3M℠ Health Care Academy

Utilizing Data and Analytics to Take Your CDI Program to the Next Level

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Objectives

At the conclusion of this presentation, participants will be able to:

- Understand how discharged data can be used to measure impact of CDI process on whole population, and how that differs from only measuring cases that receive a query.

- Identify diagnoses/DRGs with potential opportunity, in order to build a "CDI focus list" at their own hospital.

- Understand what types of variables drive profiling, (severity of illness (SOI) and risk-adjusted mortality (ROM)) data, and how the profiles impact hospitals and physicians.

- Develop a plan for deploying a second-level, pre-bill, clinical review process in their hospital, focusing on mortality reviews (for this presentation), and advancing it to include other cases that can impact risk-adjustment.

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Today's Healthcare Demands
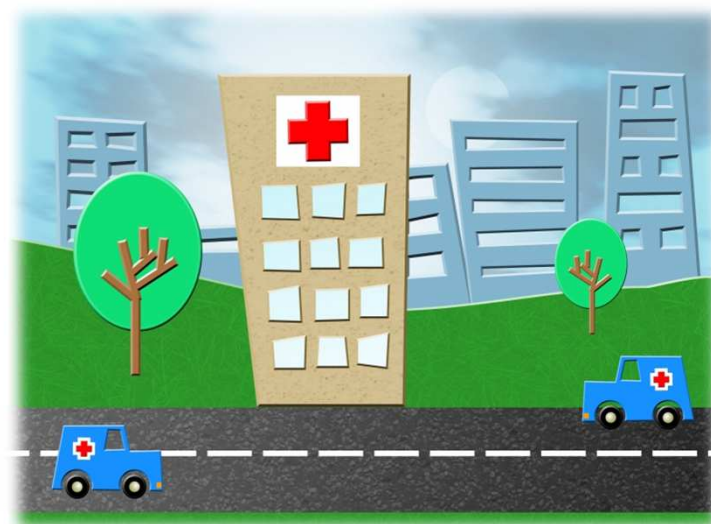
Admission for only the sickest patients

Deliver high-quality care

Achieve acceptable outcomes

Reduce LOS

Be more cost-effective

Manage it!   Prove it!

Who is Looking at this Data?

Centers for Medicare & Medicaid Services

BlueCross BlueShield Association
An Association of Independent
Blue Cross and Blue Shield Plans

HEALTHGRADES
GUIDING AMERICA TO BETTER HEALTHCARE

U.S.News & WORLD REPORT

Joint Commission
an Accreditation of Healthcare Organizations
Setting the Standard for Quality in Health Care

Payers

Consumers

Providers

Risk Management

Hospitals
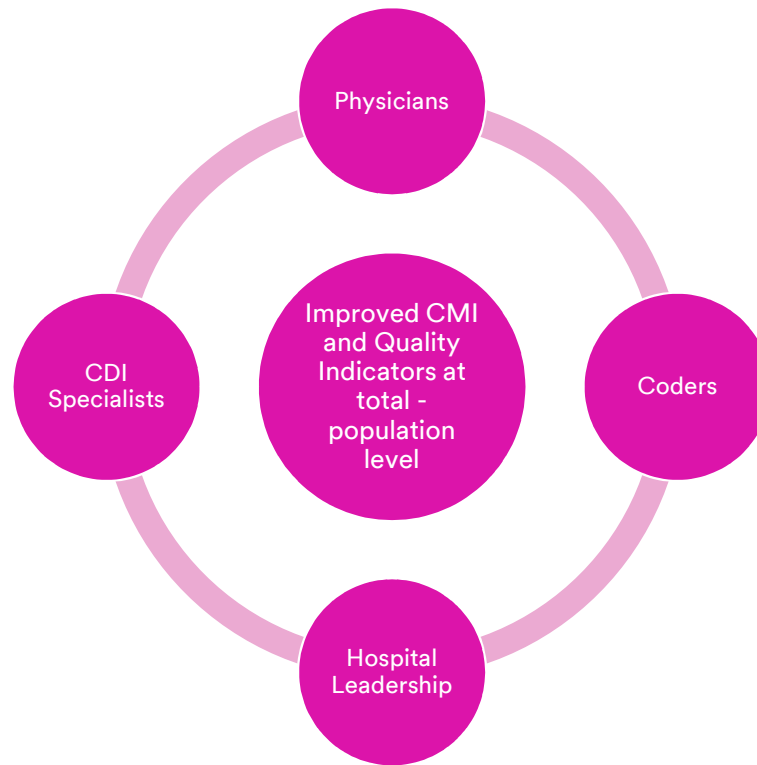
Case Management

Regulators

RAC Audits

Documentation Improvement and Data Accuracy

To monitor the "Big Picture" – Are all parties involved doing enough to "move" the data in the correct direction?

Improving Documentation/Data Quality

To measure function and success of CDI program and maintain documentation improvement, it is helpful to track and monitor 3 types of data:

1. Data at the CDI Specialist and Coder level

2. Summarized data on the payer/population being focused on as a whole, with ability to drill-down to service line, MS and APR DRG, then case level.

3. Data at the Physician level.

1. Data at CDI/Coder Level

- Purposes of monitoring at this level are:

  - Monitor to see if CDI specialists are meeting "Best Practice" goals.
  - Assess as a whole, how the CDI team is functioning from a process standpoint.
  - Assess CDI team members individually how they are functioning.
    - Querying:
      - Supporting evidence for query.
      - Utilizing clinical expertise and critical thinking skills, to find more diverse query opportunities, as well as querying for the "usual" things.
      - Analyzing physician responses for each individual CDI.
  - Covering enough of their assigned cases – if not, what are the barriers?
  - Follow-up on cases.
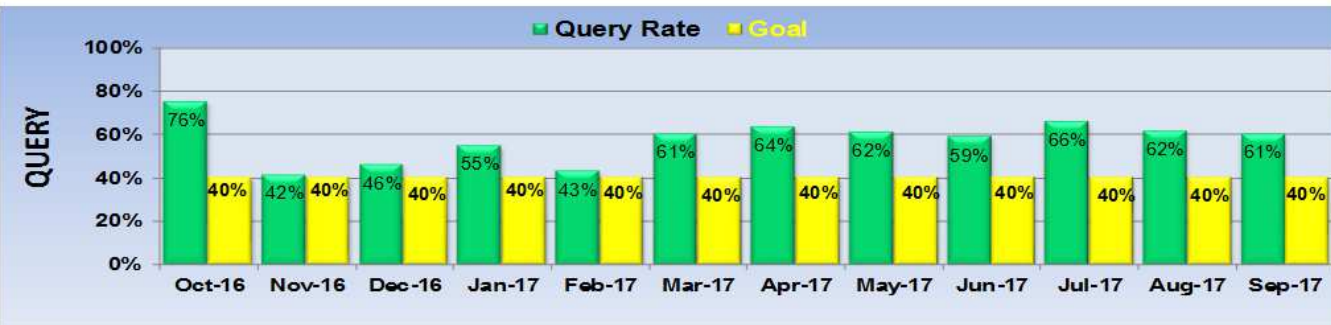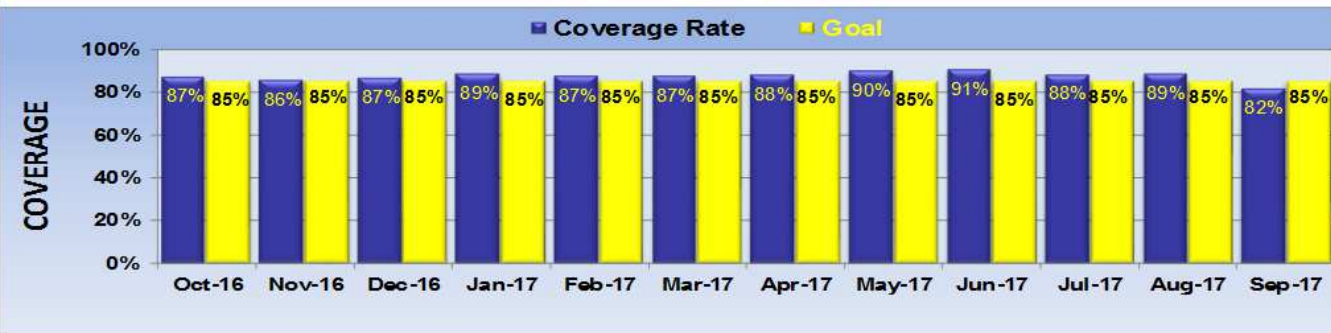 - Follow-up with physicians and queries.

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Data at CDI/Coder Level

Evaluation: client doing an excellent job.
Needs: 1. Physicians may need more education, as evidenced by the very high query rate.
Evaluate each CDI's stats to see who is re-querying the most, and investigate why if too much.

Coverage & Query Rates

Coverage Rate — Goal
COVERAGE

	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
Coverage	87%	86%	87%	89%	87%	87%	88%	90%	91%	88%	89%	82%
Goal	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%

Query Rate — Goal
QUERY

	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
Query	76%	42%	46%	55%	43%	61%	64%	62%	59%	66%	62%	61%
Goal	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%

Cumulative: Average Days to 1st Review – 1.9   Frequency of Reviews/DC – 2.0
Best Practice: 1-2 days   Best Practice: 2.5-3 days average

October 2016 – September 2017

Physician Response -
Cumulative/Refreshed Period

120   25

2009

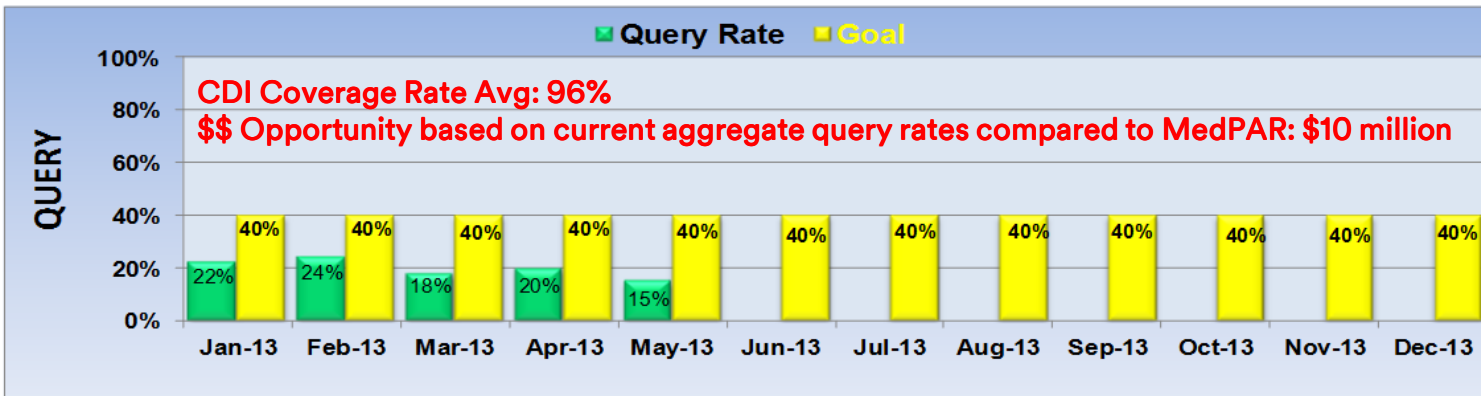■ Agreed 94%   ■ Disagreed 6%   ■ No Response 1%
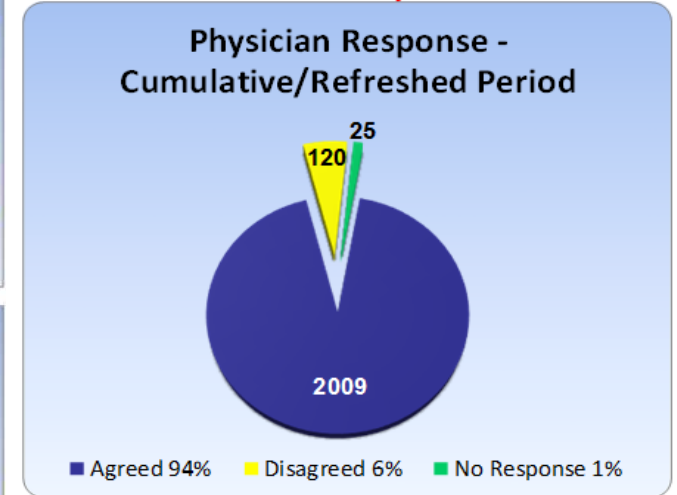
Response rate 99%

Unable to determine – 79
Response not Codable – 29
Alternate Dx for response – 18

Data at CDI/Coder Level

Problem: Quantity of initial reviews is high, however quality is not – back off on reviews so that more quality reviews can be done (i.e. more subsequent reviews, more queries)

Chart title: **Query Rate** ■ **Goal**

CDI Coverage Rate Avg: 96%
$$ Opportunity based on current aggregate query rates compared to MedPAR: $10 million

Y-axis: QUERY (0% to 100%)

Month	Query Rate	Goal
Jan-13	22%	40%
Feb-13	24%	40%
Mar-13	18%	40%
Apr-13	20%	40%
May-13	15%	40%
Jun-13		40%
Jul-13		40%
Aug-13		40%
Sep-13		40%
Oct-13		40%
Nov-13		40%
Dec-13		40%

- ✓ Total # Queries-300
- ✓ Total # Responded-60
- ✓ Response is "agree"-20
- ✓ Unable to determine-15
- ✓ Response not codeable-5
- ✓ Alternate Response-20

Cumulative: Average Days to 1st Review – **2**   Frequency of Review – **1.6** -Should be 2.5 – 2.8 avg.

***Rate of Medicare IP cases with 1-2 day LOS: **36%**

- Evaluate Query Rate – What opportunity exists compared to national or state peer group?
- Increase frequency of re-reviews (subsequent reviews).
- Investigate why "agree" rate is so low.
- Review queries for content, clarity, and ease of reading.
- Set up plan for educating physicians.
- Analyze aggregate payer data to see which service lines need the most education.

Data at CDI/Coder Level – Physician Response

- Helps you focus on which Providers need additional education.

Query MD	Query Type	Ttl Pts w/Query	# MD Queries	# Withdrawn	# MD Responses	% MD Response Rate	# MD Resp Agreed	# MD Resp Disagreed	# MD Resp Unable To Determine	# MD Resp Not Codable	# MD Resp Alt Dx	% MD Agreed Rate	# MD No Response
		8	20	0	20	100	19	0	0	0	1	95	0
	210 Documenta	8	10	0	10	100	10	0	0	0	0	100	0
	251 Conflicting	3	5	0	5	100	4	0	0	0	1	80	0
	193 POA Diagn	2	2	0	2	100	2	0	0	0	0	100	0
	041 Pneumonia	1	1	0	1	100	1	0	0	0	0	100	0
	189 Heart Failu	1	1	0	1	100	1	0	0	0	0	100	0
	207 Underlying	1	1	0	1	100	1	0	0	0	0	100	0
l G		2	2	0	0	0	0	0	0	0	0	0	2
	326 Medical Re	2	2	0	0	0	0	0	0	0	0	0	2
eem		2	2	0	1	50	1	0	0	0	0	100	1
	326 Medical Re	2	2	0	1	50	1	0	0	0	0	100	1
Lesl		2	2	0	1	50	1	0	0	0	0	100	1
	190 Chronic Kid	1	1	0	0	0	0	0	0	0	0	0	1
	003 Clinical Fin	3	3	0	2	67	1	0	0	1	0	50	1
	005 Anemia Sp	1	1	0	0	0	0	0	0	0	0	0	1
	183 Medication	1	1	0	1	100	0	0	0	0	1	0	0
	239 Open Fract	1	1	0	0	0	0	0	0	0	0	0	1
	248 Shock Spec	1	1	0	0	0	0	0	0	0	0	0	1
trick		2	2	0	2	100	1	0	0	0	0	1	50	0
	003 Clinical Fin	1	1	0	1	100	0	0	0	0	1	0	0
	189 Heart Failu	1	1	0	1	100	1	0	0	0	0	100	0

2. Data at Hospital-Payer/Population Level

Summarized data on the payer/population being focused on as a whole, with ability to drill-down to service line (SL), MS and APR DRG, then case level.

- Purpose of monitoring at this level is to:
  - Evaluate how concurrent clinical review/query program, quality improvement program (s), physician education, etc. initiatives are impacting and moving data on the aggregate level.
    - Are current query rate, physician response rate, physician agree rates high-enough? Or are there still a lot of opportunity areas that are not being addressed in the aggregated data.
    - Is the current CDI coverage rate high-enough to capture most of the opportunity to improve documentation, or are there still a lot of areas of, "low-hanging fruit" in the data?
    - Are there still death cases that are being final coded in a subclass 1 or 2? Or, death cases coded to diagnoses where you would not expect deaths (i.e. chest pain, syncope, etc.).
  - Assess where opportunities for improvement still exist and should be focused on.
  - Assess where certain indicators have improved/increased above appropriate benchmarks, so that second-level reviews can be done on these..

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Data at Hospital-Payer/Population Level

Sources of this data:

- Healthgrades

- HHS.Gov

- State Data

- Pepper Reports

- State Data

- Hospitals

- Vendors

- Others

Data at Hospital Level-MS-DRG CMI by SL

Service Line [1]	Period 1						Period 2						% Change Average Case Wt (Hi to Low)	Contribution Difference
	Cases	Percent of Total Cases	Total Case Weight	Average Case Wght	Rank	CMI Contribution	Cases	Percent of Total Cases	Total Case Weight	Average Case Wght	Rank	CMI Contribution		
Ophthalmology	9	0.17%	7.6523	0.8503	14	0.0015	6	0.12%	6.1834	1.0306	14	0.0013	21.2%	-0.0002
Women's Health	15	0.29%	20.3648	1.3577	12	0.0039	11	0.22%	16.0984	1.4635	12	0.0033	7.8%	-0.0006
Orthopedics	568	10.82%	1440.0603	2.5353	2	0.2744	498	10.18%	1326.4237	2.6635	2	0.2713	5.1%	-0.0031
Cardiology	746	14.21%	1173.1840	1.5726	4	0.2235	788	16.11%	1299.4178	1.6490	3	0.2657	4.9%	0.0422
Vascular	69	1.31%	223.8257	3.2439	10	0.0426	52	1.06%	174.5321	3.3564	11	0.0357	3.5%	-0.0070
Neurology	323	6.15%	418.6538	1.2961	7	0.0798	265	5.42%	352.4559	1.3300	7	0.0721	2.6%	-0.0077
Medicine	1903	36.26%	2326.6911	1.2226	1	0.4433	1834	37.51%	2279.6638	1.2430	1	0.4662	1.7%	0.0228
Neurosurgery	64	1.22%	185.0452	2.8913	11	0.0353	60	1.23%	176.1251	2.9354	10	0.0360	1.5%	0.0008
Rehab	0	0.00%	0.0000	0.0000	17	0.0000	0	0.00%	0.0000	0.0000	17	0.0000	0.0%	0.0000
Transplant	0	0.00%	0.0000	0.0000	18	0.0000	0	0.00%	0.0000	0.0000	18	0.0000	0.0%	0.0000
Ungroupable	0	0.00%	0.0000	0.0000	19	0.0000	0	0.00%	0.0000	0.0000	19	0.0000	0.0%	0.0000
Neonatology	0	0.00%	0.0000	0.0000	16	0.0000	0	0.00%	0.0000	0.0000	16	0.0000	0.0%	0.0000
Psych	0	0.00%	0.0000	0.0000	15	0.0000	0	0.00%	0.0000	0.0000	15	0.0000	0.0%	0.0000
Surgery	468	8.92%	1423.7208	3.0421	3	0.2713	357	7.30%	1082.5362	3.0323	4	0.2214	-0.3%	-0.0499
Pulmonary	722	13.76%	940.1948	1.3022	5	0.1792	648	13.25%	829.6906	1.2804	5	0.1697	-1.7%	-0.0095
Renal	218	4.15%	275.2130	1.2624	9	0.0524	209	4.27%	259.0996	1.2397	8	0.0530	-1.8%	0.0005
Trach	26	0.50%	383.5008	14.7500	8	0.0731	16	0.33%	219.1528	13.6971	9	0.0448	-7.1%	-0.0283
CT Surgery	103	1.96%	577.6199	5.6080	6	0.1101	132	2.70%	588.6045	4.4591	6	0.1204	-20.5%	0.0103
Behavioral	14	0.27%	17.1041	1.2217	13	0.0033	14	0.29%	11.3351	0.8097	13	0.0023	-33.7%	-0.0009
Total:	5248	100%	9412.8306			1.7936	4890	100%	8621.3190			1.7631		-0.0306

Physician Champion, CDI Lead, and Coding Supervisor focused on Provider Doc. Improvement education for last 6 months of this data year, for these 2 SL.

SLs with increased CMI (Avg. case weights)

Need for focused Provider education

SLs with decreased CMI (Avg. case weights

Data at Hospital Level

Service Line [1]	Period 1						Period 2						% Change Average Case Wt (Hi to Low)	Contribution Difference
	Cases	Percent of Total Cases	Total Case Weight	Average Case Wght	Rank	CMI Contribution	Cases	Percent of Total Cases	Total Case Weight	Average Case Wght	Rank	CMI Contribution		
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Women's Health	15	0.29%	20.3648	1.3577	12	0.0039	11	0.22%	16.0984	1.4635	12	0.0033	7.8%	-0.0006
Orthopedics	568	10.82%	1440.0603	2.5353	2	0.2744	498	10.18%	1326.4237	2.6635	2	0.2713	5.1% ←	-0.0031
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Vascular	69	1.31%	223.8257	3.2439	10	0.0426	52	1.06%	174.5321	3.3564	11	0.0357	3.5%	-0.0070
Neurology	323	6.15%	418.6538	1.2961	7	0.0798	265	5.42%	352.4559	1.3300	7	0.0721	2.6%	-0.0077

SLs with increased CMI (Avg. case weights

Data at Hospital Level

Surgical Cases	% Variance in Cap. Rates from P2 to P1			
Service Line	MCC vs NMCC	MCC/CC vs. NMCC/CC	MCC+CC vs. No MCC/CC	MCC vs. CC
Orthopedics	-2.0%	0.0%	5.4%	10.0%
Cardiology	15.3%	0.0%	5.0%	8.0%

CC and MCC Capture rate improvement, (except for 1 category), for the 2 focus SLs, for this aggregate population.

Data at Hospital Level-MS-DRG Focus Areas (below Benchmark)

- Consider making focused MCC/CC opportunity areas identified, a daily review rather than every second or third day.

MCC-CC-NCC

Triplet Medical	Description	Cases w MCC+ CC	Cases NCC	Total Cases	Actual	Performance [1]	Capture Rate Variance	Reimbursement Differential
280 & 281 / 282	ACUTE MYOCARDIAL INFARCTION, DISCHARGED ALIVE W	39	20	59	66.1%	86.4%	-20.3%	-$51293
291 & 292 / 293	HEART FAILURE & SHOCK W MCC	183	42	225	81.3%	87.9%	-6.6%	-$50108
070 & 071 / 072	NONSPECIFIC CEREBROVASCULAR DISORDERS W MCC	18	8	26	69.2%	92.3%	-23.1%	-$22929
190 & 191 / 192	CHRONIC OBSTRUCTIVE PULMONARY DISEASE W MCC	153	47	200	76.5%	81.5%	-5.0%	-$20566
388 & 389 / 390	G.I. OBSTRUCTION W MCC	34	20	54	63.0%	75.0%	-12.0%	-$19405
368 & 369 / 370	MAJOR ESOPHAGEAL DISORDERS W MCC	4	4	8	50.0%	100.0%	-50.0%	-$17168 *
193 & 194 / 195	SIMPLE PNEUMONIA & PLEURISY W MCC	143	27	170	84.1%	86.8%	-2.7%	-$13405
380 & 381 / 382	COMPLICATED PEPTIC ULCER W MCC	5	4	9	55.6%	91.7%	-36.1%	-$12672 *
314 & 315 / 316	OTHER CIRCULATORY SYSTEM DIAGNOSES W MCC	21	3	24	87.5%	96.2%	-8.7%	-$12293
180 & 181 / 182	RESPIRATORY NEOPLASMS W MCC	20	3	23	87.0%	100.0%	-13.0%	-$11793
061 & 062 / 063	ACUTE ISCHEMIC STROKE W USE OF THROMBOLYTIC AGE	7	3	10	70.0%	93.3%	-23.3%	-$11054
385 & 386 / 387	INFLAMMATORY BOWEL DISEASE W MCC	6	5	11	54.5%	84.6%	-30.1%	-$9588
177 & 178 / 179	RESPIRATORY INFECTIONS & INFLAMMATIONS W MCC	62	5	67	92.5%	95.7%	-3.1%	-$9551
643 & 644 / 645	ENDOCRINE DISORDERS W MCC	8	4	12	66.7%	88.5%	-21.8%	-$9352
183 & 184 / 185	MAJOR CHEST TRAUMA W MCC	4	4	8	50.0%	90.9%	-40.9%	-$9120 *

190 ACUTE MYOCARDIAL INFARCTION

1	0.6724	15173	10.9%	10202.3252		7	10.1%	4.7068		
2	0.8005	52314	37.5%	41877.3570		35	50.7%	28.0175		
3	1.1342	52468	37.6%	59509.2056		22	31.9%	24.9524		
4	2.3036	19658	14.1%	45284.1688		5	7.2%	11.5180		
SUBTOTAL:		139613	100%	156873.0566	1.1236	69	100%	69.1947	1.0028	-10.8%

Data at Hospital Level – Severity of Illness

	Period 1: 10/1/2015 to 9/30/2016				Period 2: 10/1/2016 to 9/30/2017				
Service Line [1]	Cases	% of Total	Total Weight	SOI Weight	Cases	% of Total	Total Weight	SOI Weight	%Diff
Women's Health	14	0.3%	12.4561	0.8897	11	0.2%	16.5105	1.5010	68.7%
Ophthalmology	8	0.2%	5.3725	0.6716	6	0.1%	5.7656	0.9609	43.1%
Vascular	84	1.6%	231.2805	2.7533	75	1.5%	233.3284	3.1110	13.0%
Surgery	513	9.8%	1371.8091	2.6741	425	8.7%	1248.0073	2.9365	9.8%
Neurology	313	6.0%	363.8849	1.1626	245	5.0%	301.8082	1.2319	6.0%
CT Surgery	101	1.9%	533.0372	5.2776	88	1.8%	476.1010	5.4102	2.5%
Medicine	1,834	34.9%	1950.8315	1.0637	1,753	35.8%	1906.2170	1.0874	2.2%
Cardiology	719	13.7%	867.5288	1.2066	758	15.5%	934.1186	1.2323	2.1%
Orthopedics	565	10.8%	1019.1649	1.8038	487	10.0%	890.6711	1.8289	1.4%
Neonatology	0	0.0%	0.0000	0.0000	0	0.0%	0.0000	0.0000	0.0%
Transplant	0	0.0%	0.0000	0.0000	0	0.0%	0.0000	0.0000	0.0%
Renal	279	5.3%	314.0765	1.1257	261	5.3%	282.5391	1.0825	-3.8%
Pulmonary	742	14.1%	1082.1600	1.4584	704	14.4%	937.7488	1.3320	-8.7%
Neurosurgery	61	1.2%	198.1676	3.2486	63	1.3%	166.5913	2.6443	-18.6%
Behavioral	15	0.3%	13.4004	0.8934	14	0.3%	8.2633	0.5902	-33.9%
GRAND TOTAL:	5,248	100.0%	7,963.1700		4,890	100.0%	7,407.6702		
			Avg. SOI:	1.5174			Avg. SOI:	1.5149	-0.2%

Original Avg. SOI: 1.2540 (2012)

Data at Hospital Level –Risk-Adjusted Mortality

|	MedPAR 2015			Period 2: 10/1/2016 to 9/30/2017						
Service Line [1]	Total Cases	Actual		Total Cases	Actual		Expected [2]		Variance Actual to Expected Death [3]	% Variance Actual to Expected Mortality Rate
		Deaths	Mort. Rate		Deaths	Mort. Rate	Deaths	Mort. Rate		
Women's Health	4,643	26	0.56%	11	1	9.09%	0.1	0.91%	0.9	900.0%
Neurosurgery	9,313	325	3.49%	63	5	7.94%	2.8	4.44%	2.2	78.6%
Neonatology	0	0	0.00%	0	0	0.00%	0.0	0.00%	0.0	0.0%
Transplant	551	21	3.81%	0	0	0.00%	0.0	0.00%	0.0	0.0%
Vascular	10,554	294	2.79%	75	4	5.33%	4.1	5.47%	-0.1	-2.4%
Surgery	46,153	1508	3.27%	425	21	4.94%	23.5	5.53%	-2.5	-10.6%
Medicine	240,871	9031	3.75%	1,753	57	3.25%	75.4	4.30%	-18.4	-24.4%
Cardiology	96,108	3066	3.19%	758	20	2.64%	28.0	3.69%	-8.0	-28.6%
Renal	40,490	772	1.91%	261	6	2.30%	8.9	3.41%	-2.9	-32.6%
CT Surgery	13,463	501	3.72%	88	2	2.27%	4.0	4.55%	-2.0	-50.0%
Neurology	35,369	1629	4.61%	245	7	2.86%	14.7	6.00%	-7.7	-52.4%
Pulmonary	90,965	3959	4.35%	704	15	2.13%	33.1	4.70%	-18.1	-54.7%
Orthopedics	95,089	698	0.73%	487	1	0.21%	3.6	0.74%	-2.6	-72.2%
Behavioral	1,619	10	0.62%	14	0	0.00%	0.1	0.71%	-0.1	-100.0%
Ophthalmology	613	3	0.49%	6	0	0.00%	0.1	1.67%	-0.1	-100.0%
GRAND TOTAL:	685,801	21,843	3.19%	4,890	139	2.84%	198.4	4.06%	-59.4	-29.9%

Higher than expected risk of dying

Lower than expected risk of dying

Original ROM: 2% higher than expected (2012)

Data at Hospital Level –Risk-Adjusted Mortality

Variance of Actual to Expected Mortality Rate
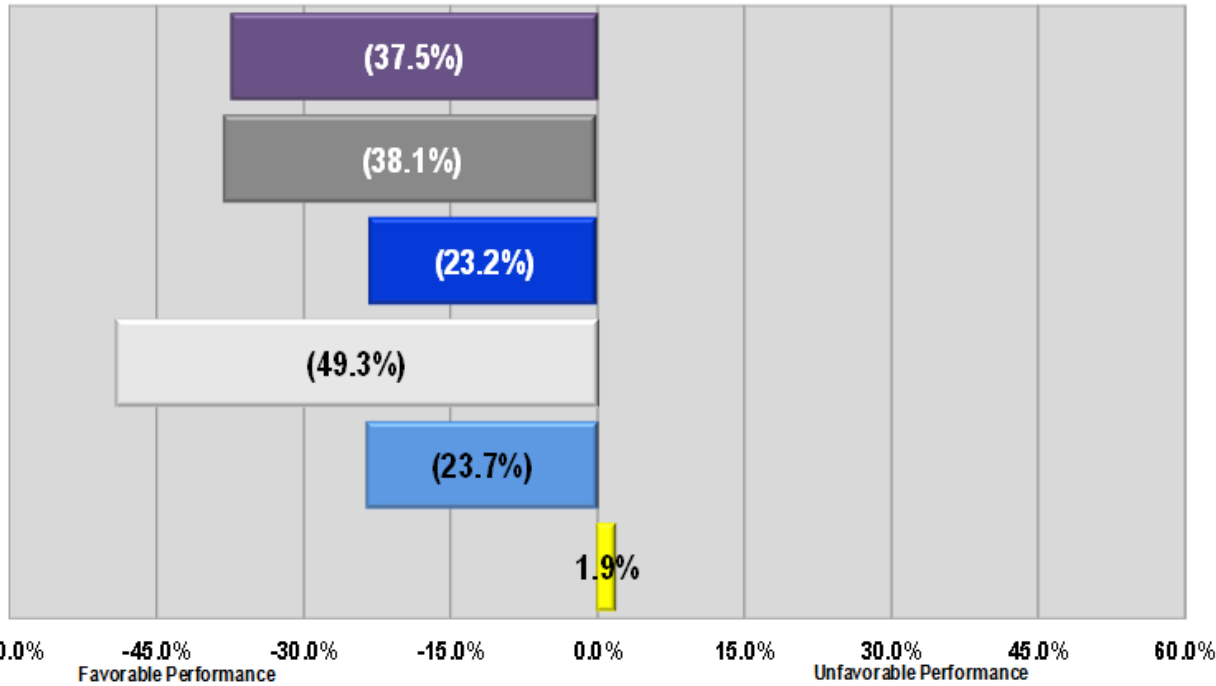
(Yellow)	Baseline Period: October 2013 - September 2014
(Light Blue)	Year 1 - 1st Quarter: October 2014 - December 2014
(White)	Year 1 - 2nd Quarter: January 2015 - March 2015
(Blue)	Year 1 - 3rd Quarter: April 2015 - June 2015
(Gray)	Year 1 - 4th Quarter: July 2015 - September 2015
(Purple)	Year 1 - Cumulative Period: October 2014 - September 2015

Bars:
- (37.5%)
- (38.1%)
- (23.2%)
- (49.3%)
- (23.7%)
- 1.9%

X-axis: -60.0%, -45.0%, -30.0%, -15.0%, 0.0%, 15.0%, 30.0%, 45.0%, 60.0%
Favorable Performance ← → Unfavorable Performance

Actual vs. Expected Mortality

Period	Actual Mortality	Expected Mortality
Baseline — Oct 2013 - Sep 2014	2.98%	2.93%
Quarter 1 — Oct 2014 - Dec 2014	3.26%	4.28%
Quarter 2 — Jan 2015 - Mar 2015	2.64%	5.22%
Quarter 3 — Apr 2015 - Jun 2015	3.08%	4.01%
Quarter 4 — Jul 2015 - Sep 2015	2.74%	4.43%
Cumulative — Oct 2014 - Sep 2015	2.88%	4.61%

Service Line [1]	Period 1						Period 2						% Change Average Case Wt (Hi to Low)	Contribution Difference
	Cases	Percent of Total Cases	Total Case Weight	Average Case Wght	Rank	CMI Contribution	Cases	Percent of Total Cases	Total Case Weight	Average Case Wght	Rank	CMI Contribution		
Surgery	468	8.92%	1423.7208	3.0421	3	0.2713	357	7.30%	1082.5362	3.0323	4	0.2214	-0.3%	-0.0499
Pulmonary	722	13.76%	940.1948	1.3022	5	0.1792	648	13.25%	829.6906	1.2804	5	0.1697	-1.7%	-0.0095
Renal	218	4.15%	275.2130	1.2624	9	0.0524	209	4.27%	259.0996	1.2397	8	0.0530	-1.8%	0.0005
Trach	26	0.50%	383.5008	14.7500	8	0.0731	16	0.33%	219.1528	13.6971	9	0.0448	-7.1%	-0.0283
CT Surgery	103	1.96%	577.6199	5.6080	6	0.1101	132	2.70%	588.6045	4.4591	6	0.1204	-20.5%	0.0103

✓ Plan: Focus on CTS P2P for next 3 months

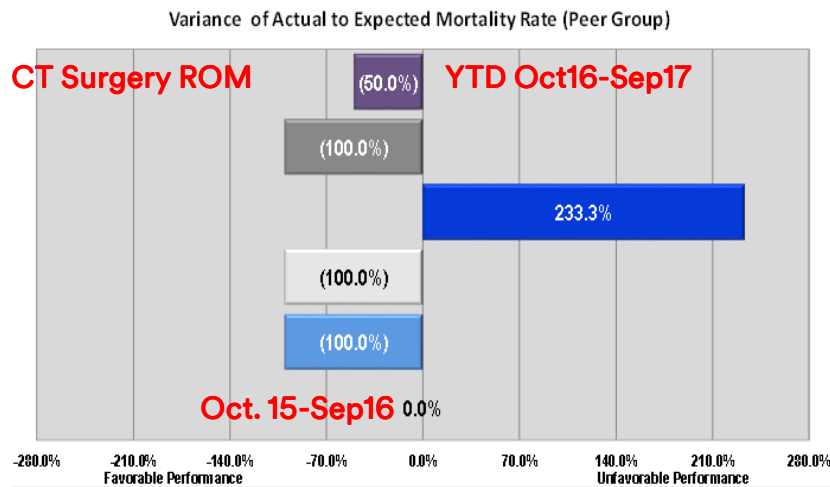| Surgical Cases Service Line	% Variance in Cap. Rates from P2 to P1			
	MCC vs NMCC	MCC/CC vs. NMCC/CC	MCC+CC vs. No MCC/CC	MCC vs. CC
CT Surgery	-4.8%	0.0%	-36.0%	-50.0%

✓ CC and MCC Capture rates decreased for CTS when compared to period 1.

MS-DRG		Description	Service Line	Hospital ALOS	MedPAR ALOS
167	28 cases	Other Respiratory System OR Procedures w/CC (look for MCC)	CT Surgery	6.7	6.1
168	64 cases	Other Respiratory System OR Procedures w/o CC or MCC	CT Surgery	4	3.6

✓ ALOS for DRGs with most CT Surgery volume, compared to national Medicare data.

APR DRG 120 - MAJOR RESPIRATORY & CHEST PROCEDURES

	Baseline Medicare and Managed Medicare					Cumulative Medicare and Managed Medicare				
	Oct 2015 - Sep 2016					Oct 2016 - Sep 2017				
APR DRG Subclass Level	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Mortality Rate % Variance	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Mortality Rate % Variance
1	2	0	0.0%	0.0	0%	3	0	0.0%	0.0	0%
2	4	0	0.0%	0.0	0%	3	0	0.0%	0.0	0%
3	4	0	0.0%	0.1	-100%	6	1	16.7%	0.1	900%
4	2	0	0.0%	0.4	-100%	2	1	50.0%	0.4	150%
Total	12	0	0.0%	0.5	-100%	14	2	14.3%	0.5	300%

Variance of Actual to Expected Mortality Rate (Peer Group)

CT Surgery ROM   YTD Oct16-Sep17

(50.0%)
(100.0%)
233.3%
(100.0%)
(100.0%)
Oct. 15-Sep16 0.0%

-280.0% -210.0% -140.0% -70.0% 0.0% 70.0% 140.0% 210.0% 280.0%
Favorable Performance   Unfavorable Performance

MedPAR 15 data for APR DRG 120

Service Line [1] APR-DRG	Risk of Mortality	Total Cases	Actual Deaths	APR-DRG Peer Group Mortality Rate
120 MAJOR RESPIRATORY & CHEST PROCEDURES				
	1	492	1	0.2%
	2	475	5	1.1%
	3	197	3	1.5%
	4	193	35	18.1%
DRG SUBTOTAL:		1357	44	3.2%

3. Data at the Physician level

- ▪ Purposes of monitoring at this level are:
  - Identify where additional physician education may be needed.
  - Obtain buy-in from physicians, on benefits of more complete documentation and how it affects their own profile, and sometimes their individual reimbursement.
  - Identify physicians with opportunity to improve their documentation, by drilling down to actionable indicators and values important to leadership and the physician.
    - Severity of illness scores
    - Risk-Adjusted mortality ("expected" mortality) scores
    - ALOS
    - MS-DRG indicators – CC/MCC capture, CMI, Performance by service-line
  - Present to physicians with their own data and cases to show them how they look compared to other "peer" groups.

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Keys to Success for Physician Engagement and Buy-In:

1. Local ownership of program is essential – high level administrators and physician leaders must be the drivers

2. Physician education - an ongoing activity

3. Make it about Quality and not Money – APR-DRG rather than MS-DRG

4. Provide data that is relevant to physicians – they are scientists and are data driven !

5. Select the correct Physician Advisor

6. Select the correct CDI Specialists – RNs with clinical expertise and knowledge, who are not shy.

7. Use technology – mobile devices, CDIS, MD-assist, ICD-10

8. Monitor results – CDIS in real time, and total population reports to see impact of efforts

9. Use results to give feedback about progress to vested groups

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Data at the Physician level

HEALTHGRADES®
THE HEALTHCARE QUALITY EXPERTS®

Hospital 1

Procedure/Condition	While In Hospital	1 Month After Hospitalization	6 Months After Hospitalization
Surgical			
Coronary Interventional Procedures (Angioplasty/ Stent)	★★★	★	★★★
Heart Bypass Surgery	★★★	★	★
Medical/Interventional			
Heart Attack	★★★	★★★	★
Heart Failure	★★★	Not applicable	★★★

Procedure/Condition	Rating
Joint	
Hip Fracture Repair	★
Total Hip Replacement	★★★
Total Knee Replacement	★★★

Data at the Physician level

Physician-level Data Monitoring

Case Study - Sepsis

720 - Septicemia & Disseminated Infections

APR DRG subclass level	Sample Physician - 182			Internal Medicine						National		
	Cases	Actual Deaths	Mortality Rate	Peer Mortality Rate	Expected Deaths	Mortality Rate % Variance	Peer Mortality Rate	Expected Deaths	Mortality Rate % Variance	Peer Mortality Rate	Expected Deaths	Mortality Rate % Variance
1	2	0	0.0%	0.0%	0.00	0%	0.0%	0.00	0%	0.3%	0.01	-100%
2	2	0	0.0%	0.8%	0.02	-100%	1.0%	0.02	-100%	1.6%	0.03	-100%
3	7	0	0.0%	4.3%	0.30	-100%	4.9%	0.34	-100%	5.9%	0.41	-100%
4	8	3	37.5%	21.2%	1.70	77%	22.0%	1.76	70%	27.3%	2.18	38%
Overall	19	3	15.8%	9.1%	2.01	73%	9.7%	2.12	63%	12.4%	2.63	28%

Top 10 secondary diagnoses from National Norms driving ROM subclass 3 and 4

Subclass 3		Subclass 4	
Dx Code	Description	Dx Code	Description
5849	Acute Kidney Failure Nos	51881	Acute Respiratry Failure
486	Pneumonia, Organism Nos	78552	Septic Shock
2762	Acidosis	5070	Food/vomit Pneumonitis
34831	Metabolic Encephalopathy	5845	Ac Kidny Fail, Tubr Necr
70703	Pressure Ulcer, Low Back	51884	Acute & Chronc Resp Fail
4589	Hypotension Nos	41071	Subendo Infarct, Initial
2760	Hyperosmolality	570	Acute Necrosis Of Liver
34830	Encephalopathy Nos	2866	Defibrination Syndrome
34982	Toxic Encephalopathy	43491	Crbl Art Ocl Nos W Infrc
262	Oth Severe Malnutrition	41519	Pulm Embol/infarct Nec

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Physician-level Data Monitoring

Case Study - Sepsis

720 - Septicemia & Disseminated Infections

SOI Subclass	Cases	Actual Days	ALOS	Distribution	Actual Weight	Total Weight
1	1	4	4.0	5%	0.5296	0.5296
2	5	21	4.2	26%	0.7147	3.5735
3	8	61	7.6	42%	1.2250	9.8000
4	5	54	10.8	26%	2.8127	14.0635
Overall	19	140	7.37	100%		27.9666

Peer Comparison	Severity Index	Variance
Sample Physician -	1.4719	--
Peer Group 1 - Internal Medicine	1.6627	-11.5%
Peer Group 2 -	1.6558	-11.1%
Peer Group 3 -National	1.6738	-12.1%

31% Sepsis cases in subclass 1 or 2

Physician's SOI weight lower than the 3 peer groups for Sepsis

Top 10 secondary diagnoses from National Norms driving SOI subclass 3 and 4

	Subclass 3		Subclass 4
Dx Code	Description	Dx Code	Description
5849	Acute Kidney Failure Nos	51881	Acute Respiratry Failure
78552	Septic Shock	5070	Food/vomit Pneumonitis
34831	Metabolic Encephalopathy	5845	Ac Kidny Fail, Tubr Necr
2639	Protein-cal Malnutr Nos	51884	Acute & Chronc Resp Fail
70703	Pressure Ulcer, Low Back	41071	Subendo Infarct, Initial
00845	Int Inf Clstrdium Dfcile	262	Oth Severe Malnutrition
2760	Hyperosmolality	486	Pneumonia, Organism Nos
34830	Encephalopathy Nos	570	Acute Necrosis Of Liver
5119	Pleural Effusion Nos	V4611	Respirator Depend Status
34982	Toxic Encephalopathy	261	Nutritional Marasmus

Physician-level Data Monitoring

Case Study - Sepsis

720 - Septicemia & Disseminated Infections

	Sample Physician - 182			Internal Medicine						National		
APR DRG subclass level	Cases	Actual Deaths	Mortality Rate	Peer Mortality Rate	Expected Deaths	Mortality Rate % Variance	Peer Mortality Rate	Expected Deaths	Mortality Rate % Variance	Peer Mortality Rate	Expected Deaths	Mortality Rate % Variance
1	2	0	0.0%	0.0%	0.00	0%	0.0%	0.00	0%	0.3%	0.01	-100%
2	2	0	0.0%	0.8%	0.02	-100%	1.0%	0.02	-100%	1.6%	0.03	-100%
3	7	0	0.0%	4.3%	0.30	-100%	4.9%	0.34	-100%	5.9%	0.41	-100%
4	8	3	37.5%	21.2%	1.70	77%	22.0%	1.76	70%	27.3%	2.18	38%
Overall	19	3	15.8%	9.1%	2.01	73%	9.7%	2.12	63%	12.4%	2.63	28%

APR DRG 720 - Septicemia and Disseminated Infections

Sample Physician			Peer Group 1		Peer Group 2		Peer Group 3	
APR DRG subclass	Cases	Actual Deaths	Peer Mortality Rate	Expected Deaths	Peer Mortality Rate	Expected Deaths	Peer Mortality Rate	Expected Deaths
1	0		0%	0	0	0	0.30%	0
2	1		0.80%	0	1.00%	0.01	1.60%	0.016
3	4		4.30%	0.17	4.90%	0.2	5.90%	0.24
4	14	3	21.20%	2.97	22%	3.08	27.30%	3.8
Overall	19	3	9.10%	3.14	9.70%	3.29	12.40%	4.05

Pulling it all Together

- Having accurate, actionable data can be the key to moving from mediocre documentation improvement program, to an extremely successful one.

- You must be able to measure your data so that areas of weakness can be exposed, and then focused on.

Mortality Reviews

Mortality Reviews and Beyond

- How can your CDI process help improve your hospital's expected ROM score?

  1. Second-level review (SLR) process for Mortality cases. Once this is mastered, the addition of #2 can improve your ROM scores even more.

  2. Second-Level Mortality Reviews along with a targeted, focused review of cases where all the criteria in #1 is met, but certain APR DRGs still have a higher than expected ROM. These cases typically have all deaths in SC 3 and 4, however the total number of cases in SC 3 and/or 4 is low. This will be explained further in the presentation.

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Mortality Reviews and Beyond

▪ Goals of a SLR mortality review include:

✓ Confirm that all reportable secondary diagnoses have been documented in codeable terms so the scores are truly reflective of the patient's clinical condition and likelihood of expiring.

✓ Assure the accuracy of PDX selection of cases reviewed, paying special attention to PDX in cases in subclasses 3 and 4.

• Frequently when a mortality case is in subclass 4 it does not receive a SLR, but it should be reviewed for accuracy and appropriateness of PDX. Is it a PDX that a patient would typically die in?

✓ Querying for and reporting all secondary diagnoses whether a CC, MCC or neither.

✓ Accurate reflection of SOI and ROM for each patient.

✓ Maintain compliance with rules and regulations issued by CMS.

✓ Develop your mortality SLR program through the joint efforts of Clinical Documentation Improvement Department, HIM Coding Department, and Compliance Office.

✓ Let your 3M project leader and/or data performance advisor know if you need help setting this up.

3M

Mortality Reviews and Beyond

▪ Although many CDI programs tend to focus their mortality SLRs on death cases in an *ROM subclass 1, (minor) and 2, (moderate)*, 3M recommends looking at *all of the death cases* whether they are in subclass (SC) 1, 2, 3, or 4, to make sure that the principal diagnosis is accurate and appropriate.

- **For example,** if you are only looking at subclass 1 or 2 cases, you could miss a death in a PDX where deaths are not expected.

Subclass	Peer Group (State MedPAR) Total Cases	Peer Group (State MedPAR) Actual Deaths	Peer Group (State MedPAR) Actual Mortality Rate	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Variance of Actual to Expected Deaths
APR DRG 144 - Respiratory Signs, Symptoms & Minor Diagnoses								
1	357	1	0.3%	5	0	0%	0	0%
2	756	1	0.1%	23	0	0%	0	0%
3	423	2	0.5%	20	1	5%	0.1	900%
4	27	4	14.8%	2	1	50%	0.3	233%
Total	1,563	8	0.5%	50	2	4%	0.4	400%

- 1 death in SC 3 and 1 death in SC 4, in a sign/Symptom APR DRG – ROM is 400% higher than expected.
- These would be missed in a SLR of only deaths in SC 1 and 2, however, opportunity may exist to query for an alternate PDX.

Mortality Reviews and Beyond

- Once your Mortality SLR process is in place, you will want to expand it to include mortality cases in subclass 3 and/or 4, that have a higher than expected ROM score.
  - ✓ Utilize your internal reporting, or 3M ROM report and Death Detail reports to identify these cases.
  - ✓ Ask your 3M data performance advisor (if you receive reporting and coaching from us), to assist you in identifying these cases.
  - ✓ Utilize clinical professionals to do the SLRs, in order to capture subtle clinical hints and or clues that could lead to additional query/diagnoses.

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Mortality Reviews and Beyond

- An example of a mortality case where, despite the death being in subclass 4, the expected ROM was higher than expected.

Subclass	Peer Group (State MedPAR) Total Cases	Peer Group (State MedPAR) Actual Deaths	Peer Group (State MedPAR) Actual Mortality Rate	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Variance of Actual to Expected Deaths
APR DRG 264 - Other Hepatobiliary, Pancreas & Abdominal Procedures								
1	11	0	0.0%	2	0	0%	0	0%
2	36	0	0.0%	5	0	0%	0	0%
3	43	1	2.3%	7	0	0%	0.2	-100%
4	20	6	30.0%	1	1	100%	0.3	233%
Total	110	7	6.4%	15	1	6.7%	0.5	100%

- The patient was categorized as a patient with an extreme risk of dying, and he/she did die.
- Despite the case being in SC 4, it was still 233% higher than expected in SC 4 due to the ACTUAL mortality rate in SC 4 being 100%.
- More cases in SC 4, whether or not they died, would increase the Expected Deaths, which would improve the Variance score.
- Example on next page.

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Mortality Reviews and Beyond

▪ An example of a mortality case(s) where despite the death being in subclass 3 or 4, the expected ROM was still high is the one below.

Subclass	Peer Group (State MedPAR) Total Cases	Peer Group (State MedPAR) Actual Deaths	Peer Group (State MedPAR) Actual Mortality Rate	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Variance of Actual to Expected Deaths
APR DRG 264 - Other Hepatobiliary, Pancreas & Abdominal Procedures								
1	11	0	0.0%	2	0	0%	0	0%
2	36	0	0.0%	5	0	0%	0	0%
3	43	1	2.3%	7	0	0%	0.2	-100%
4	20	6	30.0%	1	1	100%	0.3	233%
Total	110	7	6.4%	15	1	6.7%	0.5	100%

Subclass	Peer Group (State MedPAR) Total Cases	Peer Group (State MedPAR) Actual Deaths	Peer Group (State MedPAR) Actual Mortality Rate	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Variance of Actual to Expected Deaths
APR DRG 264 - Other Hepatobiliary, Pancreas & Abdominal Procedures								
1	11	0	0.0%	0	0	0%	0	0%
2	36	0	0.0%	4	0	0%	0	0%
3	43	1	2.3%	7	0	0%	0.2	-100%
4	20	6	30.0%	4	1	25%	1.2	-17%
Total	110	7	6.4%	15	1	6.7%	1.4	-29%

- Shifting cases in the Total Cases column demonstrates how having volume in the higher subclasses where more deaths are expected, can help improve your ROM score.

- What drives the ROM Variance (in green), are actual deaths and expected deaths.

- In example 2, cases have been shifted down with better documentation by the physician.

- 4 cases in SC 4 x 30% =1.2 expected deaths, which improves the ROM to 17% lower than expected.

- This is something that CDI and Coding can impact with mortality SLRs, and physician education.

▪ What drives cases into a higher subclass? Getting the correct PDX, and then documentation and coding of all secondary diagnoses whether CC, MCC, or not.

Mortality Reviews and Beyond

- Continued from previous page - common SOI/ROM drivers for these types of diagnoses:

Subclass	Peer Group (State MedPAR) Total Cases	Peer Group (State MedPAR) Actual Deaths	Peer Group (State MedPAR) Actual Mortality Rate	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Variance of Actual to Expected Deaths
APR DRG 264 - Other Hepatobiliary, Pancreas & Abdominal Procedures								
1	11	0	0.0%	2	0	0%	0	0%
2	36	0	0.0%	5	0	0%	0	0%
3	43	1	2.3%	7	0	0%	0.2	-100%
4	20	6	30.0%	1	1	100%	0.3	233%
Total	110	7	6.4%	15	1	6.7%	0.5	100%

Subclass	Peer Group (State MedPAR) Total Cases	Peer Group (State MedPAR) Actual Deaths	Peer Group (State MedPAR) Actual Mortality Rate	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Variance of Actual to Expected Deaths
APR DRG 264 - Other Hepatobiliary, Pancreas & Abdominal Procedures								
1	11	0	0.0%	0	0	0%	0	0%
2	36	0	0.0%	4	0	0%	0	0%
3	43	1	2.3%	7	0	0%	0.2	-100%
4	20	6	30.0%	4	1	25%	1.2	-17%
Total	110	7	6.4%	15	1	6.7%	1.4	-29%

For this DRG, the following are some more common query opportunities that are SOI and ROM drivers:
- Abscess of liver or peritoneum
- ABL anemia
- Acute pancreatitis
- Acute Renal failure/Acute tubular necrosis (ATN)
- Ascites
- Acute necrosis of liver
- Hepatorenal syndrome
- Bleeding esophageal varices
- Hepatic encephalopathy
- Metastasis to lymph nodes
- Metastasis to liver, peritoneum, lungs
- Obstruction of bile duct
- Pyloric stenosis
- Pleural effusion
- Portal hypertension
- Portal vein thrombosis
- Pressure ulcer (stage and type)
- Sepsis
- Cholangitis
- Atelectasis
- Ileus
- Malnutrition
- UTI

Mortality Reviews and Beyond

▪ For this example below, the death was in SC 4, and the expected ROM was better (lower) than expected, however, clinically these types of patients have more complex issues that would put them into higher categories of risk.

Subclass	Peer Group (State MedPAR) Total Cases	Peer Group (State MedPAR) Actual Deaths	Peer Group (State MedPAR) Actual Mortality Rate	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Variance of Actual to Expected Deaths
APR DRG 930 - Multiple Significant Trauma w/o OR Procedure								
1	17	0	0.0%	2	0	0%	0	0%
2	89	1	1.1%	8	0	0%	0.1	-100%
3	70	5	7.1%	6	0	0%	0.4	-100%
4	40	22	55.0%	3	2	67%	1.7	24%
Total	216	28	13.0%	19	2	11%	2.2	-5%

Subclass	Peer Group (State MedPAR) Total Cases	Peer Group (State MedPAR) Actual Deaths	Peer Group (State MedPAR) Actual Mortality Rate	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Variance of Actual to Expected Deaths
APR DRG 930 - Multiple Significant Trauma w/o OR Procedure								
1	17	0	0.0%	0	0	0%	0	0%
2	89	1	1.1%	6	0	0%	0.1	-100%
3	70	5	7.1%	8	0	0%	0.6	-100%
4	40	22	55.0%	5	2	40%	2.75	-27%
Total	216	28	13.0%	19	2	11%	3.45	-42%

With more thorough documentation, moving more cases into higher subclasses is going to increase Expected Deaths, thus, improving the ROM variance score in the last column.

For this DRG, the following are some more common query opportunities that are SOI and ROM drivers:
- Coma – check GCS
- Acute Resp. Failure
- Aspiration pneumonia
- Atelectasis
- Hypoxia
- Hypotension
- Liver or spleen injuries
- Acidosis
- ABL Anemia
- Acute systolic/diastolic CHF
- Acute Renal Failure
- Rhabdomyolysis
- Alkalosis
- Cardiogenic Shock
- Hemorrhagic Shock
- Traumatic Shock
- Cerebral Edema
- Cerebral herniation
- CVA
- Drug induced delirium
- Encephalopathy
- Fat Embolism
- AMOI
- Pulmonary Embolism

Mortality Reviews and Beyond

- For this example below, the deaths were SC 2, 3, and 4. The expected ROM was higher than expected, however, clinically these types of patients have more complex issues that would put them into higher categories of risk.

Subclass	Peer Group (State MedPAR) Total Cases	Peer Group (State MedPAR) Actual Deaths	Peer Group (State MedPAR) Actual Mortality Rate	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Variance of Actual to Expected Deaths
			APR DRG 044 - Intracranial Hemorrhage					
1	127	3	2.4%	4	0	0%	0.1	-100%
2	321	15	4.7%	9	1	11%	0.4	150%
3	452	52	11.5%	23	3	13%	2.6	15%
4	373	234	62.7%	8	8	100%	5	60%
Total	1,273	304	23.9%	44	12	11%	8.1	48%

Subclass	Peer Group (State MedPAR) Total Cases	Peer Group (State MedPAR) Actual Deaths	Peer Group (State MedPAR) Actual Mortality Rate	Total Cases	Actual Deaths	Actual Mortality Rate	Expected Deaths	Variance of Actual to Expected Deaths
			APR DRG 044 - Intracranial Hemorrhage					
1	127	3	2.4%	0	0	0%	0	-100%
2	321	15	4.7%	6	0	0%	0.3	-100%
3	452	52	11.5%	20	2	10%	2.3	-13%
4	373	234	62.7%	18	10	56%	11.3	-12%
Total	1,273	304	23.9%	44	12	11%	14	-14%

- For this APR DRG, the following are some more common query opportunities that are SOI and ROM drivers:
- **Query for specificity of site and other pertinent info about the ICH.**
- Coma – (check GCS, decorticate, decerebrate, obtunded, unresponsive to verbal or tactile stimuli, inability to open eyes or obey commands, or utter understandable words – all are hints and clues).
- Acute Resp. Failure
- Aspiration pneumonia
- Atelectasis
- Aphasia
- Hemiplegia
- Hypoxia
- Hypotension
- Hyponatremia
- Malignant hypertension
- Acidosis
- Acute systolic/diastolic CHF
- Acute Renal Failure
- Alkalosis
- Cerebral Edema (not integral to the ICH so can use).
- Cerebral herniation or compression (not integral to the ICH so can use).
- CVA
- Drug induced delirium
- Encephalopathy

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Thank you