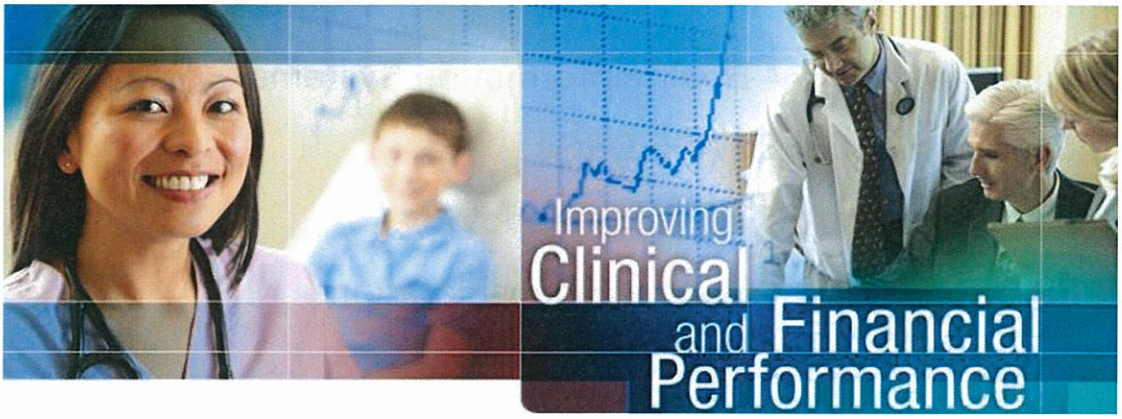
3M™ All Patient Refined Diagnosis Related Groups (APR DRG)



Arkansas Legislative Study Committee
November 16, 2015

3M Health Information Systems (HIS)Team

- Gerry Tracy
- Deb Anderson
- Liz McCullough
- Chet Stroyny

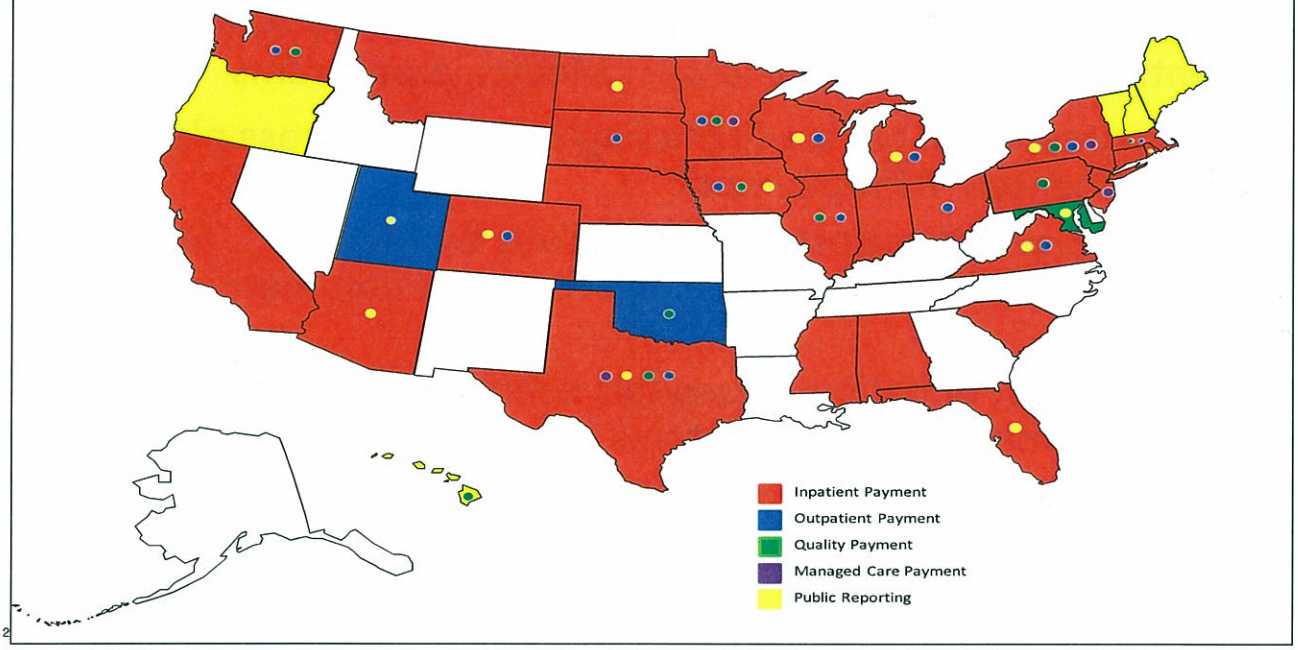
Agenda

- Introductions
- Background on 3M Health Information Systems
- Industry Adoption of APR DRGs
- Introduction to APR DRG Methodology
- APR DRG Payment Systems: Considerations
- Questions

3M Health Information Systems

- Industry leader for coding, classification and payment systems used by CMS, MedPAC, 38 states, many health plans, and 80% of U.S. hospitals
- Created original Medicare DRGs (the original "bundled payment" system) and CMS' contractor for Medicare inpatient system since 1983
- All Patient Refined DRGs (1990): severity Adjusted DRGs applicable to the entire population – now adopted by a majority of Medicaid programs
- Outpatient Ambulatory Patient Groups (APGs) (1994) modified into APCs for CMS in 2000 – APGs revamped in 2008 and in widespread use
- Potentially Preventable Event (PPE) quality measures- used in outcomes based payment programs for hospitals, MCOs, and ACOs in 15 states
- Clinical Risk Groups (CRG) population classification system- Rx and functional status modules-excellent for medically complex patients
- Acquired analytics company, Treo Solutions in 2014. Focus on large scale data collection, enrichment, reporting and analytics including All Payer Databases
- Primary CMS contractor for ICD-10 translation and conversion

Publicly Announced Use of 3M Patient Classification Systems by Major Payers as of September 2015



All Patient Refined Diagnosis Related Groups

- APR DRGs are an extension of the DRGs to account for severity of illness and risk of mortality
- APR DRGs were developed by 3M HIS in conjunction with the National Association of Children's Hospitals
- A properly designed and implemented APR DRG IPPS:
- Provides State and hospitals with **actionable** aggregate, service line, MDC, and case level information on inpatient utilization and cost performance-makes it possible to manage system
- Enables State to direct reimbursement to hospitals serving the most severely ill patients
- Classifies patients with the level of accuracy and specificity which is necessary for quality outcomes based payment programs

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All Patient Refined DRGs: Inpatient Industry Standard

- Twenty eight (28) Medicaid programs have adopted APRs for payment: includes nation's 9 largest Medicaid programs
- Over 40 commercial payers (including many Blue Cross plans) have implemented APR payment
- APRs used in quality assessment initiatives by MedPAC, AHRQ, many state agencies, hospital associations and commercial payers
- Over 75 percent of nation's hospitals licensing the APR software, along with all major hospital systems vendors.
- 52% of Arkansas hospitals license the APR DRG grouper

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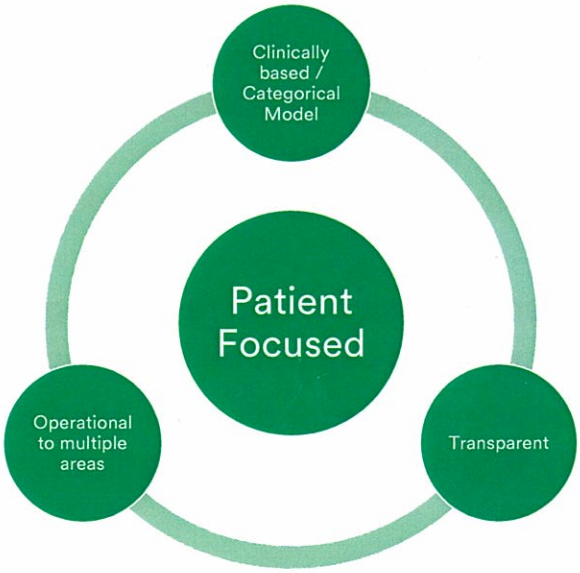
Factors Easing An Arkansas Medicaid APR Conversion

- The majority of AR acute care hospitals and major hospital systems vendors license APR DRGs
- APR DRGs are assigned using standard administrative data- no additional data collection required
- No change to hospital coding or billing practices required
- 3M provides reasonable pricing assurances to hospitals
- 3M provides education and Definitions Manuals to hospitals--no "black box
- APRs are ICD-10 enabled . 3M is the ICD-10 industry expert
- 3M has worked with many other states on successful APR DRG payment system conversions

APR-DRGs

Common Principles for methodologies



CMS Developed MS-DRGs for the Medicare Populations

"As we have stated frequently, our primary focus in maintaining the CMS DRGs is to serve the Medicare population. We do not have the data or the expertise to maintain the DRGs in clinical areas that are not relevant to the Medicare population. We continue to encourage users of the CMS DRGs (or MS-DRGs if adopted) to make relevant adaptations if they are being used for a non-Medicare patient population"

CMS Proposed IPPS Rule April 13, 2007, *Pg 91*

MS-DRGs are not Applicable to non Medicare Population

- MS-DRGs are fundamentally flawed for non Medicare populations, failing to adequately account for: newborn birth weight, many pediatric illnesses (sickle cell anemia, cystic fibrosis, hemophilia, lead poisoning, nutritional disorders, congenital anomalies), high risk pregnancies, HIV-related co-morbidities.
- These limitations are so extensive that a fair and equitable payment system for a non Medicare population can not be achieved using the MS-DRGs.
- For example, hospital admissions for a typical Medicaid population are composed of roughly 16% newborns, 20% pediatric and 25% obstetric patients.

APR-DRGs and Payment

""The CMS grouper is designed for a population that is primarily elderly. In some cases, the grouper does not sufficiently capture differences in patient acuity found in all-payer setting such as Maryland's rate-setting system.

The [CMS] Grouper also allows significant variation within each diagnostic related group (DRG) due to differences in patient severity within the group."

Bid Board Notice HSCRC-04-300, May 13, 2004

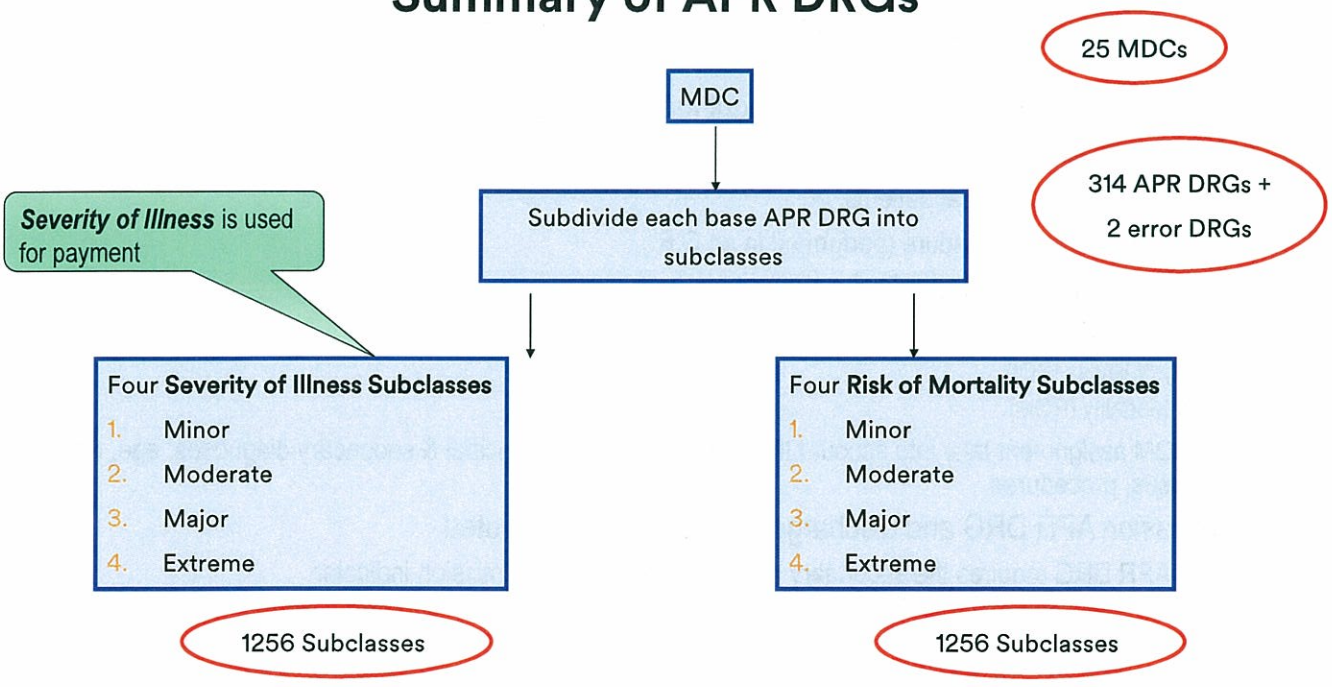
All Patient Refined DRGs (APR DRGs)

- APR DRGs are an extension of DRGs to account for severity of illness and risk of mortality
- Assignment to a "Base" APR-DRG based on:
  - Principal Diagnosis, for Medical patients, or
  - Most Important Surgical Procedure (performed in an O.R.)
- Each Base APR-DRG is divided into 4 subclasses
  - Two types of Subclasses:
    - Severity of Illness (SOI)
    - Risk of Mortality (ROM)
  - SOI and ROM assignment take into account the interaction among principal & secondary diagnoses, age, and, in some cases, procedures
- Both an admission APR DRG and discharge APR DRG are computed
  - Admission APR DRG requires the secondary diagnoses present on admission indicator

Fundamental Principle of APR DRG Clinical Logic:

- Severity of illness and risk of mortality are dependent on the patient's underlying condition (i.e., the base APR DRG).
- High severity of illness and risk of mortality are characterized by multiple serious diseases and the interaction of those diseases.

Summary of APR DRGs



Simple example of how to calculate a reimbursement from APR DRG and SOI.

APR DRG- SOI	APR-DRG Description	Relative Wt for Payment	DRG Base Payment Using Example Discharge Rate
139-1	OTHER PNEUMONIA	0.4022	$ 3,298.04
139-2	OTHER PNEUMONIA	0.6128	$ 5,024.96
139-3	OTHER PNEUMONIA	0.9459	$ 7,756.38
139-4	OTHER PNEUMONIA	1.8787	$ 15,405.34
220-1	MAJOR STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES	1.3302	$ 10,907.64
220-2	MAJOR STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES	2.0852	$ 17,098.64
220-3	MAJOR STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES	3.4859	$ 28,584.38
220-4	MAJOR STOMACH, ESOPHAGEAL & DUODENAL PROCEDURES	7.2851	$ 59,737.82
540-1	CESAREAN DELIVERY	0.5400	$ 4,428.00
540-2	CESAREAN DELIVERY	0.6424	$ 5,267.68
540-3	CESAREAN DELIVERY	0.9728	$ 7,976.96
540-4	CESAREAN DELIVERY	2.3023	$ 18,878.86
541-1	VAGINAL DELIVERY W STERILIZATION &/OR D&C	0.4955	$ 4,063.10
541-2	VAGINAL DELIVERY W STERILIZATION &/OR D&C	0.5323	$ 4,364.86
541-3	VAGINAL DELIVERY W STERILIZATION &/OR D&C	0.8258	$ 6,771.56
541-4	VAGINAL DELIVERY W STERILIZATION &/OR D&C	2.5756	$ 21,119.92
609-1	NEONATE BWT 1500-2499G W MAJOR PROCEDURE	1.6898	$ 13,856.36
609-2	NEONATE BWT 1500-2499G W MAJOR PROCEDURE	4.7480	$ 38,933.60
609-3	NEONATE BWT 1500-2499G W MAJOR PROCEDURE	7.4462	$ 61,058.84
609-4	NEONATE BWT 1500-2499G W MAJOR PROCEDURE	14.4454	$ 118,452.28
955-0	PRINCIPAL DIAGNOSIS INVALID AS DISCHARGE DIAGNOSIS	-	$ -
956-0	UNGROUPABLE	-	$ -

Comparative example of MS-DRGs vs APR-DRGs

	PDX: 562.11 **Diverticulitis of colon** Proc: 45.71 **Multiple segmental resection of large intestine**				
	Case 1	**Case 2**	**Case 3**	**Case 4**	**Description**
Secondary Diagnoses	569.41	569.41 560.9	569.41 560.9 422.99 426.0	569.41 560.9 422.99 426.0 584.9	Ulcer of anus and rectum Unspecified intestinal obstruction Acute myocarditis Atrioventricular block, complete Acute renal failure, unspecified
CMS DRG	149 wo CC	148 w CC	148 w CC	148 w CC	**Major small and large bowel procedures**
APR DRG	221 Subclass 1	221 Subclass 2	221 Subclass 3	221 Subclass 4	
CMS DRG **APR DRG**	**2.3164** **1.3322**	4.2303 1.7681	4.2303 2.9531	**4.2303** **6.3732**	Payment weights*

* National Payment Weights used in example

Link with Physicians

- This link to physician understanding and acceptance is critical to changing clinical behavior that results in cost savings.
- The sophisticated severity of illness and risk of mortality levels in APR-DRGs create the clinical language that links the financial and clinical aspects of care and makes possible the identification of meaningful opportunities for physician behavior change and improved performance, cost savings and clinical outcomes.
- Acceptance of the APR-DRG grouping methodology helps to facilitate communication with physicians regarding quality management, resource utilization and distribution

Payment System Objective

"The ultimate objective of PPS is to set a *reasonable price for a known product.*

"A strong link between payment and diagnosis, along with the ability for hospitals to retain any amounts below the prospective rate, will invite more active medical participation in the financial and operating routines of hospitals."

- HHS Report to Congress, 1982

Objectives of the Proposed Reform

- Additional payments for special Cases – Outliers and Transfers
  - Maintain or improve access to care
  - Protect hospitals so that quality is maintained
- Extend protection against extraordinary case costs to a greater number of cases by directing the same level of payments more efficiently
  - In effect, this is stop loss insurance which protects hospitals – and maintains access and quality
- Improve payment accuracy
- Give providers incentives to become more efficient
  - Reward efficient hospitals
  - Give inefficient hospitals tools which facilitate communication between hospital administration and physicians
- Use the payment systems to create a foundation which supports continuous quality improvement

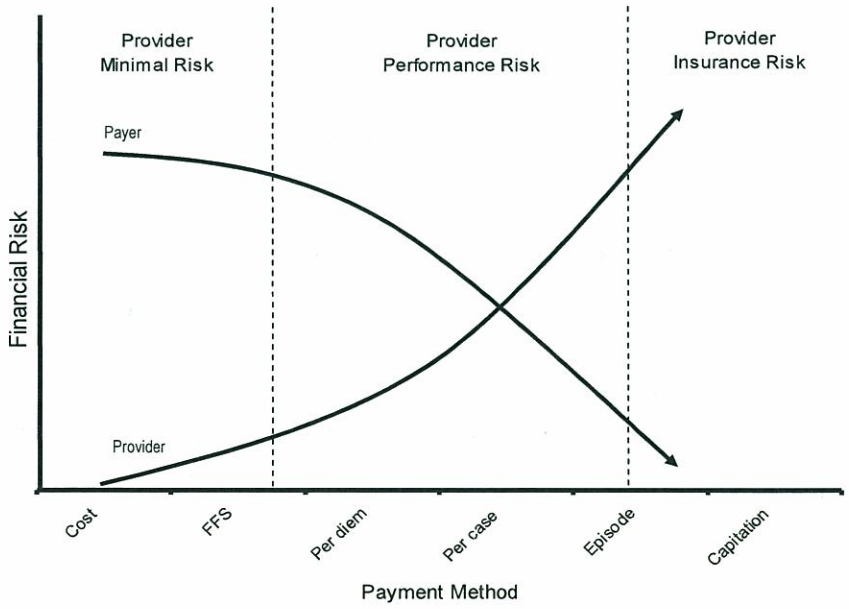
Separation of the Classification System and the Establishment of Prices

- The clinical model reflects the type of patients
- The payment weights reflect the treatment processes and methods
- Allows stable clinical categories to be maintained while payments are adjusted to reflect more accurate and complete data
- Facilitates fine-tuning payments to accommodate other factors not taken into account by the classification system

Components of an APR DRG Prospective Payment System

Unit of Payment - Case
Classification System – APR DRGs
Relative Weights (payment weights)
Case Mix Index
Outlier & Transfer Definition
Base Rate & Adjustments
Prices & Hospital Budgets
Transition

Payment Continuum



The All Patient Refined DRGs

Need a set of categories that were capable of capturing differences in the case mix and severity of the patient mix at various types of participating hospitals

APR-DRGs

- Developed for all patients
- Sophisticated severity adjustment – Accurate payment and supports communication
- Captures differences in expected cost across all participating hospitals – maintaining access and facilitating the measurement of efficient practice patterns

PPS Components – Relative Weights

- Relative Weights (payment weights)
  - Unitless Numbers that Express the Relative Resource Use for a Visit in One Category in Relation to the Average Visit
  - Major Policy Decisions Include:
    - Based on Actual Costs or Charges
    - DRG Average vs Hospital Specific Relative Value
    - Geometric vs Arithmetic

Top 10 APR DRGs by Total CM

Top 10			353,197	212,600	24.4%	
APR DRG	SOI	Relative Weight	Cases	Total CMI	% Total CMI	descr
540	1	0.79465	54,628	43,410.14	5.0%	CESAREAN DELIVERY SOI 1
560	1	0.44592	90,507	40,358.88	4.6%	VAGINAL DELIVERY SOI 1
004	4	30.00354	875	26,253.10	3.0%	TRACHEOSTOMY W LONG TERM MV W EXTENSIVE PROC SOI 4
560	2	0.51331	39,504	20,277.80	2.3%	VAGINAL DELIVERY SOI 2
588	4	33.88654	562	19,044.24	2.2%	NEONATE BWT <1500G W MAJOR PROC SOI 4
540	2	0.96069	17,155	16,480.64	1.9%	CESAREAN DELIVERY SOI 2
005	4	22.14753	704	15,591.86	1.8%	TRACHEOSTOMY W LONG TERM MV W/O EXTENSIVE PROC SOI 4
640	1	0.10582	146,854	15,540.09	1.8%	NEONATE BRTWT >2499G, NORMAL NB OR NEONATE W OTH PRBLM SOI 1
720	4	4.16961	1,980	8,255.83	0.9%	SEPTICEMIA & DISSEMINATED INFECTIONS SOI 4
593	4	17.25955	428	7,387.09	0.8%	NEONATE BIRTHWT 750-999G W/O MAJOR PROC SOI 4

PPS Components – Base Rate and Adjustments

- Base Rate and Adjustments
  - The base rate is an amount, that when multiplied by an APR-DRG specific relative weight, will yield a price for each APR-DRG
  - Major Policy Decisions Include:
    - What costs should be included or excluded in developing a base rate
    - The way that the base rate is inflated over time
    - Amounts (if any) which are withheld from the initial base rate to allow for improvements in coding after the system is introduced
    - What adjustments to the base rate are needed to account for exogenous factors that influence hospital costs

Base Rate Objectives

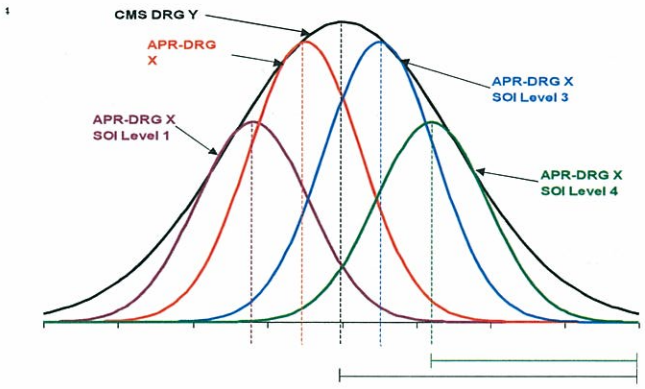
- Create fair base rates suitable for replication that can withstand review
- Base variation in base rates upon variation in "efficient" costs
- Efficient cost is a loose term but is treated here as the cost of production after adjusting for those mission related factors beyond hospital control that create systematic variation in the cost of providing care
- Which costs should be included or excluded in developing a base rate?

PPS Component – Outliers, Transfers and Transition

- Outlier and Transfer Policy
  - Payment adjustment for special cases in order to maintain access to care and provide financial protect hospitals and payers so that quality is maintained
  - Major Policy Decisions Include:
    - How will these outlier cases be identified?
    - How will credit for these cases be assigned for resource allocation?
- Transition
  - Strategy should be in place to protect against unanticipated expenditures and to protect hospitals' cash flow while minimizing disruption of normal hospital operations to allow hospitals to adjust to new system

Conceptual Illustration of Cost Variation Comparisons

Four Severity of Illness Subclasses Compared to One CMS DRG



APR DRGs are much better than CMS DRGs in making a payment that more closely resembles the resources needed to treat that case. Their cost distributions match much more closely to the payment.

APR Inliers Defined as CMS Statistical Outliers

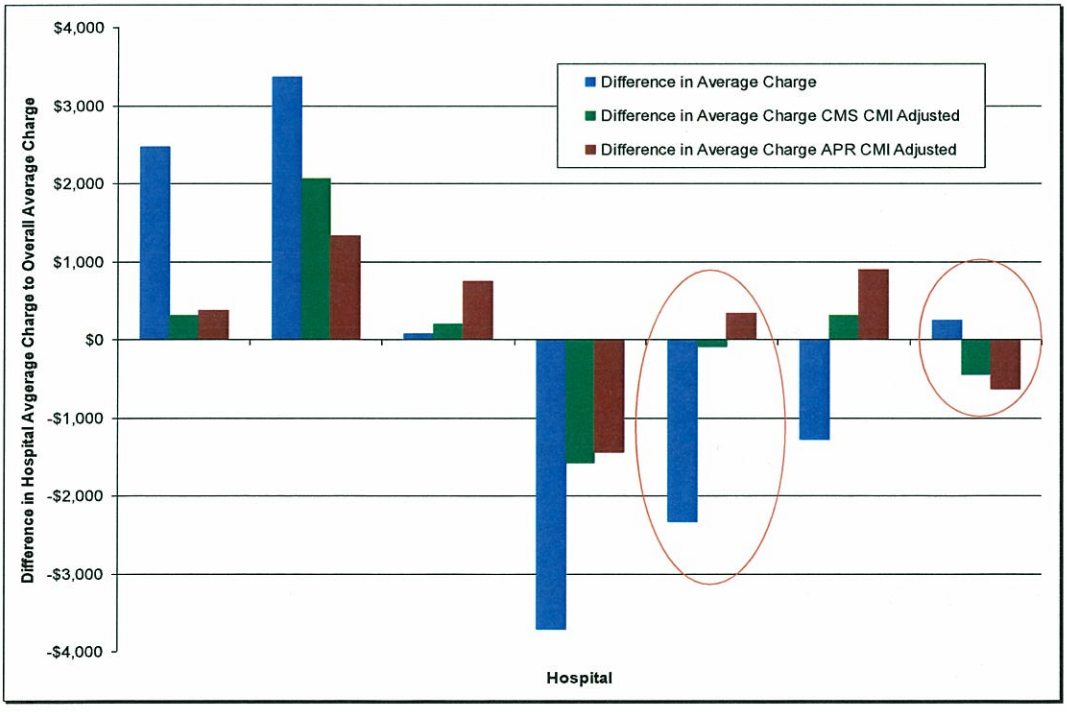
High Outliers	1	2	3	4
CMS-DRG	10.8%	18.8%	35.3%	35.1%

Low Outliers	1	2	3	4
CMS-DRG	62.2%	33.3%	0.0%	4.5%

Hospital Level R^2 for Cost

	CMS	APR
R2 Casemix Index Only	53.57	61.81
R2 Casemix Index plus Hopsital Characteristics	65.49	66.30
Percent Difference	22.25%	7.27%

Hospital characteristics: Bed size, teaching status, location, percent Medicare, percent Medicaid



Input Data Elements

- Standard UB Administrative Data Elements
  - No additional data elements required for APR DRG assignment

- Coding and Documentation
  - No additional resources required for coding and documentation above the official coding guidelines
  - Hospitals are changing coding practice to account for Medicare MS DRG changes retooling coding resources to reevaluate documentation and coding.
  - Adopting the more sophisticated APR DRG classification system, which provides the incentive to code even more completely and have more detailed conversations with the physician, may add marginally to this ongoing change

Phases of Implementing a PPS

- Phase I Identification and Evaluations of Options
  - Identify PPS Objectives and Constraints
  - Review PPS Components
  - Mandated Legal Issues Related to PPS Design
  - Data Availability and Quality
  - Create and Meet with Technical Advisory Committee On Issues
- Phase II Design of Selected System(s) and Calculation of Payment Rates
  - Designing the PPS Using the Components of PPS
  - Simulate PPS Design Alternatives
  - Perform Impact and Sensitivity Analysis of PPS Design
- Phase III Implement System
  - Data, Testing, Documentation, Training
  - General System Design Documents, Regulations, Policy Manuals
  - Obtain CMS approval
  - Education sessions for Hospitals

Benefits of a DRG Resource Allocation and Payment System

- Provides a Rational and Scientific Method to Allocate Scarce Resources to Providers
- Creates financial incentive for hospitals to provide efficient care
- Provides a fair basis for allocating a limited budget to hospitals
- Creates a language for communicating the financial implications of clinical decisions
- Focuses on the needs of patients

Benefits of a DRG Resource Allocation and Payment System

- Provides clinically meaningful information to promote care management and quality improvement
- Provides a means of identifying "reasonably efficient" hospitals
- Is easily understood and administratively straightforward
- Not a burden for hospitals

Summary

- Understanding a hospital's case mix using APR-DRGs address the serious problem of measuring differences in resources needed to treat various types of inpatient cases
- Allows for a more equitable allocation of monetary resources
- The information produced using these kinds of severity-base analysis for measuring hospitals' output can be applied to hospitals' treatment of inpatient cases; facilitating planning, utilization review, and quality assurance activities

Summary

- Critical aspect of a DRG system is the extent to which it supports communication between hospital administrators and the clinicians with privileges at the hospital. And the key to successful communication with physicians is that the DRG system recognizes severity of illness.
- APR-DRGs have sophisticated clinical logic which uses clinically coherent patterns of secondary diagnoses in a consistent four level severity framework to recognize the severity of each patient.
- APR-DRGs are an effective tool which facilitates communication between hospital administration and physicians.
- Support efforts by both the Payer and the hospitals to improve both efficiency and quality of care.