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October 16, 2009

Ms. Ruth Kennedy
Deputy Director of Medicaid
Louisiana Department of Health and Hospitals
628 North 4th Street
Baton Rouge, LA 70821

Subject: Results of the Prevention Quality Indicator (PQI)/Pediatric Quality Indicator (PDI) Study

Dear Ruth:

At the request of the Louisiana Department of Health and Hospitals (DHH), Mercer Government Human Services Consulting (Mercer) analyzed Potentially Avoidable Hospitalizations (also known as Prevention Quality Indicators (PQI)) for ambulatory care sensitive conditions. The PQIs fall into 14 main categories which consist of:

- Diabetes Short-Term Complication
- Perforated Appendix
- Diabetes Long-Term Complication
- Chronic Obstructive Pulmonary Disease
- Hypertension
- Congestive Heart Failure
- Low Birth Weight
- Dehydration
- Bacterial Pneumonia
- Urinary Tract Infection
- Angina Without Procedure
- Uncontrolled Diabetes
- Adult Asthma
- Diabetic Lower-Extremity Amputation

In addition to the PQI indicators, Mercer also examined Pediatric Quality Indicators (PDI) for children. The potentially avoidable conditions leading to an inpatient admission for children consists of:

- Asthma
- Diabetes Short-term Complications



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- Gastroenteritis
- Perforated Appendix
- Urinary Tract Infection

The analysis was developed based on specifications recommended by the Agency for Healthcare Research and Quality (AHRQ). Mercer relied on the logic published by AHRQ to identify and group claims into the 14 PQIs and 5 PDIs¹.

Data

Mercer used fee-for-service (FFS) data provided by DHH and its fiscal intermediary to conduct this analysis. Inpatient hospital claims incurred from January 1, 2007 through December 31, 2007 (CY 2007) with payment through December 31, 2008 were extracted to complete this analysis. Claims incurred in CY 2007 were chosen for this analysis because most claims incurred during that period should now be adjudicated and paid with 12 months run-out.

Analysis

Prior to applying the logic developed by AHRQ, a number of intermediate steps were performed to calibrate the claim database so that the AHRQ logic could be applied. Those steps included:

- Combining split bills where the discharge and admission dates were within one day of one another for the same recipient and provider ID.
- Diagnosis codes for each claim were assigned to Diagnostic Related Group codes (DRGs) using the version 24 grouper. The DRG codes were then mapped to Major Diagnostic Categories (MDCs). Based on the logic provided by AHRQ, Inpatient claims were assigned to a PQI/PDI based on the diagnosis code, procedure code, and MDC code.
- The PQI analysis was limited to individuals 18 years and older.
- The PDI analysis was limited to individuals younger than 18 years.

¹ <http://www.qualityindicators.ahrq.gov/>



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- The PQI/PDI study has also been limited to the population that will be included in the Enhanced Community Care Plus Program (ePCCM).

After the inpatient claims were assigned to a PQI/PDI, Mercer was able to determine the number of admissions, average length of stay per admission, total dollars and the cost per admission for each PQI/PDI.

While AHRQ has supplied the clinical logic to determine potentially avoidable admissions, Mercer normally applies additional filters to reflect the fact that not all admissions identified by the AHRQ logic may be preventable. For example, in order to affect the utilization pattern so that potentially preventable admissions are avoided, a member would have to be enrolled with a plan for a number of months (6 months for example) so that care coordination can take place. At the time the analysis was conducted, the application process date was not available for all Medicaid enrollees. Therefore, a durational filter has not been applied.

In addition to the durational filter, Mercer normally applies an additional filter to remove high risk members because their admission may not be as preventable as other lower risk recipients. This process relies on risk scores to identify the least healthy individuals. The State is still in the process of determining the risk adjustment method to be applied to the Louisiana Medicaid population. Therefore, this filter has not been applied.

Mercer does not normally recognize Low Birth Weight as a potentially preventable admission. This is due to the intermittent eligibility of mothers who fall under the SOBRA eligibility category. However, the admissions and claims have been provided for informational purposes as it is identified as an avoidable condition by AHRQ.

Findings

PQI

The results of the analysis indicate that approximately 8,873 PQI admissions were potentially avoidable preventable which added up to approximately \$58.0 million dollars. If Low Birth Weight Admissions were excluded, there were 7,072 admissions that were potentially avoidable totaling \$32.0 million dollars.

As mentioned above, Mercer has not applied filters to reflect the fact that not all identified PQIs are preventable. It may be because the individual has not been enrolled long enough so that their care can be managed or their health risk score is so severe that their condition

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may not be manageable. There are also investments in preventive treatment (replacement cost) that would be required in order to avoid ambulatory care sensitive conditions. Therefore, Mercer has reduced the potentially avoidable dollars by 10%-50% increments to reflect the considerations previously mentioned. Where avoidable dollars were reduced by 10%, this is indicative of an environment where there were minimal utilization and care management/coordination of care. Therefore, implementing utilization and care management/coordination of care would lead to significant improvements in utilization and cost. A reduction in savings of 50% is indicative of an environment in which strong utilization management and care management is already in place; therefore, additional utilization and care management/care coordination would only yield marginal improvements in savings. After considering PQIs that may not be avoidable and potential replacement cost, the savings to the State ranges from \$29.0 million dollars to \$52.2 million dollars. After the Low Birth Weight PQI is removed, the savings are between \$16.0 million dollars to \$28.8 million dollars.

Additional details on the PQI indicators are provided in the exhibits below.

PDI

The results of the analysis indicate that approximately 5,168 PDI admissions were avoidable which added up to approximately \$11.6 million dollars.

As mentioned above, Mercer has not applied filters to reflect that not all identified PDIs are avoidable. It may be because the individual has not been enrolled long enough so that their care can be managed or their health risk score is so severe that their condition may not be manageable. There are also investments in preventive treatment (replacement cost) that would be required in order to avoid the ambulatory care sensitive conditions. Therefore, Mercer has reduced the potentially avoidable dollars by 10%-50% increments to reflect the considerations previously mentioned. After considering PDIs that may not be avoidable and potential replacement cost, the savings to the State ranges from \$5.8 million dollars to \$10.4 million dollars.

Additional details on the PDI indicators are provided in the exhibits below.

Out of \$649.9 million dollars spent on Inpatient claims, 9% was associated with a PQI and 2% was associated with a PDI. After removing expenditures associated with low birth weight, the PQIs make up 5% of inpatient expenditures.

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If you have any questions regarding this analysis, please contact me at (404) 442-3464 or at An.Danh@mercer.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'An Danh'.

An Danh, ASA, MAAA
Senior Associate



Exhibit A: Prevention Quality Indicators (PQI) – Total Dollars

Aged and Disabled							
PQI	Description	Total Dollars	Reduce Avoidable Dollars by 10%	Reduce Avoidable Dollars by 20%	Reduce Avoidable Dollars by 30%	Reduce Avoidable Dollars by 40%	Reduce Avoidable Dollars by 50%
01	Diabetes Short-Term Complication	\$ 1,466,134	\$ 1,319,520	\$ 1,172,907	\$ 1,026,294	\$ 879,680	\$ 733,067
02	Perforated Appendix	\$ 261,502	\$ 235,352	\$ 209,202	\$ 183,052	\$ 156,901	\$ 130,751
03	Diabetes Long-Term Complication	\$ 2,650,490	\$ 2,385,441	\$ 2,120,392	\$ 1,855,343	\$ 1,590,294	\$ 1,325,245
05	Chronic Obstructive Pulmonary Disease	\$ 3,336,413	\$ 3,002,771	\$ 2,669,130	\$ 2,335,489	\$ 2,001,848	\$ 1,668,206
07	Hypertension	\$ 923,878	\$ 831,490	\$ 739,102	\$ 646,714	\$ 554,327	\$ 461,939
08	Congestive Heart Failure	\$ 7,851,781	\$ 7,066,603	\$ 6,281,425	\$ 5,496,247	\$ 4,711,069	\$ 3,925,891
09	Low Birth Weight	\$ 1,311,161	\$ 1,180,045	\$ 1,048,929	\$ 917,813	\$ 786,696	\$ 655,580
10	Dehydration	\$ 1,097,145	\$ 987,431	\$ 877,716	\$ 768,002	\$ 658,287	\$ 548,573
11	Bacterial Pneumonia	\$ 4,515,997	\$ 4,064,397	\$ 3,612,798	\$ 3,161,198	\$ 2,709,598	\$ 2,257,999
12	Urinary Tract Infection	\$ 1,943,009	\$ 1,748,708	\$ 1,554,407	\$ 1,360,106	\$ 1,165,806	\$ 971,505
13	Angina Without Procedure	\$ 346,325	\$ 311,692	\$ 277,060	\$ 242,427	\$ 207,795	\$ 173,162
14	Uncontrolled Diabetes	\$ 432,166	\$ 388,950	\$ 345,733	\$ 302,516	\$ 259,300	\$ 216,083
15	Adult Asthma	\$ 2,217,185	\$ 1,995,467	\$ 1,773,748	\$ 1,552,030	\$ 1,330,311	\$ 1,108,593
16	Diabetic Lower-Extremity Amputation	\$ 734,412	\$ 660,971	\$ 587,530	\$ 514,088	\$ 440,647	\$ 367,206
	Total	\$ 29,087,599	\$ 26,178,839	\$ 23,270,079	\$ 20,361,319	\$ 17,452,559	\$ 14,543,800

Children and Families, LaChip, and Pregnant Women							
PQI	Description	Total Dollars	Reduce Avoidable Dollars by 10%	Reduce Avoidable Dollars by 20%	Reduce Avoidable Dollars by 30%	Reduce Avoidable Dollars by 40%	Reduce Avoidable Dollars by 50%
01	Diabetes Short-Term Complication	\$ 623,470	\$ 561,123	\$ 498,776	\$ 436,429	\$ 374,082	\$ 311,735
02	Perforated Appendix	\$ 80,238	\$ 72,214	\$ 64,190	\$ 56,167	\$ 48,143	\$ 40,119
03	Diabetes Long-Term Complication	\$ 510,968	\$ 459,871	\$ 408,775	\$ 357,678	\$ 306,581	\$ 255,484
05	Chronic Obstructive Pulmonary Disease	\$ 80,353	\$ 72,318	\$ 64,283	\$ 56,247	\$ 48,212	\$ 40,177
07	Hypertension	\$ 191,503	\$ 172,353	\$ 153,203	\$ 134,052	\$ 114,902	\$ 95,752
08	Congestive Heart Failure	\$ 333,769	\$ 300,392	\$ 267,015	\$ 233,638	\$ 200,261	\$ 166,884
09	Low Birth Weight	\$ 24,681,734	\$ 22,213,561	\$ 19,745,387	\$ 17,277,214	\$ 14,809,040	\$ 12,340,867
10	Dehydration	\$ 264,448	\$ 238,003	\$ 211,559	\$ 185,114	\$ 158,669	\$ 132,224
11	Bacterial Pneumonia	\$ 882,953	\$ 794,657	\$ 706,362	\$ 618,067	\$ 529,772	\$ 441,476
12	Urinary Tract Infection	\$ 694,412	\$ 624,971	\$ 555,530	\$ 486,089	\$ 416,647	\$ 347,206
13	Angina Without Procedure	\$ 31,168	\$ 28,052	\$ 24,935	\$ 21,818	\$ 18,701	\$ 15,584
14	Uncontrolled Diabetes	\$ 102,246	\$ 92,021	\$ 81,796	\$ 71,572	\$ 61,347	\$ 51,123
15	Adult Asthma	\$ 410,597	\$ 369,537	\$ 328,478	\$ 287,418	\$ 246,358	\$ 205,299
16	Diabetic Lower-Extremity Amputation	\$ 16,635	\$ 14,971	\$ 13,308	\$ 11,644	\$ 9,981	\$ 8,317
	Total	\$ 28,904,495	\$ 26,014,045	\$ 23,123,596	\$ 20,233,146	\$ 17,342,697	\$ 14,452,247

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Exhibit B: PQI – Admissions

Aged and Disabled							
PQI	Description	Total Admits	Reduce Avoidable Admits by 10%	Reduce Avoidable Admits by 20%	Reduce Avoidable Admits by 30%	Reduce Avoidable Admits by 40%	Reduce Avoidable Admits by 50%
01	Diabetes Short-Term Complication	297	267	238	208	178	149
02	Perforated Appendix	17	15	14	12	10	9
03	Diabetes Long-Term Complication	438	394	350	307	263	219
05	Chronic Obstructive Pulmonary Disease	725	653	580	508	435	363
07	Hypertension	275	248	220	193	165	138
08	Congestive Heart Failure	1,568	1,411	1,254	1,098	941	784
09	Low Birth Weight	37	33	30	26	22	19
10	Dehydration	301	271	241	211	181	151
11	Bacterial Pneumonia	912	821	730	638	547	456
12	Urinary Tract Infection	419	377	335	293	251	210
13	Angina Without Procedure	153	138	122	107	92	77
14	Uncontrolled Diabetes	167	150	134	117	100	84
15	Adult Asthma	564	508	451	395	338	282
16	Diabetic Lower-Extremity Amputation	58	52	46	41	35	29
	Total	5,931	5,338	4,745	4,152	3,559	2,966

Children and Families, LaChip, and Pregnant Women							
PQI	Description	Total Admits	Reduce Avoidable Admits by 10%	Reduce Avoidable Admits by 20%	Reduce Avoidable Admits by 30%	Reduce Avoidable Admits by 40%	Reduce Avoidable Admits by 50%
01	Diabetes Short-Term Complication	175	158	140	123	105	88
02	Perforated Appendix	14	13	11	10	8	7
03	Diabetes Long-Term Complication	109	98	87	76	65	55
05	Chronic Obstructive Pulmonary Disease	31	28	25	22	19	16
07	Hypertension	81	73	65	57	49	41
08	Congestive Heart Failure	86	77	69	60	52	43
09	Low Birth Weight	1,764	1,588	1,411	1,235	1,058	882
10	Dehydration	86	77	69	60	52	43
11	Bacterial Pneumonia	184	166	147	129	110	92
12	Urinary Tract Infection	217	195	174	152	130	109
13	Angina Without Procedure	12	11	10	8	7	6
14	Uncontrolled Diabetes	34	31	27	24	20	17
15	Adult Asthma	144	130	115	101	86	72
16	Diabetic Lower-Extremity Amputation	5	5	4	4	3	3
	Total	2,942	2,648	2,354	2,059	1,765	1,471

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Exhibit C: PQI – Average Length of Stay and Average Cost Per Stay

Aged and Disabled					
PQI	Description	Total Admits	Average Length of Stay	Total Dollars	Average Cost per Stay
01	Diabetes Short-Term Complication	297	4.3	\$ 1,466,134	\$ 4,936
02	Perforated Appendix	17	10.9	\$ 261,502	\$ 15,382
03	Diabetes Long-Term Complication	438	5.7	\$ 2,650,490	\$ 6,051
05	Chronic Obstructive Pulmonary Disease	725	4.8	\$ 3,336,413	\$ 4,602
07	Hypertension	275	3.2	\$ 923,878	\$ 3,360
08	Congestive Heart Failure	1,568	4.7	\$ 7,851,781	\$ 5,008
09	Low Birth Weight	37	34.1	\$ 1,311,161	\$ 35,437
10	Dehydration	301	3.7	\$ 1,097,145	\$ 3,645
11	Bacterial Pneumonia	912	5.2	\$ 4,515,997	\$ 4,952
12	Urinary Tract Infection	419	4.7	\$ 1,943,009	\$ 4,637
13	Angina Without Procedure	153	2.3	\$ 346,325	\$ 2,264
14	Uncontrolled Diabetes	167	3.1	\$ 432,166	\$ 2,588
15	Adult Asthma	564	4.2	\$ 2,217,185	\$ 3,931
16	Diabetic Lower-Extremity Amputation	58	10.7	\$ 734,412	\$ 12,662
	Total	5,931	4.8	\$ 29,087,599	\$ 4,904

Children and Families, LaChip, and Pregnant Women					
PQI	Description	Total Admits	Average Length of Stay	Total Dollars	Average Cost per Stay
01	Diabetes Short-Term Complication	175	3.3	623,470	\$ 3,563
02	Perforated Appendix	14	6.2	80,238	\$ 5,731
03	Diabetes Long-Term Complication	109	4.5	510,968	\$ 4,688
05	Chronic Obstructive Pulmonary Disease	31	3.2	80,353	\$ 2,592
07	Hypertension	81	2.6	191,503	\$ 2,364
08	Congestive Heart Failure	86	3.6	333,769	\$ 3,881
09	Low Birth Weight	1,764	12.8	24,681,734	\$ 13,992
10	Dehydration	86	3.0	264,448	\$ 3,075
11	Bacterial Pneumonia	184	4.9	882,953	\$ 4,799
12	Urinary Tract Infection	217	3.2	694,412	\$ 3,200
13	Angina Without Procedure	12	2.4	31,168	\$ 2,597
14	Uncontrolled Diabetes	34	2.9	102,246	\$ 3,007
15	Adult Asthma	144	3.1	410,597	\$ 2,851
16	Diabetic Lower-Extremity Amputation	5	5.4	16,635	\$ 3,327
	Total	2,942	9.1	\$ 28,904,495	\$ 9,825

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Exhibit D: Pediatric Quality Indicators (PDI) – Total Dollars

Aged and Disabled							
PDI	Description	Total Dollars	Reduce Avoidable Dollars by 10%	Reduce Avoidable Dollars by 20%	Reduce Avoidable Dollars by 30%	Reduce Avoidable Dollars by 40%	Reduce Avoidable Dollars by 50%
14	Asthma	\$ 730,833	\$ 657,750	\$ 584,667	\$ 511,583	\$ 438,500	\$ 365,417
15	Diabetes Short-Term Complications	\$ 183,426	\$ 165,083	\$ 146,741	\$ 128,398	\$ 110,055	\$ 91,713
16	Gastroenteritis	\$ 289,924	\$ 260,931	\$ 231,939	\$ 202,947	\$ 173,954	\$ 144,962
17	Perforated Appendix	\$ 19,408	\$ 17,467	\$ 15,527	\$ 13,586	\$ 11,645	\$ 9,704
18	Urinary Tract Infection	\$ 197,602	\$ 177,842	\$ 158,082	\$ 138,322	\$ 118,561	\$ 98,801
	Total	\$ 1,421,193	\$ 1,279,074	\$ 1,136,955	\$ 994,835	\$ 852,716	\$ 710,597

Children and Families, LaChip, and Pregnant Women							
PDI	Description	Total Dollars	Reduce Avoidable Dollars by 10%	Reduce Avoidable Dollars by 20%	Reduce Avoidable Dollars by 30%	Reduce Avoidable Dollars by 40%	Reduce Avoidable Dollars by 50%
14	Asthma	\$ 3,099,353	\$ 2,789,418	\$ 2,479,483	\$ 2,169,547	\$ 1,859,612	\$ 1,549,677
15	Diabetes Short-Term Complications	\$ 509,755	\$ 458,779	\$ 407,804	\$ 356,828	\$ 305,853	\$ 254,877
16	Gastroenteritis	\$ 4,846,143	\$ 4,361,529	\$ 3,876,915	\$ 3,392,300	\$ 2,907,686	\$ 2,423,072
17	Perforated Appendix	\$ 511,459	\$ 460,313	\$ 409,168	\$ 358,022	\$ 306,876	\$ 255,730
18	Urinary Tract Infection	\$ 1,199,246	\$ 1,079,321	\$ 959,397	\$ 839,472	\$ 719,547	\$ 599,623
	Total	\$ 10,165,957	\$ 9,149,361	\$ 8,132,765	\$ 7,116,170	\$ 6,099,574	\$ 5,082,978

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Exhibit E: PDI – Admissions

Aged and Disabled							
PDI	Description	Total Admits	Reduce Avoidable Admits by 10%	Reduce Avoidable Admits by 20%	Reduce Avoidable Admits by 30%	Reduce Avoidable Admits by 40%	Reduce Avoidable Admits by 50%
14	Asthma	253	228	202	177	152	127
15	Diabetes Short-Term Complications	55	50	44	39	33	28
16	Gastroenteritis	132	119	106	92	79	66
17	Perforated Appendix	4	4	3	3	2	2
18	Urinary Tract Infection	62	56	50	43	37	31
	Total	506	455	405	354	304	253

Children and Families, LaChip, and Pregnant Women							
PDI	Description	Total Admits	Reduce Avoidable Admits by 10%	Reduce Avoidable Admits by 20%	Reduce Avoidable Admits by 30%	Reduce Avoidable Admits by 40%	Reduce Avoidable Admits by 50%
14	Asthma	1,278	1,150	1,022	895	767	639
15	Diabetes Short-Term Complications	151	136	121	106	91	76
16	Gastroenteritis	2,673	2,406	2,138	1,871	1,604	1,337
17	Perforated Appendix	87	78	70	61	52	44
18	Urinary Tract Infection	473	426	378	331	284	237
	Total	4,662	4,196	3,730	3,263	2,797	2,331

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Exhibit F: PDI – Average Length of Stay and Average Cost Per Stay

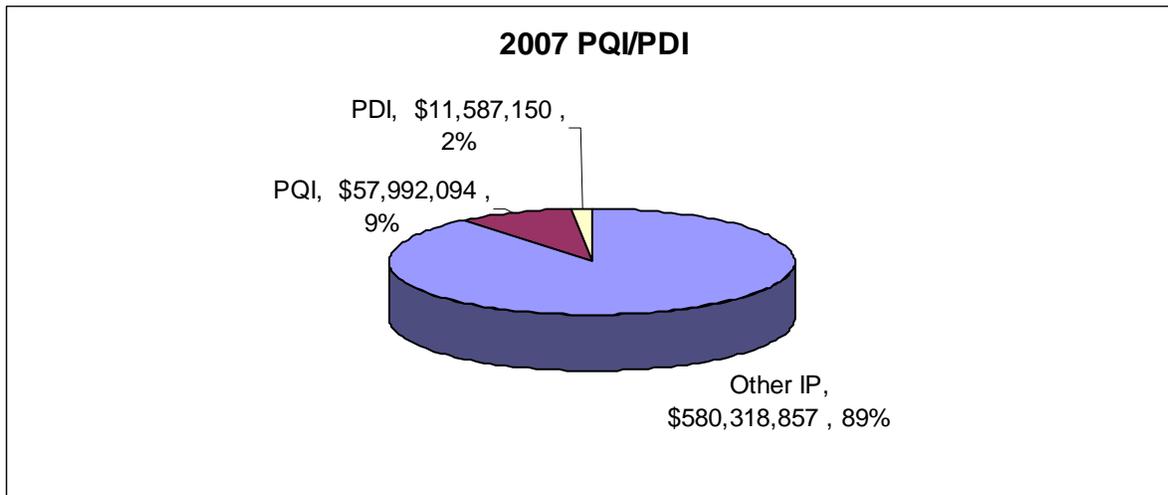
Aged and Disabled					
PDI	Description	Total Admits	Avg. Length/Stay	Total Dollars	Avg. Cost/Stay
14	Asthma	253	2.7	\$ 730,833	\$ 2,889
15	Diabetes Short-Term Complications	55	2.5	\$ 183,426	\$ 3,335
16	Gastroenteritis	132	2.4	\$ 289,924	\$ 2,196
17	Perforated Appendix	4	5.3	\$ 19,408	\$ 4,852
18	Urinary Tract Infection	62	3.3	\$ 197,602	\$ 3,187
	Total	506	2.7	\$ 1,421,193	2,809

Children and Families, LaChip, and Pregnant Women					
PDI	Description	Total Admits	Avg. Length/Stay	Total Dollars	Avg. Cost/Stay
14	Asthma	1,278	2.4	\$ 3,099,353	\$ 2,425
15	Diabetes Short-Term Complications	151	2.6	\$ 509,755	\$ 3,376
16	Gastroenteritis	2,673	2.1	\$ 4,846,143	\$ 1,813
17	Perforated Appendix	87	5.7	\$ 511,459	\$ 5,879
18	Urinary Tract Infection	473	2.7	\$ 1,199,246	\$ 2,535
	Total	4,662	2.3	\$ 10,165,957	2,181

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Exhibit G: PQI/PDI Proportion of Total Inpatient Cost (Including Low Birth Weight)



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Exhibit H: PQI/PDI Proportion of Total Inpatient Cost (Excluding Low Birth Weight)

