

Case-Mix Data for Case Ascertainment

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Outline

- History, Needs Assessment
- Definitions, Data Sets
- Methods
- Preliminary Findings and Challenges

History (1)

- MCR conducts routine, in depth case-finding audits on each acute-care hospital once every two years. (Total approx. 70)
- A three month period is audited, as close to present as feasible.

History (2)

- All path reports
- Discharge disease index
- Appropriate clinic logs and records
- Appropriate diagnostic logs

Matched against all cases submitted by that facility to MCR since 1982. Non-matches are returned for justification.

Needs Assessment (1)

- Discovery phase – 1 day to several weeks
 - yearly submissions = <50 to >5000
 - avg 700, median 400
- Estimated average time for discovery = 2 weeks x 40 hospitals per year (3000 hrs)
- = Audits not accomplished as per MCR policy.

Needs Assessment (2)

- Main culprit – Disease Index

- Always paper
- May not be strict alpha – date, type, place
- May be several reports – admission type, campus
- May lack identifiers – DOB, SS#, MR#

Need a constant, reliable source of discharge information that can be routinely reviewed and justified. Remove that piece from formal audit process.

Needs Assessment (3)

- Source equivalent to Disease Index, constantly monitored would identify both potential missed cases AND late cases, provided its data was reasonably current.
- MCR was placed in close association with Division of Health Care Finance and Policy (DHCFP), presenting opportunity to investigate case-mix data as that source.

Definitions (1)

- Division of Health Care Finance and Policy
 - Independent agency within Mass. DPH
 - Collects, analyzes information about health care delivery system
 - Sets rates for facilities and providers
 - Administers Uncompensated Care Pool

Definitions (2)

- Case-mix data
 - Case specific, diagnostic discharge data containing clinical information relating to admission and services, and socio-economic information, e.g., age, sex, race, payer, zip.
 - The “mix” of diagnostic and treatment codes generates DRGs.
 - Case-mix data submitted by hospitals to DHCFP quarterly. De-identified, verified file for public use each year.

Data Sets (1)

- DHCFP
 - Inpatient Hospital Discharge Database
 - FY 2003 file for testing (7/1/02-6/30/03)*
 - Count = 104,892
 - Routinely want unverified data quarterly, approx 9 months old
- MCR
 - Admission level reports for diagnosis years 2002 and 2003
 - Count = 105,673
 - Abandoned search for non-analytics – no match with old data
 - Focused on capturing diagnoses surrounding FY2003

*www.mass.gov/dhcfp - FY2003 Documentation Manual

Methods (1)

- Remove non-reportable diagnoses from case-mix file.
 - FY 2003 file total count = 800,000+
 - Simple Access table and query system created for Death Clearance, ICD-9 to ICD-O-2
 - Lacked many equivalencies for C80.9
 - Did not contain CNS endocrine codes
 - Did not contain codes for new blood disorders
 - Did give an ICD-O site code for matching

Methods (2)

- Select data items for matching.
 - Case-mix file
 - DPH Facility Identification Code
 - Hospital Medical Record Number
 - Date of Birth
 - ICD-O translated Discharge Diagnosis (15, only 1st 3 selected)
 - SS# exists, but is encrypted for administrative DHCFP use
 - No patient names
 - Admission zip exists but not used

Methods (3)

- Select data items for matching.
 - MCR admission-level 02-03 file
 - DPH Facility Identification Code
 - Hospital Medical Record Number
 - Date of Birth
 - ICD-O-3 Site Code

Methods (4)

- Preliminary “match” in Access using “Find Unmatched Query Wizard.”
 - Because it runs exact matches and presents the unmatched as a table
 - Discovered that the DHCFP DPH Facility Codes were not equivalent for five hospitals and this was corrected
 - Identified 79,715 non-matching discharges

Methods (5)

- Second match run in Link Plus
 - Blocking: DPH Facility ID Code, MR#, DOB
 - Matching: DPH Facility ID Code (exact), DOB (date), MR# (generic string)
 - Score: 10
- 14,011 discharges accounted for, 65,704 unmatched
- Visual comparison of matches – 14K were true matches. Most variations in MR# - additional characters to a core number

Methods (6)

- The “Non_MatchReport.txt” was then opened in a text editor, the banners were removed and it was imported back into Access.
- Hospital-specific reports were generated for return and justification.
 - Non-deduped strict “alpha lists” to allow each patient’s admissions to cluster together by MR# and DOB, with additional info – ICD-O site code(s) and discharge date(s)

Findings (1)

- Untried, since the project timeline converged on Death Clearance data requests to hospitals.
- Do intend to require justification of all residuals from DHCFP FY2003 file to create a baseline.

Findings (2)

- Private conversations with other registries suggest new case identification by this method may only add about 1% to incident cases.
 - Diagnoses are allowed to be coded upon discharge if the condition has not yet been ruled out. The same problem as “Disease Index.”

Findings (3)

- Literatures searches for scientific journal articles are barren for this use of case-mix data in the US.
- Either it is not done, or done and not published, or obscurely published.
- Requiring special attention, the facilities with variant DPH Facility ID Codes account for over half of the residual non-matches.

Findings (4)

- Is the Inpatient Discharge Database where the missed cases are?
- Is correcting trend of late submissions a more important use of case-mix data?

Findings (5)

- MCR 00-02 Dx-Expt*
 - Total records=160,524
(Avg per year=54,421)
 - Avg # days to export=362
 - # 180 days or less=24,435 (15%)
 - Avg 137 days
 - # >180 days=136,089
 - Avg 402 days

- MCR 00-02 Ct-Expt*
 - Total records=160,964
 - Avg # days to export=323
 - # 180 days or less=31,347 (19%)
 - Avg 135 days
 - # >180 days=129,617
 - Avg 368 days

**Total based on good dates*

Findings (6)

- If case-mix data are reliably available on a quarterly basis, and recent case-mix (9 months old) are matched regularly to MCR admission level data, the main benefit may be increased timeliness.

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