

Recurrence Integration Database (RID) Process

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Background and Significance

- Recurrence is a very important cancer outcome
- Currently, cancer surveillance is not providing this information
- SEER and CoC are collecting recurrence but not releasing it due to concerns of data quality
 - Studies showed
 - relatively good positive predictive value (PPV), e.g. if coded as recurrence, most likely it is true
 - but suboptimal sensitivity (false negatives-missing events)
- Pressing need to report recurrence outcome

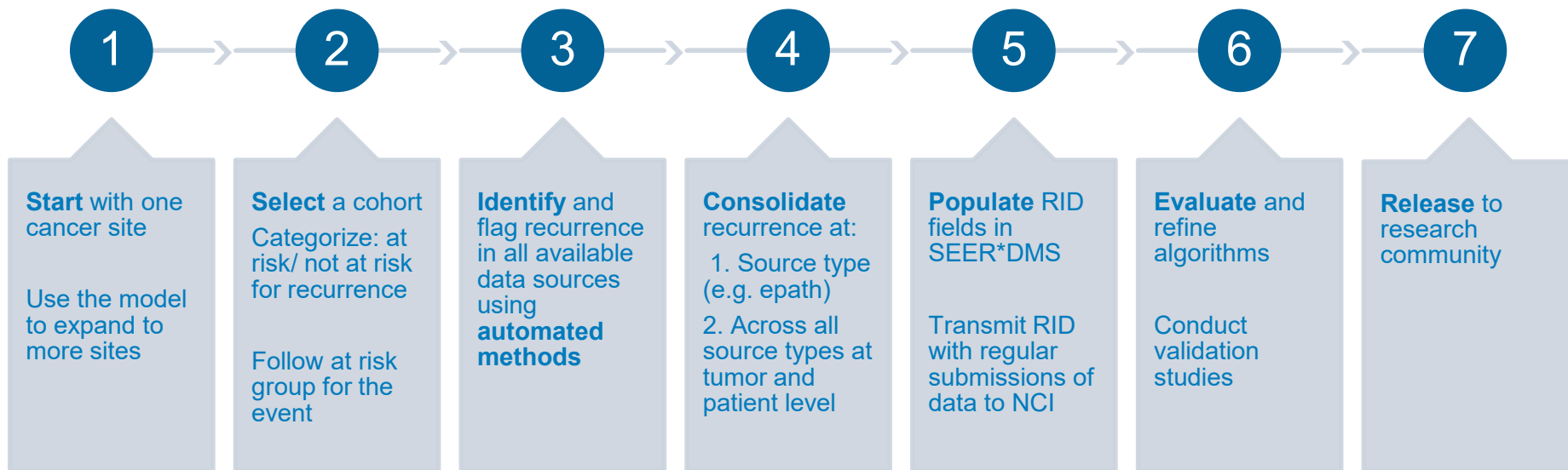
RID Objectives

- Create a Recurrence Integration Database (RID) to support research such as:
 - Estimation of likelihood of recurrence
 - Conditional to demographic, tumor characteristics and prognostic factors
 - Time to recurrence
 - Post-recurrence survival
- Test the validity of RID models

RID Process



Recurrence Integration Database Process



RID Process: Selection of RID Cohort

- Breast cancer
 - First and only BC primary defined by EOD 2018 schema
 - Female >20 yo
 - Dx years 2013 to 2023
 - Exclude autopsy and DCO cases

Defining “At Risk” for Recurrence

- Cases “at risk” cumulatively satisfy the following conditions:
 - Survival after dx $\geq$ 6 months
 - In situ, local or regional disease
 - Exclude distant and unknown stage
 - Received curative intent treatment
 - Surgery of primary site (codes 20-80)
 - Exclude
 - Cases with positive margins
 - Cases coded “Never disease free”, code 70 in “Recurrence Type, First”
 - Had surgical procedure to Other Sites

Data Source Types Queried for Recurrence Signal

- NAACCR abstracts (Recurrence Type, First and Date)
- Electronic pathology reports
- Cause of death per death certificate
- Medical claims - diagnostic codes (Optum and Unlimited Systems)
- Medical claims - systemic (Chemo and BRM) therapy from Optum and Unlimited Systems
- Medical claims – procedures (Optum)
- Pharmacy claims (CVS, Walgreen, Optum)

Rules and Algorithms

- NAACCR abstract: auto consolidation of Recurrence Type, First and Date
- Epath: Deep learning algorithm for detection of metastatic disease
- Secondary tumor diagnosis in claims
- Cancer directed systemic therapy (chemo and immunotherapy)
in medical and pharmacy claims > 18 months after dx or if between 12 and 18 months, must have a pause of 3 months
- Procedure codes for radiation therapy > 12 months after dx
- Procedure codes for mastectomy >12 months after diagnosis
- Palliative care codes in claims

Consolidation of Recurrence

- Recurrence = Yes if any
 - Cause of death secondary (metastatic) tumor: C77X, C78X
 - ODS-reported recurrence
 - Path report(s) indicating metastatic recurrence corroborated by treatment in claims or death certificate
 - Claims indicating metastatic recurrence (dx codes for secondary malignancies) corroborated by treatment in claims or death certificate
 - Claims indicating treatment for recurrence (chemo or BRM, radiation or surgery) corroborated by death certificate

RID Data Fields



Recurrence Risk Evaluation Coding

- 0: patient “At Risk”
- 1: patient “Not At Risk”, never disease free per registrar assessment (Recurrence Type=70)
- 2: patient “Not At Risk”, distant/disseminated disease at diagnosis (Summary Stage = 7)
- 3: patient “Not At Risk”, no evidence of curative intent treatment (no surgery)
- 4: patient “Not At Risk”, positive surgical margins
- 5: patient “Not At Risk”, surgery of distant sites
- 6: patient “Not At Risk”, survival less than 6 mos.
- 8: combination of codes 1,2,3,4,5,6
- 9: unknown status

Data Source Availability Flags

- RID Abstract availability flag
- RID Death certificate availability flag
- RID Medical claims availability flag
- RID Pharmacy claims availability flag
- RID Pathology report availability flag



- Coding
 - 0: Respective source not available
 - 1: Source available

Signals for Recurrence Data Fields

- RID Signal for recurrence via abstract
- RID Signal for recurrence via epath
- RID Signal for recurrence via secondary malignancy diagnosis codes in claims
- RID Signal for recurrence via subsequent treatment in claims



Coding

- 0: no evidence of recurrence
- 1: evidence of recurrence
- 8: never disease free
- 9: source data not available in follow up window

Overall Recurrence Status Autocoding

- 0: No evidence of recurrence
 - none of the sources indicate recurrence
- 1: Evidence of recurrence
- 5: Death from BC with no clear evidence from other sources for or against recurrence
- 6: Death from other cancer with no clear evidence from other sources for or against recurrence
- 7: Death from other causes with no clear evidence from other sources for or against recurrence
- 8: Patient not at risk for recurrence
- 9: Unknown (none of the codes above can be assigned)

Dates and Time Intervals Data Fields



- RID First recurrence evaluation month and year
- RID Month and year of recurrence
- RID Months from treatment initiation to recurrence
- RID Months from diagnosis to recurrence
- RID Months alive with recurrent disease

Next Steps



Current Activities and Future Plans

- Analysis of RID from February submission
- Validation study in Los Angeles SEER registry
- Publication
- Potential release of RID as SEER Specialized DB
- Expand the RID model to more cancer sites



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