Use of claims profile review to guide retrieval of medical records in an observational cohort study

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Background

Medical record review provides clinical information that is not available in administrative claims data, and is commonly used to validate claims-based methods to identify outcomes. Limitations of medical record review may include incomplete information and low rate of response to record requests.

Objective

To create a stepwise process to optimize case retrieval rate and completeness of clinical information necessary to adjudicate potential cancer cases identified using administrative claims data.

Figure 1. Study Schematic

Case Identifying Claims Date

Study Period

Oct 1, 2012 — Dec 31, 2017

30 days prior — 90 days post

Record Retrieval period

First cancer diagnosis in the qualifying pair of claims for cancer eligibility as the case-identifying claim date

Methods

Figure 2. Stepwise Process of Medical Record Selection and Retrieval Methodology

Case Identification
A cancer-case identifying algorithm was applied to administrative claims data.

Cancer cases were identified based on the presence of ICD9/10 diagnosis codes for cancer observed on at least two medical claims at least 7-90 days apart.

Creation of Claims Profile
A claims profile containing select medical claims occurring within −30/+90 days of the date of the cancer event was constructed.

The claims profile is intended to reflect the chronological series of cancer-related healthcare encounters around the time of initial cancer diagnosis. Claims included in the profile were restricted to encounters where: 1) a diagnosis of cancer; 2) a cancer-related procedure or diagnostic; or, 3) a cancer-related place of service was observed.

Review of Claims Profile
A nurse experienced with administrative claims and medical record review reviewed each claims profile and prioritized sites for record retrieval.

Up to three sites were identified for each case, based on criteria including physician specialty, place of treatment, and procedures performed. The decision to seek a particular chart was made based on which site(s) were most likely to have a medical record that could serve to validate the outcome (eg, records of diagnostic reports or lab values, specialist encounters).

Medical Record Retrieval
Medical record retrieval was coordinated by a clinical data collection team who targeted retrieval of prioritized medical records.

Initial outreach consisted of mailed record requests with fax back instructions. Follow-up via telephone outreach was conducted after one week, with up to five attempts per site. Additional targeted follow-up was conducted as needed to maximize retrieval rate.

Medical Chart Abstraction
Medical record abstracts were produced to consolidate information from multiple prioritized charts into a single data entry form.

The chart abstraction form was created to facilitate consolidation of the medical record information necessary for a panel of oncologist to assess case status. The chart abstraction form was an organized and standardized presentation of key information obtained from the patient medical record.

Figure 3. Sample Claims Profile

Patient ID	Cancer Type	Cancer Date	Service Date	Treatment Setting	Specialty	Primary Dx Code	Dx Description	Secondary Dx Code	Dx Description	Provider Name	Address
'001	Bladder	1/15/2013	1/15/2013	HOSPITAL OUTPATIENT	HOSPITAL	1889	MALIGNANT NEOPLASM OF BLADDER			Disney Hospital	123 Disney Dr
'001	Bladder	1/15/2013	1/24/2013	HOSPITAL OUTPATIENT - Pathology	ICU	1889	MALIGNANT NEOPLASM OF BLADDER			Disney Hospital	123 Disney Dr
'001	Bladder	1/15/2013	1/24/2013	HOSPITAL OUTPATIENT – ICU	ANATOMIC PATHOLOGY	1889	MALIGNANT NEOPLASM OF BLADDER	59970	HEMATURIA	Donald Duck MD	1001 Happiness Blvd
'001	Bladder	1/15/2013	1/24/2013	HOSPITAL OUTPATIENT – Urology	UROLOGY	1889	MALIGNANT NEOPLASM OF BLADDER	59971	GROSS HEMATURIA	Scrooge McDuck MD	3117 Money Ave
'001	Bladder	1/15/2013	1/24/2013	HOSPITAL OUTPATIENT- Anesthesiology	ANESTHESIOLOGY	59970	HEMATURIA	1889	MALIGNANT NEOPLASM OF BLADDER	Mickey Mouse, MD	111 Smiling Cove
'001	Bladder	1/15/2013	2/8/2013	OFFICE – Pathology	UROLOGY	1892	MALIGNANT NEOPLASM OF URETER	59659	OTHER FUNCTIONAL DISORDER OF BLADDER	Minnie Mouse MD	1150 Polka Dot Dr
'001	Bladder	1/15/2013	4/15/2013	OFFICE – Pathology	GENERAL PRACTICE	2337	CARCINOMA IN SITU OF BLADDER	78843	NOCTURIA	Daisy Duck MD	1150 Pink Bow Circle

ID = identification; Dx = diagnosis; ICU = intensive care unit

Results

- A total of 1,100 cancer cases were identified. At least one chart per patient was retrieved for 84% (N=925) of the cohort.
- The site prioritization resulted in identifying the top three sites from which we retrieved medical charts. Of the 2,960 chart requests, 1,931 were received (65% chart obtain rate). The average chart obtain rate was 69% for Priority 1 sites, 65% for Priority 2 sites, and 60% Priority 3 sites.
- The 1,931 charts received represented 925 patient cases, resulting in an average 2.1 charts received per patient.

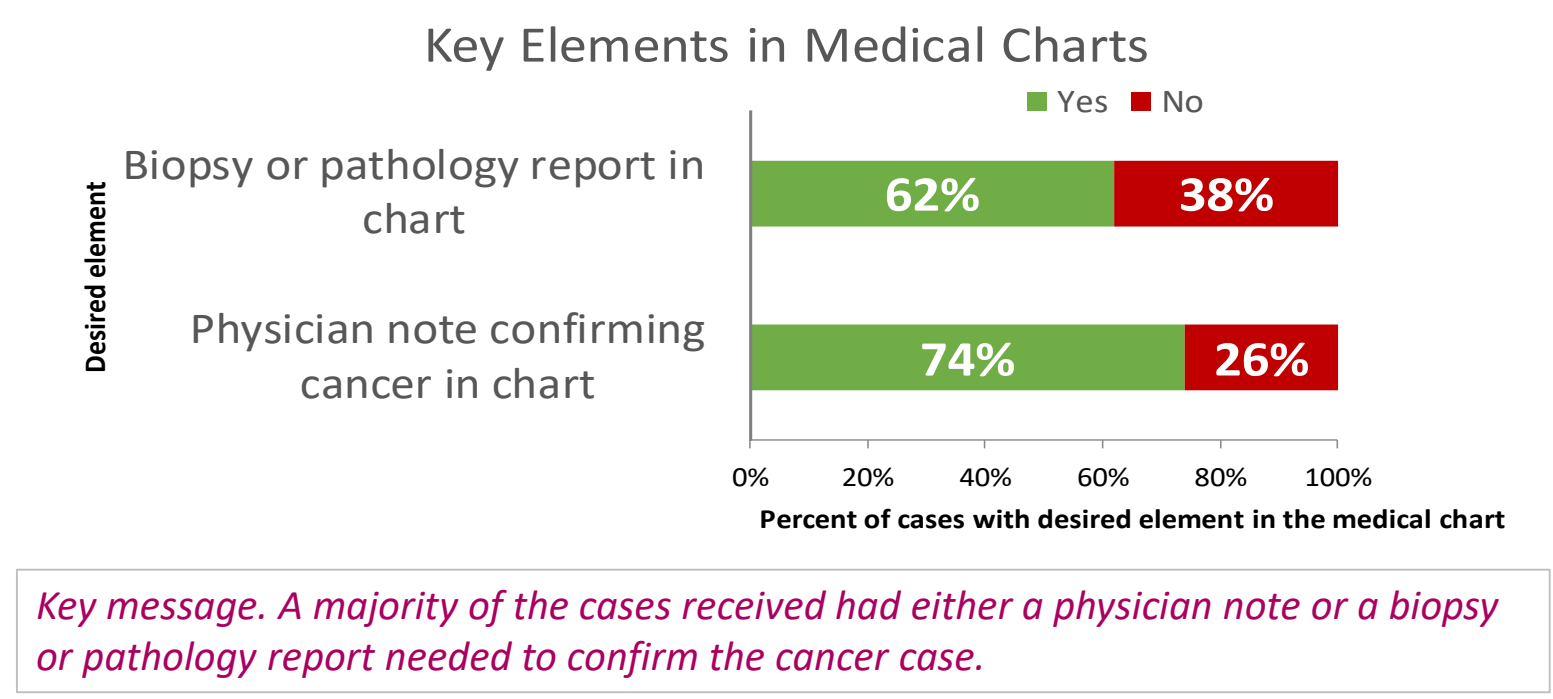### Figure 4. Clinically Relevant Information in Charts to Confirm the Cancer Case

Key Elements in Medical Charts

■ Yes ■ No

Biopsy or pathology report in chart: 62% / 38%

Physician note confirming cancer in chart: 74% / 26%

Percent of cases with desired element in the medical chart

Key message. A majority of the cases received had either a physician note or a biopsy or pathology report needed to confirm the cancer case.

Table 1. Response Rate by Cancer Type

Cancer Type	Cases Requested N	Cases Received n	Percent Obtained %
Bladder	134	110	82%
Breast	245	214	88%
Colon	105	92	88%
Kidney	74	60	81%
Lung	181	143	79%
Lymphoma	69	54	78%
Melanoma	58	46	79%
Pancreas	20	15	75%
Prostate	171	154	91%
Uterus	44	37	84%
OVERALL	1,100	925	84%

Key message. Upon applying the selection criteria to claims data, 1,099 cancer cases were identified and medical records were requested for these cases. At least one medical record was obtained for 925 patients (84% response rate).

Conclusions

- The use of claims profile review and the identification of multiple sites for medical record retrieval resulted in a high overall case retrieval rate. The site prioritization resulted in retrieval of charts with relevant clinical information needed to adjudicate the case. This study benefited from use of an integrated team to design claims profiles and the chart prioritization methodology, as well as design of a concise chart abstraction forms to organize and condense key clinical information.

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