Day 1: Session III

Implications of ICD-9-CM Coding Rules for Measuring QIs

Presenters: Patrick Romano, UC Davis

Rita Scichilone, American Health Information Management Association

AHRQ QI User Meeting

September 26-27, 2005

Overview

- Topics
  - Overview
  - ICD-9-CM coding practices
  - Coding and indicator development
  - ICD-9-CM coding resources
- Questions and answers

Overview

- The AHRQ Quality Indicators are based on commonly available administrative data.
- Administrative data are primarily used for billing, but also for other business and financial planning purposes.
- There is a basic tension between using the data for reimbursement and for defining quality indicators
  - Submitting bills quickly versus coding from a complete record
  - Maximizing the coding of complications and comorbidities versus only coding diagnoses “out of the norm.”

Overview

- Variation in QI rates might be due to variation in:
  - Data availability (e.g., number of diagnosis codes, admission type, condition present on admission, E-codes)
  - *Documentation (ICD-9-CM and DRG coding)*
  - Performance (e.g., processes of care, staffing)
- Documentation impacts both the implementation and development of the QI
- Two questions we address here:
  - What are the sources of variation in coding practices that might impact documentation and therefore the QI rates?
  - How does the design of codes impact indicator development?

ICD-9-CM Coding

- Adherence to best practices in coding and compliance with coding guidelines will ensure fair reimbursement and accurate measurement of quality indicators
  - Highest level of specificity
    - Overuse of NEC and NOS designation
  - Coding the general and specific
    - Use of 997.xx codes without use of additional code to identify specific complication
  - Coding of secondary diagnoses
    - Only codes that impact treatment or complications
  - Coding of E-codes
  - Coding of procedures
    - Only significant procedures to be reported

ICD-9-CM Coding: Specificity

- Highest level of specificity
  - Overuse of NEC and NOS designation
- Examples:

✓ Using 586 (renal failure NOS) instead of 584.x (acute renal failure) excludes case from denominator of PSI 3 (failure to rescue) and numerator of PSI 10 (postop physiologic/ metabolic derangement).

✓ Using 531.90 (gastric ulcer, unspec acute/chronic w/out hemorrhage or perforation) instead of 531.70 (gastric ulcer, chronic w/out hemorrhage or perforation) eliminates comorbidity credit in risk-adjustment of PSIs.

ICD-9-CM Coding: Multiple coding

- Coding the general and specific
  - Use of 997.xx codes without additional code to identify specific complication
- Examples:

✓ Use 451 or 453 code with 997.2 to describe postop DVT.

✓ Use 415.1x code with 997.3 to describe postop PE, or 518.81 with 997.3 to describe postop respiratory failure

✓ Use 584 code with 997.5 to describe postop renal failure (physiologic/metabolic derangements)

ICD-9-CM Coding: Avoid overcoding

- Coding of secondary diagnoses
  - Assign codes only for conditions that impact evaluation or treatment
- For reporting purposes the definition for "other diagnoses" is interpreted as additional conditions that affect patient care in terms of requiring:
  clinical evaluation; or
  therapeutic treatment; or
  diagnostic procedures; or
  extended length of hospital stay; or
  increased nursing care and/or monitoring.
- UHDDS…defines Other Diagnoses as “all conditions that coexist at the time of admission, that develop subsequently, or that affect the treatment received and/or the length of stay. Diagnoses that relate to an earlier episode which have no bearing on the current hospital stay are to be excluded.”

ICD-9-CM Coding: Avoid overcoding

- Coding of secondary diagnoses

- "Abnormal findings (laboratory, x-ray, pathologic, and other diagnostic results) are not coded and reported unless the physician indicates their clinical significance."
- "If the findings are outside the normal range and the physician has ordered other tests to evaluate the condition or prescribed treatment, it is appropriate to ask the physician whether the abnormal finding should be added."
- "All conditions that occur following surgery…are not complications… there must be more than a routinely expected condition or occurrence… there must be a cause-and-effect relationship between the care provided and the condition…"

A case study of birth trauma
Dallas-Fort Worth Hospital Council

Participating Hospitals	1999 Num	1999 Den	1999 Obs	1999 RiskAdj	1999 Exp	1999 LoCI	1999 HiCI	1999 CI	Stat Sig
State of Texas (THCIC PUDF)	831	305519	2.72	2.72	2.72	2.44	3.00		
Hosp A	6	3255	1.84	1.82	2.75	-0.91	4.55	(0.00, 4.55)	o
Hosp B	3	1324	2.27	2.27	2.72	-2.00	6.54	(0.00, 6.54)	o
Hosp C	55	1815	30.30	30.28	2.72	26.63	33.94	(26.63, 33.94)	-
Hosp D	1	1427	0.70	0.66	2.89	-3.47	4.79	(0.00, 4.79)	o
Participating Hospitals	**2000 Num**	**2000 Den**	**2000 Obs**	**2000 RiskAdj**	**2000 Exp**	**2000 LoCI**	**2000 HiCI**	**2000 CI**	**Stat Sig**
State of Texas (THCIC PUDF)	831	326095	2.55	2.55	2.55	2.28	2.82		
Hosp A	3	3303	0.91	0.90	2.58	-1.81	3.61	(0.00, 3.61)	o
Hosp B	2	1604	1.25	1.27	2.51	-2.61	5.14	(0.00, 5.14)	o
Hosp C	45	1752	25.68	25.66	2.55	21.94	29.38	(21.94, 29.38)	-
Hosp D	2	1484	1.35	1.36	2.54	-2.68	5.39	(0.00, 5.39)	o
Participating Hospitals	**2001 Num**	**2001 Den**	**2001 Obs**	**2001 RiskAdj**	**2001 Exp**	**2001 LoCI**	**2001 HiCI**	**2001 CI**	**Stat Sig**
State of Texas (THCIC PUDF)	763	333101	2.29	2.29	2.29	2.02	2.56		
Hosp A	8	3099	2.58	2.58	2.29	-0.21	5.37	(0.00, 5.37)	o
Hosp B	4	1553	2.58	2.58	2.29	-1.37	6.53	(0.00, 6.53)	o
Hosp C	53	1915	27.68	27.66	2.29	24.11	31.22	(24.11, 31.22)	-
Hosp D	1	1618	0.62	0.59	2.40	-3.29	4.46	(0.00, 4.46)	o

Confusion about coding

Birth Trauma—Injury to Neonate

Numerator:

Discharges with ICD-9-CM codes for birth trauma in any diagnosis field per 1,000 liveborn births.

Birth Trauma

ICD-9-CM diagnosis codes:

7670	Subdural and cerebral hemorrhage (due to trauma or to intrapartum anoxia or hypoxia)
7673	Injuries to skeleton (excludes clavicle)
7674	Injury to spine and spinal cord
7677	Other cranial and peripheral nerve injuries
7678	Other specified birth trauma
7679	Birth trauma, unspecified

Code Index under "Molding, head" lists 767.3

ICD-9-CM Coding Manual Definition

767.3 Other Injuries To Skeleton Due To Birth Trauma
Fracture of: long bones, skull
767.4 Injury To Spine And Spinal Cord Due To Birth Trauma
{Dislocation} {Fracture} {Laceration} {Rupture} of spine or spinal cord due to birth trauma

ICD-9-CM Coding: Procedures

- Coding of E-codes

  "External causes of injury and poisoning codes (E codes) are intended to provide data for injury research and evaluation of injury prevention strategies. E codes capture how the injury or poisoning happened (cause), the intent (unintentional or accidental; or intentional, such as suicide or assault), and the place where the event occurred."

Table 3: Indicators and Use of External Cause-of-Injury Codes

Indicator Number (used in software)	Indicator Name	Use of External Cause-of-Injury Codes
15 & 25	Accidental puncture or laceration	Required. Used in both the numerator and denominator definitions.
17	Birth trauma	Not used.
1	Complications of anesthesia	Required. Used in the numerator definition.
2	Death in low mortality DRGs	Not used.
3	Decubitus ulcer	Not used.
4	Failure to rescue	Not used.
5 & 21	Foreign body left during procedure	Required. Used in the numerator definition although the other ICD-9 CM codes may capture the same information.
6 & 22	Iatrogenic pneumothorax	Not used.
20 & 29	Obstetric trauma – cesarean section	Not used.
18 & 27	Obstetric trauma – vaginal with instrument	Not used.
19 & 28	Obstetric trauma – vaginal without instrument	Not used.
9	Postoperative hemorrhage or hematoma	Not used.
8	Postoperative hip fracture	Used as exclusion criteria in denominator population.
10	Postoperative physiologic and metabolic derangements	Not used.
12	Postoperative pulmonary embolism or deep vein thrombosis	Not used.
11	Postoperative respiratory failure	Not used.
13	Postoperative sepsis	Not used.
14 & 24	Postoperative wound dehiscence	Not used.
7 & 23	Selected infections due to medical care	Not used.
16 & 26	Transfusion reaction	Required. Used in the numerator definition although the other ICD-9 CM codes may capture the same information.

Accidental Puncture or Laceration, Secondary Diagnosis Field (PSI 15 and 25)

Numerator:

Discharges with ICD-9-CM code denoting accidental cut, puncture, perforation or laceration during a procedure in any secondary diagnosis field.

ICD-9-CM Accidental Puncture or Laceration diagnosis codes:

Accidental cut, puncture, perforation, or hemorrhage during medical care:

E8700	SURGICAL OPERATION
E8701	INFUSION OR TRANSFUSION
E8702	KIDNEY DIALYSIS OR OTHER PERFUSION
E8703	INJECTION OR VACCINATION
E8704	ENDOSCOPIC EXAMINATION
E8705	ASPIRATION OF FLUID OR TISSUE, PUNCTURE, AND CATHETERIZATION
E8706	HEART CATHETERIZATION
E8707	ADMINISTRATION OF ENEMA
E8708	OTHER SPECIFIED MEDICAL CARE
E8709	UNSPECIFIED MEDICAL CARE

9982	ACCIDENTAL PUNCTURE OR LACERATION DURING A PROCEDURE

Complications of Anesthesia (PSI 1)

Numerator:

Discharges with ICD-9-CM diagnosis codes for anesthesia complications in any secondary diagnosis field.

ICD-9-CM Anesthesia Complications diagnosis codes:

Adverse effects in therapeutic use, other central nervous system depressants and anesthetics:

E8763 ENDOTRACHEAL TUBE WRONGLY PLACE DURING ANESTHETIC PROCEDURE

E9381 HALOTHANE
E9382 OTHER GASEOUS ANESTHETICS
E9383 INTRAVENOUS ANESTHETICS
E9384 OTHER AND UNSPECIFIED GENERAL ANESTHETICS
E9385 SURFACE AND INFILTRATION ANESTHETICS
E9386 PERIPHERAL NERVE AND PLEXUS BLOCKING ANESTHETICS
E9387 SPINAL ANESTHETICS
E9389 OTHER AND UNSPECIFIED LOCAL ANESTHETICS

Poisoning by other central nervous system depressants and anesthetics:

9681 HALOTHANE
9682 OTHER GASEOUS ANESTHETICS
9683 INTRAVENOUS ANESTHETICS
9684 OTHER AND UNSPECIFIED GENERAL ANESTHETICS
9687 SPINAL ANESTHETICS
E8551 ACCIDENTAL POISONING, OTHER NERVOUS SYSTEM DEPRESSANTS

ICD-9-CM Coding: Procedures

- Coding of procedures

"The UHDDS requires all significant procedures to be reported… A significant procedure is defined as one that meets any of the following conditions:

Is surgical in nature

Carries an anesthetic risk

Carries a procedural risk

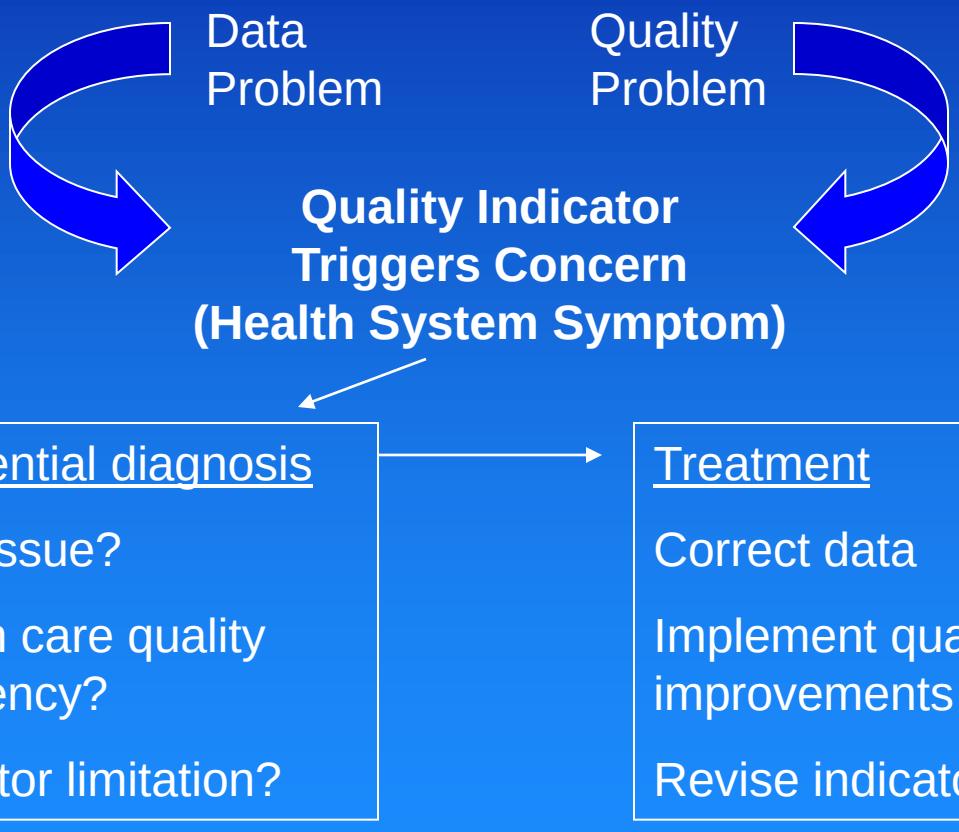
Requires specialized training."

What about central venous catheters?

Indicator Development

- How the design of ICD-9-CM codes influences indicator development
  - Specificity vs. sensitivity in defining condition of interest (e.g., wastebasket codes)
  - Codes may not keep up with clinical terminology
  - Annual coding updates and desire to allow trend analysis over time
  - Coding specificity varies across chapters
  - Special pregnancy-related and neonatal codes

Ongoing validation through use



Examples of user input

PSI	Issue
Postoperative pulmonary embolism (PE) or deep vein thrombosis (DVT)	Documentation states that the denominator excludes all surgical cases with a secondary procedure code of 38.7 (Insertion of vena cava filter) when performed on the day of or prior to the principal procedure. In some surgical cases, 38.7 was the only surgical procedure (so not secondary). That code drove the DRG to be a surgical case. The denominator should exclude cases with 38.7 as the only surgical (major operating room) procedure.
Post Operative Hip Fracture	This measure seems to include fractures that occurred prior to admission. Example: the patient experiences a TIA or Stroke, fell, fractured hip, and was admitted for surgical repair. The Fx Hip was coded in the secondary diagnosis category, but did not occur in the facility. Additionally, some were transfers from other facilities.
Iatrogenic Pneumothorax	Iatrogenic Pneumothorax appears to be very coder dependent. Some patients who have stiff lungs with scarring, undergo therapeutic thoracentesis, and some air is left in the scarred area (but no collapse), are coded as pneumothoraces.
Post Operative Hemorrhage or Hematoma	There may be an issue with this indicator related to coding blood loss during vs. after surgery as a hemorrhage.
Decubitus Ulcer	This indicator is designed to exclude patients transferred from Long Term Care. Some hospitals admit these patients through the ED; they receive an admit code of ED instead of transfer from LTC and are not excluded from the population.

ICD-9-CM Coding

- Adherence to coding "best practices"
  - Physician documentation
    - Clinical terminology versus ICD-9-CM terminology (for example, sepsis)
    - Culture and processes to query physicians for additional information and clarification
    - Concurrent "real-time" coding practices to improve access to physicians
    - Physician "peer review" for adverse events
    - Documentation improvement program
  - Coding tools
    - Standard forms: Hollister Initial Newborn Profile
    - Coding clinic on desktop
    - Electronic coding assistance (e.g., Wincoder, Quantim, Codefinder, WinStrat/WebStrat)

ICD-9-CM Coding

- Adherence to coding "best practices" (continued)
  - Training
    - AHIMA Resources and Practice Briefs
    - Credentialing
    - Continuing education
    - Clinical AND coding training
    - Self-study question list
  - Variation in staff coding expertise and productivity
    - By payer: Medicare vs. non-Medicare
    - By unit: Medical/Surgical vs. OB/pediatrics
    - Productivity expectations (e.g., 4 charts per hour)

ICD-9-CM Coding

- Self-Study question list for coded data quality
  - Do you require individuals assigning codes to be credentialed? (bound by a professional code of ethics – competency demonstrated)
  - Do you provide adequate continuing education for coding professionals?
  - Do you have a Coding Compliance policy document?
    - If so, is it operational?
    - Does it include ongoing reviews for code assignment accuracy?
  - Do coders have access to physicians for clarification or questions when required for complete code assignment?
  - When coding variances are identified is action taken to correct?

Coding Resources

- American Health Information Management Association (AHIMA)
  - www.ahima.org
- American Hospital Association
  - www.hospitalconnect.com/ahacentraloffice/ahaco/index.jsp
- National Center for Health Statistics
  - www.cdc.gov/nchs/icd9.htm
- Centers for Medicare and Medicaid Services
  - www.cms.gov
- AHIMA Resources and Practice Briefs
  - www.ahima.org/infocenter/practice_tools.asp
  - Developing a Coding Compliance Policy Document
  - Developing a Physician Query Process
  - Ongoing Coding Reviews: Ways to Ensure Quality
  - HIM's Role in Monitoring Patient Safety
  - Internet Resources for Coding and Reimbursement Practices

More Information on AHRQ QIs

Quality Indicators Technical Assistance:

- E-mail: support@qualityindicators.ahrq.gov
- Website: http://qualityindicators.ahrq.gov/
- Telephone:

  (888) 512-6090 (voice mail)

Acknowledgments

Training Module Development:

- Patrick Romano, UC Davis
- Rita Scichilone, AHIMA
- Kathy McDonald, Stanford University
- Sheryl Davies, Stanford University
- Jeffrey Geppert, Battelle Health and Life Sciences

Support for Quality Indicators II (Contract No. 290-04-0020):

- Mamatha Pancholi, AHRQ Project Officer
- Marybeth Farquhar, AHRQ
- Mark Gritz and Jeffrey Geppert, Project Directors, Battelle Health and Life Sciences

Questions?