



Patient Safety Indicators (PSI) Parameter Estimates, v2024

Prepared by:

Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
5600 Fishers Lane
Rockville, MD 20857
<https://qualityindicators.ahrq.gov/>

Contract No. 47QRAA18D00BQ

July 2024

Table of Contents

Executive Summary

Acknowledgments

Parameter Estimates Tables

Appendix Tables

Index of Tables

Table 1. Risk Adjustment Coefficients for PSI 02 - Death Rate in Low-Mortality Diagnosis Related Groups (DRGs)

Table 2. Risk Adjustment Coefficients for PSI 03 - Pressure Ulcer Rate

Table 3. Risk Adjustment Coefficients for PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications Stratum: Deep Vein Thrombosis/Pulmonary Embolism (DVT/PE)

Table 4. Risk Adjustment Coefficients for PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications Stratum: Pneumonia

Table 5. Risk Adjustment Coefficients for PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications Stratum: Sepsis

Table 6. Risk Adjustment Coefficients for PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications Stratum: Shock/Cardiac Arrest

Table 7. Risk Adjustment Coefficients for PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications Stratum: Gastrointestinal (GI) Hemorrhage/Acute Ulcer

Table 8. Risk Adjustment Coefficients for PSI 06 - Iatrogenic Pneumothorax Rate

Table 9. Risk Adjustment Coefficients for PSI 07 - Central Venous Catheter-Related Blood Stream Infection Rate

Table 10. Risk Adjustment Coefficients for PSI 08 - In Hospital Fall-Associated Fracture Rate

Table 11. Risk Adjustment Coefficients for PSI 09 - Postoperative Hemorrhage or Hematoma Rate

Table 12. Risk Adjustment Coefficients for PSI 10 - Postoperative Acute Kidney Injury Requiring Dialysis Rate

Table 13. Risk Adjustment Coefficients for PSI 11 - Postoperative Respiratory Failure Rate

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Table 14. Risk Adjustment Coefficients for PSI 12 - Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate

Table 15. Risk Adjustment Coefficients for PSI 13 - Postoperative Sepsis Rate

Table 16. Risk Adjustment Coefficients for PSI 14 - Postoperative Wound Dehiscence Rate

Table 17. Risk Adjustment Coefficients for PSI 15 - Abdominopelvic Accidental Puncture or Laceration Rate

Table 18. Composite Weights for PSI 90, v2024

Table A.1. Population Age Categories

Table A.2. Modified Diagnosis-Related Group (MDRG) Categories

Table A.3. Major Diagnostic Categories (MDC)

Table A.4. Comorbidity Categories (COMORB), Elixhauser Comorbidity Software Refined, Version v2024.1*

Table A.5. Categorical Variables Definitions: Transfer, and HPPS

Table A.6. SEVDPEDX: Severe Pulmonary Embolism or Deep Vein Thrombosis (PE/DVT) Diagnosis Codes

Table A.7. SEVPNEUDX: Severe Pneumonia Diagnosis Codes

Table A.8. SEVSEPDIX: Severe Sepsis Diagnosis Codes

Table A.9. SEVSCKDX: Severe Shock or Cardiac Arrest Diagnosis Codes

Table A.10. SEVGIHDIX: Severe Gastrointestinal Hemorrhage or Acute Ulcer Diagnosis Codes

Table A.11. Do Not Resuscitate (DNR) Status Diagnosis Codes

Table A.12. Categorical Variables Used for Comorbidity Counts

Executive Summary

This document provides statistical parameters associated with Version 2024 Agency for Healthcare Research and Quality (AHRQ) Quality Indicators (QI) Patient Safety Indicators (PSI). The parameter estimates derived for the AHRQ PSIs are based on analysis of the 2019, 2020, and 2021 AHRQ Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID).¹

HCUP is a family of healthcare databases and related software tools and products developed through a Federal- State-Industry partnership. HCUP includes the largest collection of longitudinal hospital care data in the United States, with all-payer, encounter-level information beginning in 1988. The SID contain all-payer, encounter-level information on inpatient discharges, including clinical and resource information typically found on a billing record, such as patient demographics, up to 30 *International Classification of Diseases, Tenth Revision, Clinical Modification/Procedural Classification System (ICD-10-CM/PCS)* diagnoses and procedures, length of stay (LOS), expected payer, admission and discharge dates and discharge disposition.

In 2021, the HCUP databases represented more than 97 percent of all annual discharges in the U.S.² The analytic dataset used to generate the risk adjustment regression models in this document consists of the same hospital discharge records that comprise the reference population for Version 2024 of the AHRQ QI software. This reference population file was limited to community hospitals and excludes rehabilitation and long-term acute care (LTAC) hospitals. Information on the type of hospital was obtained by the American Hospital Association (AHA) Annual Survey of Hospitals. AHA defines community hospitals as “all non-Federal, short-term, general, and other specialty hospitals, excluding hospital units of institutions.” Included among community hospitals are specialty hospitals such as obstetrics-gynecology, ear-nose-throat, orthopedic, and pediatric institutions. Also included are public hospitals and academic medical centers.

There are indicators of the diagnoses being present on admission (POA) in the SID for 45 states in 2019, 46 states in 2020, and 45 states in 2021, while 3 additional states are excluded due to incomplete information in the POA data element in 2019 and 2020 and one additional state is excluded in 2021.³ Discharges from the participating States are used to develop hospital-level indicators.⁴ Edit checks on

¹Healthcare Cost and Utilization Project (HCUP) 2019, 2020, and 2021 State Inpatient Databases (SID). Agency for Healthcare Research and Quality, Rockville, MD.

²Introduction to the HCUP State Inpatient Databases (SID). Healthcare Cost and Utilization Project (HCUP). June 2022. Agency for Healthcare Research and Quality, Rockville, MD. [https://hcup-us.ahrq.gov/db/state/siddist/Introduction to SID.pdf](https://hcup-us.ahrq.gov/db/state/siddist/Introduction%20to%20SID.pdf).

³48 states were available for the 2021 SID data at the time of the development of v2024. The hospital-level indicators reference population includes data from 2019, 2020, and 2021.

⁴States with data from 2019 included in the reference population for the hospital-level indicators are AK, AR, AZ, CA, CO, DC, FL, GA, HI, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, and WV. States with data from 2020 included in the reference population are the states with 2019 data plus WY. States with data from 2021 included in the reference population are AK, AR, AZ, CA, CO, DC, FL, GA, HI, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, and WV. Note that data from Wisconsin, Oklahoma, and New Hampshire were not included in the reference population (used to develop PSI 04, PSI 09, PSI 10, PSI 11, PSI 12, PSI 14, and PSI 15) due to incomplete procedure dates (PRDAY data element). For hospital-level quality indicators, data from Colorado and Hawaii were not used in the development of PSI 17 due to missing age in days (AGEDAY data element).

general patterns of suspect reporting of POA. The edits do not evaluate whether a valid POA value (e.g., Y or N) is appropriate for the specific diagnosis. There are three hospital-level edit checks:

1. Indication that a hospital has POA reported as Y on all diagnoses on all discharges
2. Indication that a hospital has POA reported as missing on all non-Medicare discharges
3. Indication that a hospital reported POA as missing on all nonexempt diagnoses for 15 percent or more of discharges. The cut-point of 15 percent was determined by 2 times the standard deviation plus the mean of the percentage for hospitals that are required to report POA to CMS.

This document is devoted to listing covariates and coefficients for risk adjustment regression models. The regression coefficients are used to calculate risk-adjusted rates that account for differences in patient populations across hospitals. Certain AHRQ QIs (such as PSI 18 Obstetric Trauma Rate – Vaginal Delivery with Instrument and PSI 19 Obstetric Trauma Rate – Vaginal Delivery without Instrument) are not risk-adjusted because materially important risk factors (e.g., whether the mother is nulliparous or multiparous or the size of the infant) are not available in the HCUP State Inpatient Database (SID).

The majority of the document is devoted to listing covariates and coefficients for risk adjustment regression models. The regression coefficients are used by the prediction module to calculate risk-adjusted rates that account for differences in patient populations across hospitals. Covariates that are considered as potential risk adjusters include sex and age, Major Diagnostic Categories (MDC), Modified Medicare Severity-Diagnosis-Related Group (MS-DRG) categories, Elixhauser Comorbidity Software Refined that were apparently present on admission, patient point-of-origin and whether they were transferred from another facility, and other indicator-specific risk stratifiers. Descriptions of some variable categories are provided in the Appendix tables at the end of the document. Every covariate in every model is a binary indicator variable, coded using 0 or 1. The AHRQ QI software user does not need to manipulate or adjust these coefficients; rather this document is intended to make it transparent to the user how the risk adjusted QI rates are calculated.

In addition to the presentation of the covariates for the risk models, the document also lists weights used to calculate the composite indicator, PSI 90 Patient Safety and Adverse Events Composite.

Additional information on the risk adjustment process and composite indicators may be found in Quality Indicator Empirical Methods, available on the AHRQ QI website.

(<https://qualityindicators.ahrq.gov/modules/Default.aspx>)

Acknowledgments

The AHRQ QI program would like to acknowledge the HCUP Partner organizations that participated in the HCUP SID and SEDD: **Alaska** Department of Health, **Arizona** Department of Health Services, **Arkansas** Department of Health, **California** Department of Health Care Access and Information, **Colorado** Hospital Association, **Connecticut** Hospital Association, **Delaware** Division of Public Health, **District of Columbia** Hospital Association, **Florida** Agency for Health Care Administration, **Georgia** Hospital Association, **Hawaii** Laulima Data Alliance , **Hawaii** University of Hawaii at Hilo, **Illinois** Department of Public Health, **Indiana** Hospital Association, **Iowa** Hospital Association, **Kansas** Hospital Association, **Kentucky** Cabinet for Health and Family Services, **Louisiana** Department of Health , **Maine** Health Data Organization, **Maryland** Health Services Cost Review Commission, **Massachusetts** Center for Health Information and Analysis, **Michigan** Health & Hospital Association, **Minnesota** Hospital Association, **Mississippi** State Department of Health, **Missouri** Hospital Industry Data Institute, **Montana** Hospital Association, **Nebraska** Hospital Association, **Nevada** Center for Health Information Analysis, **New Hampshire** Department of Health & Human Services, **New Jersey** Department of Health, **New Mexico** Department of Health, **New York** State Department of Health, **North Carolina** Department of Health and Human Services, **North Dakota** (data provided by the Minnesota Hospital Association), **Ohio** Hospital Association, **Oklahoma** State Department of Health, **Oregon** Apprise Health Insights, **Pennsylvania** Health Care Cost Containment Council, **Rhode Island** Department of Health, **South Carolina** Revenue and Fiscal Affairs Office, **South Dakota** Association of Healthcare Organizations, **Tennessee** Hospital Association, **Texas** Department of State Health Services, **Utah** Department of Health, **Vermont** Association of Hospitals and Health Systems, **Virginia** Health Information, **Washington** State Department of Health, **West Virginia** Department of Health and Human Resources, **Wisconsin** Department of Health Services, and **Wyoming** Hospital Association.

Parameter Estimates Tables

Table 1. Risk Adjustment Coefficients for PSI 02 - Death Rate in Low-Mortality Diagnosis Related Groups (DRGs)

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	-1.946843541	0.1820506946	-10.6939638187	<.0001
Age_30_34	30 <= Age <= 34	1	-1.340861457	0.1683939591	-7.9626458345	<.0001
Age_35_39	35 <= Age <= 39	1	-1.246836356	0.1573668056	-7.9231217198	<.0001
Age_40_44	40 <= Age <= 44	1	-0.8983418781	0.1408659155	-6.3772834965	<.0001
Age_45_49	45 <= Age <= 49	1	-0.8262316402	0.1303762957	-6.3372842120	<.0001
Age_50_54	50 <= Age <= 54	1	-0.6588543537	0.1252473218	-5.2604266832	<.0001
Age_55_59	55 <= Age <= 59	1	-0.3667525409	0.1076404798	-3.4071990537	0.0007
Age_60_64	60 <= Age <= 64	1	0.0687116834	0.1252021969	0.5488057330	0.5831
Age_70_74	70 <= Age <= 74	1	0.3838082089	0.0866048900	4.4317152152	<.0001
Age_75_79	75 <= Age <= 79	1	0.5208165330	0.1149207151	4.5319639073	<.0001
Age_80_84	80 <= Age <= 84	1	0.6058842423	0.1131530499	5.3545551175	<.0001
Age_85_89	85 <= Age <= 89	1	0.9062880167	0.1130846917	8.0142413917	<.0001
Age_90Plus	Age >= 90	1	1.1706309806	0.1142673725	10.2446652501	<.0001
MALE	Patient Sex Flag: 1=Male / 0=Female	1	0.3342744832	0.0626633860	5.3344465455	<.0001
Age_60_64_MALE	60 <= Age <= 64 MALE	1	-0.2390111561	0.1498889082	-1.5945886784	0.1108
Age_75_79_MALE	75 <= Age <= 79 MALE	1	-0.1167187575	0.1209170005	-0.9652799606	0.3344
Age_80_84_MALE	80 <= Age <= 84 MALE	1	0.0295604999	0.1230413406	0.2402485191	0.8101
Age_85_89_MALE	85 <= Age <= 89 MALE	1	0.0713645164	0.1212126801	0.5887545461	0.5560
Age_90Plus_MALE	Age >= 90 MALE	1	0.0310778959	0.1184753571	0.2623152752	0.7931
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	1	0.3226182561	0.2955689917	1.0915159073	0.2750
CMR_COAG	Coagulopathy	1	0.5841204446	0.0835793828	6.9888102203	<.0001
CMR_DEMENTIA	Dementia	1	0.3434117392	0.0576119181	5.9607760109	<.0001
CMR_DEPRESS	Depression	1	-0.2861885643	0.0626744352	-4.5662727288	<.0001
CMR_DIAB_CX	Diabetes with chronic complications	1	0.0880241716	0.0552019506	1.5945844403	0.1108
CMR_HF	Heart failure	1	0.7757389144	0.0507448931	15.2870341658	<.0001
CMR_LIVER_SEV	Liver disease, moderate to severe	1	1.6362711874	0.1539206771	10.6306132380	<.0001
CMR_NEURO_OTH	Other neurological disorders	1	0.8538455728	0.0640461306	13.3317276873	<.0001
CMR_PARALYSIS	Paralysis	1	0.2347367171	0.0777900459	3.0175675367	0.0025
CMR_PERIVASC	Peripheral vascular disease	1	0.2061079282	0.0689801831	2.9879295609	0.0028
CMR_RENLFL_MOD	Renal failure, moderate	1	0.1133947005	0.0554697709	2.0442612017	0.0409
CMR_RENLFL_SEV	Renal failure, severe	1	0.4072582447	0.1046665533	3.8910065526	<.0001
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	0.3519098538	0.2111988368	1.6662490151	0.0957
CMR_WGHTLOSS	Weight loss	1	0.9905839695	0.0705524212	14.0403965206	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
PS02_NonWt_1	PS02 Comorbidity count using non-weighted method, category 1, count > 3 and count <= 5	1	0.1467718311	0.0433459509	3.3860563231	0.0007
MDC_2	Diseases and disorders of the eye	1	-0.7171375185	0.2286742287	-3.1360661954	0.0017
MDC_3	Diseases and disorders of the ear, nose, mouth and throat	1	-1.279436893	0.1751362352	-7.3053808176	<.0001
MDC_5	Diseases and disorders of the circulatory system	1	-0.3788120144	0.0661162849	-5.7294812486	<.0001
MDC_10	Endocrine, nutritional and metabolic diseases and disorders	1	1.6332986430	0.1193741509	13.6821801960	<.0001
MDC_12	Diseases and disorders of the male reproductive system	1	0.4658927007	0.1084419775	4.2962394384	<.0001
MDC_18	Infectious and parasitic diseases, systemic or unspecified sites	1	0.3326609236	0.1324038406	2.5124718595	0.0120
MDC_19	Mental diseases and disorders	1	-0.2733723186	0.1129040662	-2.4212796553	0.0155
MDC_21	Injuries, poisonings and toxic effects of drugs	1	1.6258688482	0.1627033994	9.9928388373	<.0001
MDRG_812	MAJOR JOINT/LIMB REATTACHMENT PROCEDURE OF UPPER EXTREMITIES	1	-1.062631627	0.1370413770	-7.7540933304	<.0001
MDRG_821	MAJOR THUMB OR JOINT PROCEDURES	1	0.2767572571	0.5051320838	0.5478908703	0.5838
MDRG_822	MAJOR SHOULDER OR ELBOW JOINT PROCEDURES	1	0.6374663466	0.3859054573	1.6518718110	0.0986
MDRG_1909	O.R. PROCEDURE W PRINCIPAL DIAGNOSES OF MENTAL ILLNESS	1	1.9132894056	0.2203207294	8.6841098033	<.0001
MDRG_1915	PSYCHOSES	1	-0.3582841652	0.1061365773	-3.3756898360	0.0007
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.4359423953	0.1075474766	4.0534879035	<.0001
DNR	Do not resuscitate flag	1	1.3940512760	0.0825545400	16.8864277622	<.0001
COVIDDX_Q1	COVID, Quarter 1, 2020	1	2.0342754395	0.3523403877	5.7736084487	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	1.2392998614	0.5922999867	2.0923516617	0.0364
COVIDDX_Q3	COVID, Quarter 3, 2020	1	1.6535672742	0.3060321262	5.4032473467	<.0001
COVIDDX_Q4	COVID, Quarter 4, 2020	1	1.4423906078	0.2577392579	5.5963170659	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.4280037532	0.3506199009	1.2207058186	0.2222
COVIDDX_Q6	COVID, Quarter 2, 2021	1	1.5650993834	0.4259696593	3.6742039001	0.0002
COVIDDX_Q7	COVID, Quarter 3, 2021	1	1.4115113379	0.3191881805	4.4221917480	<.0001
COVIDDX_Q8	COVID, Quarter 4, 2021	1	1.2697688986	0.3311658965	3.8342381025	0.0001
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	-0.1261731136	0.0746803547	-1.6895087620	0.0911

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Q1	Quarter 1, 2020	1	-0.1615543246	0.0908853621	-1.7775615433	0.0755
Q2	Quarter 2, 2020	1	-0.0162028797	0.0973415962	-0.1664538120	0.8678
Q3	Quarter 3, 2020	1	-0.0210896470	0.0953835980	-0.2211034960	0.8250
Q4	Quarter 4, 2020	1	0.0345515525	0.0930485055	0.3713283982	0.7104
Q5	Quarter 1, 2021	1	0.0771865824	0.0955384739	0.8079109830	0.4191
Q6	Quarter 2, 2021	1	-0.1927149475	0.0962573402	-2.0020805389	0.0453
Q7	Quarter 3, 2021	1	0.0896789538	0.0938079205	0.9559848818	0.3391
Intercept	Intercept	1	-7.688271181	0.1132443140	-67.8910129059	<.0001

c-statistic=0.868

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 2. Risk Adjustment Coefficients for PSI 03 - Pressure Ulcer Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	-0.7208876332	0.0793314989	-9.0870290281	<.0001
Age_30_34	30 <= Age <= 34	1	-0.3546525252	0.0753254979	-4.7082665936	<.0001
Age_35_39	35 <= Age <= 39	1	-0.5797252355	0.0738237077	-7.8528328254	<.0001
Age_40_44	40 <= Age <= 44	1	-0.4103017436	0.0596853217	-6.8744162139	<.0001
Age_45_49	45 <= Age <= 49	1	-0.1957930331	0.0340814285	-5.7448599286	<.0001
Age_50_54	50 <= Age <= 54	1	-0.1946089571	0.0445846486	-4.3649319446	<.0001
Age_55_59	55 <= Age <= 59	1	-0.0442275152	0.0281395004	-1.5717235365	0.1160
Age_60_64	60 <= Age <= 64	1	-0.0133526371	0.0228006515	-0.5856252452	0.5581
Age_70_74	70 <= Age <= 74	1	0.0425722946	0.0230263457	1.8488515372	0.0645
Age_75_79	75 <= Age <= 79	1	0.1368224496	0.0337253825	4.0569576852	<.0001
Age_80_84	80 <= Age <= 84	1	0.0701309152	0.0378639968	1.8521794085	0.0640
Age_85_89	85 <= Age <= 89	1	0.0713286273	0.0437996291	1.6285212626	0.1034
Age_90Plus	Age >= 90	1	0.0105026777	0.0504358680	0.2082382656	0.8350
MALE	Patient Sex Flag: 1=Male / 0=Female	1	0.2591121261	0.0171124145	15.1417630416	<.0001
Age_LT30_MALE	Age < 30 MALE	1	0.4508964262	0.0812681838	5.5482527716	<.0001
Age_35_39_MALE	35 <= Age <= 39 MALE	1	0.3872514698	0.0750632603	5.1590014630	<.0001
Age_40_44_MALE	40 <= Age <= 44 MALE	1	0.2190593958	0.0681619928	3.2138056235	0.0013
Age_50_54_MALE	50 <= Age <= 54 MALE	1	0.1047368038	0.0497356853	2.1058683149	0.0352
Age_75_79_MALE	75 <= Age <= 79 MALE	1	-0.0922169862	0.0389426398	-2.3680209336	0.0179
Age_80_84_MALE	80 <= Age <= 84 MALE	1	-0.1173419766	0.0465351527	-2.5215771270	0.0117
Age_85_89_MALE	85 <= Age <= 89 MALE	1	-0.1526201788	0.0500834304	-3.0473187983	0.0023
Age_90Plus_MALE	Age >= 90 MALE	1	-0.1747003310	0.0644815429	-2.7093075490	0.0067
CMR_AIDS	Acquired immune deficiency syndrome	1	-0.1058138874	0.0811623399	-1.3037313548	0.1923
CMR_ALCOHOL	Alcohol abuse	1	-0.1306539843	0.0302348361	-4.3213061873	<.0001
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	-0.2140163965	0.0320904168	-6.6691684783	<.0001
CMR_BLDLOSS	Chronic blood loss anemia (iron deficiency)	1	-0.0649142576	0.0627420705	-1.0346209026	0.3008
CMR_CANCER_LEUK	Leukemia	1	0.2184652507	0.0552489870	3.9541946820	<.0001
CMR_CANCER_LYMPH	Lymphoma	1	0.0513476317	0.0515002536	0.9970364835	0.3187
CMR_CANCER_METS	Metastatic cancer	1	0.0220564996	0.0319896933	0.6894876862	0.4905
CMR_CANCER_NSITU	Solid tumor without metastasis, in situ	1	-0.8992413517	0.5003211185	-1.7973283926	0.0723
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	1	-0.0902956078	0.0315707935	-2.8600994105	0.0042
CMR_CBVD	Cerebrovascular disease	1	-0.1967831405	0.0276135460	-7.1263263444	<.0001
CMR_COAG	Coagulopathy	1	0.0204365074	0.0215046183	0.9503310939	0.3419
CMR_DEMENTIA	Dementia	1	0.1732271734	0.0316596833	5.4715384082	<.0001
CMR_DEPRESS	Depression	1	-0.1783337301	0.0344239472	-5.1805137068	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_DIAB_CX	Diabetes with chronic complications	1	0.2204672207	0.0227754380	9.6800430752	<.0001
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.1736706339	0.0284049992	-6.1140869138	<.0001
CMR_DRUG_ABUSE	Drug abuse	1	-0.1788470000	0.0344692795	-5.1885911881	<.0001
CMR_HF	Heart failure	1	0.0541465752	0.0530909271	1.0198837762	0.3078
CMR_HTN_CX	Hypertension, complicated	1	-0.1026662745	0.0502066167	-2.0448753831	0.0409
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.6015948621	0.0215291882	-27.9432209141	<.0001
CMR_LIVER_MLD	Liver disease, mild	1	-0.1629166772	0.0318482835	-5.1153989967	<.0001
CMR_LIVER_SEV	Liver disease, moderate to severe	1	0.0936405599	0.0446043703	2.0993584131	0.0358
CMR_LUNG_CHRONIC	Chronic pulmonary disease	1	-0.1970056881	0.0182089198	-10.8191858903	<.0001
CMR_NEURO_MOVT	Neurological disorders affecting movement	1	-0.2010658485	0.0432380553	-4.6502056390	<.0001
CMR_NEURO_OTH	Other neurological disorders	1	0.2234349113	0.0263680864	8.4736870280	<.0001
CMR_NEURO_SEIZ	Seizures and epilepsy	1	-0.2307505153	0.0309113860	-7.4649035573	<.0001
CMR_OBESE	Obesity	1	0.0191472747	0.0190100168	1.0072202948	0.3138
CMR_PARALYSIS	Paralysis	1	0.5633863098	0.0288103232	19.5550152272	<.0001
CMR_PERIVASC	Peripheral vascular disease	1	0.1459298938	0.0223950922	6.5161550780	<.0001
CMR_PSYCHOSES	Psychoses	1	-0.1824900913	0.0371873154	-4.9073209383	<.0001
CMR_RENLFL_MOD	Renal failure, moderate	1	-0.4392292771	0.0517881554	-8.4812689964	<.0001
CMR_RENLFL_SEV	Renal failure, severe	1	0.2000900207	0.0341912142	5.8520887643	<.0001
CMR_THYROID_HYPO	Hypothyroidism	1	-0.3109945463	0.0319520174	-9.7331740445	<.0001
CMR_THYROID_OTH	Other thyroid disorders	1	-0.2140502299	0.0593110190	-3.6089454104	0.0003
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	0.0953121525	0.0453462706	2.1018741204	0.0356
CMR_VALVE	Valvular disease	1	-0.1413529395	0.0280974823	-5.0308044622	<.0001
CMR_WGHTLOSS	Weight loss	1	0.7537285676	0.0270808979	27.8324806989	<.0001
PS03_NonWt_1	PS03 Comorbidty count using non-weighted method, category 1, count > 1 and count <= 3	1	0.3205195715	0.0342513124	9.3578770856	<.0001
PS03_NonWt_2	PS03 Comorbidty count using non-weighted method, category 2, count >= 4	1	0.3997293091	0.0505959875	7.9004152031	<.0001
MDC_1	Diseases and disorders of the nervous system	1	1.5595088747	0.0588184631	26.5139344268	<.0001
MDC_2	Diseases and disorders of the eye	1	-2.297496469	0.4054077896	-5.6671246282	<.0001
MDC_3	Diseases and disorders of the ear, nose, mouth and throat	1	-0.3175182076	0.1005727857	-3.1570986669	0.0016
MDC_4	Diseases and disorders of the respiratory system	1	1.8977577891	0.0596240688	31.8287199769	<.0001
MDC_5	Diseases and disorders of the circulatory system	1	1.7420765139	0.0641922823	27.1384105968	<.0001
MDC_7	Diseases and disorders of the hepatobiliary system and pancreas	1	1.4163717312	0.0902505274	15.6937778851	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDC_8	Diseases and disorders of the musculoskeletal system and connective tissue	1	0.6568868270	0.0633779237	10.3645999920	<.0001
MDC_9	Diseases and disorders of the skin, subcutaneous tissue and breast	1	-0.1720685351	0.0998753006	-1.7228337140	0.0849
MDC_11	Diseases and disorders of the kidney and urinary tract	1	0.0962649368	0.0964902323	0.9976650951	0.3184
MDC_12	Diseases and disorders of the male reproductive system	1	-1.829542701	0.2399268465	-7.6254188621	<.0001
MDC_13	Diseases and disorders of the female reproductive system	1	-1.168115594	0.1681685414	-6.9461005285	<.0001
MDC_18	Infectious and parasitic diseases, systemic or unspecified sites	1	2.3306828324	0.0644428208	36.1666792995	<.0001
MDC_21	Injuries, poisonings and toxic effects of drugs	1	0.9673007436	0.0948948144	10.1933993957	<.0001
MDC_22	Burns	1	0.0200321281	0.2018773594	0.0992291963	0.9210
MDC_24	Multiple significant trauma	1	0.1113405155	0.1166145633	0.9547736787	0.3397
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	-2.516800414	0.2310215165	-10.8942251479	<.0001
MDRG_102	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX	1	-2.301798050	0.1050722039	-21.9068218377	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	-2.803413606	0.1018682354	-27.5199977181	<.0001
MDRG_104	SPINAL PROCEDURES	1	-1.342824515	0.1056079945	-12.7151786250	<.0001
MDRG_105	VENTRICULAR SHUNT PROCEDURES	1	-3.151376824	0.4054765439	-7.7720323675	<.0001
MDRG_106	CAROTID ARTERY STENT PROCEDURE	1	-3.228850611	0.4078942715	-7.9159008524	<.0001
MDRG_107	EXTRACRANIAL PROCEDURES	1	-3.237951161	0.2690043066	-12.0368004564	<.0001
MDRG_108	PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC	1	-1.162885005	0.0863449188	-13.4679031565	<.0001
MDRG_109	SPINAL DISORDERS & INJURIES	1	-0.7798127683	0.1604395586	-4.8604768986	<.0001
MDRG_110	NERVOUS SYSTEM NEOPLASMS	1	-3.118357390	0.1810277263	-17.2258551421	<.0001
MDRG_111	DEGENERATIVE NERVOUS SYSTEM DISORDERS	1	-2.484838946	0.0876552452	-28.3478637180	<.0001
MDRG_112	MULTIPLE SCLEROSIS & CEREBELLAR ATAXIA	1	-2.818932181	0.2735116506	-10.3064427946	<.0001
MDRG_113	ACUTE ISCHEMIC STROKE W USE OF THROMBOLYTIC AGENT	1	-3.599748920	0.2203052638	-16.3398225653	<.0001
MDRG_114	INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION	1	-3.502574605	0.0784832185	-44.6283252934	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_115	NONSPECIFIC CVA & PRECEREBRAL OCCLUSION W/O INFARCT	1	-3.217228176	0.5012036766	-6.4190035420	<.0001
MDRG_116	TRANSIENT ISCHEMIA	1	-4.280756761	0.4075294712	-10.5041648865	<.0001
MDRG_117	NONSPECIFIC CEREBROVASCULAR DISORDERS	1	-2.737620423	0.1144584360	-23.9180310253	<.0001
MDRG_118	CRANIAL & PERIPHERAL NERVE DISORDERS	1	-3.213290444	0.1895645789	-16.9509011825	<.0001
MDRG_120	HYPERTENSIVE ENCEPHALOPATHY	1	-3.495598207	0.4869840404	-7.1780549614	<.0001
MDRG_122	TRAUMATIC STUPOR & COMA, COMA >1 HR	1	-3.115785444	0.1931340909	-16.1327574484	<.0001
MDRG_123	TRAUMATIC STUPOR & COMA, COMA <1 HR	1	-3.386546512	0.1956553613	-17.3087335270	<.0001
MDRG_125	OTHER DISORDERS OF NERVOUS SYSTEM	1	-2.405239485	0.1211254533	-19.8574240178	<.0001
MDRG_126	BACTERIAL & TUBERCULOUS INFECTIONS OF NERVOUS SYSTEM	1	-2.175796385	0.1884130703	-11.5480119350	<.0001
MDRG_127	NON-BACTERIAL INFECT OF NERVOUS SYS EXC VIRAL MENINGITIS	1	-1.977908511	0.1684074480	-11.7447804947	<.0001
MDRG_128	SEIZURES	1	-3.012489701	0.1051379287	-28.6527396619	<.0001
MDRG_301	MAJOR HEAD AND NECK PROCEDURES	1	-1.547622213	0.3675452010	-4.2106990088	<.0001
MDRG_302	OTHER EAR, NOSE, MOUTH AND THROAT O.R. PROCEDURES	1	-1.473639219	0.5077824812	-2.9021072477	0.0037
MDRG_306	EAR, NOSE, MOUTH & THROAT MALIGNANCY	1	-0.6829264272	0.3310607225	-2.0628434022	0.0391
MDRG_310	OTHER EAR, NOSE, MOUTH & THROAT DIAGNOSES	1	-1.144068064	0.3433703749	-3.3318776091	0.0009
MDRG_311	DENTAL & ORAL DISEASES	1	-2.100288837	0.5072871300	-4.1402367874	<.0001
MDRG_401	MAJOR CHEST PROCEDURES	1	-2.593216795	0.1013537065	-25.5858111492	<.0001
MDRG_402	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS WITH PRINCIPAL DIAGNOSIS PULMONARY EMBOLISM	1	-1.493380454	0.0733916278	-20.3481037031	<.0001
MDRG_403	PULMONARY EMBOLISM	1	-3.955444601	0.1568500900	-25.2179938157	<.0001
MDRG_404	RESPIRATORY INFECTIONS & INFLAMMATIONS	1	-4.042294206	0.0589099742	-68.6181629471	<.0001
MDRG_405	RESPIRATORY NEOPLASMS	1	-3.155093318	0.1862279832	-16.9421010907	<.0001
MDRG_406	MAJOR CHEST TRAUMA	1	-3.989353879	0.2988816747	-13.3476028031	<.0001
MDRG_407	PLEURAL EFFUSION	1	-4.027247492	0.2879624527	-13.9853215353	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_408	PULMONARY EDEMA & RESPIRATORY FAILURE	1	-3.406855587	0.1380455567	-24.6792122026	<.0001
MDRG_409	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	1	-4.752098283	0.1956612600	-24.2873744271	<.0001
MDRG_410	SIMPLE PNEUMONIA & PLEURISY	1	-3.948154335	0.1004273604	-39.3135328794	<.0001
MDRG_411	INTERSTITIAL LUNG DISEASE	1	-3.343068101	0.2313754450	-14.4486728063	<.0001
MDRG_412	PNEUMOTHORAX	1	-3.611899470	0.1957446758	-18.4520955982	<.0001
MDRG_413	BRONCHITIS & ASTHMA	1	-5.571338392	0.5025303273	-11.0865714748	<.0001
MDRG_414	RESPIRATORY SIGNS & SYMPTOMS	1	-4.118222553	0.5799950205	-7.1004446710	<.0001
MDRG_415	OTHER RESPIRATORY SYSTEM DIAGNOSES	1	-3.369501662	0.3024725026	-11.1398610878	<.0001
MDRG_416	RESPIRATORY SYSTEM DIAGNOSIS W VENTILATOR SUPPORT	1	-1.655136988	0.0402644151	-41.1066939360	<.0001
MDRG_501	OTHER HEART ASSIST SYSTEM IMPLANT	1	-1.394208422	0.1158005899	-12.0397350602	<.0001
MDRG_503	CONCOMITANT AORTIC AND MITRAL VALVE PROCEDURES	1	-2.007124164	0.0788994310	-25.4390195010	<.0001
MDRG_505	OTHER CARDIOTHORACIC PROCEDURES	1	-2.172987885	0.1524783714	-14.2511220742	<.0001
MDRG_506	CORONARY BYPASS W PTCA	1	-1.973261081	0.2823184461	-6.9894869021	<.0001
MDRG_507	CORONARY BYPASS WITH CARDIAC CATHETERIZATION OR OPEN ABLATION	1	-2.243031477	0.1066331410	-21.0350314753	<.0001
MDRG_508	CORONARY BYPASS W/O CARDIAC CATH	1	-2.989553289	0.1301447908	-22.9709792584	<.0001
MDRG_509	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE	1	-1.440267144	0.0732968474	-19.6497829677	<.0001
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	-3.647127051	0.1724406255	-21.1500453568	<.0001
MDRG_511	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE	1	-3.793830729	0.1193825296	-31.7787765181	<.0001
MDRG_512	AICD PROCEDURES	1	-2.588239591	0.3540284194	-7.3108243551	<.0001
MDRG_513	PERC CARDIOVASC PROC W/O INTRALUMINAL DEVICE	1	-3.772385558	0.4106243657	-9.1869501011	<.0001
MDRG_514	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES	1	-2.605352668	0.0850984341	-30.6157533592	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_515	UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS	1	-2.689889513	0.2662200856	-10.1040066404	<.0001
MDRG_517	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT	1	-2.682715341	0.2490303996	-10.7726419929	<.0001
MDRG_519	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES	1	-1.353181827	0.0963946478	-14.0379352766	<.0001
MDRG_520	ACUTE MYOCARDIAL INFARCTION	1	-3.558082382	0.0981709576	-36.2437371372	<.0001
MDRG_522	CIRCULATORY DISORDERS EXCEPT AMI, W CARD CATH	1	-3.787918874	0.1186777204	-31.9176915459	<.0001
MDRG_523	ACUTE & SUBACUTE ENDOCARDITIS	1	-2.740145221	0.3202098410	-8.5573423113	<.0001
MDRG_524	HEART FAILURE & SHOCK	1	-3.575864469	0.1037862847	-34.4541138444	<.0001
MDRG_526	CARDIAC ARREST, UNEXPLAINED	1	-2.272883369	0.3179167093	-7.1493045250	<.0001
MDRG_527	PERIPHERAL VASCULAR DISORDERS	1	-3.291249107	0.1442164136	-22.8215986314	<.0001
MDRG_528	ATHEROSCLEROSIS	1	-4.040481106	0.4454992820	-9.0695569443	<.0001
MDRG_529	HYPERTENSION	1	-5.287973225	0.4122298813	-12.8277290536	<.0001
MDRG_530	CARDIAC CONGENITAL & VALVULAR DISORDERS	1	-3.967433892	0.4955548218	-8.0060443712	<.0001
MDRG_531	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS	1	-4.007901615	0.1203158073	-33.3115132956	<.0001
MDRG_533	SYNCOPE & COLLAPSE	1	-4.685435176	0.3058013995	-15.3218238491	<.0001
MDRG_534	CHEST PAIN	1	-5.013618860	0.5730049496	-8.7496955540	<.0001
MDRG_535	OTHER CIRCULATORY SYSTEM DIAGNOSES	1	-3.065895002	0.1008198006	-30.4096515115	<.0001
MDRG_536	OTHER ENDOVASCULAR CARDIAC VALVE PROCEDURES	1	-2.349224594	0.4251482817	-5.5256593888	<.0001
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	-2.966767469	0.1785207621	-16.6186130661	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	-1.701396311	0.1377610210	-12.3503462690	<.0001
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	-2.027622871	0.0794210229	-25.5300523386	<.0001
MDRG_543	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES	1	-3.564373259	0.2340398263	-15.2297722823	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-2.633381066	0.1391068425	-18.9306364670	<.0001
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	-0.1921000624	0.0876360750	-2.1920203809	0.0284

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	-0.7733557676	0.0702801559	-11.0038994394	<.0001
MDRG_604	PERITONEAL ADHESIOLYSIS	1	-1.112445302	0.1605632716	-6.9283920968	<.0001
MDRG_607	MINOR SMALL & LARGE BOWEL PROCEDURES	1	-1.079057756	0.2903332710	-3.7166176387	0.0002
MDRG_609	INGUINAL & FEMORAL HERNIA PROCEDURES	1	-1.534410719	0.4281199563	-3.5840672599	0.0003
MDRG_610	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL	1	-1.783340630	0.2701853486	-6.6004342561	<.0001
MDRG_611	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES	1	-0.3277134075	0.1087558270	-3.0132951635	0.0026
MDRG_612	MAJOR ESOPHAGEAL DISORDERS	1	-1.898299892	0.2806823465	-6.7631609747	<.0001
MDRG_613	MAJOR GASTROINTESTINAL DISORDERS & PERITONEAL INFECTIONS	1	-1.572366339	0.1478242082	-10.6367310030	<.0001
MDRG_614	DIGESTIVE MALIGNANCY	1	-1.423678906	0.1899221280	-7.4961191786	<.0001
MDRG_615	G.I. HEMORRHAGE	1	-2.033297274	0.1153014910	-17.6346138823	<.0001
MDRG_616	COMPLICATED PEPTIC ULCER	1	-1.527159634	0.2176944942	-7.0151504724	<.0001
MDRG_617	UNCOMPLICATED PEPTIC ULCER	1	-1.821878520	0.5016208597	-3.6319831698	0.0003
MDRG_618	INFLAMMATORY BOWEL DISEASE	1	-2.186436189	0.2434750782	-8.9801231603	<.0001
MDRG_619	G.I. OBSTRUCTION	1	-1.932030112	0.1270893424	-15.2021410695	<.0001
MDRG_620	ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS	1	-2.529327250	0.1266807558	-19.9661521967	<.0001
MDRG_621	OTHER DIGESTIVE SYSTEM DIAGNOSES	1	-1.796084580	0.1280358617	-14.0279805743	<.0001
MDRG_622	APPENDIX PROCEDURES	1	-2.846027308	0.4515329262	-6.3030338273	<.0001
MDRG_701	PANCREAS, LIVER & SHUNT PROCEDURES	1	-2.160089692	0.1624369368	-13.2980203515	<.0001
MDRG_702	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E.	1	-3.201991664	0.5861200246	-5.4630306587	<.0001
MDRG_704	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E.	1	-3.185913785	0.3814521795	-8.3520660165	<.0001
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	-3.671995722	0.1940920607	-18.9188352620	<.0001
MDRG_706	HEPATOBIILIARY DIAGNOSTIC PROCEDURES	1	-2.605027413	0.4571716756	-5.6981382531	<.0001
MDRG_707	OTHER HEPATOBIILIARY OR PANCREAS O.R. PROCEDURES	1	-1.363932105	0.2088323764	-6.5312291545	<.0001
MDRG_708	CIRRHOSIS & ALCOHOLIC HEPATITIS	1	-2.899592119	0.1451015459	-19.9831924727	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_709	MALIGNANCY OF HEPATOBILIARY SYSTEM OR PANCREAS	1	-3.193446308	0.2089992762	-15.2797003254	<.0001
MDRG_710	DISORDERS OF PANCREAS EXCEPT MALIGNANCY	1	-3.827124947	0.1848889462	-20.6995876544	<.0001
MDRG_711	DISORDERS OF LIVER EXCEPT MALIG,CIRR,ALC HEPA	1	-2.990024176	0.1466142606	-20.3938154665	<.0001
MDRG_712	DISORDERS OF THE BILIARY TRACT	1	-3.600194578	0.2090964234	-17.2178678128	<.0001
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-2.143593403	0.1521774734	-14.0861413653	<.0001
MDRG_802	SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFECTION OR EXT FUS	1	-0.9082653041	0.1741046717	-5.2167773270	<.0001
MDRG_803	SPINAL FUSION EXCEPT CERVICAL	1	-2.338130394	0.1811294061	-12.9086184559	<.0001
MDRG_804	BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY	1	-2.106863036	0.4367133195	-4.8243617542	<.0001
MDRG_806	REVISION OF HIP OR KNEE REPLACEMENT	1	-1.515740306	0.1374675617	-11.0261671009	<.0001
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-2.022629946	0.0994872804	-20.3305381272	<.0001
MDRG_808	CERVICAL SPINAL FUSION	1	-1.791629723	0.1578978565	-11.3467640610	<.0001
MDRG_810	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	1	-1.369295385	0.1534742253	-8.9219892239	<.0001
MDRG_811	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT	1	-1.556504614	0.0749494318	-20.7673971127	<.0001
MDRG_812	MAJOR JOINT/LIMB REATTACHMENT PROCEDURE OF UPPER EXTREMITIES	1	-3.307217445	0.5708224995	-5.7937755561	<.0001
MDRG_813	KNEE PROCEDURES W PDX OF INFECTION	1	-1.371054643	0.2332410906	-5.8782723037	<.0001
MDRG_814	KNEE PROCEDURES W/O PDX OF INFECTION	1	-2.421448536	0.4984604279	-4.8578551086	<.0001
MDRG_815	BACK & NECK PROC EXC SPINAL FUSION OR DISC DEVICE/NEUROSTIM	1	-1.931446161	0.2021405796	-9.5549649888	<.0001
MDRG_816	LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR	1	-2.220621273	0.1388380183	-15.9943313800	<.0001
MDRG_817	LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR	1	-2.571075595	0.5782166313	-4.4465611253	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_818	LOCAL EXCISION & REMOVAL INT FIX DEVICES OF HIP & FEMUR	1	-0.6800283648	0.3650950872	-1.8626061775	0.0625
MDRG_819	SOFT TISSUE PROCEDURES	1	-1.262821756	0.1438167699	-8.7807684460	<.0001
MDRG_820	FOOT PROCEDURES	1	-2.028871840	0.3810681480	-5.3241706261	<.0001
MDRG_826	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC	1	-1.852393976	0.1610607873	-11.5012102376	<.0001
MDRG_827	FRACTURES OF FEMUR	1	-0.8004424742	0.2803269902	-2.8553885361	0.0043
MDRG_828	FRACTURES OF HIP & PELVIS	1	-1.847611971	0.1663777957	-11.1049191588	<.0001
MDRG_830	OSTEOMYELITIS	1	-1.214171235	0.2060742336	-5.8919119259	<.0001
MDRG_831	PATHOLOGICAL FRACTURES & MUSCULOSKELET & CONN TISS MALIG	1	-1.534984102	0.1221265173	-12.5688027162	<.0001
MDRG_832	CONNECTIVE TISSUE DISORDERS	1	-1.683794432	0.1951504521	-8.6281861730	<.0001
MDRG_833	SEPTIC ARTHRITIS	1	-2.368452877	0.5960146289	-3.9738166848	<.0001
MDRG_834	MEDICAL BACK PROBLEMS	1	-2.153152725	0.1253762482	-17.1735297256	<.0001
MDRG_835	BONE DISEASES & ARTHROPATHIES	1	-2.129623785	0.2609097619	-8.1623001352	<.0001
MDRG_836	SIGNS & SYMPTOMS OF MUSCULOSKELETAL SYSTEM & CONN TISSUE	1	-2.464503622	0.3440825368	-7.1625361896	<.0001
MDRG_837	TENDONITIS, MYOSITIS & BURSITIS	1	-1.858968810	0.2092561438	-8.8837000249	<.0001
MDRG_838	AFTERCARE, MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	1	-0.5503478045	0.1122860390	-4.9013021505	<.0001
MDRG_839	FX, SPRN, STRN & DISL EXCEPT FEMUR, HIP, PELVIS & THIGH	1	-2.640165940	0.2382874770	-11.0797511213	<.0001
MDRG_840	OTHER MUSCULOSKELETAL SYS & CONNECTIVE TISSUE DIAGNOSES	1	-2.110245080	0.2220239246	-9.5045841728	<.0001
MDRG_841	HIP REPLACEMENT WITH PRINCIPAL DIAGNOSIS OF HIP FRACTURE	1	-1.497053921	0.1299183538	-11.5230364084	<.0001
MDRG_903	OTHER SKIN, SUBCUT TISS & BREAST PROC	1	-0.5979420152	0.1347165842	-4.4385182342	<.0001
MDRG_905	BREAST BIOPSY, LOCAL EXCISION & OTHER BREAST PROCEDURES	1	-1.486586506	0.5863388988	-2.5353707706	0.0112
MDRG_906	SKIN ULCERS	1	0.3706591483	0.1435416023	2.5822419596	0.0098
MDRG_907	MAJOR SKIN DISORDERS	1	-1.046097813	0.3748828383	-2.7904659962	0.0053
MDRG_908	MALIGNANT BREAST DISORDERS	1	-0.7146688110	0.6114440156	-1.1688213357	0.2425
MDRG_910	CELLULITIS	1	-1.614818714	0.1648812231	-9.7938302713	<.0001
MDRG_911	TRAUMA TO THE SKIN, SUBCUT TISS & BREAST	1	-1.603328436	0.3035656432	-5.2816531516	<.0001
MDRG_912	MINOR SKIN DISORDERS	1	-1.134809243	0.2865278981	-3.9605541033	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1002	AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS	1	-1.217475713	0.1532910047	-7.9422515028	<.0001
MDRG_1003	O.R. PROCEDURES FOR OBESITY	1	-2.119351700	0.5045970643	-4.2000872581	<.0001
MDRG_1006	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC	1	-0.6507697607	0.1687698068	-3.8559608075	0.0001
MDRG_1007	DIABETES	1	-1.922839791	0.1110899601	-17.3088530212	<.0001
MDRG_1008	MISC DISORDERS OF NUTRITION,METABOLISM,FLUIDS/ELECT ROLYTES	1	-1.486608561	0.0940605619	-15.8048020415	<.0001
MDRG_1009	INBORN AND OTHER DISORDERS OF METABOLISM	1	-1.567645504	0.5802412279	-2.7017134058	0.0069
MDRG_1010	ENDOCRINE DISORDERS	1	-1.698474717	0.1990019938	-8.5349633189	<.0001
MDRG_1101	KIDNEY TRANSPLANT	1	-3.235349552	0.5984322650	-5.4063755265	<.0001
MDRG_1102	MAJOR BLADDER PROCEDURES	1	-1.119331994	0.2535888816	-4.4139632100	<.0001
MDRG_1103	KIDNEY & URETER PROCEDURES FOR NEOPLASM	1	-2.048248371	0.3122428722	-6.5597922455	<.0001
MDRG_1104	KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM	1	-1.670393181	0.1668989290	-10.0084116254	<.0001
MDRG_1107	TRANSURETHRAL PROCEDURES	1	-1.636440046	0.3080786666	-5.3117603507	<.0001
MDRG_1109	OTHER KIDNEY & URINARY TRACT PROCEDURES	1	-0.5342021842	0.1136423408	-4.7007319654	<.0001
MDRG_1110	RENAL FAILURE	1	-1.730357859	0.1194510538	-14.4859153929	<.0001
MDRG_1112	KIDNEY & URINARY TRACT NEOPLASMS	1	-1.482678309	0.3700500280	-4.0066969233	<.0001
MDRG_1113	KIDNEY & URINARY TRACT INFECTIONS	1	-1.798273605	0.1541101266	-11.6687569106	<.0001
MDRG_1116	KIDNEY & URINARY TRACT SIGNS & SYMPTOMS	1	-1.990291050	0.5080778206	-3.9172956759	<.0001
MDRG_1118	OTHER KIDNEY & URINARY TRACT DIAGNOSES	1	-1.079873375	0.1727305681	-6.2517792129	<.0001
MDRG_1202	PENIS PROCEDURES	1	1.5517774626	0.5578499856	2.7817110383	0.0054
MDRG_1204	TRANSURETHRAL PROSTATECTOMY	1	0.4392626507	0.5088360365	0.8632695391	0.3880
MDRG_1207	MALIGNANCY, MALE REPRODUCTIVE SYSTEM	1	1.2618696297	0.4457039052	2.8311836959	0.0046
MDRG_1304	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	-0.9682080002	0.3923906634	-2.4674593220	0.0136
MDRG_1310	INFECTIONS, FEMALE REPRODUCTIVE SYSTEM	1	-0.4398449911	0.4776174298	-0.9209148656	0.3571

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1602	OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS	1	0.0574052994	0.2422522409	0.2369649883	0.8127
MDRG_1603	MAJOR HEMATOL/IMMUN DIAG EXC SICKLE CELL CRISIS & COAGUL	1	-1.684393984	0.1832927859	-9.1896360016	<.0001
MDRG_1604	RED BLOOD CELL DISORDERS	1	-2.148494671	0.1564676006	-13.7312431603	<.0001
MDRG_1605	COAGULATION DISORDERS	1	-2.545401015	0.3524242409	-7.2225480535	<.0001
MDRG_1606	RETICULOENDOTHELIAL & IMMUNITY DISORDERS	1	-1.530213016	0.3538816875	-4.3240808167	<.0001
MDRG_1708	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC	1	-0.0330660491	0.1351997711	-0.2445717833	0.8068
MDRG_1709	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W MAJ O.R. PROC	1	-0.7245665512	0.2660583742	-2.7233367616	0.0065
MDRG_1710	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W OTHER O.R. PROC	1	-0.3291694443	0.2321525530	-1.4179014618	0.1562
MDRG_1711	ACUTE LEUKEMIA W/O MAJOR O.R. PROCEDURE	1	-0.4709631131	0.1288221086	-3.6559183680	0.0003
MDRG_1712	CHEMO W ACUTE LEUKEMIA	1	-2.391340751	0.3377641594	-7.0799126669	<.0001
MDRG_1713	LYMPHOMA & NON-ACUTE LEUKEMIA	1	-0.6159153122	0.1190756605	-5.1724702557	<.0001
MDRG_1714	OTHER MYELOPROLIF DIS OR POORLY DIFF NEOPL DIAG	1	-0.7623090183	0.2255503886	-3.3797725780	0.0007
MDRG_1715	CHEMOTHERAPY W/O ACUTE LEUKEMIA AS SECONDARY DIAGNOSIS	1	-2.406187110	0.2352572310	-10.2278986288	<.0001
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE	1	-1.858409893	0.0385346440	-48.2269900102	<.0001
MDRG_1802	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC	1	-2.761334341	0.0944377487	-29.2397307054	<.0001
MDRG_1803	POSTOPERATIVE & POST-TRAUMATIC INFECTIONS	1	-4.174205101	0.1873720926	-22.2776243993	<.0001
MDRG_1804	FEVER	1	-5.051842142	0.5592879229	-9.0326322727	<.0001
MDRG_1805	VIRAL ILLNESS	1	-4.296703227	0.4106786403	-10.4624463166	<.0001
MDRG_1806	OTHER INFECTIOUS & PARASITIC DISEASES DIAGNOSES	1	-3.295067416	0.2431602017	-13.5510144846	<.0001
MDRG_1807	SEPTICEMIA OR SEVERE SEPSIS W MV >96 HOURS	1	-1.722905311	0.0405717137	-42.4656775286	<.0001
MDRG_1808	SEPTICEMIA OR SEVERE SEPSIS W/O MV >96 HOURS	1	-3.544784076	0.0523270148	-67.7429065319	<.0001
MDRG_1909	O.R. PROCEDURE W PRINCIPAL DIAGNOSES OF MENTAL ILLNESS	1	0.0140924252	0.3237288457	0.0435315709	0.9653

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1913	DISORDERS OF PERSONALITY & IMPULSE CONTROL	1	-1.752425818	0.4523896395	-3.8737089993	0.0001
MDRG_1914	ORGANIC DISTURBANCES & MENTAL RETARDATION	1	-1.179749793	0.1534828589	-7.6865247493	<.0001
MDRG_1915	PSYCHOSES	1	-3.947425442	0.1600112525	-24.6696740364	<.0001
MDRG_2018	ALCOHOL/DRUG ABUSE OR DEPENDENCE	1	-2.877914864	0.1558579899	-18.4649812749	<.0001
MDRG_2101	WOUND DEBRIDEMENTS FOR INJURIES	1	-0.7029733528	0.1900828992	-3.6982461638	0.0002
MDRG_2102	SKIN GRAFTS FOR INJURIES	1	-1.505512267	0.3567960064	-4.2195322825	<.0001
MDRG_2104	OTHER O.R. PROCEDURES FOR INJURIES	1	-1.759420009	0.1352603293	-13.0076572901	<.0001
MDRG_2106	ALLERGIC REACTIONS	1	-2.762061925	0.5096953566	-5.4190447087	<.0001
MDRG_2107	POISONING & TOXIC EFFECTS OF DRUGS	1	-2.495406475	0.1410450554	-17.6922648447	<.0001
MDRG_2108	COMPLICATIONS OF TREATMENT	1	-2.418730529	0.1757500027	-13.7623356602	<.0001
MDRG_2109	OTHER INJURY, POISONING & TOXIC EFFECT DIAG	1	-3.232148430	0.5812767641	-5.5604294370	<.0001
MDRG_2210	EXTENSIVE BURNS OR FULL THICKNESS BURNS W MV >96 HRS W SKIN GRAFT	1	1.9422890328	0.3794493069	5.1187049159	<.0001
MDRG_2214	NON-EXTENSIVE BURNS	1	-1.607745036	0.4642536578	-3.4630745690	0.0005
MDRG_2301	O.R. PROC W DIAGNOSES OF OTHER CONTACT W HEALTH SERVICES	1	0.8995063468	0.1511263679	5.9520145912	<.0001
MDRG_2302	REHABILITATION	1	-0.4922730220	0.1348810997	-3.6496812599	0.0003
MDRG_2303	SIGNS & SYMPTOMS	1	-0.9763306695	0.1327112601	-7.3568035532	<.0001
MDRG_2304	AFTERCARE	1	0.0193682204	0.1503318058	0.1288364781	0.8975
MDRG_2305	OTHER FACTORS INFLUENCING HEALTH STATUS	1	-2.038656628	0.2615152453	-7.7955555733	<.0001
MDRG_2406	CRANIOTOMY FOR MULTIPLE SIGNIFICANT TRAUMA	1	0.8927662043	0.2089101999	4.2734447856	<.0001
MDRG_2408	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA	1	0.3489300141	0.1287402040	2.7103422494	0.0067
MDRG_2409	OTHER MULTIPLE SIGNIFICANT TRAUMA	1	-0.7611136277	0.1838234666	-4.1404595495	<.0001
MDRG_2501	HIV W EXTENSIVE O.R. PROCEDURE	1	1.2099517724	0.1787267854	6.7698401778	<.0001
MDRG_2502	HIV W MAJOR RELATED CONDITION	1	-0.4294187920	0.1388240418	-3.0932595415	0.0020
MDRG_2503	HIV W OR W/O OTHER RELATED CONDITION	1	-1.180262609	0.5055727404	-2.3345060252	0.0196

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_7701	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	1	0.1541873208	0.0821008661	1.8780230729	0.0604
MDRG_7702	LIVER TRANSPLANT	1	-1.510780510	0.2104117494	-7.1801147707	<.0001
MDRG_7703	LUNG TRANSPLANT	1	-1.605435258	0.3543045918	-4.5312290483	<.0001
MDRG_7705	ALLOGENEIC OR AUTOLOGOUS BONE MARROW TRANSPLANT	1	-0.9736107264	0.1900764483	-5.1222060125	<.0001
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.3575587240	0.0417895493	8.5561756427	<.0001
COVIDDX_Q1	COVID, Quarter 1, 2020	1	-0.9825549405	0.5051768638	-1.9449721688	0.0518
COVIDDX_Q2	COVID, Quarter 2, 2020	1	1.5940524291	0.0731104210	21.8033545331	<.0001
COVIDDX_Q3	COVID, Quarter 3, 2020	1	1.2633246010	0.0630316236	20.0427107786	<.0001
COVIDDX_Q4	COVID, Quarter 4, 2020	1	0.7536668842	0.0575295874	13.1005091255	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.9451117488	0.0562141625	16.8126981903	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	1.1944498166	0.0691259238	17.2793324256	<.0001
COVIDDX_Q7	COVID, Quarter 3, 2021	1	0.9053871914	0.0682094533	13.2736321395	<.0001
COVIDDX_Q8	COVID, Quarter 4, 2021	1	1.1207146495	0.0593809910	18.8732897520	<.0001
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	-0.1054063883	0.0366920460	-2.8727312835	0.0041
Q1	Quarter 1, 2020	1	-0.3049474969	0.0393554377	-7.7485479740	<.0001
Q2	Quarter 2, 2020	1	-0.2737265584	0.0397617719	-6.8841639954	<.0001
Q3	Quarter 3, 2020	1	-0.2712205133	0.0360269880	-7.5282594566	<.0001
Q4	Quarter 4, 2020	1	-0.1469037900	0.0360844366	-4.0711121976	<.0001
Q5	Quarter 1, 2021	1	-0.0579328349	0.0342882043	-1.6895849788	0.0911
Q6	Quarter 2, 2021	1	-0.2771827194	0.0353970993	-7.8306619745	<.0001
Q7	Quarter 3, 2021	1	-0.2004121265	0.0320456573	-6.2539558717	<.0001
Intercept	Intercept	1	-6.680232747	0.0806081017	-82.8729694503	<.0001

c-statistic=0.854

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 3. Risk Adjustment Coefficients for PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications Stratum: Deep Vein Thrombosis/Pulmonary Embolism (DVT/PE)

Parameter	Label	DF	Estimate	Standard Error	Z Statistics	Prob Z Statistics
Age_LT30	Age < 30	1	-0.7180114195	0.2225905624	-3.2257046825	0.0013
Age_30_34	30 <= Age <= 34	1	-0.7664727988	0.1625906439	-4.7141261047	<.0001
Age_35_39	35 <= Age <= 39	1	-0.5117061759	0.1385109934	-3.6943361927	0.0002
Age_40_44	40 <= Age <= 44	1	-0.2945874110	0.1664591193	-1.7697282802	0.0768
Age_45_49	45 <= Age <= 49	1	-0.2457692660	0.1481186495	-1.6592729334	0.0971
Age_50_54	50 <= Age <= 54	1	-0.0620749352	0.0922211734	-0.6731093622	0.5009
Age_55_59	55 <= Age <= 59	1	-0.0408930980	0.0852342595	-0.4797730188	0.6314
Age_60_64	60 <= Age <= 64	1	-0.0210390358	0.0809805055	-0.2598037103	0.7950
Age_70_74	70 <= Age <= 74	1	0.3684924563	0.0690043126	5.3401366127	<.0001
Age_75_79	75 <= Age <= 79	1	0.2674243029	0.0763285930	3.5035927218	0.0005
Age_80_84	80 <= Age <= 84	1	0.2696751590	0.1025260446	2.6303088162	0.0085
Age_85Plus	Age >= 85	1	0.6566557789	0.0869915333	7.5485021789	<.0001
MALE	Patient Sex Flag: 1=Male / 0=Female	1	-0.0386174950	0.0449461471	-0.8591947815	0.3902
Age_LT30 MALE	Age < 30 MALE	1	-0.2714399597	0.2724138683	-0.9964248933	0.3190
Age_40_44 MALE	40 <= Age <= 44 MALE	1	-0.2821261152	0.2245518062	-1.2563965524	0.2090
Age_45_49 MALE	45 <= Age <= 49 MALE	1	-0.2625416771	0.1900255121	-1.3816127855	0.1671
Age_80_84 MALE	80 <= Age <= 84 MALE	1	0.2729615078	0.1238083297	2.2047103648	0.0275
CMR_AIDS	Acquired immune deficiency syndrome	1	-0.5467809287	0.2766304370	-1.9765754434	0.0481
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	-0.2941427272	0.0484776901	-6.0675895819	<.0001
CMR_BLDLOSS	Chronic blood loss anemia (iron deficiency)	1	-0.6085408545	0.2162329207	-2.8142840252	0.0049
CMR_CANCER_METS	Metastatic cancer	1	0.7952166213	0.0590831143	13.4592875032	<.0001
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	1	0.2058105755	0.0832325663	2.4727169277	0.0134
CMR_CBVD	Cerebrovascular disease	1	0.0911507978	0.0769255389	1.1849224481	0.2360
CMR_COAG	Coagulopathy	1	0.5776607426	0.0545617333	10.5872872368	<.0001
CMR_DEPRESS	Depression	1	-0.3217702999	0.0679574458	-4.7348792512	<.0001
CMR_DRUG_ABUSE	Drug abuse	1	-0.2606914028	0.1319093199	-1.9762925241	0.0481
CMR_HF	Heart failure	1	0.3309416322	0.0507190543	6.5249961183	<.0001
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.2085390968	0.0479877076	-4.3456774108	<.0001
CMR_LIVER_SEV	Liver disease, moderate to severe	1	0.8966237031	0.1460373093	6.1396892841	<.0001
CMR_LUNG_CHRONIC	Chronic pulmonary disease	1	0.1416812858	0.0478438860	2.9613247914	0.0031
CMR_NEURO_OTH	Other neurological disorders	1	0.5687565004	0.0573399596	9.9190251247	<.0001
CMR_OBESE	Obesity	1	-0.1395729123	0.0499303872	-2.7953500915	0.0052
CMR_PARALYSIS	Paralysis	1	0.1067786746	0.0768045039	1.3902657935	0.1644
CMR_PERIVASC	Peripheral vascular disease	1	0.2719755896	0.0520102498	5.2292690550	<.0001
CMR_PSYCHOSES	Psychoses	1	-0.2779987617	0.1223549550	-2.2720678668	0.0231

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z Statistics	Prob Z Statistics
CMR_PULMCIRC	Pulmonary circulation disease	1	0.1100985695	0.0709746637	1.5512376366	0.1208
CMR_RENLFL_MOD	Renal failure, moderate	1	0.2635314912	0.0627130006	4.2021827807	<.0001
CMR_RENLFL_SEV	Renal failure, severe	1	0.6723418959	0.0809712587	8.3034635600	<.0001
CMR_THYROID_HYPO	Hypothyroidism	1	-0.1910858036	0.0635218467	-3.0081903096	0.0026
CMR_VALVE	Valvular disease	1	0.0533503187	0.0682322394	0.7818931214	0.4343
CMR_WGHTLOSS	Weight loss	1	0.1579108451	0.0579387911	2.7254770437	0.0064
MDC_1	Diseases and disorders of the nervous system	1	0.4081821189	0.1358340345	3.0050062218	0.0027
MDC_3	Diseases and disorders of the ear, nose, mouth and throat	1	-1.246808228	0.5865253742	-2.1257532628	0.0335
MDC_4	Diseases and disorders of the respiratory system	1	0.8675590864	0.1121941261	7.7326604933	<.0001
MDC_5	Diseases and disorders of the circulatory system	1	0.3368026061	0.0779606571	4.3201612042	<.0001
MDC_8	Diseases and disorders of the musculoskeletal system and connective tissue	1	-0.0739107017	0.0799845162	-0.9240626212	0.3555
MDC_9	Diseases and disorders of the skin, subcutaneous tissue and breast	1	-1.241705568	0.3963246514	-3.1330515624	0.0017
MDC_10	Endocrine, nutritional and metabolic diseases and disorders	1	-0.5368783587	0.3072939166	-1.7471167817	0.0806
MDC_11	Diseases and disorders of the kidney and urinary tract	1	-0.4919311698	0.1806278257	-2.7234517608	0.0065
MDC_13	Diseases and disorders of the female reproductive system	1	-0.9164760040	0.2405103700	-3.8105467299	0.0001
MDC_22	Burns	1	1.7809806868	0.4425630404	4.0242418009	<.0001
MDC_24	Multiple significant trauma	1	0.8680502032	0.1179792715	7.3576501375	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	0.5148067883	0.2631514850	1.9563134453	0.0504
MDRG_102	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX	1	1.2367639927	0.1339728167	9.2314547338	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	0.3203825085	0.1553503346	2.0623226160	0.0392
MDRG_401	MAJOR CHEST PROCEDURES	1	-0.3657787703	0.1354828806	-2.6998154213	0.0069
MDRG_501	OTHER HEART ASSIST SYSTEM IMPLANT	1	1.3456605454	0.2221878093	6.0564103378	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z Statistics	Prob Z Statistics
MDRG_507	CORONARY BYPASS WITH CARDIAC CATHETERIZATION OR OPEN ABLATION	1	0.2341445841	0.2453939718	0.9541578483	0.3400
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	-1.433386855	0.6568447961	-2.1822306637	0.0291
MDRG_511	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE	1	-0.3466922426	0.1271447822	-2.7267516342	0.0064
MDRG_513	PERC CARDIOVASC PROC W/O INTRALUMINAL DEVICE	1	0.6508973920	0.2454550743	2.6517984759	0.0080
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	-1.225393312	0.3002137879	-4.0817356226	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	0.6153111074	0.2106009026	2.9216926417	0.0035
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-1.663605110	0.3663345756	-4.5412178412	<.0001
MDRG_611	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES	1	0.2627823636	0.1968822452	1.3347184423	0.1820
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-0.9061089519	0.3049654787	-2.9711853151	0.0030
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-0.6049720240	0.1369595720	-4.4171576705	<.0001
MDRG_905	BREAST BIOPSY, LOCAL EXCISION & OTHER BREAST PROCEDURES	1	2.9093436107	0.6117021082	4.7561444886	<.0001
MDRG_1306	VAGINA, CERVIX & VULVA PROCEDURES	1	1.5859976582	0.5557989699	2.8535455158	0.0043
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE	1	0.4256856913	0.1021058030	4.1690646251	<.0001
MDRG_1802	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC	1	-0.1918714725	0.1859956085	-1.0315914129	0.3023
MDRG_2406	CRANIOTOMY FOR MULTIPLE SIGNIFICANT TRAUMA	1	2.5762639745	0.2362279516	10.9058388620	<.0001
TRANSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.3167050421	0.0495424488	6.3925996688	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z Statistics	Prob Z Statistics
RegVarPS04_DVT_PE_ANY	PSI04 DVT PE Regression variable: Any Triggering Complication POA	1	-0.4784035549	0.0447735454	-10.6849602956	<.0001
RegVarPS04_DVT_PE_SEVERE	PSI04 DVT PE Regression variable: Triggering Complication Severe	1	0.8151947859	0.0428793259	19.0113712959	<.0001
RegVarPS04_GIHEMORRHAGE_SEVERE	PSI04 GIHEMORRHAGE Regression variable: Triggering Complication Severe	1	0.9237191267	0.5141182338	1.7967056333	0.0724
RegVarPS04_PNEUMONIA_ANY	PSI04 PNEUMONIA Regression variable: Any Triggering Complication POA	1	0.4797722368	0.1572161148	3.0516734079	0.0023
RegVarPS04_PNEUMONIA_SEVERE	PSI04 PNEUMONIA Regression variable: Triggering Complication Severe	1	0.3995897781	0.1740571126	2.2957394393	0.0217
RegVarPS04_SEPSIS_SEVERE	PSI04 SEPSIS Regression variable: Triggering Complication Severe	1	1.8367141318	0.0906784863	20.2552359087	<.0001
RegVarPS04_SHOCK_ANY	PSI04 SHOCK Regression variable: Any Triggering Complication POA	1	0.2518595499	0.1058172171	2.3801377209	0.0173
RegVarPS04_SHOCK_SEVERE	PSI04 SHOCK Regression variable: Triggering Complication Severe	1	3.5707066934	0.0757923899	47.1116783645	<.0001
DNR	Do not resuscitate flag	1	0.8565911589	0.0718041442	11.9295504237	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	0.7338235912	0.2679416437	2.7387440830	0.0062
COVIDDX_Q3	COVID, Quarter 3, 2020	1	1.3795943622	0.2326026654	5.9311201782	<.0001
COVIDDX_Q4	COVID, Quarter 4, 2020	1	0.9612545201	0.2095254028	4.5877707765	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.9634166908	0.1765426561	5.4571326394	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	0.4381471408	0.3160133352	1.3864830753	0.1656
COVIDDX_Q7	COVID, Quarter 3, 2021	1	1.2718972780	0.1821241991	6.9836808309	<.0001
COVIDDX_Q8	COVID, Quarter 4, 2021	1	0.8160756569	0.1903056887	4.2882357452	<.0001
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	-0.0464879645	0.0740392201	-0.6278829578	0.5301
Q1	Quarter 1, 2020	1	-0.1502463057	0.0979712766	-1.5335750522	0.1251
Q2	Quarter 2, 2020	1	0.1681692642	0.0953290869	1.7640918375	0.0777
Q3	Quarter 3, 2020	1	-0.1644968909	0.0920753396	-1.7865466661	0.0740
Q4	Quarter 4, 2020	1	-0.0830068349	0.0900108157	-0.9221873421	0.3564
Q5	Quarter 1, 2021	1	-0.1378459946	0.0924422177	-1.4911584558	0.1359

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z Statistics	Prob Z Statistics
Q6	Quarter 2, 2021	1	-0.0919429616	0.0953421571	-0.9643474031	0.3349
Q7	Quarter 3, 2021	1	0.0699481179	0.0869656521	0.8043189027	0.4212
Intercept	Intercept	1	-4.491364788	0.1219072395	-36.8424779893	<.0001

c-statistic=0.88

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 4. Risk Adjustment Coefficients for PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications Stratum: Pneumonia

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	-0.9523530618	0.0538913620	-17.6717200432	<.0001
Age_30_34	30 <= Age <= 34	1	-0.7774472876	0.0635660649	-12.2305398142	<.0001
Age_35_39	35 <= Age <= 39	1	-0.6780338343	0.0560274320	-12.1018188862	<.0001
Age_40_44	40 <= Age <= 44	1	-0.4475571172	0.0485445016	-9.2195223451	<.0001
Age_45_49	45 <= Age <= 49	1	-0.3874964177	0.0413106658	-9.3800574270	<.0001
Age_50_54	50 <= Age <= 54	1	-0.3539373622	0.0356016861	-9.9415898702	<.0001
Age_55_59	55 <= Age <= 59	1	-0.2672925390	0.0316431031	-8.4471026188	<.0001
Age_60_64	60 <= Age <= 64	1	-0.0612612028	0.0281358756	-2.1773341507	0.0295
Age_70_74	70 <= Age <= 74	1	0.1322696114	0.0258468669	5.1174330752	<.0001
Age_75_79	75 <= Age <= 79	1	0.2083774384	0.0374286768	5.5673204691	<.0001
Age_80_84	80 <= Age <= 84	1	0.3037748615	0.0396576892	7.6599233988	<.0001
Age_85Plus	Age >= 85	1	0.3573918929	0.0430073142	8.3100258620	<.0001
MALE	Patient Sex Flag: 1=Male / 0=Female	1	-0.0010606298	0.0186118189	-0.0569868991	0.9546
Age_75_79_MALE	75 <= Age <= 79 MALE	1	0.0447875201	0.0432306992	1.0360119298	0.3002
Age_80_84_MALE	80 <= Age <= 84 MALE	1	0.0584809023	0.0453221699	1.2903376506	0.1969
Age_85Plus_MALE	Age >= 85 MALE	1	0.1031749735	0.0502502405	2.0532234747	0.0401
CMR_ALCOHOL	Alcohol abuse	1	-0.1128023589	0.0290396260	-3.8844287793	0.0001
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	-0.2821218985	0.0195259372	-14.4485714371	<.0001
CMR_BLDLOSS	Chronic blood loss anemia (iron deficiency)	1	-0.2328595317	0.0805927460	-2.8893361172	0.0039
CMR_CANCER_LYMPH	Lymphoma	1	0.2528533904	0.0669669107	3.7757959499	0.0002
CMR_CANCER_METS	Metastatic cancer	1	0.6411224030	0.0328732760	19.5028448952	<.0001
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	1	0.1348154610	0.0349100000	3.8618006580	0.0001
CMR_CBVD	Cerebrovascular disease	1	0.1370233395	0.0246069166	5.5684887951	<.0001
CMR_COAG	Coagulopathy	1	0.4493584790	0.0221420063	20.2943885273	<.0001
CMR_DEPRESS	Depression	1	-0.2663957465	0.0260768553	-10.2157926237	<.0001
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.0689002203	0.0271677859	-2.5360999396	0.0112
CMR_DRUG_ABUSE	Drug abuse	1	-0.1710926676	0.0383232479	-4.4644615789	<.0001
CMR_HF	Heart failure	1	0.2502154008	0.0199823392	12.5218273390	<.0001
CMR_HTN_CX	Hypertension, complicated	1	-0.2318955361	0.0221176497	-10.4846373665	<.0001
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.3134150642	0.0228794906	-13.6985158078	<.0001
CMR_LIVER_SEV	Liver disease, moderate to severe	1	0.7631226346	0.0487451165	15.6553658833	<.0001
CMR_LUNG_CHRONIC	Chronic pulmonary disease	1	-0.0651621860	0.0168641809	-3.8639401642	0.0001
CMR_NEURO_MOVT	Neurological disorders affecting movement	1	-0.1301383490	0.0434648043	-2.9941087057	0.0028
CMR_NEURO_OTH	Other neurological disorders	1	0.3100649134	0.0190856844	16.2459415254	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_OBESE	Obesity	1	-0.1372972471	0.0199314913	-6.8884583366	<.0001
CMR_PARALYSIS	Paralysis	1	-0.2691451195	0.0263935760	-10.1973722482	<.0001
CMR_PERIVASC	Peripheral vascular disease	1	0.1190040417	0.0194841293	6.1077423568	<.0001
CMR_PSYCHOSES	Psychoses	1	-0.2806665073	0.0418137437	-6.7123027553	<.0001
CMR_PULMCIRC	Pulmonary circulation disease	1	0.1072102130	0.0295923379	3.6229044590	0.0003
CMR_RENLFL_MOD	Renal failure, moderate	1	0.1316985887	0.0241132108	5.4616778227	<.0001
CMR_RENLFL_SEV	Renal failure, severe	1	0.4374333395	0.0264155381	16.5596982419	<.0001
CMR_THYROID_HYPO	Hypothyroidism	1	-0.1446028979	0.0227450806	-6.3575460756	<.0001
CMR_THYROID_OTH	Other thyroid disorders	1	-0.3288606913	0.0722353328	-4.5526292845	<.0001
CMR_WGHTLOSS	Weight loss	1	0.1620456862	0.0202597475	7.9984060327	<.0001
MDC_1	Diseases and disorders of the nervous system	1	0.0150585521	0.0453053023	0.3323794628	0.7396
MDC_3	Diseases and disorders of the ear, nose, mouth and throat	1	-1.060287366	0.1111536501	-9.5389343051	<.0001
MDC_8	Diseases and disorders of the musculoskeletal system and connective tissue	1	-0.2997915286	0.0299525207	-10.0088914596	<.0001
MDC_10	Endocrine, nutritional and metabolic diseases and disorders	1	-0.4341752421	0.1088638700	-3.9882400101	<.0001
MDC_11	Diseases and disorders of the kidney and urinary tract	1	-0.7879935592	0.0825793274	-9.5422617730	<.0001
MDC_13	Diseases and disorders of the female reproductive system	1	-1.098582484	0.1946791485	-5.6430413421	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	1.4095303284	0.0598021534	23.5698925118	<.0001
MDRG_102	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX	1	1.6249814995	0.0485156491	33.4939659796	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	1.2375789714	0.0509282995	24.3004181224	<.0001
MDRG_104	SPINAL PROCEDURES	1	0.8329452332	0.1004401863	8.2929479116	<.0001
MDRG_501	OTHER HEART ASSIST SYSTEM IMPLANT	1	1.3181441978	0.0501591690	26.2792272156	<.0001
MDRG_507	CORONARY BYPASS WITH CARDIAC CATHETERIZATION OR OPEN ABLATION	1	-0.4242224191	0.0958982243	-4.4236733477	<.0001
MDRG_508	CORONARY BYPASS W/O CARDIAC CATH	1	-0.6157063630	0.0939491265	-6.5536145588	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_509	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE	1	0.1999684059	0.0733987560	2.7244113781	0.0064
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	-0.8553545883	0.1671313638	-5.1178580076	<.0001
MDRG_513	PERC CARDIOVASC PROC W/O INTRALUMINAL DEVICE	1	0.5507725137	0.0852563457	6.4601937725	<.0001
MDRG_514	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES	1	0.1792750981	0.0521089013	3.4403929784	0.0006
MDRG_536	OTHER ENDOVASCULAR CARDIAC VALVE PROCEDURES	1	0.8153640823	0.1964883865	4.1496807866	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	0.3886520351	0.0842267603	4.6143533671	<.0001
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	0.5019199875	0.0391338449	12.8257263995	<.0001
MDRG_543	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES	1	-0.6835511070	0.1349747662	-5.0642881344	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-1.646703725	0.1203194914	-13.6860927930	<.0001
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	-0.4049684505	0.0735199096	-5.5082827618	<.0001
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	-0.3150105579	0.0444765834	-7.0826159185	<.0001
MDRG_604	PERITONEAL ADHESIOLYSIS	1	-0.8099446465	0.1272814313	-6.3634156099	<.0001
MDRG_609	INGUINAL & FEMORAL HERNIA PROCEDURES	1	-0.8290085554	0.2058947522	-4.0263704955	<.0001
MDRG_610	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL	1	-1.008740292	0.1787525720	-5.6432211337	<.0001
MDRG_622	APPENDIX PROCEDURES	1	-1.042398536	0.2039344762	-5.1114385149	<.0001
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	-1.199361475	0.1186393419	-10.1093065412	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-0.7875220046	0.1584844792	-4.9690796766	<.0001
MDRG_803	SPINAL FUSION EXCEPT CERVICAL	1	-0.8702201344	0.1711849762	-5.0835076418	<.0001
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-0.2238710426	0.0633589439	-3.5333771183	0.0004
MDRG_809	AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS	1	0.4710233324	0.1352014306	3.4838635233	0.0005
MDRG_1707	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE	1	0.5796813021	0.2027832327	2.8586254116	0.0043
MDRG_2210	EXTENSIVE BURNS OR FULL THICKNESS BURNS W MV >96 HRS W SKIN GRAFT	1	1.3934159671	0.1901917997	7.3263724808	<.0001
MDRG_2406	CRANIOTOMY FOR MULTIPLE SIGNIFICANT TRAUMA	1	2.5901655264	0.0831625969	31.1457989700	<.0001
MDRG_2408	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA	1	0.6767808036	0.0555351169	12.1865378500	<.0001
MDRG_7701	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	1	0.3707459554	0.1063894667	3.4847994540	0.0005
MDRG_7702	LIVER TRANSPLANT	1	-2.127934334	0.4489471462	-4.7398326319	<.0001
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.1891342758	0.0227402334	8.3171651125	<.0001
RegVarPS04_DVT_PE_SEVERE	PSI04 DVT PE Regression variable: Triggering Complication Severe	1	0.3010841457	0.0402881305	7.4732717078	<.0001
RegVarPS04_GIHEMORRHAGE_ANY	PSI04 GIHEMORRHAGE Regression variable: Any Triggering Complication POA	1	0.2648499892	0.0369462573	7.1685201284	<.0001
RegVarPS04_GIHEMORRHAGE_SEVERE	PSI04 GIHEMORRHAGE Regression variable: Triggering Complication Severe	1	0.1435322190	0.0880823525	1.6295229966	0.1032
RegVarPS04_PNEUMONIA_ANY	PSI04 PNEUMONIA Regression variable: Any Triggering Complication POA	1	-0.1739184930	0.0179411275	-9.6938441269	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
RegVarPS04_PNEUMONIA_SEVERE	PSI04 PNEUMONIA Regression variable: Triggering Complication Severe	1	0.4038564188	0.0164347631	24.5733033518	<.0001
RegVarPS04_SEPSIS_SEVERE	PSI04 SEPSIS Regression variable: Triggering Complication Severe	1	1.5007485396	0.0227094036	66.0848943474	<.0001
RegVarPS04_SHOCK_ANY	PSI04 SHOCK Regression variable: Any Triggering Complication POA	1	0.2499794064	0.0327094708	7.6424167123	<.0001
RegVarPS04_SHOCK_SEVERE	PSI04 SHOCK Regression variable: Triggering Complication Severe	1	1.7717775188	0.0337088770	52.5611553173	<.0001
DNR	Do not resuscitate flag	1	0.8241486831	0.0310481824	26.5441845304	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	0.5852668239	0.2870571595	2.0388511646	0.0415
COVIDDX_Q3	COVID, Quarter 3, 2020	1	0.1825018620	0.2575330305	0.7086541934	0.4785
COVIDDX_Q4	COVID, Quarter 4, 2020	1	0.6709038721	0.2063856365	3.2507294760	0.0012
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.2719017656	0.1697413021	1.6018597847	0.1092
COVIDDX_Q6	COVID, Quarter 2, 2021	1	0.0780774822	0.3125301887	0.2498238091	0.8027
COVIDDX_Q7	COVID, Quarter 3, 2021	1	0.6083076276	0.2542686977	2.3923811033	0.0167
COVIDDX_Q8	COVID, Quarter 4, 2021	1	0.5570660168	0.2004306427	2.7793455592	0.0054
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	-0.1169623274	0.0269309775	-4.3430405585	<.0001
Q1	Quarter 1, 2020	1	-0.0980881827	0.0336978658	-2.9108129085	0.0036
Q2	Quarter 2, 2020	1	-0.1409457573	0.0345975166	-4.0738692051	<.0001
Q3	Quarter 3, 2020	1	-0.0819546465	0.0340434976	-2.4073509543	0.0161
Q4	Quarter 4, 2020	1	-0.0828049096	0.0323275572	-2.5614341696	0.0104
Q5	Quarter 1, 2021	1	-0.0832874009	0.0335341457	-2.4836595427	0.0130
Q6	Quarter 2, 2021	1	-0.1108431887	0.0323319577	-3.4282857100	0.0006
Q7	Quarter 3, 2021	1	-0.0628548887	0.0328000749	-1.9163032075	0.0553
Intercept	Intercept	1	-2.993811102	0.0444255273	-67.3894331653	<.0001

c-statistic=0.816

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 5. Risk Adjustment Coefficients for PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications Stratum: Sepsis

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age LT30	Age < 30	1	-1.130114487	0.0506695813	-22.3036081713	<.0001
Age 30 34	30 <= Age <= 34	1	-1.355187628	0.0969710117	-13.9751829345	<.0001
Age 35 39	35 <= Age <= 39	1	-0.8361361963	0.0538600613	-15.5242340229	<.0001
Age 40 44	40 <= Age <= 44	1	-0.6775676559	0.0484384516	-13.9882187225	<.0001
Age 45 49	45 <= Age <= 49	1	-0.5823882351	0.0448478529	-12.9858665888	<.0001
Age 50 54	50 <= Age <= 54	1	-0.4046139063	0.0340811836	-11.8720614462	<.0001
Age 55 59	55 <= Age <= 59	1	-0.3008179256	0.0300010510	-10.0269129036	<.0001
Age 60 64	60 <= Age <= 64	1	-0.1119329282	0.0382772211	-2.9242699703	0.0035
Age 70 74	70 <= Age <= 74	1	0.1136072965	0.0258619137	4.3928418383	<.0001
Age 75 79	75 <= Age <= 79	1	0.2468068551	0.0277623814	8.8899742340	<.0001
Age 80 84	80 <= Age <= 84	1	0.3665080801	0.0294998945	12.4240471291	<.0001
Age 85Plus	Age >= 85	1	0.4374316863	0.0361097105	12.1139627182	<.0001
MALE	Patient Sex Flag: 1=Male / 0=Female	1	-0.0565214009	0.0164334487	-3.4394120179	0.0006
Age 30 34 MALE	30 <= Age <= 34 MALE	1	0.6706952598	0.1195524428	5.6100506515	<.0001
Age 60 64 MALE	60 <= Age <= 64 MALE	1	-0.0504517114	0.0421034573	-1.1982795398	0.2308
CMR_ALCOHOL	Alcohol abuse	1	-0.1579262324	0.0321783866	-4.9078356364	<.0001
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	-0.2863791149	0.0205661153	-13.9248035517	<.0001
CMR_BLDLOSS	Chronic blood loss anemia (iron deficiency)	1	-0.2581269675	0.0795486145	-3.2448958287	0.0012
CMR_CANCER_LEUK	Leukemia	1	0.2452474376	0.0721316930	3.3999955827	0.0007
CMR_CANCER_METS	Metastatic cancer	1	0.3538487784	0.0322000574	10.9890729218	<.0001
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	1	0.0952894824	0.0352928798	2.6999633587	0.0069
CMR_COAG	Coagulopathy	1	0.4568654479	0.0212785502	21.4707038096	<.0001
CMR_DEMENTIA	Dementia	1	-0.2219282950	0.0351445806	-6.3147230985	<.0001
CMR_DEPRESS	Depression	1	-0.2763517785	0.0264002504	-10.4677711102	<.0001
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.0794539779	0.0306476326	-2.5924996889	0.0095
CMR_DRUG_ABUSE	Drug abuse	1	-0.1311050562	0.0406764090	-3.2231226723	0.0013
CMR_HF	Heart failure	1	0.2384008710	0.0218729212	10.8993612895	<.0001
CMR_HTN_CX	Hypertension, complicated	1	-0.2048517083	0.0227414941	-9.0078386147	<.0001
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.2840943569	0.0209990903	-13.5288887582	<.0001
CMR_LIVER_MLD	Liver disease, mild	1	0.2002536475	0.0302688701	6.6158283121	<.0001
CMR_LIVER_SEV	Liver disease, moderate to severe	1	0.7077457258	0.0443754982	15.9490203795	<.0001
CMR_LUNG_CHRONIC	Chronic pulmonary disease	1	0.0644110046	0.0182147917	3.5361922160	0.0004
CMR_NEURO_MOVT	Neurological disorders affecting movement	1	-0.1141907098	0.0498301205	-2.2916001151	0.0219
CMR_NEURO_OTH	Other neurological disorders	1	0.0864765955	0.0231463380	3.7360810878	0.0002
CMR_OBESE	Obesity	1	-0.1085864160	0.0200914221	-5.4046157377	<.0001
CMR_PARALYSIS	Paralysis	1	-0.2302212670	0.0294846757	-7.8081668261	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_PERIVASC	Peripheral vascular disease	1	0.2054813801	0.0228032130	9.0110713688	<.0001
CMR_PSYCHOSES	Psychoses	1	-0.4607591639	0.0478410552	-9.6310409886	<.0001
CMR_PULMCIRC	Pulmonary circulation disease	1	0.0982610688	0.0322740875	3.0445808483	0.0023
CMR_RENLFL_SEV	Renal failure, severe	1	0.3211277334	0.0251189252	12.7842943534	<.0001
CMR_THYROID_HYPO	Hypothyroidism	1	-0.1012085675	0.0245684749	-4.1194485232	<.0001
CMR_THYROID_OTH	Other thyroid disorders	1	-0.3070099080	0.0798548981	-3.8445970781	0.0001
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	-0.2780224921	0.0525527379	-5.2903521890	<.0001
CMR_VALVE	Valvular disease	1	0.0504121252	0.0260499638	1.9352090364	0.0530
CMR_WGHTLOSS	Weight loss	1	-0.0604026757	0.0207994719	-2.9040485309	0.0037
PS04_SEPSIS_NonWt_1	PS04_SEPSIS Comorbidty count using non-weighted method, category 1, count > 1 and count <= 3	1	0.0271763534	0.0169096894	1.6071468120	0.1080
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	0.9212884396	0.0750806334	12.2706535283	<.0001
MDRG_102	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX	1	1.1370539051	0.0462431661	24.5885824969	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	0.6862309013	0.0545722910	12.5747130873	<.0001
MDRG_104	SPINAL PROCEDURES	1	0.4264595804	0.1108351279	3.8476933130	0.0001
MDRG_301	MAJOR HEAD AND NECK PROCEDURES	1	-0.8409712916	0.2688522516	-3.1280053874	0.0018
MDRG_302	OTHER EAR, NOSE, MOUTH AND THROAT O.R. PROCEDURES	1	-0.5872660967	0.3463639233	-1.6955175095	0.0900
MDRG_401	MAJOR CHEST PROCEDURES	1	0.4816331266	0.0537242658	8.9649084924	<.0001
MDRG_402	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS WITH PRINCIPAL DIAGNOSIS PULMONARY EMBOLISM	1	0.6735700912	0.0793846846	8.4848871636	<.0001
MDRG_501	OTHER HEART ASSIST SYSTEM IMPLANT	1	1.2459737850	0.0539025816	23.1152896341	<.0001
MDRG_503	CONCOMITANT AORTIC AND MITRAL VALVE PROCEDURES	1	0.4533297313	0.0472345758	9.5974129810	<.0001
MDRG_505	OTHER CARDIOTHORACIC PROCEDURES	1	0.1547809471	0.1095458267	1.4129333054	0.1577

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	-0.8367978196	0.2162415334	-3.8697368005	0.0001
MDRG_511	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE	1	0.2313766499	0.0386517417	5.9861894933	<.0001
MDRG_512	AICD PROCEDURES	1	-0.7280801177	0.2817209634	-2.5844016319	0.0098
MDRG_513	PERC CARDIOVASC PROC W/O INTRALUMINAL DEVICE	1	0.6656024196	0.0983456362	6.7679913949	<.0001
MDRG_514	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES	1	0.2556335198	0.0481000194	5.3146240515	<.0001
MDRG_519	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES	1	0.6984996000	0.1016639282	6.8706729333	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	0.7774418255	0.0635232724	12.2386929330	<.0001
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	0.5390967590	0.0366616871	14.7046358827	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-1.072937942	0.1414207356	-7.5868502381	<.0001
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	-0.1569605336	0.0262810534	-5.9723836584	<.0001
MDRG_608	ANAL & STOMAL PROCEDURES	1	-0.5627180053	0.2811024637	-2.0018252346	0.0453
MDRG_610	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL	1	-0.3005672357	0.1030957288	-2.9154188953	0.0036
MDRG_611	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES	1	0.5591807586	0.0571858350	9.7783088853	<.0001
MDRG_622	APPENDIX PROCEDURES	1	-1.295040383	0.4683473493	-2.7651280294	0.0057
MDRG_702	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E.	1	-0.6903209038	0.2168200205	-3.1838429964	0.0015
MDRG_704	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E.	1	-0.4839650643	0.2341149332	-2.0672114228	0.0387
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	-1.023910033	0.1866366117	-5.4861156355	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_706	HEPATOBIILIARY DIAGNOSTIC PROCEDURES	1	0.4498951521	0.1714434535	2.6241605787	0.0087
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-0.7811723302	0.1091589447	-7.1562832769	<.0001
MDRG_803	SPINAL FUSION EXCEPT CERVICAL	1	-0.7218685460	0.1129575694	-6.3906168453	<.0001
MDRG_805	WND DEBRID & SKN GRFT EXC HAND, FOR MUSCULO-CONN TISS DIS	1	-0.6213163977	0.1339042389	-4.6400054442	<.0001
MDRG_806	REVISION OF HIP OR KNEE REPLACEMENT	1	-0.5773615671	0.1423873704	-4.0548650166	<.0001
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-0.5440284252	0.0649870168	-8.3713401853	<.0001
MDRG_808	CERVICAL SPINAL FUSION	1	-0.4160030175	0.1422470917	-2.9245098264	0.0034
MDRG_809	AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS	1	-0.6930577540	0.1636046358	-4.2361743037	<.0001
MDRG_811	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT	1	-0.1466218659	0.0397128625	-3.6920497937	0.0002
MDRG_815	BACK & NECK PROC EXC SPINAL FUSION OR DISC DEVICE/NEUROSTIM	1	-0.5231414020	0.1921302368	-2.7228478494	0.0065
MDRG_816	LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR	1	-0.3028558965	0.0891008180	-3.3990248715	0.0007
MDRG_826	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC	1	-0.5448644138	0.1550349275	-3.5144623374	0.0004
MDRG_902	SKIN GRAFT EXC FOR SKIN ULCER OR CELLULITIS	1	-0.5597052514	0.2728793595	-2.0511087845	0.0403
MDRG_903	OTHER SKIN, SUBCUT TISS & BREAST PROC	1	-0.6646833171	0.2390588028	-2.7804176601	0.0054
MDRG_1002	AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS	1	-0.9723306645	0.1289118300	-7.5426022905	<.0001
MDRG_1003	O.R. PROCEDURES FOR OBESITY	1	-0.7819641069	0.2138128367	-3.6572364835	0.0003
MDRG_1004	SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS	1	-1.205793389	0.2418590748	-4.9855205565	<.0001
MDRG_1101	KIDNEY TRANSPLANT	1	-0.7144660852	0.2047039420	-3.4902409701	0.0005

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1102	MAJOR BLADDER PROCEDURES	1	-0.5774141195	0.0873642063	-6.6092756299	<.0001
MDRG_1103	KIDNEY & URETER PROCEDURES FOR NEOPLASM	1	-0.5307515774	0.1151339183	-4.6098628909	<.0001
MDRG_1104	KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM	1	-1.416822942	0.1400730661	-10.1148849067	<.0001
MDRG_1105	MINOR BLADDER PROCEDURES	1	-0.5446147584	0.2237626098	-2.4338952733	0.0149
MDRG_1107	TRANSURETHRAL PROCEDURES	1	-0.4871494280	0.1755316246	-2.7752801190	0.0055
MDRG_1109	OTHER KIDNEY & URINARY TRACT PROCEDURES	1	-0.2924395292	0.1444469847	-2.0245457514	0.0429
MDRG_1201	MAJOR MALE PELVIC PROCEDURES	1	-1.725597742	0.3520773403	-4.9011894378	<.0001
MDRG_1204	TRANSURETHRAL PROSTATECTOMY	1	-2.431030197	0.4177013163	-5.8200204364	<.0001
MDRG_1301	PELVIC EVISCERATION, RAD HYSTERECTOMY & RAD VULVECTOMY	1	-1.012545194	0.4155275708	-2.4367701821	0.0148
MDRG_1302	UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY	1	-0.5257834020	0.1648419589	-3.1896211721	0.0014
MDRG_1303	UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG	1	-0.9954957787	0.2361338521	-4.2158113709	<.0001
MDRG_1304	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	-0.8966195253	0.1789112764	-5.0115316551	<.0001
MDRG_1602	OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS	1	0.5746577255	0.3213247878	1.7884014780	0.0737
MDRG_1707	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE	1	0.4741335427	0.1314059388	3.6081591668	0.0003
MDRG_1708	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC	1	0.5641890670	0.1484459902	3.8006352763	0.0001
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE	1	0.8834592164	0.1985146304	4.4503481401	<.0001
MDRG_2101	WOUND DEBRIDEMENTS FOR INJURIES	1	-0.6273811654	0.1644661083	-3.8146531953	0.0001
MDRG_2102	SKIN GRAFTS FOR INJURIES	1	-0.9349217118	0.3719169528	-2.5137916001	0.0119
MDRG_2104	OTHER O.R. PROCEDURES FOR INJURIES	1	-0.1748804608	0.0496703824	-3.5208196979	0.0004
MDRG_2210	EXTENSIVE BURNS OR FULL THICKNESS BURNS W MV >96 HRS W SKIN GRAFT	1	1.3291867620	0.1488418982	8.9301922262	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_2301	O.R. PROC W DIAGNOSES OF OTHER CONTACT W HEALTH SERVICES	1	-0.7245111334	0.2435466456	-2.9748351963	0.0029
MDRG_2406	CRANIOTOMY FOR MULTIPLE SIGNIFICANT TRAUMA	1	1.7082166791	0.1140232801	14.9812974798	<.0001
MDRG_2407	LIMB REATTACHMENT, HIP & FEMUR PROC FOR MULTIPLE SIGNIFICANT TRAUMA	1	0.4091136173	0.0732760673	5.5831819609	<.0001
MDRG_2408	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA	1	0.5380216521	0.0544264500	9.8852975411	<.0001
MDRG_7701	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	1	0.5749416428	0.0897874497	6.4033631083	<.0001
MDRG_7702	LIVER TRANSPLANT	1	-0.9162722116	0.1574059132	-5.8210787172	<.0001
MDRG_7703	LUNG TRANSPLANT	1	-0.9097700714	0.2874086600	-3.1654233087	0.0015
MDRG_7705	ALLOGENEIC OR AUTOLOGOUS BONE MARROW TRANSPLANT	1	0.8182411512	0.2542391536	3.2183915792	0.0013
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.2128080126	0.0237970027	8.9426393325	<.0001
RegVarPS04_DVT_PE_A NY	PSI04 DVT PE Regression variable: Any Triggering Complication POA	1	-0.1542961882	0.0512546372	-3.0103849444	0.0026
RegVarPS04_DVT_PE_S EVERE	PSI04 DVT PE Regression variable: Triggering Complication Severe	1	0.2076308901	0.0394053420	5.2691051401	<.0001
RegVarPS04_GIHEMOR RHAGE_ANY	PSI04 GIHEMORRHAGE Regression variable: Any Triggering Complication POA	1	0.1836273932	0.0405765240	4.5254589332	<.0001
RegVarPS04_GIHEMOR RHAGE_SEVERE	PSI04 GIHEMORRHAGE Regression variable: Triggering Complication Severe	1	0.3689973430	0.0885196467	4.1685361020	<.0001
RegVarPS04_PNEUMON IA_ANY	PSI04 PNEUMONIA Regression variable: Any Triggering Complication POA	1	0.0330994935	0.0261486245	1.2658215901	0.2056
RegVarPS04_PNEUMON IA_SEVERE	PSI04 PNEUMONIA Regression variable: Triggering Complication Severe	1	0.0926389503	0.0185583033	4.9917790848	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
RegVarPS04_SEPSIS_ANY	PSI04 SEPSIS Regression variable: Any Triggering Complication POA	1	-0.4567952674	0.0205848043	-22.1908968213	<.0001
RegVarPS04_SEPSIS_SEVERE	PSI04 SEPSIS Regression variable: Triggering Complication Severe	1	1.3519455665	0.0185083797	73.0450525435	<.0001
RegVarPS04_SHOCK_ANY	PSI04 SHOCK Regression variable: Any Triggering Complication POA	1	-0.1698952805	0.0327760456	-5.1835197803	<.0001
RegVarPS04_SHOCK_SEVERE	PSI04 SHOCK Regression variable: Triggering Complication Severe	1	1.3079359788	0.0299512141	43.6688800868	<.0001
DNR	Do not resuscitate flag	1	0.6963849653	0.0393503744	17.6970352985	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	1.1307600508	0.1337672742	8.4531890021	<.0001
COVIDDX_Q3	COVID, Quarter 3, 2020	1	0.6771411684	0.1299829073	5.2094631716	<.0001
COVIDDX_Q4	COVID, Quarter 4, 2020	1	0.8946159036	0.0984644396	9.0856750648	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.5925989306	0.0880536172	6.7299782746	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	0.8680451802	0.1280209591	6.7804927109	<.0001
COVIDDX_Q7	COVID, Quarter 3, 2021	1	1.0723543022	0.1044142871	10.2701874619	<.0001
COVIDDX_Q8	COVID, Quarter 4, 2021	1	0.9008158104	0.0920717803	9.7838426452	<.0001
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	-0.1215499373	0.0301307889	-4.0340774920	<.0001
Q1	Quarter 1, 2020	1	-0.0819078653	0.0343538857	-2.3842387458	0.0171
Q2	Quarter 2, 2020	1	-0.0905843339	0.0371213873	-2.4402195188	0.0147
Q3	Quarter 3, 2020	1	-0.0623067400	0.0368549712	-1.6905925593	0.0909
Q4	Quarter 4, 2020	1	-0.0690315365	0.0341917436	-2.0189533853	0.0435
Q5	Quarter 1, 2021	1	0.0359538317	0.0339734172	1.0582930622	0.2899
Q6	Quarter 2, 2021	1	-0.1283590590	0.0350216973	-3.6651295836	0.0002
Q7	Quarter 3, 2021	1	-0.0131527688	0.0362878247	-0.3624567999	0.7170
Intercept	Intercept	1	-2.082328155	0.0444954559	-46.7986699143	<.0001

c-statistic=0.797

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 6. Risk Adjustment Coefficients for PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications Stratum: Shock/Cardiac Arrest

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age LT30	Age < 30	1	-0.4560799610	0.0625281612	-7.2939928511	<.0001
Age 30 34	30 <= Age <= 34	1	-0.3764074982	0.0489263103	-7.6933554893	<.0001
Age 35 39	35 <= Age <= 39	1	-0.5619098358	0.0605881462	-9.2742536409	<.0001
Age 40 44	40 <= Age <= 44	1	-0.1498097265	0.0434261256	-3.4497603519	0.0006
Age 45 49	45 <= Age <= 49	1	-0.1852714137	0.0417023369	-4.4427105910	<.0001
Age 50 54	50 <= Age <= 54	1	-0.1638355582	0.0349210673	-4.6915965271	<.0001
Age 55 59	55 <= Age <= 59	1	-0.1049414729	0.0419549461	-2.5012896597	0.0124
Age 60 64	60 <= Age <= 64	1	-0.0373895289	0.0284976982	-1.3120192609	0.1895
Age 70 74	70 <= Age <= 74	1	0.1364097867	0.0278996438	4.8893020883	<.0001
Age 75 79	75 <= Age <= 79	1	0.3046439353	0.0305009835	9.9880036737	<.0001
Age 80 84	80 <= Age <= 84	1	0.3758427858	0.0342676065	10.9678738817	<.0001
Age 85Plus	Age >= 85	1	0.5745165556	0.0385684343	14.8960300407	<.0001
MALE	Patient Sex Flag: 1=Male / 0=Female	1	0.0410055824	0.0177032710	2.3162715181	0.0205
Age LT30 MALE	Age < 30 MALE	1	0.3920965059	0.0888253146	4.4142428033	<.0001
Age 35 39 MALE	35 <= Age <= 39 MALE	1	0.4457491769	0.0876359521	5.0863734145	<.0001
Age 55 59 MALE	55 <= Age <= 59 MALE	1	-0.1259099481	0.0518716815	-2.4273350029	0.0152
CMR ALCOHOL	Alcohol abuse	1	0.0702291567	0.0362938796	1.9350137643	0.0530
CMR CANCER LEUK	Leukemia	1	0.5162590288	0.0875764245	5.8949543956	<.0001
CMR CANCER LYMPH	Lymphoma	1	0.1888701542	0.0737221782	2.5619177122	0.0104
CMR CANCER METS	Metastatic cancer	1	0.2991524336	0.0356285369	8.3964276963	<.0001
CMR CANCER SOLID	Solid tumor without metastasis, malignant	1	0.1168928774	0.0340064500	3.4373737130	0.0006
CMR CBVD	Cerebrovascular disease	1	0.1631525196	0.0343772484	4.7459446850	<.0001
CMR COAG	Coagulopathy	1	0.3890408233	0.0227785818	17.0792381326	<.0001
CMR DEPRESS	Depression	1	-0.2193839867	0.0260944300	-8.4073109366	<.0001
CMR DIAB_UNCX	Diabetes without chronic complications	1	0.0709291495	0.0294177882	2.4110972900	0.0159
CMR HF	Heart failure	1	0.0593272603	0.0227812891	2.6042099764	0.0092
CMR HTN_UNCX	Hypertension, uncomplicated	1	0.0814342853	0.0211187902	3.8560109055	0.0001
CMR LIVER_MLD	Liver disease, mild	1	0.3145351613	0.0316525719	9.9371122859	<.0001
CMR LIVER_SEV	Liver disease, moderate to severe	1	0.7706351146	0.0432815258	17.8051743809	<.0001
CMR LUNG_CHRONIC	Chronic pulmonary disease	1	0.1197683424	0.0201841232	5.9337896891	<.0001
CMR NEURO_OTH	Other neurological disorders	1	0.2888687689	0.0263731210	10.9531506972	<.0001
CMR OBESE	Obesity	1	-0.1132855870	0.0201182056	-5.6309985618	<.0001
CMR PARALYSIS	Paralysis	1	-0.3433409308	0.0344724532	-9.9598635560	<.0001
CMR PERIVASC	Peripheral vascular disease	1	0.2298668791	0.0247809730	9.2759424340	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_PSYCHOSES	Psychoses	1	-0.1798490499	0.0433300011	-4.1506818677	<.0001
CMR_RENLFL_MOD	Renal failure, moderate	1	0.1809588734	0.0283228047	6.3891579745	<.0001
CMR_RENLFL_SEV	Renal failure, severe	1	0.1671801848	0.0297360563	5.6221370823	<.0001
CMR_THYROID_HYPO	Hypothyroidism	1	-0.0835674847	0.0245384415	-3.4055742551	0.0007
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	-0.2134803344	0.0424277105	-5.0316251369	<.0001
CMR_WGHTLOSS	Weight loss	1	-0.2699680992	0.0226219264	-11.9339128780	<.0001
PS04_SHOCK_NonWt_1	PS04_SHOCK Comorbidity count using non-weighted method, category 1, count > 1 and count <= 3	1	0.1900004177	0.0282143685	6.7341722636	<.0001
PS04_SHOCK_NonWt_2	PS04_SHOCK Comorbidity count using non-weighted method, category 2, count >= 4	1	0.1728409978	0.0359415843	4.8089420991	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	1.9482097980	0.0723595129	26.9240314232	<.0001
MDRG_102	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX	1	2.1978082559	0.0506924822	43.3557040296	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	1.0496617460	0.0671356007	15.6349497780	<.0001
MDRG_106	CAROTID ARTERY STENT PROCEDURE	1	-0.2956194042	0.1315116244	-2.2478575987	0.0246
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	0.6601358536	0.0457454414	14.4306368662	<.0001
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	0.7070195078	0.0286503600	24.6775086993	<.0001
MDRG_604	PERITONEAL ADHESIOLYSIS	1	0.7633181039	0.0631768232	12.0822489102	<.0001
MDRG_607	MINOR SMALL & LARGE BOWEL PROCEDURES	1	0.7660216481	0.1764582238	4.3410935000	<.0001
MDRG_610	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL	1	0.4638059155	0.0860736936	5.3884746447	<.0001
MDRG_611	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES	1	0.9409822393	0.0633980012	14.8424591032	<.0001
MDRG_701	PANCREAS, LIVER & SHUNT PROCEDURES	1	0.5240251808	0.0562745817	9.3119338303	<.0001
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	0.2354801799	0.0723728298	3.2537097229	0.0011
MDRG_706	HEPATOBIILIARY DIAGNOSTIC PROCEDURES	1	1.4630883752	0.1394716662	10.4902193780	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_707	OTHER HEPATOBILIARY OR PANCREAS O.R. PROCEDURES	1	1.2697303746	0.1071320844	11.8520085005	<.0001
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-0.2528962413	0.0694443048	-3.6417131965	0.0003
MDRG_802	SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFECTION OR EXT FUS	1	-0.4682167831	0.1162845520	-4.0264744963	<.0001
MDRG_806	REVISION OF HIP OR KNEE REPLACEMENT	1	-0.4278472919	0.0828303748	-5.1653429440	<.0001
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-0.3483146374	0.0862383381	-4.0389766914	<.0001
MDRG_811	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT	1	0.4552135549	0.0855069365	5.3237032422	<.0001
MDRG_819	SOFT TISSUE PROCEDURES	1	0.5827466335	0.1214698782	4.7974579555	<.0001
MDRG_913	SKIN DEBRIDEMENT FOR SKIN ULCER OR CELLULITIS	1	0.4613161180	0.1439753248	3.2041331998	0.0014
MDRG_1006	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC	1	0.5826610742	0.1291631067	4.5110487762	<.0001
MDRG_1101	KIDNEY TRANSPLANT	1	-0.3287382990	0.1080736002	-3.0418002021	0.0024
MDRG_1302	UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY	1	-0.3974705190	0.1258789561	-3.1575612900	0.0016
MDRG_1304	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	-0.9730055767	0.1400228082	-6.9489077485	<.0001
MDRG_1707	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE	1	0.5843679555	0.1514506264	3.8584716982	0.0001
MDRG_1708	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC	1	1.1862929380	0.1394225392	8.5086166461	<.0001
MDRG_1710	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W OTHER O.R. PROC	1	0.8190810324	0.1764050866	4.6431826219	<.0001
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE	1	0.8187603908	0.0304963572	26.8478095774	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1802	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC	1	0.4208488570	0.0718578684	5.8566843982	<.0001
MDRG_2103	HAND PROCEDURES FOR INJURIES	1	0.9284894246	0.3286925541	2.8247960380	0.0047
MDRG_2104	OTHER O.R. PROCEDURES FOR INJURIES	1	0.3747452204	0.0590606100	6.3450956623	<.0001
MDRG_2301	O.R. PROC W DIAGNOSES OF OTHER CONTACT W HEALTH SERVICES	1	0.7699154892	0.2179826648	3.5320032895	0.0004
MDRG_2501	HIV W EXTENSIVE O.R. PROCEDURE	1	1.1610825645	0.1959263727	5.9261167766	<.0001
MDRG_7702	LIVER TRANSPLANT	1	-1.421221332	0.1393560649	-10.1984892633	<.0001
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.2440669844	0.0261131177	9.3465279647	<.0001
RegVarPS04_DVT_PE_A NY	PSI04 DVT PE Regression variable: Any Triggering Complication POA	1	-0.2200073595	0.0567372089	-3.8776556665	0.0001
RegVarPS04_DVT_PE_S EVERE	PSI04 DVT PE Regression variable: Triggering Complication Severe	1	0.4411237430	0.0454574096	9.7041108820	<.0001
RegVarPS04_GIHEMOR RHAGE_SEVERE	PSI04 GIHEMORRHAGE Regression variable: Triggering Complication Severe	1	0.2736471238	0.0839879941	3.2581695360	0.0011
RegVarPS04_PNEUMON IA_SEVERE	PSI04 PNEUMONIA Regression variable: Triggering Complication Severe	1	-0.2530241174	0.0236869782	-10.6819922228	<.0001
RegVarPS04_SEPSIS_A NY	PSI04 SEPSIS Regression variable: Any Triggering Complication POA	1	-0.2638420373	0.0340130843	-7.7570747485	<.0001
RegVarPS04_SEPSIS_SE VERE	PSI04 SEPSIS Regression variable: Triggering Complication Severe	1	0.9397438393	0.0292365752	32.1427469914	<.0001
RegVarPS04_SHOCK_A NY	PSI04 SHOCK Regression variable: Any Triggering Complication POA	1	-0.2752712891	0.0241515998	-11.3976420222	<.0001
RegVarPS04_SHOCK_SE VERE	PSI04 SHOCK Regression variable: Triggering Complication Severe	1	2.2859570909	0.0216545517	105.5647385554	<.0001
DNR	Do not resuscitate flag	1	0.9969816737	0.0420078031	23.7332495501	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	1.0824141536	0.1515374911	7.1428802596	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
COVIDDX_Q3	COVID, Quarter 3, 2020	1	0.6702140821	0.1651230356	4.0588769430	<.0001
COVIDDX_Q4	COVID, Quarter 4, 2020	1	0.6237947924	0.1353651941	4.6082362343	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.4978831278	0.1109466888	4.4875888863	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	0.4820973184	0.1694383524	2.8452667981	0.0044
COVIDDX_Q7	COVID, Quarter 3, 2021	1	1.0341469940	0.1303160308	7.9356851776	<.0001
COVIDDX_Q8	COVID, Quarter 4, 2021	1	0.6729270551	0.1333256432	5.0472440164	<.0001
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	0.0107756443	0.0304889500	0.3534278597	0.7238
Q1	Quarter 1, 2020	1	0.0163337601	0.0368842705	0.4428380963	0.6579
Q2	Quarter 2, 2020	1	-0.0115868251	0.0390157155	-0.2969784091	0.7665
Q3	Quarter 3, 2020	1	0.0337134526	0.0371177198	0.9082845823	0.3637
Q4	Quarter 4, 2020	1	-0.0481574374	0.0383760610	-1.2548822406	0.2095
Q5	Quarter 1, 2021	1	0.0092470771	0.0368363851	0.2510310672	0.8018
Q6	Quarter 2, 2021	1	-0.1068158454	0.0362449661	-2.9470532555	0.0032
Q7	Quarter 3, 2021	1	0.0092365672	0.0371343830	0.2487335571	0.8036
Intercept	Intercept	1	-2.966002434	0.0504728007	-58.7643719883	<.0001

c-statistic=0.855

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 7. Risk Adjustment Coefficients for PSI 04 - Death Rate among Surgical Inpatients with Serious Treatable Complications Stratum: Gastrointestinal (GI) Hemorrhage/Acute Ulcer

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	-1.100809851	0.1842632736	-5.9741142594	<.0001
Age_30_34	30 <= Age <= 34	1	-0.4904173575	0.1526353235	-3.2130004126	0.0013
Age_35_39	35 <= Age <= 39	1	-0.6502180103	0.1373303640	-4.7346995343	<.0001
Age_40_44	40 <= Age <= 44	1	-0.4070864207	0.1237656914	-3.2891701728	0.0010
Age_45_49	45 <= Age <= 49	1	-0.3570842164	0.0994535096	-3.5904637041	0.0003
Age_50_54	50 <= Age <= 54	1	-0.1491816580	0.0759932103	-1.9630919325	0.0496
Age_55_59	55 <= Age <= 59	1	-0.0982620066	0.0670159797	-1.4662474090	0.1426
Age_60_64	60 <= Age <= 64	1	-0.0165960857	0.0890300945	-0.1864098402	0.8521
Age_70_74	70 <= Age <= 74	1	0.2659881169	0.0818213923	3.2508383144	0.0012
Age_75_79	75 <= Age <= 79	1	0.2327671090	0.0588229094	3.9570825591	<.0001
Age_80_84	80 <= Age <= 84	1	0.2925629660	0.0629275046	4.6492065448	<.0001
Age_85Plus	Age >= 85	1	0.3343728916	0.0785978880	4.2542223460	<.0001
MALE	Patient Sex Flag: 1=Male / 0=Female	1	-0.0634766979	0.0398939981	-1.5911340267	0.1116
Age_60_64_MALE	60 <= Age <= 64 MALE	1	-0.1321883090	0.1005097826	-1.3151785396	0.1884
Age_70_74_MALE	70 <= Age <= 74 MALE	1	-0.2599620563	0.0954098373	-2.7246881850	0.0064
CMR_ALCOHOL	Alcohol abuse	1	-0.0297671519	0.0646399058	-0.4605073528	0.6452
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	-0.4238362994	0.0419651617	-10.0997180018	<.0001
CMR_BLDLOSS	Chronic blood loss anemia (iron deficiency)	1	-0.5188127815	0.1160181492	-4.4718243247	<.0001
CMR_CANCER_LEUK	Leukemia	1	0.2759939231	0.1717197633	1.6072344719	0.1080
CMR_CANCER_METS	Metastatic cancer	1	0.3912924007	0.0736394919	5.3136216819	<.0001
CMR_CBVD	Cerebrovascular disease	1	0.1880293600	0.0599855647	3.1345768085	0.0017
CMR_COAG	Coagulopathy	1	0.6095338969	0.0419051409	14.5455637136	<.0001
CMR_DEPRESS	Depression	1	-0.3334953799	0.0596765357	-5.5883837091	<.0001
CMR_DIAB_CX	Diabetes with chronic complications	1	-0.1380284638	0.0396460992	-3.4815143639	0.0005
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.0695079288	0.0644288500	-1.0788323675	0.2807
CMR_DRUG_ABUSE	Drug abuse	1	-0.0587780517	0.0919240968	-0.6394194094	0.5226
CMR_HF	Heart failure	1	0.3476353931	0.0444119131	7.8275257399	<.0001
CMR_HTN_CX	Hypertension, complicated	1	-0.3286480410	0.0481950988	-6.8191174842	<.0001
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.3264853948	0.0470104554	-6.9449528221	<.0001
CMR_LIVER_SEV	Liver disease, moderate to severe	1	0.4257231755	0.0706808929	6.0231720048	<.0001
CMR_LUNG_CHRONIC	Chronic pulmonary disease	1	0.0667750436	0.0394415299	1.6930135277	0.0905
CMR_NEURO_OTH	Other neurological disorders	1	0.5710815390	0.0469918792	12.1527708229	<.0001
CMR_OBESE	Obesity	1	-0.1633425601	0.0459701368	-3.5532319815	0.0004
CMR_PERIVASC	Peripheral vascular disease	1	0.2009943897	0.0413533847	4.8604096395	<.0001
CMR_PSYCHOSES	Psychoses	1	-0.4075382504	0.1181753548	-3.4485891856	0.0006
CMR_RENLFL_SEV	Renal failure, severe	1	0.4207366662	0.0554359985	7.5895930016	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_THYROID_HYPO	Hypothyroidism	1	-0.2373640835	0.0535266925	-4.4344993565	<.0001
CMR_THYROID_OTH	Other thyroid disorders	1	-0.3831568134	0.1811899355	-2.1146694069	0.0345
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	-0.2788561881	0.0508146775	-5.4877094941	<.0001
CMR_WGHTLOSS	Weight loss	1	0.0214762863	0.0467040167	0.4598380994	0.6456
MDC_4	Diseases and disorders of the respiratory system	1	1.0124462719	0.1104164004	9.1693468407	<.0001
MDC_5	Diseases and disorders of the circulatory system	1	1.0014295817	0.0834024158	12.0072011341	<.0001
MDC_8	Diseases and disorders of the musculoskeletal system and connective tissue	1	-0.3651501929	0.1211909585	-3.0130151418	0.0026
MDC_10	Endocrine, nutritional and metabolic diseases and disorders	1	-0.2411351599	0.2332483758	-1.0338128147	0.3012
MDC_11	Diseases and disorders of the kidney and urinary tract	1	-1.125744281	0.2426340723	-4.6396792942	<.0001
MDC_13	Diseases and disorders of the female reproductive system	1	-1.761056251	0.5054086674	-3.4844203597	0.0005
MDC_16	Diseases and disorders of blood, blood forming organs and immunologic disorders	1	-1.092277391	0.5894055918	-1.8531846420	0.0639
MDC_18	Infectious and parasitic diseases, systemic or unspecified sites	1	0.5345963161	0.0890670879	6.0021757607	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	1.1569990123	0.2242268393	5.1599488091	<.0001
MDRG_102	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX	1	1.6031987358	0.1041945069	15.3865955426	<.0001
MDRG_402	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS WITH PRINCIPAL DIAGNOSIS PULMONARY EMBOLISM	1	0.3613579868	0.1590050941	2.2726189298	0.0230
MDRG_501	OTHER HEART ASSIST SYSTEM IMPLANT	1	1.2781589393	0.1048613267	12.1890403217	<.0001
MDRG_505	OTHER CARDIOTHORACIC PROCEDURES	1	-0.6187488810	0.2169566428	-2.8519471580	0.0043
MDRG_507	CORONARY BYPASS WITH CARDIAC CATHETERIZATION OR OPEN ABLATION	1	-1.006806356	0.2295456334	-4.3860836768	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_508	CORONARY BYPASS W/O CARDIAC CATH	1	-0.8865141816	0.2045049485	-4.3349277759	<.0001
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	-1.913988786	0.4357834538	-4.3920639235	<.0001
MDRG_511	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE	1	-0.5861100114	0.0738315230	-7.9384792273	<.0001
MDRG_514	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES	1	-0.5514651536	0.0974662898	-5.6580090879	<.0001
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	-1.580966856	0.1809645046	-8.7363367727	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	-0.0046300539	0.1305301595	-0.0354711424	0.9717
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	-0.2227724742	0.0759707690	-2.9323446013	0.0034
MDRG_543	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES	1	-1.078097410	0.2565169809	-4.2028305748	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-2.435202433	0.3486325870	-6.9850109365	<.0001
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-1.295827287	0.4214750588	-3.0745052638	0.0021
MDRG_1003	O.R. PROCEDURES FOR OBESITY	1	-1.655910039	0.6249519490	-2.6496597728	0.0081
MDRG_1802	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC	1	-0.4040261627	0.1545758074	-2.6137735880	0.0090
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.3172576336	0.0437569077	7.2504582823	<.0001
RegVarPS04_DVT_PE_SEVERE	PSI04 DVT PE Regression variable: Triggering Complication Severe	1	0.2132172858	0.1091065460	1.9542116724	0.0507
RegVarPS04_GIHEMORRHAGE_ANY	PSI04 GIHEMORRHAGE Regression variable: Any Triggering Complication POA	1	-0.3895795325	0.0358017698	-10.8815719201	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
RegVarPS04_GIHEMORRHAGE_SEVERE	PSI04 GIHEMORRHAGE Regression variable: Triggering Complication Severe	1	0.1803440682	0.0701346674	2.5713969264	0.0101
RegVarPS04_PNEUMONIA_SEVERE	PSI04 PNEUMONIA Regression variable: Triggering Complication Severe	1	0.1584728502	0.1520748414	1.0420714485	0.2974
RegVarPS04_SEPSIS_SEVERE	PSI04 SEPSIS Regression variable: Triggering Complication Severe	1	1.7133599589	0.0632422993	27.0919934617	<.0001
RegVarPS04_SHOCK_ANY	PSI04 SHOCK Regression variable: Any Triggering Complication POA	1	0.7774622994	0.0546343118	14.2302936360	<.0001
RegVarPS04_SHOCK_SEVERE	PSI04 SHOCK Regression variable: Triggering Complication Severe	1	2.3523015678	0.0640239527	36.7409612886	<.0001
DNR	Do not resuscitate flag	1	0.8021561303	0.0644592558	12.4443901804	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	1.0927704577	0.3211600382	3.4025729475	0.0007
COVIDDX_Q3	COVID, Quarter 3, 2020	1	0.6577192912	0.2962885679	2.2198605093	0.0264
COVIDDX_Q4	COVID, Quarter 4, 2020	1	1.1155141755	0.2112103503	5.2815317706	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.8543974956	0.1749260344	4.8843358192	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	1.0078450153	0.3010932214	3.3472856366	0.0008
COVIDDX_Q7	COVID, Quarter 3, 2021	1	1.1633889164	0.2379770046	4.8886610630	<.0001
COVIDDX_Q8	COVID, Quarter 4, 2021	1	1.1989720778	0.2241193439	5.3497036746	<.0001
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	-0.0236459360	0.0642318287	-0.3681342478	0.7128
Q1	Quarter 1, 2020	1	-0.0834928562	0.0850322709	-0.9818961114	0.3262
Q2	Quarter 2, 2020	1	-0.0613604552	0.0860615071	-0.7129837403	0.4759
Q3	Quarter 3, 2020	1	0.0813425049	0.0773696314	1.0513492630	0.2931
Q4	Quarter 4, 2020	1	-0.0435708454	0.0824423325	-0.5285008807	0.5972
Q5	Quarter 1, 2021	1	0.0297168171	0.0793816201	0.3743538752	0.7081
Q6	Quarter 2, 2021	1	-0.1797727277	0.0838103356	-2.1449947249	0.0320
Q7	Quarter 3, 2021	1	0.0183550362	0.0798321954	0.2299202231	0.8182
Intercept	Intercept	1	-3.391694407	0.1106250907	-30.6593593448	<.0001

c-statistic=0.865

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 8. Risk Adjustment Coefficients for PSI 06 - Iatrogenic Pneumothorax Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob
Age_LT30	Age < 30	1	-0.4034206829	0.0628133216	-6.4225338331	<.0001
Age_30_34	30 <= Age <= 34	1	-0.5498543850	0.0765105966	-7.1866435464	<.0001
Age_35_39	35 <= Age <= 39	1	-0.5291357432	0.0697083884	-7.5907040093	<.0001
Age_40_44	40 <= Age <= 44	1	-0.3135029654	0.0618012021	-5.0727648486	<.0001
Age_45_49	45 <= Age <= 49	1	-0.3105932236	0.0723874138	-4.2907075626	<.0001
Age_50_54	50 <= Age <= 54	1	-0.2647305233	0.0637690795	-4.1513932074	<.0001
Age_55_59	55 <= Age <= 59	1	-0.1360715009	0.0425405501	-3.1986304930	0.0014
Age_60_64	60 <= Age <= 64	1	-0.0540069919	0.0389699678	-1.3858618565	0.1658
Age_70_74	70 <= Age <= 74	1	0.0580147018	0.0350161223	1.6567997230	0.0976
Age_75_79	75 <= Age <= 79	1	0.1137173036	0.0380213045	2.9908838003	0.0028
Age_80_84	80 <= Age <= 84	1	0.1221764283	0.0446611920	2.7356284677	0.0062
Age_85_89	85 <= Age <= 89	1	0.1145210844	0.0405024934	2.8275070220	0.0047
Age_90Plus	Age >= 90	1	-0.0750152750	0.0482108072	-1.5559846305	0.1197
MALE	Patient Sex Flag: 1=Male / 0=Female	1	-0.2525472007	0.0210931332	-11.9729581600	<.0001
Age_45_49_MALE	45 <= Age <= 49 MALE	1	-0.0077398368	0.0993812182	-0.0778802768	0.9379
Age_50_54_MALE	50 <= Age <= 54 MALE	1	0.1302991085	0.0841824737	1.5478175296	0.1217
Age_80_84_MALE	80 <= Age <= 84 MALE	1	-0.0849371232	0.0573817662	-1.4802110303	0.1388
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	-0.1593392551	0.0251095479	-6.3457635931	<.0001
CMR_BLDLOSS	Chronic blood loss anemia (iron deficiency)	1	-0.0144690610	0.1033674676	-0.1399769322	0.8887
CMR_CANCER_METS	Metastatic cancer	1	0.2888700734	0.0458552547	6.2996067812	<.0001
CMR_DIAB_CX	Diabetes with chronic complications	1	-0.2832527167	0.0263462186	-10.7511715867	<.0001
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.2963251378	0.0324512535	-9.1313926580	<.0001
CMR_HF	Heart failure	1	-0.0060910895	0.0277373233	-0.2195990389	0.8262
CMR_HTN_CX	Hypertension, complicated	1	-0.0364798325	0.0280531328	-1.3003835534	0.1935
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.2473928372	0.0246883826	-10.0206174359	<.0001
CMR_LIVER_MLD	Liver disease, mild	1	0.0182787814	0.0412028107	0.4436294784	0.6573
CMR_NEURO_OTH	Other neurological disorders	1	0.4647064525	0.0299964268	15.4920602898	<.0001
CMR_NEURO_SEIZ	Seizures and epilepsy	1	0.0364468837	0.0422277089	0.8631035079	0.3881
CMR_OBESE	Obesity	1	-0.3341699795	0.0266525843	-12.5379953914	<.0001
CMR_PERIVASC	Peripheral vascular disease	1	0.1293649344	0.0322080052	4.0165460019	<.0001
CMR_PSYCHOSES	Psychoses	1	-0.1063051601	0.0465920351	-2.2816165863	0.0225
CMR_RENLFL_MOD	Renal failure, moderate	1	-0.1568632604	0.0302719436	-5.1818033972	<.0001
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	0.2093113827	0.0803113058	2.6062505214	0.0092
CMR_VALVE	Valvular disease	1	-0.0693507868	0.0316798880	-2.1891108581	0.0286

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_WGHTLOSS	Weight loss	1	0.8605376259	0.0272481831	31.5814681524	<.0001
MDC_19	Mental diseases and disorders	1	-4.629499509	0.5021076994	-9.2201324816	<.0001
MDC_23	Factors influencing health status and other contacts with health services	1	-1.555771375	0.1767451961	-8.8023403675	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	2.1128506226	0.1682315668	12.5591805557	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	0.6294147788	0.0974530254	6.4586479063	<.0001
MDRG_105	VENTRICULAR SHUNT PROCEDURES	1	1.2563052804	0.2263521267	5.5502252110	<.0001
MDRG_108	PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC	1	1.6822950126	0.1100769665	15.2828976455	<.0001
MDRG_111	DEGENERATIVE NERVOUS SYSTEM DISORDERS	1	-1.374638558	0.2213615682	-6.2099241944	<.0001
MDRG_114	INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION	1	-0.6386388854	0.0894311769	-7.1411213334	<.0001
MDRG_117	NONSPECIFIC CEREBROVASCULAR DISORDERS	1	-0.5182977454	0.2009961736	-2.5786448373	0.0099
MDRG_122	TRAUMATIC STUPOR & COMA, COMA >1 HR	1	0.4252419715	0.1498074483	2.8385903131	0.0045
MDRG_128	SEIZURES	1	-0.7478296683	0.1539327884	-4.8581570977	<.0001
MDRG_402	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS WITH PRINCIPAL DIAGNOSIS PULMONARY EMBOLISM	1	1.9142055217	0.1196104323	16.0036669386	<.0001
MDRG_404	RESPIRATORY INFECTIONS & INFLAMMATIONS	1	-2.339932714	0.0857090080	-27.3008960141	<.0001
MDRG_405	RESPIRATORY NEOPLASMS	1	1.1883882921	0.1758485474	6.7580216604	<.0001
MDRG_408	PULMONARY EDEMA & RESPIRATORY FAILURE	1	-1.211669129	0.1716727126	-7.0580181967	<.0001
MDRG_501	OTHER HEART ASSIST SYSTEM IMPLANT	1	1.6401577207	0.2271521391	7.2205250961	<.0001
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	4.0220611234	0.0318452514	126.3001842646	<.0001
MDRG_520	ACUTE MYOCARDIAL INFARCTION	1	-0.4408017932	0.1064013222	-4.1428225135	<.0001
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	1.1568768635	0.1161408661	9.9609801616	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	0.7611490903	0.1179780523	6.4516160043	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	3.6539062974	0.0558320320	65.4446232440	<.0001
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	1.5797604402	0.1003626300	15.7405245375	<.0001
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	0.4043203760	0.0746130605	5.4188954724	<.0001
MDRG_604	PERITONEAL ADHESIOLYSIS	1	0.1800556611	0.2024327265	0.8894592502	0.3738
MDRG_611	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES	1	1.1868647471	0.1365472057	8.6919738924	<.0001
MDRG_615	G.I. HEMORRHAGE	1	-1.069653248	0.1252378555	-8.5409738435	<.0001
MDRG_616	COMPLICATED PEPTIC ULCER	1	-0.1957369723	0.2583139439	-0.7577483791	0.4486
MDRG_620	ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS	1	-1.786314429	0.1779771119	-10.0367648956	<.0001
MDRG_621	OTHER DIGESTIVE SYSTEM DIAGNOSES	1	-1.380950601	0.2179978291	-6.3346988679	<.0001
MDRG_701	PANCREAS, LIVER & SHUNT PROCEDURES	1	2.1103122702	0.1031218855	20.4642521805	<.0001
MDRG_704	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E.	1	0.2678345311	0.3776706446	0.7091748722	0.4782
MDRG_709	MALIGNANCY OF HEPATOBILIARY SYSTEM OR PANCREAS	1	-0.2002965551	0.2014979905	-0.9940374820	0.3202
MDRG_710	DISORDERS OF PANCREAS EXCEPT MALIGNANCY	1	-1.608419200	0.2416369424	-6.6563464326	<.0001
MDRG_711	DISORDERS OF LIVER EXCEPT MALIG,CIRR,ALC HEPA	1	-0.2132746898	0.1520165363	-1.4029703279	0.1606
MDRG_802	SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFECTION OR EXT FUS	1	2.0918898524	0.1387327256	15.0785609049	<.0001
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-2.218661016	0.1930317327	-11.4937631485	<.0001
MDRG_810	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	1	0.8509651446	0.1827704752	4.6559223729	<.0001
MDRG_812	MAJOR JOINT/LIMB REATTACHMENT PROCEDURE OF UPPER EXTREMITIES	1	0.4472285678	0.1258657063	3.5532201830	0.0004
MDRG_826	OTHER MUSCULOSKELETAL SYS & CONN TISS O.R. PROC	1	0.2484532943	0.1730667963	1.4355919199	0.1511

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_905	BREAST BIOPSY, LOCAL EXCISION & OTHER BREAST PROCEDURES	1	1.8139134877	0.2135699729	8.4932982988	<.0001
MDRG_910	CELLULITIS	1	-2.493785978	0.3326422394	-7.4969011218	<.0001
MDRG_1006	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC	1	0.1646629907	0.3351101109	0.4913698073	0.6232
MDRG_1101	KIDNEY TRANSPLANT	1	0.6021258607	0.2896851529	2.0785527138	0.0377
MDRG_1102	MAJOR BLADDER PROCEDURES	1	1.0242583026	0.2253289378	4.5456136825	<.0001
MDRG_1103	KIDNEY & URETER PROCEDURES FOR NEOPLASM	1	2.7991915946	0.0715410914	39.1270462647	<.0001
MDRG_1104	KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM	1	0.5827428710	0.1106361886	5.2671994449	<.0001
MDRG_1109	OTHER KIDNEY & URINARY TRACT PROCEDURES	1	0.7092155327	0.1488234837	4.7654813271	<.0001
MDRG_1110	RENAL FAILURE	1	-1.415307049	0.1382797943	-10.2350965716	<.0001
MDRG_1112	KIDNEY & URINARY TRACT NEOPLASMS	1	0.2374008647	0.3763823050	0.6307439577	0.5282
MDRG_1118	OTHER KIDNEY & URINARY TRACT DIAGNOSES	1	-1.227938086	0.1851341698	-6.6326928592	<.0001
MDRG_1604	RED BLOOD CELL DISORDERS	1	-2.570604422	0.3774172556	-6.8110410523	<.0001
MDRG_1710	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W OTHER O.R. PROC	1	1.2032499790	0.3130400819	3.8437569138	0.0001
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE	1	0.8902751015	0.0564428845	15.7730263070	<.0001
MDRG_1807	SEPTICEMIA OR SEVERE SEPSIS W MV >96 HOURS	1	1.5817203927	0.0522854306	30.2516470744	<.0001
MDRG_2108	COMPLICATIONS OF TREATMENT	1	-0.5759208742	0.2329985800	-2.4717784722	0.0134
MDRG_2502	HIV W MAJOR RELATED CONDITION	1	0.1521125754	0.2241513944	0.6786153432	0.4974
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.2780421130	0.0328933579	8.4528345869	<.0001
COVIDDX_Q1	COVID, Quarter 1, 2020	1	0.4050157052	0.3690541429	1.0974425107	0.2724
COVIDDX_Q2	COVID, Quarter 2, 2020	1	2.1138000662	0.0873048759	24.2117069086	<.0001
COVIDDX_Q3	COVID, Quarter 3, 2020	1	1.8943072587	0.0827742231	22.8852315169	<.0001
COVIDDX_Q4	COVID, Quarter 4, 2020	1	1.8300854649	0.0722404916	25.3332365902	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	1.8418402696	0.0657870020	27.9970239213	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	1.9883854053	0.0946686789	21.0036247260	<.0001
COVIDDX_Q7	COVID, Quarter 3, 2021	1	2.2564072934	0.0754833696	29.8927738059	<.0001
COVIDDX_Q8	COVID, Quarter 4, 2021	1	2.2361555407	0.0749158782	29.8488864330	<.0001
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	0.0640200298	0.0437879326	1.4620473269	0.1437

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Q1	Quarter 1, 2020	1	0.0759137253	0.0509839883	1.4889718862	0.1365
Q2	Quarter 2, 2020	1	0.1636794413	0.0541133224	3.0247531314	0.0025
Q3	Quarter 3, 2020	1	0.1742554272	0.0514973565	3.3837742151	0.0007
Q4	Quarter 4, 2020	1	0.0928558056	0.0535670313	1.7334506581	0.0830
Q5	Quarter 1, 2021	1	0.1170269568	0.0539371607	2.1696907143	0.0300
Q6	Quarter 2, 2021	1	0.0901886978	0.0525091986	1.7175790165	0.0859
Q7	Quarter 3, 2021	1	-0.0353374207	0.0522492077	-0.6763245284	0.4988
Intercept	Intercept	1	-8.665263853	0.0548227681	#####	<.0001

c-statistic=0.83

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 9. Risk Adjustment Coefficients for PSI 07 - Central Venous Catheter-Related Blood Stream Infection Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	0.5208340852	0.0645315446	8.0709998209	<.0001
Age_30_34	30 <= Age <= 34	1	0.6009215610	0.0692388263	8.6789680456	<.0001
Age_35_39	35 <= Age <= 39	1	0.6020044931	0.0834336537	7.2153677414	<.0001
Age_40_44	40 <= Age <= 44	1	0.3673040940	0.0610424537	6.0171908561	<.0001
Age_45_49	45 <= Age <= 49	1	0.3220220338	0.0814970673	3.9513327824	<.0001
Age_50_54	50 <= Age <= 54	1	0.2721146335	0.0573032778	4.7486748418	<.0001
Age_55_59	55 <= Age <= 59	1	0.2130508343	0.0523198376	4.0720851565	<.0001
Age_60_64	60 <= Age <= 64	1	0.1122358761	0.0497763622	2.2548027029	0.0241
Age_70_74	70 <= Age <= 74	1	-0.1761982805	0.0535087221	-3.2928889672	0.0010
Age_75_79	75 <= Age <= 79	1	-0.3810280515	0.0633713688	-6.0126214557	<.0001
Age_80_84	80 <= Age <= 84	1	-0.6688502488	0.0681489925	-9.8145287885	<.0001
Age_85_89	85 <= Age <= 89	1	-1.177131083	0.1019316397	-11.5482404321	<.0001
Age_90Plus	Age >= 90	1	-1.768852482	0.1583951056	-11.1673430562	<.0001
MALE	Patient Sex Flag: 1=Male / 0=Female	1	0.1555093674	0.0290614338	5.3510562731	<.0001
Age_35_39_MALE	35 <= Age <= 39 MALE	1	-0.0851121235	0.0995689344	-0.8548060097	0.3927
Age_45_49_MALE	45 <= Age <= 49 MALE	1	0.0698904608	0.0942917820	0.7412147622	0.4586
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	0.2391948403	0.0348559445	6.8623829899	<.0001
CMR_COAG	Coagulopathy	1	0.4126208727	0.0424280205	9.7251973630	<.0001
CMR_DEPRESS	Depression	1	0.0076642887	0.0397388375	0.1928664544	0.8471
CMR_HF	Heart failure	1	0.4651247241	0.0345098456	13.4780296988	<.0001
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.3730467013	0.0351230208	-10.6211451149	<.0001
CMR_LIVER_SEV	Liver disease, moderate to severe	1	0.4065196227	0.0824045828	4.9332161990	<.0001
CMR_NEURO_OTH	Other neurological disorders	1	0.4886666391	0.0405207492	12.0596644614	<.0001
CMR_NEURO_SEIZ	Seizures and epilepsy	1	0.1242772443	0.0528204707	2.3528234893	0.0186
CMR_OBESE	Obesity	1	0.1827941010	0.0283108105	6.4566890749	<.0001
CMR_PARALYSIS	Paralysis	1	0.3538022565	0.0483071090	7.3240204936	<.0001
CMR_PSYCHOSES	Psychoses	1	0.0731985839	0.0564000133	1.2978469260	0.1943
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	0.3856226029	0.0976811638	3.9477683080	<.0001
CMR_WGHTLOSS	Weight loss	1	1.0560666807	0.0444529401	23.7569591142	<.0001
MDC_14	Pregnancy, childbirth and the puerperium	1	-3.284787681	0.1434512102	-22.8982918726	<.0001
MDRG_404	RESPIRATORY INFECTIONS & INFLAMMATIONS	1	-2.173867715	0.1181029119	-18.4065547594	<.0001
MDRG_416	RESPIRATORY SYSTEM DIAGNOSIS W VENTILATOR SUPPORT	1	2.0157022054	0.0539693637	37.3490081325	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	0.3332435157	0.1229276979	2.7108903956	0.0067
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	0.4946048563	0.0750541095	6.5899770117	<.0001
MDRG_1109	OTHER KIDNEY & URINARY TRACT PROCEDURES	1	1.6000182939	0.1274186821	12.5571718980	<.0001
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE	1	0.2780682099	0.0598927334	4.6427704057	<.0001
MDRG_1807	SEPTICEMIA OR SEVERE SEPSIS W MV >96 HOURS	1	2.1746324285	0.0566705234	38.3732546759	<.0001
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.6561321315	0.0472976556	13.8724028377	<.0001
MEDICDR	Medical DRGs flag	1	-1.618622479	0.0388360427	-41.6783577134	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	2.8302433739	0.0894794041	31.6301097681	<.0001
COVIDDX_Q3	COVID, Quarter 3, 2020	1	2.5640405025	0.0917428590	27.9481207640	<.0001
COVIDDX_Q4	COVID, Quarter 4, 2020	1	2.1523171655	0.0891612221	24.1396104195	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	2.3669008945	0.0787170964	30.0684476894	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	2.2993022576	0.1096024574	20.9785648315	<.0001
COVIDDX_Q7	COVID, Quarter 3, 2021	1	1.9707627371	0.0866180904	22.7523226198	<.0001
COVIDDX_Q8	COVID, Quarter 4, 2021	1	2.3539053768	0.0825862100	28.5024022360	<.0001
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	-0.0694488491	0.0632920233	-1.0972764904	0.2725
Q1	Quarter 1, 2020	1	-0.1217507029	0.0754154674	-1.6143996330	0.1064
Q2	Quarter 2, 2020	1	0.0156024129	0.0779008850	0.2002854385	0.8413
Q3	Quarter 3, 2020	1	0.0850259056	0.0737766285	1.1524775164	0.2491
Q4	Quarter 4, 2020	1	0.0295650470	0.0729158511	0.4054680366	0.6851
Q5	Quarter 1, 2021	1	-0.0329675160	0.0737064000	-0.4472815921	0.6547
Q6	Quarter 2, 2021	1	-0.1009877497	0.0785723414	-1.2852837005	0.1987
Q7	Quarter 3, 2021	1	0.0676821338	0.0731480603	0.9252758508	0.3548
Intercept	Intercept	1	-8.759838165	0.0797368838	#####	<.0001

c-statistic=0.864

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 10. Risk Adjustment Coefficients for PSI 08 - In Hospital Fall-Associated Fracture Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	-1.306139714	0.0859626155	-15.1942760987	<.0001
Age_30_34	30 <= Age <= 34	1	-1.063738179	0.0997010847	-10.6692738856	<.0001
Age_35_39	35 <= Age <= 39	1	-1.061372174	0.0941647467	-11.2714387476	<.0001
Age_40_44	40 <= Age <= 44	1	-1.033037491	0.0945219785	-10.9290718154	<.0001
Age_45_49	45 <= Age <= 49	1	-0.6098705679	0.0518500471	-11.7621989097	<.0001
Age_50_54	50 <= Age <= 54	1	-0.3190107340	0.0402798648	-7.9198561277	<.0001
Age_55_59	55 <= Age <= 59	1	-0.1694527821	0.0440949556	-3.8429062862	0.0001
Age_60_64	60 <= Age <= 64	1	-0.0619947112	0.0401790922	-1.5429594787	0.1228
Age_70_74	70 <= Age <= 74	1	0.1735342078	0.0365108821	4.7529448147	<.0001
Age_75_79	75 <= Age <= 79	1	0.3276114303	0.0369975288	8.8549543937	<.0001
Age_80_84	80 <= Age <= 84	1	0.4555866099	0.0379198872	12.0144505620	<.0001
Age_85_89	85 <= Age <= 89	1	0.5317857477	0.0368651506	14.4251614072	<.0001
Age_90Plus	Age >= 90	1	0.5549801221	0.0451757597	12.2849095520	<.0001
MALE	Patient Sex Flag: 1=Male / 0=Female	1	-0.3163289791	0.0319274987	-9.9077281906	<.0001
Age_LT30_MALE	Age < 30 MALE	1	0.9249369507	0.0932558668	9.9182709039	<.0001
Age_30_34_MALE	30 <= Age <= 34 MALE	1	0.5605245216	0.1158252889	4.8393967056	<.0001
Age_35_39_MALE	35 <= Age <= 39 MALE	1	0.6437711863	0.1140130195	5.6464708088	<.0001
Age_40_44_MALE	40 <= Age <= 44 MALE	1	0.6107517157	0.1227240947	4.9766243328	<.0001
Age_55_59_MALE	55 <= Age <= 59 MALE	1	-0.1245669732	0.0633952680	-1.9649254137	0.0494
Age_60_64_MALE	60 <= Age <= 64 MALE	1	-0.1474597740	0.0556051010	-2.6519109087	0.0080
Age_70_74_MALE	70 <= Age <= 74 MALE	1	-0.1222230540	0.0517223239	-2.3630619170	0.0181
Age_75_79_MALE	75 <= Age <= 79 MALE	1	-0.1047736586	0.0530541650	-1.9748432307	0.0483
Age_80_84_MALE	80 <= Age <= 84 MALE	1	-0.0503129561	0.0532844967	-0.9442325470	0.3451
Age_90Plus_MALE	Age >= 90 MALE	1	0.0860615493	0.0666390853	1.2914575406	0.1965
CMR_ALCOHOL	Alcohol abuse	1	0.4072475753	0.0514148189	7.9208209551	<.0001
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	0.0574468774	0.0473747457	1.2126055048	0.2253
CMR_AUTOIMMUNE	Autoimmune conditions	1	0.1685356938	0.0354145987	4.7589327615	<.0001
CMR_CANCER_LEUK	Leukemia	1	0.3064081645	0.0740704209	4.1367142358	<.0001
CMR_CANCER_LYMPH	Lymphoma	1	0.2606345247	0.0683573334	3.8128246365	0.0001
CMR_CBVD	Cerebrovascular disease	1	0.0410438517	0.0417261906	0.9836472277	0.3253
CMR_COAG	Coagulopathy	1	0.0911449151	0.0504422206	1.8069171823	0.0708
CMR_DEMENTIA	Dementia	1	0.5718321291	0.0287677264	19.8775572901	<.0001
CMR_DEPRESS	Depression	1	0.2496982835	0.0206677654	12.0815327265	<.0001
CMR_DIAB_CX	Diabetes with chronic complications	1	0.1315845142	0.0303300259	4.3384240620	<.0001
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.1588842264	0.0277565416	-5.7242083200	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_DRUG_ABUSE	Drug abuse	1	0.0994206210	0.0377768052	2.6317900733	0.0085
CMR_HF	Heart failure	1	0.1218480755	0.0748431224	1.6280463926	0.1035
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.1814329429	0.0419493561	-4.3250471525	<.0001
CMR_LIVER_MLD	Liver disease, mild	1	0.0932497535	0.0597705905	1.5601276931	0.1187
CMR_LIVER_SEV	Liver disease, moderate to severe	1	0.4077748761	0.0685154544	5.9515751571	<.0001
CMR_LUNG_CHRONIC	Chronic pulmonary disease	1	0.2355395331	0.0176193369	13.3682404768	<.0001
CMR_NEURO_OTH	Other neurological disorders	1	0.2046779888	0.0635006898	3.2232404018	0.0013
CMR_NEURO_SEIZ	Seizures and epilepsy	1	0.1919853852	0.0569752908	3.3696253702	0.0008
CMR_OBESE	Obesity	1	-0.2231591186	0.0244347605	-9.1328547659	<.0001
CMR_PERIVASC	Peripheral vascular disease	1	0.0375169364	0.0333984512	1.1233136582	0.2613
CMR_PSYCHOSES	Psychoses	1	0.2182847221	0.0552223391	3.9528336872	<.0001
CMR_PULMCIRC	Pulmonary circulation disease	1	0.1862124711	0.0423402444	4.3980018041	<.0001
CMR_RENLFL_MOD	Renal failure, moderate	1	-0.1859702025	0.0682263351	-2.7257832658	0.0064
CMR_RENLFL_SEV	Renal failure, severe	1	0.0623913383	0.0421862556	1.4789494235	0.1392
CMR_THYROID_HYPO	Hypothyroidism	1	0.0435547942	0.0260275427	1.6734116898	0.0942
CMR_WGHTLOSS	Weight loss	1	0.4781689433	0.0492639950	9.7062559162	<.0001
PS08_NonWt_1	PS08 Comorbidity count using non-weighted method, category 1, count > 3 and count <= 6	1	0.1587542820	0.0382698657	4.1482842704	<.0001
MDC_20	Alcohol or drug use or induced organic mental disorders	1	2.0086158917	0.1568509792	12.8058868456	<.0001
MDC_22	Burns	1	-1.476434574	0.3232848528	-4.5669772706	<.0001
MDC_23	Factors influencing health status and other contacts with health services	1	-0.7211895807	0.1227511893	-5.8752146077	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	-2.026191844	0.4076304073	-4.9706592226	<.0001
MDRG_102	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX	1	-1.527812331	0.1795571771	-8.5087789596	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	-1.522411372	0.1392752516	-10.9309540261	<.0001
MDRG_105	VENTRICULAR SHUNT PROCEDURES	1	-1.957205697	0.3764495092	-5.1991187367	<.0001
MDRG_106	CAROTID ARTERY STENT PROCEDURE	1	-2.063981878	0.3161158324	-6.5291948909	<.0001
MDRG_107	EXTRACRANIAL PROCEDURES	1	-2.156154606	0.1944426025	-11.0889001579	<.0001
MDRG_108	PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC	1	-0.9668417453	0.1694255912	-5.7065862264	<.0001
MDRG_110	NERVOUS SYSTEM NEOPLASMS	1	-2.022421675	0.2082744537	-9.7103684079	<.0001
MDRG_111	DEGENERATIVE NERVOUS SYSTEM DISORDERS	1	-0.8390088618	0.0720294597	-11.6481348767	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_112	MULTIPLE SCLEROSIS & CEREBELLAR ATAXIA	1	-2.619348817	0.5021212841	-5.2165659972	<.0001
MDRG_113	ACUTE ISCHEMIC STROKE W USE OF THROMBOLYTIC AGENT	1	-2.555454120	0.2583713113	-9.8906264273	<.0001
MDRG_114	INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION	1	-2.143047952	0.0927283541	-23.1110319243	<.0001
MDRG_115	NONSPECIFIC CVA & PRECEREBRAL OCCLUSION W/O INFARCT	1	-2.045711113	0.3759907419	-5.4408550143	<.0001
MDRG_116	TRANSIENT ISCHEMIA	1	-2.631455233	0.2107148769	-12.4882270859	<.0001
MDRG_117	NONSPECIFIC CEREBROVASCULAR DISORDERS	1	-1.785410047	0.1171480684	-15.2406272794	<.0001
MDRG_118	CRANIAL & PERIPHERAL NERVE DISORDERS	1	-1.883530322	0.1720977039	-10.9445406871	<.0001
MDRG_120	HYPERTENSIVE ENCEPHALOPATHY	1	-2.006491118	0.3960426232	-5.0663514481	<.0001
MDRG_121	NONTRAUMATIC STUPOR & COMA	1	-1.864369740	0.5795922084	-3.2166922073	0.0013
MDRG_122	TRAUMATIC STUPOR & COMA, COMA >1 HR	1	-0.4073172869	0.3786394568	-1.0757391487	0.2820
MDRG_123	TRAUMATIC STUPOR & COMA, COMA <1 HR	1	-0.9505315053	0.3759310729	-2.5284728343	0.0115
MDRG_124	CONCUSSION	1	-1.061468461	0.4353014282	-2.4384676744	0.0147
MDRG_125	OTHER DISORDERS OF NERVOUS SYSTEM	1	-1.618105216	0.1221266606	-13.2494019568	<.0001
MDRG_126	BACTERIAL & TUBERCULOUS INFECTIONS OF NERVOUS SYSTEM	1	-1.265442979	0.2715383808	-4.6602729785	<.0001
MDRG_127	NON-BACTERIAL INFECT OF NERVOUS SYS EXC VIRAL MENINGITIS	1	-1.520539466	0.2892738917	-5.2564006292	<.0001
MDRG_128	SEIZURES	1	-1.679583171	0.1060986101	-15.8303974891	<.0001
MDRG_129	HEADACHES	1	-2.621803466	0.3483837792	-7.5256186491	<.0001
MDRG_205	NEUROLOGICAL EYE DISORDERS	1	-2.406140705	0.5784289378	-4.1597861867	<.0001
MDRG_302	OTHER EAR, NOSE, MOUTH AND THROAT O.R. PROCEDURES	1	-2.186684214	0.5027653916	-4.3493133186	<.0001
MDRG_304	MOUTH PROCEDURES	1	-1.767126656	0.5786056868	-3.0541121472	0.0023
MDRG_306	EAR, NOSE, MOUTH & THROAT MALIGNANCY	1	-1.844903094	0.4497503187	-4.1020606697	<.0001
MDRG_307	DYSEQUILIBRIUM	1	-2.697035702	0.3350059214	-8.0507105413	<.0001
MDRG_308	EPISTAXIS	1	-2.030512184	0.5032298884	-4.0349594314	<.0001
MDRG_309	OTITIS MEDIA & URI	1	-2.872209391	0.5249378489	-5.4715227663	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_310	OTHER EAR, NOSE, MOUTH & THROAT DIAGNOSES	1	-3.043784577	0.5767770366	-5.2772291253	<.0001
MDRG_311	DENTAL & ORAL DISEASES	1	-1.946788163	0.3442252154	-5.6555652400	<.0001
MDRG_401	MAJOR CHEST PROCEDURES	1	-1.974779451	0.1566177136	-12.6089150771	<.0001
MDRG_402	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS WITH PRINCIPAL DIAGNOSIS PULMONARY EMBOLISM	1	-1.312263752	0.1312542957	-9.9978727866	<.0001
MDRG_403	PULMONARY EMBOLISM	1	-2.750897403	0.1924015777	-14.2976863106	<.0001
MDRG_404	RESPIRATORY INFECTIONS & INFLAMMATIONS	1	-2.416341494	0.1207997354	-20.0028707504	<.0001
MDRG_405	RESPIRATORY NEOPLASMS	1	-2.288588033	0.1870791831	-12.2332586418	<.0001
MDRG_406	MAJOR CHEST TRAUMA	1	-0.3511947952	0.4165754873	-0.8430519940	0.3992
MDRG_407	PLEURAL EFFUSION	1	-2.531880660	0.2918426501	-8.6754991384	<.0001
MDRG_408	PULMONARY EDEMA & RESPIRATORY FAILURE	1	-2.201960482	0.1625011816	-13.5504275066	<.0001
MDRG_409	CHRONIC OBSTRUCTIVE PULMONARY DISEASE	1	-2.123843865	0.0835001640	-25.4352059057	<.0001
MDRG_410	SIMPLE PNEUMONIA & PLEURISY	1	-2.288599249	0.0832787686	-27.4811850411	<.0001
MDRG_411	INTERSTITIAL LUNG DISEASE	1	-2.514436726	0.3004852318	-8.3679211482	<.0001
MDRG_412	PNEUMOTHORAX	1	-1.008071446	0.4859055765	-2.0746241555	0.0380
MDRG_413	BRONCHITIS & ASTHMA	1	-2.739839773	0.2045619283	-13.3936935195	<.0001
MDRG_414	RESPIRATORY SIGNS & SYMPTOMS	1	-3.010785705	0.4985539078	-6.0390374208	<.0001
MDRG_415	OTHER RESPIRATORY SYSTEM DIAGNOSES	1	-1.645609420	0.3093176470	-5.3201278224	<.0001
MDRG_416	RESPIRATORY SYSTEM DIAGNOSIS W VENTILATOR SUPPORT	1	-1.855305319	0.1857455011	-9.9884266829	<.0001
MDRG_501	OTHER HEART ASSIST SYSTEM IMPLANT	1	-1.878736031	0.3068059554	-6.1235318225	<.0001
MDRG_503	CONCOMITANT AORTIC AND MITRAL VALVE PROCEDURES	1	-1.647883193	0.1356653461	-12.1466774011	<.0001
MDRG_505	OTHER CARDIOTHORACIC PROCEDURES	1	-1.788286204	0.2667365272	-6.7043168886	<.0001
MDRG_506	CORONARY BYPASS W PTCA	1	-1.451467195	0.5773169054	-2.5141602155	0.0119
MDRG_507	CORONARY BYPASS WITH CARDIAC CATHETERIZATION OR OPEN ABLATION	1	-1.968589773	0.2005177494	-9.8175337548	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_508	CORONARY BYPASS W/O CARDIAC CATH	1	-1.814052962	0.1919025213	-9.4529918071	<.0001
MDRG_509	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE	1	-1.859575545	0.1889360034	-9.8423567325	<.0001
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	-1.960086560	0.1518023836	-12.9120934350	<.0001
MDRG_511	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE	1	-2.368685872	0.1013530984	-23.3706310826	<.0001
MDRG_512	AICD PROCEDURES	1	-1.693550182	0.5013879875	-3.3777238867	0.0007
MDRG_513	PERC CARDIOVASC PROC W/O INTRALUMINAL DEVICE	1	-2.579010252	0.4711055145	-5.4743792468	<.0001
MDRG_514	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES	1	-1.909972702	0.1112571821	-17.1671856660	<.0001
MDRG_515	UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS	1	-0.9972332920	0.2640623462	-3.7765069744	0.0002
MDRG_517	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT	1	-1.726573770	0.3599454718	-4.7967648046	<.0001
MDRG_519	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES	1	-1.488389386	0.2114010971	-7.0405944258	<.0001
MDRG_520	ACUTE MYOCARDIAL INFARCTION	1	-2.521826976	0.1090946951	-23.1159450367	<.0001
MDRG_522	CIRCULATORY DISORDERS EXCEPT AMI, W CARD CATH	1	-2.505028462	0.1197648543	-20.9162235218	<.0001
MDRG_523	ACUTE & SUBACUTE ENDOCARDITIS	1	-2.291947353	0.5786998527	-3.9605113812	<.0001
MDRG_524	HEART FAILURE & SHOCK	1	-2.419468696	0.0941133426	-25.7080306484	<.0001
MDRG_526	CARDIAC ARREST, UNEXPLAINED	1	-2.246564391	0.4485787718	-5.0081825806	<.0001
MDRG_527	PERIPHERAL VASCULAR DISORDERS	1	-2.480250346	0.1617799973	-15.3310074626	<.0001
MDRG_528	ATHEROSCLEROSIS	1	-2.216747745	0.2574947609	-8.6089042624	<.0001
MDRG_529	HYPERTENSION	1	-2.594400875	0.1876699306	-13.8242757763	<.0001
MDRG_530	CARDIAC CONGENITAL & VALVULAR DISORDERS	1	-1.934760050	0.2917207201	-6.6322339017	<.0001
MDRG_531	CARDIAC ARRHYTHMIA & CONDUCTION DISORDERS	1	-2.653617756	0.1142039683	-23.2357753851	<.0001
MDRG_533	SYNCOPE & COLLAPSE	1	-2.143609621	0.1632913296	-13.1275164858	<.0001
MDRG_534	CHEST PAIN	1	-2.743596822	0.2042470287	-13.4327379933	<.0001
MDRG_535	OTHER CIRCULATORY SYSTEM DIAGNOSES	1	-2.586419539	0.1497655942	-17.2697845103	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	-2.423799264	0.1642624386	-14.7556512942	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	-2.447141171	0.2998716311	-8.1606291408	<.0001
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	-2.010415604	0.1395266588	-14.4088278275	<.0001
MDRG_543	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES	1	-2.986443380	0.2536140013	-11.7755461608	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-1.349794184	0.1988661790	-6.7874496836	<.0001
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	-2.014236088	0.1601705151	-12.5755735177	<.0001
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	-2.002150726	0.0817860578	-24.4803427173	<.0001
MDRG_604	PERITONEAL ADHESIOLYSIS	1	-1.894790857	0.1937608907	-9.7790160338	<.0001
MDRG_607	MINOR SMALL & LARGE BOWEL PROCEDURES	1	-1.229042692	0.2767367511	-4.4411979533	<.0001
MDRG_609	INGUINAL & FEMORAL HERNIA PROCEDURES	1	-1.849495183	0.3123754894	-5.9207436099	<.0001
MDRG_610	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL	1	-2.927664276	0.3788770924	-7.7272137442	<.0001
MDRG_611	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES	1	-1.514846864	0.1640806960	-9.2323283685	<.0001
MDRG_612	MAJOR ESOPHAGEAL DISORDERS	1	-2.141428863	0.2516242022	-8.5104248471	<.0001
MDRG_613	MAJOR GASTROINTESTINAL DISORDERS & PERITONEAL INFECTIONS	1	-2.295088864	0.1591567664	-14.4203034213	<.0001
MDRG_614	DIGESTIVE MALIGNANCY	1	-2.166280404	0.1639816420	-13.2105056187	<.0001
MDRG_615	G.I. HEMORRHAGE	1	-2.424910163	0.0979415063	-24.7587591200	<.0001
MDRG_616	COMPLICATED PEPTIC ULCER	1	-2.498535896	0.2668581953	-9.3627849536	<.0001
MDRG_617	UNCOMPLICATED PEPTIC ULCER	1	-2.792572992	0.5759160435	-4.8489237689	<.0001
MDRG_618	INFLAMMATORY BOWEL DISEASE	1	-2.477990746	0.2607889944	-9.5018992310	<.0001
MDRG_619	G.I. OBSTRUCTION	1	-2.624512271	0.1256948338	-20.8800329413	<.0001
MDRG_620	ESOPHAGITIS, GASTROENT & MISC DIGEST DISORDERS	1	-2.561793317	0.0988012359	-25.9287578047	<.0001
MDRG_621	OTHER DIGESTIVE SYSTEM DIAGNOSES	1	-2.497275965	0.1317738192	-18.9512300673	<.0001
MDRG_622	APPENDIX PROCEDURES	1	-3.345615640	0.4164206336	-8.0342215771	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_701	PANCREAS, LIVER & SHUNT PROCEDURES	1	-1.914862023	0.2295761710	-8.3408570425	<.0001
MDRG_702	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E.	1	-1.338721702	0.4467291641	-2.9967188399	0.0027
MDRG_704	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E.	1	-2.005409772	0.4097980693	-4.8936535392	<.0001
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	-2.620776798	0.1692510433	-15.4845532808	<.0001
MDRG_706	HEPATOBIILIARY DIAGNOSTIC PROCEDURES	1	-1.552529669	0.4986590485	-3.1134091989	0.0018
MDRG_707	OTHER HEPATOBIILIARY OR PANCREAS O.R. PROCEDURES	1	-1.217289197	0.3790245462	-3.2116368432	0.0013
MDRG_708	CIRRHOSIS & ALCOHOLIC HEPATITIS	1	-2.286499552	0.1297399470	-17.6237127091	<.0001
MDRG_709	MALIGNANCY OF HEPATOBIILIARY SYSTEM OR PANCREAS	1	-2.026700054	0.1772469082	-11.4343323349	<.0001
MDRG_710	DISORDERS OF PANCREAS EXCEPT MALIGNANCY	1	-2.513715876	0.1294139315	-19.4238429165	<.0001
MDRG_711	DISORDERS OF LIVER EXCEPT MALIG,CIRR,ALC HEPA	1	-2.149929116	0.1819363465	-11.8169302484	<.0001
MDRG_712	DISORDERS OF THE BILIARY TRACT	1	-2.718696027	0.1862719352	-14.5953067204	<.0001
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-0.8831344996	0.1057979942	-8.3473652446	<.0001
MDRG_802	SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFEC OR EXT FUS	1	-0.7582182924	0.2368447438	-3.2013304590	0.0014
MDRG_803	SPINAL FUSION EXCEPT CERVICAL	1	-1.492232446	0.1190792464	-12.5314233271	<.0001
MDRG_804	BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY	1	-0.4113847858	0.2141045138	-1.9214204247	0.0547
MDRG_805	WND DEBRID & SKN GRFT EXC HAND, FOR MUSCULO-CONN TISS DIS	1	-0.1278622304	0.1000453459	-1.2780427643	0.2012
MDRG_808	CERVICAL SPINAL FUSION	1	-1.827991780	0.1737652301	-10.5198938810	<.0001
MDRG_809	AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS	1	-1.339628768	0.2711549612	-4.9404545711	<.0001
MDRG_810	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	1	-0.9491801491	0.2480302606	-3.8268723612	0.0001
MDRG_812	MAJOR JOINT/LIMB REATTACHMENT PROCEDURE OF UPPER EXTREMITIES	1	-0.3799476463	0.0877048965	-4.3321144128	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_813	KNEE PROCEDURES W PDX OF INFECTION	1	-2.418656343	0.5002686228	-4.8347152561	<.0001
MDRG_814	KNEE PROCEDURES W/O PDX OF INFECTION	1	-1.118480530	0.3240240426	-3.4518442560	0.0006
MDRG_815	BACK & NECK PROC EXC SPINAL FUSION OR DISC DEVICE/NEUROSTIM	1	-1.706817270	0.2090063900	-8.1663401309	<.0001
MDRG_816	LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR	1	0.4487383667	0.1266980215	3.5417945851	0.0004
MDRG_817	LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR	1	-0.3912270187	0.2299314584	-1.7014940947	0.0889
MDRG_818	LOCAL EXCISION & REMOVAL INT FIX DEVICES OF HIP & FEMUR	1	-0.0744481757	0.3314420028	-0.2246190135	0.8223
MDRG_819	SOFT TISSUE PROCEDURES	1	-1.182109002	0.1858556942	-6.3603593457	<.0001
MDRG_820	FOOT PROCEDURES	1	-1.203942469	0.2836416510	-4.2445898349	<.0001
MDRG_824	SHOULDER,ELBOW OR FOREARM PROC,EXC MAJOR JOINT PROC	1	0.3041923431	0.3174939848	0.9581042716	0.3380
MDRG_825	HAND OR WRIST PROC, EXCEPT MAJOR THUMB OR JOINT PROC	1	-1.255355639	0.3626694659	-3.4614318457	0.0005
MDRG_826	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC	1	-1.438390288	0.1659716359	-8.6664825594	<.0001
MDRG_830	OSTEOMYELITIS	1	-2.169070008	0.3324600521	-6.5243026766	<.0001
MDRG_831	PATHOLOGICAL FRACTURES & MUSCULOSKELET & CONN TISS MALIG	1	-1.212108287	0.1732172406	-6.9976191901	<.0001
MDRG_832	CONNECTIVE TISSUE DISORDERS	1	-1.966639327	0.2659965351	-7.3934772361	<.0001
MDRG_834	MEDICAL BACK PROBLEMS	1	-1.790701580	0.1366097363	-13.1081548687	<.0001
MDRG_835	BONE DISEASES & ARTHROPATHIES	1	-2.117892076	0.2650140026	-7.9916232925	<.0001
MDRG_836	SIGNS & SYMPTOMS OF MUSCULOSKELETAL SYSTEM & CONN TISSUE	1	-1.432490571	0.1906602848	-7.5133139163	<.0001
MDRG_837	TENDONITIS, MYOSITIS & BURSITIS	1	-1.818477588	0.2059759554	-8.8285915951	<.0001
MDRG_838	AFTERCARE, MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	1	-0.5205142810	0.0708839121	-7.3431934740	<.0001
MDRG_839	FX, SPRN, STRN & DISL EXCEPT FEMUR, HIP, PELVIS & THIGH	1	-0.6276772195	0.2557902495	-2.4538746911	0.0141
MDRG_840	OTHER MUSCULOSKELETAL SYS & CONNECTIVE TISSUE DIAGNOSES	1	-1.487794268	0.3283089025	-4.5316902983	<.0001
MDRG_841	HIP REPLACEMENT WITH PRINCIPAL DIAGNOSIS OF HIP FRACTURE	1	0.1576764910	0.2854237491	0.5524294719	0.5807

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_901	SKIN GRAFT FOR SKIN ULCER OR CELLULITIS	1	-0.9053698387	0.3542715306	-2.5555816952	0.0106
MDRG_902	SKIN GRAFT EXC FOR SKIN ULCER OR CELLULITIS	1	-1.711299256	0.4496604086	-3.8057592416	0.0001
MDRG_903	OTHER SKIN, SUBCUT TISS & BREAST PROC	1	-1.904543884	0.2190313526	-8.6953025735	<.0001
MDRG_906	SKIN ULCERS	1	-2.053658469	0.2854455996	-7.1945704258	<.0001
MDRG_908	MALIGNANT BREAST DISORDERS	1	-2.052563699	0.4496812566	-4.5644857756	<.0001
MDRG_910	CELLULITIS	1	-2.116256298	0.1009003806	-20.9737196686	<.0001
MDRG_911	TRAUMA TO THE SKIN, SUBCUT TISS & BREAST	1	-2.011633600	0.2693494072	-7.4684909124	<.0001
MDRG_912	MINOR SKIN DISORDERS	1	-2.357126947	0.3752543315	-6.2814116981	<.0001
MDRG_913	SKIN DEBRIDEMENT FOR SKIN ULCER OR CELLULITIS	1	-2.084112433	0.2657204584	-7.8432516835	<.0001
MDRG_1002	AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS	1	-1.831318891	0.1850187836	-9.8980160560	<.0001
MDRG_1003	O.R. PROCEDURES FOR OBESITY	1	-3.254903975	0.3210971960	-10.1368184318	<.0001
MDRG_1004	SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS	1	-1.349908547	0.2169304011	-6.2227725585	<.0001
MDRG_1005	THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES	1	-1.942672493	0.4483600341	-4.3328404532	<.0001
MDRG_1006	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC	1	0.4048627191	0.0941618241	4.2996482182	<.0001
MDRG_1007	DIABETES	1	-2.316204068	0.1034286028	-22.3942314412	<.0001
MDRG_1008	MISC DISORDERS OF NUTRITION,METABOLISM,FLUIDS/ELECTROLYTES	1	-2.222034492	0.1010041987	-21.9994269642	<.0001
MDRG_1009	INBORN AND OTHER DISORDERS OF METABOLISM	1	-1.995307862	0.5788211751	-3.4471922382	0.0006
MDRG_1010	ENDOCRINE DISORDERS	1	-1.794483367	0.1769958106	-10.1385640765	<.0001
MDRG_1101	KIDNEY TRANSPLANT	1	-2.410050933	0.4339040915	-5.5543401884	<.0001
MDRG_1102	MAJOR BLADDER PROCEDURES	1	-1.818266373	0.3315282812	-5.4844985354	<.0001
MDRG_1103	KIDNEY & URETER PROCEDURES FOR NEOPLASM	1	-2.392786817	0.2847429661	-8.4033219494	<.0001
MDRG_1104	KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM	1	-2.155968864	0.1456910504	-14.7982244517	<.0001
MDRG_1105	MINOR BLADDER PROCEDURES	1	-1.490068725	0.4464075615	-3.3379110331	0.0008
MDRG_1106	PROSTATECTOMY	1	-1.334699133	0.4481809440	-2.9780363287	0.0029

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1107	TRANSURETHRAL PROCEDURES	1	-1.733581008	0.2645299195	-6.5534401990	<.0001
MDRG_1109	OTHER KIDNEY & URINARY TRACT PROCEDURES	1	-1.478306753	0.1483488970	-9.9650673713	<.0001
MDRG_1110	RENAL FAILURE	1	-2.523846154	0.1558445956	-16.1946337905	<.0001
MDRG_1112	KIDNEY & URINARY TRACT NEOPLASMS	1	-2.275988828	0.4478199530	-5.0823747642	<.0001
MDRG_1113	KIDNEY & URINARY TRACT INFECTIONS	1	-2.280531827	0.1130758627	-20.1681576698	<.0001
MDRG_1115	URINARY STONES	1	-2.760932006	0.4493920064	-6.1437051994	<.0001
MDRG_1118	OTHER KIDNEY & URINARY TRACT DIAGNOSES	1	-2.927627048	0.1656590000	-17.6726108993	<.0001
MDRG_1204	TRANSURETHRAL PROSTATECTOMY	1	-2.555506734	0.5790963131	-4.4129217830	<.0001
MDRG_1206	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC EXC MALIGNANCY	1	-1.761825931	0.5802628814	-3.0362547526	0.0024
MDRG_1208	BENIGN PROSTATIC HYPERTROPHY	1	-2.264026785	0.5722292294	-3.9565032138	<.0001
MDRG_1302	UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY	1	-2.721970055	0.5741447519	-4.7409125421	<.0001
MDRG_1303	UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG	1	-2.470907394	0.4997325860	-4.9444592236	<.0001
MDRG_1304	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	-4.243865344	0.5822361722	-7.2889070557	<.0001
MDRG_1305	D&C, CONIZATION, LAPAROSCOPY & TUBAL INTERRUPTION	1	-2.015492729	0.5708729038	-3.5305454427	0.0004
MDRG_1309	MALIGNANCY, FEMALE REPRODUCTIVE SYSTEM	1	-2.337966093	0.4077892088	-5.7332711191	<.0001
MDRG_1311	MENSTRUAL & OTHER FEMALE REPRODUCTIVE SYSTEM DISORDERS	1	-2.429322905	0.5636438104	-4.3100320808	<.0001
MDRG_1601	SPLenic PROCEDURES	1	-0.9129176356	0.5999019684	-1.5217780300	0.1281
MDRG_1602	OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS	1	-1.983309366	0.5769031763	-3.4378548207	0.0006
MDRG_1603	MAJOR HEMATOL/IMMUN DIAG EXC SICKLE CELL CRISIS & COAGUL	1	-2.535265674	0.2185737931	-11.5991292380	<.0001
MDRG_1604	RED BLOOD CELL DISORDERS	1	-2.543893675	0.1278878520	-19.8915974856	<.0001
MDRG_1605	COAGULATION DISORDERS	1	-2.069244958	0.2719289707	-7.6095053533	<.0001
MDRG_1606	RETICULOENDOTHELIAL & IMMUNITY DISORDERS	1	-2.257549841	0.4690071208	-4.8134660227	<.0001
MDRG_1707	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE	1	-1.392065122	0.3551442398	-3.9197175858	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1708	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC	1	-1.037904210	0.2071807946	-5.0096545460	<.0001
MDRG_1709	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W MAJ O.R. PROC	1	-1.563733335	0.3702675848	-4.2232520469	<.0001
MDRG_1710	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W OTHER O.R. PROC	1	-0.2054743528	0.2322402541	-0.8847490869	0.3763
MDRG_1711	ACUTE LEUKEMIA W/O MAJOR O.R. PROCEDURE	1	-0.9248013022	0.1605387991	-5.7606093177	<.0001
MDRG_1712	CHEMO W ACUTE LEUKEMIA	1	-1.461155363	0.2491156582	-5.8653694170	<.0001
MDRG_1713	LYMPHOMA & NON-ACUTE LEUKEMIA	1	-1.755370144	0.1817959880	-9.6557144285	<.0001
MDRG_1714	OTHER MYELOPROLIF DIS OR POORLY DIFF NEOPL DIAG	1	-1.640864336	0.3047159555	-5.3848979896	<.0001
MDRG_1715	CHEMOTHERAPY W/O ACUTE LEUKEMIA AS SECONDARY DIAGNOSIS	1	-2.361854893	0.2279987979	-10.3590673045	<.0001
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE	1	-0.8533537583	0.0843567155	-10.1160145102	<.0001
MDRG_1802	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC	1	-1.262330434	0.1391816462	-9.0696616171	<.0001
MDRG_1803	POSTOPERATIVE & POST-TRAUMATIC INFECTIONS	1	-2.625879995	0.2472287964	-10.6212546141	<.0001
MDRG_1804	FEVER	1	-3.382587161	0.5777345408	-5.8549159219	<.0001
MDRG_1805	VIRAL ILLNESS	1	-2.538704702	0.4065359029	-6.2447244743	<.0001
MDRG_1806	OTHER INFECTIOUS & PARASITIC DISEASES DIAGNOSES	1	-1.498079558	0.2895197590	-5.1743603394	<.0001
MDRG_1807	SEPTICEMIA OR SEVERE SEPSIS W MV >96 HOURS	1	-1.965271380	0.1443168661	-13.6177526087	<.0001
MDRG_1808	SEPTICEMIA OR SEVERE SEPSIS W/O MV >96 HOURS	1	-2.614051194	0.1271088071	-20.5654608276	<.0001
MDRG_1909	O.R. PROCEDURE W PRINCIPAL DIAGNOSES OF MENTAL ILLNESS	1	2.4075227318	0.1136123900	21.1906705987	<.0001
MDRG_1910	ACUTE ADJUSTMENT REACTION & PSYCHOSOCIAL DYSFUNCTION	1	-1.309752798	0.1740500592	-7.5251499714	<.0001
MDRG_1911	DEPRESSIVE NEUROSES	1	-1.309145623	0.1646924150	-7.9490341044	<.0001
MDRG_1912	NEUROSES EXCEPT DEPRESSIVE	1	-1.849094990	0.3319329025	-5.5706890631	<.0001
MDRG_1913	DISORDERS OF PERSONALITY & IMPULSE CONTROL	1	-0.8629993673	0.2729673818	-3.1615475877	0.0016
MDRG_1914	ORGANIC DISTURBANCES & MENTAL RETARDATION	1	-0.2703306660	0.0761123393	-3.5517324611	0.0004

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1915	PSYCHOSES	1	-0.6866123028	0.0839381752	-8.1799765268	<.0001
MDRG_2018	ALCOHOL/DRUG ABUSE OR DEPENDENCE	1	-3.791162240	0.1745488015	-21.7197838485	<.0001
MDRG_2101	WOUND DEBRIDEMENTS FOR INJURIES	1	-1.241808075	0.3439253711	-3.6106905130	0.0003
MDRG_2102	SKIN GRAFTS FOR INJURIES	1	-0.7372936403	0.4508822521	-1.6352243561	0.1020
MDRG_2103	HAND PROCEDURES FOR INJURIES	1	-1.194567387	0.5798728084	-2.0600507045	0.0394
MDRG_2104	OTHER O.R. PROCEDURES FOR INJURIES	1	-0.8552729864	0.1366592052	-6.2584367064	<.0001
MDRG_2105	TRAUMATIC INJURY	1	-0.9133986749	0.2857968795	-3.1959714766	0.0014
MDRG_2106	ALLERGIC REACTIONS	1	-3.062474021	0.5773095217	-5.3047349913	<.0001
MDRG_2107	POISONING & TOXIC EFFECTS OF DRUGS	1	-1.925311887	0.1087489040	-17.7041957758	<.0001
MDRG_2108	COMPLICATIONS OF TREATMENT	1	-2.375769155	0.2050225879	-11.5878410208	<.0001
MDRG_2109	OTHER INJURY, POISONING & TOXIC EFFECT DIAG	1	-2.554835251	0.4983890781	-5.1261862741	<.0001
MDRG_2210	EXTENSIVE BURNS OR FULL THICKNESS BURNS W MV >96 HRS W SKIN GRAFT	1	1.4864381124	0.5291808907	2.8089414006	0.0050
MDRG_2301	O.R. PROC W DIAGNOSES OF OTHER CONTACT W HEALTH SERVICES	1	0.9572538680	0.2002517572	4.7802520259	<.0001
MDRG_2302	REHABILITATION	1	-0.3424361941	0.1822817749	-1.8786090614	0.0603
MDRG_2303	SIGNS & SYMPTOMS	1	-0.5867975292	0.1481790618	-3.9600569875	<.0001
MDRG_2305	OTHER FACTORS INFLUENCING HEALTH STATUS	1	-2.925226618	0.3629572607	-8.0594244414	<.0001
MDRG_2406	CRANIOTOMY FOR MULTIPLE SIGNIFICANT TRAUMA	1	2.5398054150	0.5584303654	4.5481148093	<.0001
MDRG_2408	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA	1	1.3388883474	0.4129895483	3.2419424481	0.0012
MDRG_2409	OTHER MULTIPLE SIGNIFICANT TRAUMA	1	1.2902625022	0.4277320659	3.0165203992	0.0026
MDRG_2501	HIV W EXTENSIVE O.R. PROCEDURE	1	0.3207048717	0.3296199861	0.9729533561	0.3306
MDRG_2502	HIV W MAJOR RELATED CONDITION	1	-2.089728181	0.2886328800	-7.2400905295	<.0001
MDRG_7701	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	1	-0.3046755963	0.2348681819	-1.2972195457	0.1946
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.0763517634	0.0328022296	2.3276394430	0.0199
COVIDDX_Q1	COVID, Quarter 1, 2020	1	-0.0997030034	0.4870356464	-0.2047139756	0.8378
COVIDDX_Q2	COVID, Quarter 2, 2020	1	0.0963096842	0.1414191296	0.6810230304	0.4959

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
COVIDDX_Q3	COVID, Quarter 3, 2020	1	0.1271540191	0.1312227458	0.9689937394	0.3325
COVIDDX_Q4	COVID, Quarter 4, 2020	1	0.1870437422	0.1266696822	1.4766259689	0.1398
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.3789158513	0.1022230144	3.7067567763	0.0002
COVIDDX_Q6	COVID, Quarter 2, 2021	1	-0.0131977194	0.1896670138	-0.0695836306	0.9445
COVIDDX_Q7	COVID, Quarter 3, 2021	1	-0.0311151477	0.1420957777	-0.2189730632	0.8267
COVIDDX_Q8	COVID, Quarter 4, 2021	1	0.3023966675	0.1385855304	2.1820219371	0.0291
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	-0.0681134003	0.0383831315	-1.7745660043	0.0760
Q1	Quarter 1, 2020	1	-0.1019602567	0.0472771555	-2.1566495610	0.0310
Q2	Quarter 2, 2020	1	0.0600760490	0.0421841147	1.4241391435	0.1544
Q3	Quarter 3, 2020	1	0.0263423442	0.0387960182	0.6789960786	0.4971
Q4	Quarter 4, 2020	1	0.0252984071	0.0401118914	0.6306959423	0.5282
Q5	Quarter 1, 2021	1	-0.0449677327	0.0404221424	-1.1124529785	0.2659
Q6	Quarter 2, 2021	1	-0.0534242103	0.0385038382	-1.3875035002	0.1653
Q7	Quarter 3, 2021	1	0.0267910038	0.0358117467	0.7481065921	0.4544
Intercept	Intercept	1	-6.766368344	0.1056978981	-64.0161107091	<.0001

c-statistic=0.757

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 11. Risk Adjustment Coefficients for PSI 09 - Postoperative Hemorrhage or Hematoma Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	-0.3572754193	0.0493476471	-7.2399686774	<.0001
Age_30_34	30 <= Age <= 34	1	-0.1362977667	0.0369402646	-3.6896802983	0.0002
Age_35_39	35 <= Age <= 39	1	-0.0960852002	0.0328655151	-2.9235872325	0.0035
Age_40_44	40 <= Age <= 44	1	-0.0424896923	0.0372885259	-1.1394843670	0.2545
Age_45_49	45 <= Age <= 49	1	-0.0312866412	0.0267845299	-1.1680862527	0.2428
Age_50_54	50 <= Age <= 54	1	0.0073096289	0.0240130555	0.3044022819	0.7608
Age_55_59	55 <= Age <= 59	1	0.0072190400	0.0224770435	0.3211739098	0.7481
Age_60_64	60 <= Age <= 64	1	0.0238408095	0.0200598424	1.1884843859	0.2346
Age_70_74	70 <= Age <= 74	1	0.0162835684	0.0292476128	0.5567486337	0.5777
Age_75_79	75 <= Age <= 79	1	0.0642941892	0.0302099216	2.1282474710	0.0333
Age_80_84	80 <= Age <= 84	1	0.0388921117	0.0255131065	1.5243973396	0.1274
Age_85_89	85 <= Age <= 89	1	-0.0882270795	0.0371021228	-2.3779523320	0.0174
Age_90Plus	Age >= 90	1	-0.3368023914	0.0724195789	-4.6507090576	<.0001
MALE	Patient Sex Flag: 1=Male / 0=Female	1	0.0959850247	0.0143255443	6.7002707154	<.0001
Age_LT30_MALE	Age < 30 MALE	1	0.3043852461	0.0579249227	5.2548235181	<.0001
Age_40_44_MALE	40 <= Age <= 44 MALE	1	0.0435087277	0.0483947795	0.8990376274	0.3686
Age_70_74_MALE	70 <= Age <= 74 MALE	1	0.0110596606	0.0321448337	0.3440571732	0.7308
Age_75_79_MALE	75 <= Age <= 79 MALE	1	-0.0016152050	0.0369436248	-0.0437208052	0.9651
Age_90Plus_MALE	Age >= 90 MALE	1	0.0898062851	0.1040902079	0.8627736164	0.3883
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	-0.3518237999	0.0195334633	-18.0113374472	<.0001
CMR_BLDLOSS	Chronic blood loss anemia (iron deficiency)	1	-0.0908890383	0.0635550529	-1.4300835921	0.1527
CMR_CANCER_METS	Metastatic cancer	1	0.0944890705	0.0282648154	3.3429926641	0.0008
CMR_CANCER_NSITU	Solid tumor without metastasis, in situ	1	0.7616178458	0.1109544157	6.8642409654	<.0001
CMR_CBVD	Cerebrovascular disease	1	0.0900381205	0.0253641540	3.5498176143	0.0004
CMR_COAG	Coagulopathy	1	0.3136970691	0.2293899271	1.3675276549	0.1715
CMR_DEMENTIA	Dementia	1	-0.2731765439	0.0359368903	-7.6015632372	<.0001
CMR_DEPRESS	Depression	1	0.0177789555	0.0173457907	1.0249723280	0.3054
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.1871739873	0.0215850863	-8.6714495742	<.0001
CMR_HF	Heart failure	1	0.2349311552	0.0188908598	12.4362341435	<.0001
CMR_LIVER_SEV	Liver disease, moderate to severe	1	0.2179237943	0.0625584610	3.4835223036	0.0005
CMR_NEURO_MOVT	Neurological disorders affecting movement	1	-0.1034983736	0.0399512073	-2.5906194244	0.0096
CMR_NEURO_SEIZ	Seizures and epilepsy	1	0.0379143725	0.0324666174	1.1677955868	0.2429
CMR_PERIVASC	Peripheral vascular disease	1	0.4248405219	0.0181195866	23.4464798627	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_PULMCIRC	Pulmonary circulation disease	1	0.0434595466	0.0299343121	1.4518304739	0.1465
CMR_RENLFL_MOD	Renal failure, moderate	1	-0.0399935810	0.0203525320	-1.9650420387	0.0494
CMR_RENLFL_SEV	Renal failure, severe	1	0.1782039756	0.0247841555	7.1902379651	<.0001
CMR_THYROID_OTH	Other thyroid disorders	1	-0.0063700352	0.0437163587	-0.1457128505	0.8841
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	0.3550940635	0.0511250791	6.9455944107	<.0001
CMR_VALVE	Valvular disease	1	0.2313596834	0.0221044998	10.4666328115	<.0001
CMR_WGHTLOSS	Weight loss	1	0.4281453292	0.0233251399	18.3555310009	<.0001
PS09_NonWt_1	PS09 Comorbidity count using non-weighted method, category 1, count > 1 and count <= 3	1	0.1623251924	0.0165188934	9.8266383850	<.0001
PS09_NonWt_2	PS09 Comorbidity count using non-weighted method, category 2, count >= 4	1	0.1725518849	0.0243439721	7.0880743751	<.0001
MDC_2	Diseases and disorders of the eye	1	-1.371854204	0.2610355202	-5.2554311491	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	0.7821274208	0.1040682536	7.5155236486	<.0001
MDRG_102	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX	1	-0.7718022630	0.0741499636	-10.4086667749	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	0.2859642879	0.0426039850	6.7121488330	<.0001
MDRG_105	VENTRICULAR SHUNT PROCEDURES	1	-2.595381635	0.3481083574	-7.4556717159	<.0001
MDRG_106	CAROTID ARTERY STENT PROCEDURE	1	-0.2892090397	0.0901185770	-3.2092055760	0.0013
MDRG_107	EXTRACRANIAL PROCEDURES	1	0.8444416920	0.0382552107	22.0738998826	<.0001
MDRG_301	MAJOR HEAD AND NECK PROCEDURES	1	0.8451225755	0.0612285584	13.8027514812	<.0001
MDRG_302	OTHER EAR, NOSE, MOUTH AND THROAT O.R. PROCEDURES	1	1.0278916399	0.0720895521	14.2585383000	<.0001
MDRG_401	MAJOR CHEST PROCEDURES	1	0.0594599503	0.0449604767	1.3224937688	0.1860
MDRG_402	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS WITH PRINCIPAL DIAGNOSIS PULMONARY EMBOLISM	1	-1.209077728	0.1188380974	-10.1741592506	<.0001
MDRG_501	OTHER HEART ASSIST SYSTEM IMPLANT	1	0.8742846844	0.0688069992	12.7063335720	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_503	CONCOMITANT AORTIC AND MITRAL VALVE PROCEDURES	1	0.8788653730	0.0517370401	16.9871598893	<.0001
MDRG_505	OTHER CARDIOTHORACIC PROCEDURES	1	0.3529896119	0.0664404213	5.3128743798	<.0001
MDRG_506	CORONARY BYPASS W PTCA	1	0.6857868761	0.1274209395	5.3820579145	<.0001
MDRG_507	CORONARY BYPASS WITH CARDIAC CATHETERIZATION OR OPEN ABLATION	1	0.4454131287	0.0515915078	8.6334582454	<.0001
MDRG_508	CORONARY BYPASS W/O CARDIAC CATH	1	0.2809164922	0.0475574817	5.9068832492	<.0001
MDRG_509	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE	1	-0.485067808	0.0657103289	-7.3819111257	<.0001
MDRG_511	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE	1	-1.663505459	0.0515535257	-32.2675401042	<.0001
MDRG_512	AICD PROCEDURES	1	-0.6345853549	0.1886883232	-3.3631405702	0.0008
MDRG_513	PERC CARDIOVASC PROC W/O INTRALUMINAL DEVICE	1	-1.593074740	0.1568332288	-10.1577628129	<.0001
MDRG_514	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES	1	0.4055957906	0.0335562222	12.0870516504	<.0001
MDRG_515	UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS	1	-2.039542226	0.2880475045	-7.0805759270	<.0001
MDRG_517	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT	1	0.3120239715	0.1253667659	2.4888890546	0.0128
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	-0.5377373969	0.0614262233	-8.7541992384	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	-0.0422595188	0.0618276776	-0.6835048717	0.4943
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	0.1068695313	0.0407992529	2.6193992221	0.0088
MDRG_543	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES	1	-1.021992950	0.0928085189	-11.0118441975	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-0.7206435879	0.0794730290	-9.0677755312	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	0.0831129533	0.0430619264	1.9300797790	0.0536
MDRG_604	PERITONEAL ADHESIOLYSIS	1	-0.3819344486	0.0635675961	-6.0083198373	<.0001
MDRG_608	ANAL & STOMAL PROCEDURES	1	-0.5720235364	0.1492101401	-3.8336773634	0.0001
MDRG_610	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL	1	0.2360404811	0.0526644084	4.4819734679	<.0001
MDRG_622	APPENDIX PROCEDURES	1	-1.002960996	0.0770190557	-13.0222447660	<.0001
MDRG_701	PANCREAS, LIVER & SHUNT PROCEDURES	1	0.3618791314	0.0637946945	5.6725584199	<.0001
MDRG_704	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E.	1	-0.1336004605	0.1056774074	-1.2642291648	0.2061
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	-0.8304343687	0.0473898025	-17.5234823852	<.0001
MDRG_707	OTHER HEPATOBILIARY OR PANCREAS O.R. PROCEDURES	1	-0.1883719394	0.2077379002	-0.9067769494	0.3645
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-0.5436330310	0.0565912448	-9.6063098309	<.0001
MDRG_803	SPINAL FUSION EXCEPT CERVICAL	1	-0.5851975102	0.0545415234	-10.7293942934	<.0001
MDRG_804	BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY	1	-1.864126768	0.2575849330	-7.2369402444	<.0001
MDRG_806	REVISION OF HIP OR KNEE REPLACEMENT	1	-1.167311192	0.0795122112	-14.6809046549	<.0001
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-2.938183057	0.0718009183	-40.9212462336	<.0001
MDRG_808	CERVICAL SPINAL FUSION	1	0.1198113124	0.0395983110	3.0256672407	0.0025
MDRG_809	AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS	1	-0.5903178887	0.1035915703	-5.6985127928	<.0001
MDRG_810	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	1	-1.123216793	0.1464053088	-7.6719676553	<.0001
MDRG_811	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT	1	-2.147691003	0.0790573325	-27.1662467537	<.0001
MDRG_812	MAJOR JOINT/LIMB REATTACHMENT PROCEDURE OF UPPER EXTREMITIES	1	-2.522536831	0.1247515086	-20.2204915900	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_813	KNEE PROCEDURES W PDX OF INFECTION	1	-1.462092078	0.2274028284	-6.4295245946	<.0001
MDRG_814	KNEE PROCEDURES W/O PDX OF INFECTION	1	-2.383795397	0.3151583227	-7.5638027783	<.0001
MDRG_815	BACK & NECK PROC EXC SPINAL FUSION OR DISC DEVICE/NEUROSIM	1	0.2201255971	0.0538760115	4.0857812404	<.0001
MDRG_816	LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR	1	-2.477838876	0.1177609417	-21.0412623990	<.0001
MDRG_817	LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR	1	-0.6413744677	0.1624301203	-3.9486178218	<.0001
MDRG_820	FOOT PROCEDURES	1	-1.986473880	0.2365589561	-8.3973733783	<.0001
MDRG_824	SHOULDER,ELBOW OR FOREARM PROC,EXC MAJOR JOINT PROC	1	-3.652520755	0.4994369899	-7.3132764062	<.0001
MDRG_825	HAND OR WRIST PROC, EXCEPT MAJOR THUMB OR JOINT PROC	1	-2.252777394	0.3443397555	-6.5423099067	<.0001
MDRG_826	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC	1	-0.5766793769	0.0643758359	-8.9580099204	<.0001
MDRG_841	HIP REPLACEMENT WITH PRINCIPAL DIAGNOSIS OF HIP FRACTURE	1	-2.390621801	0.1978177888	-12.0849687753	<.0001
MDRG_901	SKIN GRAFT FOR SKIN ULCER OR CELLULITIS	1	0.5403230924	0.1291323133	4.1842593734	<.0001
MDRG_902	SKIN GRAFT EXC FOR SKIN ULCER OR CELLULITIS	1	1.2592244341	0.0710606485	17.7204185527	<.0001
MDRG_903	OTHER SKIN, SUBCUT TISS & BREAST PROC	1	1.6013059231	0.0364976803	43.8741834768	<.0001
MDRG_904	MASTECTOMY FOR MALIGNANCY	1	1.7632695609	0.0682342037	25.8414323746	<.0001
MDRG_905	BREAST BIOPSY, LOCAL EXCISION & OTHER BREAST PROCEDURES	1	1.5691922750	0.0724954320	21.6453951764	<.0001
MDRG_913	SKIN DEBRIDEMENT FOR SKIN ULCER OR CELLULITIS	1	0.2341546709	0.0681256043	3.4371022966	0.0006
MDRG_1002	AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS	1	-1.089150003	0.0835702683	-13.0327450863	<.0001
MDRG_1003	O.R. PROCEDURES FOR OBESITY	1	-0.6242033255	0.0537265718	-11.6181491728	<.0001
MDRG_1005	THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES	1	1.6322759893	0.0544171654	29.9956085157	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1006	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC	1	-0.7386322256	0.1082096946	-6.8259339287	<.0001
MDRG_1101	KIDNEY TRANSPLANT	1	1.1338151433	0.0795463864	14.2535091132	<.0001
MDRG_1105	MINOR BLADDER PROCEDURES	1	1.5311351371	0.1064159649	14.3882089392	<.0001
MDRG_1106	PROSTATECTOMY	1	-1.964847668	0.4441249958	-4.4240871083	<.0001
MDRG_1107	TRANSURETHRAL PROCEDURES	1	-2.803381203	0.3757032354	-7.4616903422	<.0001
MDRG_1204	TRANSURETHRAL PROSTATECTOMY	1	0.1396986774	0.1019179967	1.3706968539	0.1705
MDRG_1304	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	0.2261167049	0.0400991202	5.6389442910	<.0001
MDRG_1602	OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS	1	-0.6656751864	0.2654876453	-2.5073678501	0.0122
MDRG_1707	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE	1	0.5927246720	0.0980310895	6.0462928119	<.0001
MDRG_1708	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC	1	-1.099355937	0.2345573413	-4.6869389409	<.0001
MDRG_1709	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W MAJ O.R. PROC	1	0.4749704444	0.0904715805	5.2499408293	<.0001
MDRG_1710	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W OTHER O.R. PROC	1	-0.8815586018	0.2504219883	-3.5202923186	0.0004
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE	1	-0.3050514119	0.0319896021	-9.5359551657	<.0001
MDRG_1802	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC	1	0.0769995628	0.0556290207	1.3841617514	0.1663
MDRG_1909	O.R. PROCEDURE W PRINCIPAL DIAGNOSES OF MENTAL ILLNESS	1	0.5615973133	0.2412546830	2.3278193249	0.0199
MDRG_2101	WOUND DEBRIDEMENTS FOR INJURIES	1	0.1844813080	0.1052366380	1.7530140791	0.0796
MDRG_2102	SKIN GRAFTS FOR INJURIES	1	0.6597224724	0.1214440192	5.4323175133	<.0001
MDRG_2103	HAND PROCEDURES FOR INJURIES	1	-1.117287356	0.2845567340	-3.9264133383	<.0001
MDRG_2201	FULL THICKNESS BURN W SKIN GRAFT OR INHAL INJ	1	-0.2800391434	0.2381118921	-1.1760821392	0.2396
MDRG_2407	LIMB REATTACHMENT, HIP & FEMUR PROC FOR MULTIPLE SIGNIFICANT TRAUMA	1	-0.8486274861	0.1375684527	-6.1687652174	<.0001
MDRG_2408	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA	1	-0.2922150063	0.0940657566	-3.1064971663	0.0019

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_7701	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	1	2.0776591883	0.0845876427	24.5622069845	<.0001
MDRG_7702	LIVER TRANSPLANT	1	1.7807986172	0.1134501834	15.6967451625	<.0001
MDRG_7703	LUNG TRANSPLANT	1	1.5021234236	0.1608695247	9.3375263366	<.0001
MDRG_7704	SIMULTANEOUS PANCREAS/KIDNEY TRANSPLANT	1	2.0757750135	0.1958518872	10.5986980402	<.0001
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.1288483840	0.0246406297	5.2291027271	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	0.2848713364	0.1729874026	1.6467750377	0.0996
COVIDDX_Q3	COVID, Quarter 3, 2020	1	-0.2610220475	0.2091601524	-1.2479530373	0.2120
COVIDDX_Q4	COVID, Quarter 4, 2020	1	-0.2233432733	0.1749800643	-1.2763926802	0.2018
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.0198379901	0.1250390573	0.1586543478	0.8739
COVIDDX_Q6	COVID, Quarter 2, 2021	1	0.4580695930	0.1661417471	2.7571010953	0.0058
COVIDDX_Q7	COVID, Quarter 3, 2021	1	0.0066621434	0.1767950494	0.0376828616	0.9699
COVIDDX_Q8	COVID, Quarter 4, 2021	1	0.2052087802	0.1526034569	1.3447190797	0.1787
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	0.1321941718	0.0235038952	5.6243516606	<.0001
Q1	Quarter 1, 2020	1	0.1684464117	0.0283703100	5.9374187924	<.0001
Q2	Quarter 2, 2020	1	0.0885461329	0.0300993069	2.9417997276	0.0033
Q3	Quarter 3, 2020	1	0.1171278331	0.0266929492	4.3879689898	<.0001
Q4	Quarter 4, 2020	1	0.1024446216	0.0259098796	3.9538825811	<.0001
Q5	Quarter 1, 2021	1	0.0694187893	0.0270185906	2.5692972022	0.0102
Q6	Quarter 2, 2021	1	0.0715814988	0.0271022687	2.6411626124	0.0083
Q7	Quarter 3, 2021	1	0.0265138813	0.0270532223	0.9800637071	0.3271
Intercept	Intercept	1	-6.172258534	0.0343611792	#####	<.0001

c-statistic=0.76

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 12. Risk Adjustment Coefficients for PSI 10 - Postoperative Acute Kidney Injury Requiring Dialysis Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	-1.110645480	0.1523918665	-7.2880889593	<.0001
Age_30_34	30 <= Age <= 34	1	-0.8566907889	0.1489828608	-5.7502640512	<.0001
Age_35_39	35 <= Age <= 39	1	-0.7717056622	0.1188570829	-6.4927191815	<.0001
Age_40_44	40 <= Age <= 44	1	-0.6164169120	0.1017934705	-6.0555643590	<.0001
Age_45_49	45 <= Age <= 49	1	-0.5615655538	0.0786380879	-7.1411394753	<.0001
Age_50_54	50 <= Age <= 54	1	-0.3058550611	0.0601418055	-5.0855649968	<.0001
Age_55_59	55 <= Age <= 59	1	-0.1987373904	0.0515766774	-3.8532414350	0.0001
Age_60_64	60 <= Age <= 64	1	-0.1186488253	0.0631416725	-1.8790890491	0.0602
Age_70_74	70 <= Age <= 74	1	0.1136638760	0.0387373214	2.9342213625	0.0033
Age_75_79	75 <= Age <= 79	1	0.1321076957	0.0421367913	3.1352101506	0.0017
Age_80_84	80 <= Age <= 84	1	0.0429081817	0.0512426110	0.8373535389	0.4024
Age_85_89	85 <= Age <= 89	1	-0.2446364366	0.0729743937	-3.3523599727	0.0008
Age_90Plus	Age >= 90	1	-0.6244442719	0.2192154393	-2.8485414803	0.0044
MALE	Patient Sex Flag: 1=Male / 0=Female	1	0.0674752777	0.0292187690	2.3093128170	0.0209
Age_60_64_MALE	60 <= Age <= 64 MALE	1	0.0542160313	0.0758355143	0.7149161147	0.4747
Age_90Plus_MALE	Age >= 90 MALE	1	-0.2169135770	0.3092933085	-0.7013199803	0.4831
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	0.2644795740	0.0428052727	6.1786681207	<.0001
CMR_CANCER_LEUK	Leukemia	1	0.4854104223	0.1281177095	3.7887847371	0.0002
CMR_CANCER_METS	Metastatic cancer	1	0.2962809133	0.0693855229	4.2700681773	<.0001
CMR_CBVD	Cerebrovascular disease	1	-0.1531269874	0.0622839638	-2.4585299007	0.0140
CMR_COAG	Coagulopathy	1	0.5118352509	0.0527876919	9.6961096893	<.0001
CMR_DIAB_CX	Diabetes with chronic complications	1	0.2892367742	0.0327049125	8.8438326921	<.0001
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.7325465184	0.0663121649	-11.0469401733	<.0001
CMR_HF	Heart failure	1	0.3364309239	0.0432936374	7.7709091669	<.0001
CMR_HTN_CX	Hypertension, complicated	1	0.3514222325	0.0486685624	7.2207235095	<.0001
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.6112835358	0.0492964494	-12.4001534301	<.0001
CMR_LIVER_MLD	Liver disease, mild	1	0.3195860921	0.0586494685	5.4490876093	<.0001
CMR_LIVER_SEV	Liver disease, moderate to severe	1	0.9754524975	0.0901008586	10.8262286617	<.0001
CMR_LUNG_CHRONIC	Chronic pulmonary disease	1	0.0548182864	0.0289939282	1.8906815942	0.0587
CMR_NEURO_OTH	Other neurological disorders	1	0.3048618931	0.0913713852	3.3365138601	0.0008
CMR_OBESE	Obesity	1	0.3890724080	0.0316415842	12.2962366721	<.0001
CMR_PARALYSIS	Paralysis	1	0.2873157219	0.0861423237	3.3353607084	0.0009
CMR_PERIVASC	Peripheral vascular disease	1	0.4250025508	0.0409789122	10.3712501813	<.0001
CMR_PULMCIRC	Pulmonary circulation disease	1	0.4174085360	0.0422035167	9.8903733396	<.0001
CMR_RENLF_MOD	Renal failure, moderate	1	0.4873660623	0.0427365815	11.4039552449	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_RENLFL_SEV	Renal failure, severe	1	1.9101473048	0.0573032862	33.3339923805	<.0001
CMR_THYROID_OTH	Other thyroid disorders	1	-0.3966970295	0.1296276027	-3.0602820788	0.0022
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	0.2929180396	0.1350439441	2.1690572024	0.0301
CMR_WGHTLOSS	Weight loss	1	1.0690951198	0.0511975019	20.8817829157	<.0001
MDC_1	Diseases and disorders of the nervous system	1	-0.9465439973	0.1277933387	-7.4068336166	<.0001
MDC_4	Diseases and disorders of the respiratory system	1	1.0605580504	0.0907904984	11.6813771110	<.0001
MDC_5	Diseases and disorders of the circulatory system	1	3.8899179282	0.1023187379	38.0176496242	<.0001
MDC_6	Diseases and disorders of the digestive system	1	0.8928932697	0.0783286267	11.3993224084	<.0001
MDC_7	Diseases and disorders of the hepatobiliary system and pancreas	1	1.8709658805	0.1436534956	13.0241583933	<.0001
MDC_8	Diseases and disorders of the musculoskeletal system and connective tissue	1	-0.5052507876	0.0868880113	-5.8149654964	<.0001
MDC_9	Diseases and disorders of the skin, subcutaneous tissue and breast	1	-0.9400254770	0.2346367295	-4.0063014819	<.0001
MDC_10	Endocrine, nutritional and metabolic diseases and disorders	1	0.1244574302	0.1463165880	0.8506036938	0.3950
MDC_11	Diseases and disorders of the kidney and urinary tract	1	0.8327590656	0.1247257782	6.6767197441	<.0001
MDC_16	Diseases and disorders of blood, blood forming organs and immunologic disorders	1	0.6077897562	0.3044454031	1.9963834238	0.0459
MDC_17	Myeloproliferative diseases and disorders, poorly differentiated neoplasms	1	1.2439789639	0.1422062477	8.7477096388	<.0001
MDC_18	Infectious and parasitic diseases, systemic or unspecified sites	1	1.0024452111	0.1528829343	6.5569464354	<.0001
MDRG_503	CONCOMITANT AORTIC AND MITRAL VALVE PROCEDURES	1	-1.640152050	0.0775076762	-21.1611562939	<.0001
MDRG_505	OTHER CARDIOTHORACIC PROCEDURES	1	-2.409520493	0.1184903068	-20.3351696617	<.0001
MDRG_506	CORONARY BYPASS W PTCA	1	-1.297865444	0.2521236329	-5.1477341869	<.0001
MDRG_507	CORONARY BYPASS WITH CARDIAC CATHETERIZATION OR OPEN ABLATION	1	-2.263086059	0.1093187192	-20.7017249632	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_508	CORONARY BYPASS W/O CARDIAC CATH	1	-2.426158209	0.0894146660	-27.1337837158	<.0001
MDRG_509	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE	1	-3.855050182	0.2081402809	-18.5214037681	<.0001
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	-3.420740581	0.3909964817	-8.7487758604	<.0001
MDRG_511	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE	1	-3.791468883	0.1695194375	-22.3659831470	<.0001
MDRG_513	PERC CARDIOVASC PROC W/O INTRALUMINAL DEVICE	1	-3.6374604422	0.4999948477	-7.2749958500	<.0001
MDRG_514	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES	1	-3.923807270	0.1335864431	-29.3727954683	<.0001
MDRG_515	UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS	1	-3.833021311	0.5889285796	-6.5084654478	<.0001
MDRG_519	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES	1	-3.927355932	0.4434069501	-8.8572268239	<.0001
MDRG_536	OTHER ENDOVASCULAR CARDIAC VALVE PROCEDURES	1	-3.742454672	0.5867495112	-6.3782834078	<.0001
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	-3.970699852	0.0990305298	-40.0957145292	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	-2.304698890	0.0974387697	-23.6527913686	<.0001
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	-2.309010188	0.1055690145	-21.8720445443	<.0001
MDRG_543	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES	1	-4.130341890	0.2457733020	-16.8054945601	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-3.609222817	0.2720498020	-13.2667724434	<.0001
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	0.0526320354	0.0861218752	0.6111343403	0.5411
MDRG_701	PANCREAS, LIVER & SHUNT PROCEDURES	1	-0.1168940032	0.1476604069	-0.7916408035	0.4286
MDRG_702	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E.	1	-1.209791001	0.4350245370	-2.7809718730	0.0054

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	-1.749890313	0.2879591222	-6.0768705623	<.0001
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-1.307293656	0.1160883822	-11.2611928224	<.0001
MDRG_812	MAJOR JOINT/LIMB REATTACHMENT PROCEDURE OF UPPER EXTREMITIES	1	-1.755558114	0.2905468770	-6.0422542894	<.0001
MDRG_813	KNEE PROCEDURES W PDX OF INFECTION	1	0.7522959499	0.3730831296	2.0164298256	0.0438
MDRG_1003	O.R. PROCEDURES FOR OBESITY	1	-1.085877089	0.2027006293	-5.3570484361	<.0001
MDRG_1101	KIDNEY TRANSPLANT	1	0.8774067615	0.5090046161	1.7237697534	0.0847
MDRG_1102	MAJOR BLADDER PROCEDURES	1	0.8580425247	0.1438339075	5.9655093826	<.0001
MDRG_1103	KIDNEY & URETER PROCEDURES FOR NEOPLASM	1	0.6309285149	0.1185262907	5.3231102673	<.0001
MDRG_1203	TESTES PROCEDURES	1	2.1307803940	0.5217707307	4.0837484143	<.0001
MDRG_1308	OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES	1	0.8131601856	0.4438309038	1.8321396250	0.0669
MDRG_7701	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	1	0.2209184260	0.1369668592	1.6129334297	0.1068
MDRG_7702	LIVER TRANSPLANT	1	1.1377868801	0.2575466422	4.4177896104	<.0001
MDRG_7703	LUNG TRANSPLANT	1	1.7334763298	0.4998001754	3.4683387781	0.0005
MDRG_7705	ALLOGENEIC OR AUTOLOGOUS BONE MARROW TRANSPLANT	1	2.1413189389	0.4125887358	5.1899597659	<.0001
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.2347376155	0.1125602224	2.0854402250	0.0370
COVIDDX_Q2	COVID, Quarter 2, 2020	1	1.6589914871	0.6304432975	2.6314681964	0.0085
COVIDDX_Q3	COVID, Quarter 3, 2020	1	1.2741310560	0.6082038362	2.0949079571	0.0362
COVIDDX_Q4	COVID, Quarter 4, 2020	1	0.4525299569	0.5808959009	0.7790207439	0.4360
COVIDDX_Q5	COVID, Quarter 1, 2021	1	1.3296892791	0.3781394283	3.5163994538	0.0004
COVIDDX_Q7	COVID, Quarter 3, 2021	1	1.5573638585	0.5560198579	2.8009140974	0.0051
COVIDDX_Q8	COVID, Quarter 4, 2021	1	1.4360400302	0.4962407037	2.8938376465	0.0038
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	0.1599100972	0.0526971303	3.0345124346	0.0024
Q1	Quarter 1, 2020	1	0.1423307256	0.0596405464	2.3864758828	0.0170
Q2	Quarter 2, 2020	1	0.1520836881	0.0645362016	2.3565639794	0.0184
Q3	Quarter 3, 2020	1	0.0555459213	0.0646297595	0.8594480578	0.3901
Q4	Quarter 4, 2020	1	0.0910649926	0.0588416638	1.5476277641	0.1217
Q5	Quarter 1, 2021	1	0.1315932883	0.0610117908	2.1568501219	0.0310

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Q6	Quarter 2, 2021	1	0.0586175101	0.0586515539	0.9994195584	0.3176
Q7	Quarter 3, 2021	1	0.0471814097	0.0593688132	0.7947170768	0.4268
Intercept	Intercept	1	-8.056028995	0.0952617540	-84.5672964696	<.0001

c-statistic=0.92

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 13. Risk Adjustment Coefficients for PSI 11 - Postoperative Respiratory Failure Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	-0.4612199344	0.0772148271	-5.9732042674	<.0001
Age_30_34	30 <= Age <= 34	1	-0.6900691423	0.0547821702	-12.5966010410	<.0001
Age_35_39	35 <= Age <= 39	1	-0.8197771059	0.0608797518	-13.4655132629	<.0001
Age_40_44	40 <= Age <= 44	1	-0.5748568121	0.0396872252	-14.4846813976	<.0001
Age_45_49	45 <= Age <= 49	1	-0.4783218861	0.0397530704	-12.0323255771	<.0001
Age_50_54	50 <= Age <= 54	1	-0.2837801036	0.0229902785	-12.3434826306	<.0001
Age_55_59	55 <= Age <= 59	1	-0.1382293950	0.0186761398	-7.4013900423	<.0001
Age_60_64	60 <= Age <= 64	1	-0.0397927701	0.0244418853	-1.6280564979	0.1035
Age_70_74	70 <= Age <= 74	1	0.0972451544	0.0213936882	4.5455067705	<.0001
Age_75_79	75 <= Age <= 79	1	0.1719609230	0.0172260011	9.9826374021	<.0001
Age_80_84	80 <= Age <= 84	1	0.1679743578	0.0203854145	8.2399285026	<.0001
Age_85_89	85 <= Age <= 89	1	0.1245952908	0.0391750724	3.1804737823	0.0015
Age_90Plus	Age >= 90	1	-0.1191124183	0.0502073927	-2.3724079647	0.0177
MALE	Patient Sex Flag: 1=Male / 0=Female	1	0.0188005224	0.0134496379	1.3978459946	0.1622
Age_35_39_MALE	35 <= Age <= 39 MALE	1	0.5147300343	0.0788162961	6.5307564492	<.0001
Age_45_49_MALE	45 <= Age <= 49 MALE	1	0.2644655295	0.0488074354	5.4185500106	<.0001
Age_60_64_MALE	60 <= Age <= 64 MALE	1	-0.0606007484	0.0275852496	-2.1968533611	0.0280
Age_70_74_MALE	70 <= Age <= 74 MALE	1	-0.0401175245	0.0248164486	-1.6165699263	0.1060
Age_85_89_MALE	85 <= Age <= 89 MALE	1	0.0052980088	0.0501566412	0.1056292574	0.9159
CMR_ALCOHOL	Alcohol abuse	1	0.5451354084	0.0288256236	18.9114870859	<.0001
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	-0.0313364852	0.0196186155	-1.5972832123	0.1102
CMR_AUTOIMMUNE	Autoimmune conditions	1	-0.0797606390	0.0245738319	-3.2457550527	0.0012
CMR_CANCER_LEUK	Leukemia	1	0.2171562555	0.0550066451	3.9478185770	<.0001
CMR_CANCER_NSITU	Solid tumor without metastasis, in situ	1	-0.5341869035	0.2362301838	-2.2612982596	0.0237
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	1	0.0230084043	0.0267164111	0.8612086487	0.3891
CMR_CBVD	Cerebrovascular disease	1	0.0008191831	0.0234512310	0.0349313474	0.9721
CMR_COAG	Coagulopathy	1	0.4649860887	0.0215400561	21.5870416447	<.0001
CMR_DEMENTIA	Dementia	1	0.1920903058	0.0342618038	5.6065438691	<.0001
CMR_DEPRESS	Depression	1	-0.0232574581	0.0166645829	-1.3956219794	0.1628
CMR_DIAB_CX	Diabetes with chronic complications	1	0.1661702043	0.0148884035	11.1610492042	<.0001
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.2700519324	0.0201084285	-13.4297880601	<.0001
CMR_DRUG_ABUSE	Drug abuse	1	0.2956367888	0.0381896990	7.7412704703	<.0001
CMR_HF	Heart failure	1	0.4457157368	0.0191854403	23.2319784525	<.0001
CMR_HTN_CX	Hypertension, complicated	1	0.1713528344	0.0209849099	8.1655263391	<.0001
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.1961867219	0.0185576215	-10.5717600634	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_LIVER_MLD	Liver disease, mild	1	0.0514028394	0.0241840128	2.1254884321	0.0335
CMR_LIVER_SEV	Liver disease, moderate to severe	1	0.2888374769	0.0469960816	6.1459906289	<.0001
CMR_LUNG_CHRONIC	Chronic pulmonary disease	1	0.3683465305	0.0141999078	25.9400650282	<.0001
CMR_NEURO_OTH	Other neurological disorders	1	0.8659431217	0.0308572022	28.0629176088	<.0001
CMR_NEURO_SEIZ	Seizures and epilepsy	1	0.2527644036	0.0276114493	9.1543330911	<.0001
CMR_OBESE	Obesity	1	0.2482140567	0.0163657047	15.1667197864	<.0001
CMR_PARALYSIS	Paralysis	1	0.4206397461	0.0299376575	14.0505230452	<.0001
CMR_PERIVASC	Peripheral vascular disease	1	0.2432178892	0.0166578076	14.6008343664	<.0001
CMR_PSYCHOSES	Psychoses	1	0.1619046545	0.0303927235	5.3270860902	<.0001
CMR_PULMCIRC	Pulmonary circulation disease	1	0.2724194957	0.0237892669	11.4513615316	<.0001
CMR_RENLFL_SEV	Renal failure, severe	1	0.4230864329	0.0237460123	17.8171571407	<.0001
CMR_THYROID_HYPO	Hypothyroidism	1	-0.1026473826	0.0148084662	-6.9316687800	<.0001
CMR_THYROID_OTH	Other thyroid disorders	1	-0.1812473869	0.0408571492	-4.4361241618	<.0001
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	0.5959249713	0.0461929736	12.9007709400	<.0001
CMR_VALVE	Valvular disease	1	0.0316517665	0.0225261005	1.4051152127	0.1600
CMR_WGHTLOSS	Weight loss	1	1.1077767800	0.0256860032	43.1276431204	<.0001
PS11_NonWt_1	PS11 Comorbidity count using non-weighted method, category 1, count > 2 and count <= 4	1	0.3982067523	0.0202981126	19.6179201805	<.0001
PS11_NonWt_2	PS11 Comorbidity count using non-weighted method, category 2, count >= 5	1	0.3260703121	0.0331913907	9.8239424450	<.0001
MDC_2	Diseases and disorders of the eye	1	-2.858958644	0.3272022325	-8.7375890503	<.0001
MDC_19	Mental diseases and disorders	1	-3.535023634	0.4878815083	-7.2456602133	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	-1.147559929	0.1649699948	-6.9561736400	<.0001
MDRG_102	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX	1	-1.269535663	0.0998031448	-12.7203973967	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	-2.010887725	0.0531000927	-37.8697591976	<.0001
MDRG_104	SPINAL PROCEDURES	1	-2.415719551	0.1031941070	-23.4094719228	<.0001
MDRG_105	VENTRICULAR SHUNT PROCEDURES	1	-3.553651022	0.1589285282	-22.3600574505	<.0001
MDRG_106	CAROTID ARTERY STENT PROCEDURE	1	-3.202204196	0.1032980133	-30.9996687506	<.0001
MDRG_107	EXTRACRANIAL PROCEDURES	1	-2.807362851	0.0556648091	-50.4333509410	<.0001
MDRG_108	PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC	1	-2.955263386	0.1575012651	-18.7634263326	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_301	MAJOR HEAD AND NECK PROCEDURES	1	-2.212237359	0.1612447386	-13.7197491090	<.0001
MDRG_302	OTHER EAR, NOSE, MOUTH AND THROAT O.R. PROCEDURES	1	-2.076903242	0.1454258301	-14.2815292227	<.0001
MDRG_501	OTHER HEART ASSIST SYSTEM IMPLANT	1	-0.4624993139	0.0675822672	-6.8435010073	<.0001
MDRG_503	CONCOMITANT AORTIC AND MITRAL VALVE PROCEDURES	1	-0.5123195688	0.0525728279	-9.7449497934	<.0001
MDRG_506	CORONARY BYPASS W PTCA	1	0.1125857771	0.1016788667	1.1072682136	0.2682
MDRG_507	CORONARY BYPASS WITH CARDIAC CATHETERIZATION OR OPEN ABLATION	1	-0.6056554319	0.0569038164	-10.6434940590	<.0001
MDRG_508	CORONARY BYPASS W/O CARDIAC CATH	1	-0.7154007827	0.0466586443	-15.3326525713	<.0001
MDRG_509	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE	1	-2.357522860	0.0649447313	-36.3004483029	<.0001
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	-2.709505623	0.1536335579	-17.6361574872	<.0001
MDRG_511	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE	1	-2.976899589	0.0776267821	-38.3488727494	<.0001
MDRG_512	AICD PROCEDURES	1	-2.288514774	0.1880589447	-12.1691354637	<.0001
MDRG_513	PERC CARDIOVASC PROC W/O INTRALUMINAL DEVICE	1	-2.301706824	0.1739912279	-13.2288670613	<.0001
MDRG_514	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES	1	-2.570054678	0.0465815750	-55.1732026543	<.0001
MDRG_515	UPPER LIMB & TOE AMPUTATION FOR CIRC SYSTEM DISORDERS	1	-2.978543618	0.2195547244	-13.5662925333	<.0001
MDRG_517	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT	1	-2.272809357	0.1789215287	-12.7028277352	<.0001
MDRG_518	VEIN LIGATION & STRIPPING	1	-2.160336098	0.4241504570	-5.0933249338	<.0001
MDRG_519	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES	1	-2.202253018	0.0996133118	-22.1080192817	<.0001
MDRG_536	OTHER ENDOVASCULAR CARDIAC VALVE PROCEDURES	1	-2.887074570	0.2792749036	-10.3377515587	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	-2.965378447	0.0494428682	-59.9758581438	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	-1.819823920	0.0451414901	-40.3137760429	<.0001
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	-1.324123839	0.0440493648	-30.0599984817	<.0001
MDRG_543	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES	1	-2.200976510	0.0709158440	-31.0364565385	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-2.198555634	0.0825849487	-26.6217472907	<.0001
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	-1.539016157	0.0522631765	-29.4474285562	<.0001
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	-1.809076285	0.0412048847	-43.9044132286	<.0001
MDRG_603	RECTAL RESECTION	1	-2.476901231	0.1481747153	-16.7160856428	<.0001
MDRG_604	PERITONEAL ADHESIOLYSIS	1	-1.630665189	0.0637719633	-25.5702522598	<.0001
MDRG_607	MINOR SMALL & LARGE BOWEL PROCEDURES	1	-2.400786852	0.1570435029	-15.2874000356	<.0001
MDRG_608	ANAL & STOMAL PROCEDURES	1	-2.865604674	0.1854955016	-15.4483782630	<.0001
MDRG_609	INGUINAL & FEMORAL HERNIA PROCEDURES	1	-1.800077872	0.1139233001	-15.8007876457	<.0001
MDRG_610	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL	1	-1.729568479	0.0595487817	-29.0445653147	<.0001
MDRG_611	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES	1	-2.146685762	0.0919037325	-23.3579823612	<.0001
MDRG_622	APPENDIX PROCEDURES	1	-2.518420162	0.1987335879	-12.6723428494	<.0001
MDRG_701	PANCREAS, LIVER & SHUNT PROCEDURES	1	-1.276245513	0.0537999365	-23.7220635532	<.0001
MDRG_702	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E.	1	-1.679786787	0.1357510937	-12.3740202873	<.0001
MDRG_703	CHOLECYSTECTOMY W C.D.E.	1	-1.865221383	0.4128665027	-4.5177348393	<.0001
MDRG_704	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E.	1	-1.870680992	0.0993164881	-18.8355531753	<.0001
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	-2.236913399	0.0821924421	-27.2155607235	<.0001
MDRG_706	HEPATOBIILIARY DIAGNOSTIC PROCEDURES	1	-2.347068942	0.1806246472	-12.9941786931	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_707	OTHER HEPATOBILIARY OR PANCREAS O.R. PROCEDURES	1	-2.351254126	0.2541820928	-9.2502744767	<.0001
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-2.338736895	0.0512792469	-45.6078635409	<.0001
MDRG_802	SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFEC OR EXT FUS	1	-1.596346888	0.0664486685	-24.0237603750	<.0001
MDRG_803	SPINAL FUSION EXCEPT CERVICAL	1	-3.032615975	0.0553839551	-54.7562190531	<.0001
MDRG_804	BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY	1	-3.872559692	0.1793874062	-21.5876898710	<.0001
MDRG_805	WND DEBRID & SKN GRFT EXC HAND, FOR MUSCULO-CONN TISS DIS	1	-2.722970491	0.0891333542	-30.5494000001	<.0001
MDRG_806	REVISION OF HIP OR KNEE REPLACEMENT	1	-3.473491626	0.0706286284	-49.1796556871	<.0001
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-4.022058853	0.0501456699	-80.2075006907	<.0001
MDRG_808	CERVICAL SPINAL FUSION	1	-2.531696662	0.0526754921	-48.0621359272	<.0001
MDRG_809	AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS	1	-2.800404643	0.1082916445	-25.8598403879	<.0001
MDRG_810	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	1	-3.088403288	0.1886380137	-16.3721151876	<.0001
MDRG_811	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT	1	-2.995207921	0.1049001857	-28.5529324913	<.0001
MDRG_812	MAJOR JOINT/LIMB REATTACHMENT PROCEDURE OF UPPER EXTREMITIES	1	-3.807526344	0.0670505537	-56.7859045566	<.0001
MDRG_813	KNEE PROCEDURES W PDX OF INFECTION	1	-3.331574311	0.2161915268	-15.4102908670	<.0001
MDRG_814	KNEE PROCEDURES W/O PDX OF INFECTION	1	-3.656016328	0.1919799712	-19.0437382856	<.0001
MDRG_815	BACK & NECK PROC EXC SPINAL FUSION OR DISC DEVICE/NEUROSTIM	1	-3.153870457	0.0861592858	-36.6051137478	<.0001
MDRG_816	LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR	1	-3.069155882	0.0896824800	-34.2224688986	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_817	LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR	1	-3.035448100	0.1710667603	-17.7442309373	<.0001
MDRG_818	LOCAL EXCISION & REMOVAL INT FIX DEVICES OF HIP & FEMUR	1	-2.872024841	0.2671358473	-10.7511772377	<.0001
MDRG_819	SOFT TISSUE PROCEDURES	1	-2.529820475	0.1099477911	-23.0092887675	<.0001
MDRG_820	FOOT PROCEDURES	1	-3.863557528	0.2758518387	-14.0059154451	<.0001
MDRG_824	SHOULDER,ELBOW OR FOREARM PROC,EXC MAJOR JOINT PROC	1	-2.155366191	0.1856220492	-11.6115849419	<.0001
MDRG_825	HAND OR WRIST PROC, EXCEPT MAJOR THUMB OR JOINT PROC	1	-3.103732231	0.4123024144	-7.5278051321	<.0001
MDRG_826	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC	1	-3.117536522	0.0812918976	-38.3499046503	<.0001
MDRG_841	HIP REPLACEMENT WITH PRINCIPAL DIAGNOSIS OF HIP FRACTURE	1	-2.955558751	0.2357676094	-12.5358982004	<.0001
MDRG_901	SKIN GRAFT FOR SKIN ULCER OR CELLULITIS	1	-2.719785980	0.1924971640	-14.1289664964	<.0001
MDRG_902	SKIN GRAFT EXC FOR SKIN ULCER OR CELLULITIS	1	-2.386868429	0.1345694126	-17.7370799481	<.0001
MDRG_903	OTHER SKIN, SUBCUT TISS & BREAST PROC	1	-3.219520681	0.1129276141	-28.5095962392	<.0001
MDRG_904	MASTECTOMY FOR MALIGNANCY	1	-3.418325552	0.2299157083	-14.8677338179	<.0001
MDRG_905	BREAST BIOPSY, LOCAL EXCISION & OTHER BREAST PROCEDURES	1	-3.317895796	0.2120570365	-15.6462424066	<.0001
MDRG_913	SKIN DEBRIDEMENT FOR SKIN ULCER OR CELLULITIS	1	-2.964268157	0.1524796493	-19.4404182525	<.0001
MDRG_1001	ADRENAL & PITUITARY PROCEDURES	1	-1.967827358	0.0815177151	-24.1398738413	<.0001
MDRG_1002	AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS	1	-3.267224171	0.1264617698	-25.8356669775	<.0001
MDRG_1003	O.R. PROCEDURES FOR OBESITY	1	-3.659055865	0.0697911374	-52.4286607184	<.0001
MDRG_1004	SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS	1	-2.974692566	0.1965899682	-15.1314565708	<.0001
MDRG_1005	THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES	1	-1.884722048	0.0980982750	-19.2125911292	<.0001
MDRG_1006	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC	1	-2.687009696	0.1380525309	-19.4636757391	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1101	KIDNEY TRANSPLANT	1	-2.729015555	0.1701753297	-16.0364934235	<.0001
MDRG_1102	MAJOR BLADDER PROCEDURES	1	-1.595610810	0.0674936917	-23.6408880628	<.0001
MDRG_1103	KIDNEY & URETER PROCEDURES FOR NEOPLASM	1	-2.057413953	0.0541617269	-37.9864910188	<.0001
MDRG_1104	KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM	1	-2.491171694	0.0734156150	-33.9324501102	<.0001
MDRG_1105	MINOR BLADDER PROCEDURES	1	-2.833791579	0.2637260955	-10.7452073437	<.0001
MDRG_1106	PROSTATECTOMY	1	-2.640362016	0.2801422697	-9.4250754029	<.0001
MDRG_1107	TRANSURETHRAL PROCEDURES	1	-2.539836972	0.1457382899	-17.4273828378	<.0001
MDRG_1108	URETHRAL PROCEDURES	1	-3.377501790	0.5820914814	-5.8023556404	<.0001
MDRG_1109	OTHER KIDNEY & URINARY TRACT PROCEDURES	1	-2.379126825	0.1033304858	-23.0244424754	<.0001
MDRG_1201	MAJOR MALE PELVIC PROCEDURES	1	-3.199592264	0.0948668282	-33.7271976229	<.0001
MDRG_1202	PENIS PROCEDURES	1	-2.545587797	0.2801333652	-9.0870567840	<.0001
MDRG_1203	TESTES PROCEDURES	1	-1.463944291	0.2744416455	-5.3342643693	<.0001
MDRG_1204	TRANSURETHRAL PROSTATECTOMY	1	-3.077910219	0.1401207244	-21.9661312226	<.0001
MDRG_1205	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC FOR MALIGNANCY	1	-2.249219033	0.3747740097	-6.0015341914	<.0001
MDRG_1206	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC EXC MALIGNANCY	1	-2.876893474	0.2417594744	-11.8998168796	<.0001
MDRG_1301	PELVIC EVISCERATION, RAD HYSTERECTOMY & RAD VULVECTOMY	1	-2.634298644	0.1726634599	-15.2568392064	<.0001
MDRG_1302	UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY	1	-2.254437498	0.0959692339	-23.4912524069	<.0001
MDRG_1303	UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG	1	-2.212700285	0.0868047005	-25.4905583633	<.0001
MDRG_1304	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	-3.169276364	0.0733966995	-43.1800937453	<.0001
MDRG_1305	D&C, CONIZATION, LAPAROSCOPY & TUBAL INTERRUPTION	1	-1.976385463	0.2341936491	-8.4391078524	<.0001
MDRG_1306	VAGINA, CERVIX & VULVA PROCEDURES	1	-2.865273229	0.1812522521	-15.8082076007	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1307	FEMALE REPRODUCTIVE SYSTEM RECONSTRUCTIVE PROCEDURES	1	-2.805049053	0.2271973376	-12.3463112865	<.0001
MDRG_1308	OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES	1	-1.959265946	0.1805930311	-10.8490672906	<.0001
MDRG_1601	SPLENIC PROCEDURES	1	-1.841314546	0.1897913953	-9.7017809659	<.0001
MDRG_1602	OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS	1	-2.083952855	0.1999322048	-10.4232975220	<.0001
MDRG_1707	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE	1	-1.891542520	0.1302451521	-14.5229399223	<.0001
MDRG_1708	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC	1	-2.159195999	0.1550248005	-13.9280682275	<.0001
MDRG_1709	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W MAJ O.R. PROC	1	-1.378675470	0.0842692491	-16.3603625910	<.0001
MDRG_1710	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W OTHER O.R. PROC	1	-2.172717438	0.1447209559	-15.0131501348	<.0001
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE	1	-1.106787938	0.0595118614	-18.5977704601	<.0001
MDRG_1802	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC	1	-2.435556510	0.0859146796	-28.3485490632	<.0001
MDRG_2101	WOUND DEBRIDEMENTS FOR INJURIES	1	-2.853172418	0.1745347398	-16.3473038113	<.0001
MDRG_2102	SKIN GRAFTS FOR INJURIES	1	-2.403361127	0.2014996704	-11.9273700200	<.0001
MDRG_2104	OTHER O.R. PROCEDURES FOR INJURIES	1	-1.963449909	0.0651823619	-30.1224112024	<.0001
MDRG_2201	FULL THICKNESS BURN W SKIN GRAFT OR INHAL INJ	1	-3.409607123	0.3837722418	-8.8844547660	<.0001
MDRG_2301	O.R. PROC W DIAGNOSES OF OTHER CONTACT W HEALTH SERVICES	1	-2.958620932	0.1557701039	-18.9935093979	<.0001
MDRG_2407	LIMB REATTACHMENT, HIP & FEMUR PROC FOR MULTIPLE SIGNIFICANT TRAUMA	1	-1.872536636	0.4261890040	-4.3936765581	<.0001
MDRG_2501	HIV W EXTENSIVE O.R. PROCEDURE	1	-0.6877767803	0.3305392187	-2.0807720881	0.0375
MDRG_7701	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	1	0.7626681674	0.0916335958	8.3230190951	<.0001
MDRG_7702	LIVER TRANSPLANT	1	-0.9976009168	0.1288765890	-7.7407458163	<.0001
MDRG_7704	SIMULTANEOUS PANCREAS/KIDNEY TRANSPLANT	1	-1.049774719	0.2735871778	-3.8370757255	0.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_7705	ALLOGENEIC OR AUTOLOGOUS BONE MARROW TRANSPLANT	1	-0.3957370732	0.2723763164	-1.4529055922	0.1462
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.1704744265	0.0457607729	3.7253397529	0.0002
COVIDDX_Q2	COVID, Quarter 2, 2020	1	0.6270303235	0.4235310795	1.4804824340	0.1387
COVIDDX_Q3	COVID, Quarter 3, 2020	1	0.6142359112	0.3202745269	1.9178419121	0.0551
COVIDDX_Q4	COVID, Quarter 4, 2020	1	0.9254941422	0.1868746805	4.9524854830	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.9506171425	0.1914690078	4.9648616953	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	0.3396358073	0.3754315491	0.9046544119	0.3656
COVIDDX_Q7	COVID, Quarter 3, 2021	1	0.4793055571	0.3563616010	1.3449977655	0.1786
COVIDDX_Q8	COVID, Quarter 4, 2021	1	0.8384653458	0.2685041694	3.1227274711	0.0018
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	0.1949849453	0.0264142522	7.3818082587	<.0001
Q1	Quarter 1, 2020	1	0.1963729997	0.0289995076	6.7715977235	<.0001
Q2	Quarter 2, 2020	1	0.1329661901	0.0306157063	4.3430711288	<.0001
Q3	Quarter 3, 2020	1	0.1253658614	0.0292226275	4.2900270163	<.0001
Q4	Quarter 4, 2020	1	0.1516523512	0.0272571275	5.5637686319	<.0001
Q5	Quarter 1, 2021	1	0.1001042168	0.0258688005	3.8696891627	0.0001
Q6	Quarter 2, 2021	1	0.0909115636	0.0241562614	3.7634782169	0.0002
Q7	Quarter 3, 2021	1	0.0650336039	0.0236820816	2.7461101190	0.0060
Intercept	Intercept	1	-3.490309455	0.0475569075	-73.3922711816	<.0001

c-statistic=0.869

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 14. Risk Adjustment Coefficients for PSI 12 - Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age LT30	Age < 30	1	-0.3867555008	0.0317246852	-12.1909957062	<.0001
Age 30 34	30 <= Age <= 34	1	-0.2628390870	0.0339929651	-7.7321612296	<.0001
Age 35 39	35 <= Age <= 39	1	-0.2023607182	0.0302878601	-6.6812484402	<.0001
Age 40 44	40 <= Age <= 44	1	-0.3245850646	0.0413468798	-7.8502916368	<.0001
Age 45 49	45 <= Age <= 49	1	-0.1469428711	0.0248982897	-5.9017254849	<.0001
Age 50 54	50 <= Age <= 54	1	-0.1243275415	0.0218669735	-5.6856309633	<.0001
Age 55 59	55 <= Age <= 59	1	-0.0954250829	0.0198178709	-4.8151026630	<.0001
Age 60 64	60 <= Age <= 64	1	-0.0207472766	0.0176930017	-1.1726261569	0.2409
Age 70 74	70 <= Age <= 74	1	0.0712235249	0.0171212576	4.1599470454	<.0001
Age 75 79	75 <= Age <= 79	1	0.0998419604	0.0179314738	5.5679729178	<.0001
Age 80 84	80 <= Age <= 84	1	0.1152912349	0.0211239333	5.4578488417	<.0001
Age 85 89	85 <= Age <= 89	1	0.1041326945	0.0307315180	3.3884656943	0.0007
Age 90Plus	Age >= 90	1	-0.1320103208	0.0326769349	-4.0398624088	<.0001
MALE	Patient Sex Flag: 1=Male / 0=Female	1	0.1177459741	0.0108487366	10.8534272957	<.0001
Age 40 44 MALE	40 <= Age <= 44 MALE	1	0.1974062080	0.0496491457	3.9760242643	<.0001
Age 85 89 MALE	85 <= Age <= 89 MALE	1	-0.1709151099	0.0423997077	-4.0310445322	<.0001
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	-0.0736297304	0.0153567000	-4.7946323270	<.0001
CMR_AUTOIMMUNE	Autoimmune conditions	1	-0.0752508777	0.0243473553	-3.0907208162	0.0020
CMR_CANCER_LYMPH	Lymphoma	1	0.2125254176	0.0431298268	4.9275741086	<.0001
CMR_CANCER_METS	Metastatic cancer	1	0.6832011916	0.0204779028	33.3628495991	<.0001
CMR_CANCER_NSITU	Solid tumor without metastasis, in situ	1	0.2253502892	0.1820021935	1.2381734798	0.2157
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	1	0.2455688573	0.0237608016	10.3350409599	<.0001
CMR_CBVD	Cerebrovascular disease	1	-0.2068565429	0.0256959462	-8.0501624988	<.0001
CMR_COAG	Coagulopathy	1	0.2873847172	0.0183564047	15.6558281614	<.0001
CMR_DEPRESS	Depression	1	-0.1831112531	0.0145950130	-12.5461520990	<.0001
CMR_DIAB_CX	Diabetes with chronic complications	1	-0.1229374508	0.0143971834	-8.5389931743	<.0001
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.3224139814	0.0175054283	-18.4179430345	<.0001
CMR_HF	Heart failure	1	0.0631537600	0.0159313697	3.9641136396	<.0001
CMR_HTN_UNCX	Hypertension, uncomplicated	1	-0.3725043721	0.0136532282	-27.2832451332	<.0001
CMR_LIVER_MLD	Liver disease, mild	1	-0.1600512667	0.0213542362	-7.4950592894	<.0001
CMR_NEURO_MOVT	Neurological disorders affecting movement	1	-0.1679542980	0.0297224213	-5.6507609644	<.0001
CMR_NEURO_OTH	Other neurological disorders	1	0.4310171624	0.0195592377	22.0365010374	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_OBESE	Obesity	1	0.2869651762	0.0129266089	22.1995712704	<.0001
CMR_PARALYSIS	Paralysis	1	0.3692824439	0.0233842925	15.7919014880	<.0001
CMR_PERIVASC	Peripheral vascular disease	1	0.2276820544	0.0164051403	13.8787020654	<.0001
CMR_PULMCIRC	Pulmonary circulation disease	1	0.5178681300	0.0237792718	21.7781324055	<.0001
CMR_RENLFL_MOD	Renal failure, moderate	1	-0.3733339084	0.0176863818	-21.1085519678	<.0001
CMR_RENLFL_SEV	Renal failure, severe	1	-0.3000507982	0.0251367484	-11.9367387395	<.0001
CMR_THYROID_HYPO	Hypothyroidism	1	-0.2229290489	0.0149759549	-14.8857986521	<.0001
CMR_THYROID_OTH	Other thyroid disorders	1	0.1497050942	0.0366293552	4.0870251003	<.0001
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	0.5405275464	0.0330687332	16.3455776520	<.0001
CMR_WGHTLOSS	Weight loss	1	0.5796699622	0.0177940670	32.5765864930	<.0001
PS12_NonWt_1	PS12 Comorbidity count using non-weighted method, category 1, count > 1 and count <= 3	1	0.5298014493	0.0182533979	29.0248123393	<.0001
PS12_NonWt_2	PS12 Comorbidity count using non-weighted method, category 2, count >= 4	1	0.5913661992	0.0284152857	20.8115521196	<.0001
MDC_1	Diseases and disorders of the nervous system	1	0.5034095474	0.0311904594	16.1398567781	<.0001
MDC_2	Diseases and disorders of the eye	1	-1.326959847	0.2477061157	-5.3569926732	<.0001
MDC_3	Diseases and disorders of the ear, nose, mouth and throat	1	-0.1943168148	0.0744379550	-2.6104534284	0.0090
MDC_4	Diseases and disorders of the respiratory system	1	0.0149709545	0.0319241797	0.4689534604	0.6391
MDC_9	Diseases and disorders of the skin, subcutaneous tissue and breast	1	-0.9701116625	0.0612504472	-15.8384421038	<.0001
MDC_12	Diseases and disorders of the male reproductive system	1	-0.4990296238	0.0787363151	-6.3379855058	<.0001
MDC_16	Diseases and disorders of blood, blood forming organs and immunologic disorders	1	0.2679231027	0.0669474409	4.0019917004	<.0001
MDC_22	Burns	1	0.8236775319	0.1083953052	7.5988303220	<.0001
MDC_23	Factors influencing health status and other contacts with health services	1	-0.5274800904	0.1321444006	-3.9916946002	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	1.1163882570	0.1955010006	5.7103966392	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	-0.7711379468	0.0464798312	-16.5908078202	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_105	VENTRICULAR SHUNT PROCEDURES	1	-1.463585157	0.1278974505	-11.4434271468	<.0001
MDRG_106	CAROTID ARTERY STENT PROCEDURE	1	-2.378363443	0.1645514120	-14.4536191728	<.0001
MDRG_107	EXTRACRANIAL PROCEDURES	1	-2.935303685	0.1360289762	-21.5785178004	<.0001
MDRG_108	PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC	1	-0.9634105189	0.1003054619	-9.6047662855	<.0001
MDRG_201	ORBITAL PROCEDURES	1	-0.7827637125	0.6303101122	-1.2418707829	0.2143
MDRG_301	MAJOR HEAD AND NECK PROCEDURES	1	-1.101071924	0.1391600655	-7.9122693700	<.0001
MDRG_302	OTHER EAR, NOSE, MOUTH AND THROAT O.R. PROCEDURES	1	-1.194028535	0.1913899538	-6.2387210601	<.0001
MDRG_305	SALIVARY GLAND PROCEDURES	1	-1.061818018	0.5815049985	-1.8259826161	0.0679
MDRG_402	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS WITH PRINCIPAL DIAGNOSIS PULMONARY EMBOLISM	1	-0.5036465007	0.0667696970	-7.5430400787	<.0001
MDRG_503	CONCOMITANT AORTIC AND MITRAL VALVE PROCEDURES	1	-0.3147827568	0.0421602839	-7.4663338973	<.0001
MDRG_507	CORONARY BYPASS WITH CARDIAC CATHETERIZATION OR OPEN ABLATION	1	-0.2168014738	0.0466744442	-4.6449717316	<.0001
MDRG_508	CORONARY BYPASS W/O CARDIAC CATH	1	-0.5787532837	0.0512321890	-11.2966729616	<.0001
MDRG_509	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE	1	-0.5869404385	0.0643818040	-9.1165578122	<.0001
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	-0.7976989215	0.1103377971	-7.2296071009	<.0001
MDRG_511	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE	1	-1.888630348	0.0414045830	-45.6140410304	<.0001
MDRG_512	AICD PROCEDURES	1	-1.613584666	0.2575272261	-6.2656857312	<.0001
MDRG_513	PERC CARDIOVASC PROC W/O INTRALUMINAL DEVICE	1	-1.507662466	0.1312187684	-11.4896861487	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_514	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES	1	-0.8664228499	0.0456953517	-18.9608530597	<.0001
MDRG_519	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES	1	-0.9277401558	0.1004921205	-9.2319691432	<.0001
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	-1.682414923	0.0775525979	-21.6938563966	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	-0.5817113651	0.0701591605	-8.2913102267	<.0001
MDRG_543	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES	1	-1.251135555	0.0884998425	-14.1371500781	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-1.009825141	0.0726286894	-13.9039427641	<.0001
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	0.3029515707	0.0347711443	8.7127293757	<.0001
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	0.1158387838	0.0217207907	5.3330832005	<.0001
MDRG_607	MINOR SMALL & LARGE BOWEL PROCEDURES	1	-0.8320408230	0.1371115106	-6.0683513665	<.0001
MDRG_608	ANAL & STOMAL PROCEDURES	1	-1.300415811	0.1673260276	-7.7717485445	<.0001
MDRG_609	INGUINAL & FEMORAL HERNIA PROCEDURES	1	-0.6797457565	0.1098929512	-6.1855264516	<.0001
MDRG_622	APPENDIX PROCEDURES	1	-1.578323871	0.0887365429	-17.7866279098	<.0001
MDRG_701	PANCREAS, LIVER & SHUNT PROCEDURES	1	0.1871315224	0.0458678347	4.0797984795	<.0001
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	-1.551410400	0.0556450883	-27.8804553352	<.0001
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	0.2619635608	0.0410621155	6.3796898391	<.0001
MDRG_802	SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFECTION OR EXT FUS	1	0.8826241419	0.0545217767	16.1884699110	<.0001
MDRG_804	BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY	1	0.4377137266	0.0874606371	5.0046940083	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-0.5741338051	0.0274526888	-20.9135727961	<.0001
MDRG_808	CERVICAL SPINAL FUSION	1	-0.6737782087	0.0513742142	-13.1151049150	<.0001
MDRG_810	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	1	-0.2897593623	0.0767338724	-3.7761597739	0.0002
MDRG_811	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT	1	0.2504331206	0.0219664800	11.4006941776	<.0001
MDRG_812	MAJOR JOINT/LIMB REATTACHMENT PROCEDURE OF UPPER EXTREMITIES	1	-1.640479861	0.0828302249	-19.8053290659	<.0001
MDRG_815	BACK & NECK PROC EXC SPINAL FUSION OR DISC DEVICE/NEUROSTIM	1	-0.2872864677	0.0520743431	-5.5168524558	<.0001
MDRG_818	LOCAL EXCISION & REMOVAL INT FIX DEVICES OF HIP & FEMUR	1	-0.2579678773	0.1996275134	-1.2922461084	0.1963
MDRG_820	FOOT PROCEDURES	1	-1.417051459	0.1582980095	-8.9517958198	<.0001
MDRG_824	SHOULDER,ELBOW OR FOREARM PROC,EXC MAJOR JOINT PROC	1	-1.215491092	0.1368367374	-8.8827833452	<.0001
MDRG_825	HAND OR WRIST PROC, EXCEPT MAJOR THUMB OR JOINT PROC	1	-1.972285885	0.2484947764	-7.9369309637	<.0001
MDRG_841	HIP REPLACEMENT WITH PRINCIPAL DIAGNOSIS OF HIP FRACTURE	1	0.2492075145	0.0412017650	6.0484669669	<.0001
MDRG_903	OTHER SKIN, SUBCUT TISS & BREAST PROC	1	-0.4626277600	0.1059490924	-4.3665098937	<.0001
MDRG_1002	AMPUTAT OF LOWER LIMB FOR ENDOCRINE,NUTRIT,& METABOL DIS	1	-1.462507315	0.0871166140	-16.7879265141	<.0001
MDRG_1003	O.R. PROCEDURES FOR OBESITY	1	-2.823643717	0.1075902444	-26.2444214561	<.0001
MDRG_1004	SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS	1	-1.696486648	0.1434779288	-11.8240252148	<.0001
MDRG_1005	THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES	1	-1.258254785	0.1742183900	-7.2222845419	<.0001
MDRG_1006	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC	1	-1.085402045	0.1124039918	-9.6562588881	<.0001
MDRG_1101	KIDNEY TRANSPLANT	1	-0.5318561355	0.1104623495	-4.8148182419	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1102	MAJOR BLADDER PROCEDURES	1	0.5034299052	0.0574378074	8.7647827771	<.0001
MDRG_1103	KIDNEY & URETER PROCEDURES FOR NEOPLASM	1	-0.1441363992	0.0567693386	-2.5389832405	0.0111
MDRG_1105	MINOR BLADDER PROCEDURES	1	-0.3740316772	0.1430590417	-2.6145266508	0.0089
MDRG_1106	PROSTATECTOMY	1	-0.6815950581	0.1788096733	-3.8118466718	0.0001
MDRG_1109	OTHER KIDNEY & URINARY TRACT PROCEDURES	1	-0.4875726963	0.0823914777	-5.9177564230	<.0001
MDRG_1201	MAJOR MALE PELVIC PROCEDURES	1	-0.2915656171	0.1190608429	-2.4488791618	0.0143
MDRG_1301	PELVIC EVISCERATION, RAD HYSTERECTOMY & RAD VULVECTOMY	1	0.3727602973	0.1264139013	2.9487286872	0.0032
MDRG_1302	UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY	1	0.1481637707	0.0699727307	2.1174501724	0.0342
MDRG_1304	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	-1.017177027	0.0635439780	-16.0074496331	<.0001
MDRG_1305	D&C, CONIZATION, LAPAROSCOPY & TUBAL INTERRUPTION	1	0.0918145907	0.1040112446	0.8827371600	0.3774
MDRG_1708	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC	1	0.0951132176	0.0879800717	1.0810768360	0.2797
MDRG_1709	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W MAJ O.R. PROC	1	0.1399344706	0.0781863560	1.7897556261	0.0735
MDRG_1710	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W OTHER O.R. PROC	1	-0.1692056506	0.1133468162	-1.4928134392	0.1355
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W O.R. PROCEDURE	1	0.1946393919	0.0205604375	9.4666950640	<.0001
MDRG_2103	HAND PROCEDURES FOR INJURIES	1	-2.689539563	0.5779459939	-4.6536174514	<.0001
MDRG_2104	OTHER O.R. PROCEDURES FOR INJURIES	1	0.0056953054	0.0405010096	0.1406213185	0.8882
MDRG_2407	LIMB REATTACHMENT, HIP & FEMUR PROC FOR MULTIPLE SIGNIFICANT TRAUMA	1	1.7029733750	0.0418123382	40.7289678170	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_2408	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA	1	1.7358005948	0.0383754680	45.2320371873	<.0001
MDRG_2501	HIV W EXTENSIVE O.R. PROCEDURE	1	0.6277048790	0.1417797399	4.4273242389	<.0001
MDRG_7701	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	1	0.6604343824	0.0854215806	7.7314699379	<.0001
MDRG_7702	LIVER TRANSPLANT	1	0.0145086838	0.1186217016	0.1223105352	0.9027
MDRG_7703	LUNG TRANSPLANT	1	1.3148331691	0.1801727454	7.2976252117	<.0001
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.4800326746	0.0191673712	25.0442624452	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	1.0888858132	0.1064821437	10.2259944737	<.0001
COVIDDX_Q3	COVID, Quarter 3, 2020	1	0.7594400976	0.1145317237	6.6308274546	<.0001
COVIDDX_Q4	COVID, Quarter 4, 2020	1	0.5532141625	0.0938053516	5.8974691009	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.9819181366	0.0678904423	14.4632750053	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	0.9844156739	0.1053873923	9.3409244878	<.0001
COVIDDX_Q7	COVID, Quarter 3, 2021	1	0.9487685800	0.0913331620	10.3879966412	<.0001
COVIDDX_Q8	COVID, Quarter 4, 2021	1	1.2988334268	0.0715002413	18.1654411601	<.0001
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	-0.0058408299	0.0196229794	-0.2976525517	0.7660
Q1	Quarter 1, 2020	1	-0.0686118497	0.0246840687	-2.7796005013	0.0054
Q2	Quarter 2, 2020	1	-0.1052701751	0.0259324027	-4.0594069257	<.0001
Q3	Quarter 3, 2020	1	-0.0467590688	0.0228822904	-2.0434610353	0.0410
Q4	Quarter 4, 2020	1	-0.0086265062	0.0223048192	-0.3867552642	0.6989
Q5	Quarter 1, 2021	1	-0.0898065601	0.0243342385	-3.6905432716	0.0002
Q6	Quarter 2, 2021	1	-0.0655539121	0.0231636713	-2.8300311818	0.0047
Q7	Quarter 3, 2021	1	-0.0256462913	0.0239680824	-1.0700184864	0.2846
Intercept	Intercept	1	-5.919705861	0.0301655811	-196.2404050701	<.0001

c-statistic=0.747

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 15. Risk Adjustment Coefficients for PSI 13 - Postoperative Sepsis Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age LT30	Age < 30	1	-0.7232061203	0.0518446245	-13.9494909528	<.0001
Age 30 34	30 <= Age <= 34	1	-0.6762159395	0.0566229986	-11.9424254453	<.0001
Age 35 39	35 <= Age <= 39	1	-0.5793857694	0.0464117729	-12.4835948589	<.0001
Age 40 44	40 <= Age <= 44	1	-0.5081764789	0.0387675389	-13.1082986779	<.0001
Age 45 49	45 <= Age <= 49	1	-0.4271978869	0.0339210924	-12.5938717255	<.0001
Age 50 54	50 <= Age <= 54	1	-0.3068458326	0.0277515319	-11.0568970954	<.0001
Age 55 59	55 <= Age <= 59	1	-0.1831775339	0.0243401572	-7.5257333989	<.0001
Age 60 64	60 <= Age <= 64	1	-0.0668163081	0.0296618486	-2.2526009406	0.0243
Age 70 74	70 <= Age <= 74	1	0.1395845701	0.0210519505	6.6304815991	<.0001
Age 75 79	75 <= Age <= 79	1	0.2579300363	0.0225087526	11.4590995459	<.0001
Age 80 84	80 <= Age <= 84	1	0.2901690194	0.0265485340	10.9297567587	<.0001
Age 85 89	85 <= Age <= 89	1	0.2365174018	0.0509954842	4.6380067854	<.0001
Age 90Plus	Age >= 90	1	0.1134835146	0.0848150151	1.3380120770	0.1809
MALE	Patient Sex Flag: 1=Male / 0=Female	1	0.2243513354	0.0142952372	15.6941317194	<.0001
Age 60 64 MALE	60 <= Age <= 64 MALE	1	-0.0635849274	0.0353244096	-1.8000280286	0.0719
Age 85 89 MALE	85 <= Age <= 89 MALE	1	0.0384591801	0.0641835369	0.5992063064	0.5490
Age 90Plus MALE	Age >= 90 MALE	1	0.2347080221	0.1121089138	2.0935714584	0.0363
CMR_AIDS	Acquired immune deficiency syndrome	1	0.0812078358	0.0874677117	0.9284321521	0.3532
CMR_ALCOHOL	Alcohol abuse	1	0.5378450578	0.0348450731	15.4353258559	<.0001
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	0.0621865999	0.0247381864	2.5137897699	0.0119
CMR_AUTOIMMUNE	Autoimmune conditions	1	-0.0072003331	0.0343218092	-0.2097888578	0.8338
CMR_BLDLOSS	Chronic blood loss anemia (iron deficiency)	1	-0.1758822170	0.0673550287	-2.6112707611	0.0090
CMR_CANCER_LEUK	Leukemia	1	0.2922873529	0.0647293214	4.5155324768	<.0001
CMR_CANCER_METS	Metastatic cancer	1	0.1890621487	0.0292522406	6.4631681123	<.0001
CMR_CANCER_NSITU	Solid tumor without metastasis, in situ	1	-0.1941298949	0.1917860567	-1.0122211086	0.3114
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	1	0.0367224505	0.0296144167	1.2400193781	0.2150
CMR_CBVD	Cerebrovascular disease	1	-0.2107460723	0.0399980682	-5.2689062653	<.0001
CMR_COAG	Coagulopathy	1	0.5089863419	0.0297370319	17.1162456164	<.0001
CMR_DEMENTIA	Dementia	1	0.3445507182	0.0391964772	8.7903491017	<.0001
CMR_DEPRESS	Depression	1	-0.0290113459	0.0209148670	-1.3871159634	0.1654
CMR_DIAB_CX	Diabetes with chronic complications	1	0.2281182046	0.0199614054	11.4279631015	<.0001
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.4474478555	0.0273961606	-16.3325022771	<.0001
CMR_HF	Heart failure	1	0.6098437488	0.0245971614	24.7932571892	<.0001
CMR_HTN_CX	Hypertension, complicated	1	0.1639052634	0.0284905827	5.7529628349	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR HTN UNCX	Hypertension, uncomplicated	1	-0.4353753677	0.0248798721	-17.4990999482	<.0001
CMR LIVER SEV	Liver disease, moderate to severe	1	-0.0463759880	0.0675724354	-0.6863151779	0.4925
CMR LUNG CHRONIC	Chronic pulmonary disease	1	0.1560052123	0.0167930456	9.2898701246	<.0001
CMR NEURO OTH	Other neurological disorders	1	0.8732335113	0.0389551278	22.4163944602	<.0001
CMR OBESE	Obesity	1	0.1597809963	0.0180122302	8.8706947684	<.0001
CMR PARALYSIS	Paralysis	1	0.9075969505	0.0393913819	23.0404953191	<.0001
CMR PERIVASC	Peripheral vascular disease	1	0.2543858493	0.0233325894	10.9025982663	<.0001
CMR PSYCHOSES	Psychoses	1	0.2852439067	0.0374905160	7.6084284064	<.0001
CMR PULMCIRC	Pulmonary circulation disease	1	0.2132356466	0.0340333385	6.2654930811	<.0001
CMR RENLFL MOD	Renal failure, moderate	1	-0.1879337283	0.0244218944	-7.6952968961	<.0001
CMR RENLFL SEV	Renal failure, severe	1	0.1694180764	0.0350831368	4.8290458551	<.0001
CMR THYROID HYPO	Hypothyroidism	1	-0.1920030276	0.0206788902	-9.2849773645	<.0001
CMR THYROID OTH	Other thyroid disorders	1	-0.2018331752	0.0580791557	-3.4751396240	0.0005
CMR ULCER PEPTIC	Peptic ulcer disease x bleeding	1	0.5317555668	0.0539645324	9.8537973615	<.0001
CMR VALVE	Valvular disease	1	-0.1429393049	0.0283268666	-5.0460683451	<.0001
CMR WGHTLOSS	Weight loss	1	1.1491032333	0.0268882385	42.7362778673	<.0001
PS13_NonWt_1	PS13 Comorbidity count using non-weighted method, category 1, count > 2 and count <= 4	1	0.2953617732	0.0143838810	20.5342197564	<.0001
MDC_1	Diseases and disorders of the nervous system	1	-0.8576039266	0.0781833878	-10.9691323270	<.0001
MDC_2	Diseases and disorders of the eye	1	-3.354506567	0.4481746061	-7.4848206973	<.0001
MDC_3	Diseases and disorders of the ear, nose, mouth and throat	1	-1.283980397	0.0693398607	-18.5172047358	<.0001
MDC_4	Diseases and disorders of the respiratory system	1	-0.4943946977	0.0598985682	-8.2538650310	<.0001
MDC_9	Diseases and disorders of the skin, subcutaneous tissue and breast	1	-2.524638727	0.0801846437	-31.4853145313	<.0001
MDC_10	Endocrine, nutritional and metabolic diseases and disorders	1	-1.087777152	0.0915220161	-11.8854151075	<.0001
MDC_12	Diseases and disorders of the male reproductive system	1	-2.050424452	0.0904710885	-22.6638640786	<.0001
MDC_16	Diseases and disorders of blood, blood forming organs and immunologic disorders	1	-1.819889622	0.1470350732	-12.3772483892	<.0001
MDC_19	Mental diseases and disorders	1	-3.101091533	0.4266116353	-7.2691208486	<.0001
MDC_21	Injuries, poisonings and toxic effects of drugs	1	-1.381898983	0.1294006695	-10.6792259141	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDC_23	Factors influencing health status and other contacts with health services	1	-2.448874077	0.1515476262	-16.1591054796	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	-0.4571850527	0.2343935334	-1.9505019873	0.0511
MDRG_102	CRANIO W MAJOR DEV IMPL/ACUTE COMPLEX CNS PDX	1	-1.343511038	0.1472546487	-9.1237257997	<.0001
MDRG_103	CRANIOTOMY & ENDOVASCULAR INTRACRANIAL PROCEDURES	1	-2.268400216	0.0959416409	-23.6435420059	<.0001
MDRG_104	SPINAL PROCEDURES	1	-2.039095630	0.1575463483	-12.9428301732	<.0001
MDRG_105	VENTRICULAR SHUNT PROCEDURES	1	-2.797383593	0.1991305378	-14.0479889418	<.0001
MDRG_106	CAROTID ARTERY STENT PROCEDURE	1	-3.370725332	0.1907189111	-17.6737865799	<.0001
MDRG_107	EXTRACRANIAL PROCEDURES	1	-3.063382238	0.1137131073	-26.9395702030	<.0001
MDRG_108	PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC	1	-1.896426982	0.1728747459	-10.9699480510	<.0001
MDRG_301	MAJOR HEAD AND NECK PROCEDURES	1	-1.325569523	0.0992895691	-13.3505416072	<.0001
MDRG_302	OTHER EAR, NOSE, MOUTH AND THROAT O.R. PROCEDURES	1	-1.608225853	0.1856135066	-8.6643794537	<.0001
MDRG_304	MOUTH PROCEDURES	1	-1.983324472	0.5000471217	-3.9662751484	<.0001
MDRG_401	MAJOR CHEST PROCEDURES	1	-1.700759109	0.0775654232	-21.9267688920	<.0001
MDRG_402	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS WITH PRINCIPAL DIAGNOSIS PULMONARY EMBOLISM	1	-2.295975689	0.1197127615	-19.1790387374	<.0001
MDRG_501	OTHER HEART ASSIST SYSTEM IMPLANT	1	-1.463228899	0.0831236602	-17.6030373936	<.0001
MDRG_503	CONCOMITANT AORTIC AND MITRAL VALVE PROCEDURES	1	-2.059458975	0.0559091177	-36.8358339228	<.0001
MDRG_505	OTHER CARDIOTHORACIC PROCEDURES	1	-2.709944970	0.0922736580	-29.3685655046	<.0001
MDRG_506	CORONARY BYPASS W PTCA	1	-1.904778048	0.2228057768	-8.5490514443	<.0001
MDRG_507	CORONARY BYPASS WITH CARDIAC CATHETERIZATION OR OPEN ABLATION	1	-2.295208404	0.0748870028	-30.6489553400	<.0001
MDRG_508	CORONARY BYPASS W/O CARDIAC CATH	1	-2.454097663	0.0548147946	-44.7707171040	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_509	AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TOE	1	-1.653934830	0.1254758548	-13.1812995627	<.0001
MDRG_510	PERMANENT CARDIAC PACEMAKER IMPLANT AND PROCEDURES	1	-3.131562142	0.2174253300	-14.4029315396	<.0001
MDRG_511	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE	1	-3.437170592	0.0882761939	-38.9365517723	<.0001
MDRG_512	AICD PROCEDURES	1	-2.778763173	0.2331535721	-11.9181668462	<.0001
MDRG_513	PERC CARDIOVASC PROC W/O INTRALUMINAL DEVICE	1	-3.182128245	0.2686305451	-11.8457424251	<.0001
MDRG_514	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES	1	-3.004678625	0.0588281051	-51.0755636501	<.0001
MDRG_518	VEIN LIGATION & STRIPPING	1	-2.639465838	0.5723439416	-4.6116777804	<.0001
MDRG_519	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES	1	-2.492923617	0.1333767568	-18.6908399635	<.0001
MDRG_536	OTHER ENDOVASCULAR CARDIAC VALVE PROCEDURES	1	-2.843724393	0.2580182313	-11.0214087510	<.0001
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	-3.959293502	0.0611470478	-64.7503623905	<.0001
MDRG_541	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON	1	-2.439531858	0.0586981686	-41.5606128197	<.0001
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	-2.038004516	0.0557115431	-36.5813689895	<.0001
MDRG_543	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES	1	-3.141876508	0.1032686152	-30.4243114182	<.0001
MDRG_544	CARDIAC DEFIBRILLATOR IMPLANT	1	-3.569908880	0.1564752498	-22.8145274398	<.0001
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	-0.9293815276	0.0413601844	-22.4704396309	<.0001
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	-1.187608588	0.0345903584	-34.3335149357	<.0001
MDRG_603	RECTAL RESECTION	1	-2.282554977	0.1698179296	-13.4411895286	<.0001
MDRG_604	PERITONEAL ADHESIOLYSIS	1	-1.666460831	0.0762715083	-21.8490609102	<.0001
MDRG_607	MINOR SMALL & LARGE BOWEL PROCEDURES	1	-2.099868224	0.1662321716	-12.6321409619	<.0001
MDRG_608	ANAL & STOMAL PROCEDURES	1	-2.746980070	0.2134366868	-12.8702338443	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_609	INGUINAL & FEMORAL HERNIA PROCEDURES	1	-2.549407850	0.1716666086	-14.8509245382	<.0001
MDRG_610	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL	1	-2.157083418	0.0776785286	-27.7693650707	<.0001
MDRG_611	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES	1	-2.109530936	0.0941584069	-22.4040636074	<.0001
MDRG_622	APPENDIX PROCEDURES	1	-1.865228771	0.2835045753	-6.5791840189	<.0001
MDRG_701	PANCREAS, LIVER & SHUNT PROCEDURES	1	-0.9756705722	0.0534544537	-18.2523719677	<.0001
MDRG_702	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E.	1	-0.7688827478	0.1145758925	-6.7106852155	<.0001
MDRG_703	CHOLECYSTECTOMY W C.D.E.	1	-1.730876503	0.5923974551	-2.9218162372	0.0035
MDRG_704	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E.	1	-1.265574507	0.1075661295	-11.7655484371	<.0001
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	-1.964565128	0.1055416514	-18.6141215444	<.0001
MDRG_706	HEPATOBIILIARY DIAGNOSTIC PROCEDURES	1	-1.733933349	0.1491517915	-11.6252934821	<.0001
MDRG_707	OTHER HEPATOBIILIARY OR PANCREAS O.R. PROCEDURES	1	-1.379452328	0.1754007184	-7.8645762728	<.0001
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-2.469283234	0.0543100296	-45.4664313927	<.0001
MDRG_802	SPINAL FUS EXC CERV W SPINAL CURV/MALIG/INFEC OR EXT FUS	1	-1.890735558	0.0852353143	-22.1825375410	<.0001
MDRG_803	SPINAL FUSION EXCEPT CERVICAL	1	-2.782148867	0.0565145002	-49.2289387352	<.0001
MDRG_804	BILATERAL OR MULTIPLE MAJOR JOINT PROCS OF LOWER EXTREMITY	1	-3.748297844	0.1831947069	-20.4607322364	<.0001
MDRG_805	WND DEBRID & SKN GRFT EXC HAND, FOR MUSCULO-CONN TISS DIS	1	-2.212756299	0.1040134636	-21.2737488209	<.0001
MDRG_806	REVISION OF HIP OR KNEE REPLACEMENT	1	-3.524489051	0.0855979847	-41.1749068955	<.0001
MDRG_807	MAJOR JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY	1	-4.093002070	0.0529372819	-77.3179491355	<.0001
MDRG_808	CERVICAL SPINAL FUSION	1	-3.223947013	0.0660011018	-48.8468665639	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_809	AMPUTATION FOR MUSCULOSKELETAL SYS & CONN TISSUE DIS	1	-2.536211261	0.1858745286	-13.6447488502	<.0001
MDRG_810	BIOPSIES OF MUSCULOSKELETAL SYSTEM & CONNECTIVE TISSUE	1	-2.502400968	0.1993290909	-12.5541182034	<.0001
MDRG_811	HIP & FEMUR PROCEDURES EXCEPT MAJOR JOINT	1	-2.781714954	0.1131779077	-24.5782503861	<.0001
MDRG_812	MAJOR JOINT/LIMB REATTACHMENT PROCEDURE OF UPPER EXTREMITIES	1	-4.388849332	0.0962960734	-45.5766177710	<.0001
MDRG_814	KNEE PROCEDURES W/O PDX OF INFECTION	1	-3.783528955	0.2494835464	-15.1654448125	<.0001
MDRG_815	BACK & NECK PROC EXC SPINAL FUSION OR DISC DEVICE/NEUROSTIM	1	-3.130265206	0.0901648702	-34.7171265181	<.0001
MDRG_816	LOWER EXTREM & HUMER PROC EXCEPT HIP,FOOT,FEMUR	1	-3.313507153	0.1159878941	-28.5676981866	<.0001
MDRG_817	LOCAL EXCISION & REMOVAL INT FIX DEVICES EXC HIP & FEMUR	1	-3.088753838	0.2487516742	-12.4170172839	<.0001
MDRG_818	LOCAL EXCISION & REMOVAL INT FIX DEVICES OF HIP & FEMUR	1	-2.746359370	0.3775645061	-7.2738812206	<.0001
MDRG_819	SOFT TISSUE PROCEDURES	1	-2.912579056	0.1576989536	-18.4692351424	<.0001
MDRG_820	FOOT PROCEDURES	1	-3.220907500	0.3139330224	-10.2598556727	<.0001
MDRG_824	SHOULDER,ELBOW OR FOREARM PROC,EXC MAJOR JOINT PROC	1	-3.258241246	0.3778766075	-8.6225005234	<.0001
MDRG_826	OTHER MUSCULOSKELET SYS & CONN TISS O.R. PROC	1	-3.174449894	0.0896403050	-35.4131982661	<.0001
MDRG_841	HIP REPLACEMENT WITH PRINCIPAL DIAGNOSIS OF HIP FRACTURE	1	-3.232719727	0.2904342292	-11.1306430240	<.0001
MDRG_903	OTHER SKIN, SUBCUT TISS & BREAST PROC	1	-0.9753285284	0.1622743529	-6.0103676968	<.0001
MDRG_1001	ADRENAL & PITUITARY PROCEDURES	1	-1.342571693	0.1430967655	-9.3822644261	<.0001
MDRG_1003	O.R. PROCEDURES FOR OBESITY	1	-2.323289387	0.1097896379	-21.1612810784	<.0001
MDRG_1004	SKIN GRAFTS & WOUND DEBRID FOR ENDOC, NUTRIT & METAB DIS	1	-1.160753186	0.2897226769	-4.0064284856	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1005	THYROID, PARATHYROID & THYROGLOSSAL PROCEDURES	1	-1.954760532	0.1746057070	-11.1952843111	<.0001
MDRG_1006	OTHER ENDOCRINE, NUTRIT & METAB O.R. PROC	1	-0.9784762259	0.2036061748	-4.8057296252	<.0001
MDRG_1101	KIDNEY TRANSPLANT	1	-3.252279744	0.1351312441	-24.0675631039	<.0001
MDRG_1102	MAJOR BLADDER PROCEDURES	1	-0.7795167982	0.0532024885	-14.6518860395	<.0001
MDRG_1103	KIDNEY & URETER PROCEDURES FOR NEOPLASM	1	-2.124281772	0.0575299547	-36.9247948081	<.0001
MDRG_1104	KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM	1	-1.478399581	0.0606632815	-24.3705837290	<.0001
MDRG_1105	MINOR BLADDER PROCEDURES	1	-2.213186137	0.2277864499	-9.7160570274	<.0001
MDRG_1106	PROSTATECTOMY	1	-2.325247902	0.2762186425	-8.4181425290	<.0001
MDRG_1107	TRANSURETHRAL PROCEDURES	1	-2.264199911	0.1472761437	-15.3738402821	<.0001
MDRG_1108	URETHRAL PROCEDURES	1	-2.847591931	0.4912137010	-5.7970531460	<.0001
MDRG_1109	OTHER KIDNEY & URINARY TRACT PROCEDURES	1	-2.719225547	0.1339312532	-20.3031442027	<.0001
MDRG_1201	MAJOR MALE PELVIC PROCEDURES	1	-0.7585981678	0.1150725529	-6.5923467317	<.0001
MDRG_1202	PENIS PROCEDURES	1	-0.3502043709	0.3261545986	-1.0737373393	0.2829
MDRG_1203	TESTES PROCEDURES	1	0.1031786153	0.4044280938	0.2551222748	0.7986
MDRG_1301	PELVIC EVISCERATION, RAD HYSTERECTOMY & RAD VULVECTOMY	1	-1.615007984	0.1286655051	-12.5519888330	<.0001
MDRG_1302	UTERINE & ADNEXA PROC FOR OVARIAN OR ADNEXAL MALIGNANCY	1	-1.539610456	0.0720044211	-21.3821656053	<.0001
MDRG_1303	UTERINE,ADNEXA PROC FOR NON-OVARIAN/ADNEXAL MALIG	1	-1.833914032	0.0792820671	-23.1315113103	<.0001
MDRG_1304	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	-2.530124014	0.0612347085	-41.3184625860	<.0001
MDRG_1305	D&C, CONIZATION, LAPAROSCOPY & TUBAL INTERRUPTION	1	-1.610760381	0.2375399741	-6.7810076476	<.0001
MDRG_1306	VAGINA, CERVIX & VULVA PROCEDURES	1	-2.793246626	0.2087928409	-13.3780766329	<.0001
MDRG_1307	FEMALE REPRODUCTIVE SYSTEM RECONSTRUCTIVE PROCEDURES	1	-2.358972363	0.2234253636	-10.5582120339	<.0001
MDRG_1602	OTHER O.R. PROC OF THE BLOOD & BLOOD FORMING ORGANS	1	-1.085541228	0.3145810446	-3.4507521889	0.0006

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_1707	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE	1	-2.195052081	0.1157218969	-18.9683382241	<.0001
MDRG_1708	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC	1	-2.241455750	0.1793741730	-12.4959781690	<.0001
MDRG_1710	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W OTHER O.R. PROC	1	-1.977837514	0.1372611207	-14.4093061735	<.0001
MDRG_2101	WOUND DEBRIDEMENTS FOR INJURIES	1	-0.8876304517	0.2465971846	-3.5995157578	0.0003
MDRG_2102	SKIN GRAFTS FOR INJURIES	1	-1.073395424	0.3067351885	-3.4994205572	0.0005
MDRG_2104	OTHER O.R. PROCEDURES FOR INJURIES	1	-0.2560521501	0.1364458863	-1.8765838762	0.0606
MDRG_2201	FULL THICKNESS BURN W SKIN GRAFT OR INHAL INJ	1	-2.860418952	0.3486554945	-8.2041413276	<.0001
MDRG_2210	EXTENSIVE BURNS OR FULL THICKNESS BURNS W MV >96 HRS W SKIN GRAFT	1	1.0588264389	0.2715929169	3.8985789871	<.0001
MDRG_2407	LIMB REATTACHMENT, HIP & FEMUR PROC FOR MULTIPLE SIGNIFICANT TRAUMA	1	-1.529359486	0.3962661414	-3.8594250824	0.0001
MDRG_2501	HIV W EXTENSIVE O.R. PROCEDURE	1	-0.7200048858	0.4315819641	-1.6682923426	0.0953
MDRG_7701	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	1	-0.3260527755	0.0840828129	-3.8777577032	0.0001
MDRG_7702	LIVER TRANSPLANT	1	-1.927178408	0.1733358659	-11.1181745229	<.0001
MDRG_7703	LUNG TRANSPLANT	1	-1.885651345	0.3889552557	-4.8479903997	<.0001
MDRG_7704	SIMULTANEOUS PANCREAS/KIDNEY TRANSPLANT	1	-2.621623645	0.5273658276	-4.9711670873	<.0001
MDRG_7705	ALLOGENEIC OR AUTOLOGOUS BONE MARROW TRANSPLANT	1	0.0392870463	0.3934572365	0.0998508672	0.9205
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.4261263321	0.0745361475	5.7170426257	<.0001
HPPS13_1	Medium immune risk	1	0.2885459013	0.0332796765	8.6703337090	<.0001
HPPS13_2	High immune risk	1	0.4660543940	0.0266036124	17.5184627659	<.0001
HPPS13_3	Very High immune risk	1	1.0692682141	0.0891496445	11.9940827648	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	1.3924628121	0.3652722619	3.8121230587	0.0001
COVIDDX_Q3	COVID, Quarter 3, 2020	1	1.1148992638	0.3665619794	3.0415027373	0.0024
COVIDDX_Q4	COVID, Quarter 4, 2020	1	1.2119620592	0.1983843448	6.1091617920	<.0001
COVIDDX_Q5	COVID, Quarter 1, 2021	1	1.3417203895	0.2004985736	6.6919198742	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	1.2416187180	0.3228195769	3.8461692134	0.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
COVIDDX_Q7	COVID, Quarter 3, 2021	1	1.5378692821	0.2685926244	5.7256571559	<.0001
COVIDDX_Q8	COVID, Quarter 4, 2021	1	1.0784826932	0.2694065349	4.0031794090	<.0001
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	0.0924505533	0.0264478479	3.4955794418	0.0005
Q1	Quarter 1, 2020	1	0.0986511845	0.0298918634	3.3002688136	0.0010
Q2	Quarter 2, 2020	1	0.0282115245	0.0334913637	0.8423522186	0.3996
Q3	Quarter 3, 2020	1	0.0810123247	0.0303307014	2.6709677306	0.0076
Q4	Quarter 4, 2020	1	0.1324378986	0.0284620132	4.6531458441	<.0001
Q5	Quarter 1, 2021	1	0.0207601155	0.0309100511	0.6716299324	0.5018
Q6	Quarter 2, 2021	1	0.0280462580	0.0302076432	0.9284490621	0.3532
Q7	Quarter 3, 2021	1	0.0416996872	0.0306064944	1.3624457159	0.1731
Intercept	Intercept	1	-3.630018740	0.0533167752	-68.0839891088	<.0001

c-statistic=0.857

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 16. Risk Adjustment Coefficients for PSI 14 - Postoperative Wound Dehiscence Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	-0.6393741514	0.0770941576	-8.2934189955	<.0001
Age_30_34	30 <= Age <= 34	1	-0.5603262533	0.0911229252	-6.1491249577	<.0001
Age_35_39	35 <= Age <= 39	1	-0.6104996977	0.0839770306	-7.2698414466	<.0001
Age_40_44	40 <= Age <= 44	1	-0.5062716358	0.0734309636	-6.8945252885	<.0001
Age_45_49	45 <= Age <= 49	1	-0.3915288985	0.0652794162	-5.9977389691	<.0001
Age_50_54	50 <= Age <= 54	1	-0.2539170956	0.0851823153	-2.9808663304	0.0029
Age_55_59	55 <= Age <= 59	1	-0.3275443807	0.2095100817	-1.5633824307	0.1180
Age_60_64	60 <= Age <= 64	1	-0.0359569660	0.0501254896	-0.7173389488	0.4732
Age_70_74	70 <= Age <= 74	1	-0.0049702121	0.0498175280	-0.0997683410	0.9205
Age_75_79	75 <= Age <= 79	1	-0.1609681818	0.0573377113	-2.8073701938	0.0050
Age_80_84	80 <= Age <= 84	1	-0.1190185880	0.0665757684	-1.7877163236	0.0738
Age_85_89	85 <= Age <= 89	1	-0.2284691132	0.0863022401	-2.6473138238	0.0081
Age_90Plus	Age >= 90	1	-0.4333360299	0.1320128687	-3.2825286970	0.0010
MALE	Patient Sex Flag: 1=Male / 0=Female	1	0.6893519453	0.0304069583	22.6708616888	<.0001
Age_50_54_MALE	50 <= Age <= 54 MALE	1	-0.0946577915	0.0988686654	-0.9574094193	0.3384
CMR_ALCOHOL	Alcohol abuse	1	0.3101105307	0.3188868235	0.9724783460	0.3308
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	1	-0.2214530851	0.1884621911	-1.1750531174	0.2400
CMR_BLDLOSS	Chronic blood loss anemia (iron deficiency)	1	-0.1128279430	0.4957024571	-0.2276122327	0.8199
CMR_CANCER_METS	Metastatic cancer	1	0.0498848577	0.2253423890	0.2213736082	0.8248
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	1	0.1411331746	0.2816743151	0.5010509196	0.6163
CMR_COAG	Coagulopathy	1	0.1146416441	0.0489600852	2.3415327754	0.0192
CMR_DEPRESS	Depression	1	0.1194893888	0.0398978391	2.9948837231	0.0027
CMR_DIAB_CX	Diabetes with chronic complications	1	-0.3638807465	0.0475357379	-7.6548879333	<.0001
CMR_DIAB_UNCX	Diabetes without chronic complications	1	-0.2534530471	0.2096603275	-1.2088746118	0.2267
CMR_DRUG_ABUSE	Drug abuse	1	0.3273735497	0.0671439065	4.8757000728	<.0001
CMR_HF	Heart failure	1	0.2328987157	0.0499765744	4.6601576542	<.0001
CMR_HTN_CX	Hypertension, complicated	1	0.6380158913	0.2246954118	2.8394700453	0.0045
CMR_HTN_UNCX	Hypertension, uncomplicated	1	0.1290098011	0.1423228466	0.9064588307	0.3647
CMR_LUNG_CHRONIC	Chronic pulmonary disease	1	0.4864244686	0.0314767785	15.4534387509	<.0001
CMR_OBESE	Obesity	1	0.6318443488	0.1361945769	4.6392768588	<.0001
CMR_PARALYSIS	Paralysis	1	0.2186517193	0.0684938428	3.1922828447	0.0014
CMR_PERIVASC	Peripheral vascular disease	1	0.0690048773	0.0477481016	1.4451857776	0.1484
CMR_PSYCHOSES	Psychoses	1	0.3180909682	0.0629616642	5.0521372405	<.0001
CMR_RENLFL_MOD	Renal failure, moderate	1	0.1283634587	0.2559164565	0.5015834482	0.6160
CMR_RENLFL_SEV	Renal failure, severe	1	0.2390679998	0.3355798978	0.7124026241	0.4762
CMR_VALVE	Valvular disease	1	0.2209115521	0.2583801736	0.8549864684	0.3926

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
CMR_WGHTLOSS	Weight loss	1	0.6553247019	0.0345854886	18.9479671243	<.0001
PS14s	PS14 Open Approach Diagnosis Stratum	1	3.4139580735	0.1873404066	18.2232874152	<.0001
MDC_4	Diseases and disorders of the respiratory system	1	-0.2284376962	0.7241797838	-0.3154433488	0.7524
MDC_6	Diseases and disorders of the digestive system	1	0.6451817306	0.0705165989	9.1493597357	<.0001
MDC_7	Diseases and disorders of the hepatobiliary system and pancreas	1	-0.1759728946	0.0946658663	-1.8588843218	0.0630
MDC_8	Diseases and disorders of the musculoskeletal system and connective tissue	1	1.4668032393	0.5993465079	2.4473375917	0.0144
MDC_10	Endocrine, nutritional and metabolic diseases and disorders	1	-0.4707801265	0.2036064934	-2.3122058573	0.0208
MDC_11	Diseases and disorders of the kidney and urinary tract	1	0.8072438536	0.2800028575	2.8829843406	0.0039
MDC_12	Diseases and disorders of the male reproductive system	1	-0.6483306783	0.2038838596	-3.1799019283	0.0015
MDC_13	Diseases and disorders of the female reproductive system	1	1.2227551210	0.5824607915	2.0992917272	0.0358
MDC_18	Infectious and parasitic diseases, systemic or unspecified sites	1	0.3199335028	0.2927040427	1.0930272773	0.2744
MDC_21	Injuries, poisonings and toxic effects of drugs	1	0.3925231053	0.1133640610	3.4625003872	0.0005
MDC_24	Multiple significant trauma	1	1.0595838162	0.1772360670	5.9783758115	<.0001
MDRG_542	OTHER MAJOR CARDIOVASCULAR PROCEDURES	1	-0.6345816609	0.1374669346	-4.6162494469	<.0001
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	0.8000258766	0.1776714201	4.5028394325	<.0001
MDRG_604	PERITONEAL ADHESIOLYSIS	1	-0.0274385822	0.4070807551	-0.0674032899	0.9463
MDRG_607	MINOR SMALL & LARGE BOWEL PROCEDURES	1	-1.281041710	0.2005500732	-6.3876401991	<.0001
MDRG_609	INGUINAL & FEMORAL HERNIA PROCEDURES	1	-2.652793698	0.3179908265	-8.3423592038	<.0001
MDRG_610	HERNIA PROCEDURES EXCEPT INGUINAL & FEMORAL	1	2.7147666307	0.1282992475	21.1596457807	<.0001
MDRG_611	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES	1	-1.813134730	0.2434596246	-7.4473733884	<.0001
MDRG_622	APPENDIX PROCEDURES	1	-0.8512081584	0.1729427203	-4.9219079977	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_704	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E.	1	-1.128774635	0.2130847407	-5.2973039321	<.0001
MDRG_705	LAPAROSCOPIC CHOLECYSTECTOMY W/O C.D.E.	1	-0.6171945584	0.2534389694	-2.4352788357	0.0149
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-1.501379864	0.2592359354	-5.7915576448	<.0001
MDRG_803	SPINAL FUSION EXCEPT CERVICAL	1	-1.866098267	0.3361832630	-5.5508363223	<.0001
MDRG_1102	MAJOR BLADDER PROCEDURES	1	1.0406902544	0.1327633763	7.8386847582	<.0001
MDRG_1103	KIDNEY & URETER PROCEDURES FOR NEOPLASM	1	0.7774934165	0.2791913814	2.7848045042	0.0054
MDRG_1304	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	-0.1544025928	0.8093895215	-0.1907642596	0.8487
MDRG_1801	INFECTIOUS & PARASITIC DISEASES W/O.R. PROCEDURE	1	-0.3288318460	0.0821503210	-4.0028065879	<.0001
MDRG_2101	WOUND DEBRIDEMENTS FOR INJURIES	1	2.2646812125	0.1989534999	11.3829674434	<.0001
MDRG_2408	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA	1	-0.0558477654	0.1800461824	-0.3101857796	0.7564
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.0176711670	0.2920005184	0.0605175876	0.9517
COVIDDX_Q2	COVID, Quarter 2, 2020	1	-0.4531237835	0.5081705105	-0.8916766600	0.3726
COVIDDX_Q3	COVID, Quarter 3, 2020	1	0.3844144988	0.3045993967	1.2620330273	0.2069
COVIDDX_Q4	COVID, Quarter 4, 2020	1	-0.0539188518	0.3195369335	-0.1687405935	0.8660
COVIDDX_Q5	COVID, Quarter 1, 2021	1	0.9190480499	0.1711236946	5.3706650732	<.0001
COVIDDX_Q6	COVID, Quarter 2, 2021	1	0.3746083553	0.3223204717	1.1622232784	0.2451
COVIDDX_Q7	COVID, Quarter 3, 2021	1	-0.0189746479	0.3392585046	-0.0559297634	0.9554
COVIDDX_Q8	COVID, Quarter 4, 2021	1	0.2692117103	0.2565326903	1.0494245779	0.2940
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	0.0431271735	0.1340897775	0.3216290933	0.7477
Q1	Quarter 1, 2020	1	-0.0537396861	0.0618724578	-0.8685558641	0.3851
Q2	Quarter 2, 2020	1	-0.0177905316	0.0670695072	-0.2652551414	0.7908
Q3	Quarter 3, 2020	1	-0.0612353027	0.0661344733	-0.9259210773	0.3545
Q4	Quarter 4, 2020	1	-0.0245164203	0.0620601718	-0.3950427397	0.6928
Q5	Quarter 1, 2021	1	-0.0786090568	0.0647335729	-1.2143475672	0.2246
Q6	Quarter 2, 2021	1	-0.1056346477	0.0618740974	-1.7072515330	0.0878
Q7	Quarter 3, 2021	1	-0.0702934432	0.0667452830	-1.0531597150	0.2923
Intercept	Intercept	1	-9.807399894	0.2009657401	-48.8013523439	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
PS14s_Age_55_59	Interaction between PS14 Open Approach Diagnosis Stratum and 55 <= Age <= 59	1	0.2789486505	0.2097990353	1.3295993002	0.1837
PS14s_CMV_ALCOHOL	Interaction between PS14 Open Approach Diagnosis Stratum and Alcohol abuse	1	0.1455469451	0.3228818822	0.4507745810	0.6522
PS14s_CMV_ANEMDEF	Interaction between PS14 Open Approach Diagnosis Stratum and Anemias due to other nutritional deficiencies	1	-0.0202989887	0.1924552035	-0.1054738368	0.9160
PS14s_CMV_BLDLOSS	Interaction between PS14 Open Approach Diagnosis Stratum and Chronic blood loss anemia (iron deficiency)	1	-0.3823173886	0.5216387169	-0.7329160512	0.4636
PS14s_CMV_CANCER_METS	Interaction between PS14 Open Approach Diagnosis Stratum and Metastatic cancer	1	-0.3466072056	0.2331155574	-1.4868471649	0.1371
PS14s_CMV_CANCER_SOLID	Interaction between PS14 Open Approach Diagnosis Stratum and Solid tumor without metastasis, malignant	1	-0.4933791074	0.2917691753	-1.6909911987	0.0908
PS14s_CMV_DIAB_UNCX	Interaction between PS14 Open Approach Diagnosis Stratum and Diabetes without chronic complications	1	-0.3189646732	0.2159847922	-1.4767922771	0.1397
PS14s_CMV_HTN_CX	Interaction between PS14 Open Approach Diagnosis Stratum and Hypertension, complicated	1	-0.5963899188	0.2227327179	-2.6776035619	0.0074
PS14s_CMV_HTN_UNCX	Interaction between PS14 Open Approach Diagnosis Stratum and Hypertension, uncomplicated	1	-0.3681435779	0.1445591057	-2.5466647443	0.0109
PS14s_CMV_OBESE	Interaction between PS14 Open Approach Diagnosis Stratum and Obesity	1	0.0014838849	0.1396334788	0.0106269993	0.9915
PS14s_CMV_RENLFL_MOD	Interaction between PS14 Open Approach Diagnosis Stratum and Renal failure, moderate	1	-0.3816510233	0.2597046124	-1.4695581248	0.1417
PS14s_CMV_RENLFL_SEV	Interaction between PS14 Open Approach Diagnosis Stratum and Renal failure, severe	1	-0.5297038809	0.3397752819	-1.5589829783	0.1190

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
PS14s_CMV_VALVE	Interaction between PS14 Open Approach Diagnosis Stratum and Valvular disease	1	-0.4668113163	0.2681901256	-1.7405984478	0.0818
PS14s_MDC_11	Interaction between PS14 Open Approach Diagnosis Stratum and Diseases and disorders of the kidney and urinary tract	1	-1.064137081	0.2777314971	-3.8315318652	0.0001
PS14s_MDC_13	Interaction between PS14 Open Approach Diagnosis Stratum and Diseases and disorders of the female reproductive system	1	-1.799428740	0.5863347920	-3.0689441667	0.0021
PS14s_MDC_18	Interaction between PS14 Open Approach Diagnosis Stratum and Infectious and parasitic diseases, systemic or unspecified sites	1	0.7112929953	0.2831730600	2.5118667546	0.0120
PS14s_MDC_4	Interaction between PS14 Open Approach Diagnosis Stratum and Diseases and disorders of the respiratory system	1	0.8645284983	0.7299647999	1.1843427223	0.2363
PS14s_MDC_8	Interaction between PS14 Open Approach Diagnosis Stratum and Diseases and disorders of the musculoskeletal system and connective tissue	1	-3.115880278	0.6067669213	-5.1352177727	<.0001
PS14s_MDRG_1103	Interaction between PS14 Open Approach Diagnosis Stratum and KIDNEY & URETER PROCEDURES FOR NEOPLASM	1	-1.189673366	0.3087860060	-3.8527437857	0.0001
PS14s_MDRG_1304	Interaction between PS14 Open Approach Diagnosis Stratum and UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	-0.6373036693	0.8297038276	-0.7681098340	0.4424
PS14s_MDRG_602	Interaction between PS14 Open Approach Diagnosis Stratum and MAJOR SMALL & LARGE BOWEL PROCEDURES	1	-0.9307529365	0.1795143377	-5.1848389853	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
PS14s_MDRG_604	Interaction between PS14 Open Approach Diagnosis Stratum and PERITONEAL ADHESIOLYSIS	1	-0.5450748888	0.4125247654	-1.3213143417	0.1864
PS14s_TRNSFER	Interaction between PS14 Open Approach Diagnosis Stratum and TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.3089649853	0.2899864260	1.0654463711	0.2867
PS14s_YEAR_2019	Interaction between PS14 Open Approach Diagnosis Stratum and Discharge YEAR is 2019 or before 2019	1	-0.0447738746	0.1281872255	-0.3492849964	0.7269

c-statistic=0.855

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the HGLR feature selection).

Table 17. Risk Adjustment Coefficients for PSI 15 - Abdominopelvic Accidental Puncture or Laceration Rate

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
Age_LT30	Age < 30	1	-0.5222859655	0.0711775216	-7.3377936384	<.0001
Age_30_34	30 <= Age <= 34	1	-0.4814570271	0.0805197907	-5.9793626257	<.0001
Age_35_39	35 <= Age <= 39	1	-0.3519431984	0.0708556015	-4.9670483489	<.0001
Age_40_44	40 <= Age <= 44	1	-0.2162967574	0.0611935110	-3.5346355167	0.0004
Age_45_49	45 <= Age <= 49	1	-0.1182227800	0.0506936460	-2.3321025272	0.0197
Age_50_54	50 <= Age <= 54	1	-0.1597219957	0.0486594754	-3.2824438476	0.0010
Age_55_59	55 <= Age <= 59	1	-0.0882039041	0.0453528497	-1.9448370888	0.0518
Age_60_64	60 <= Age <= 64	1	-0.0522282451	0.0421784452	-1.2382686189	0.2156
Age_70_74	70 <= Age <= 74	1	0.0374134444	0.0419099937	0.8927093773	0.3720
Age_75_79	75 <= Age <= 79	1	0.1878567057	0.0529956317	3.5447583067	0.0004
Age_80_84	80 <= Age <= 84	1	0.1104174000	0.0499819214	2.2091467668	0.0272
Age_85_89	85 <= Age <= 89	1	0.0337020250	0.0626286209	0.5381249733	0.5905
Age_90Plus	Age >= 90	1	-0.0851376858	0.0884451095	-0.9626047862	0.3357
MALE	Patient Sex Flag: 1=Male / 0=Female	1	-0.0694609448	0.0248696512	-2.7930003637	0.0052
Age_75_79_MALE	75 <= Age <= 79 MALE	1	-0.1082429013	0.0697242834	-1.5524419333	0.1206
CMR_ALCOHOL	Alcohol abuse	1	0.2500810589	0.0549516502	4.5509290043	<.0001
CMR_AUTOIMMUNE	Autoimmune conditions	1	0.0841433255	0.0609081160	1.3814796946	0.1671
CMR_CANCER_LEUK	Leukemia	1	0.2750366874	0.1416095862	1.9422180012	0.0521
CMR_CANCER_LYMPH	Lymphoma	1	-0.1641935809	0.1323215694	-1.2408678471	0.2147
CMR_CANCER_METS	Metastatic cancer	1	-0.1257256919	0.0453523661	-2.7721969674	0.0056
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	1	-0.0228835999	0.0521932670	-0.4384396912	0.6611
CMR_DRUG_ABUSE	Drug abuse	1	0.2468323353	0.0675985289	3.6514453670	0.0003
CMR_LIVER_MLD	Liver disease, mild	1	0.0161647925	0.0469043729	0.3446329518	0.7304
CMR_PERIVASC	Peripheral vascular disease	1	0.2285704479	0.0437124344	5.2289571867	<.0001
CMR_PULMCIRC	Pulmonary circulation disease	1	0.1277508882	0.0657156621	1.9439945384	0.0519
CMR_RENLFL_SEV	Renal failure, severe	1	0.1340905547	0.0528363132	2.5378484306	0.0112
CMR_THYROID_HYPO	Hypothyroidism	1	-0.1199660925	0.0344723440	-3.4800677493	0.0005
CMR_THYROID_OTH	Other thyroid disorders	1	-0.2297271595	0.1078878085	-2.1293152825	0.0332
CMR_ULCER_PEPTIC	Peptic ulcer disease x bleeding	1	0.1520528592	0.0650959860	2.3358254250	0.0195
CMR_WGHTLOSS	Weight loss	1	0.6712886967	0.0303772478	22.0984040658	<.0001
PS15_NonWt_1	PS15 Comorbidity count using non-weighted method, category 1, count > 0 and count <= 1	1	0.0038638388	0.0331437213	0.1165783027	0.9072

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDC_7	Diseases and disorders of the hepatobiliary system and pancreas	1	0.3442318971	0.0605345031	5.6865403916	<.0001
MDC_8	Diseases and disorders of the musculoskeletal system and connective tissue	1	-0.7696203288	0.1184688808	-6.4963923319	<.0001
MDC_9	Diseases and disorders of the skin, subcutaneous tissue and breast	1	-1.084476295	0.2889142876	-3.7536263921	0.0002
MDC_13	Diseases and disorders of the female reproductive system	1	0.4126611260	0.0823947470	5.0083426584	<.0001
MDRG_101	INTRACRANIAL VASCULAR PROCEDURES W PDX HEMORRHAGE	1	-0.0510030720	0.4989372231	-0.1022234254	0.9186
MDRG_105	VENTRICULAR SHUNT PROCEDURES	1	-0.4077716699	0.5060921097	-0.8057261951	0.4204
MDRG_108	PERIPH/CRANIAL NERVE & OTHER NERV SYST PROC	1	-0.6009786260	0.3539948805	-1.6977042862	0.0896
MDRG_540	ENDOVASCULAR CARDIAC VALVE REPLACEMENT	1	-0.0421582053	0.3642925416	-0.1157262378	0.9079
MDRG_601	STOMACH, ESOPHAGEAL & DUODENAL PROC	1	1.1503108108	0.0511879783	22.4722844676	<.0001
MDRG_602	MAJOR SMALL & LARGE BOWEL PROCEDURES	1	1.5330344722	0.0362871766	42.2472789710	<.0001
MDRG_622	APPENDIX PROCEDURES	1	-1.092237141	0.2250381759	-4.8535637848	<.0001
MDRG_701	PANCREAS, LIVER & SHUNT PROCEDURES	1	0.4190662336	0.1003678372	4.1753040133	<.0001
MDRG_702	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST W OR W/O C.D.E.	1	2.3672560361	0.0983578356	24.0677930914	<.0001
MDRG_704	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE W/O C.D.E.	1	1.5280343722	0.1095596091	13.9470593698	<.0001
MDRG_706	HEPATOBIILIARY DIAGNOSTIC PROCEDURES	1	0.6366777158	0.1775588447	3.5857279698	0.0003
MDRG_707	OTHER HEPATOBIILIARY OR PANCREAS O.R. PROCEDURES	1	0.9390251020	0.1487893226	6.3111054310	<.0001
MDRG_712	DISORDERS OF THE BILIARY TRACT	1	1.5706613049	0.1723116321	9.1152366550	<.0001
MDRG_801	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION	1	-0.7581693578	0.1773791245	-4.2742874047	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MDRG_803	SPINAL FUSION EXCEPT CERVICAL	1	-0.7060957045	0.2052506616	-3.4401628681	0.0006
MDRG_819	SOFT TISSUE PROCEDURES	1	0.9338230933	0.4158147587	2.2457670725	0.0247
MDRG_1104	KIDNEY & URETER PROCEDURES FOR NON-NEOPLASM	1	-0.8389734203	0.0917778982	-9.1413448907	<.0001
MDRG_1115	URINARY STONES	1	1.7638104709	0.5067815709	3.4804155721	0.0005
MDRG_1304	UTERINE & ADNEXA PROC FOR NON-MALIGNANCY	1	0.2202484171	0.0920563709	2.3925385616	0.0167
MDRG_1308	OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES	1	0.2906292590	0.2598638864	1.1183903351	0.2634
MDRG_1601	SPLENIC PROCEDURES	1	1.3530899779	0.2478813602	5.4586193040	<.0001
MDRG_1707	LYMPHOMA & LEUKEMIA W MAJOR O.R. PROCEDURE	1	1.0281116114	0.2235747305	4.5985143715	<.0001
MDRG_1708	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER O.R. PROC	1	-1.026064422	0.3759726791	-2.7290930402	0.0064
MDRG_1709	MYELOPROLIF DISORD OR POORLY DIFF NEOPL W MAJ O.R. PROC	1	0.8992304696	0.1664558231	5.4022169528	<.0001
MDRG_1801	INFECTIOUS & PARASITIC	1	0.5725061460	0.0451856562	12.6700859120	<.0001
MDRG_1802	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS W O.R. PROC	1	1.2501917542	0.1065970953	11.7281971999	<.0001
MDRG_2104	OTHER O.R. PROCEDURES FOR INJURIES	1	0.7400288507	0.1074285626	6.8885669971	<.0001
MDRG_2408	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA	1	0.7086289099	0.1270964996	5.5755186975	<.0001
MDRG_2501	HIV W EXTENSIVE O.R. PROCEDURE	1	0.7644429154	0.4930692345	1.5503764217	0.1211
MDRG_7701	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM	1	0.7786961533	0.2735849659	2.8462680715	0.0044
MDRG_7704	SIMULTANEOUS PANCREAS/KIDNEY TRANSPLANT	1	0.6398796732	0.5572577297	1.1482652264	0.2509
TRNSFER	TRANSFER FROM ANOTHER ACUTE CARE HOSPITAL	1	0.2106669219	0.0450699977	4.6742163891	<.0001
HPPS15_3	1 major ther PR/no diag PR	1	-1.318333284	0.0459458139	-28.6932186436	<.0001
HPPS15_4	1 major ther PR/minor diag PR	1	-1.209566641	0.0693434830	-17.4431192140	<.0001
HPPS15_5	1 major ther PR/major diag PR	1	-1.069865644	0.0861634004	-12.4167063935	<.0001
HPPS15_6	2 major therapeutic PR	1	-0.7631278684	0.0335286994	-22.7604375193	<.0001

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Z-Statistics	Prob Z-Statistics
MEDICDR	Medical DRGs flag	1	-3.441455958	0.0778495270	-44.2065108020	<.0001
COVIDDX_Q2	COVID, Quarter 2, 2020	1	-0.5419903809	0.4425207820	-1.2247794972	0.2207
COVIDDX_Q3	COVID, Quarter 3, 2020	1	-0.0474562332	0.3542627450	-0.1339577301	0.8934
COVIDDX_Q4	COVID, Quarter 4, 2020	1	0.1854199641	0.2646024833	0.7007491454	0.4835
COVIDDX_Q5	COVID, Quarter 1, 2021	1	-0.5129427516	0.2900351503	-1.7685537461	0.0770
COVIDDX_Q6	COVID, Quarter 2, 2021	1	0.2031686853	0.3174806976	0.6399402763	0.5222
COVIDDX_Q7	COVID, Quarter 3, 2021	1	-0.3259580898	0.3533672680	-0.9224343036	0.3563
COVIDDX_Q8	COVID, Quarter 4, 2021	1	-0.0473761170	0.2704034892	-0.1752052726	0.8609
YEAR_2019	Discharge YEAR is 2019 or before 2019	1	-0.0774099572	0.0442478111	-1.7494641039	0.0802
Q1	Quarter 1, 2020	1	-0.0963118525	0.0552100789	-1.7444614164	0.0811
Q2	Quarter 2, 2020	1	-0.1475569962	0.0596292946	-2.4745722259	0.0133
Q3	Quarter 3, 2020	1	-0.1676307371	0.0575495263	-2.9128082885	0.0036
Q4	Quarter 4, 2020	1	-0.0841964731	0.0556150715	-1.5139146782	0.1300
Q5	Quarter 1, 2021	1	-0.1354797071	0.0557077067	-2.4319742313	0.0150
Q6	Quarter 2, 2021	1	-0.1057142495	0.0522570236	-2.0229672942	0.0431
Q7	Quarter 3, 2021	1	0.0488505695	0.0545364789	0.8957411715	0.3704
Intercept	Intercept	1	-6.777398308	0.0620250250	-109.2687718746	<.0001

c-statistic=0.843

C-statistics for hospital level indicators are based on the test data (a random sample of 2019-2021 HCUP reference population, not used for the LASSO feature selection).

Table 18. Composite Weights for PSI 90, v2024

Indicator	Harm Weight	Volume Weight	Component Weight
PSI 03 Pressure Ulcer Rate	0.3080	0.1240	0.1937
PSI 06 Iatrogenic Pneumothorax Rate	0.1381	0.0489	0.0342
PSI 08 In Hospital Fall-Associated Fracture Rate	0.1440	0.0692	0.0506
PSI 09 Postoperative Hemorrhage or Hematoma Rate	0.0570	0.1414	0.0409
PSI 10 Postoperative Acute Kidney Injury Requiring Dialysis Rate	0.3584	0.0284	0.0516
PSI 11 Postoperative Respiratory Failure Rate	0.2219	0.2119	0.2384
PSI 12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate	0.1557	0.1983	0.1565
PSI 13 Postoperative Sepsis Rate	0.3102	0.1230	0.1935
PSI 14 Postoperative Wound Dehiscence Rate	0.1441	0.0232	0.0169
PSI 15 Abdominopelvic Accidental Puncture or Laceration Rate	0.1474	0.0316	0.0236
SUM			1.0000

Source: The volume weight is derived from Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Databases (SID), 2019, 2020, 2021. The harm weight was estimated using 2012-2013 Medicare Fee-for-Service claims data in combination with information from the published literature.

Appendix Tables

Table A.1. Population Age Categories

POPCAT	Age Range
Age_LT30	< 30
Age_30_34	30 - 34
Age_35_39	35 - 39
Age_40_44	40 - 44
Age_45_49	45 - 49
Age_50_54	50 - 54
Age_55_59	55 - 59
Age_60_64	60 - 64
Age_65_69	65 - 69
Age_70_74	70 - 74
Age_75_79	75 - 79
Age_80_84	80 - 84
Age_85_89	85 - 89
Age_90Plus	90 plus

Table A.2. Modified Diagnosis-Related Group (MDRG) Categories

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	7701	1	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM WITH MCC
S	7701	2	HEART TRANSPLANT OR IMPLANT OF HEART ASSIST SYSTEM WITHOUT MCC
S	7799	3	ECMO OR TRACHEOSTOMY WITH MV >96 HOURS OR PDX EXCEPT FACE MOUTH AND NECK WITH MAJOR O.R. PROCEDURE
S	7799	4	TRACHEOSTOMY WITH MV >96 HOURS OR PDX EXCEPT FACE MOUTH AND NECK WITHOUT MAJOR O.R. PROCEDURE
S	7702	5	LIVER TRANSPLANT WITH MCC OR INTESTINAL TRANSPLANT
S	7702	6	LIVER TRANSPLANT WITHOUT MCC
S	7703	7	LUNG TRANSPLANT
S	7704	8	SIMULTANEOUS PANCREAS AND KIDNEY TRANSPLANT
S	7706	10	PANCREAS TRANSPLANT
S	7799	11	TRACHEOSTOMY FOR FACE, MOUTH & NECK DIAGNOSES OR LARYNGECTOMY W MCC
S	7799	12	TRACHEOSTOMY FOR FACE, MOUTH & NECK DIAGNOSES OR LARYNGECTOMY W CC
S	7799	13	TRACHEOSTOMY FOR FACE, MOUTH & NECK DIAGNOSES OR LARYNGECTOMY W/O CC/MCC
M	7705	14	ALLOGENEIC BONE MARROW TRANSPLANT
M	7705	16	AUTOLOGOUS BONE MARROW TRANSPLANT WITH CC/MCC
M	7705	17	AUTOLOGOUS BONE MARROW TRANSPLANT WITHOUT CC/MCC
M	7707	18	CHIMERIC ANTIGEN RECEPTOR (CAR) T-CELL IMMUNOTHERAPY
S	7704	19	SIMULTANEOUS PANCREAS AND KIDNEY TRANSPLANT WITH HEMODIALYSIS
S	101	20	INTRACRANIAL VASCULAR PROCEDURES WITH PDX HEMORRHAGE WITH MCC
S	101	21	INTRACRANIAL VASCULAR PROCEDURES WITH PDX HEMORRHAGE WITH CC
S	101	22	INTRACRANIAL VASCULAR PROCEDURES WITH PDX HEMORRHAGE WITHOUT CC/MCC
S	102	23	CRANIOTOMY W MAJOR DEVICE IMPLANT OR ACUTE COMPLEX CNS PDX W MCC OR CHEMOTHERAPY IMPLANT OR EPILEP
S	102	24	CRANIOTOMY WITH MAJOR DEVICE IMPLANT OR ACUTE COMPLEX CNS PDX WITHOUT MCC
S	103	25	CRANIOTOMY AND ENDOVASCULAR INTRACRANIAL PROCEDURES WITH MCC
S	103	26	CRANIOTOMY AND ENDOVASCULAR INTRACRANIAL PROCEDURES WITH CC
S	103	27	CRANIOTOMY AND ENDOVASCULAR INTRACRANIAL PROCEDURES WITHOUT CC/MCC
S	104	28	SPINAL PROCEDURES WITH MCC
S	104	29	SPINAL PROCEDURES WITH CC OR SPINAL NEUROSTIMULATORS
S	104	30	SPINAL PROCEDURES WITHOUT CC/MCC
S	105	31	VENTRICULAR SHUNT PROCEDURES WITH MCC
S	105	32	VENTRICULAR SHUNT PROCEDURES WITH CC
S	105	33	VENTRICULAR SHUNT PROCEDURES WITHOUT CC/MCC
S	106	34	CAROTID ARTERY STENT PROCEDURE WITH MCC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	106	35	CAROTID ARTERY STENT PROCEDURE WITH CC
S	106	36	CAROTID ARTERY STENT PROCEDURE WITHOUT CC/MCC
S	107	37	EXTRACRANIAL PROCEDURES WITH MCC
S	107	38	EXTRACRANIAL PROCEDURES WITH CC
S	107	39	EXTRACRANIAL PROCEDURES WITHOUT CC/MCC
S	108	40	PERIPHERAL CRANIAL NERVE AND OTHER NERVOUS SYSTEM PROCEDURES WITH MCC
S	108	41	PERIPHERAL CRANIAL NERVE AND OTHER NERVOUS SYSTEM PROCEDURES WITH CC OR PERIPHERAL NEUROSTIMULATOR
S	108	42	PERIPHERAL CRANIAL NERVE AND OTHER NERVOUS SYSTEM PROCEDURES WITHOUT CC/MCC
M	109	52	SPINAL DISORDERS AND INJURIES WITH CC/MCC
M	109	53	SPINAL DISORDERS AND INJURIES WITHOUT CC/MCC
M	110	54	NERVOUS SYSTEM NEOPLASMS WITH MCC
M	110	55	NERVOUS SYSTEM NEOPLASMS WITHOUT MCC
M	111	56	DEGENERATIVE NERVOUS SYSTEM DISORDERS WITH MCC
M	111	57	DEGENERATIVE NERVOUS SYSTEM DISORDERS WITHOUT MCC
M	112	58	MULTIPLE SCLEROSIS AND CEREBELLAR ATAXIA WITH MCC
M	112	59	MULTIPLE SCLEROSIS AND CEREBELLAR ATAXIA WITH CC
M	112	60	MULTIPLE SCLEROSIS AND CEREBELLAR ATAXIA WITHOUT CC/MCC
M	113	61	ISCHEMIC STROKE, PRECEREBRAL OCCLUSION OR TRANSIENT ISCHEMIA WITH THROMBOLYTIC AGENT WITH MCC
M	113	62	ISCHEMIC STROKE, PRECEREBRAL OCCLUSION OR TRANSIENT ISCHEMIA WITH THROMBOLYTIC AGENT WITH CC
M	113	63	ISCHEMIC STROKE, PRECEREBRAL OCCLUSION OR TRANSIENT ISCHEMIA WITH THROMBOLYTIC AGENT WITHOUT CC/MC
M	114	64	INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION WITH MCC
M	114	65	INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION WITH CC OR TPA IN 24 HOURS
M	114	66	INTRACRANIAL HEMORRHAGE OR CEREBRAL INFARCTION WITHOUT CC/MCC
M	115	67	NONSPECIFIC CVA AND PRECEREBRAL OCCLUSION WITHOUT INFARCTION WITH MCC
M	115	68	NONSPECIFIC CVA AND PRECEREBRAL OCCLUSION WITHOUT INFARCTION WITHOUT MCC
M	116	69	TRANSIENT ISCHEMIA W/O THROMBOLYTIC
M	117	70	NONSPECIFIC CEREBROVASCULAR DISORDERS WITH MCC
M	117	71	NONSPECIFIC CEREBROVASCULAR DISORDERS WITH CC
M	117	72	NONSPECIFIC CEREBROVASCULAR DISORDERS WITHOUT CC/MCC
M	118	73	CRANIAL AND PERIPHERAL NERVE DISORDERS WITH MCC
M	118	74	CRANIAL AND PERIPHERAL NERVE DISORDERS WITHOUT MCC
M	119	75	VIRAL MENINGITIS WITH CC/MCC
M	119	76	VIRAL MENINGITIS WITHOUT CC/MCC
M	120	77	HYPERTENSIVE ENCEPHALOPATHY WITH MCC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	120	78	HYPERTENSIVE ENCEPHALOPATHY WITH CC
M	120	79	HYPERTENSIVE ENCEPHALOPATHY WITHOUT CC/MCC
M	121	80	NONTRAUMATIC STUPOR AND COMA WITH MCC
M	121	81	NONTRAUMATIC STUPOR AND COMA WITHOUT MCC
M	122	82	TRAUMATIC STUPOR AND COMA COMA >1 HOUR WITH MCC
M	122	83	TRAUMATIC STUPOR AND COMA COMA >1 HOUR WITH CC
M	122	84	TRAUMATIC STUPOR AND COMA COMA >1 HOUR WITHOUT CC/MCC
M	123	85	TRAUMATIC STUPOR AND COMA COMA <1 HOUR WITH MCC
M	123	86	TRAUMATIC STUPOR AND COMA COMA <1 HOUR WITH CC
M	123	87	TRAUMATIC STUPOR AND COMA COMA <1 HOUR WITHOUT CC/MCC
M	124	88	CONCUSSION WITH MCC
M	124	89	CONCUSSION WITH CC
M	124	90	CONCUSSION WITHOUT CC/MCC
M	125	91	OTHER DISORDERS OF NERVOUS SYSTEM WITH MCC
M	125	92	OTHER DISORDERS OF NERVOUS SYSTEM WITH CC
M	125	93	OTHER DISORDERS OF NERVOUS SYSTEM WITHOUT CC/MCC
M	126	94	BACTERIAL AND TUBERCULOUS INFECTIONS OF NERVOUS SYSTEM WITH MCC
M	126	95	BACTERIAL AND TUBERCULOUS INFECTIONS OF NERVOUS SYSTEM WITH CC
M	126	96	BACTERIAL AND TUBERCULOUS INFECTIONS OF NERVOUS SYSTEM WITHOUT CC/MCC
M	127	97	NON-BACTERIAL INFECTION OF NERVOUS SYSTEM EXCEPT VIRAL MENINGITIS WITH MCC
M	127	98	NON-BACTERIAL INFECTION OF NERVOUS SYSTEM EXCEPT VIRAL MENINGITIS WITH CC
M	127	99	NON-BACTERIAL INFECTION OF NERVOUS SYSTEM EXCEPT VIRAL MENINGITIS WITHOUT CC/MCC
M	128	100	SEIZURES WITH MCC
M	128	101	SEIZURES WITHOUT MCC
M	129	102	HEADACHES WITH MCC
M	129	103	HEADACHES WITHOUT MCC
S	201	113	ORBITAL PROCEDURES WITH CC/MCC
S	201	114	ORBITAL PROCEDURES WITHOUT CC/MCC
S	202	115	EXTRAOCULAR PROCEDURES EXCEPT ORBIT
S	203	116	INTRAOCULAR PROCEDURES WITH CC/MCC
S	203	117	INTRAOCULAR PROCEDURES WITHOUT CC/MCC
M	204	121	ACUTE MAJOR EYE INFECTIONS WITH CC/MCC
M	204	122	ACUTE MAJOR EYE INFECTIONS WITHOUT CC/MCC
M	205	123	NEUROLOGICAL EYE DISORDERS
M	206	124	OTHER DISORDERS OF THE EYE WITH MCC
M	206	125	OTHER DISORDERS OF THE EYE WITHOUT MCC
S	301	129	MAJOR HEAD AND NECK PROCEDURES WITH CC/MCC OR MAJOR DEVICE
S	301	130	MAJOR HEAD AND NECK PROCEDURES WITHOUT CC/MCC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	301	131	CRANIAL AND FACIAL PROCEDURES WITH CC/MCC
S	301	132	CRANIAL AND FACIAL PROCEDURES WITHOUT CC/MCC
S	302	133	OTHER EAR NOSE MOUTH AND THROAT O.R. PROCEDURES WITH CC/MCC
S	302	134	OTHER EAR NOSE MOUTH AND THROAT O.R. PROCEDURES WITHOUT CC/MCC
S	303	135	SINUS AND MASTOID PROCEDURES WITH CC/MCC
S	303	136	SINUS AND MASTOID PROCEDURES WITHOUT CC/MCC
S	304	137	MOUTH PROCEDURES WITH CC/MCC
S	304	138	MOUTH PROCEDURES WITHOUT CC/MCC
S	305	139	SALIVARY GLAND PROCEDURES
S	301	140	MAJOR HEAD AND NECK PROCEDURES WITH MCC
S	301	141	MAJOR HEAD AND NECK PROCEDURES WITH CC
S	301	142	MAJOR HEAD AND NECK PROCEDURES WITHOUT CC/MCC
S	302	143	OTHER EAR, NOSE, MOUTH AND THROAT O.R. PROCEDURES WITH MCC
S	302	144	OTHER EAR, NOSE, MOUTH AND THROAT O.R. PROCEDURES WITH CC
S	302	145	OTHER EAR, NOSE, MOUTH AND THROAT O.R. PROCEDURES WITHOUT CC/MCC
M	306	146	EAR NOSE MOUTH AND THROAT MALIGNANCY WITH MCC
M	306	147	EAR NOSE MOUTH AND THROAT MALIGNANCY WITH CC
M	306	148	EAR NOSE MOUTH AND THROAT MALIGNANCY WITHOUT CC/MCC
M	307	149	DYSEQUILIBRIUM
M	308	150	EPISTAXIS WITH MCC
M	308	151	EPISTAXIS WITHOUT MCC
M	309	152	OTITIS MEDIA AND URI WITH MCC
M	309	153	OTITIS MEDIA AND URI WITHOUT MCC
M	310	154	OTHER EAR NOSE MOUTH AND THROAT DIAGNOSES WITH MCC
M	310	155	OTHER EAR NOSE MOUTH AND THROAT DIAGNOSES WITH CC
M	310	156	OTHER EAR NOSE MOUTH AND THROAT DIAGNOSES WITHOUT CC/MCC
M	311	157	DENTAL AND ORAL DISEASES WITH MCC
M	311	158	DENTAL AND ORAL DISEASES WITH CC
M	311	159	DENTAL AND ORAL DISEASES WITHOUT CC/MCC
S	401	163	MAJOR CHEST PROCEDURES WITH MCC
S	401	164	MAJOR CHEST PROCEDURES WITH CC
S	401	165	MAJOR CHEST PROCEDURES WITHOUT CC/MCC
S	402	166	OTHER RESPIRATORY SYSTEM O.R. PROCEDURES WITH MCC
S	402	167	OTHER RESPIRATORY SYSTEM O.R. PROCEDURES WITH CC
S	402	168	OTHER RESPIRATORY SYSTEM O.R. PROCEDURES WITHOUT CC/MCC
S	402	173	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS WITH PRINCIPAL DIAGNOSIS PULMONARY EMBOLISM
M	403	175	PULMONARY EMBOLISM W MCC OR ACUTE COR PULMONALE
M	403	176	PULMONARY EMBOLISM WITHOUT MCC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	404	177	RESPIRATORY INFECTIONS AND INFLAMMATIONS WITH MCC
M	404	178	RESPIRATORY INFECTIONS AND INFLAMMATIONS WITH CC
M	404	179	RESPIRATORY INFECTIONS AND INFLAMMATIONS WITHOUT CC/MCC
M	405	180	RESPIRATORY NEOPLASMS WITH MCC
M	405	181	RESPIRATORY NEOPLASMS WITH CC
M	405	182	RESPIRATORY NEOPLASMS WITHOUT CC/MCC
M	406	183	MAJOR CHEST TRAUMA WITH MCC
M	406	184	MAJOR CHEST TRAUMA WITH CC
M	406	185	MAJOR CHEST TRAUMA WITHOUT CC/MCC
M	407	186	PLEURAL EFFUSION WITH MCC
M	407	187	PLEURAL EFFUSION WITH CC
M	407	188	PLEURAL EFFUSION WITHOUT CC/MCC
M	408	189	PULMONARY EDEMA AND RESPIRATORY FAILURE
M	409	190	CHRONIC OBSTRUCTIVE PULMONARY DISEASE WITH MCC
M	409	191	CHRONIC OBSTRUCTIVE PULMONARY DISEASE WITH CC
M	409	192	CHRONIC OBSTRUCTIVE PULMONARY DISEASE WITHOUT CC/MCC
M	410	193	SIMPLE PNEUMONIA AND PLEURISY WITH MCC
M	410	194	SIMPLE PNEUMONIA AND PLEURISY WITH CC
M	410	195	SIMPLE PNEUMONIA AND PLEURISY WITHOUT CC/MCC
M	411	196	INTERSTITIAL LUNG DISEASE WITH MCC
M	411	197	INTERSTITIAL LUNG DISEASE WITH CC
M	411	198	INTERSTITIAL LUNG DISEASE WITHOUT CC/MCC
M	412	199	PNEUMOTHORAX WITH MCC
M	412	200	PNEUMOTHORAX WITH CC
M	412	201	PNEUMOTHORAX WITHOUT CC/MCC
M	413	202	BRONCHITIS AND ASTHMA WITH CC/MCC
M	413	203	BRONCHITIS AND ASTHMA WITHOUT CC/MCC
M	414	204	RESPIRATORY SIGNS AND SYMPTOMS
M	415	205	OTHER RESPIRATORY SYSTEM DIAGNOSES WITH MCC
M	415	206	OTHER RESPIRATORY SYSTEM DIAGNOSES WITHOUT MCC
M	416	207	RESPIRATORY SYSTEM DIAGNOSIS W VENTILATOR SUPPORT >96 HOURS OR PERIPHERAL EXTRACORPOREAL MEMBRANE
M	416	208	RESPIRATORY SYSTEM DIAGNOSIS W VENTILATOR SUPPORT <=96 HOURS
S	503	212	CONCOMITANT AORTIC AND MITRAL VALVE PROCEDURES
S	501	215	OTHER HEART ASSIST SYSTEM IMPLANT
S	503	216	CARDIAC VALVE AND OTHER MAJOR CARDIOTHORACIC PROCEDURES WITH CARDIAC CATHETERIZATION WITH MCC
S	503	217	CARDIAC VALVE AND OTHER MAJOR CARDIOTHORACIC PROCEDURES WITH CARDIAC CATHETERIZATION WITH CC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	503	218	CARDIAC VALVE AND OTHER MAJOR CARDIOTHORACIC PROCEDURES WITH CARDIAC CATHETERIZATION WITHOUT CC/MC
S	503	219	CARDIAC VALVE AND OTHER MAJOR CARDIOTHORACIC PROCEDURES WITHOUT CARDIAC CATHETERIZATION WITH MCC
S	503	220	CARDIAC VALVE AND OTHER MAJOR CARDIOTHORACIC PROCEDURES WITHOUT CARDIAC CATHETERIZATION WITH CC
S	503	221	CARDIAC VALVE AND OTHER MAJOR CARDIOTHORACIC PROCEDURES WITHOUT CARDIAC CATHETERIZATION WITHOUT CC
S	544	222	CARDIAC DEFIBRILLATOR IMPLANT WITH CARDIAC CATHETERIZATION WITH AMI/HF/SHOCK WITH MCC
S	544	223	CARDIAC DEFIBRILLATOR IMPLANT WITH CARDIAC CATHETERIZATION WITH AMI/HF/SHOCK WITHOUT MCC
S	544	224	CARDIAC DEFIBRILLATOR IMPLANT WITH CARDIAC CATHETERIZATION WITHOUT AMI/HF/SHOCK WITH MCC
S	544	225	CARDIAC DEFIBRILLATOR IMPLANT WITH CARDIAC CATHETERIZATION WITHOUT AMI/HF/SHOCK WITHOUT MCC
S	544	226	CARDIAC DEFIBRILLATOR IMPLANT WITHOUT CARDIAC CATHETERIZATION WITH MCC
S	544	227	CARDIAC DEFIBRILLATOR IMPLANT WITHOUT CARDIAC CATHETERIZATION WITHOUT MCC
S	505	228	OTHER CARDIOTHORACIC PROCEDURES WITH MCC
S	505	229	OTHER CARDIOTHORACIC PROCEDURES WITHOUT MCC
S	505	230	OTHER CARDIOTHORACIC PROCEDURES WITHOUT CC/MCC
S	506	231	CORONARY BYPASS WITH PTCA WITH MCC
S	506	232	CORONARY BYPASS WITH PTCA WITHOUT MCC
S	507	233	CORONARY BYPASS WITH CARDIAC CATHETERIZATION WITH MCC
S	507	234	CORONARY BYPASS WITH CARDIAC CATHETERIZATION WITHOUT MCC
S	508	235	CORONARY BYPASS WITHOUT CARDIAC CATHETERIZATION WITH MCC
S	508	236	CORONARY BYPASS WITHOUT CARDIAC CATHETERIZATION WITHOUT MCC
S	509	239	AMPUTATION FOR CIRCULATORY SYSTEM DISORDERS EXCEPT UPPER LIMB AND TOE WITH MCC
S	509	240	AMPUTATION FOR CIRCULATORY SYSTEM DISORDERS EXCEPT UPPER LIMB AND TOE WITH CC
S	509	241	AMPUTATION FOR CIRCULATORY SYSTEM DISORDERS EXCEPT UPPER LIMB AND TOE WITHOUT CC/MCC
S	510	242	PERMANENT CARDIAC PACEMAKER IMPLANT WITH MCC
S	510	243	PERMANENT CARDIAC PACEMAKER IMPLANT WITH CC
S	510	244	PERMANENT CARDIAC PACEMAKER IMPLANT WITHOUT CC/MCC
S	512	245	AICD GENERATOR PROCEDURES

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	511	246	PERCUTANEOUS CARDIOVASCULAR PROCEDURES W DRUG-ELUTING STENT W MCC OR 4+ ARTERIES OR STENTS
S	511	247	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH DRUG-ELUTING STENT WITHOUT MCC
S	511	248	PERCUTANEOUS CARDIOVASCULAR PROCEDURES W NON-DRUG-ELUTING STENT W MCC OR 4+ ARTERIES OR STENTS
S	511	249	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH NON-DRUG-ELUTING STENT WITHOUT MCC
S	513	250	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITHOUT CORONARY ARTERY STENT WITH MCC
S	513	251	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITHOUT CORONARY ARTERY STENT WITHOUT MCC
S	514	252	OTHER VASCULAR PROCEDURES WITH MCC
S	514	253	OTHER VASCULAR PROCEDURES WITH CC
S	514	254	OTHER VASCULAR PROCEDURES WITHOUT CC/MCC
S	515	255	UPPER LIMB AND TOE AMPUTATION FOR CIRCULATORY SYSTEM DISORDERS WITH MCC
S	515	256	UPPER LIMB AND TOE AMPUTATION FOR CIRCULATORY SYSTEM DISORDERS WITH CC
S	515	257	UPPER LIMB AND TOE AMPUTATION FOR CIRCULATORY SYSTEM DISORDERS WITHOUT CC/MCC
S	516	258	CARDIAC PACEMAKER DEVICE REPLACEMENT WITH MCC
S	516	259	CARDIAC PACEMAKER DEVICE REPLACEMENT WITHOUT MCC
S	517	260	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT WITH MCC
S	517	261	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT WITH CC
S	517	262	CARDIAC PACEMAKER REVISION EXCEPT DEVICE REPLACEMENT WITHOUT CC/MCC
S	518	263	VEIN LIGATION AND STRIPPING
S	519	264	OTHER CIRCULATORY SYSTEM O.R. PROCEDURES
S	512	265	AICD LEAD PROCEDURES
S	540	266	ENDOVASCULAR CARDIAC VALVE REPLACEMENT & SUPPLEMENT PROCEDURES W MCC
S	540	267	ENDOVASCULAR CARDIAC VALVE REPLACEMENT & SUPPLEMENT PROCEDURES W/O MCC
S	541	268	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON W MCC
S	541	269	AORTIC AND HEART ASSIST PROCEDURES EXCEPT PULSATION BALLOON W/O MCC
S	542	270	OTHER MAJOR CARDIOVASCULAR PROCEDURES W MCC
S	542	271	OTHER MAJOR CARDIOVASCULAR PROCEDURES W CC
S	542	272	OTHER MAJOR CARDIOVASCULAR PROCEDURES W/O CC/MCC
S	543	273	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES WITH MCC
S	543	274	PERCUTANEOUS AND OTHER INTRACARDIAC PROCEDURES WITHOUT MCC
S	544	275	CARDIAC DEFIBRILLATOR IMPLANT WITH CARDIAC CATHETERIZATION AND MCC
S	544	276	CARDIAC DEFIBRILLATOR IMPLANT WITH MCC
S	544	277	CARDIAC DEFIBRILLATOR IMPLANT WITHOUT MCC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	514	278	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES WITH MCC
S	514	279	ULTRASOUND ACCELERATED AND OTHER THROMBOLYSIS OF PERIPHERAL VASCULAR STRUCTURES WITHOUT MCC
M	520	280	ACUTE MYOCARDIAL INFARCTION DISCHARGED ALIVE WITH MCC
M	520	281	ACUTE MYOCARDIAL INFARCTION DISCHARGED ALIVE WITH CC
M	520	282	ACUTE MYOCARDIAL INFARCTION DISCHARGED ALIVE WITHOUT CC/MCC
M	520	283	ACUTE MYOCARDIAL INFARCTION EXPIRED WITH MCC
M	520	284	ACUTE MYOCARDIAL INFARCTION EXPIRED WITH CC
M	520	285	ACUTE MYOCARDIAL INFARCTION EXPIRED WITHOUT CC/MCC
M	522	286	CIRCULATORY DISORDERS EXCEPT AMI WITH CARDIAC CATETERIZATION WITH MCC
M	522	287	CIRCULATORY DISORDERS EXCEPT AMI WITH CARDIAC CATETERIZATION WITHOUT MCC
M	523	288	ACUTE AND SUBACUTE ENDOCARDITIS WITH MCC
M	523	289	ACUTE AND SUBACUTE ENDOCARDITIS WITH CC
M	523	290	ACUTE AND SUBACUTE ENDOCARDITIS WITHOUT CC/MCC
M	524	291	HEART FAILURE & SHOCK W MCC
M	524	292	HEART FAILURE AND SHOCK WITH CC
M	524	293	HEART FAILURE AND SHOCK WITHOUT CC/MCC
M	525	294	DEEP VEIN THROMBOPHLEBITIS WITH CC/MCC
M	525	295	DEEP VEIN THROMBOPHLEBITIS WITHOUT CC/MCC
M	526	296	CARDIAC ARREST, UNEXPLAINED W MCC
M	526	297	CARDIAC ARREST UNEXPLAINED WITH CC
M	526	298	CARDIAC ARREST UNEXPLAINED WITHOUT CC/MCC
M	527	299	PERIPHERAL VASCULAR DISORDERS WITH MCC
M	527	300	PERIPHERAL VASCULAR DISORDERS WITH CC
M	527	301	PERIPHERAL VASCULAR DISORDERS WITHOUT CC/MCC
M	528	302	ATHEROSCLEROSIS WITH MCC
M	528	303	ATHEROSCLEROSIS WITHOUT MCC
M	529	304	HYPERTENSION WITH MCC
M	529	305	HYPERTENSION WITHOUT MCC
M	530	306	CARDIAC CONGENITAL AND VALVULAR DISORDERS WITH MCC
M	530	307	CARDIAC CONGENITAL AND VALVULAR DISORDERS WITHOUT MCC
M	531	308	CARDIAC ARRHYTHMIA AND CONDUCTION DISORDERS WITH MCC
M	531	309	CARDIAC ARRHYTHMIA AND CONDUCTION DISORDERS WITH CC
M	531	310	CARDIAC ARRHYTHMIA AND CONDUCTION DISORDERS WITHOUT CC/MCC
M	532	311	ANGINA PECTORIS
M	533	312	SYNCOPE AND COLLAPSE
M	534	313	CHEST PAIN
M	535	314	OTHER CIRCULATORY SYSTEM DIAGNOSES WITH MCC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	535	315	OTHER CIRCULATORY SYSTEM DIAGNOSES WITH CC
M	535	316	OTHER CIRCULATORY SYSTEM DIAGNOSES WITHOUT CC/MCC
S	536	319	OTHER ENDOVASCULAR CARDIAC VALVE PROCEDURES W MCC
S	536	320	OTHER ENDOVASCULAR CARDIAC VALVE PROCEDURES W/O MCC
S	511	321	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE WITH MCC OR 4+ ARTERIES/INTRALUMIN
S	511	322	PERCUTANEOUS CARDIOVASCULAR PROCEDURES WITH INTRALUMINAL DEVICE WITHOUT MCC
S	511	323	CORONARY INTRAVASCULAR LITHOTRIpsy WITH INTRALUMINAL DEVICE WITH MCC
S	511	324	CORONARY INTRAVASCULAR LITHOTRIpsy WITH INTRALUMINAL DEVICE WITHOUT MCC
S	513	325	CORONARY INTRAVASCULAR LITHOTRIpsy WITHOUT INTRALUMINAL DEVICE
S	601	326	STOMACH ESOPHAGEAL AND DUODENAL PROCEDURES WITH MCC
S	601	327	STOMACH ESOPHAGEAL AND DUODENAL PROCEDURES WITH CC
S	601	328	STOMACH ESOPHAGEAL AND DUODENAL PROCEDURES WITHOUT CC/MCC
S	602	329	MAJOR SMALL AND LARGE BOWEL PROCEDURES WITH MCC
S	602	330	MAJOR SMALL AND LARGE BOWEL PROCEDURES WITH CC
S	602	331	MAJOR SMALL AND LARGE BOWEL PROCEDURES WITHOUT CC/MCC
S	603	332	RECTAL RESECTION WITH MCC
S	603	333	RECTAL RESECTION WITH CC
S	603	334	RECTAL RESECTION WITHOUT CC/MCC
S	604	335	PERITONEAL ADHESIOlysis WITH MCC
S	604	336	PERITONEAL ADHESIOlysis WITH CC
S	604	337	PERITONEAL ADHESIOlysis WITHOUT CC/MCC
S	622	338	APPENDECTOMY WITH COMPLICATED PRINCIPAL DIAGNOSIS WITH MCC
S	622	339	APPENDECTOMY WITH COMPLICATED PRINCIPAL DIAGNOSIS WITH CC
S	622	340	APPENDECTOMY WITH COMPLICATED PRINCIPAL DIAGNOSIS WITHOUT CC/MCC
S	622	341	APPENDECTOMY WITHOUT COMPLICATED PRINCIPAL DIAGNOSIS WITH MCC
S	622	342	APPENDECTOMY WITHOUT COMPLICATED PRINCIPAL DIAGNOSIS WITH CC
S	622	343	APPENDECTOMY WITHOUT COMPLICATED PRINCIPAL DIAGNOSIS WITHOUT CC/MCC
S	607	344	MINOR SMALL AND LARGE BOWEL PROCEDURES WITH MCC
S	607	345	MINOR SMALL AND LARGE BOWEL PROCEDURES WITH CC
S	607	346	MINOR SMALL AND LARGE BOWEL PROCEDURES WITHOUT CC/MCC
S	608	347	ANAL AND STOMAL PROCEDURES WITH MCC
S	608	348	ANAL AND STOMAL PROCEDURES WITH CC
S	608	349	ANAL AND STOMAL PROCEDURES WITHOUT CC/MCC
S	609	350	INGUINAL AND FEMORAL HERNIA PROCEDURES WITH MCC
S	609	351	INGUINAL AND FEMORAL HERNIA PROCEDURES WITH CC
S	609	352	INGUINAL AND FEMORAL HERNIA PROCEDURES WITHOUT CC/MCC
S	610	353	HERNIA PROCEDURES EXCEPT INGUINAL AND FEMORAL WITH MCC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	610	354	HERNIA PROCEDURES EXCEPT INGUINAL AND FEMORAL WITH CC
S	610	355	HERNIA PROCEDURES EXCEPT INGUINAL AND FEMORAL WITHOUT CC/MCC
S	611	356	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES WITH MCC
S	611	357	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES WITH CC
S	611	358	OTHER DIGESTIVE SYSTEM O.R. PROCEDURES WITHOUT CC/MCC
M	612	368	MAJOR ESOPHAGEAL DISORDERS WITH MCC
M	612	369	MAJOR ESOPHAGEAL DISORDERS WITH CC
M	612	370	MAJOR ESOPHAGEAL DISORDERS WITHOUT CC/MCC
M	613	371	MAJOR GASTROINTESTINAL DISORDERS AND PERITONEAL INFECTIONS WITH MCC
M	613	372	MAJOR GASTROINTESTINAL DISORDERS AND PERITONEAL INFECTIONS WITH CC
M	613	373	MAJOR GASTROINTESTINAL DISORDERS AND PERITONEAL INFECTIONS WITHOUT CC/MCC
M	614	374	DIGESTIVE MALIGNANCY WITH MCC
M	614	375	DIGESTIVE MALIGNANCY WITH CC
M	614	376	DIGESTIVE MALIGNANCY WITHOUT CC/MCC
M	615	377	G.I. HEMORRHAGE WITH MCC
M	615	378	G.I. HEMORRHAGE WITH CC
M	615	379	G.I. HEMORRHAGE WITHOUT CC/MCC
M	616	380	COMPLICATED PEPTIC ULCER WITH MCC
M	616	381	COMPLICATED PEPTIC ULCER WITH CC
M	616	382	COMPLICATED PEPTIC ULCER WITHOUT CC/MCC
M	617	383	UNCOMPLICATED PEPTIC ULCER WITH MCC
M	617	384	UNCOMPLICATED PEPTIC ULCER WITHOUT MCC
M	618	385	INFLAMMATORY BOWEL DISEASE WITH MCC
M	618	386	INFLAMMATORY BOWEL DISEASE WITH CC
M	618	387	INFLAMMATORY BOWEL DISEASE WITHOUT CC/MCC
M	619	388	G.I. OBSTRUCTION WITH MCC
M	619	389	G.I. OBSTRUCTION WITH CC
M	619	390	G.I. OBSTRUCTION WITHOUT CC/MCC
M	620	391	ESOPHAGITIS GASTROENTERITIS AND MISCELLANEOUS DIGESTIVE DISORDERS WITH MCC
M	620	392	ESOPHAGITIS GASTROENTERITIS AND MISCELLANEOUS DIGESTIVE DISORDERS WITHOUT MCC
M	621	393	OTHER DIGESTIVE SYSTEM DIAGNOSES WITH MCC
M	621	394	OTHER DIGESTIVE SYSTEM DIAGNOSES WITH CC
M	621	395	OTHER DIGESTIVE SYSTEM DIAGNOSES WITHOUT CC/MCC
S	622	397	APPENDIX PROCEDURES WITH MCC
S	622	398	APPENDIX PROCEDURES WITH CC
S	622	399	APPENDIX PROCEDURES WITHOUT CC/MCC
S	701	405	PANCREAS LIVER AND SHUNT PROCEDURES WITH MCC
S	701	406	PANCREAS LIVER AND SHUNT PROCEDURES WITH CC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	701	407	PANCREAS LIVER AND SHUNT PROCEDURES WITHOUT CC/MCC
S	702	408	BILIARY TRACT PROCEDURE EXCEPT ONLY CHOLECYSTECTOMY WITH OR WITHOUT C.D.E. WITH MCC
S	702	409	BILIARY TRACT PROCEDURE EXCEPT ONLY CHOLECYSTECTOMY WITH OR WITHOUT C.D.E. WITH CC
S	702	410	BILIARY TRACT PROC EXCEPT ONLY CHOLECYST WITH OR WITHOUT C.D.E. WITHOUT CC/MCC
S	703	411	CHOLECYSTECTOMY WITH C.D.E. WITH MCC
S	703	412	CHOLECYSTECTOMY WITH C.D.E. WITH CC
S	703	413	CHOLECYSTECTOMY WITH C.D.E. WITHOUT CC/MCC
S	704	414	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE WITHOUT C.D.E. WITH MCC
S	704	415	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE WITHOUT C.D.E. WITH CC
S	704	416	CHOLECYSTECTOMY EXCEPT BY LAPAROSCOPE WITHOUT C.D.E. WITHOUT CC/MCC
S	705	417	LAPAROSCOPIC CHOLECYSTECTOMY WITHOUT C.D.E. WITH MCC
S	705	418	LAPAROSCOPIC CHOLECYSTECTOMY WITHOUT C.D.E. WITH CC
S	705	419	LAPAROSCOPIC CHOLECYSTECTOMY WITHOUT C.D.E. WITHOUT CC/MCC
S	706	420	HEPATOBIILIARY DIAGNOSTIC PROCEDURES WITH MCC
S	706	421	HEPATOBIILIARY DIAGNOSTIC PROCEDURES WITH CC
S	706	422	HEPATOBIILIARY DIAGNOSTIC PROCEDURES WITHOUT CC/MCC
S	707	423	OTHER HEPATOBIILIARY OR PANCREAS O.R. PROCEDURES WITH MCC
S	707	424	OTHER HEPATOBIILIARY OR PANCREAS O.R. PROCEDURES WITH CC
S	707	425	OTHER HEPATOBIILIARY OR PANCREAS O.R. PROCEDURES WITHOUT CC/MCC
M	708	432	CIRRHOSIS AND ALCOHOLIC HEPATITIS WITH MCC
M	708	433	CIRRHOSIS AND ALCOHOLIC HEPATITIS WITH CC
M	708	434	CIRRHOSIS AND ALCOHOLIC HEPATITIS WITHOUT CC/MCC
M	709	435	MALIGNANCY OF HEPATOBIILIARY SYSTEM OR PANCREAS WITH MCC
M	709	436	MALIGNANCY OF HEPATOBIILIARY SYSTEM OR PANCREAS WITH CC
M	709	437	MALIGNANCY OF HEPATOBIILIARY SYSTEM OR PANCREAS WITHOUT CC/MCC
M	710	438	DISORDERS OF PANCREAS EXCEPT MALIGNANCY WITH MCC
M	710	439	DISORDERS OF PANCREAS EXCEPT MALIGNANCY WITH CC
M	710	440	DISORDERS OF PANCREAS EXCEPT MALIGNANCY WITHOUT CC/MCC
M	711	441	DISORDERS OF LIVER EXCEPT MALIGNANCY CIRRHOSIS OR ALCOHOLIC HEPATITIS WITH MCC
M	711	442	DISORDERS OF LIVER EXCEPT MALIGNANCY CIRRHOSIS OR ALCOHOLIC HEPATITIS WITH CC
M	711	443	DISORDERS OF LIVER EXCEPT MALIGNANCY CIRRHOSIS OR ALCOHOLIC HEPATITIS WITHOUT CC/MCC
M	712	444	DISORDERS OF THE BILIARY TRACT WITH MCC
M	712	445	DISORDERS OF THE BILIARY TRACT WITH CC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	712	446	DISORDERS OF THE BILIARY TRACT WITHOUT CC/MCC
S	801	453	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION WITH MCC
S	801	454	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION WITH CC
S	801	455	COMBINED ANTERIOR/POSTERIOR SPINAL FUSION WITHOUT CC/MCC
S	802	456	SPINAL FUSION EXCEPT CERVICAL WITH SPINAL CURVATURE OR MALIGNANCY OR INFECTION OR EXTENSIVE FUSION
S	802	457	SPINAL FUSION EXCEPT CERVICAL WITH SPINAL CURVATURE OR MALIGNANCY OR INFECTION OR EXTENSIVE FUSION
S	802	458	SPINAL FUSION EXCEPT CERVICAL WITH SPINAL CURVATURE OR MALIGNANCY OR INFECTION OR EXTENSIVE FUSION
S	803	459	SPINAL FUSION EXCEPT CERVICAL WITH MCC
S	803	460	SPINAL FUSION EXCEPT CERVICAL WITHOUT MCC
S	804	461	BILATERAL OR MULTIPLE MAJOR JOINT PROCEDURES OF LOWER EXTREMITY WITH MCC
S	804	462	BILATERAL OR MULTIPLE MAJOR JOINT PROCEDURES OF LOWER EXTREMITY WITHOUT MCC
S	805	463	WOUND DEBRIDEMENT AND SKIN GRAFT EXCEPT HAND FOR MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DISO
S	805	464	WOUND DEBRIDEMENT AND SKIN GRAFT EXCEPT HAND FOR MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DISO
S	805	465	WOUND DEBRIDEMENT AND SKIN GRAFT EXCEPT HAND FOR MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DISO
S	806	466	REVISION OF HIP OR KNEE REPLACEMENT WITH MCC
S	806	467	REVISION OF HIP OR KNEE REPLACEMENT WITH CC
S	806	468	REVISION OF HIP OR KNEE REPLACEMENT WITHOUT CC/MCC
S	807	469	MAJOR HIP AND KNEE JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W MCC OR TOTAL ANKLE REPLA
S	807	470	MAJOR HIP AND KNEE JOINT REPLACEMENT OR REATTACHMENT OF LOWER EXTREMITY W/O MCC
S	808	471	CERVICAL SPINAL FUSION WITH MCC
S	808	472	CERVICAL SPINAL FUSION WITH CC
S	808	473	CERVICAL SPINAL FUSION WITHOUT CC/MCC
S	809	474	AMPUTATION FOR MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DISORDERS WITH MCC
S	809	475	AMPUTATION FOR MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DISORDERS WITH CC
S	809	476	AMPUTATION FOR MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DISORDERS WITHOUT CC/MCC
S	810	477	BIOPSIES OF MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE WITH MCC
S	810	478	BIOPSIES OF MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE WITH CC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	810	479	BIOPSIES OF MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE WITHOUT CC/MCC
S	811	480	HIP AND FEMUR PROCEDURES EXCEPT MAJOR JOINT WITH MCC
S	811	481	HIP AND FEMUR PROCEDURES EXCEPT MAJOR JOINT WITH CC
S	811	482	HIP AND FEMUR PROCEDURES EXCEPT MAJOR JOINT WITHOUT CC/MCC
S	812	483	MAJOR JOINT/LIMB REATTACHMENT PROCEDURE OF UPPER EXTREMITIES
S	813	485	KNEE PROCEDURES WITH PDX OF INFECTION WITH MCC
S	813	486	KNEE PROCEDURES WITH PDX OF INFECTION WITH CC
S	813	487	KNEE PROCEDURES WITH PDX OF INFECTION WITHOUT CC/MCC
S	814	488	KNEE PROCEDURES WITHOUT PDX OF INFECTION WITH CC/MCC
S	814	489	KNEE PROCEDURES WITHOUT PDX OF INFECTION WITHOUT CC/MCC
S	816	492	LOWER EXTREMITY AND HUMERUS PROCEDURES EXCEPT HIP FOOT AND FEMUR WITH MCC
S	816	493	LOWER EXTREMITY AND HUMERUS PROCEDURES EXCEPT HIP FOOT AND FEMUR WITH CC
S	816	494	LOWER EXTREMITY AND HUMERUS PROCEDURES EXCEPT HIP FOOT AND FEMUR WITHOUT CC/MCC
S	817	495	LOCAL EXCISION AND REMOVAL OF INTERNAL FIXATION DEVICES EXCEPT HIP AND FEMUR WITH MCC
S	817	496	LOCAL EXCISION AND REMOVAL OF INTERNAL FIXATION DEVICES EXCEPT HIP AND FEMUR WITH CC
S	817	497	LOCAL EXCISION AND REMOVAL INTERNAL FIXATION DEVICES EXCEPT HIP AND FEMUR WITHOUT CC/MCC
S	818	498	LOCAL EXCISION AND REMOVAL INTERNAL FIXATION DEVICES OF HIP AND FEMUR WITH CC/MCC
S	818	499	LOCAL EXCISION AND REMOVAL INTERNAL FIXATION DEVICES OF HIP AND FEMUR WITHOUT CC/MCC
S	819	500	SOFT TISSUE PROCEDURES WITH MCC
S	819	501	SOFT TISSUE PROCEDURES WITH CC
S	819	502	SOFT TISSUE PROCEDURES WITHOUT CC/MCC
S	820	503	FOOT PROCEDURES WITH MCC
S	820	504	FOOT PROCEDURES WITH CC
S	820	505	FOOT PROCEDURES WITHOUT CC/MCC
S	821	506	MAJOR THUMB OR JOINT PROCEDURES
S	822	507	MAJOR SHOULDER OR ELBOW JOINT PROCEDURES WITH CC/MCC
S	822	508	MAJOR SHOULDER OR ELBOW JOINT PROCEDURES WITHOUT CC/MCC
S	823	509	ARTHROSCOPY
S	824	510	SHOULDER ELBOW OR FOREARM PROCEDURES EXCEPT MAJOR JOINT PROCEDURES WITH MCC
S	824	511	SHOULDER ELBOW OR FOREARM PROCEDURES EXCEPT MAJOR JOINT PROCEDURES WITH CC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	824	512	SHOULDER ELBOW OR FOREARM PROCEDURES EXCEPT MAJOR JOINT PROCEDURES WITHOUT CC/MCC
S	825	513	HAND OR WRIST PROCEDURES EXCEPT MAJOR THUMB OR JOINT PROCEDURES WITH CC/MCC
S	825	514	HAND OR WRIST PROCEDURES EXCEPT MAJOR THUMB OR JOINT PROCEDURES WITHOUT CC/MCC
S	826	515	OTHER MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE O.R. PROCEDURES WITH MCC
S	826	516	OTHER MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE O.R. PROCEDURES WITH CC
S	826	517	OTHER MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE O.R. PROCEDURES WITHOUT CC/MCC
S	815	518	BACK AND NECK PROCEDURES EXCEPT SPINAL FUSION WITH MCC OR DISC DEVICE OR NEUROSTIMULATOR
S	815	519	BACK AND NECK PROCEDURES EXCEPT SPINAL FUSION WITH CC
S	815	520	BACK AND NECK PROCEDURES EXCEPT SPINAL FUSION WITHOUT CC/MCC
S	841	521	HIP REPLACEMENT WITH PRINCIPAL DIAGNOSIS OF HIP FRACTURE WITH MCC
S	841	522	HIP REPLACEMENT WITH PRINCIPAL DIAGNOSIS OF HIP FRACTURE WITHOUT MCC
M	827	533	FRACTURES OF FEMUR WITH MCC
M	827	534	FRACTURES OF FEMUR WITHOUT MCC
M	828	535	FRACTURES OF HIP AND PELVIS WITH MCC
M	828	536	FRACTURES OF HIP AND PELVIS WITHOUT MCC
M	829	537	SPRAINS STRAINS AND DISLOCATIONS OF HIP PELVIS AND THIGH WITH CC/MCC
M	829	538	SPRAINS STRAINS AND DISLOCATIONS OF HIP PELVIS AND THIGH WITHOUT CC/MCC
M	830	539	OSTEOMYELITIS WITH MCC
M	830	540	OSTEOMYELITIS WITH CC
M	830	541	OSTEOMYELITIS WITHOUT CC/MCC
M	831	542	PATHOLOGICAL FRACTURES AND MUSCULOSKELETAL AND CONNECTIVE TISSUE MALIGNANCY WITH MCC
M	831	543	PATHOLOGICAL FRACTURES AND MUSCULOSKELETAL AND CONNECTIVE TISSUE MALIGNANCY WITH CC
M	831	544	PATHOLOGICAL FRACTURES AND MUSCULOSKELETAL AND CONNECTIVE TISSUE MALIGNANCY WITHOUT CC/MCC
M	832	545	CONNECTIVE TISSUE DISORDERS WITH MCC
M	832	546	CONNECTIVE TISSUE DISORDERS WITH CC
M	832	547	CONNECTIVE TISSUE DISORDERS WITHOUT CC/MCC
M	833	548	SEPTIC ARTHRITIS WITH MCC
M	833	549	SEPTIC ARTHRITIS WITH CC
M	833	550	SEPTIC ARTHRITIS WITHOUT CC/MCC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	834	551	MEDICAL BACK PROBLEMS WITH MCC
M	834	552	MEDICAL BACK PROBLEMS WITHOUT MCC
M	835	553	BONE DISEASES AND ARTHROPATHIES WITH MCC
M	835	554	BONE DISEASES AND ARTHROPATHIES WITHOUT MCC
M	836	555	SIGNS AND SYMPTOMS OF MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE WITH MCC
M	836	556	SIGNS AND SYMPTOMS OF MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE WITHOUT MCC
M	837	557	TENDONITIS MYOSITIS AND BURSITIS WITH MCC
M	837	558	TENDONITIS MYOSITIS AND BURSITIS WITHOUT MCC
M	838	559	AFTERCARE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE WITH MCC
M	838	560	AFTERCARE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE WITH CC
M	838	561	AFTERCARE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE WITHOUT CC/MCC
M	839	562	FRACTURE SPRAIN STRAIN AND DISLOCATION EXCEPT FEMUR HIP PELVIS AND THIGH WITH MCC
M	839	563	FRACTURE SPRAIN STRAIN AND DISLOCATION EXCEPT FEMUR HIP PELVIS AND THIGH WITHOUT MCC
M	840	564	OTHER MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DIAGNOSES WITH MCC
M	840	565	OTHER MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DIAGNOSES WITH CC
M	840	566	OTHER MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE DIAGNOSES WITHOUT CC/MCC
S	913	570	SKIN DEBRIDEMENT WITH MCC
S	913	571	SKIN DEBRIDEMENT WITH CC
S	913	572	SKIN DEBRIDEMENT WITHOUT CC/MCC
S	901	573	SKIN GRAFT FOR SKIN ULCER OR CELLULITIS WITH MCC
S	901	574	SKIN GRAFT FOR SKIN ULCER OR CELLULITIS WITH CC
S	901	575	SKIN GRAFT FOR SKIN ULCER OR CELLULITIS WITHOUT CC/MCC
S	902	576	SKIN GRAFT EXCEPT FOR SKIN ULCER OR CELLULITIS WITH MCC
S	902	577	SKIN GRAFT EXCEPT FOR SKIN ULCER OR CELLULITIS WITH CC
S	902	578	SKIN GRAFT EXCEPT FOR SKIN ULCER OR CELLULITIS WITHOUT CC/MCC
S	903	579	OTHER SKIN SUBCUTANEOUS TISSUE AND BREAST PROCEDURES WITH MCC
S	903	580	OTHER SKIN SUBCUTANEOUS TISSUE AND BREAST PROCEDURES WITH CC
S	903	581	OTHER SKIN SUBCUTANEOUS TISSUE AND BREAST PROCEDURES WITHOUT CC/MCC
S	904	582	MASTECTOMY FOR MALIGNANCY WITH CC/MCC
S	904	583	MASTECTOMY FOR MALIGNANCY WITHOUT CC/MCC
S	905	584	BREAST BIOPSY LOCAL EXCISION AND OTHER BREAST PROCEDURES WITH CC/MCC
S	905	585	BREAST BIOPSY LOCAL EXCISION AND OTHER BREAST PROCEDURES WITHOUT CC/MCC
M	906	592	SKIN ULCERS WITH MCC
M	906	593	SKIN ULCERS WITH CC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	906	594	SKIN ULCERS WITHOUT CC/MCC
M	907	595	MAJOR SKIN DISORDERS WITH MCC
M	907	596	MAJOR SKIN DISORDERS WITHOUT MCC
M	908	597	MALIGNANT BREAST DISORDERS WITH MCC
M	908	598	MALIGNANT BREAST DISORDERS WITH CC
M	908	599	MALIGNANT BREAST DISORDERS WITHOUT CC/MCC
M	909	600	NON-MALIGNANT BREAST DISORDERS WITH CC/MCC
M	909	601	NON-MALIGNANT BREAST DISORDERS WITHOUT CC/MCC
M	910	602	CELLULITIS WITH MCC
M	910	603	CELLULITIS WITHOUT MCC
M	911	604	TRAUMA TO THE SKIN SUBCUTANEOUS TISSUE AND BREAST WITH MCC
M	911	605	TRAUMA TO THE SKIN SUBCUTANEOUS TISSUE AND BREAST WITHOUT MCC
M	912	606	MINOR SKIN DISORDERS WITH MCC
M	912	607	MINOR SKIN DISORDERS WITHOUT MCC
S	1001	614	ADRENAL AND PITUITARY PROCEDURES WITH CC/MCC
S	1001	615	ADRENAL AND PITUITARY PROCEDURES WITHOUT CC/MCC
S	1002	616	AMPUTATION OF LOWER LIMB FOR ENDOCRINE NUTRITIONAL AND METABOLIC DISORDERS WITH MCC
S	1002	617	AMPUTATION OF LOWER LIMB FOR ENDOCRINE NUTRITIONAL AND METABOLIC DISORDERS WITH CC
S	1002	618	AMPUTATION OF LOWER LIMB FOR ENDOCRINE NUTRITIONAL AND METABOLIC DISORDERS WITHOUT CC/MCC
S	1003	619	O.R. PROCEDURES FOR OBESITY WITH MCC
S	1003	620	O.R. PROCEDURES FOR OBESITY WITH CC
S	1003	621	O.R. PROCEDURES FOR OBESITY WITHOUT CC/MCC
S	1004	622	SKIN GRAFTS AND WOUND DEBRIDEMENT FOR ENDOCRINE NUTRITIONAL AND METABOLIC DISORDERS WITH MCC
S	1004	623	SKIN GRAFTS AND WOUND DEBRIDEMENT FOR ENDOCRINE NUTRITIONAL AND METABOLIC DISORDERS WITH CC
S	1004	624	SKIN GRAFTS AND WOUND DEBRIDEMENT FOR ENDOCRINE NUTRITIONAL AND METABOLIC DISORDERS WITHOUT CC/MCC
S	1005	625	THYROID PARATHYROID AND THYROID GLOSSAL PROCEDURES WITH MCC
S	1005	626	THYROID PARATHYROID AND THYROID GLOSSAL PROCEDURES WITH CC
S	1005	627	THYROID PARATHYROID AND THYROID GLOSSAL PROCEDURES WITHOUT CC/MCC
S	1006	628	OTHER ENDOCRINE NUTRITIONAL AND METABOLIC O.R. PROCEDURES WITH MCC
S	1006	629	OTHER ENDOCRINE NUTRITIONAL AND METABOLIC O.R. PROCEDURES WITH CC
S	1006	630	OTHER ENDOCRINE NUTRITIONAL AND METABOLIC O.R. PROCEDURE WITHOUT CC/MCC
M	1007	637	DIABETES WITH MCC
M	1007	638	DIABETES WITH CC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	1007	639	DIABETES WITHOUT CC/MCC
M	1008	640	MISCELLANEOUS DISORDERS OF NUTRITION METABOLISM FLUIDS AND ELECTROLYTES WITH MCC
M	1008	641	MISCELLANEOUS DISORDERS OF NUTRITION METABOLISM FLUIDS AND ELECTROLYTES WITHOUT MCC
M	1009	642	INBORN AND OTHER DISORDERS OF METABOLISM
M	1010	643	ENDOCRINE DISORDERS WITH MCC
M	1010	644	ENDOCRINE DISORDERS WITH CC
M	1010	645	ENDOCRINE DISORDERS WITHOUT CC/MCC
S	1101	650	KIDNEY TRANSPLANT WITH HEMODIALYSIS WITH MCC
S	1101	651	KIDNEY TRANSPLANT WITH HEMODIALYSIS WITHOUT MCC
S	1101	652	KIDNEY TRANSPLANT
S	1102	653	MAJOR BLADDER PROCEDURES WITH MCC
S	1102	654	MAJOR BLADDER PROCEDURES WITH CC
S	1102	655	MAJOR BLADDER PROCEDURES WITHOUT CC/MCC
S	1103	656	KIDNEY AND URETER PROCEDURES FOR NEOPLASM WITH MCC
S	1103	657	KIDNEY AND URETER PROCEDURES FOR NEOPLASM WITH CC
S	1103	658	KIDNEY AND URETER PROCEDURES FOR NEOPLASM WITHOUT CC/MCC
S	1104	659	KIDNEY AND URETER PROCEDURES FOR NON-NEOPLASM WITH MCC
S	1104	660	KIDNEY AND URETER PROCEDURES FOR NON-NEOPLASM WITH CC
S	1104	661	KIDNEY AND URETER PROCEDURES FOR NON-NEOPLASM WITHOUT CC/MCC
S	1105	662	MINOR BLADDER PROCEDURES WITH MCC
S	1105	663	MINOR BLADDER PROCEDURES WITH CC
S	1105	664	MINOR BLADDER PROCEDURES WITHOUT CC/MCC
S	1106	665	PROSTATECTOMY WITH MCC
S	1106	666	PROSTATECTOMY WITH CC
S	1106	667	PROSTATECTOMY WITHOUT CC/MCC
S	1107	668	TRANSURETHRAL PROCEDURES WITH MCC
S	1107	669	TRANSURETHRAL PROCEDURES WITH CC
S	1107	670	TRANSURETHRAL PROCEDURES WITHOUT CC/MCC
S	1108	671	URETHRAL PROCEDURES WITH CC/MCC
S	1108	672	URETHRAL PROCEDURES WITHOUT CC/MCC
S	1109	673	OTHER KIDNEY AND URINARY TRACT PROCEDURES WITH MCC
S	1109	674	OTHER KIDNEY AND URINARY TRACT PROCEDURES WITH CC
S	1109	675	OTHER KIDNEY AND URINARY TRACT PROCEDURES WITHOUT CC/MCC
M	1110	682	RENAL FAILURE WITH MCC
M	1110	683	RENAL FAILURE WITH CC
M	1110	684	RENAL FAILURE WITHOUT CC/MCC
M	1118	685	ADMIT FOR RENAL DIALYSIS

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	1112	686	KIDNEY AND URINARY TRACT NEOPLASMS WITH MCC
M	1112	687	KIDNEY AND URINARY TRACT NEOPLASMS WITH CC
M	1112	688	KIDNEY AND URINARY TRACT NEOPLASMS WITHOUT CC/MCC
M	1113	689	KIDNEY AND URINARY TRACT INFECTIONS WITH MCC
M	1113	690	KIDNEY AND URINARY TRACT INFECTIONS WITHOUT MCC
M	1115	691	URINARY STONES WITH ESW LITHOTRIPSY WITH CC/MCC
M	1115	692	URINARY STONES WITH ESW LITHOTRIPSY WITHOUT CC/MCC
M	1115	693	URINARY STONES W MCC
M	1115	694	URINARY STONES W/O MCC
M	1116	695	KIDNEY AND URINARY TRACT SIGNS AND SYMPTOMS WITH MCC
M	1116	696	KIDNEY AND URINARY TRACT SIGNS AND SYMPTOMS WITHOUT MCC
M	1117	697	URETHRAL STRICTURE
M	1118	698	OTHER KIDNEY AND URINARY TRACT DIAGNOSES WITH MCC
M	1118	699	OTHER KIDNEY AND URINARY TRACT DIAGNOSES WITH CC
M	1118	700	OTHER KIDNEY AND URINARY TRACT DIAGNOSES WITHOUT CC/MCC
S	1201	707	MAJOR MALE PELVIC PROCEDURES WITH CC/MCC
S	1201	708	MAJOR MALE PELVIC PROCEDURES WITHOUT CC/MCC
S	1202	709	PENIS PROCEDURES WITH CC/MCC
S	1202	710	PENIS PROCEDURES WITHOUT CC/MCC
S	1203	711	TESTES PROCEDURES WITH CC/MCC
S	1203	712	TESTES PROCEDURES WITHOUT CC/MCC
S	1204	713	TRANSURETHRAL PROSTATECTOMY WITH CC/MCC
S	1204	714	TRANSURETHRAL PROSTATECTOMY WITHOUT CC/MCC
S	1205	715	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROCEDURES FOR MALIGNANCY WITH CC/MCC
S	1205	716	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROCEDURES FOR MALIGNANCY WITHOUT CC/MCC
S	1206	717	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROCEDURES EXCEPT MALIGNANCY WITH CC/MCC
S	1206	718	OTHER MALE REPRODUCTIVE SYSTEM O.R. PROC EXCEPT MALIGNANCY WITHOUT CC/MCC
M	1207	722	MALIGNANCY MALE REPRODUCTIVE SYSTEM WITH MCC
M	1207	723	MALIGNANCY MALE REPRODUCTIVE SYSTEM WITH CC
M	1207	724	MALIGNANCY MALE REPRODUCTIVE SYSTEM WITHOUT CC/MCC
M	1208	725	BENIGN PROSTATIC HYPERTROPHY WITH MCC
M	1208	726	BENIGN PROSTATIC HYPERTROPHY WITHOUT MCC
M	1209	727	INFLAMMATION OF THE MALE REPRODUCTIVE SYSTEM WITH MCC
M	1209	728	INFLAMMATION OF THE MALE REPRODUCTIVE SYSTEM WITHOUT MCC
M	1210	729	OTHER MALE REPRODUCTIVE SYSTEM DIAGNOSES WITH CC/MCC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	1210	730	OTHER MALE REPRODUCTIVE SYSTEM DIAGNOSES WITHOUT CC/MCC
S	1301	734	PELVIC EVISCERATION RADICAL HYSTERECTOMY AND RADICAL VULVECTOMY WITH CC/MCC
S	1301	735	PELVIC EVISCERATION RADICAL HYSTERECTOMY AND RADICAL VULVECTOMY WITHOUT CC/MCC
S	1302	736	UTERINE AND ADNEXA PROCEDURES FOR OVARIAN OR ADNEXAL MALIGNANCY WITH MCC
S	1302	737	UTERINE AND ADNEXA PROCEDURES FOR OVARIAN OR ADNEXAL MALIGNANCY WITH CC
S	1302	738	UTERINE AND ADNEXA PROCEDURES FOR OVARIAN OR ADNEXAL MALIGNANCY WITHOUT CC/MCC
S	1303	739	UTERINE ADNEXA PROCEDURES FOR NON-OVARIAN AND NON-ADNEXAL MALIGNANCY WITH MCC
S	1303	740	UTERINE ADNEXA PROCEDURES FOR NON-OVARIAN AND NON-ADNEXAL MALIGNANCY WITH CC
S	1303	741	UTERINE ADNEXA PROCEDURES FOR NON-OVARIAN AND NON-ADNEXAL MALIGNANCY WITHOUT CC/MCC
S	1304	742	UTERINE AND ADNEXA PROCEDURES FOR NON-MALIGNANCY WITH CC/MCC
S	1304	743	UTERINE AND ADNEXA PROCEDURES FOR NON-MALIGNANCY WITHOUT CC/MCC
S	1305	744	D&C CONIZATION LAPAROSCOPY AND TUBAL INTERRUPTION WITH CC/MCC
S	1305	745	D&C CONIZATION LAPAROSCOPY AND TUBAL INTERRUPTION WITHOUT CC/MCC
S	1306	746	VAGINA CERVIX AND VULVA PROCEDURES WITH CC/MCC
S	1306	747	VAGINA CERVIX AND VULVA PROCEDURES WITHOUT CC/MCC
S	1307	748	FEMALE REPRODUCTIVE SYSTEM RECONSTRUCTIVE PROCEDURES
S	1308	749	OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES WITH CC/MCC
S	1308	750	OTHER FEMALE REPRODUCTIVE SYSTEM O.R. PROCEDURES WITHOUT CC/MCC
M	1309	754	MALIGNANCY FEMALE REPRODUCTIVE SYSTEM WITH MCC
M	1309	755	MALIGNANCY FEMALE REPRODUCTIVE SYSTEM WITH CC
M	1309	756	MALIGNANCY FEMALE REPRODUCTIVE SYSTEM WITHOUT CC/MCC
M	1310	757	INFECTIONS FEMALE REPRODUCTIVE SYSTEM WITH MCC
M	1310	758	INFECTIONS FEMALE REPRODUCTIVE SYSTEM WITH CC
M	1310	759	INFECTIONS FEMALE REPRODUCTIVE SYSTEM WITHOUT CC/MCC
M	1311	760	MENSTRUAL AND OTHER FEMALE REPRODUCTIVE SYSTEM DISORDERS WITH CC/MCC
M	1311	761	MENSTRUAL AND OTHER FEMALE REPRODUCTIVE SYSTEM DISORDERS WITHOUT CC/MCC
S	1401	765	CESAREAN SECTION WITH CC/MCC
S	1401	766	CESAREAN SECTION WITHOUT CC/MCC
S	1413	767	VAGINAL DELIVERY WITH STERILIZATION AND/OR D&C
S	1402	768	VAGINAL DELIVERY WITH O.R. PROCEDURE EXCEPT STERILIZATION AND/OR D&C
S	1403	769	POSTPARTUM AND POST ABORTION DIAGNOSES WITH O.R. PROCEDURE
S	1404	770	ABORTION WITH D&C ASPIRATION CURETTAGE OR HYSTEROTOMY

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	1405	774	VAGINAL DELIVERY WITH COMPLICATING DIAGNOSES
M	1405	775	VAGINAL DELIVERY WITHOUT COMPLICATING DIAGNOSES
M	1406	776	POSTPARTUM AND POST ABORTION DIAGNOSES WITHOUT O.R. PROCEDURE
M	1411	777	ECTOPIC PREGNANCY
M	1411	778	THREATENED ABORTION
M	1409	779	ABORTION WITHOUT D&C
M	1411	780	FALSE LABOR
M	1411	781	OTHER ANTEPARTUM DIAGNOSES WITH MEDICAL COMPLICATIONS
M	1411	782	OTHER ANTEPARTUM DIAGNOSES WITHOUT MEDICAL COMPLICATIONS
S	1401	783	CESAREAN SECTION W STERILIZATION W MCC
S	1401	784	CESAREAN SECTION W STERILIZATION W CC
S	1401	785	CESAREAN SECTION W STERILIZATION W/O CC/MCC
S	1401	786	CESAREAN SECTION W/O STERILIZATION W MCC
S	1401	787	CESAREAN SECTION W/O STERILIZATION W CC
S	1401	788	CESAREAN SECTION W/O STERILIZATION W/O CC/MCC
M	1501	789	NEONATES DIED OR TRANSFERRED TO ANOTHER ACUTE CARE FACILITY
M	1502	790	EXTREME IMMATUREITY OR RESPIRATORY DISTRESS SYNDROME NEONATE
M	1503	791	PREMATURITY WITH MAJOR PROBLEMS
M	1504	792	PREMATURITY WITHOUT MAJOR PROBLEMS
M	1505	793	FULL TERM NEONATE WITH MAJOR PROBLEMS
M	1506	794	NEONATE WITH OTHER SIGNIFICANT PROBLEMS
M	1507	795	NORMAL NEWBORN
S	1413	796	VAGINAL DELIVERY W STERILIZATION/D&C W MCC
S	1413	797	VAGINAL DELIVERY W STERILIZATION/D&C W CC
S	1413	798	VAGINAL DELIVERY W STERILIZATION/D&C WO CC/MCC
S	1601	799	SPLENECTOMY WITH MCC
S	1601	800	SPLENECTOMY WITH CC
S	1601	801	SPLENECTOMY WITHOUT CC/MCC
S	1602	802	OTHER O.R. PROCEDURES OF THE BLOOD AND BLOOD FORMING ORGANS WITH MCC
S	1602	803	OTHER O.R. PROCEDURES OF THE BLOOD AND BLOOD FORMING ORGANS WITH CC
S	1602	804	OTHER O.R. PROCEDURES OF THE BLOOD AND BLOOD FORMING ORGANS WITHOUT CC/MCC
M	1405	805	VAGINAL DELIVERY W/O STERILIZATION/D&C W MCC
M	1405	806	VAGINAL DELIVERY W/O STERILIZATION/D&C W CC
M	1405	807	VAGINAL DELIVERY W/O STERILIZATION/D&C W/O CC/MCC
M	1603	808	MAJOR HEMATOLOGICAL AND IMMUNOLOGICAL DIAGNOSES EXCEPT SICKLE CELL CRISIS AND COAGULATION DISORDER
M	1603	809	MAJOR HEMATOLOGICAL AND IMMUNOLOGICAL DIAGNOSES EXCEPT SICKLE CELL CRISIS AND COAGULATION DISORDER

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	1603	810	MAJOR HEMATOLOGICAL AND IMMUNOLOGICAL DIAGNOSES EXCEPT SICKLE CELL CRISIS AND COAGULATION DISORDER
M	1604	811	RED BLOOD CELL DISORDERS WITH MCC
M	1604	812	RED BLOOD CELL DISORDERS WITHOUT MCC
M	1605	813	COAGULATION DISORDERS
M	1606	814	RETICULOENDOTHELIAL AND IMMUNITY DISORDERS WITH MCC
M	1606	815	RETICULOENDOTHELIAL AND IMMUNITY DISORDERS WITH CC
M	1606	816	RETICULOENDOTHELIAL AND IMMUNITY DISORDERS WITHOUT CC/MCC
S	1414	817	OTHER ANTEPARTUM DIAGNOSES W O.R. PROCEDURE W MCC
S	1414	818	OTHER ANTEPARTUM DIAGNOSES W O.R. PROCEDURE W CC
S	1414	819	OTHER ANTEPARTUM DIAGNOSES W O.R. PROCEDURE W/O CC/MCC
S	1707	820	LYMPHOMA AND LEUKEMIA WITH MAJOR O.R. PROCEDURE WITH MCC
S	1707	821	LYMPHOMA AND LEUKEMIA WITH MAJOR O.R. PROCEDURE WITH CC
S	1707	822	LYMPHOMA AND LEUKEMIA WITH MAJOR O.R. PROCEDURE WITHOUT CC/MCC
S	1708	823	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER PROC W MCC
S	1708	824	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER PROC W CC
S	1708	825	LYMPHOMA & NON-ACUTE LEUKEMIA W OTHER PROC W/O CC/MCC
S	1709	826	MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASMS WITH MAJOR O.R. PROCEDURE WITH MCC
S	1709	827	MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASMS WITH MAJOR O.R. PROCEDURE WITH CC
S	1709	828	MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASMS WITH MAJOR O.R. PROCEDURE WITHOUT
S	1710	829	MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASMS W OTHER PROCEDURE W CC/MCC
S	1710	830	MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASMS W OTHER PROCEDURE W/O CC/MCC
M	1411	831	OTHER ANTEPARTUM DIAGNOSES W/O O.R. PROCEDURE W MCC
M	1411	832	OTHER ANTEPARTUM DIAGNOSES W/O O.R. PROCEDURE W CC
M	1411	833	OTHER ANTEPARTUM DIAGNOSES W/O O.R. PROCEDURE W/O CC/MCC
M	1711	834	ACUTE LEUKEMIA WITHOUT MAJOR O.R. PROCEDURE WITH MCC
M	1711	835	ACUTE LEUKEMIA WITHOUT MAJOR O.R. PROCEDURE WITH CC
M	1711	836	ACUTE LEUKEMIA WITHOUT MAJOR O.R. PROCEDURE WITHOUT CC/MCC
M	1712	837	CHEMOTHERAPY WITH ACUTE LEUKEMIA AS SDX OR WITH HIGH DOSE CHEMOTHERAPY AGENT WITH MCC
M	1712	838	CHEMOTHERPY WITH ACUTE LEUKEMIA AS SDX WITH CC OR HIGH DOSE CHEMOTHERAPY AGENT
M	1712	839	CHEMOTHERAPY WITH ACUTE LEUKEMIA AS SDX WITHOUT CC/MCC
M	1713	840	LYMPHOMA AND NON-ACUTE LEUKEMIA WITH MCC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	1713	841	LYMPHOMA AND NON-ACUTE LEUKEMIA WITH CC
M	1713	842	LYMPHOMA AND NON-ACUTE LEUKEMIA WITHOUT CC/MCC
M	1714	843	OTHER MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASTIC DIAGNOSES WITH MCC
M	1714	844	OTHER MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASTIC DIAGNOSES WITH CC
M	1714	845	OTHER MYELOPROLIFERATIVE DISORDERS OR POORLY DIFFERENTIATED NEOPLASTIC DIAGNOSES WITHOUT CC/MCC
M	1715	846	CHEMOTHERAPY WITHOUT ACUTE LEUKEMIA AS SECONDARY DIAGNOSIS WITH MCC
M	1715	847	CHEMOTHERAPY WITHOUT ACUTE LEUKEMIA AS SECONDARY DIAGNOSIS WITH CC
M	1715	848	CHEMOTHERAPY WITHOUT ACUTE LEUKEMIA AS SECONDARY DIAGNOSIS WITHOUT CC/MCC
M	1716	849	RADIOTHERAPY
S	1801	853	INFECTIOUS AND PARASITIC DISEASES WITH O.R. PROCEDURE WITH MCC
S	1801	854	INFECTIOUS AND PARASITIC DISEASES WITH O.R. PROCEDURE WITH CC
S	1801	855	INFECTIOUS AND PARASITIC DISEASES WITH O.R. PROCEDURE WITHOUT CC/MCC
S	1802	856	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS WITH O.R. PROCEDURE WITH MCC
S	1802	857	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS WITH O.R. PROCEDURE WITH CC
S	1802	858	POSTOPERATIVE OR POST-TRAUMATIC INFECTIONS WITH O.R. PROCEDURE WITHOUT CC/MCC
M	1803	862	POSTOPERATIVE AND POST-TRAUMATIC INFECTIONS WITH MCC
M	1803	863	POSTOPERATIVE AND POST-TRAUMATIC INFECTIONS WITHOUT MCC
M	1804	864	FEVER AND INFLAMMATORY CONDITIONS
M	1805	865	VIRAL ILLNESS WITH MCC
M	1805	866	VIRAL ILLNESS WITHOUT MCC
M	1806	867	OTHER INFECTIOUS AND PARASITIC DISEASES DIAGNOSES WITH MCC
M	1806	868	OTHER INFECTIOUS AND PARASITIC DISEASES DIAGNOSES WITH CC
M	1806	869	OTHER INFECTIOUS AND PARASITIC DISEASES DIAGNOSES WITHOUT CC/MCC
M	1807	870	SEPTICEMIA OR SEVERE SEPSIS W MV >96 HOURS
M	1808	871	SEPTICEMIA OR SEVERE SEPSIS WITHOUT MV >96 HOURS WITH MCC
M	1808	872	SEPTICEMIA OR SEVERE SEPSIS WITHOUT MV >96 HOURS WITHOUT MCC
S	1909	876	O.R. PROCEDURE WITH PRINCIPAL DIAGNOSES OF MENTAL ILLNESS
M	1910	880	ACUTE ADJUSTMENT REACTION AND PSYCHOSOCIAL DYSFUNCTION
M	1911	881	DEPRESSIVE NEUROSES
M	1912	882	NEUROSES EXCEPT DEPRESSIVE
M	1913	883	DISORDERS OF PERSONALITY AND IMPULSE CONTROL
M	1914	884	ORGANIC DISTURBANCES AND INTELLECTUAL DISABILITY
M	1915	885	PSYCHOSES
M	1916	886	BEHAVIORAL AND DEVELOPMENTAL DISORDERS

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
M	1917	887	OTHER MENTAL DISORDER DIAGNOSES
M	2018	894	ALCOHOL DRUG ABUSE OR DEPENDENCE LEFT AMA
M	2018	895	ALCOHOL DRUG ABUSE OR DEPENDENCE WITH REHABILITATION THERAPY
M	2018	896	ALCOHOL DRUG ABUSE OR DEPENDENCE WITHOUT REHABILITATION THERAPY WITH MCC
M	2018	897	ALCOHOL DRUG ABUSE OR DEPENDENCE WITHOUT REHABILITATION THERAPY WITHOUT MCC
S	2101	901	WOUND DEBRIDEMENTS FOR INJURIES WITH MCC
S	2101	902	WOUND DEBRIDEMENTS FOR INJURIES WITH CC
S	2101	903	WOUND DEBRIDEMENTS FOR INJURIES WITHOUT CC/MCC
S	2102	904	SKIN GRAFTS FOR INJURIES WITH CC/MCC
S	2102	905	SKIN GRAFTS FOR INJURIES WITHOUT CC/MCC
S	2103	906	HAND PROCEDURES FOR INJURIES
S	2104	907	OTHER O.R. PROCEDURES FOR INJURIES WITH MCC
S	2104	908	OTHER O.R. PROCEDURES FOR INJURIES WITH CC
S	2104	909	OTHER O.R. PROCEDURES FOR INJURIES WITHOUT CC/MCC
M	2105	913	TRAUMATIC INJURY WITH MCC
M	2105	914	TRAUMATIC INJURY WITHOUT MCC
M	2106	915	ALLERGIC REACTIONS WITH MCC
M	2106	916	ALLERGIC REACTIONS WITHOUT MCC
M	2107	917	POISONING AND TOXIC EFFECTS OF DRUGS WITH MCC
M	2107	918	POISONING AND TOXIC EFFECTS OF DRUGS WITHOUT MCC
M	2108	919	COMPLICATIONS OF TREATMENT WITH MCC
M	2108	920	COMPLICATIONS OF TREATMENT WITH CC
M	2108	921	COMPLICATIONS OF TREATMENT WITHOUT CC/MCC
M	2109	922	OTHER INJURY POISONING AND TOXIC EFFECT DIAGNOSES WITH MCC
M	2109	923	OTHER INJURY POISONING AND TOXIC EFFECT DIAGNOSES WITHOUT MCC
S	2210	927	EXTENSIVE BURNS OR FULL THICKNESS BURNS WITH MV >96 HOURS WITH SKIN GRAFT
S	2201	928	FULL THICKNESS BURN WITH SKIN GRAFT OR INHALATION INJURY WITH CC/MCC
S	2201	929	FULL THICKNESS BURN WITH SKIN GRAFT OR INHALATION INJURY WITHOUT CC/MCC
M	2212	933	EXTENSIVE BURNS OR FULL THICKNESS BURNS WITH MV >96 HOURS WITHOUT SKIN GRAFT
M	2213	934	FULL THICKNESS BURN WITHOUT SKIN GRFT OR INHALATION INJURY
M	2214	935	NON-EXTENSIVE BURNS
S	2301	939	O.R. PROCEDURES WITH DIAGNOSES OF OTHER CONTACT WITH HEALTH SERVICES WITH MCC
S	2301	940	O.R. PROCEDURES WITH DIAGNOSES OF OTHER CONTACT WITH HEALTH SERVICES WITH CC

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

M/S	MDRG	MS DRG	MS DRG DESCRIPTION
S	2301	941	O.R. PROCEDURES WITH DIAGNOSES OF OTHER CONTACT WITH HEALTH SERVICES WITHOUT CC/MCC
M	2302	945	REHABILITATION WITH CC/MCC
M	2302	946	REHABILITATION WITHOUT CC/MCC
M	2303	947	SIGNS AND SYMPTOMS WITH MCC
M	2303	948	SIGNS AND SYMPTOMS WITHOUT MCC
M	2304	949	AFTERCARE WITH CC/MCC
M	2304	950	AFTERCARE WITHOUT CC/MCC
M	2305	951	OTHER FACTORS INFLUENCING HEALTH STATUS
S	2406	955	CRANIOTOMY FOR MULTIPLE SIGNIFICANT TRAUMA
S	2407	956	LIMB REATTACHMENT HIP AND FEMUR PROC FOR MULTIPLE SIGNIFICANT TRAUMA
S	2408	957	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA WITH MCC
S	2408	958	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA WITH CC
S	2408	959	OTHER O.R. PROCEDURES FOR MULTIPLE SIGNIFICANT TRAUMA WITHOUT CC/MCC
M	2409	963	OTHER MULTIPLE SIGNIFICANT TRAUMA WITH MCC
M	2409	964	OTHER MULTIPLE SIGNIFICANT TRAUMA WITH CC
M	2409	965	OTHER MULTIPLE SIGNIFICANT TRAUMA WITHOUT CC/MCC
S	2501	969	HIV WITH EXTENSIVE O.R. PROCEDURE WITH MCC
S	2501	970	HIV WITH EXTENSIVE O.R. PROCEDURE WITHOUT MCC
M	2502	974	HIV WITH MAJOR RELATED CONDITION WITH MCC
M	2502	975	HIV WITH MAJOR RELATED CONDITION WITH CC
M	2502	976	HIV WITH MAJOR RELATED CONDITION WITHOUT CC/MCC
M	2503	977	HIV WITH OR WITHOUT OTHER RELATED CONDITION
S	8899	981	EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS WITH MCC
S	8899	982	EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS WITH CC
S	8899	983	EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS WITHOUT CC/MCC
S	8897	984	PROSTATIC O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS WITH MCC
S	8897	985	PROSTATIC O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS WITH CC
S	8897	986	PROSTATIC O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS WITHOUT CC/MCC
S	8897	987	NON-EXTENSIVE O.R. PROC UNRELATED TO PRINCIPAL DIAGNOSIS WITH MCC
S	8897	988	NON-EXTENSIVE O.R. PROC UNRELATED TO PRINCIPAL DIAGNOSIS WITH CC
S	8897	989	NON-EXTENSIVE O.R. PROCEDURE UNRELATED TO PRINCIPAL DIAGNOSIS WITHOUT CC/MCC
	8898	998	PRINCIPAL DIAGNOSIS INVALID AS DISCHARGE DIAGNOSIS
	8898	999	UNGROUPABLE

M/S: Indicate if an MS-DRG is medical (M) or surgical (S).

Table A.3. Major Diagnostic Categories (MDC)

MDC	Label
1	Diseases and disorders of the nervous system
2	Diseases and disorders of the eye
3	Diseases and disorders of the ear, nose, mouth and throat
4	Diseases and disorders of the respiratory system
5	Diseases and disorders of the circulatory system
6	Diseases and disorders of the digestive system
7	Diseases and disorders of the hepatobiliary system and pancreas
8	Diseases and disorders of the musculoskeletal system and connective tissue
9	Diseases and disorders of the skin, subcutaneous tissue and breast
10	Endocrine, nutritional and metabolic diseases and disorders
11	Diseases and disorders of the kidney and urinary tract
12	Diseases and disorders of the male reproductive system
13	Diseases and disorders of the female reproductive system
14	Pregnancy, childbirth and the puerperium
15	Newborns and other neonates with conditions originating in perinatal period
16	Diseases and disorders of blood, blood forming organs and immunologic disorders
17	Myeloproliferative diseases and disorders, poorly differentiated neoplasms
18	Infectious and parasitic diseases, systemic or unspecified sites
19	Mental diseases and disorders
20	Alcohol or drug use or induced organic mental disorders
21	Injuries, poisonings and toxic effects of drugs
22	Burns
23	Factors influencing health status and other contacts with health services
24	Multiple significant trauma
25	Human immunodeficiency virus infections

Table A.4. Comorbidity Categories (COMORB), Elixhauser Comorbidity Software Refined, Version v2023.1*

Comorbidity	Description	Uses POA?
CMR_AIDS	Acquired immune deficiency syndrome	No
CMR_ALCOHOL	Alcohol abuse	No
CMR_ANEMDEF	Anemias due to other nutritional deficiencies	Yes
CMR_AUTOIMMUNE	Autoimmune conditions	No
CMR_BLDLOSS	Chronic blood loss (iron deficiency)	Yes
CMR_CANCER_LEUK	Leukemia	No
CMR_CANCER_LYMPH	Lymphoma	No
CMR_CANCER_METS	Metastatic cancer	No
CMR_CANCER_NSITU	Solid tumor without metastasis, in situ	No
CMR_CANCER_SOLID	Solid tumor without metastasis, malignant	No
CMR_CBVD	Cerebrovascular disease	Yes
CMR_COAG	Coagulopathy	Yes
CMR_DEMENTIA	Dementia	No
CMR_DEPRESS	Depression	No
CMR_DIAB_CX	Diabetes with chronic complications	No
CMR_DIAB_UNCX	Diabetes without chronic complications	No
CMR_DRUG_ABUSE	Drug abuse	No
CMR_HF	Heart failure	Yes
CMR_HTN_CX	Hypertension, complicated	No
CMR_HTN_UNCX	Hypertension, uncomplicated	No
CMR_LIVER_MLD	Liver disease, mild	Yes
CMR_LIVER_SEV	Liver disease and failure, moderate to severe	Yes
CMR_LUNG_CHRONIC	Chronic pulmonary disease	No
CMR_NEURO_MOVT	Neurological disorders affecting movement	Yes
CMR_NEURO_OTH	Other neurological disorders	Yes
CMR_NEURO_SEIZ	Seizures and epilepsy	Yes
CMR_OBESE	Obesity	No
CMR_PARALYSIS	Paralysis	Yes
CMR_PERIVASC	Peripheral vascular disease	No
CMR_PSYCHOSES	Psychoses	Yes
CMR_PULMCIRC	Pulmonary circulation disease	Yes
CMR_RENLFL_MOD	Renal (kidney) failure and disease, moderate	Yes
CMR_RENLFL_SEV	Renal (kidney) failure and disease, severe	Yes

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Comorbidity	Description	Uses POA?
CMR_THYROID_HYPO	Hypothyroidism	No
CMR_THYROID_OTH	Other thyroid disorders	No
CMR_ULCER_PEPTIC	Peptic ulcer with bleeding	Yes
CMR_VALVE	Valvular disease	Yes
CMR_WGHTLOSS	Weight loss	Yes

*Elixhauser Comorbidity Software Refined for ICD-10-CM Healthcare Cost and Utilization Project (HCUP). December 2022. Agency for Healthcare Research and Quality, Rockville, MD.

www.hcup-us.ahrq.gov/toolssoftware/comorbidityicd10/comorbidity_icd10.jsp

Table A.5. Categorical Variables Definitions: Transfer, and HPPS

CATEGORY	DESCRIPTION	DEFINITION
TRNSFER	Transfer-in	If admission type (ATYPE) not equal to '4' (newborn) and
		- admission source (ASOURCE) equal to '2' (Another Hospital) or
		- point of origin (POINTOFORIGINUB04) equal to '4' (Transfer from a Hospital), then TRNSFER=1
HPPS13***	HPPS13_0	Any diagnosis code not meeting the inclusion rules for HPPS13_1, HPPS13_2, and HPPS13_3.
	HPPS13_1	Any diagnosis code for intermediate-risk immunocompromised state (IMMUITD), or
		Any diagnosis code for cirrhosis (HEPFA2D), and not meeting the inclusion rules for HPPS13_2, and HPPS13_3,
		Then HPPS13_1 = 1.
	HPPS13_2	Any diagnosis code for high-risk immunocompromised state (IMMUNHD), or
		Any procedure code for high-risk immunocompromised state (TRANSPP), and not meeting the inclusion rules for HPPS13_3,
		Then HPPS13_2 = 1.
	HPPS13_3	Any diagnosis code for hepatic failure (HEPFA3D),
		Then HPPS13_3 = 1.
HPPS15***	HPPS15_1	Discharges otherwise qualifying for the denominator with no therapeutic procedures and with any or no diagnostic procedures (PRCLASS).
	HPPS15_2	Discharges otherwise qualifying for the denominator with one or more minor therapeutic procedures, with any or no diagnostic procedures (PRCLASS), and not meeting the inclusion rules for HPPS15_1.
	HPPS15_3	Discharges otherwise qualifying for the denominator with one major therapeutic procedure, without any diagnostic procedures (PRCLASS), and not meeting the inclusion rules for HPPS15_1 or HPPS15_2.
	HPPS15_4	Discharges otherwise qualifying for the denominator with one major therapeutic procedure, with one or more minor diagnostic procedure(s) but no major diagnostic procedure(s) (PRCLASS), and not meeting the inclusion rules for HPPS15_1 through HPPS15_3.

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

CATEGORY	DESCRIPTION	DEFINITION
	HPPS15_5	Discharges otherwise qualifying for the denominator with one major therapeutic procedure, with one or more major diagnostic procedure(s) (PRCLASS), and not meeting the inclusion rules for HPPS15_1 through HPPS15_4.
	HPPS15_6	Discharges otherwise qualifying for the denominator with two major therapeutic procedures, with any or no diagnostic procedures (PRCLASS), and not meeting the inclusion rules for HPPS15_1 through HPPS15_5.
	HPPS15_7	Discharges otherwise qualifying for the denominator with three or more major therapeutic procedures, with any or no diagnostic procedures (PRCLASS), and not meeting the inclusion rules for HPPS15_1 through HPPS15_6.
	HPPS15_9	Discharges otherwise qualifying for the denominator and not meeting the inclusion rules for HPPS15_1 through HPPS15_7.

*** Refer to All ICD-10-CM/PCS coding revisions in MS Excel format for a full list of codes in IMMUITD, IMMUNHD, HEPFA2D, HEPFA3D, TRANSPP, and PRCLASS.

Table A.6. SEVDPEDX: Severe Pulmonary Embolism or Deep Vein Thrombosis (PE/DVT) Diagnosis Codes

Diagnosis Code	Description
I2602	Saddle embolus of pulmonary artery with acute cor pulmonale
I2609	Other pulmonary embolism with acute cor pulmonale
I2692	Saddle embolus of pulmonary artery without acute cor pulmonale
I2694	Multiple subsegmental pulmonary emboli without acute cor pulmonale
I2699	Other pulmonary embolism without acute cor pulmonale

Note: SEVDPEDX setname is used in the risk-adjustment model for PSI04 deep vein thrombosis/pulmonary embolism stratum

Table A.7. SEVPNEUDX: Severe Pneumonia Diagnosis Codes

Diagnosis Code	Description
J150	Pneumonia due to <i>Klebsiella pneumoniae</i>
J151	Pneumonia due to <i>Pseudomonas</i>
J1520	Pneumonia due to staphylococcus, unspecified
J15211	Pneumonia due to Methicillin susceptible <i>Staphylococcus aureus</i>
J15212	Pneumonia due to Methicillin resistant <i>Staphylococcus aureus</i>
J1529	Pneumonia due to other staphylococcus
J155	Pneumonia due to <i>Escherichia coli</i>
J156	Pneumonia due to other Gram-negative bacteria
J1561	Pneumonia due to <i>Acinetobacter baumannii</i>
J1569	Pneumonia due to other Gram-negative bacteria
J158	Pneumonia due to other specified bacteria
J690	Pneumonitis due to inhalation of food and vomit

Note: SEVPNEUDX setname is used in the risk-adjustment model for PSI04 pneumonia stratum.

Table A.8. SEVSEPDY: Severe Sepsis Diagnosis Codes

Diagnosis Code	Description
R6520	Severe sepsis without septic shock
R6521	Severe sepsis with septic shock
T8112XA	Postprocedural septic shock, initial encounter

Note: SEVSEPDY setname is used in the risk-adjustment model for PSI04 sepsis stratum.

Table A.9. SEVSCKDX: Severe Shock or Cardiac Arrest Diagnosis Codes

Diagnosis Code	Description
I462	Cardiac arrest due to underlying cardiac condition
I468	Cardiac arrest due to other underlying condition
I469	Cardiac arrest, cause unspecified
R092	Respiratory arrest

Note: SEVSCKDX setname is used in the risk-adjustment model for PSI04 shock/cardiac arrest stratum.

Table A.10. SEVGIHDX: Severe Gastrointestinal Hemorrhage or Acute Ulcer Diagnosis

Diagnosis Code	Description
I8501	Esophageal varices with bleeding
I8511	Secondary esophageal varices with bleeding
K251	Acute gastric ulcer with perforation
K252	Acute gastric ulcer with both hemorrhage and perforation
K261	Acute duodenal ulcer with perforation
K262	Acute duodenal ulcer with both hemorrhage and perforation
K271	Acute peptic ulcer, site unspecified, with perforation
K272	Acute peptic ulcer, site unspecified, with both hemorrhage and perforation
K281	Acute gastrojejunal ulcer with perforation
K282	Acute gastrojejunal ulcer with both hemorrhage and perforation

Note: SEVGIHDX setname is used in the risk-adjustment model for PSI04 gastrointestinal hemorrhage stratum.

Table A.11. Do Not Resuscitate (DNR) Status Diagnosis Codes

Diagnosis Code	Description
Z66	Do not resuscitate

Table A.12. Categorical Variables Used for Comorbidity Counts

Measure	Comorbidity Count Category	Description
PSI 02	PS02_NonWt_1	PS02 Comorbidity count using non-weighted method, category 1, count > 3 and count <= 4
PSI 02	PS02_NonWt_2	PS02 Comorbidity count using non-weighted method, category 2, count >= 5
PSI 03	PS03_NonWt_1	PS03 Comorbidity count using non-weighted method, category 1, count > 2 and count <= 4
PSI 03	PS03_NonWt_2	PS03 Comorbidity count using non-weighted method, category 2, count >= 5
PSI 04 DVT_PE	PS04_DVT_PE_NonWt_1	PS04_DVT_PE Comorbidity count using non-weighted method, category 1, count > 3 and count <= 5
PSI 04 DVT_PE	PS04_DVT_PE_NonWt_2	PS04_DVT_PE Comorbidity count using non-weighted method, category 2, count >= 6
PSI 04 GIHEMORRHAGE	PS04_GIHEMORRHAGE_NonWt_1	PS04_GIHEMORRHAGE Comorbidity count using non-weighted method, category 1, count > 2 and count <= 4
PSI 04 GIHEMORRHAGE	PS04_GIHEMORRHAGE_NonWt_2	PS04_GIHEMORRHAGE Comorbidity count using non-weighted method, category 2, count >= 5
PSI 04 PNEUMONIA	PS04_PNEUMONIA_NonWt_1	PS04_PNEUMONIA Comorbidity count using non-weighted method, category 1, count > 2 and count <= 4
PSI 04 PNEUMONIA	PS04_PNEUMONIA_NonWt_2	PS04_PNEUMONIA Comorbidity count using non-weighted method, category 2, count >= 5
PSI 04 SEPSIS	PS04_SEPSIS_NonWt_1	PS04_SEPSIS Comorbidity count using non-weighted method, category 1, count > 1 and count <= 3
PSI 04 SEPSIS	PS04_SEPSIS_NonWt_2	PS04_SEPSIS Comorbidity count using non-weighted method, category 2, count >= 4

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Measure	Comorbidity Count Category	Description
PSI 04 SHOCK	PS04_SHOCK_NonWt_1	PS04_SHOCK Comorbidity count using non-weighted method, category 1, count > 1 and count <= 3
PSI 04 SHOCK	PS04_SHOCK_NonWt_2	PS04_SHOCK Comorbidity count using non-weighted method, category 2, count >= 4
PSI 06	PS06_NonWt_1	PS06 Comorbidity count using non-weighted method, category 1, count > 1 and count <= 2
PSI 06	PS06_NonWt_2	PS06 Comorbidity count using non-weighted method, category 2, count >= 3
PSI 07	PS07_NonWt_1	PS07 Comorbidity count using non-weighted method, category 1, count > 1 and count <= 3
PSI 07	PS07_NonWt_2	PS07 Comorbidity count using non-weighted method, category 2, count >= 4
PSI 08	PS08_NonWt_1	PS08 Comorbidity count using non-weighted method, category 1, count > 3 and count <= 6
PSI 08	PS08_NonWt_2	PS08 Comorbidity count using non-weighted method, category 2, count >= 7
PSI 09	PS09_NonWt_1	PS09 Comorbidity count using non-weighted method, category 1, count > 1 and count <= 3
PSI 09	PS09_NonWt_2	PS09 Comorbidity count using non-weighted method, category 2, count >= 4
PSI 10	PS10_NonWt_1	PS10 Comorbidity count using non-weighted method, category 1, count > 3 and count <= 5
PSI 10	PS10_NonWt_2	PS10 Comorbidity count using non-weighted method, category 2, count >= 6
PSI 11	PS11_NonWt_1	PS11 Comorbidity count using non-weighted method, category 1, count > 2 and count <= 4

AHRQ Quality Indicators
Patient Safety Indicators (PSI) Parameter Estimates, v2024

Measure	Comorbidity Count Category	Description
PSI 11	PS11_NonWt_2	PS11 Comorbidity count using non-weighted method, category 2, count ≥ 5
PSI 12	PS12_NonWt_1	PS12 Comorbidity count using non-weighted method, category 1, count > 1 and count ≤ 3
PSI 12	PS12_NonWt_2	PS12 Comorbidity count using non-weighted method, category 2, count ≥ 4
PSI 13	PS13_NonWt_1	PS13 Comorbidity count using non-weighted method, category 1, count > 2 and count ≤ 4
PSI 13	PS13_NonWt_2	PS13 Comorbidity count using non-weighted method, category 2, count ≥ 5
PSI 14 NONOPEN	PS14_NONOPEN_NonWt_1	PS14_NONOPEN Comorbidity count using non-weighted method, category 1, count > 1 and count ≤ 4
PSI 14 NONOPEN	PS14_NONOPEN_NonWt_2	PS14_NONOPEN Comorbidity count using non-weighted method, category 2, count ≥ 5
PSI 14 OPEN	PS14_OPEN_NonWt_1	PS14_OPEN Comorbidity count using non-weighted method, category 1, count > 1 and count ≤ 3
PSI 14 OPEN	PS14_OPEN_NonWt_2	PS14_OPEN Comorbidity count using non-weighted method, category 2, count ≥ 4
PSI 15	PS15_NonWt_1	PS15 Comorbidity count using non-weighted method, category 1, count > 0 and count ≤ 1
PSI 15	PS15_NonWt_2	PS15 Comorbidity count using non-weighted method, category 2, count ≥ 2