ABSTRACTED ON BEHALF OF

Proposed Abstract Data Field For Defining and Monitoring Facility Relationships

Problem

Central Registries Lack a Complete Picture of Treatment/Diagnosis Facilities

An accurate understanding of facility cancer reporting relationships is key to accurately crediting cases to medical facilities that diagnosed and/or treated them. This in turn plays a critical role in the ability of Central Cancer Registries to monitor turnover in diagnosing/treating facilities, and impacts their case finding ability. In a staff-limited context, tracking the tenuous and often obfuscated relationships between facilities – whether they be ownership relationships or abstracting relationships – becomes a taxing and increasingly arduous task that has grown to be unrealistic for CCRs to maintain in a timely manner, especially those without resources for routine follow back of cases.

The current status quo for hospitals is that abstract cases for clinics that they do not own, to be credited with those cases . This results in the Abstractee (i.e., clinic) Facility going unnoticed by central registries, as well as artificially inflating the numbers of diagnosis and treatments at the Abstractor (i.e., hospital) facility. The inaccurate tallies of both facility case counts, and of facilities themselves can lead to inaccurate and incomplete picture of the universe of cancer related facilities within a state or province.

Hospital Registries Lack Facility Relationship Data to Meet Their Needs

Hospital registries are often tasked to generate provider-based cancer case accounting via provider ID numbers. Additionally, they also need facility-based case accounting capability for a variety of reasons (among them, assessing market share and/or revenue for abstracting services). Yet despite this need, such accounting may not be available to them. Often, hospital registry staff not have access to timely facility-facility relationship data for clinics their hospital owns or abstracts for.

Hospital registrars may operate in an environment where facility-facility relationship data may not be made available and in which many demands are made upon their attention. Hospital staff need to able to leverage software tools to facilitate their determination of facility-facility relationship types and to leverage database memory to identify and manage facility name aliases in order minimize lookup keystrokes.

Background

The abstraction of cancer cases for reporting to a central registry is a function that is typically centralized within a hospital organization to achieve economies of scale. Hospitals report for clinics that they own, but also sometimes for clinics that they don't own. Cancer case abstracting agreements between hospitals (abstractor facilities) and clinics they do not own (abstractee facilities) are referred to as abstracting relationships. Abstracting relationships are an arrangement of convenience and tend to be more tenuous than ownership relationships. As a result, they are more appropriately recorded as a case attribute rather than as a facility attribute.

North Carolina CCR staff first proposed Abstracted On Behalf Of (AOBO) to both the NAACCR Uniform Data Standards (Jan 2015) and Registry Operations workgroup (Oct 2015). The overall reception was positive but required more detail on how AOBO might be collected before further consideration. Since then, and amid growing support, we have been gathering requirement data for collecting AOBO, both for hospital registry use and central registry use. We invite other states and provinces to take part in a periodic conference call to compile requirements for this item.

Ownership/Abstraction Relationships and the Universe of Cancer-related Facilities

It has been made clear to CCRs that an implied part of collecting case abstracts for reportable cancer cases also includes responsibility for collecting data on treating/diagnosing medical facilities (alea potential reporters), and ownership or abstracting relationships between them. This facility-facility relationship data enables positive identification of facilities responsible for case reporting when ownership or abstracting relationships are in effect. To help CCRs understand the magnitude of keeping track of these relationships, it is helpful for them to identify the universe of potential reporters in their state or province (Facility Universe Table), and their relationships (Facility Affiliations Table). It is a challenge to identify the universe of potential reporters, because they periodically change names or incorporation status due to mergers, acquisitions, name changes, and closures. A primary method that is practical for CCRs to help identify this universe is an annual collection of medical facility ownership relationship data from hospitals that own and abstract for them, as facility attributes. By contrast, attempting to mine the National Provider Index (NPI), in order to approximate a comprehensive list of clinics that see cancer patients, is a use of which the NPI was never intended, and so may take resources beyond those available to most CCRs.

We propose that the subset of facility names, addresses, and aliases maintained by hospital cancer registries can be collected by CCRs to help populate a Facility Universe Table.

Enhancing Electronic Pathology Reporting Data to Finding Missing Reporters

The ability to identify potential reporters has changed within the last 10 years with the adoption of electronic pathology report capture by CCRs, which enables registries to see the path reports ordered by attending physicians for biopsy/diagnosis for individual patients. For CCRs that take part in electronic pathology report capture, there is a capability to identify facilities that diagnose or treat cancer patients and subsequently do not report the case to their Central Cancer Registry, as state or provincial statues require.

Ideally, CCRs would have all the medical facility ownership and abstracting relationship data they need on hand when attempting to identify these facilities. Typically this is not the case, so the registrar must follow back on path reports not matched to known cases in their databases. A frustration for CCR staff attempting to contact facilities for this purpose is that many facility staff do not know the status of any outstanding ownership or abstracting relationships, and sometimes claim a relationship when none exists. In these cases, CCR staff contact the hospital in question only to discover the hospital recognizes no such relationship. Since the hospital is the arbiter of abstracting relationships between the hospital and the abstractee clinics, it makes sense to capture abstracting relationship data from the hospital as a case attribute, so as to shortcut such confusion.

Abstract

We present the case for collection of Abstracted On Behalf Of as a case attribute, and for facility-facility ownership and/or abstraction relationship data as facility attributes. We present findings to date on criteria by which to differentiate an Abstracted On Behalf Of case from other cases.
We present an initial set of software requirements to enable the capture of Abstracted On Behalf Of with a minimum of keystrokes.

The Case for Collecting 'Abstracted On Behalf Of'

- Return on Investment in Dollars and Sense

The Return on Investment (RoI) cannot be calculated until all requirements are known, so that we can estimate whether increased staff time to keep track of facilities is offset through automation. The RoI calculation is made more difficult in that for many CCRs, new capabilities for facility tracking would be enabled that are difficult to compare to past practices. What is known at this point is that the real RoI may not be measured in workhours spent to dollars recouped but in the confidence granted from knowing facility relationships are tracked at hospital registries and periodically updated to CCRs.

Achieving consensus on the extent of uncertainty within data shared among cooperating organizations can be hard to quantify in terms of RoI, because that trust relies on the strength of professional relationships. For example at least some facility-facility relationship data will contain uncertainty (from the perspectives of both the hospital registry and CCR). Working together they can come to consensus on the extent of that uncertainty, and possibly reduce it through their combined resources.

- Case Attributes can be Chronologically Sequenced to Derive Abstracting Relationship Duration

Capture of abstracting relationships enables a data stream via submitted abstracts (in other words, a notification of the duration of the relationship that is updated with each received abstract). In a best-case scenario (ie consistent reporting), changes in abstracting relationships will be detected at the speed at which they happen. In an intermittent reporting scenario, changes in abstracting relationships might still be inferred. Both are potentially more accurate and precise to the relationship than would be capturing abstracting relationship data as a facility attribute. Further, changes to facility name, notification of new clinics, and clinic closures, might be detected through this data item, thereby strengthening the ability of CCRs to approximate the universe of potential providers in their database.

- First Step in Facility-based Case Accounting

From the perspective of facility-based cancer case accounting, this has a direct impact on the crediting of cases to facilities at the CCR via (annual) facility case counts. Thus for example, were the duration of an abstracting relationship to be less than a calendar year, cases can still be credited to the appropriate facilities with the AOBO data item. This is in comparison to the present case accounting situation where cases that are abstracted are typically credited to the reporting (abstractor) facility, thus masking the case count of the abstactree facility as well as artificially inflating the case count of the abstractor facility.

- First Step in Generating Missing Case Estimates By Facility

The categorization of cancer diagnosis/treatment facilities (owned, abstracted on behalf of, or self-reporting) is a necessary prerequisite to using facility-base case accounting to generate missing case estimates for all cancer diagnosis/treatment facilities.

- Clinic-Hospital Cardinality

Not all clinics' abstracting relationships are expected to be so neatly described as one-to-one (abstractee-to-abstractor). Inevitably we expect different physicians at the same clinic to arrange abstracting relationships with different hospitals (one-to-many). For the latter situation, making AOBO a case attribute eliminates confusion that would result were it a facility attribute.

- Uncertain Ownership Issues

Finally, not all ownership relationships are clear to hospital staff at hospitals that take part in them. Questions about whether a given clinic is owned, or just its medical records data are owned, by the hospital may remain unanswered or unclarified (from a legal perspective) for years. AOBO gives both the hospital and the CCR the opportunity to define a relationship as abstracting when ownership is uncertain.

What is AOBO?

How to Define Abstracted On Behalf Of

The North Carolina CCR continues to vet criteria that meet both CCR and hospital requirements. During this process, we are working to determine whether the terminology we use needs to be more specific or more general to successfully convey the definition to CTRs.

Scope of Abstracted On Behalf Of Cases and Confidence in Comprehensive Cancer Surveillance

Using Class of Case 42 as a preliminary selection criteria for an AOBO case, the North Carolina CCR identified approximately 500 cases that had been Abstracted On Behalf Of, which is far less than 1% of total cases. From that result, it may seem unwarranted to capture this item given its limited scope. However, it is the prospect of *comprehensive* capture of abstracting relationship data, and the impact that has on confidence in successfully categorizing the universe of potential reporters (as self-reporting, owned, or AOBO), and by extension the confidence that lends to comprehensive cancer surveillance, that is of critical concern. If a primary step in identifying missing cases is to identify missing reporters, then knowing which facilities are not taking part in either an ownership or abstracting relationship, at any given time, is just as important as determining which ones are.

Knowing the number of AOBO cases, however small, enables the identification of reporters not taking part in abstracting relationships by process of elimination. Such categorization of facilities makes it easier for CCRs to identify non-reporters and thereby determine confidence for missing case estimations in a given region, country, or other sub-state or sub-province area.

INTERESTED? WANT TO HELP OUT?

If you are interested in learning more about AOBO, participating in pilot programs for gathering the AOBO data field, or submitting requirements for consideration, please contact Christian Klaus (christian.klaus@dhhs.nc.gov) or Robert V Aldrich (robert.aldrich@dhhs.nc.gov) at the North Carolina Central Cancer Registry, part of the NC Department of Health and Human Services for more information.

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Allowable Values and Format: This field is alphanumeric and can accommodate text up to 99 characters
A) A default value of 'NOT AOBO' will be used to indicate that the reporting facility has determined that there exists no case affiliated facility, relative to reported case
B) This data item may not be left blank. If any case affiliated facility exists, the default of 'NOT AOBO' must be changed from 'NOT AOBO' to the appropriate medical facility name by the abstractor.

Facility-Facility Relationship Summarized as Categories: The following mutually-exclusive categories are proposed to summarize facility-facility relationships
1 – Hospital Administration claims an ownership relationship either of facility or its data
2 – Clinic staff claims clinic or data is owned by hospital, hospital response unavailable
3 – Both hospital and clinic agree that clinic and/or data are owned by hospital
4 – Both hospital and clinic agree that clinic and/or data are not owned by hospital
5 – Ownership status undetermined because hospital and clinic response are unavailable

Name Alias/Facility Relationship Lookup Table

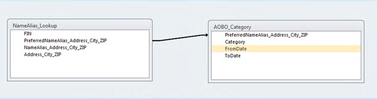
The key objective in collection of this data item from a CCR standpoint is that CTRs at abstractor facilities are provided information that maximizes the probability that they will not mistake one abstractee facility for another. To this end, facility names and addresses must be mapped to known aliases to minimize this possibility.
Conversations with cancer registry software vendors to date have suggested that the use of a dropdown lookup table will be key in this regard. Such a lookup table must be dynamic, to enable additions from hospital CTR staff. In the cancer registry software, the lookup table we are considering appear as a single text field with 4 components in a single field, separated by pipe delimiter:

FIN | Preferred Name Alias
Wrapped non-preferred Name Alias 1 | Concatenated Address_City_ZIP | Category
Wrapped non-preferred Name Alias 2 | Concatenated Address_City_ZIP | Category
Wrapped non-preferred Name Alias 3 | Concatenated Address_City_ZIP | Category

The preferred name alias is the unabbreviated name chosen by a given facility. Both preferred name and name aliases must be unique (in combination with Address) across facilities. By extension, a preferred name must be unique in combination with a given set of aliases, across all facilities. Each row in the lookup table has as many wrapped name aliases as needed for a given facility. Name aliases are a critical part of the collection of this item as they enable hospital CTRs to use name abbreviation to minimize keystrokes. Not all facilities may have a FIN, but it is made available for those that do to enable FIN search.

To view the lookup requires a dropdown text box that dynamically resizes for viewing. It will temporarily obscure other text boxes on the graphic user interface until it is no longer needed. Hospital CTRs can find the clinic they are searching for with the lookup table sort, wildcard searching, or both, to minimize keystrokes.

There are 2 backend tables that store these data within the application:



Additional Terms

Abbreviation Aliases: A subset of aliases are specifically meant for abbreviation (finding).
Abbreviation Traverse: We want software to enable the unique identification of facilities based on abbreviation aliases, not unabbreviated facility names. This reduces the required keystrokes to positive identification of a facility within a facility listing. When a hospital CTR identifies a group of aliases, (s)he can expand the combo box and then pick the correct facility by address with a mouse click.
Lookup Table Facility Primary Key: The unabbreviated, preferred name alias/address serves as the primary key.
Proprietary Information: Lookup does not convey AOBO relationship data to all CTRs using the lookup. AOBO is seen only by those CTRs at facilities that are submitting AOBO relationship data. Transmission of (encrypted) lookup is one-way: from hospital to CCR.
Relationship Management Notification: Facility-facility ownership data can be stored and maintained at the CCR and/or with software vendors. These data would then be available through the software, to enable it to notify hospital CTRs when they are working on an abstract from a facility for which there is no ownership relationship. If a facility is categorized with a #4 or #5 as above, the software reminds the CTR to enter in AOBO.
The lookup table would also be dynamic, in case hospital CTRs have more current info about ownership. Thus hospital CTRs can add in clinics once, and pick them thereafter. The name of the clinic serves as the primary key until a number can be assigned by the CCR.
Transmission of Lookup Table to CCR: Lookup tables are encrypted and sent to the CCR through the automated process of submission of the case abstract. The AOBO_Category table contains durations that can be used to retroactively construct abstracting relationships between facilities, which can be populated into the Facility Universe Table.

Additional Work CCR Staff May Need to Undertake to Track Facilities

While effort is being made to make the collection of this field and maintainence of this data as inobtrusive as possible to current registrars, the amount of additional work required is currently unknown. Possible tasks that may be required could include:
1 – Classify ePath facility names/addresses as either preferred alias or alias, on periodic basis. Add to Facility Universe Table.
2 – Compare hospital registry preferred alias/alias lookups on a quarterly basis to Facility Universe Table to identify new aliases. Identify and resolve discrepancies.
3 – Link facilities identified with text primary key, to CCR FIN where appropriate.
4 – Update Facility Affiliations Table with AOBO affiliation durations from hospital-specific lookup tables.
5 – Link Facility Universe Table to ePath facilities, self-reporting, and AOBO facilities for given area.
6 – Geocode facilities to identify extent of ownership, self-reporting, and AOBO facilities for given area.
7 – Generate case counts by Facility Universe Table and Facility Affiliations Table.
8 – Analyze patterns in Facility Universe Table and Facility Affiliations Table with respect to AOBO, mergers, and consolidations that enable enhanced case-finding ability.