

**Minutes**  
**Quality-Based Reimbursement initiative**  
**Evaluation Work Group Meeting**  
**September 8, 2008**  
**9:00 AM to 10:30 AM**  
**Health Services Cost Review Commission**  
**4160 Patterson Avenue**  
**Baltimore, MD 21215**

**EWG Members present:** Don S. Hillier, Former Chairman, HSCRC (Vice Chair); Pam Barclay, MHCC; Robert Brooks, MD, PhD, MBA, Delmarva Foundation for Medical Care, Inc.; Barbara Epke, MPH, MA, LifeBridge Health System; Cynthia Hancock, Fort Washington Medical Center; Charles Reuland, ScD, Johns Hopkins Health System; Renee B. Webster, DHMH; Robert Murray, Steve Ports, and Dianne Feeney, HSCRC.

**EWG Members on by conference call:** George Chedraoui, IBM; Julianne R. Howell, PhD, Independent Technical Advisor, CMS; Ernest Moy, MD, AHRQ; Donald M. Steinwachs, PhD, Johns Hopkins Bloomberg School of Public Health.

**Interested parties present:** Vahe Kazandjian, PhD, Nikolas Matthes, Center for Performance Sciences; Ing-Jye Cheng and Beverly Miller, MHA; Kristen Geisler, Navigant Consulting; Theresa Lee and Carol Christmyer, MHCC. ; John S. Hughes, MD, Yale Medical Center/3M; Elizabeth McCullough, 3M; Mary Mussman, DHMH; Lisa Grabert, CMS.

**Interested parties on by conference call:** Grant Ritter, PhD, Brandeis University; Hal Cohen, Hal Cohen, Inc.; Rena Litten, Western Maryland Health System; Gail Thompson, Kaiser Foundation Health Plan of the Mid-Atlantic States; Sylvia Daniel, University of Maryland Medical Center; Sam Agumbo and Karol Wicker, Center for Performance Sciences; Gerry Macks, MedStar Health; Jean Acuna, Mercy Medical Center.

- ***Welcome and introduction of EWG members and other participants-*** Don Hillier called the meeting to order and invited EWG members and interested parties joining the meeting in person and by conference call to introduce themselves.
- ***Review and approval of the August 11, 2008 meeting minutes*** – Barbara Epke noted that the minutes attribute to her a comment about possibly withholding quality-based payment for periods when hospitals do not meet Medicare Conditions of Participation, and she indicated she commented that the group did need to discuss conditions of participation in the QBR Initiative, but did not comment about payment. Dianne Feeney indicated she would amend the minutes. A motion to approve the minutes as amended was made and seconded with unanimous approval.
- ***Changes to the New measures discussion (refer to new measures discussion document September 5, 2008 revised draft)*** – Ms. Feeney noted changes to the new

measures discussion document from the previous draft including the clustering of the healthcare-associated measures that were to be added in the nearer term to the MHCC Hospital Performance Guide which specifically include: central line-associated blood stream infection, healthcare worker influenza vaccine rate, Methycillin-Resistant Staphylococcus Aureus screening for ICU patients, and surgical site infection rates. Ms. Feeney noted that the detailed specifications would be provided and that these measures would be discussed at a subsequent meeting in the near term.

- ***CMS Hospital Acquired Conditions (HAC) Presentation-*** Ms. Feeney introduced Lisa Grabert, Health Insurance Specialist, Hospital & Ambulatory Policy Group, CMS, and noted that Ms. Grabert has agreed to provide an overview of the CMS approach to adjusting payment for HACs and that this would be helpful in providing some national context as we do our work in Maryland. Ms. Grabert reviewed the content of her slides on HACs and the Present on Admission indicator (see Appendix A).

Robert Murray asked for clarification on the relationship between the HACs and the CMS Value-Based Purchasing (VBP) program. Ms. Grabert noted that some of the HACs may be good candidates for VBP in providing rates of occurrence for certain conditions, e.g., stage III and IV pressure ulcers which are high occurrence conditions in the Medicare population. Mr. Hiller asked for clarification on CMS moving to ICD10 codes, and Ms. Grabert noted the target transition timeframe was 2011 and that CMS would use the ICD9 codes in the interim for identifying pressure ulcers.

Charles Reuland asked how would risk adjustment apply at the individual level, and noted that, when looking at a risk score to compare patients at hospitals by region one can make a broad adjustment, although this is difficult. Vahe Kazandjian asked whether Mr. Reuland was referring to risk adjustment or severity adjustment, as what was described was not looking at types of patients at risk to develop the pressure ulcer, but rather about severity differences when they already have ulcers. Ms. Grabert responded CMS was looking at severity adjustment. Robert Brooks noted that it is an important distinction to make because some conditions that develop are clearly identified for anybody. For others, e.g., deep vein thrombosis or infection after knee surgery, certain patient groups such as those with obesity and diabetes are at higher risk for developing them. Dr. Brooks added that we would not want to set up a pay for performance system that incented physicians to not treat higher risk patients. Dr. Kazandjian added that it is important to keep in mind the relationship between process measures and outcome measures, understanding that all the recommended care can be provided and a complication or bad outcome can occur, and that risk adjustment is a critical component for outcomes.

Mr. Murray asked for clarification on CMS HACs in terms of their preventability. Ms. Grabert clarified that the level of preventability varies by condition, and that the CMS payment policy was attempting to recognize this, and that an additional

complicating factor, e.g., obesity for bariatric surgery, will result in higher payment even if an HAC occurs, because of the presence of the complicating factor.

- ***3M Potentially Preventable Complication (PPC) and Potentially Preventable Readmission Rates (PPR)***- Dr. John Hughes and Elizabeth McCullough provided an overview of the 3M PPC and PPR development and measurement approaches (see Appendix B).

#### PPC Discussion

Dr. Kazandjian noted that the 3M PPCs and PPRs seem to provide a flag for probabilities or potentials of problems that can point toward where additional investigation should be conducted, and that this is more in the spirit of performance improvement. Dr. Hughes responded this is the case, but that is not to say reimbursement policies cannot be devised based on a deviation from rates.

Dr. Kazandjian asked whether reference groups are used to compare observed to expected PPC rates for hospitals. Dr. Hughes responded that, in New York, 3M provides a statewide average as expected as well as regional and peer group averages. Dr. Kazandjian added that a challenge to using observed to expected ratios is whether the expected is what should be expected or what is actually observed but not what should be expected. Dr. Hughes responded that the PPCs are a tool that can be used perhaps for policy purposes. Dr. Kazandjian added that the CMS presentation and HAC approach illustrates their interpretation of the data and its translation into reimbursement policy. Alternatively, the 3M presentation highlighted performance measurement tools based on certain criteria that seem to be well tested and repeatedly verified and that allow users to make determinations on how the data can be used. Mr. Hillier noted that, with fewer hospitals in the state, one outlier hospital's performance can throw off the average/expected value. Ms. McCullough responded that the outlier hospital can be removed from the calculation of the expected value. Mr. Hillier also commented that the target level is not necessarily the expected average value. Ms. McCullough responded that best practice performance levels can be used as the target, and that the largest gains will be achieved when the overall averages come down overall.

Dr. Brooks noted that some of the complications are very rare and asked if there are different statistical methods used for analyzing these small numbers. Ms. McCullough noted that complications can be aggregated to calculate rates, and that the analysis is sensitive to statistically significant differences in actual to expected rates.

#### PPR Discussion

Dr. Kazandjian asked how patients are identified across hospitals absent a unique identifier (which Maryland does not have), and asked if probability testing had been done for the patient matching approach, adding that there are now two sets of probabilities, the expected rate of readmission and the patient matching, making interpretation of results challenging. Ms. McCullough responded that, for Florida and other states, 3M has used their unique identifier, and that patient-level data such

as date of birth, zip code, gender, etc. can be used to perform probability matching of patients, adding that data from states with unique identifiers can be used as normative statistics to compare accuracy of the probability matching and the PPR rates. Mr. Murray asked how MHCC was matching patients for the readmission rates that are posted to the Hospital Performance Guide, with Pam Barclay responding that probabilistic matching was used for rates currently being posted, and that Delmarva had developed the algorithm.

Barbara Epke commented that readmissions are very complex in terms of the factors that influence the rates, including such issues as patient compliance, and that they are labor intensive and it is challenging for hospitals to analyze and implement improvement strategies, so selecting readmissions down the road as opposed to the near term may be a better strategy.

Mr. Murray noted that the PPRs may be amenable to measuring by payer/insurer and asked if FL was taking that approach, and Ms. McCullough responded she was not aware that they were at this point.

Pam Barclay asked what states are currently using PPRs. Ms. McCullough responded that the state of Florida and the hospital association worked together to adopt public reporting of PPRs that the state began publishing on the web in June of this year, and added that several states have legislative mandates to look at complications and/or readmissions, and that 3M is actively working with NY and MA and exploring options with various payers on these issues. Ms. McCullough added that the PPC development work in NY goes back 4-5 years, with them going live in April of 2008, and the PPRs went live in December 2007.



- *Next meeting date and time* - The group agreed the date of next meeting would be convened when Dr. Hall was available, and that the group would be notified shortly.
- *Adjournment* - Mr. Hillier adjourned the meeting at 10:50 AM.

## Appendix A: CMS HACs and Present on Admission Indicator Presentation

Centers for Medicare & Medicaid Services



### CMS' Progress Toward Implementing Value-Based Purchasing

Lisa Grabert, MPH  
Health Insurance Specialist  
Hospital & Ambulatory Policy Group



### Presentation Overview

- CMS' Value-Based Purchasing (VBP) Principles
- CMS' VBP Demonstrations and Pilots
- CMS' VBP Programs
  - Hospital-Acquired Conditions & Present on Admission Indicator Reporting
- Horizon Scanning and Opportunities for Participation



### CMS' Quality Improvement Roadmap

- Vision: The right care for every person every time
  - Make care:
    - Safe
    - Effective
    - Efficient
    - Patient-centered
    - Timely
    - Equitable



### CMS' Quality Improvement Roadmap

- Strategies
  - Work through partnerships
  - Measure quality and report comparative results
  - Value-Based Purchasing: improve quality and avoid unnecessary costs
  - Encourage adoption of effective health information technology
  - Promote innovation and the evidence base for effective use of technology





### VBP Program Goals

- Improve clinical quality
- Reduce adverse events and improve patient safety
- Encourage patient-centered care
- Avoid unnecessary costs in the delivery of care
- Stimulate investments in effective structural components or systems
- Make performance results transparent and comprehensible
  - To empower consumers to make value-based decisions about their health care
  - To encourage hospitals and clinicians to improve quality of care





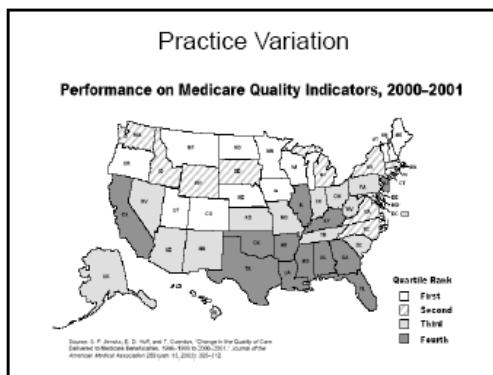
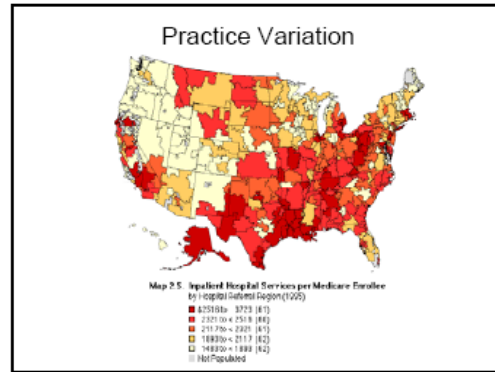
### What Does VBP Mean to CMS?

- Transforming Medicare from a passive payer to an active purchaser of higher quality, more efficient health care
- Tools and initiatives for promoting better quality, while avoiding unnecessary costs
  - Tools: measurement, payment incentives, public reporting, conditions of participation, coverage policy, QIO program
  - Initiatives: pay for reporting, pay for performance, gainsharing, competitive bidding, bundled payment, coverage decisions, direct provider support





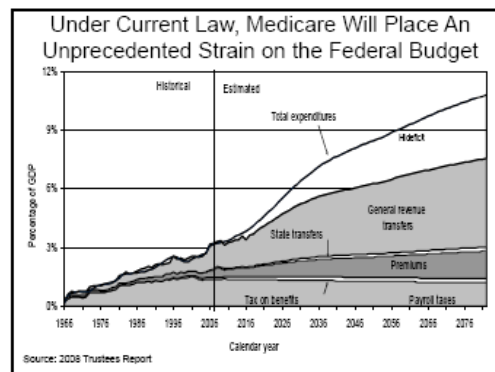
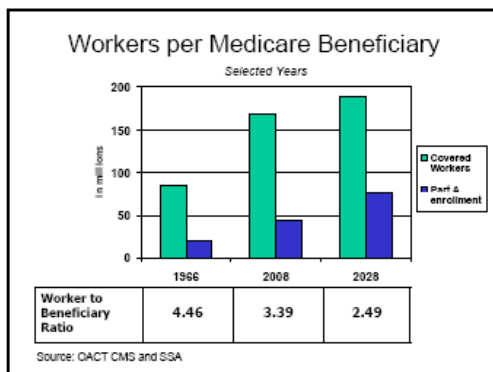
### Why VBP?

- **Improve Quality**
  - Quality improvement opportunity
    - Wennberg's Dartmouth Atlas on variation in care
    - McGlynn's NEJM findings on lack of evidence-based care
    - IOM's Crossing the Quality Chasm findings
- **Avoid Unnecessary Costs**
  - Medicare's various fee-for-service fee schedules and prospective payment systems are based on resource consumption and quantity of care, NOT quality or unnecessary costs avoided
    - Payment systems' incentives are not aligned



### Why VBP?

- **Medicare Solvency and Beneficiary Impact**
  - Expenditures up from \$219 billion in 2000 to a projected \$486 billion in 2009
  - **Part A Trust Fund**
    - Excess of expenditures over tax income in 2007
    - Projected to be depleted by 2019
  - **Part B Trust Fund**
    - Expenditures increasing 11% per year over the last 6 years
  - Medicare premiums, deductibles, and cost-sharing are projected to consume 28% of the average beneficiaries' Social Security check in 2010

### Support for VBP

- President's Budget
  - FYs 2006-09
- Congressional Interest in P4P and Other Value-Based Purchasing Tools
  - BIPA, MMA, DRA, TRCHA, MMSEA, MIPPA
- MedPAC Reports to Congress
  - P4P recommendations related to quality, efficiency, health information technology, and payment reform
- IGM Reports
  - P4P recommendations in *To Err Is Human* and *Crossing the Quality Chasm*
  - Report, *Rewarding Provider Performance: Aligning Incentives in Medicare*
- Private Sector
  - Private health plans
  - Employer coalitions



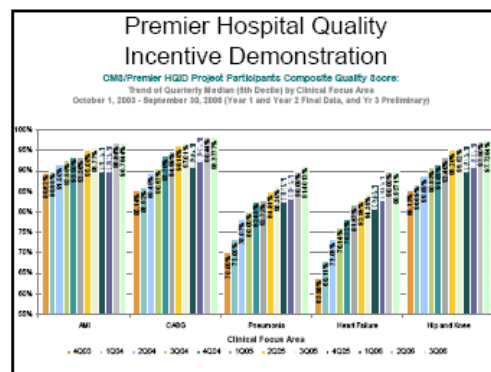
### VBP Demonstrations and Pilots

- Premier Hospital Quality Incentive Demonstration
- Physician Group Practice Demonstration
- Medicare Care Management Performance Demonstration
- Nursing Home Value-Based Purchasing Demonstration
- Home Health Pay for Performance Demonstration





### VBP Demonstrations and Pilots

- Medicare Health Support Pilots
- Care Management for High-Cost Beneficiaries Demonstration
- Medicare Healthcare Quality Demonstration
- Gainsharing Demonstrations
- Accountable Care Episode (ACE) Demonstration
- Better Quality Information (BQI) Pilots
- Electronic Health Records (EHR) Demonstration
- Medical Home Demonstration



### VBP Programs

- Hospital Quality Initiative: Inpatient & Outpatient Pay for Reporting
- Hospital VBP Plan & Report to Congress
- Hospital-Acquired Conditions & Present on Admission Indicator Reporting
- Physician Quality Reporting Initiative
- Physician Resource Use Reporting
- Home Health Care Pay for Reporting
- ESRD Pay for Performance
- Medicaid




### VBP Initiatives



## Hospital-Acquired Conditions and Present on Admission Indicator Reporting

### The HAC Problem



- The IOM estimated in 1999 that as many as 98,000 Americans die each year as a result of medical errors
- Total national costs of these errors estimated at \$17-29 billion

IOM. *To Err is Human: Building a Safer Health System*, November 1999. Available at: <http://www.iom.edu/Object.File/Master/4/117/ToErr-Sparger.pdf>.



### The HAC Problem

- In 2000, CDC estimated that hospital-acquired infections add nearly \$5 billion to U.S. health care costs annually  
Centers for Disease Control and Prevention. Press Release, March 2000. Available at: [http://www.cdc.gov/od/oc/media/pressreleases/r20305a.htm](http://www.cdc.gov/od/oc/media/pressreleases/r200305a.htm)
- A 2007 study found that, in 2002, 1.7 million hospital-acquired infections were associated with 99,000 deaths  
Klevens et al. Estimating Health Care-Associated Infections and Deaths in U.S. Hospitals, 2002. *Public Health Reports*. March-April 2007. Volume 122.



### The HAC Problem

- A 2007 Leapfrog Group survey of 1,256 hospitals found that 87% of those hospitals do not consistently follow recommendations to prevent many of the most common hospital-acquired infections  
2007 Leapfrog Group Hospital Survey. The Leapfrog Group 2007. Available at: [http://www.leapfroggroup.org/mediafile/Leapfrog\\_hospital\\_acquired\\_infections\\_release.pdf](http://www.leapfroggroup.org/mediafile/Leapfrog_hospital_acquired_infections_release.pdf)



### Statutory Authority: DRA Section 5001(c)

- Beginning October 1, 2007, IPPS hospitals were required to submit data on their claims for payment indicating whether diagnoses were present on admission (POA)
- Beginning October 1, 2008, CMS cannot assign a case to a higher DRG based on the occurrence of one of the selected conditions, if that condition was acquired during the hospitalization



### Statutory Selection Criteria

- CMS must select conditions that are:
  1. High cost, high volume, or both
  2. Assigned to a higher paying DRG when present as a secondary diagnosis
  3. Reasonably preventable through the application of evidence-based guidelines

### Statutory Selection Criteria



- Focus
  - Incidence, cost, morbidity, and mortality
- Coding
  - Clearly identified using ICD-9 codes
  - Triggers higher paying MS-DRG
- Availability of Evidence-Based Guidelines
- Preventability
  - "Reasonably preventable" does not mean "always preventable"



### Statutory Selection Criteria



- Condition must trigger higher payment
  - Complications, including infections, can be designated complicating conditions (CCs) or major complicating conditions (MCCs)
  - MS-DRGs may split into three different levels of severity, based on complications (no CC or MCC, CC, or MCC)
    - The presence of a CCs or MCCs as a secondary diagnosis on a claim generates higher payment

MS-DRG Assignment (Examples for a single secondary diagnosis)	POA Status of Secondary Diagnosis	Average Payment
Principal Diagnosis: MS-DRG 066 • Stroke without CC/MCC	–	\$5,347.98
Principal Diagnosis: MS-DRG 065 • Stroke with CC Example Secondary Diagnosis: • Injury due to a fall (code 836.4 (CC))	Y	\$6,177.48
Principal Diagnosis: MS-DRG 066 • Stroke with CC Example Secondary Diagnosis: • Injury due to a fall (code 836.4 (CC))	N	\$5,347.98
Principal Diagnosis: MS-DRG 064 • Stroke with MCC Example Secondary Diagnosis: • Stage III pressure ulcer (code 707.23 (MCC))	Y	\$8,030.28
Principal Diagnosis: MS-DRG 066 • Stroke with MCC Example Secondary Diagnosis: • Stage III pressure ulcer (code 707.23 (MCC))	N	\$5,347.98



### HAC Selection Process

- The CMS and Centers for Disease Control and Prevention (CDC) internal Workgroup selected the HACs
- Informal comments from stakeholders
  - CMS/CDC sponsored Listening Session
    - December 17, 2007
  - Ad hoc meetings with stakeholders
- Inpatient Prospective Payment System (IPPS) rulemaking
  - Proposed and Final rules for Fiscal Years (FY) 2007, 2008, 2009



### Selected HACs for Implementation

- Foreign object retained after surgery
- Air embolism
- Blood incompatibility
- Pressure ulcers
  - Stages III & IV
- Falls
  - Fracture
  - Dislocation
  - Intracranial injury
  - Crushing injury
  - Burn
  - Electric shock



### Selected HACs for Implementation

- Manifestations of poor glycemic control
  - Hypoglycemic coma
  - Diabetic ketoacidosis
  - Nonketotic hyperosmolar coma
  - Secondary diabetes with ketoacidosis
  - Secondary diabetes with hyperosmolarity
- Catheter-associated urinary tract infection
- Vascular catheter-associated infection
- Deep vein thrombosis (DVT)/pulmonary embolism (PE)
  - Total knee replacement
  - Hip replacement



### Selected HACs for Implementation

- Surgical site infection
  - Mediastinitis after coronary artery bypass graft (CABG)
  - Certain orthopedic procedures
    - Spine
    - Neck
    - Shoulder
    - Elbow
  - Bariatric surgery for obesity
    - Laparoscopic gastric bypass
    - Gastroenterostomy
    - Laparoscopic gastric restrictive surgery



### Infectious Agents

- Directly addressed by selecting infections as HACs
  - Example: MRSA
- Coding
  - To be selected as an HAC, the conditions must be a CC or MCC
- Considerations
  - Community-acquired v. hospital-acquired
  - Colonization v. infection



### Relationship Between CMS' HACs and NQF's "Never Events"

- In 2002, NQF created a list of 27 Serious Reportable Events, which was expanded to 28 events in 2006
- The list of NQF "never events" was used to inform selection of HACs



### Relationship Between CMS' HACs and NQF's "Never Events"

- NQF's selection criteria for Serious Reportable Adverse Events
  - Unambiguous: clearly identifiable and measurable
  - Usually preventable: recognizing that some events are not always avoidable
  - Serious: resulting in death or loss of a body part, disability, or more transient loss of a body function
  - Indicative of a problem in a health care facility's safety systems
  - Important for public credibility or public accountability

### Relationship Between CMS' HACs and NQF's "Never Events"

1. Foreign object retained after surgery
2. Air embolism
3. Blood incompatibility
4. Pressure ulcers
5. Falls
6. Burns
7. Electric Shock
8. Hypoglycemic Coma



### CMS' Authority to Address the NQF's "Never Events"

- CMS applies its authorities in various ways, beyond the HAC payment provision, to combat "never events:"
  - Conditions of participation for survey and certification
  - Quality Improvement Organization (QIO) retrospective review
  - Medicaid partnerships
  - Coverage policy






### CMS' Authority to Address the NQF's "Never Events"

- National Coverage Determinations (NCDs)
  - CMS is evaluating evidence regarding three surgical "never events:"
    - Surgery performed on the wrong body part
    - Surgery performed on the wrong patient
    - Wrong surgery performed on a patient
  - NCD tracking sheets are available at: [http://www.cms.hhs.gov/mod/index\\_list.asp?list\\_type=nca](http://www.cms.hhs.gov/mod/index_list.asp?list_type=nca)



### CMS' Authority to Address the NQF's "Never Events"

- State Medicaid Director Letter (SMD)
  - Advises States about how to coordinate State Medicaid Agency policy with Medicare HAC policy to preclude Medicaid payment for HACs when Medicare does not pay
  - <http://www.cms.hhs.gov/SMDL/downloads/SMD073108.pdf>



### President's FY 2009 Budget Addresses NQF's "Never Events"

- The President's FY 2009 Budget outlined another option for addressing "never events" through a legislative proposal to:
  - Require hospitals to report occurrences of these events or receive a reduced annual payment update
  - Prohibit Medicare payment for these events



### Present on Admission Indicator (POA)

## CMS' Implementation of POA Indicator Reporting

### POA Indicator General Requirements

- Present on admission (POA) is defined as present at the time the order for inpatient admission occurs
- Conditions that develop during an outpatient encounter, including emergency department, observation, or outpatient surgery, are considered POA
- POA indicator is assigned to
  - Principal diagnosis
  - Secondary diagnoses
  - External cause of injury codes (Medicare requires reporting only if E-code is reported as an additional diagnosis)






### POA Indicator Reporting Options

POA Indicator Options and Definitions	
Code	Reason for Code
Y	Diagnosis was present at time of inpatient admission.
N	Diagnosis was not present at time of inpatient admission.
U	Documentation insufficient to determine if condition was present at the time of inpatient admission.
W	Clinically undetermined. Provider unable to clinically determine whether the condition was present at the time of inpatient admission.
1	Unreported/Not used. Exempt from POA reporting. This code is equivalent code of a blank on the UB-04; however, it was determined that blanks are undesirable when submitting this data via the 4010A.

### POA Indicator Reporting Options



- POA indicator
  - CMS pays the CC/MCC for HACs that are coded as "Y" & "W"
  - CMS does NOT pay the CC/MCC for HACs that are coded "N" & "U"

### POA Indicator Reporting Requires Accurate Documentation



"A joint effort between the healthcare provider and the coder is essential to achieve complete and accurate documentation, code assignment, and reporting of diagnoses and procedures."

*ICD-9-CM Official Guidelines for Coding and Reporting*



### HAC & POA Enhancement & Future Issues

- Future Enhancements to HAC payment provision
  - Risk adjustment
    - Individual and population level
  - Rates of HACs for VBP
    - Appropriate for some HACs
  - Uses of POA information
    - Public reporting
  - Adoption of ICD-10
    - Example: 125 codes capturing size, depth, and location of pressure ulcer
  - Expansion of the IPPS HAC payment provision to other settings
    - Discussion in the IRF, OPPTS/ASC, SNF, LTCH regulations



### Opportunities for HAC & POA Involvement

- Updates to the CMS HAC & POA website: [www.cms.hhs.gov/HospitalAcqCond/](http://www.cms.hhs.gov/HospitalAcqCond/)
- FY 2010 Rulemaking
- Hospital Open Door Forums
- Hospital Listserv Messages



### Horizon Scanning and Opportunities for Participation

- IOM Payment Incentives Report
  - Three-part series: *Pathways to Quality Health Care*
- MedPAC
  - Ongoing studies and recommendations regarding VBP
- Congress
  - VBP legislation this session?
- CMS Proposed Regulations
  - Seeking public comment on the VBP building blocks
- CMS Demonstrations and Pilots
  - Periodic evaluations and opportunities to participate

### Horizon Scanning and Opportunities for Participation

- CMS Implementation of MMA, DRA, TRHCA, MMSEA, and MIPPA VBP provisions
  - Demonstrations, P4R programs, VBP planning
- Measure Development
  - Foundation of VBP
- Value-Driven Health Care Initiative
  - Expanding nationwide
- Quality Alliances and Quality Alliance Steering Committee
  - AQA Alliance and HQA adoption of measure sets and oversight of transparency initiative

### Thank You

Lisa Grabert, MPH  
 Health Insurance Specialist  
 Hospital & Ambulatory Policy Group  
 Centers for Medicare & Medicaid Services





# Appendix B: 3M Presentation on Potentially Preventable Complications and Potentially Preventable Readmissions

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## Potentially Preventable Complications (PPCs)


## Potentially Preventable Readmissions (PPRs)

8 September 2008



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## Potentially Preventable Complications (PPCs)



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## Assumptions


- Not all inpatient complications are preventable
- Even with optimal care inpatient complications will occur
- Patients who have had a problem with the quality of care will be more likely to have an inpatient complication
- Hospitals with quality of care problems will have higher rates of inpatient complications
- A patient's risk of an inpatient complication is related to the patient's reason for admission and severity of illness at the time of admission



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## Overview PPCs: What Do They Do?


- Identify in-hospital complications using computerized discharge abstract data
- Adjust for risk of complications based on
  - Reason for admission
  - Severity of illness
- Calculate expected complication rates
- Compare actual and expected complication rates at the hospital level



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## Determining Potentially Preventable Complications – a General Rule


*If a hospital or other health care facility has a statistically significantly higher rate of a complication (or group of complications) than comparable hospitals and facilities, reasonable clinicians would be concerned that a potential quality of care problem exists, and would suggest further investigation in order to account for the difference.*



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## Development of PPCs


- Requires availability of present on admission indicator
  - MD established statewide POA collection/reporting on 7/1/07
- Identify post admission events that represent a complication
  - Clinical panels
- Identify chance circumstances under which the complication is potentially preventable
  - Clinical panels
- Develop a method of risk adjusting complication rates



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## 3M's Approach to Preventable Conditions Potentially Preventable Complications


- Potentially Preventable Complications (PPCs): Harmful events (accidental laceration during a procedure) or negative outcomes (hospital acquired pneumonia) that may result from the process of care and treatment rather than from a natural progression of underlying disease
- All broad categories of the AHRQ PSI's, NQF, and CMS list are built into the PPCs.
- PPCs are a much larger list than others: because there are numerous exclusions and extensive risk adjustment built into the PPC list. (Example: exclusions are built into the decubitus ulcer PPC that are not present for either the AHRQ PSI or the CMS HAC category)



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## PPC Diagnoses and PPC Groups


- Of 13,367 ICD-9 CM diagnosis codes, we identified 1,450 as PPC diagnoses
- Each of the 1,450 codes designated as PPC diagnoses were assigned to one of 64 mutually exclusive PPC Groups (PPCs for short), based on similarities in clinical presentation and clinical impact



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## Post-Admission Patient Complication Groups (PPCs) - Examples

Extreme CNS Complications	Congestive Heart Failure
3481 Anoxic Brain Damage	4100 Acute Cor Pulmonale
3484 Compression of Brain	4280 Congestive Heart Failure
3485 Cerebral Edema	4281 Left Heart Failure
78001 Coma	42821 Acute systolic HF
78003 Persistent Vegetative State	42832 Acute B chronic HF
	42831 Acute diastolic HF
	42833 Acute B chronic diastolic HF
	42841 Acute systolic/diastolic HF
	42843 Acute/chronic systolic/diastolic HF
	4289 Heart Failure NOS







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### PPRs – Development Issues

- What about transfers from other facilities?
- What about patients with multiple admissions?

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### Chain Rules

- Chain Rules were defined for creating a "readmission chain" (that is an initial index admission followed by a number of related readmissions)
- For example: Any elective surgical admission that occurs after a medical admission is not considered to be related and thus "terminates" a chain.

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### Example of a Readmission Chain

Initial Admission: CABG surgery  
 Readmission: Post op wound infection  
 Readmission: PTCA

- Both readmissions are related to the CABG surgery
- Without readmission chains the readmission sequence is a CABG discharge with one readmission followed by an unrelated PTCA admission
- With readmission chains the readmission sequence is a CABG discharge with two related readmissions.

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### Readmission Issues

- Readmission time window
- Readmission to same hospital or any hospital
- Excluded sites of service
- Computation of expected value for individuals with mental illness

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### Potentially Preventable Hospital Readmission Rates (MedPAC 2007)

	Patients readmitted to hospital within:		
	7 days	15 days	30 days
Rate of potentially preventable readmissions	5.2%	8.8%	13.3%
Spending on potentially preventable readmissions (in billions)	\$5	\$8	\$12

Source: 3M analysis of 2005 Medicare discharge claims.

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### Readmission: to the same hospital or to any hospital?

PPR Rate (%):	Readmission Time Interval		
	7 Days	15 Days	30 Days
Readmission to Same Hospital	3.80	5.89	8.34
Readmission to Any Hospital	4.84	7.44	10.37

Source: Florida hospitals, 2004-2005

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### Top 10 Medical Initial Admissions – Ranked by Readmission Frequency (Florida 2004-2005)

Rank	APR DRG	APR DRG Description	Number with PPR Chains	PPR Rate %
1	184	Heart failure	13,083	15.6
2	140	Chronic obstructive pulmonary disease	6,171	8.7
3	782	Schizophrenia	7,082	17.7
4	139	Other pneumonia	7,278	7.8
5	731	Major depressive disorder	5,808	10.8
6	168	Angina pectoris & coronary atherosclerosis	6,181	8.8
7	782	Bipolar disorders	4,832	14.0
8	725	Streptococcal & diphtheria infection	4,771	13.5
9	485	Knee issue	4,088	12.7
10	201	Chronic lymphitis & leukodyst disorders	4,058	8.2

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### Top 10 Surgical Initial Admissions – Ranked by Readmission Frequency (Florida 2004-2005)

Rank	APR DRG	APR DRG Description	Number with PPR Chains	PPR Rate %
1	173	Pericardiotomy catheterizer proc w/o ASD	7,281	7.8
2	221	Major small & large bowel procedure	3,423	9.4
3	172	Other vascular procedures	3,188	11.7
4	116	Pericardiotomy catheterizer procedure w/out	3,163	8.7
5	325	Hip joint replacement	2,373	8.1
6	168	Coronary bypass w catheterization/angioplasty	2,638	12.1
7	308	Hip/other proc for trauma except joint replacement	2,385	8.7
8	362	Knee joint replacement	2,273	8.8
9	101	Cardiac catheterization/heart assist implant	2,248	2.1
10	171	Percutaneous catheterizer w/o Atrial/Septal	2,044	8.1

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### Top 5 Reasons for Readmission for Two Initial Admission APR-DRGs

- ACUTE MYOCARDIAL INFARCT 2,358
- HEART FAILURE 439
- ANGINA PECT & CORONARY ATH 354
- ACUTE MYOCARDIAL INFARCT 347
- COR COR BYPASS W/O CARD CATH 239
- PERICUT CARDIOVASC W/O-AMB 185
- CORONARY BYPASS W/CARD CATH 1,366
- HEART FAILURE 185
- POST SURGERY DRAIN W/REC 154
- OTHER RESPIRATORY DIAGNOSES 118
- ANGINA PECT & CORONARY ATH 90
- CARD ARRHYTHMIA & 89

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### Categories of Reasons for Readmission

1. Medical readmission for a continuation or recurrence of the reason for the initial admission, or for a closely related condition
2. Medical readmission for an acute decompensation of a chronic problem unrelated to the reasons for the initial admission, but plausibly related to pre- or post-discharge care
3. Medical readmission for an acute medical complication plausibly related to care in the initial admission
4. Readmission for a surgical procedure to address a continuation or a recurrence of the problem causing the initial admission
5. Readmission for a surgical procedure to address a complication resulting from care during the initial admission.

### The Need for Risk Adjustment

- A patient's risk of a readmission is related not only to quality of care, but also to:
  - The reason for admission & underlying medical conditions
  - The severity of illness at the time of admission
- Therefore, comparison of readmission rates across hospitals requires adjustment for reason for admission and severity of illness

### Patients With At Least One PPR in Selected APR-DRGs, by Severity Level (Wisconsin, 2000-02)

Diagnosis	APR-DRG	Admission Severity of Illness				Total
		001	002	003	004	
Stroke	PPR0	32	281	229	33	595
	All Risk	1,001	1,344	1,096	97	3,538
	Patient	6.7	7.8	12.1	18.7	8.7
Other Procedures	PPR0	700	1,774	1,491	118	3,983
	All Risk	5,242	22,713	16,457	718	30,130
	Patient	4.1	8.7	13.9	18.0	8.3
CABG without Catheterization	PPR0	227	1,180	729	87	2,223
	All Risk	2,942	9,657	3,225	422	17,246
	Patient	7.9	11.8	18.8	25.3	15.1
Acute MI	PPR0	247	622	273	28	1,170
	All Risk	2,338	5,995	2,990	422	11,745
	Patient	10.5	13.7	18.1	25.2	14.8
Major Large & Small Bowel Procedures	PPR0	41	322	228	18	609
	All Risk	5,325	6,240	4,422	918	16,905
	Patient	7.7	7.8	10.8	18.4	10.6

### Readmission Issues

- Readmission time window
- Readmission to same hospital or any hospital
- Excluded sites of service
- Computation of expected value for individuals with mental illness

### Locally Expected PPR Rates for Patients With and Without Major Mental Health or Substance Abuse Secondary Diagnoses

Age Group	No Major Mental Health or Substance Abuse				Major Mental Health or Substance Abuse			
	Number of Patients	All Risk	Local	Expected	Number of Patients	All Risk	Local	Expected
18-24 year	2,560	3.7	5.7	3.5	82	6.0	10.7	3.85
25-34 year	7,563	4.3	6.0	4.0	1,070	9.0	11.5	4.75
35-44 year	21,389	5.0	6.0	4.0	3,028	11.5	11.1	1.00
45-54 year	40,167	5.0	6.0	4.0	16,743	17.1	13.4	1.4
55-64 year	50,023	6.0	7.0	5.0	6,790	19.8	15.8	1.94
65-74 year	47,158	6.4	7.0	5.0	20,221	23.0	18.8	1.9
75 Years and Over	38,724	11.0	11.7	11.0	5,125	34.8	23.4	1.48
Total	220,617	5.9	6.0	4.0	30,977	15.8	15.8	1.00

### Number of PPR Chains - by Readmission time interval up to 30 days

### PPR Stability

### Variation in PPRs across hospitals (MSFAC 2007 (Not severity adjusted))

### Florida PPRs

- June 2008
- Public Reporting of PPR rates for 210 Hospitals in Florida - Risk Adjusted by APR DRGs

