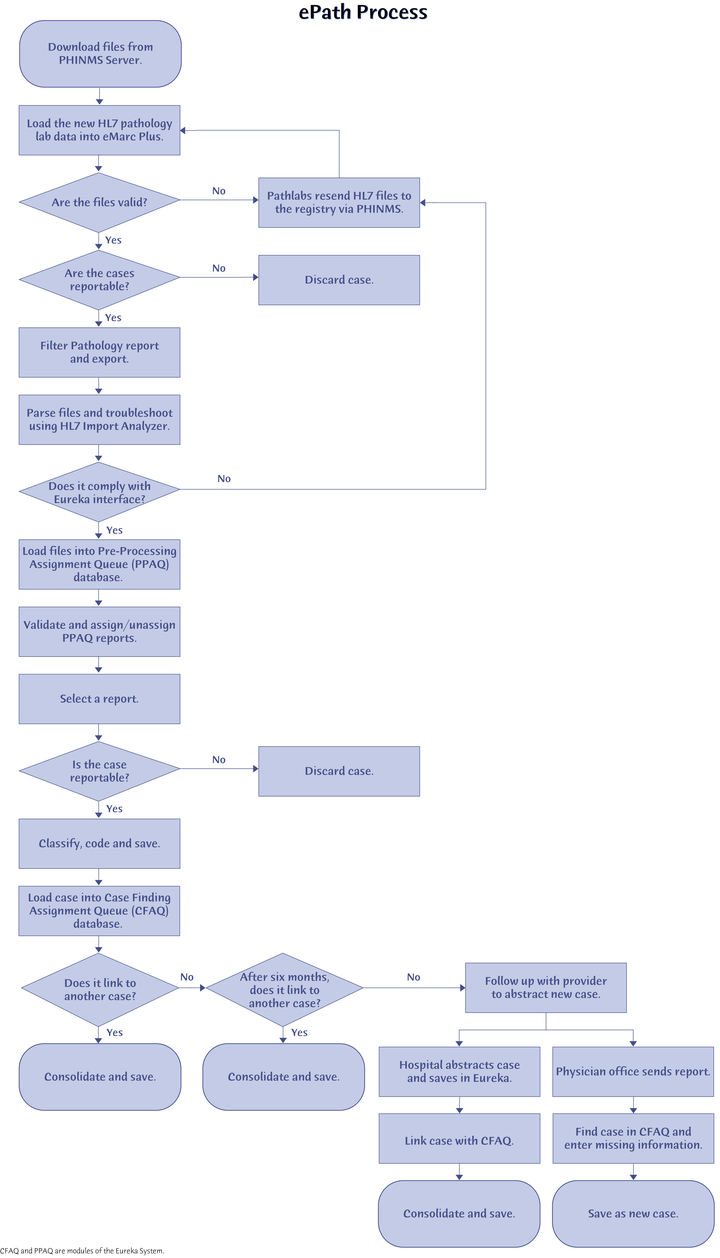
Recruiting Pathology Labs

- Identify and target pathology labs with larger data reporting volumes as well as the technical capabilities for ePath.
- Send ePath questionnaire and North Carolina legislative statutes to pathology labs.
- Send the NAACCR HL7 v2.3.1 standard, Eureka Parser specifications and the casefinding list with ICD-9 codes, guidelines for casefinding list, and links to Logical Observation Identifiers Names and Codes (LOINC).

Establish Pathology Labs for ePath

- Coordinate with CDC and NCCCR to help pathology labs to download and install PHINMS software; set up an account for each pathology lab to start transmitting the HL7 messages to NCCCR.
- Pathology labs transmit test file to the NCCCR for testing.
- Review test HL7 messages for compliance with NAACCR HL7 v2.3.1 standard; work with the lab's IT to modify HL7 interface in order to meet reporting specifications.

ePath Process



CFAQ and PPAQ are modules of the Eureka System.

Challenges

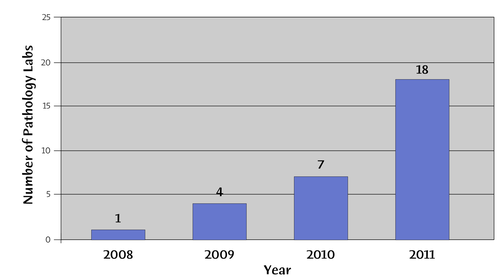
- Delay due to Administrative approval at multiple levels in the lab.
- Lack of technology necessary for Electronic Laboratory Reporting (ELR).
- Lack of familiarity with NAACCR HL7 v2.3.1 standard LOINC and SNOMED codes.
- Missing Social Security number, date of birth or demographic information that makes the linking process very challenging.
- Delays due to merger of labs with various Laboratory Information System (LIS) as it require conversion and migration of LIS.

Solution Implemented

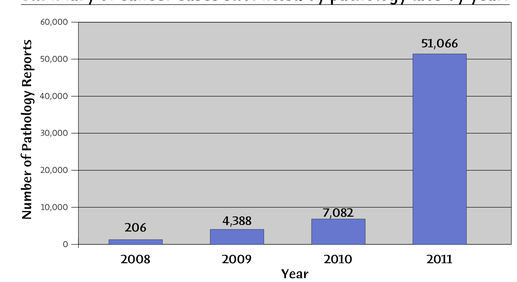
- Develop good relationships and frequent communication with pathology lab administrators to get the progress of ePath implementation.
- Encourage smaller labs to send files in an alternate electronic form.
- Periodically check with the labs to see if they have ePath capability.
- Train the pathology lab's Information Technology (IT) team to modify the file according to the standards and provide LOINC codes to assist in mapping the local codes and incorporating them in the HL7 files.
- Enhance existing linkage software to minimize manual review and linkage.
- Frequent follow up with the pathology labs on the status of the LIS conversion and/or migration.

Progression of ePath at NCCCR

Summary of pathology labs on ePath by year.



Summary of cancer cases submitted by pathology labs by year.



Conclusions

- The ePath project is an ongoing process which is successful in getting pathology reports in a timely manner. The ePath reports improve casefinding for diagnoses in non-hospital data sources.
- Rapid Case Ascertainment utilizes ePath cases because records come into the registry with very little delay from the time of initial diagnosis.

Future Plans

- Recruit pathology labs and work with the lab's IT to facilitate cancer case reporting via ePath.
- Collect biomarker data from specialty pathology labs.
- Integrate eMaRC PLUS with Eureka System to automate the process of parsing ePath cases into the Eureka database.

References

- NAACCR ePath Reporting guidelines. Available at www.naaccr.org/LinkClick.aspx?fileticket=tOk5jRk9wI0%3D&tabid=136&mid=476
- Modeling ePath Reporting. Available at www.cdc.gov/cancer/npcr/pdf/aerro/MERP_epath_final_2007.pdf

*University of North Carolina, Chapel Hill, Cancer Research Fund

nc department of health and human services

NCPH North Carolina Public Health

NCCCR North Carolina Central Cancer Registry