Section J, Attachment 10

Appendix A – Details on Measures

Contents:

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9. The Proportion of Transitions Table (basis of Measures I-1, 2, 3, 4, 6 and O-3) (with example)

1. Measures – I-1,2,3,4,6

For measures I-1, I-2, I-3, I-4, and I-6 (and O-3, which is listed separately below), the QIO will report the relevant rate for each provider that they listed in the area, along with a justification for their estimate. The QIO will enter these six rates, by provider, monthly throughout the project. The rate for each measure for each provider will be multiplied by the proportion of transitions represented by that provider in the Table of Proportions of Transitions (in #9 below) to yield the proportion of transitions involved in that measure. For each measure, those rates by provider will be summed to yield the proportion of transitions affected by the local project. An example of this calculation for I-1 and I-6 are given in the example presented in #9 below.

One patient transition may have been affected by more than one intervention; thus, the reporting of rates for each provider by the QIO will have to take account of the overlap and avoid double-counting transitions. The process for doing this will be included in the justification for the estimate of the provider table supplied monthly by the QIO.

An "intervention" reported here consists of an aim, a working group guiding the intervention, an intervention strategy, and a measurement strategy. An "intervention" in this meaning does not include activities limited to planning. Complex interventions and monitors may be reported as one coherent project or as split in meaningful ways, as preferred by the QIO and approved by the GTL; that choice will not affect the key monitors of progress as given below.

The Specific Measures:

I-1 Description: Percentage of patient care transitions (FFS Medicare) in the specified geographic area that are attributable to providers who agree to participate.
The rate at which providers are coming to meetings, agreeing in writing (including by Email), or otherwise participating in decision-making or intervention implementation. This is meant to be as inclusive as possible, and the rate may fall as well as rising from month to month (e.g., when a provider institution decides to withdraw from the project or new management stops participating). In general, the presence of a representative of a provider "at the table" will indicate 100% participation for the transitions represented by that provider. However, non-institutional providers will have to have their rate of participation estimated, and institutional providers might have different branches or other reasons why a particular representative reflects only part of their population.

I-2 Description: Percentage of patient care transitions (FFS Medicare) in the specified geographic area that are the potential subject of an implemented intervention that addresses hospital/community system wide processes. (Task 2.2.a).

I-3 Description: Percentage of patient care transitions (FFS Medicare) in the specified geographic area that are the potential subject of an implemented intervention that addresses AMI, CHF, or pneumonia.(Task 2.2.b)

I-4: Description: Percentage of patient care transitions (FFS Medicare) in the specified geographic area that are the potential subject of an implemented intervention that addresses specific reasons for readmission (Task 2.2.c)

I-6. Description: Percentage of patient care transitions (FFS Medicare) in the specified geographic area to which implemented and measured (as in I-5) interventions apply.

2. Measure – I- 5

Description: Percentage of implemented interventions in the specific geographic area that are measured. Calculated by dividing the sum of the interventions implemented for which measures are being collected, by the total number of interventions tallied. This ratio should always be as close to 1 as possible, since interventions without measurement are unlikely to provide insight.

3. Measures O-1a and O-1b

Description: Percentage of patients over 65 years who rate hospital performance meeting HCAHPS performance standard for medication management (O-1a) or discharge planning (O-1b)

Method:

1. Existing data collection has each hospital completing 300 surveys per year, collecting the surveys quarterly.
2. After each quarter, construct rolling annual sets of H-CAHPS reports on the four data elements for all targeted hospitals in each project site (from the list submitted by the QIO) and for comparison sites.
3. Combine all targeted hospitals and split out the respondents age 65 or older.
4. Using the same approach as the two nationally reported measures, calculate the two measures from the survey questions 16 and 17 (for medication management) and 18 and 19 (for discharge planning).
5. Report rolling measures from the preceding year, quarterly, for each target community and each comparison community (as well as the publicly reported national and state reports on all hospitals' data, annually).

4. Measure —O-2

Description: Percentage of patients discharged from an “acute care” hospital to a community setting and readmitted within 30 days who are seen by a physician between discharge and readmission.

Numerator: Medicare FFS beneficiaries discharged alive from “acute care” hospital who are readmitted within 30 days and for whom a physician (including nurse practitioner or physician assistant) claim was submitted for services in the time between discharge and readmission.

Denominator: Medicare FFS beneficiaries discharged alive from acute care hospital who are readmitted within 30 days.

Data Sources:

1. Medicare claims for the specified geographic areas for codes listed below.

<u>List of E&M codes</u>
New patient, office – 99201- 99205
Established patient, office – 99211- 99215
Consultations, office or outpatient – 99241 – 99245
Nursing facility, new or established – 99304 – 99310, 99315-99316, 99318
Domiciliary and assisted living – new – 99324 – 99328
Domiciliary and assisted living – established – 99334- 99337 and 99339-40
Home care – new – 99341- 99345
Home care – established – 99347 – 99350

Exclusions:

1. Claim for dates of service for institutional post acute care in the time between discharge and readmission.
2. Claim for hospice or home care in the time between discharge and readmission.

5. Measure -- O-3

The QIOs will report narrative and time series reports, using the SQUIRE guidelines for reporting (see Appendix) and will estimate the rate of implementation of improvements, by provider, using the method described for the Interim Reports, #2 above.
Description: Percentage of patient care transitions (FFS Medicare), in the specified geographic area, for which implemented and measured interventions show improvement.

Method: In addition to the narrative and time-series reports, the QIO will report the proportion of transitions affected by interventions that showed improvement in quality, by provider. This report follows the method of the interim measures, using the Table of Proportions of Transitions, including being summed to an overall rate at which improvements affect transitions in the community. This rate will be reported quarterly.

6. Measure -- O-4

Description: Percentage of patients from the specified geographic area re-hospitalized within 30 days of discharge from an acute care hospital.

"Acute care" hospitals will not include critical access hospitals for the purposes of this measure.

Data source:

- Claims for beneficiaries hospitalized in the target area for each project (and for the comparison sites) (defined by ZIP codes),
- 1 quarter + 1 month of claims

Frequency of calculation: Quarterly for the 30 day measure.

Denominator: Each QIO will specify a population by ZIP Code of residence in the enrollment file (see specifications and exclusions below). The only exclusions from among beneficiaries in traditional Medicare at the time of hospitalization are for enrollees discharged dead, or discharged to another acute care hospital (and admitted to that other hospital on the same day).

Numerator: From those in the denominator, the number of Medicare beneficiaries who were readmitted at least once within 30 days of discharge from their initial hospital stay within the target period.

7. Measure -- O- 6

Description: Percentage of patient transitions within the specified geographic area for which a CARE instrument was used.

Data Sources:

1. CARE instrument data from OIS.
2. Proportions of transitions table.

8. Measures – O-5a, b, and c.

Using the methods established for the national reporting, except the readmission rates will be calculated quarterly without adjustment for purposes of tracking change, and annually for purposes of public reporting.

9. The Proportion of Transitions Table (basis of Measures I-1, 2, 3, 4, 6 and O-3) (with example)

Data:
From Medicare claims:

- Beneficiary Zip code of residence at the time of hospital discharge
- Admission and Discharge dates for "acute care" (IPPS) hospitalizations in 2007 (initially, then repeated annually) with follow-up through January 2008 (initially, then repeated annually).
- Calculated by August 2008 (and annually in 2009, 2010)
- Admission and discharge dates for all SNF, IRF, LTAC, psychiatric hospitals, and critical access hospitals for the same time periods.

Procedure:

1. For the ZIP codes specified by each QIO, pull all hospitalizations in 2007.
2. Exclude discharges dead.
3. Test for whether there is a new hospitalization on the same day as the initial hospital discharge. If so, discard the initial hospitalization and count only the ensuing hospitalization
4. For each beneficiary discharged alive in 2007, pull all other institutional use (admission and discharge date) for each beneficiary.
5. Assign 2 variables for each of the 30 days after the initial discharge: the day after discharge and the Medicare provider number where the beneficiary resides on that day. If the beneficiary is not residing in any of the target settings, then assign a neutral provider number (I will use "9" in the example below). This will yield a table with days 0 through 30 and provider numbers for each. Day 0 will have the provider number of the index hospital doing the discharge. If the patient is in two facilities on the same day (by having a discharge date and an admission date that match, then assign the patient to the admission setting for that day. This yields tables like the following:

Example #1 - For a patient who only has a hospital discharge from hospital #1

Bene ID # xxx-xx-xxxxx																														
Day after discharge	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Provider number	#1	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

Example #2 - For a patient who only has a readmission to hospital #2, on the 10th day

Bene ID # xxx-xx-xxxxx											
Day after discharge	0	1	2	3	4	5	6	7	8	9	10
Provider number	#1	9	9	9	9	9	9	9	9	9	#2

Example #3 - For that patient, who is discharged from hospital #2 a few days later, resetting the clock. This time, the person uses an SNF, #3, from day 5 through day 12 but is not readmitted to a hospital

Bene ID # xxx-xx-xxxxx																														
Day after discharge	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Provider number	#2	9	9	9	9	#3	#3	#3	#3	#3	#3	#3	#3	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

Example #4 - For a patient who goes direct from hospital #1 to an IRF (#4) for four more days, then to SNF (#5) for all of the rest of the month

Bene ID # xxx-xx-xxxxx																														
Day after discharge	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Provider number	#1	#4	#4	#4	#4	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5	#5

6. If the patient is readmitted to an “acute care” hospital within 30 days, truncate the table on the day of readmission, and count the new admission as a new start date for the 30 day follow-up.
7. Test for whether each beneficiary’s table has changes in provider number and create a list in which the provider number on the day before a change is listed as “sender” and the provider number on the day after a change is listed as “receiver.”

For the examples above –

Example #1 yields one transition in which #1 is a sender and “9” is a receiver

Example #2 yields two transitions, one in which #1 is a sender and “9” is a receiver, and one in which “9” is a sender and #2 is a receiver

Example #3 yields three transitions, one in which #1 is a sender and “9” is a receiver, one in which “9” is a sender and #3 is a receiver, and one in which #3 is a sender and “9” is a receiver

Example #4 yields two transitions, one in which #1 is a sender and #4 is a receiver, one in which #4 is a sender and #5 is a receiver.

Thus, if these were all hospitalizations, the tally would be

Provider number	Transitions as sender	Transitions as receiver	Sum of parties to transitions
#1	4	0	4
#2	0	1	1
#3	1	1	2
#4	1	1	2
#5	0	1	1
“9” (non-institutional providers)	2	4	6
Sum	8 transitions	8 transitions	16 parties to transitions

8. The sum of transitions on the list is the number of transitions.
9. The number of parties to transitions is double the number of transitions.
10. Tally the number of times each provider number is a sender or a receiver.
11. (Report the entire table to the QIO).
12. Match the provider number with the list that the QIO provided in order to create the institutional list in the Table: Proportions of Transitions Attributable to Each Institutional Provider. So, in this example, if provider #4 and # 5 are not in the QIO list, then the table above becomes

Provider number	Transitions as sender	Transitions as receiver	Sum of parties to transitions
#1	4	0	4
#2	0	1	1
#3	1	1	2
Institutional providers not in target group	1	2	3

“9” (non-institutional providers)	2	4	6
Sum	8 transitions	8 transitions	16 parties to transitions

The following steps are needed in order to estimate the proportion of non-institutional providers that are not in the target area.

13. The proportion of institutional providers that are “out of area” = 1 – [N of times that a targeted institution is party to transitions/ total N of times that an institution is party to transitions]
14. The proportion of non-institutional providers presumed to be “out of area” is assumed to be the same as the proportion of institutional providers that are “out of area,” as in #13.
15. Multiply the number of times that the “9” (or other neutral provider code) is party to transitions by the proportion of non-institutional providers that are “out of area” (#14) to get the number of transitions attributable to non-institutional providers “out of area.”
16. Subtract the product in #15 from the number of times that the “9” is party to transitions in order to obtain the non-institutional providers that are “in area.”
17. Fill in the last two lines of the Table with the numbers obtained in #15 and #16.

An empty final table and the further calculation of the simple example above follow:

Provider	Proportion
Hospital 1	xx.x%
Hospital 2	xx.x%
(Other area hospitals)…	
Out of Area hospitals	xx.x%
SNF 1	xx.x%
SNF 2	xx.x%
(Other “post acute care” institutions)	
Non-institutional providers in area	xx.x%
Non-institutional providers out of area	xx.x%
SUM	100%

And for the example above, the table would be the first and last columns in this table

Provider number	Number of times that this provider is party to transitions	Proportion
#1	4	4/16 = 25%

#2	1	1/16 = 6.25%
#3	2	2/16 = 12.5%
Institutional providers not in target group	3	3/16 = 18.75%
“9” (non-institutional providers) in area	6 x [7/10] = ~4	4/16 = 25%
“9” non-institutional providers not in area	6 x [3/10] = ~ 2	2/16 = 12.5%
Sum	16 parties to transitions	100%

Appendix B –
SQUIRE guidelines for reporting intervention trials.

SQUIRE Guidelines
(Standards for QUality Improvement Reporting Excellence)
Version 2.6 – 12/1/07 – used with permission – will amend to match final published version

- These guidelines are intended to provide a framework for writing and publishing reports of studies that formally assess the nature and effectiveness of interventions carried out to improve the quality and safety of care. (Guidelines for informal reports of experiences with QI interventions can be found at: [URL for QSHC/BMJ QI reporting guidelines])

- Although each major section (i.e., Introduction, Methods, Results, and Discussion) of published reports of original studies generally contains at least some information about all the numbered items included in the corresponding guideline section, some information about individual items from one section (for example, the Introduction) is often also needed in other sections (for example, the Discussion).

Text section; Item number and name	***Section or Item description***
Front matter	*What did you do to help with finding, indexing, and scanning your report?*
1. Title	• Indicates the article concerns improvement of quality (broadly defined to include safety, effectiveness, patient-centeredness, timeliness, efficiency (value), and equity), and states the specific aim of the intervention
2. Abstract	• Summarizes the key information from all text sections, using the abstract format requested by the intended publication
Introduction	*Why did you undertake the intervention, and why did you decide to study it?*
3. Background Knowledge	• Provides a brief, balanced summary of current knowledge of care problem being addressed, and characteristics of organizations in which it occurs
4. Local problem	• Describes the nature and severity of the specific local problem or system dysfunction that was addressed • Specifies who (champions, supporters) and what (events, observations) triggered the decision to make changes, and why now (timing) • Indicates the factors contributing to choice of the specific improvement intervention (e.g., analysis of causes of the dysfunction; prior studies of relevant improvement strategies)
5. Intended improvement	• Describes the specific aim (changes/improvements in care processes and patient outcomes) of the proposed intervention
6. Study question	• States the questions that the study of the intervention was designed to answer as related to primary and secondary outcomes
Methods	*What did you do to implement the intervention, and to study its implementation and impact?*
7. Ethical issues	• Describes the ethical aspects of implementing and studying the improvement, particularly those related to its primary purpose, i.e., local improvement (better care), search for generalizable knowledge (research), or both, and how ethical concerns were

Text section; Item number and name	*Section or Item description*
	addressed
8. Setting	• Specifies how elements of the environment considered most likely to influence change/improvement in the involved site or sites were identified and characterized
9. Planning the intervention	• Characterizes in detail how the intervention was initially planned: i.e., what was to be done (initial steps; functions to be accomplished by those steps; how tests of change would be used to modify the intervention), and by whom (intended roles, qualifications, and training of staff)
10. Planning the study	• Outlines plans made for assessing how well the intervention was implemented (dose or intensity of exposure) • Describes the mechanisms (theories) by which intervention components were expected to cause changes, and approaches planned for testing whether those mechanisms were effective • Identifies the experimental or quasi-experimental design chosen for measuring impact of the intervention on primary and secondary outcomes, if applicable • Explains efforts planned for implementing the essential aspects of chosen study design, as described in appropriate study design publication guidelines (see, for example, www.equator-network.org) • Describes specific plans made for maximizing internal and external validity
11. Methods of evaluation	• Describes instruments (qualitative, quantitative, or mixed) used to assess a) effectiveness of implementation, b) contributions of intervention components and context factors to effectiveness of the intervention, and c) primary and secondary outcomes • Reports efforts to validate and test reliability of assessment instruments • Explains methods used to assure data quality (e.g., blinding, repeating measurements and data extraction; training in data collection)
12. Analysis	• Provides details of qualitative and quantitative (statistical) methods used to draw inferences from the data • Aligns unit of analysis with level at which the intervention was applied (if applicable) • Specifies degree of variability expected in implementation, change expected in primary outcome (effect size), and ability of study design (including size) to detect such effects • Describes analytic methods used to demonstrate effects of time as a variable (e.g., statistical process control)
Results	*What did you find?*
13. Outcomes	a) Nature of setting and improvement intervention • Characterizes relevant elements of setting or settings (e.g., geography, physical resources, organizational culture, history of change efforts), and structures and patterns of care (e.g., staffing, leadership) that provided context for the intervention • Explains the actual course of the intervention (e.g., sequence of steps, events or phases; type and number of participants at key points), preferably using a time-line diagram or flow chart • Documents degree of success in implementing intervention

Text section; Item number and name	*Section or Item description*
	components • Describes how and why the initial plan evolved, and the most important lessons learned from that evolution, particularly the effects of internal feedback from tests of change (reflexiveness) b) Changes in processes of care and patient outcomes associated with the intervention • Presents data on changes observed in the care delivery process • Presents data on changes observed in measures of patient outcome (e.g., morbidity, mortality, function, patient/staff satisfaction, service utilization, cost, care disparities) • Presents evidence on strength of the association between observed changes in outcomes and intervention components and context factors • Includes summary of missing data for intervention and outcomes
Discussion	*What does it all mean?*
14. Summary	• Summarizes the most important successes and difficulties in implementing intervention components, and main changes observed in care delivery and clinical outcomes
15. Relation to other evidence	• Compares and contrasts study results with relevant findings of others, drawing on broad and balanced review of the literature; use of a summary table may be helpful in building on existing evidence
16. Limitations	• Considers possible sources of confounding, bias, or imprecision in design, measurement, and analysis that might have affected study accuracy (internal validity) • Explores factors affecting generalizability (external validity), particularly features of local settings and implementation of the intervention • Addresses likelihood that observed gains may weaken over time, and describes plans, if any, for monitoring and maintaining improvement; explicitly states if such planning was not done • Reviews efforts made to minimize and adjust for study limitations • Assesses the effect of study limitations on interpretation and application of results
17. Interpretation	• Explores possible reasons for differences between observed and expected outcomes • Draws inferences consistent with the strength of the data about causal mechanisms and size of observed changes, paying particular attention to components of the intervention and context factors that helped determine the intervention's effectiveness (or lack thereof) • Suggests steps that might be modified to improve future performance • Reviews issues of opportunity cost and actual financial cost of the intervention
18. Conclusions	• Considers overall practical usefulness of the intervention demonstrated locally, and types of settings in which this intervention is most likely to be effective • Suggests implications of this report for further studies of improvement interventions
Other information	*Were other factors relevant to conduct and interpretation of the study?*

Text section; Item number and name	***Section or Item description***
19. Funding	• Describes funding sources, if any, and role of funding organization in design, implementation, interpretation, and publication of study

Appendix C: Databases and Analytic Methods to support interventions.

This material is supplemental to the section in the SOW concerning databases and analytic methods that are available to the QIO to use in supporting interventions. (Task 2.4)

- **Appendix C- 1 – Variables proposed to include in the claims databases**
- **Appendix C – 2 – Sample of analyses with existing SAS code, by hospital**
- **Appendix C- 3 – Samples of claims sequence for individual patients**
- **Appendix C-4 Timeline of periods of data generation and resulting reports**

Appendix C- 1 – Variables (for each claim) in the databases supplied

Obs	NAME
1	ADDR_POSTALCODE
2	ADHC_IND
3	AMI_IND
4	APC_HIPPS_CD
5	BENE_ADDR_CITY
6	BENE_ADDR_STATE
7	BENE_BIRTH_DT
8	BENE_BIRTH_DT
9	BENE_CLM_NUM
10	BENE_CLM_NUM
11	BENE_COUNTY_CD
12	BENE_COUNTY_CD
13	BENE_GVN_NAME
14	BENE_MDCR_STUS_CD
15	BENE_MDCR_STUS_CD

Obs	NAME
16	BENE_MLG_CNTCT_ZIP_CD
17	BENE_MLG_CNTCT_ZIP_CD
18	BENE_RACE_CD
19	BENE_RACE_CD
20	BENE_SEX_IDENT_CD
21	BENE_SEX_IDENT_CD
22	BENE_SRNM_NAME
23	BENE_STATE_CD
24	BENE_STATE_CD
25	BENE_ZIP_CD
26	CARR_CLM_CNTL_NUM
27	CLM_ADMTG_DGNS_CD
28	CLM_DGNS_E_CD
29	CLM_PRMRY_CARE_PHYSICIAN_UPIN
30	CLM_PRNCPAL_DGNS_CD
31	CLM_PRNCPAL_PHYSN_NUM
32	CWFB_ALOW_CHRG_AMT
33	CWFB_CLM_RFRG_PHYSCIAN_UPIN
34	CWFB_CLM_RFRG_PHYSN_PRFLG_NUM
35	DEATH_DT
36	DGNS_CD
37	DGNS_CD_1
38	DGNS_CD_1
39	DGNS_CD_2
40	DGNS_CD_2
41	DGNS_CD_3
42	DGNS_CD_3
43	DGNS_CD_4
44	DGNS_CD_4
45	DGNS_CD_5
46	DGNS_CD_6
47	DGNS_CD_7

Obs	NAME
48	DGNS_CD_8
49	DGNS_CD_9
50	DRG_CODE
51	FIB_IND
52	FICARR_IDENT_NBR
53	FICARR_IDENT_NBR
54	FINAL_ACTION_SW
55	FINAL_ACTION_SW
56	FINDER_CLAIM_NUM
57	FINDER_CLAIM_NUM
58	FIRST_EXPNS_DT
59	FI_CLAIM_PROC_DT
60	HCFA_CLM_PROC_DT
61	HCFA_CLM_PROC_DT
62	HCPCS_2ND_MDFR_CD
63	HCPCS_2ND_MDFR_CD
64	HCPCS_CODE
65	HCPCS_CODE
66	HCPCS_INITL_MDFR_CD
67	HCPCS_INITL_MDFR_CD
68	HSEA_CLM_IP_ADMSN_TYPE_CD
69	HSEA_CLM_SRC_IP_ADMSN_CD
70	HSE_B_CLM_PMT_AMT
71	HSE_B_CLNCL_LAB_NUM
72	HSE_B_HCFA_PRVDR_SPCLTY_CD
73	HSE_B_MTUS_CNT
74	HSE_B_MTUS_IND_CD
75	HSE_B_PLC_SRVC_CD
76	HSE_B_PRFRMG_PRVDR_PRFLG_NBR
77	HSE_B_PRVDR_TAX_NUM
78	HSE_B_TYPE_SRVC_CD
79	HSE_CLM_ADMSN_DT_C

Obs	NAME
80	HSE_CLM_FAC_TYPE_CD
81	HSE_CLM_FAC_TYPE_CD
82	HSE_CLM_FREQ_CD
83	HSE_CLM_FROM_DT
84	HSE_CLM_FROM_DT
85	HSE_CLM_MDCL_REC_NUM
86	HSE_CLM_MDCR_MPMT_RSN_CD
87	HSE_CLM_PYM_AMT
88	HSE_CLM_PYM_AMT_C
89	HSE_CLM_SRVC_CLSFCTN_TYPE_CD
90	HSE_CLM_STUS_CD
91	HSE_CLM_THRU_DT
92	HSE_CLM_THRU_DT
93	HSE_CLM_TOT_CHRG_AMT
94	HSE_CLM_TOT_CHRG_AMT_C
95	HSE_CODE_SET
96	HSE_CWFB_CLM_PMT_DNL_CD
97	HSE_CWF_CLM_ACRTN_DT
98	HSE_CWF_CLM_ACRTN_NUM
99	HSE_DISP_CD
100	HSE_HCPCS_SEQ
101	HSE_HCPCS_SEQ
102	HSE_ICN_CNTL_NUM_CURR
103	HSE_ICN_CNTL_NUM_CURR
104	HSE_ICN_CNTL_NUM_ORIG
105	HSE_UNIQUE_ID
106	HSE_UNIQUE_ID
107	HSE_UNIQUE_ID
108	HSE_UNIQUE_ID
109	HSP_ID
110	HSP_STATE_CODE
111	HSP_STATE_CODE

Obs	NAME
112	HTF_IND
113	INTRMDRY_CLM_ACTN_CD
114	IN_ST_BENE_OUT_ST_PRV_IND
115	LAST_EDIT_DATE
116	LAST_EXPNS_DT
117	NCH_CLM_TYPE_CD
118	NCH_CLM_TYPE_CD
119	NPI_ATNDG
120	NPI_OPRTG
121	NPI_ORG
122	NPI_PRFRMG
123	NPI_PRFRMG_GROUP
124	NPI_RFRG
125	OTH_IND1
126	OTH_IND2
127	OTH_IND3
128	OTH_IND4
129	OTH_IND5
130	OTH_IND6
131	OTH_IND7
132	PHYSICIAN_UPIN
133	PNE_IND
134	PRCDR_CD_1
135	PRCDR_CD_2
136	PRCDR_CD_3
137	PRCDR_CD_4
138	PRCDR_CD_5
139	PRCDR_CD_6
140	PRCDR_DT_1
141	PRCDR_DT_2
142	PRCDR_DT_3
143	PRCDR_DT_4

Obs	NAME
144	PRCDR_DT_5
145	PRCDR_DT_6
146	REV_CNTR_CD
147	SSI_IND
148	STATE_CODE
149	STR_IND
150	comp_death_dt
151	comp_death_ind
152	findrfrom_dt
153	findrhic
154	findrhsp_id
155	hse_clm_admsn_dt

Appendix C – 2 – Sample of analyses with existing SAS code, by hospital (fictitious hospitals)

Calculated Hospital Statistic	***A***	***B***	***C***	***D***
	(N=xx)	***(N=xxx)***	***(N=xxx)***	***(N=xxx)***
Dartmouth Atlas Utilization	**High**	**Low**	**High**	**Low**
Statistics from Index Hospitalization at Participant Hospital				
LENGTH OF STAY (Mean/Median)	5.8/4.0	9.4/6.0	6.9/4.5	4.8/3.0
ICU/CCU STAY DURING INDEX HOSPITALIZATION (%)	61.8%	17.9%	36.8%	--
ICU/CCU LENGTH OF STAY (Mean/Median)	3.9/2.5	0.8/0.0	4.2/3.0	--
RATIO OF #ICU/CCU DAYS TO #HOSPITAL DAYS (%)	3.9:5.8 (67.6%)	4.6/3.0	4.2:6.9 (60.6%)	--
MEAN AGE	74.3	81.7	75.4	78.1
PRIMARY DISCHARGE DIAGNOSIS:				
Acute Myocardial Infarction (AMI) (%)	37.1%	8.7%	30.2%	0.0%
Heart Failure (HF) (%)	27.0%	38.1%	37.7%	37.5%
Pneumonia (PN) (%)	36.0%	11.9%	32.1%	62.5%
ADMISSION TYPE:				
Elective (%)	2.2%	27.4%	20.8%	0.0%
Urgent (%)	25.8%	60.7%	1.9%	100.0%
Emergency (%)	67.4%	15.5%	76.4%	0.0%
Unknown (%)	4.5%	3.6%	0.9%	0.0%
DISCHARGE DISPOSITION:				
Home (%)	36.0%	29.8%	47.2%	93.8%
Skilled Nursing Facilty (%)	22.5%	41.7%	20.8%	6.3%
Home Health (%)	18.0%	13.1%	16.0%	0.0%
Expired (%)	11.2%	8.3%	3.8%	0.0%
Other (%)	12.4%	7.1%	12.3%	0.0%
Statistics from Admissions to Target Hospital Post Index Hospitalization				
LENGTH OF STAY (Mean/Median)	4.0/3.0	6.1/5.1	7.7/5.0	4.8/3.0
PROPORTION OF ADMISSIONS WITH ICU/CCU STAY (%)	44.9%	61%	33.3%	--

ICU/CCU LENGTH OF STAY (Mean/Median)	3.4/1.5	2.0/0.0	6.7/3.0	--
RATIO OF #ICU/CCU DAYS TO #HOSPITAL DAYS (%)	3.4:4.0 (83.2%)	4.5/6.0(75.0%)	6.7:7.7 (87.5%)	--
EXPIRED WITHIN 180 DAYS OF INDEX HOSP DISCHARGE (%)	24.7%	26.2%	26.4%	43.8%
READMISSION RATIO = (total #readm in specified days from index dsg date) / (total #pts alive within specified time):				
Readmissions within 14 days of index hosp discharge date	0.09	65.6%	0.07	0.06
Readmissions within 30 days of index hosp discharge date	0.20	6.9/5.0	0.19	0.13
Readmissions within 60 days of index hosp discharge date	0.37	31.0%	0.37	0.36
Readmissions within 90 days of index hosp discharge date	0.45	0.15	0.46	0.58
Readmissions within 180 days of index hosp discharge date	0.70	0.31	0.66	1.00
NUMBER OF READMISSIONS = (total #pts readm specifed # of times) / (total #pts alive at 180 days from index dsg):				
No Readmissions to Target Hospital	62.7%	0.70	69.2%	77.8%
One Readmission to Target Hospital	26.9%	1.00	23.1%	11.1%
Two Readmissions to Target Hospital	7.5%	55.2%	5.1%	11.1%
Three Readmissions to Target Hospital	0.0%	25.9%	1.3%	0.0%
More than Three Readmissions to Target Hospital	3.0%	5.2%	1.3%	0.0%
Statistics from Physician Office Visits Post Index Hospitalization				
PHYSICIAN OFFICE VISITS BETWEEN HOSPITALIZATIONS (Mean/Median)	5.8/3.0	5.2%	6.1/4.0	1.0/1.0
PHYSICIANS VISITED BETWEEN HOSPITALIZATIONS (Mean/Median)	2.4/2.0	1.8/2.0	2.8/2.0	1.0/1.0
OUTPATIENT PROCEDURES BETWEEN HOSPITALIZATIONS (Mean/Median)	2.5/2.0	3.1/2.0	3.4/2.0	6.7/5.0
Time to Event Statistics				
NUMBER OF DAYS BETWEEN DISCHARGE DATE OF INDEX HOSPITALIZATION AND…				
...SNF VISIT (Mean/Median)	24.7/0.0	31.7/31.0	24.6/0.0	122.7/97.0
...HOME HEALTH VISIT (Mean/Median)	28.0/6.5	41.8/30.0	46.2/23.0	./.
...HOSPICE VISIT (Mean/Median)	29.7/9.0	35.9/0.0	63.1/33.0	./.
...PHYSICIAN OFFICE VISIT (Mean/Median)	32.6/13.0	65.4/31.5	23.1/8.0	59.0/59.0

Appendix C- 3 – Samples of claims sequence for individual patients (note these are fictitious patients)

Case 1

VALUE Project Claims-based Electronic Medical Record Recorded Claims July 1, 2005 through December 31, 2006

CASE ID: Jane Doe AGE: 87 SEX: Male RACE: XX DEATH DT: XX STATE: XX

INDEX EVENT DATE: XXXXXXXXXXX INDEX EVENT: Earliest 2005q3 Inp AMI, HF, or PN as Prin Discharge Dx CARE COST: $211,785

Service Type	Place	MD Spec.	Days Fr Start	Event End	Payment Amount	Diagnoses	HCPCS/CPT4 Procedures	ICD9 Procedures
HSP	Hospce		118	128	$1,541	ALZHEIMER*S DISEASE		
HSP	Hospce		88	117	$4,203	ALZHEIMER*S DISEASE		
HSP	Hospce		57	87	$4,343	ALZHEIMER*S DISEASE		
HSP	Hospce		27	56	$4,049	ALZHEIMER*S DISEASE		
HSP	Hospce		0	26	$3,644	ALZHEIMER*S DISEASE		
INP	Inp		-7	0	$47,931	PNEUMONIA, ORGANISM NOS		ENTRAL INFUS NUTRIT SUB
						RETENTION URINE NOS		VENOUS CATH NEC
						CONVULSIONS NEC		
						DVRTCLO COLON W/O HMRHG		
						PERIPH VASCULAR DIS NOS		
						HYPERTENSION NOS		
						DMII WO CMP NT ST UNCNTR		
						THRUSH		
						INT INF CLSTRDIUM DFCILE		
medical Off		Neurol	-17	-17	$66	ALZHEIMER*S DISEASE	Office/outpatient visit, est	
OTP	Otp		-25	-16	$385	CONVULSIONS NEC	Wheelchair mngement training	
						72887	Therapeutic activities	
							Therapeutic exercises	
							Pt evaluation	
medical Off		Podiat	-31	-31	$31	FX MEDIAL MALLEOLUS-CLOS	Office/outpatient visit, est	
						EDEMA		
						70714		
medical Off		Podiat	-64	-64	$42	FX MEDIAL MALLEOLUS-CLOS	Office/outpatient visit, est	
						EDEMA		
SNF	SNF		-65	-49	$5,505	CONVULSIONS NEC	CB103	
						PERIPH VASCULAR DIS NOS		
						HYPERTENSION NOS		

					ALZHEIMER*S DISEASE	
					DMII WO CMP NT ST UNCNTR	
OTP	Otp	-94	-94	$5,151	FX MEDIAL MALLEOLUS-CLOS	Emergency dept visit
					HX-VEN THROMBOSIS/EMBOLS	Extremity study
					BONE & CARTILAGE DIS NOS	Injection (IV)
					URIN TRACT INFECTION NOS	Antibiotic sensitivity, MIC
					HYPERTENSION NOS	Urine culture, colony count
					ALZHEIMER*S DISEASE	87077
					29410	Automated hemogram
					HYPOSMOLALITY	Urinalysis nonauto w/o scope
					DMII WO CMP NT ST UNCNTR	Urinalysis, auto, w/scope
						See data set for more detail
SNF	SNF	-96	-66	$13,771	CONVULSIONS NEC	RMB02
					PERIPH VASCULAR DIS NOS	CB103
					HYPERTENSION NOS	
					ALZHEIMER*S DISEASE	
					DMII WO CMP NT ST UNCNTR	
medical	Off Neurol	-107	-107	$42	EPIL PAR CONT W INTR EPI	Office/outpatient visit, est
SNF	SNF	-126	-97	$14,604	CONVULSIONS NEC	RVB11
					PERIPH VASCULAR DIS NOS	RVB07
					HYPERTENSION NOS	RMB02
					ALZHEIMER*S DISEASE	
					DMII WO CMP NT ST UNCNTR	
SNF	SNF	-135	-127	$4,908	CONVULSIONS NEC	RVB11
					PERIPH VASCULAR DIS NOS	
					HYPERTENSION NOS	
					ALZHEIMER*S DISEASE	
					DMII WO CMP NT ST UNCNTR	
INP	Inp	-138	-135	$11,552	PART EPIL W/O INTR EPIL	
					HX-CIRCULATORY DIS NEC	
					CONGESTIVE HEART FAILURE	
					HYPERTENSION NOS	
					ALZHEIMER*S DISEASE	
					HYPOPOTASSEMIA	
					HYPOSMOLALITY	
					DIS MAGNESIUM METABOLISM	
					DMII WO CMP NT ST UNCNTR	
HHA	Home	-176	-141	$5,440	PHYSICAL THERAPY NEC	HCGM1
					ENCNTR OCCUPATNAL THRPY	G0155
					CONVULSIONS NEC	G0154
					72887	G0152
					LATE EFFECT CV DIS NOS	G0151
					DMII WO CMP NT ST UNCNTR	
OTP	Otp	-185	-179	$432	ABNORMALITY OF GAIT	Therapeutic activities
					MALAISE AND FATIGUE NEC	Gait training therapy
						Therapeutic exercises
						Pt evaluation
SNF	SNF	-199	-186	$17,999	REHABILITATION PROC NEC	RHC01
					HX-CIRCULATORY DIS NEC	
					CONVULSIONS NEC	
					70703	
					URIN TRACT INFECTION NOS	
					PNEUMONIA, ORGANISM NOS	
					ALZHEIMER*S DISEASE	

					29410		
					DMII WO CMP NT ST UNCNTR		
INP	Inp		-207	-199	$33,465	7837	COLONOSCOPY
						ACCIDENT IN PLACE NOS	SM BOWEL ENDOSCOPY NEC
						CONVULSIONS NEC	
						URIN TRACT INFECTION NOS	
						BLOOD IN STOOL	
						AGRANULOCYTOSIS	
						HYPOVOLEMIA	
						DMII WO CMP NT ST UNCNTR	
						E. COLI INFECT NOS	
medical	Off	GP/IM	-211	-211	$0	CHEST PAIN NOS	Office/outpatient visit, est
						78321	
						MALAISE AND FATIGUE NEC	
						HYPERTENSION NOS	
HHA	Home		-245	-232	$1,400	PHYSICAL THERAPY NEC	HCGJ1
						ABNORMALITY OF GAIT	G0151
						MALAISE AND FATIGUE NEC	
						CONVULSIONS NEC	
						PAIN IN THORACIC SPINE	
SNF	SNF		-253	-246	$8,923	REHABILITATION PROC NEC	RHA01
						HX-CIRCULATORY DIS NEC	
						DEBILITY NOS	
						CONVULSIONS NEC	
						FOOD/VOMIT PNEUMONITIS	
						HYPERTENSION NOS	
						ALZHEIMER*S DISEASE	
						29410	
						DMII WO CMP NT ST UNCNTR	
INP	Inp		-255	-253	$17,586	CONVULSIONS NEC	
						HX-CIRCULATORY DIS NEC	
						URINARY INCONTINENCE NOS	
						FOOD/VOMIT PNEUMONITIS	
						HYPERTENSION NOS	
						ALZHEIMER*S DISEASE	
						29410	
						DMII WO CMP NT ST UNCNTR	
medical	Off	GP/IM	-273	-273	$65	DMII UNSPF UNCNTRLD	Office/outpatient visit, est
						V0481	
						CONVULSIONS NEC	
						HYPERTENSION NOS	
medical	Off	Neurol	-284	-284	$65	ALZHEIMER*S DISEASE	Office/outpatient visit, est
medical	Off	GP/IM	-304	-304	$65	EDEMA	Office/outpatient visit, est
						CONVULSIONS NEC	
						STOMACH FUNCTION DIS NEC	
						HYPERTENSION NOS	
OTP	Otp		-309	-309	$3,591	MALAISE AND FATIGUE NEC	Emergency dept visit
						STATUS AMPUT FOOT	Electrocardiogram, tracing
						HX-CIRCULATORY DIS NEC	Urine culture, colony count
						CONVULSIONS NEC	Automated hemogram
						HYPERTENSION NOS	Glucose blood test
						ALZHEIMER*S DISEASE	Urinalysis nonauto w/o scope
						DMII WO CMP NT ST UNCNTR	Urinalysis, auto, w/scope
							80053

							Chest x-ray See data set for more detail
medical	Off	GP/IM	-325	-325	$65	DMII UNSPF UNCNTRLD EDEMA CONVULSIONS NEC	Office/outpatient visit, est
medical	Off	GP/IM	-339	-339	$65	DMII UNSPF UNCNTRLD EDEMA CONVULSIONS NEC HYPERTENSION NOS	Office/outpatient visit, est
OTP	Otp		-379	-379	$772	CONVULSIONS NEC	Electroencephalogram (EEG)
medical	Off	GP/IM	-393	-393	$65	DMII UNSPF UNCNTRLD MALAISE AND FATIGUE NEC RHINITIS DUE TO POLLEN	Office/outpatient visit, est

Case 2

VALUE Project Claims-based Electronic Medical Record Recorded Claims July 1, 2005 through December 31, 2006

CASE ID: John Doe STATE: XX AGE: 68 SEX: Male RACE: XX DEATH DT: XX

INDEX EVENT DATE: XXXXXXX

INDEX EVENT: Earliest 2005q3 Inp AMI, HF, or PN as Prin D/C Dx CARE COST: $1,259,813

Service Type	Place	MD Spec.	Days Fr Event Start	End	Payment Amount	Diagnoses	HCPCS/CPT4 Procedures	ICD9 Procedures
SNF	SNF		344	345	$1,012	FX NECK OF FEMUR NOS-OPN EDEMA 78099 GASTROINTEST HEMORR NOS ACUTE PANCREATITIS STOMACH FUNCTION DIS NOS CHR AIRWAY OBSTRUCT NEC ANXIETY STATE NOS ANEMIA NOS	RML05	
INP	Inp		337	344	$26,533	28529 INF MCRG RSTN PNCLLINS OTHER POSTOP INFECTION CHRONIC PANCREATITIS DIAPHRAGMATIC HERNIA CHR AIRWAY OBSTRUCT NEC CONGESTIVE HEART FAILURE ORGANIC BRAIN SYND NOS STAPHYLOCOCCUS AUREUS		PACKED CELL TRANSFUSION SM BOWEL ENDOSCOPY NEC VENOUS CATH NEC
SNF	SNF		325	337	$8,800	FX NECK OF FEMUR NOS-OPN POSTTRAUM WND INFEC NEC 78099	RML35	

					GASTROINTEST HEMORR NOS		
					STOMACH FUNCTION DIS NOS		
					HYPERTENSION NOS		
					ANXIETY STATE NOS		
					ANEMIA NOS		
INP	Inp	322	325	$29,007	INTERTROCHANTERIC FX-CL		PACKED CELL TRANSFUSION
					FX BASE FEMORAL NCK-CLOS		CLOSED RED-INT FIX FEMUR
					SKIN DISORDERS NEC		
					PULMONARY COLLAPSE		
					CHR AIRWAY OBSTRUCT NEC		
					HYPOTENSION NOS		
					VENOUS THROMBOSIS NEC		
					HEART DISEASE NOS		
					ANEMIA NOS		
OTP	Otp	278	282	$17,299	52100	Leukocyte poor blood, unit	
					ESOPHAGEAL REFLUX	G0378	
					CHRONIC PERIODONTITIS	Non-covered item or service	
					CHR AIRWAY OBSTRUCT NEC	Pulmonary service/procedure	
					42830	Measure blood oxygen level	
					CONGESTIVE HEART FAILURE	Aerosol or vapor inhalations	
					HYPERTENSION NOS	Airway inhalation treatment	
					TOBACCO USE DISORDER	Electrocardiogram, tracing	
					ANEMIA NOS	Compatibility test	
						See data set for more detail	
OTP	Otp	229	254	$1,293	CHR AIRWAY OBSTRUCT NEC	Self care mngment training	
					78099	Therapeutic activities	
					STOMACH FUNCTION DIS NOS	Gait training therapy	
					PNEUMONIA, ORGANISM NOS	Therapeutic exercises	
					ACUTE PHARYNGITIS	Therapeutic exercises	
					HYPOTENSION NOS	Ot evaluation	
					CHR PULMON HEART DIS NEC	Pt evaluation	
INP	Inp	211	226	$135,425	SEPTICEMIA NOS		CONT MECH VENT < 96 HRS
					ACUTE RESPIRATRY FAILURE		ENTRAL INFUS NUTRIT SUB
					PULMONARY COLLAPSE		INSERT ENDOTRACHEAL TUBE
					FOOD/VOMIT PNEUMONITIS		CONT POS AIRWAY PRESSURE
					OBS CHR BRNC W ACT EXA		CONTR PULMON ARTERIOGRAM
					42830		VENOUS CATH NEC
					27651		
					MIXED ACID-BASE BAL DIS		
					PROTEIN-CAL MALNUTR NOS		
OTP	Otp	177	177	$1,607	ABDMNAL PAIN EPIGASTRIC	Fentanyl citrate injeciton	
					INTESTINAL BYPASS STATUS	Upper gi endoscopy,diagnosis	
					HEARING LOSS NOS		
					BLINDNESS, ONE EYE		
OTP	Otp	113	113	$383	HEADACHE	Emergency dept visit	
					ABDMNAL PAIN UNSPCF SITE		
OTP	Otp	90	90	$55	BRAIN INJURY NEC	Office/outpatient visit, est	
SNF	SNF	43	54	$4,604	PEPTIC ULCER NOS	RVA11	
					BRAIN INJURY NEC	RMA07	
					78099		
					72887		
					CHR AIRWAY OBSTRUCT NEC		

					PNEUMONIA, ORGANISM NOS		
SNF	SNF	35	42	$4,611	PEPTIC ULCER NOS	RVA11	
					BRAIN INJURY NEC		
					78099		
					CHR AIRWAY OBSTRUCT NEC		
					PNEUMONIA, ORGANISM NOS		
INP	Inp	16	35	$191,473	CHR DUODEN ULCER W HEM		CONT MECH VENT 96+ HRS
					SURG COMP-DIGESTV SYSTEM		INSERT ENDOTRACHEAL TUBE
					PANCREAT CYST/PSEUDOCYST		CHOLECYSTECTOMY
					CHRONIC PANCREATITIS		ENTEROSTOMY NEC
					PARALYTIC ILEUS		GASTROENTEROSTOMY NEC
					POST TRAUM PULM INSUFFIC		TRUNCAL VAGOTOMY
					CHR AIRWAY OBSTRUCT NEC		
					PNEUMONIA, ORGANISM NOS		
					PROTEIN-CAL MALNUTR NOS		
INP	Inp	0	16	$40,591	CHR DUODEN ULC NOS-OBSTR		
					CONVULSIONS NEC		
					ACQ PYLORIC STENOSIS		
					CHR AIRWAY OBSTRUCT NEC		
					ANEMIA NOS		
					PROTEIN-CAL MALNUTR NOS		
INP	Inp	-18	0	$165,201	PNEUMONIA, ORGANISM NOS		CONT MECH VENT 96+ HRS
					99591		ENTRAL INFUS NUTRIT SUB
					SPLEEN HEMATOMA-CLOSED		INSERT ENDOTRACHEAL TUBE
					FX MULT RIBS NOS-CLOSED		OTHER LOCAL DESTRUC SKIN
					78552		NONEXCIS DEBRIDEMENT WND
					CHR DUODEN ULC NOS-OBSTR		VENOUS CATH NEC
					ACUTE RESPIRATRY FAILURE		
					PROTEIN-CAL MALNUTR NOS		
					SEPTICEMIA NOS		
OTP	Otp	-24	-23	$499	HEADACHE	Emergency dept visit	
					ABDMNAL PAIN EPIGASTRIC	Automated hemogram	
HHA	Home	-28	-27	$125	LUMBAGO	HCHJ1	
					CHR AIRWAY OBSTRUCT NEC	G0154	
OTP	Otp	-29	-29	$4,159	MYALGIA AND MYOSITIS NOS	Emergency dept visit	
					V462	Electrocardiogram, tracing	
					EMPHYSEMA NEC	Injection (IV)	
					MONONEURITIS NOS	IV infusion therapy, 1 hour	
					TOBACCO USE DISORDER	Automated hemogram	
						Assay CK (CPK)	
						Urinalysis, auto, w/scope	
						80053	
						Chest x-ray	
						CAT scan of head or brain	
INP	Inp	-44	-42	$20,408	CHR STOMACH ULC W HEM		PACKED CELL TRANSFUSION
					LT EFF INTRACRANIAL INJ		SM BOWEL ENDOSCOPY NEC
					CONVULSIONS NEC		VENOUS CATH NEC
					EMPHYSEMA NEC		
					HYPOTENSION NEC		
					CONGESTIVE HEART FAILURE		
					HYPERTENSION NOS		
					CHR BLOOD LOSS ANEMIA		
					PROTEIN-CAL MALNUTR NOS		
OTP	Otp	-44	-44	$85	CONGESTIVE HEART FAILURE	Office/outpatient visit, est	
					LONG-TERM USE MEDS NEC		
OTP	Otp	-48	-48	$1,170	HYPOPOTASSEMIA	Emergency dept visit	

					BONE & CARTILAGE DIS NOS	Thromboplastin time, partial	
					MYALGIA AND MYOSITIS NOS	Prothrombin time	
					CONGESTIVE HEART FAILURE	Automated hemogram	
					ANEMIA NOS	80053	
OTP	Otp		-65	-65	$166 HEADACHE	Emergency dept visit	
					V462		
					CHRONIC PANCREATITIS		
					CHR AIRWAY OBSTRUCT NEC		
					CONGESTIVE HEART FAILURE		
					TOBACCO USE DISORDER		
OTP	Otp		-70	-70	$85 CONGESTIVE HEART FAILURE	Office/outpatient visit, est	
					LONG-TERM USE MEDS NEC		
OTP	Otp		-86	-86	$6,885 WRIST DROP	Emergency dept visit	
					LONG-TERM USE ANTICOAGUL	Electrocardiogram, tracing	
					V462	Thromboplastin time, partial	
					EMPHYSEMA NEC	Prothrombin time	
					CONGESTIVE HEART FAILURE	Automated hemogram	
					TOBACCO USE DISORDER	80048	
						3d/holograph reconstr add-on	
						Magnetic image, neck spine	
						Chest x-ray	
						See data set for more detail	
OTP	Otp		-91	-91	$85 CONGESTIVE HEART FAILURE	Office/outpatient visit, est	
medical	Off	GP/IM	-97	-97	$89 REHABILITATION PROC NEC	G0181	
					V5423		
					42833		
HHA	Home		-100	-68	$2,624 DEBILITY NOS	HBGL1	
					HEAD INJURY NOS	G0156	
					HEADACHE	G0154	
						G0152	
						G0151	
SNF	SNF		-110	-102	$4,977 PNEUMONIA, ORGANISM NOS	RMB07	
					SHOCK W/O TRAUMA NEC	RHB35	
					MUSCSKEL SYMPT LIMB NEC		
					GASTROINTEST HEMORR NOS		
					CHR AIRWAY OBSTRUCT NEC		
					HEARING LOSS NOS		
SNF	SNF		-117	-111	$6,252 PNEUMONIA, ORGANISM NOS	RHB35	
					SHOCK W/O TRAUMA NEC		
					MUSCSKEL SYMPT LIMB NEC		
					GASTROINTEST HEMORR NOS		
					CHR AIRWAY OBSTRUCT NEC		
					HEARING LOSS NOS		
INP	Inp		-137	-117	$117,510 PNEUMONIA, ORGANISM NOS		CONTR PULMON ARTERIOGRAM
					SHOCK W/O TRAUMA NEC		EGD WITH CLOSED BIOPSY
					CELLULITIS OF LEG		EGD WITH CLOSED BIOPSY
					ACUTE RENAL FAILURE NOS		ENDOSC CONTROL GAST HEM
					CHR DUODEN ULCER W HEM		ENDOSC CONTROL GAST HEM
					PULMONARY COLLAPSE		VENOUS CATH NEC
					OBS CHR BRNC W ACT EXA		
					AC POSTHEMORRHAG ANEMIA		
					HYPOVOLEMIA		
INP	Inp		-147	-143	$15,787 CONGESTIVE HEART FAILURE		
					PRSNL HST PEPTIC ULCR DS		
					LT EFF INTRACRANIAL INJ		

					70710		
					OBS CHR BRNC W ACT EXA		
					CHR PULMON HEART DIS NOS		
					BRAIN CONDITION NOS		
					HYPOPOTASSEMIA		
					PROTEIN-CAL MALNUTR NOS		
OTP	Otp	-156	-156	$85	CONGESTIVE HEART FAILURE	Office/outpatient visit, est	
					ASPHYXIA		
OTP	Otp	-163	-163	$85	CONGESTIVE HEART FAILURE	Office/outpatient visit, est	
					LONG-TERM USE MEDS NEC		
					ASPHYXIA		
OTP	Otp	-182	-182	$85	78321	Office/outpatient visit, est	
					LONG-TERM USE MEDS NEC		
					56400		
					CONGESTIVE HEART FAILURE		
SNF	SNF	-200	-189	$7,285	ACUTE PANCREATITIS	RHB07	
					MUSCSKEL SYMPT LIMB NEC		
					GASTROINTEST HEMORR NOS		
					ACUTE RESPIRATRY FAILURE		
					OBS CHR BRNC W ACT EXA		
SNF	SNF	-216	-201	$10,337	ACUTE PANCREATITIS	RHB11	
					INF MCRG RSTN PNCLLINS	RHB07	
					MUSCSKEL SYMPT LIMB NEC		
					GASTROINTEST HEMORR NOS		
					ESOPHAGEAL REFLUX		
					ACUTE RESPIRATRY FAILURE		
					OBS CHR BRNC W ACT EXA		
					AC POSTHEMORRHAG ANEMIA		
INP	Inp	-230	-216	$105,505	CHR DUODEN ULCER W HEM		SERUM TRANSFUSION NEC
					PARALYTIC ILEUS		PACKED CELL TRANSFUSION
					AC VASC INSUFF INTESTINE		CONT MECH VENT < 96 HRS
					ACUTE RESPIRATRY FAILURE		INSERT ENDOTRACHEAL TUBE
					PULMONARY COLLAPSE		SM BOWEL ENDOSCOPY NEC
					PLEURAL EFFUSION NOS		VENOUS CATH NEC
					OBS CHR BRNC W ACT EXA		
					AC POSTHEMORRHAG ANEMIA		
					CANDIDAL ESOPHAGITIS		
OTP	Otp	-230	-230	$565	HEMATEMESIS	A0429	
					DIARRHEA	A0425	
SNF	SNF	-231	-230	$169	ACUTE PANCREATITIS	SE207	
					ANEMIA NOS		
OTP	Otp	-242	-242	$2,439	CHRONIC PANCREATITIS	Fentanyl citrate injeciton	
					V462	Emergency dept visit	
					CHR AIRWAY OBSTRUCT NEC	Injection (IV)	
					HYPOVOLEMIA	Automated hemogram	
						Assay lipase	
						Urinalysis, auto, w/o scope	
						80053	
						Chest x-ray	
						36556	
SNF	SNF	-246	-232	$10,836	ACUTE PANCREATITIS	SE311	
					ANEMIA NOS	SE207	
INP	Inp	-267	-246	$51,107	CHRONIC PANCREATITIS		
					LT EFF INTRACRANIAL INJ		

					PLEURAL EFFUSION NOS		
					EMPYEMA W/O FISTULA		
					CHR AIRWAY OBSTRUCT NEC		
					ANEMIA NOS		
					PROTEIN-CAL MALNUTR NOS		
					DMII WO CMP NT ST UNCNTR		
					HYPOTHYROIDISM NOS		
INP	Inp	-281	-267	$121,697	CHRONIC PANCREATITIS		PERCU ABDOMINAL DRAINAGE
					PANCREAT CYST/PSEUDOCYST		VENOUS CATH NEC
					PLEURAL EFFUSION NOS		INSERT INTERCOSTAL CATH
					OBS CHR BRNC W ACT EXA		
					CHR PULMON HEART DIS NOS		
					PARAPLEGIA NOS		
					ANEMIA NOS		
					PROTEIN-CAL MALNUTR NOS		
					HYPOTHYROIDISM NOS		
SNF	SNF	-292	-282	$5,944	CELLULITIS, SITE NEC	RVB01	
					CHR AIRWAY OBSTRUCT NEC		
SNF	SNF	-293	-293	$854	CELLULITIS, SITE NEC	RHB01	
					CHR AIRWAY OBSTRUCT NEC		
INP	Inp	-310	-293	$100,033	PLEURAL EFFUS NEC NOT TB		PARENT INFUS NUTRIT SUB
					RESPIRATORY ABNORM NEC		NONEXCIS DEBRIDEMENT WND
					CELLULITIS OF LEG		VENOUS CATH NEC
					PANCREAT CYST/PSEUDOCYST		THORACENTESIS
					CHRONIC PANCREATITIS		INSERT INTERCOSTAL CATH
					PULMONARY COLLAPSE		
					OBS CHR BRNC W ACT EXA		
					HYPERTENSION NOS		
					TOBACCO USE DISORDER		
SNF	SNF	-322	-311	$4,405	CELLULITIS NOS	RHC01	
					REHABILITATION PROC NEC	Therapeutic activities	
					MALAISE AND FATIGUE NEC	Therapeutic activities	
					ACUTE PANCREATITIS	Ot evaluation	
					CHR AIRWAY OBSTRUCT NEC	Ot evaluation	
					VENOUS INSUFFICIENCY NOS		
					TOBACCO USE DISORDER		
					ANEMIA NOS		
					PROTEIN-CAL MALNUTR NOS		
INP	Inp	-326	-322	$26,314	CELLULITIS OF LEG		EXC WOUND DEBRIDEMENT
					70719		VENOUS CATH NEC
					ACUTE RENAL FAILURE NOS		
					CHR AIRWAY OBSTRUCT NEC		
					CONGESTIVE HEART FAILURE		
					COAGULAT DEFECT NEC/NOS		
					HYPOVOLEMIA		
					HYPOSMOLALITY		
					PROTEIN-CAL MALNUTR NOS		
OTP	Otp	-329	-329	$85	BURN NOS	Office/outpatient visit, est	
					CHR AIRWAY OBSTRUCT NEC		
					CONGESTIVE HEART FAILURE		
OTP	Otp	-336	-336	$85	CONGESTIVE HEART FAILURE	Office/outpatient visit, est	
					TRAUMATIC SUBDURAL HEM		
					CHR AIRWAY OBSTRUCT NEC		
OTP	Otp	-338	-338	$690	ABDMNAL PAIN UNSPCF SITE	CAT scan of abdomen	
medical	Off Gastr	-342	-342	$42	PANCREAT CYST/PSEUDOCYST	Office/outpatient visit, est	

OTP	Otp	-359	-359	$85	CONGESTIVE HEART FAILURE	Office/outpatient visit, est
					LONG-TERM USE MEDS NEC	
					78099	
					CHR AIRWAY OBSTRUCT NEC	
OTP	Otp	-366	-366	$55	EDEMA	Office/outpatient visit, est
OTP	Otp	-373	-373	$85	CONGESTIVE HEART FAILURE	Office/outpatient visit, est
					TRAUM SUBARACHNOID HEM	
					ASPHYXIA	
					CHR AIRWAY OBSTRUCT NEC	

Case 3

VALUE Project Claims-based Electronic Medical Record Recorded Claims July 1, 2005 through December 31, 2006

CASE ID: James Doe AGE: 72 SEX: Male RACE: XX DEATH DT: n/a STATE: XX

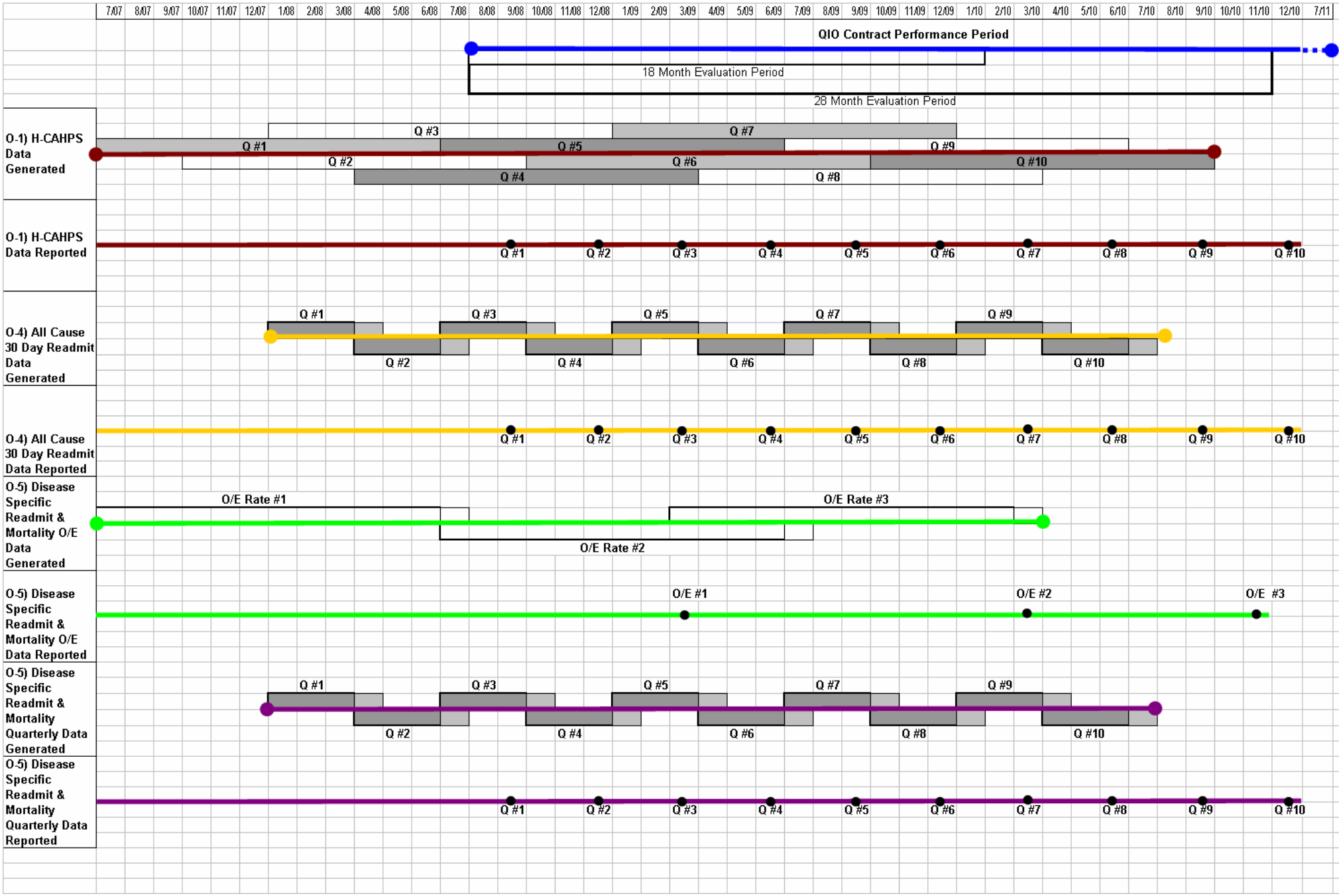
INDEX EVENT DATE: XXX INDEX EVENT: Earliest 2005q3 Inp AMI, HF, or PN as Prin Discharge Dx CARE COST: $116,913

Service Type	Place	MD Spec.	Days Fr Event Start	End	Payment Amount	Diagnoses	HCPCS/CPT4 Procedures	ICD9 Procedures
medical	Off	Other	315	315	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	302	302	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	287	287	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	273	273	$12	ALLERGIC RHINITIS NOS	Office/outpatient visit, est	
						ASTHMA W/O STATUS ASTHM	Immunotherapy, one injection	
medical	Off	GP/IM	258	258	$42	CVA	Office/outpatient visit, est	
medical	Off	Other	253	253	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	245	245	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
OTP	Otp		233	233	$3,300	V7651	Colon ca scrn barium enema	
						INT HEMORRHOID W/O COMPL		
medical	Off	Other	233	233	$182	ALLERGIC RHINITIS NOS	Antigen therapy services	
medical	Off	GP/IM	231	231	$0	ROUTINE MEDICAL EXAM	Preventive visit,new,65 & ove	
medical	Off	Other	231	231	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	217	217	$42	RHINITIS DUE TO POLLEN	Office/outpatient visit, est	
						ASTHMA W/O STATUS ASTHM	Immunotherapy, one injection	
medical	Off	Other	208	208	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	205	205	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	196	196	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	190	190	$0	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	187	187	$0	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	175	175	$0	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	169	169	$0	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	
medical	Off	Other	159	159	$0	ALLERGIC RHINITIS NOS	Immunotherapy, one injection	

medical	Off	Other	153	153	$1	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	147	147	$0	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	141	141	$0	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	135	135	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	126	126	$12	ALLERGIC RHINITIS NOS	Office/outpatient visit, est
						ASTHMA W/O STATUS ASTHM	Immunotherapy, one injection
medical	Off	Other	114	117	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	105	105	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	100	100	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	92	92	$12	ALLERGIC RHINITIS NOS	Office/outpatient visit, est
							Immunotherapy, one injection
medical	Off	Other	85	85	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	77	77	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	70	70	$12	V0481	Office/outpatient visit, est
							Immunotherapy, one injection
							Immunotherapy, one injection
medical	Off	Other	63	63	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	55	55	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
INP	Inp		50	51	$58,994	CRNRY ATHRSCL NATVE VSSL	CORONAR ARTERIOGR-2 CATH
						STATUS-POST PTCA	LEFT HEART CARDIAC CATH
						ANGINA PECTORIS NEC/NOS	3607
						AMI INFERIOR WALL,SUBSEQ	0066
						HYPERTENSION NOS	0046
						HYPERLIPIDEMIA NEC/NOS	0041
medical	Off	Other	46	46	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	39	39	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	30	30	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Cardio	29	29	$42	CRNRY ATHRSCL NATVE VSSL	Office/outpatient visit, est
						ANGINA PECTORIS NEC/NOS	
						AMI INFERIOR WALL,SUBSEQ	
						PURE HYPERCHOLESTEROLEM	
medical	Off	Other	21	21	$42	ALLERGIC RHINITIS NOS	Office/outpatient visit, est
						ASTHMA W/O STATUS ASTHM	Immunotherapy, one injection
medical	Off	Other	14	14	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	7	7	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	1	1	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
INP	Inp		-2	0	$52,544	AMI INFERIOR WALL, INIT	CORONAR ARTERIOGR-2 CATH
						HX-CIRCULATORY DIS NEC	LEFT HEART CARDIAC CATH
						ASTHMA W/O STATUS ASTHM	3607
						HYPERTENSION NOS	PTCA-1 VES/ATH W/O AGENT
medical	Off	Other	-8	-8	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	-9	-9	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	-16	-16	$42	ASTHMA W/O STATUS ASTHM	Office/outpatient visit, est
							Immunotherapy, one injection
medical	Off	Other	-23	-23	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	-37	-37	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	-41	-41	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	-47	-47	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	-51	-51	$0	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	-58	-58	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical	Off	Other	-30	-30	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection

medical Off	Other	-63	-63	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical Off	Other	-71	-71	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical Off	Other	-76	-76	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical Off	Other	-87	-87	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical Off	Other	-91	-91	$42	ASTHMA W/O STATUS ASTHM RHINITIS DUE TO POLLEN	Office/outpatient visit, est Immunotherapy, one injection
medical Off	Other	-94	-94	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical Off	Other	-98	-98	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical Off	Other	-105	-105	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical Off	Other	-113	-113	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical Off	Other	-119	-119	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical Off	Other	-126	-126	$12	ALLERGIC RHINITIS NOS	Immunotherapy, one injection
medical Off	Other	-132	-132	$42	ALLERGIC RHINITIS NOS 49392	Office/outpatient visit, est Immunotherapy, one injection
medical Off	Other	-133	-133	$588	ALLERGIC RHINITIS NOS	Antigen therapy services
medical Off	Other	-153	-153	$187	ASTHMA W/O STATUS ASTHM ALLERGIC RHINITIS NOS	Office consultation Allergy skin tests
medical Off	Alg/Im	-332	-332	$65	RHINITIS DUE TO POLLEN 60000 EXT ASTHMA W/O STAT ASTH BENIGN HYPERTENSION	Office/outpatient visit, est
medical Off	Alg/Im	-352	-352	$65	ACUTE BRONCHITIS 49302 HYPERTENSION NOS	Office/outpatient visit, est

Appendix C-4 Timeline of periods of data generation and resulting reports


7/07 8/07 9/07 10/07 11/07 12/07 1/08 2/08 3/08 4/08 5/08 6/08 7/08 8/08 9/08 10/08 11/08 12/08 1/09 2/09 3/09 4/09 5/09 6/09 7/09 8/09 9/09 10/09 11/09 12/09 1/10 2/10 3/10 4/10 5/10 6/10 7/10 8/10 9/10 10/10 11/10 12/10 7/11
QIO Contract Performance Period
18 Month Evaluation Period
28 Month Evaluation Period
O-1) H-CAHPS Data Generated
Q #1
Q #2
Q #3
Q #4
Q #5
Q #6
Q #7
Q #8
Q #9
Q #10
O-1) H-CAHPS Data Reported
O-4) All Cause 30 Day Readmit Data Generated
O-4) All Cause 30 Day Readmit Data Reported
O-5) Disease Specific Readmit & Mortality O/E Data Generated
O/E Rate #1
O/E Rate #2
O/E Rate #3
O-5) Disease Specific Readmit & Mortality O/E Data Reported
O/E #1
O/E #2
O/E #3
O-5) Disease Specific Readmit & Mortality Quarterly Data Generated
O-5) Disease Specific Readmit & Mortality Quarterly Data Reported

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