Monthly MA APCD / Case Mix User Workgroup Webinar

October 28, 2014

Agenda

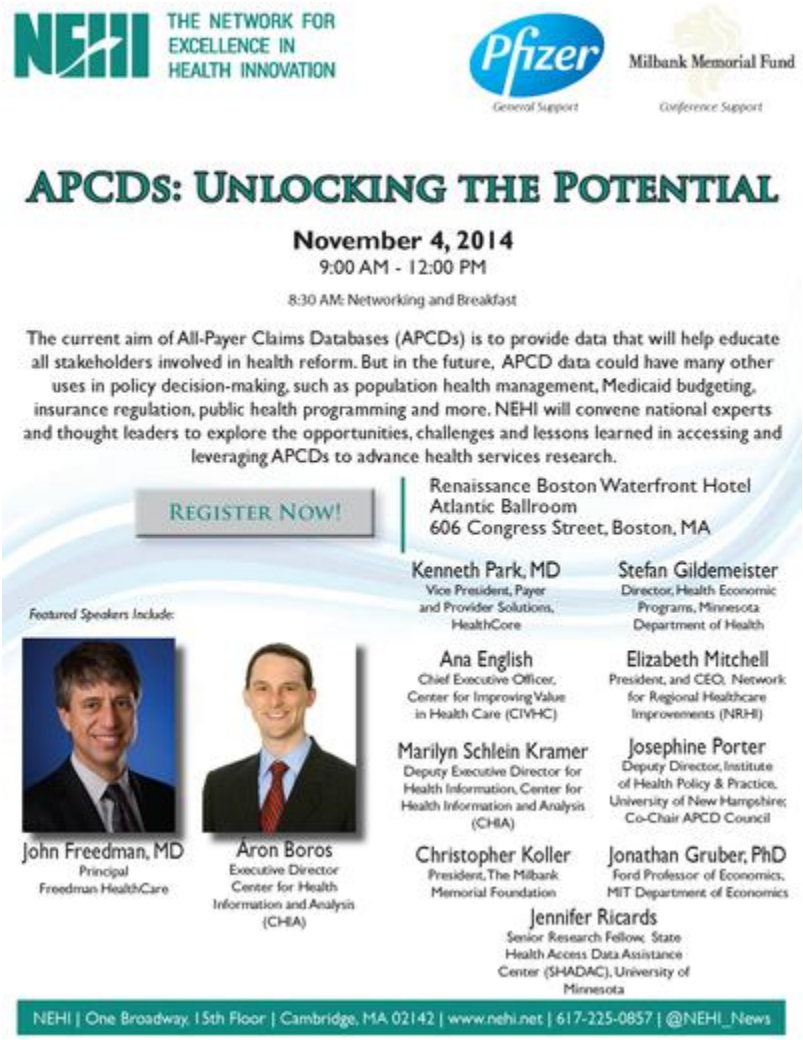
I. Announcements
II. Common Application Issues / Questions
III. Presentation on DRGs
IV. Presentation on E-Codes
V. Questions from Current APCD Users

Announcement – APCD Webcast

NEHI will convene national experts and thought leaders to explore the opportunities, challenges and lessons learned in accessing and leveraging APCDs to advance health services research.

The discussion will highlight existing models, the opportunities and challenges for expanded data access and use, and the potential for these systems to evolve over time.

Register Here: http://www.nehi.net/events/59-all-payer-claims-databases-unlocking-the-potential/view



Announcement – APCD Symposium

- CHIA is in the preliminary stages of planning a research symposium featuring APCD research
- Please contact Adam Tapply [adam.tapply@state.ma.us] if you are interested in getting involved

Common Application Questions

Question:

When can I apply for 2013 APCD data?

Answer:

- Release 3.0 application materials are expected to be ready in December 2014
- Will be announced at this workgroup and via eblast

[NOTE: 2013 Case Mix data is available now]

Reminders Re: Application Revisions

- Please title revised documents in the following format “Name of Revised Document _ Date” (i.e. “Revised Application Form 10.24.14)
- If application form is revised, it must be re-signed with the date of the revision
- Please bold or highlight changes in application form and data spec workbook
- Please send an IRBNet message or “lock your package” once you are finished with revisions

What DRG versions available in CHIA Inpatient Case Mix Data?

Review: Definition of DRG
Diagnosis Related Group

A classification system that groups patients according to diagnosis, type of treatment, age, and other relevant criteria. Under the prospective payment system, hospitals are paid a set fee for treating patients in a single DRG category, regardless of the actual cost of care for the individual.

Source: CMS [*http://www.cms.gov/apps/glossary/default.asp*](http://www.cms.gov/apps/glossary/default.asp)

Over the Past 30 years Multiple Versions of DRGs have been Created and Refined

The Three Most Commonly Used DRGs Decade (2004-2013) in HDD

- All Patients Diagnosis Related Groups
  AP-DRG
- All Patients Refined Diagnosis Related Groups
  APR-DRG
- Medicare (CMS) Diagnosis Related Groups
  CMS-DRG

13 Year (2001-2013) History of Diagnosis Related Group (DRG) Versions in Massachusetts Inpatient Hospital Discharge Data (HDD)

HDD Fiscal Year	AP-DRG Version 12	AP-DRG Version 14.1	AP-DRG Version 18	AP-DRG Version 21	AP-DRG Version 25.1	APR-DRG Version 15	APR-DRG Version 20	APR-DRG Version 26.1	APR-DRG Version 30	VHAF-DRG Version 24	VHAF-DRG Version 25	CMS-DRG Version 26	CMS-DRG Version 27	CMS-DRG Version 28	CMS-DRG Version 29	CMS-DRG Version 30
2013				X	X		X	X	X							X
2012				X	X		X	X	X						X	
2011				X	X		X	X	X					X		
2010				X	X		X	X	X				X			
2009				X	X		(available soon)	X	X			X				
2008	X			X			X				X					
2007	X			X			X			X						
2006	X	X	X	X		X										
2005	X	X	X			X										
2004	X	X	X			X										
2003	X	X	X			X										
2002	X	X	X			X										
2001	X	X	X			X										

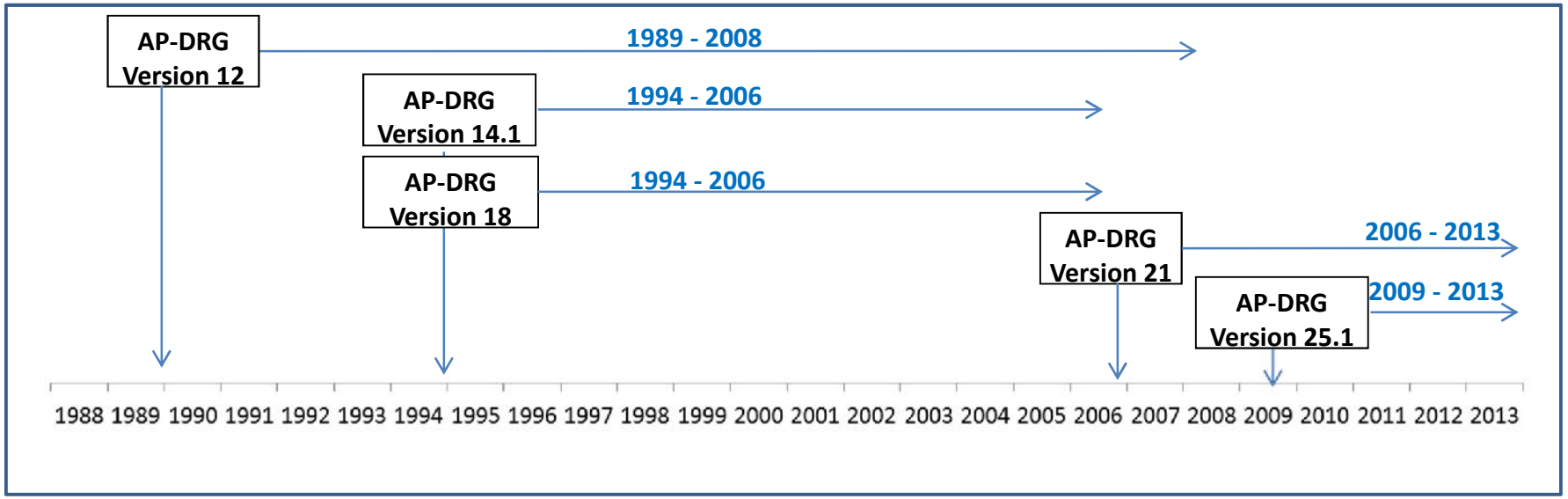
What is the difference between the DRG versions?

AP-DRG History and Massachusetts HDD Use Timeline

All Patients Diagnosis Related Groups (**AP-DRG)** was developed in 1987 through agreement between New York State Department of Health and 3M Health Information Systems Software in conjunction with the National Association of Children's Hospitals and Related Institutions. AP-DRGs are similar to original DRGs developed by Yale University for CMS, but also include a more detailed DRG breakdown for non-Medicare patients, particularly newborns and children. Its development was driven by legislation instituting DRG-prospective payment for all **non-Medicare patients** and evaluated to ensure its applicability to **neonatal, pediatric patients** and **patients with HIV**. The features of AP-DRG categories recognize **resource intensity*** associated with:

- Six Distinct Neonate Birth Weight Ranges
- HIV in the presence or absence of 12 related infections
- Complications and Comorbidities / Transplant Status
- Differentiation of Forms of Substance Abuse
- Pediatric modifications associated with, for example, lead poisoning and congenital anomalies

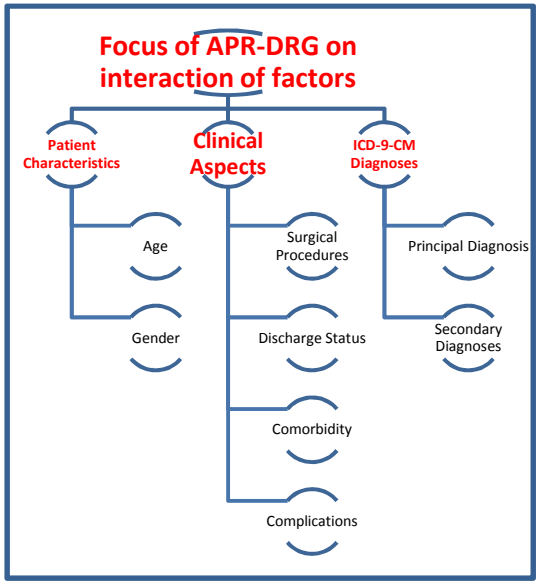
Timeline of AP-DRG Use in Massachusetts HDD



Definition of Resource Intensity - *The relative volume and types of diagnostic, therapeutic, and bed services used in the management of a particular disease. (source: AHRQ https://www.hcup-us.ahrq.gov/db/nation/nis/APR-DRGsV20MethodologyOverviewandBibliography.pdf)*

APR-DRG History and Massachusetts HDD Use Timeline

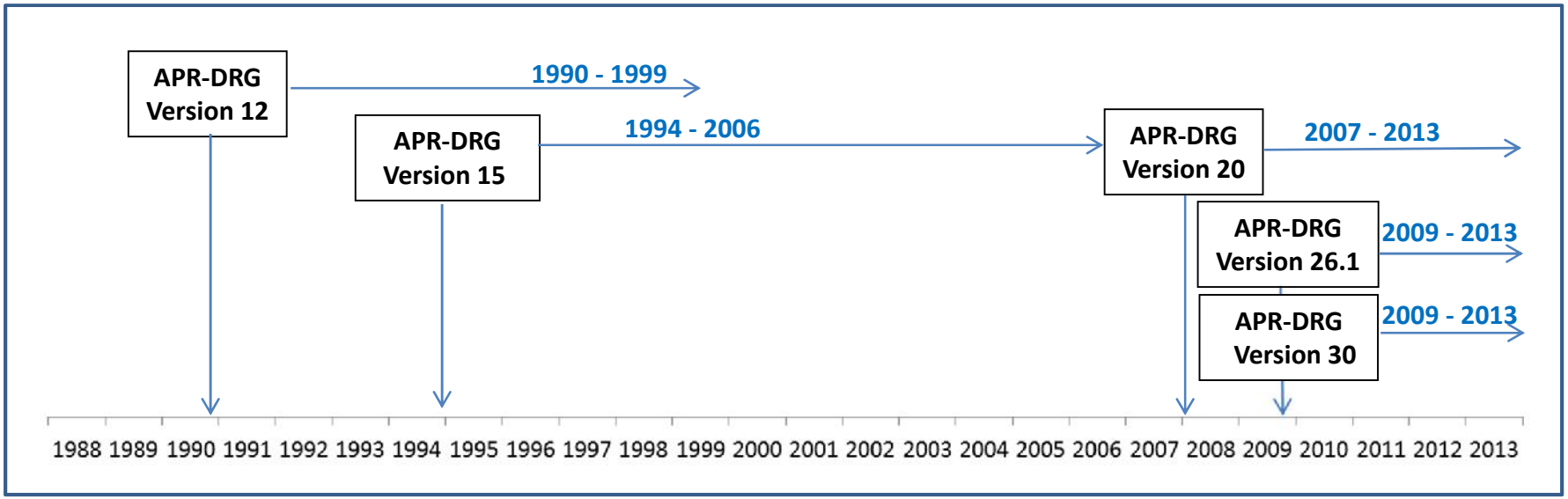
All Patients Refined Diagnosis Related Groups (**APR-DRG**), developed in 1990, shifts focus of DRGs from institutional resource intensity to case mix demographics, clinical complications and comorbidities, and multiple diagnoses. Existing resource intensity DRGs did not address severity of illness, risk of mortality, and the impact and interaction of multiple diagnoses on treatment difficulty. While CMS later created an MS-DRG severity adjustment to CMS-DRG, it only adjusts for single complicating factors while APR-DRG is more effective in grouping by the true complexity of multiple additional comorbidities or complications with and without their added impact on resource use. The APR-DRG includes:



- Four severity of illness subgroups (Minor, Moderate, Major, Extreme)
- Four risk of mortality subgroups (Minor, Moderate, Major, Extreme)
- Each of the above subgroup assignments take into consideration secondary diagnosis, interaction between secondary diagnosis, age, principal diagnosis, complications, comorbidities, OR and non-OR procedures.

More than 50% of U.S. hospitals use APR-DRG. CMS contracted with RAND to evaluate severity-adjusted of 5 different DRG systems APR-DRG ranked superior to all other DRG classification systems.*

Timeline of APR-DRG Use in Massachusetts HDD



* *Wynn BO, Scott M: Evaluation of Severity-Adjusted Systems. Prepared for the CMS July 2007, RAND Health.*

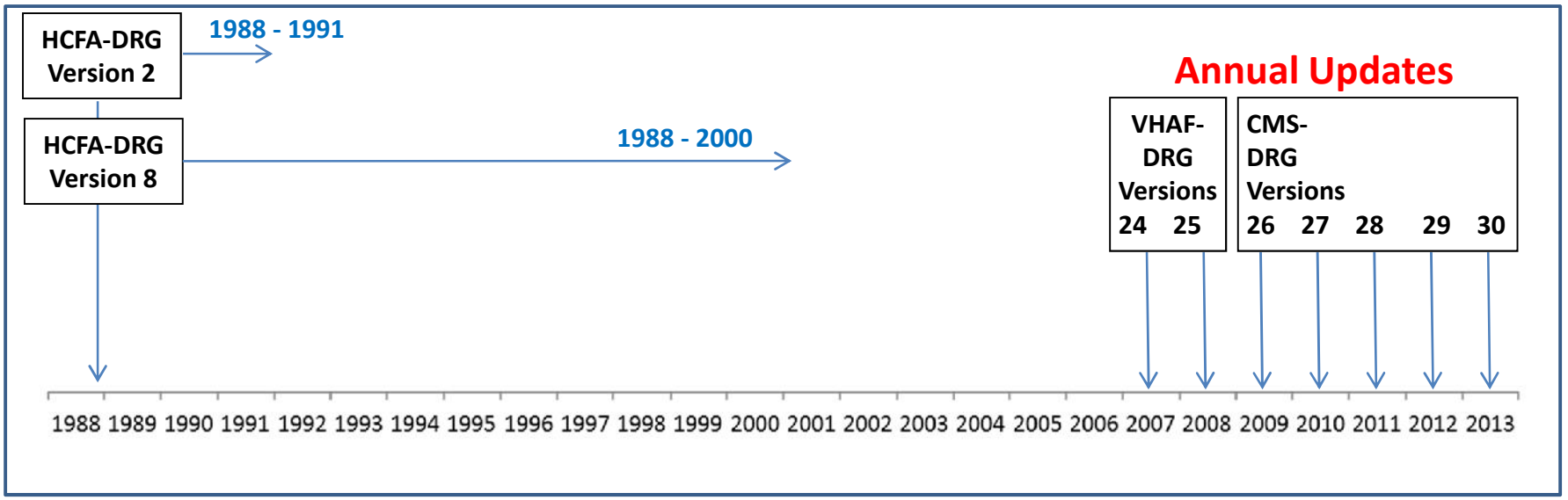
CMS-DRG History and Massachusetts HDD Use Timeline

The Health Care Financing Administration (HCFA), the predecessor agency to the Centers for Medicare and Medicaid Services, implemented **HCFA-DRGs** in 1983 to measure inpatient resource consumption by the Medicare population. The core of their DRG system was the healthcare "product" supplied by hospital care of a patient. The initial architects of the CMS-DRG system established 23 major diagnostic categories (MDCs) as the first level of categorizing these products.* The MDCs were then subdivided into DRGs based on factors such as surgical status, organ system, age, symptoms, comorbidities, and discharge status. While subsequent modifications to the Medicare DRGs included non-Medicare patients, the key focus of modifications has been on problems relating primarily to the elderly population. The Veterans Health Administration **VHAF-DRG** is based on the CMS-DRG with refinements by 3M for severity in the veterans population and non-veteran population.

How CMS-DRGs differ from APR-DRGs?**

Usage	CMS DRG Development	3M APR DRG Development
Medicare population representation		
Non-Medicare population representation		
Severity-of-Illness analysis		
Recognition of the impact of MULTIPLE secondary diagnoses, their severity, and their interactions		
Mortality analysis		
Variation in mortality rates within a DRG *(e.g. CVA w/ infarct vs. intracranial bleed)*		

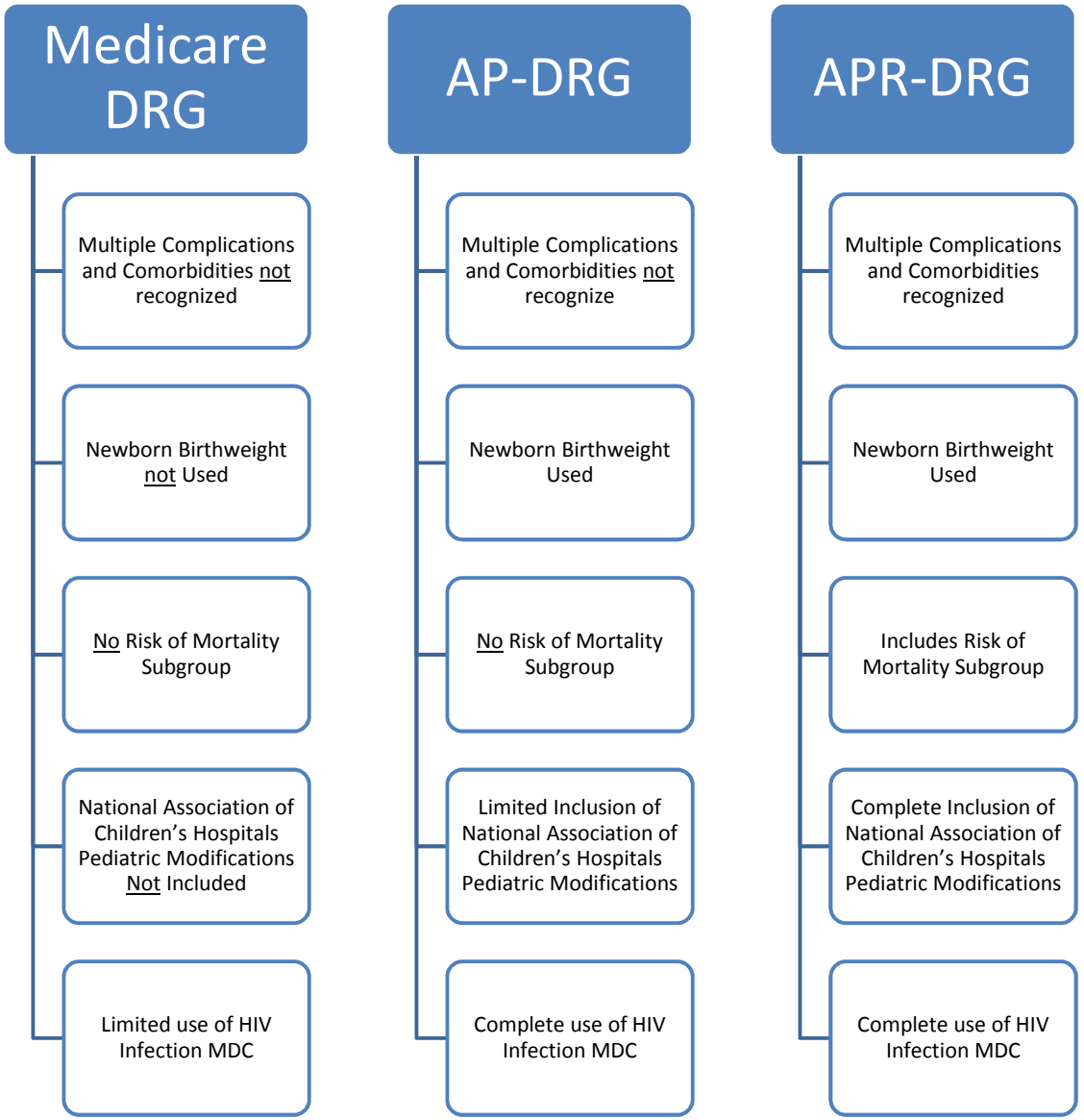
Timeline of HCFA, VHAF, and CMS DRG Use in Massachusetts HDD



* *Source: Dr. Brandon Bushnell: The Evolution of DRGs. American Academy of Orthopedic Surgeons, http://www.aaos.org/news/aaosnow/dec13/advocacy2.asp*

** *Source: All Patient Refined DRGs, a Methodology Overview, 2006, 3M HIS, https://msmedicaid.acs-inc.com/trainingMaterials/MSAPR-Methodology.pdf*

Comparison of Some Structural* Differences between Medicare-DRG, AP-DRG, APR-DRG Versions 12



** Source: 3M Health Information Systems Research Report No. 5-98*

If I want to identify the potential delivery records, which DRG is the best for me?

Comparison of Differences in CMS DRG Version 30 and APR DRG Version Top Ranking Delivery Groupings by Charges for Massachusetts HDD

CMS DRG	CMS Version 30 DRG
766	Cesarean section w/o CC/MCC
775	Vaginal delivery w/o complicating diagnoses
765	Cesarean section w CC/MCC
774	Vaginal delivery w complicating diagnoses
767	Vaginal delivery w sterilization &/or D&C
776	Postpartum & post abortion diagnoses w/o O.R. procedure
781	Other antepartum diagnoses w medical complications
794	Neonate w other significant problems
982	Extensive O.R. procedure unrelated to principal diagnosis w CC
782	Other antepartum diagnoses w/o medical complications
768	Vaginal delivery w O.R. proc except steril &/or D&C
792	Prematurity w/o major problems
789	Neonates, died or transferred to another acute care facility
791	Prematurity w major problems
793	Full term neonate w major problems
769	Postpartum & post abortion diagnoses w O.R. procedure

APR DRG	APR DRG* Version 30 DRG
540	Cesarean delivery
560	Vaginal delivery
541	Vaginal delivery w sterilization &/or D&C
561	Postpartum & post abortion diagnoses w/o procedure
566	Other antepartum diagnoses
640	Neonate birthwt >2499g, normal newborn or neonate w other problem
542	Vaginal delivery w complicating procedures exc sterilization &/or D&C
950	Extensive procedure unrelated to principal diagnosis
625	Neonate bwt 2000-2499g w other significant condition
614	Neonate bwt 1500-1999g w or w/o other significant condition
546	Other O.R. proc for obstetric diagnoses except delivery diagnoses
639	Neonate birthwt >2499g w other significant condition
633	Neonate birthwt >2499g w major anomaly
544	D&C, aspiration curettage or hysterotomy for obstetric diagnoses
626	Neonate bwt 2000-2499g, normal newborn or neonate w other problem
621	Neonate bwt 2000-2499g w major anomaly
580	Neonate, transferred <5 days old, not born here

* *Note: APR DRG includes additional Subclass groupings by Category for* ***Severity of Illness*** *and* ***Risk of Mortality***

Comparison of CMS-DRG to APR-DRG for 4 Single Liveborn Cases*

PDX V3000: Single liveborn, born in hospital, delivered without mention of cesarean section
Admission age in days: 0
Discharge status: Home
Birthweight: 500G

	Case 1	Case 2	Case 3	Case 4	Description
Secondary Diagnoses		748.4	748.4 770.8	748.4 770.8 753.0	Congenital Cystic Lung Respiratory Failure of NB Renal Agenesis
CMS DRG APR DRG	391 591 Subclass 1	390 591 Subclass 2	389 591Subclass 3	389 591 Subclass 4	Normal Newborn/ Newborn with other significant problems/Full Term Neonate w/ Maj. Prob. Neonate, birth weight 500-749G, without major procedure
CMS DRG APR DRG	0.2560 0.1134	0.2892 2.6320	0.6430 12.8901	0.6430 23.1141	Payment weights**

* *Source: Lisa Lyons, An Overview of 3M™ All Patient Refined Diagnostic Related Groups (3M APR DRG), July 13, 2012, 3M HIS*

** Payment weights are budget neutral and computed from a national database

Comparison of CMS-DRG to APR-DRG for Preterm Infant*

	Principal Diagnosis: Preterm Infant		
	33-34 weeks gestation 2200 (4.85 lbs)	33-34 weeks gestation 2200 (4.85 lbs)	25-26 weeks gestation 850 g (1.87 lbs)
Principal Diagnosis	Single Liveborn	Single Liveborn	Single Liveborn
Secondary Diagnoses	Tetralogy of Fallot	Tetralogy of Fallot	Tetralogy of Fallot
	Other preterm infants -- code: 76518	Other preterm infants -- code: 76518	Extreme immaturity -- code: 76503
	33-34 weeks gestation -- code: 76527	33-34 weeks gestation -- code: 76527	25-26 weeks gestation -- code: 76523
	Respiratory distress syndrome	Respiratory distress syndrome	Respiratory distress syndrome
		Chronic resp disease	Chronic resp disease
		Primary apnea	Primary apnea
		Pneumonia	Pneumonia
		Preterm Jaundice	Preterm Jaundice
		Feeding problems	Feeding problems
		Retrolental fibroplasia	Retrolental fibroplasia
		Cutaneous hemorrhage	Cutaneous hemorrhage
CMV (Continuous Mechanical Ventilation)	N/A	CMV < 96 hours	CMV < 96 hours
Medicare DRG	Extreme Immaturity or Resp Distress -- code: 386	Extreme Immaturity or Resp Distress -- code: 386	Extreme Immaturity or Resp Distress -- code: 386
3M™ APR™ DRG	Neonate BW 2000-2499 w Major Anomoly -- code: 621	Neonate BW 2000-2499 w Major Anomoly -- code: 621	Neonate BW 750-999 w/o Major Procedure -- code: 593
Severity of Illness	2 - Moderate	4 - Extreme	4 - Extreme
Medicare Weight	**4.5935**	**4.5935**	**4.5935**
APR Relative Weight	**2.1324**	**7.6616**	**17.0215**
Length of Stay	7	38	86
Risk of Mortality	1 - Minor	2 - Moderate	3 - Major
National Mortality Rate (APR Adjusted)	6.94%	7.33%	18.39%

* *Source: All Patient Refined DRGs, a Methodology Overview, 2006, 3M HIS, https://msmedicaid.acs-inc.com/trainingMaterials/MSAPR-Methodology.pdf*

How complete are the External Cause of Injury Codes (MC040) in APCD?

2009-2012 MA APCD Injury Diagnoses and External Cause of Injury Codes

All Injury Principal Diagnosis E-Codes

11.7% of all APCD Injury Principal Diagnosis Claim Lines have an accompanying E-Code

8.7% have an E-Code in the Dedicated **E-Code Field (MC040)**

3% have an E-Code populating an **Other Diagnosis Code Field**

Accident Related Injury E-Codes

10% of All Injury Principal Diagnoses have Yes (Code 1) for **Accident Indicator (MC126)**

40% of these claim lines have an E-Code in the E-Code field or Other Diagnosis Code Field

Employment Related Injury E-Codes

2% of All Injury Principal Diagnoses have a Yes (Code 1) for **Employment* Related (MC128)**

88% of these claim lines have an E-Code in the E-Code field or Other Diagnosis Fields

* ***Note***: *MA APCD does not include* ***Workers' Compensation, Auto Insurance and other claims not paid by Medical Insurance.*** *Case Mix includes data regardless of payment source.*

Questions from MA APCD Users

QUESTION

- The “Service Provider Number” (MC024) is listed as a linkage element but many of the records have a NULL value. We cannot link elements with NULL values.

ANSWER

- For MassHealth and Health Safety Net, the Service Provider Number (MC024) is always as the Billing Provider (MC076), so they did not populate the field MC024.
- There are other carriers where that scenario is also true but they did redundantly populate the service provider number with the billing provider number.

QUESTION

- Is there an identifier for patients that is NOT their SSN? We would like to track patients across plans and over time, but would like to avoid accessing high-level identifying info such as SSNs.

ANSWER

- CHIA has created in APCD an MEID that allows you to track patients across plans and over time.
- For more information, refer to our Master Patient Index presentation from last April: http://www.mass.gov/chia/docs/p/apcd/workgroup-meetings/2014-04-22-apcd-user-group-presentation.pdf

QUESTION

- Is it possible to determine race/ethnicity of a patient?

ANSWER

- In the APCD, the eligibility file has race and ethnicity data but the completeness of that varies across carriers.
  [Thresholds for Race and Ethnicity are both 3%]
- Case mix data has more complete race and ethnicity data

QUESTION

- Are payments to the Department of Mental Health or Department of Corrections included in APCD?

ANSWER

- Yes.

QUESTION

- We are interested in learning more about high-deductible health plans. Can we determine whether a plan is a HDHP in the product type field? (or is there another indicator that we could use?)

ANSWER

- The Product File has field PR012 Annual Per Person Deductible Code which defines the Total Per Person Deductible for all benefits under this product using the following coding options

  000 No per person deductible

  001 Deductible Total under $1,000

  002 Deductible Total of $1,000 thru $1,999

  003 Deductible Total of $2,000 thru $2,999

  004 Deductible Total greater than $3000

  999 Not Applicable

QUESTION

- If a claim is denied, we understand that it is not reflected in APCD. Are there any instances where a denied claim might appear (i.e., initially denied but later paid, partially paid, or other circumstances)?

ANSWER

- Yes, if a claim was originally paid then later denied or partially paid with specific claim lines denied.

Upcoming Schedule

- 11/13 – Data Privacy Committee Meeting
- 11/20 – Data Release Committee Meeting

  [a week early due to Thanksgiving]
- 11/25 – User Workgroup Webinar

Questions?

- General questions about the APCD: (CHIA-APCD@state.ma.us)
- Questions related to APCD applications: (apcd.data@state.ma.us)
- Questions related to Casemix: (casemix.data@state.ma.us)