



AHRQ Quality Indicators

Prevention Quality Indicators (PQI) Parameter Estimates, v2024

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Table of Contents

Executive Summary

Acknowledgments

Parameter Estimates Tables

Appendix: Additional Tables

Index of Tables

Table 1. Risk Adjustment Coefficients (non SES) for PQI 01 - Diabetes Short-Term Complications Admission Rate

Table 2. Risk Adjustment Coefficients (non SES) for PQI 03 - Diabetes Long-Term Complications Admission Rate

Table 3. Risk Adjustment Coefficients (non SES) for PQI 05 - Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate

Table 4. Risk Adjustment Coefficients (non SES) for PQI 07 - Hypertension Admission Rate

Table 5. Risk Adjustment Coefficients (non SES) for PQI 08 - Heart Failure Admission Rate

Table 6. Risk Adjustment Coefficients (non SES) for PQI 11 - Community-Acquired Pneumonia Admission Rate

Table 7. Risk Adjustment Coefficients (non SES) for PQI 12 - Urinary Tract Infection Admission

Table 8. Risk Adjustment Coefficients (non SES) for PQI 14 - Uncontrolled Diabetes Admission Rate

Table 9. Risk Adjustment Coefficients (non SES) for PQI 15 - Asthma in Younger Adults Admission Rate

Table 10. Risk Adjustment Coefficients (non SES) for PQI 16 - Lower-Extremity Amputation Among Patients with Diabetes Rate

Table 11. Risk Adjustment Coefficients (non SES) for PQI 90 - Prevention Quality Overall Composite

Table 12. Risk Adjustment Coefficients (non SES) for PQI 91 - Prevention Quality Acute Composite

Table 13. Risk Adjustment Coefficients (non SES) for PQI 92 - Prevention Quality Chronic Composite

Table 14. Risk Adjustment Coefficients (non SES) for PQI 93 - Prevention Quality Diabetes Composite

Table A.1. Population Age Categories

Executive Summary

This document provides statistical parameters associated with Version 2024 Agency for Healthcare Research and Quality (AHRQ) Quality Indicators (QI) Prevention Quality Indicators (PQI). The parameter estimates derived for the AHRQ PQIs are based on analysis of the 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 represent 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.

The 2021 HCUP SID includes information on all inpatient discharges from hospitals in participating States. Discharges from all 48 participating States in 2021 are used to develop area-level indicators.³ This document is devoted to listing covariates and coefficients for risk adjustment logistic regression models. The regression coefficients are used by the prediction module to calculate risk-adjusted rates that account for differences in patient populations across areas. Covariates that are considered as potential risk adjusters include sex and age and the interaction of sex and age. Descriptions of the population age categories are provided in the Table A.1. 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.

¹Healthcare Cost and Utilization Project (HCUP) 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.

³States with data from 2021 SID included in the area-level reference populations include: AK, AR, AZ, CA, CO, CT, DC, DE, 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, WV, and WY.

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** Lauima 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 (non SES) for PQI 01 - Diabetes Short-Term Complications Admission Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-7.689315398	0.0320651369	57505.4695829248	<.0001
FEMALE	Female	1	-0.1612532162	0.0413795008	15.1861007451	<.0001
AGECAT1	Age 18-24	1	0.7941279893	0.0330844309	576.1474822612	<.0001
AGECAT2	Age 25-29	1	0.7973676415	0.0334283377	568.9677523467	<.0001
AGECAT3	Age 30-34	1	0.7705997928	0.0334297327	531.3638049972	<.0001
AGECAT4	Age 35-39	1	0.7433970212	0.0335159892	491.9687860063	<.0001
AGECAT5	Age 40-44	1	0.7828451821	0.0335490267	544.4925163562	<.0001
AGECAT6	Age 45-49	1	0.7682815720	0.0336773637	520.4327976738	<.0001
AGECAT7	Age 50-54	1	0.7552650410	0.0336128799	504.8790146578	<.0001
AGECAT8	Age 55-59	1	0.7273773181	0.0336267841	467.8954678396	<.0001
AGECAT9	Age 60-64	1	0.5762317787	0.0339270938	288.4702902454	<.0001
AGECAT10	Age 65-69	1	0.4224271512	0.0346069251	148.9970339216	<.0001
AGECAT11	Age 70-74	1	0.2532814460	0.0357052730	50.3201627169	<.0001
AGECAT12	Age 75-79	1	0.2693088665	0.0376138683	51.2631518406	<.0001
AGECAT13	Age 80-84	1	0.2442193753	0.0410506384	35.3932466049	<.0001
FAGECAT1	Female, Age 18-24	1	0.1884339081	0.0429652917	19.2345743927	<.0001
FAGECAT2	Female, Age 25-29	1	0.0258815903	0.0436708708	0.3512353463	0.5534
FAGECAT3	Female, Age 30-34	1	-0.1289013797	0.0438597603	8.6373918804	0.0033
FAGECAT4	Female, Age 35-39	1	-0.1179567512	0.0439982024	7.1874649433	0.0073
FAGECAT5	Female, Age 40-44	1	-0.1490691032	0.0440843868	11.4341969765	0.0007
FAGECAT6	Female, Age 45-49	1	-0.0907976120	0.0442062410	4.2187294951	0.0400
FAGECAT7	Female, Age 50-54	1	-0.0328376938	0.0440096506	0.5567361950	0.4556
FAGECAT8	Female, Age 55-59	1	-0.0621220625	0.0440389770	1.9898360174	0.1584
FAGECAT9	Female, Age 60-64	1	-0.0364894188	0.0444629716	0.6734989497	0.4118
FAGECAT10	Female, Age 65-69	1	0.0372032924	0.0453387079	0.6733245858	0.4119

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT11	Female, Age 70-74	1	0.1140513629	0.0467382119	5.9546573074	0.0147
FAGECAT12	Female, Age 75-79	1	0.1119422616	0.0493172783	5.1521672417	0.0232
FAGECAT13	Female, Age 80-84	1	0.0907037717	0.0537899885	2.8434643636	0.0917

c-statistic=0.558

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 2. Risk Adjustment Coefficients (non SES) for PQI 03 - Diabetes Long-Term Complications Admission Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-5.902737054	0.0131542384	201361.0461792560	<.0001
FEMALE	Female	1	-0.7496597835	0.0194891464	1479.5947852450	<.0001
AGECAT1	Age 18-24	1	-4.385269663	0.0463114365	8966.3585985259	<.0001
AGECAT2	Age 25-29	1	-3.073473328	0.0298237639	10620.2316737319	<.0001
AGECAT3	Age 30-34	1	-2.344393519	0.0225817621	10778.1784593268	<.0001
AGECAT4	Age 35-39	1	-1.746749638	0.0191085774	8356.1189432954	<.0001
AGECAT5	Age 40-44	1	-1.173396127	0.0169813218	4774.7025140483	<.0001
AGECAT6	Age 45-49	1	-0.6889255977	0.0157905227	1903.4945270238	<.0001
AGECAT7	Age 50-54	1	-0.3487562099	0.0149833022	541.7873006933	<.0001
AGECAT8	Age 55-59	1	-0.0812586404	0.0145511784	31.1847864682	<.0001
AGECAT9	Age 60-64	1	0.0230665717	0.0144557517	2.5461544405	0.1106
AGECAT10	Age 65-69	1	0.0644761158	0.0146227358	19.4419789396	<.0001
AGECAT11	Age 70-74	1	0.0281500965	0.0150009358	3.5214625228	0.0606
AGECAT12	Age 75-79	1	0.1224640932	0.0157615287	60.3699575452	<.0001
AGECAT13	Age 80-84	1	0.1430333892	0.0171884916	69.2467391488	<.0001
FAGECAT1	Female, Age 18-24	1	1.4099955309	0.0584224336	582.4735169994	<.0001
FAGECAT2	Female, Age 25-29	1	1.2544829763	0.0392832129	1019.8012587920	<.0001
FAGECAT3	Female, Age 30-34	1	0.8739265733	0.0319509437	748.1393722251	<.0001
FAGECAT4	Female, Age 35-39	1	0.5824612863	0.0283518501	422.0572076173	<.0001
FAGECAT5	Female, Age 40-44	1	0.3518302537	0.0258485397	185.2654075923	<.0001
FAGECAT6	Female, Age 45-49	1	0.2167945813	0.0241999424	80.2542760610	<.0001
FAGECAT7	Female, Age 50-54	1	0.0690094522	0.0230733708	8.9453032856	0.0028
FAGECAT8	Female, Age 55-59	1	-0.0695651719	0.0224411989	9.6092970048	0.0019
FAGECAT9	Female, Age 60-64	1	-0.0964755807	0.0222452587	18.8087476432	<.0001
FAGECAT10	Female, Age 65-69	1	-0.0664266927	0.0224492237	8.7555333356	0.0031
FAGECAT11	Female, Age 70-74	1	-0.0109440453	0.0229899571	0.2266101946	0.6340

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT12	Female, Age 75-79	1	-0.0222409300	0.0242621777	0.8403231504	0.3593
FAGECAT13	Female, Age 80-84	1	0.0105035662	0.0263097685	0.1593820852	0.6897

c-statistic=0.735

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 3. Risk Adjustment Coefficients (non SES) for PQI 05 - Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-5.591889653	0.0112718310	246109.4259085970	<.0001
FEMALE	Female	1	-0.0808833788	0.0143187803	31.9085097386	<.0001
AGECAT5	Age 40-44	1	-2.629648285	0.0221179915	14135.2650470058	<.0001
AGECAT6	Age 45-49	1	-2.216694553	0.0196017346	12788.5910631458	<.0001
AGECAT7	Age 50-54	1	-1.605888632	0.0161035184	9944.6453361598	<.0001
AGECAT8	Age 55-59	1	-0.9407437609	0.0139248888	4564.1428117129	<.0001
AGECAT9	Age 60-64	1	-0.5139463398	0.0131170789	1535.1870372300	<.0001
AGECAT10	Age 65-69	1	-0.3668270051	0.0131543070	777.6544318750	<.0001
AGECAT11	Age 70-74	1	-0.2685010811	0.0133536283	404.2904754781	<.0001
AGECAT12	Age 75-79	1	-0.0536765949	0.0138925280	14.9281968896	0.0001
AGECAT13	Age 80-84	1	0.0247844812	0.0151047720	2.6923487712	0.1008
FAGECAT5	Female, Age 40-44	1	0.7311576675	0.0275286353	705.4280287596	<.0001
FAGECAT6	Female, Age 45-49	1	0.7432080450	0.0243833062	929.0425832496	<.0001
FAGECAT7	Female, Age 50-54	1	0.6200364313	0.0203529216	928.0703490380	<.0001
FAGECAT8	Female, Age 55-59	1	0.4248612463	0.0178319657	567.6698120096	<.0001
FAGECAT9	Female, Age 60-64	1	0.3083963014	0.0168531559	334.8542722848	<.0001
FAGECAT10	Female, Age 65-69	1	0.2152560871	0.0169550837	161.1799456023	<.0001
FAGECAT11	Female, Age 70-74	1	0.1997978155	0.0172050214	134.8562368942	<.0001
FAGECAT12	Female, Age 75-79	1	0.2185669597	0.0178376863	150.1384681239	<.0001
FAGECAT13	Female, Age 80-84	1	0.1850086271	0.0193369444	91.5394423979	<.0001

c-statistic=0.675

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 4. Risk Adjustment Coefficients (non SES) for PQI 07 - Hypertension Admission Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-6.482882299	0.0175599729	136297.7207158100	<.0001
FEMALE	Female	1	0.6926368495	0.0198992175	1211.5439919842	<.0001
AGECAT1	Age 18-24	1	-3.857059075	0.0488381686	6237.2599163533	<.0001
AGECAT2	Age 25-29	1	-2.719006850	0.0347290754	6129.6285838798	<.0001
AGECAT3	Age 30-34	1	-1.996836543	0.0270819177	5436.5852704963	<.0001
AGECAT4	Age 35-39	1	-1.508875504	0.0240580012	3933.5776744418	<.0001
AGECAT5	Age 40-44	1	-1.157039981	0.0226026356	2620.4662106456	<.0001
AGECAT6	Age 45-49	1	-0.8991602833	0.0218242676	1697.4417284015	<.0001
AGECAT7	Age 50-54	1	-0.8060902920	0.0212892507	1433.6615278489	<.0001
AGECAT8	Age 55-59	1	-0.7100593960	0.0209176625	1152.2933519914	<.0001
AGECAT9	Age 60-64	1	-0.7234989912	0.0210528742	1181.0086190305	<.0001
AGECAT10	Age 65-69	1	-0.7542860004	0.0217454241	1203.1958591681	<.0001
AGECAT11	Age 70-74	1	-0.7182830590	0.0224380886	1024.7537856323	<.0001
AGECAT12	Age 75-79	1	-0.5157558787	0.0237107197	473.1500625527	<.0001
AGECAT13	Age 80-84	1	-0.2541261186	0.0251467915	102.1253233966	<.0001
FAGECAT1	Female, Age 18-24	1	-0.6197666892	0.0669689340	85.6465135160	<.0001
FAGECAT2	Female, Age 25-29	1	-0.6411877372	0.0466356671	189.0314340011	<.0001
FAGECAT3	Female, Age 30-34	1	-0.7965137046	0.0360981216	486.8748027206	<.0001
FAGECAT4	Female, Age 35-39	1	-0.8723084683	0.0315749314	763.2298456137	<.0001
FAGECAT5	Female, Age 40-44	1	-0.9181630860	0.0292282835	986.8088451128	<.0001
FAGECAT6	Female, Age 45-49	1	-0.9104114518	0.0277867281	1073.4964214090	<.0001
FAGECAT7	Female, Age 50-54	1	-0.9487222727	0.0269681432	1237.5880348755	<.0001
FAGECAT8	Female, Age 55-59	1	-0.9591486277	0.0262485966	1335.2409501307	<.0001
FAGECAT9	Female, Age 60-64	1	-0.8051981721	0.0259580813	962.1889892511	<.0001
FAGECAT10	Female, Age 65-69	1	-0.5647119783	0.0263007077	461.0193244936	<.0001
FAGECAT11	Female, Age 70-74	1	-0.3550841620	0.0266939197	176.9448411716	<.0001

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT12	Female, Age 75-79	1	-0.1969606159	0.0278723851	49.9356285641	<.0001
FAGECAT13	Female, Age 80-84	1	-0.0594617205	0.0291229644	4.1687301549	0.0412

c-statistic=0.715

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 5. Risk Adjustment Coefficients (non SES) for PQI 08 - Heart Failure Admission Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-3.236312705	0.0035935209	811074.2409926050	<.0001
FEMALE	Female	1	-0.1705772610	0.0046352219	1354.2574031458	<.0001
AGECAT1	Age 18-24	1	-6.479144690	0.0335438217	37308.7136418569	<.0001
AGECAT2	Age 25-29	1	-5.244875927	0.0212057811	61173.2971547324	<.0001
AGECAT3	Age 30-34	1	-4.399909500	0.0139958524	98829.9966743757	<.0001
AGECAT4	Age 35-39	1	-3.796731768	0.0108031037	123515.8639027300	<.0001
AGECAT5	Age 40-44	1	-3.293415250	0.0089317085	135963.9903109810	<.0001
AGECAT6	Age 45-49	1	-2.865133653	0.0077286289	137431.0476944730	<.0001
AGECAT7	Age 50-54	1	-2.469461506	0.0065434720	142425.5900452260	<.0001
AGECAT8	Age 55-59	1	-2.127269851	0.0058150409	133825.7298710930	<.0001
AGECAT9	Age 60-64	1	-1.857579334	0.0054222105	117365.9162298830	<.0001
AGECAT10	Age 65-69	1	-1.667018541	0.0053918657	95587.8588502457	<.0001
AGECAT11	Age 70-74	1	-1.401289849	0.00531115018	69601.9312147312	<.0001
AGECAT12	Age 75-79	1	-0.9645265404	0.0053684469	32279.8152168595	<.0001
AGECAT13	Age 80-84	1	-0.5398954205	0.0055156748	9581.2459372951	<.0001
FAGECAT1	Female, Age 18-24	1	-0.0076326722	0.0501883403	0.0231285046	0.8791
FAGECAT2	Female, Age 25-29	1	-0.1825067225	0.0331754630	30.2638200023	<.0001
FAGECAT3	Female, Age 30-34	1	-0.3112100583	0.0225192770	190.9846059680	<.0001
FAGECAT4	Female, Age 35-39	1	-0.4250340615	0.0178173626	569.0633756573	<.0001
FAGECAT5	Female, Age 40-44	1	-0.3772959249	0.0143105623	695.1056744173	<.0001
FAGECAT6	Female, Age 45-49	1	-0.4004715857	0.0122795331	1063.6033784179	<.0001
FAGECAT7	Female, Age 50-54	1	-0.4285583826	0.0102697937	1741.3920306005	<.0001
FAGECAT8	Female, Age 55-59	1	-0.3760395833	0.0087937686	1828.5930275181	<.0001
FAGECAT9	Female, Age 60-64	1	-0.3079826169	0.0079410964	1504.1511101434	<.0001
FAGECAT10	Female, Age 65-69	1	-0.1862487506	0.0076471766	593.1772612659	<.0001
FAGECAT11	Female, Age 70-74	1	-0.0655946637	0.0073219223	80.2577143510	<.0001

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT12	Female, Age 75-79	1	-0.0296462307	0.0072975745	16.5037216494	<.0001
FAGECAT13	Female, Age 80-84	1	-0.0105823756	0.0073812491	2.0554486105	0.1517

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 6. Risk Adjustment Coefficients (non SES) for PQI 11 - Community-Acquired Pneumonia Admission Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-4.595268815	0.0068914475	444632.2309286640	<.0001
FEMALE	Female	1	-0.3077207925	0.0091590083	1128.7994329551	<.0001
AGECAT1	Age 18-24	1	-4.778744237	0.0289494771	27248.7213629537	<.0001
AGECAT2	Age 25-29	1	-4.383093126	0.0276669054	25098.0642600271	<.0001
AGECAT3	Age 30-34	1	-4.094649164	0.0239157717	29313.2920418701	<.0001
AGECAT4	Age 35-39	1	-3.791576446	0.0211864954	32027.3780539874	<.0001
AGECAT5	Age 40-44	1	-3.484365857	0.0190199473	33560.5353094727	<.0001
AGECAT6	Age 45-49	1	-3.198003075	0.0173424634	34004.4834240317	<.0001
AGECAT7	Age 50-54	1	-2.829744729	0.0146101306	37513.3910913742	<.0001
AGECAT8	Age 55-59	1	-2.404512530	0.0124108310	37536.3782591413	<.0001
AGECAT9	Age 60-64	1	-2.042494719	0.0111336027	33655.0662108994	<.0001
AGECAT10	Age 65-69	1	-1.722855350	0.0106422452	26207.8330472967	<.0001
AGECAT11	Age 70-74	1	-1.381174733	0.0102484049	18162.8793567322	<.0001
AGECAT12	Age 75-79	1	-0.9019265912	0.0102181452	7791.0903936417	<.0001
AGECAT13	Age 80-84	1	-0.4816364337	0.0104744031	2114.3656440537	<.0001
FAGECAT1	Female, Age 18-24	1	0.3313595747	0.0409761244	65.3939074443	<.0001
FAGECAT2	Female, Age 25-29	1	0.2798164179	0.0395565809	50.0390313707	<.0001
FAGECAT3	Female, Age 30-34	1	0.3646412099	0.0333883037	119.2731766472	<.0001
FAGECAT4	Female, Age 35-39	1	0.3644176548	0.0295407013	152.1798723784	<.0001
FAGECAT5	Female, Age 40-44	1	0.4255893516	0.0260726569	266.4470575230	<.0001
FAGECAT6	Female, Age 45-49	1	0.4201216295	0.0237253521	313.5629547992	<.0001
FAGECAT7	Female, Age 50-54	1	0.4167882664	0.0199534930	436.3079266522	<.0001
FAGECAT8	Female, Age 55-59	1	0.3521529741	0.0170132296	428.4391943225	<.0001
FAGECAT9	Female, Age 60-64	1	0.2788738433	0.0153266898	331.0692355901	<.0001
FAGECAT10	Female, Age 65-69	1	0.1796200296	0.0147438952	148.4174815011	<.0001
FAGECAT11	Female, Age 70-74	1	0.1625864110	0.0141207558	132.5722430087	<.0001

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT12	Female, Age 75-79	1	0.1165121366	0.0140455452	68.8121502450	<.0001
FAGECAT13	Female, Age 80-84	1	0.0574144991	0.0143305329	16.0516056891	<.0001

c-statistic=0.811

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 7. Risk Adjustment Coefficients (non SES) for PQI 12 - Urinary Tract Infection Admission Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-4.813918282	0.0076726813	393643.5266742700	<.0001
FEMALE	Female	1	0.5466607349	0.0088541068	3811.9416737283	<.0001
AGECAT1	Age 18-24	1	-5.332765143	0.0420802537	16060.0989040276	<.0001
AGECAT2	Age 25-29	1	-5.056294564	0.0425463009	14123.4604692806	<.0001
AGECAT3	Age 30-34	1	-4.772652856	0.0366646547	16944.3336656486	<.0001
AGECAT4	Age 35-39	1	-4.577174788	0.0339742581	18150.7690774528	<.0001
AGECAT5	Age 40-44	1	-4.327523940	0.0311003604	19361.9063666899	<.0001
AGECAT6	Age 45-49	1	-4.039988756	0.0281063798	20660.9597057241	<.0001
AGECAT7	Age 50-54	1	-3.669466900	0.0231679081	25086.0512302593	<.0001
AGECAT8	Age 55-59	1	-3.250446564	0.0191681672	28755.7621667292	<.0001
AGECAT9	Age 60-64	1	-2.770974049	0.0159907537	30028.0443075767	<.0001
AGECAT10	Age 65-69	1	-2.289041239	0.0142389988	25843.3212918614	<.0001
AGECAT11	Age 70-74	1	-1.745042467	0.0127147101	18836.4506947213	<.0001
AGECAT12	Age 75-79	1	-1.152227065	0.0122297584	8876.4721041314	<.0001
AGECAT13	Age 80-84	1	-0.6154392851	0.0121267951	2575.5996033751	<.0001
FAGECAT1	Female, Age 18-24	1	1.5254737135	0.0448888794	1154.8668879573	<.0001
FAGECAT2	Female, Age 25-29	1	1.2678150483	0.0460945194	756.5074738364	<.0001
FAGECAT3	Female, Age 30-34	1	1.1035251656	0.0402025667	753.4543072831	<.0001
FAGECAT4	Female, Age 35-39	1	1.0066556443	0.0375581045	718.3804993668	<.0001
FAGECAT5	Female, Age 40-44	1	0.8953541019	0.0346907276	666.1358981051	<.0001
FAGECAT6	Female, Age 45-49	1	0.7181960184	0.0318660310	507.9606104888	<.0001
FAGECAT7	Female, Age 50-54	1	0.5172948002	0.0268461206	371.2899132564	<.0001
FAGECAT8	Female, Age 55-59	1	0.2999791169	0.0227073205	174.5220337497	<.0001
FAGECAT9	Female, Age 60-64	1	0.1332988130	0.0192301177	48.0494787213	<.0001
FAGECAT10	Female, Age 65-69	1	0.0768861035	0.0170962650	20.2252186046	<.0001
FAGECAT11	Female, Age 70-74	1	0.0551146078	0.0151792705	13.1835279843	0.0003

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT12	Female, Age 75-79	1	0.0335075685	0.0145232666	5.3230091309	0.0210
FAGECAT13	Female, Age 80-84	1	0.0191419066	0.0142852039	1.7955499722	0.1803

c-statistic=0.844

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 8. Risk Adjustment Coefficients (non SES) for PQI 14 - Uncontrolled Diabetes Admission Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-6.541662572	0.0180821495	130880.8680514230	<.0001
FEMALE	Female	1	-0.2940148145	0.0239842972	150.2742030376	<.0001
AGECAT1	Age 18-24	1	-3.128256764	0.0372790802	7041.6495461892	<.0001
AGECAT2	Age 25-29	1	-2.619760175	0.0344836719	5771.5978663557	<.0001
AGECAT3	Age 30-34	1	-2.249736014	0.0301236688	5577.6003573162	<.0001
AGECAT4	Age 35-39	1	-2.050767469	0.0286340563	5129.4061794302	<.0001
AGECAT5	Age 40-44	1	-1.732676626	0.0266221870	4235.9182983512	<.0001
AGECAT6	Age 45-49	1	-1.506675758	0.0255687148	3472.3364911208	<.0001
AGECAT7	Age 50-54	1	-1.331554681	0.0242212384	3022.2147609853	<.0001
AGECAT8	Age 55-59	1	-1.130542456	0.0231404698	2386.8735285844	<.0001
AGECAT9	Age 60-64	1	-0.9751328451	0.0226020759	1861.3622997856	<.0001
AGECAT10	Age 65-69	1	-0.7925117683	0.0225434910	1235.8595013240	<.0001
AGECAT11	Age 70-74	1	-0.6278149648	0.0227156909	763.8558806844	<.0001
AGECAT12	Age 75-79	1	-0.3451627540	0.0235373008	215.0475684626	<.0001
AGECAT13	Age 80-84	1	-0.0963545507	0.0249099830	14.9622738706	0.0001
FAGECAT1	Female, Age 18-24	1	0.3447186313	0.0518720864	44.1633571402	<.0001
FAGECAT2	Female, Age 25-29	1	0.2088839614	0.0490655852	18.1240905716	<.0001
FAGECAT3	Female, Age 30-34	1	-0.0551108305	0.0446861375	1.5209967166	0.2175
FAGECAT4	Female, Age 35-39	1	-0.0389060703	0.0420776916	0.8549307169	0.3552
FAGECAT5	Female, Age 40-44	1	-0.0867333386	0.0389895421	4.9485260320	0.0261
FAGECAT6	Female, Age 45-49	1	0.0319249270	0.0364076325	0.7689090045	0.3806
FAGECAT7	Female, Age 50-54	1	0.1563241152	0.0336433240	21.5900755890	<.0001
FAGECAT8	Female, Age 55-59	1	0.1212951688	0.0320083097	14.3602342578	0.0002
FAGECAT9	Female, Age 60-64	1	0.1161739551	0.0311001221	13.9538279212	0.0002
FAGECAT10	Female, Age 65-69	1	0.1455461226	0.0307739899	22.3683353881	<.0001
FAGECAT11	Female, Age 70-74	1	0.2181815563	0.0306935626	50.5290891889	<.0001

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT12	Female, Age 75-79	1	0.2014293357	0.0317276208	40.3060675011	<.0001
FAGECAT13	Female, Age 80-84	1	0.1367233515	0.0335277774	16.6293725343	<.0001

c-statistic=0.717

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 9. Risk Adjustment Coefficients (non SES) for PQI 15 - Asthma in Younger Adults Admission Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-8.883284872	0.0256765855	119694.0714235990	<.0001
FEMALE	Female	1	0.7526922221	0.0312510792	580.1026077046	<.0001
AGECAT1	Age 18-24	1	-0.1324335858	0.0348114640	14.4727713720	0.0001
AGECAT2	Age 25-29	1	-0.1059023754	0.0372164626	8.0973184385	0.0044
AGECAT3	Age 30-34	1	-0.0152319725	0.0361299028	0.1777373536	0.6733
FAGECAT1	Female, Age 18-24	1	-0.2504500215	0.0433322390	33.4056469732	<.0001
FAGECAT2	Female, Age 25-29	1	-0.1629092251	0.0460250146	12.5286272009	0.0004
FAGECAT3	Female, Age 30-34	1	-0.1057079078	0.0443687237	5.6762443347	0.0172

c-statistic=0.592

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 10. Risk Adjustment Coefficients (non SES) for PQI 16 - Lower-Extremity Amputation Among Patients with Diabetes Rate

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-7.154248417	0.0245462315	84949.0213818684	<.0001
FEMALE	Female	1	-1.038229372	0.0395632118	688.6579092505	<.0001
AGECAT1	Age 18-24	1	-5.866144422	0.1757978902	1113.4691381066	<.0001
AGECAT2	Age 25-29	1	-3.848502209	0.0777006474	2453.2070564442	<.0001
AGECAT3	Age 30-34	1	-2.660964543	0.0470968640	3192.2301541691	<.0001
AGECAT4	Age 35-39	1	-1.804321681	0.0362400463	2478.8511398035	<.0001
AGECAT5	Age 40-44	1	-1.072015237	0.0310867085	1189.1932490841	<.0001
AGECAT6	Age 45-49	1	-0.4960109393	0.0286716678	299.2792433866	<.0001
AGECAT7	Age 50-54	1	-0.0928716262	0.0272298860	11.6325372808	0.0006
AGECAT8	Age 55-59	1	0.2079854653	0.0265238112	61.4885309050	<.0001
AGECAT9	Age 60-64	1	0.3360990532	0.0263449921	162.7565345793	<.0001
AGECAT10	Age 65-69	1	0.3778192664	0.0265778289	202.0827293641	<.0001
AGECAT11	Age 70-74	1	0.2728976118	0.0272819716	100.0571124768	<.0001
AGECAT12	Age 75-79	1	0.3506039423	0.0284863792	151.4813223886	<.0001
AGECAT13	Age 80-84	1	0.2702349006	0.0312684169	74.6914838844	<.0001
FAGECAT1	Female, Age 18-24	1	0.7611063779	0.2711589193	7.8784890156	0.0050
FAGECAT2	Female, Age 25-29	1	0.4099313444	0.1323878022	9.5879620965	0.0020
FAGECAT3	Female, Age 30-34	1	0.4579737470	0.0782993457	34.2109316096	<.0001
FAGECAT4	Female, Age 35-39	1	0.3921831330	0.0605079014	42.0100929353	<.0001
FAGECAT5	Female, Age 40-44	1	0.2629230848	0.0522052693	25.3646432332	<.0001
FAGECAT6	Female, Age 45-49	1	0.1200759713	0.0482995249	6.1805411083	0.0129
FAGECAT7	Female, Age 50-54	1	-0.0494985178	0.0459851716	1.1586406619	0.2817
FAGECAT8	Female, Age 55-59	1	-0.1573219266	0.0446113357	12.4362103392	0.0004
FAGECAT9	Female, Age 60-64	1	-0.1307804497	0.0439944619	8.8366902698	0.0030
FAGECAT10	Female, Age 65-69	1	-0.1203377754	0.0443681189	7.3563422448	0.0067
FAGECAT11	Female, Age 70-74	1	-0.0331961519	0.0454700266	0.5329973761	0.4653
FAGECAT12	Female, Age 75-79	1	-0.0787810437	0.0479312689	2.7015039542	0.1003

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT13	Female, Age 80-84	1	-0.0291062934	0.0524446938	0.3080141699	0.5789

c-statistic=0.779

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 11. Risk Adjustment Coefficients (non SES) for PQI 90 - Prevention Quality Overall Composite

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-2.650791727	0.0027614577	921455.6327118250	<.0001
FEMALE	Female	1	-0.0563391401	0.0034874449	260.9790984234	<.0001
AGECAT1	Age 18-24	1	-3.885382521	0.0073513410	279340.8347519840	<.0001
AGECAT2	Age 25-29	1	-3.632046233	0.0075008222	234468.7638256930	<.0001
AGECAT3	Age 30-34	1	-3.342125680	0.0065683846	258897.8251708800	<.0001
AGECAT4	Age 35-39	1	-3.042574617	0.0059116424	264890.3713651790	<.0001
AGECAT5	Age 40-44	1	-2.672030358	0.0052689935	257174.2274471880	<.0001
AGECAT6	Age 45-49	1	-2.346100066	0.0048248788	236439.6191035320	<.0001
AGECAT7	Age 50-54	1	-2.034057438	0.0043041745	223329.8084519920	<.0001
AGECAT8	Age 55-59	1	-1.722841254	0.0039389311	191308.2749367610	<.0001
AGECAT9	Age 60-64	1	-1.500617853	0.0037646870	158884.8429609070	<.0001
AGECAT10	Age 65-69	1	-1.347526417	0.0037821133	126942.0466205180	<.0001
AGECAT11	Age 70-74	1	-1.157390160	0.0038034260	92599.7094862190	<.0001
AGECAT12	Age 75-79	1	-0.7928505190	0.0039160492	40990.7954652632	<.0001
AGECAT13	Age 80-84	1	-0.4429904166	0.0041065853	11636.6232537017	<.0001
FAGECAT1	Female, Age 18-24	1	0.3056771249	0.0098134465	970.2480114099	<.0001
FAGECAT2	Female, Age 25-29	1	0.1818861572	0.0102541847	314.6277477429	<.0001
FAGECAT3	Female, Age 30-34	1	0.0361972036	0.0092042807	15.4657265813	<.0001
FAGECAT4	Female, Age 35-39	1	-0.0583603093	0.0084119290	48.1331153500	<.0001
FAGECAT5	Female, Age 40-44	1	-0.1185422485	0.0075128042	248.9672247838	<.0001
FAGECAT6	Female, Age 45-49	1	-0.1580040265	0.0068635248	529.9585419893	<.0001
FAGECAT7	Female, Age 50-54	1	-0.1971303884	0.0060826562	1050.3175485476	<.0001
FAGECAT8	Female, Age 55-59	1	-0.2276327727	0.0054929686	1717.3362897214	<.0001
FAGECAT9	Female, Age 60-64	1	-0.2039965275	0.0051671739	1558.6169269830	<.0001
FAGECAT10	Female, Age 65-69	1	-0.1528502539	0.0051237758	889.9223002129	<.0001
FAGECAT11	Female, Age 70-74	1	-0.0621813647	0.0050680968	150.5326464031	<.0001

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT12	Female, Age 75-79	1	-0.0235753333	0.0051665249	20.8218172014	<.0001
FAGECAT13	Female, Age 80-84	1	-0.0026541779	0.0053526393	0.2458804969	0.6200

c-statistic=0.767

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 12. Risk Adjustment Coefficients (non SES) for PQI 91 - Prevention Quality Acute Composite

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-3.996976835	0.0051512551	602056.3536448050	<.0001
FEMALE	Female	1	0.1643031601	0.0062743918	685.7227669563	<.0001
AGECAT1	Age 18-24	1	-4.997396042	0.0238205726	44013.2201110351	<.0001
AGECAT2	Age 25-29	1	-4.637808071	0.0231471379	40144.9522872403	<.0001
AGECAT3	Age 30-34	1	-4.350722890	0.0199765632	47433.0767729527	<.0001
AGECAT4	Age 35-39	1	-4.077625588	0.0178972796	51908.7588279077	<.0001
AGECAT5	Age 40-44	1	-3.785487671	0.0161263594	55102.4618380465	<.0001
AGECAT6	Age 45-49	1	-3.498770679	0.0146519791	57021.4655820475	<.0001
AGECAT7	Age 50-54	1	-3.129834559	0.0122375126	65411.8542517251	<.0001
AGECAT8	Age 55-59	1	-2.706038531	0.0102842232	69234.8832817913	<.0001
AGECAT9	Age 60-64	1	-2.312297201	0.0090358767	65485.7366809970	<.0001
AGECAT10	Age 65-69	1	-1.944194058	0.0084688420	52702.4932694331	<.0001
AGECAT11	Age 70-74	1	-1.533933809	0.0079681872	37059.0418233440	<.0001
AGECAT12	Age 75-79	1	-1.011170148	0.0078496888	16593.7141868797	<.0001
AGECAT13	Age 80-84	1	-0.5424443689	0.0079502247	4655.3421775398	<.0001
FAGECAT1	Female, Age 18-24	1	1.0018918952	0.0274944661	1327.8565078676	<.0001
FAGECAT2	Female, Age 25-29	1	0.7417304402	0.0275933251	722.5769947396	<.0001
FAGECAT3	Female, Age 30-34	1	0.6515604773	0.0240913415	731.4548033423	<.0001
FAGECAT4	Female, Age 35-39	1	0.5497856173	0.0219127312	629.4970880865	<.0001
FAGECAT5	Female, Age 40-44	1	0.4896837572	0.0198847732	606.4431789253	<.0001
FAGECAT6	Female, Age 45-49	1	0.3911667620	0.0183101032	456.3965011304	<.0001
FAGECAT7	Female, Age 50-54	1	0.2899354894	0.0155116719	349.3699427059	<.0001
FAGECAT8	Female, Age 55-59	1	0.1547319354	0.0132138181	137.1207779919	<.0001
FAGECAT9	Female, Age 60-64	1	0.0605507629	0.0116711239	26.9162084029	<.0001
FAGECAT10	Female, Age 65-69	1	0.0088922286	0.0109102082	0.6642860996	0.4151
FAGECAT11	Female, Age 70-74	1	0.0261138600	0.0101492537	6.6202429107	0.0101

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT12	Female, Age 75-79	1	0.0150545868	0.0099285098	2.2991618538	0.1294
FAGECAT13	Female, Age 80-84	1	0.0054323165	0.0099567033	0.2976726955	0.5853

c-statistic=0.823

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 13. Risk Adjustment Coefficients (non SES) for PQI 92 - Prevention Quality Chronic Composite

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-2.988745894	0.0032085871	867661.5046662200	<.0001
FEMALE	Female	1	-0.1536696975	0.0041234134	1388.8735647293	<.0001
AGECAT1	Age 18-24	1	-3.637159424	0.0078138705	216666.7421671000	<.0001
AGECAT2	Age 25-29	1	-3.394471945	0.0080030091	179902.7614960430	<.0001
AGECAT3	Age 30-34	1	-3.104370976	0.0070383040	194541.0200208940	<.0001
AGECAT4	Age 35-39	1	-2.802235204	0.0063560700	194371.1620521860	<.0001
AGECAT5	Age 40-44	1	-2.424251379	0.0056844921	181874.5679357770	<.0001
AGECAT6	Age 45-49	1	-2.095010846	0.0052297578	160475.7443149440	<.0001
AGECAT7	Age 50-54	1	-1.788709703	0.0047152547	143902.8554483510	<.0001
AGECAT8	Age 55-59	1	-1.489750151	0.0043629341	116592.2203255730	<.0001
AGECAT9	Age 60-64	1	-1.289085378	0.0042068212	93897.7646908430	<.0001
AGECAT10	Age 65-69	1	-1.169459859	0.0042532673	75600.6066001331	<.0001
AGECAT11	Age 70-74	1	-1.024032634	0.0043152690	56313.4123083175	<.0001
AGECAT12	Age 75-79	1	-0.7028875478	0.0044768069	24651.0249212386	<.0001
AGECAT13	Age 80-84	1	-0.3950008533	0.0047302389	6973.1646467889	<.0001
FAGECAT1	Female, Age 18-24	1	0.2510238999	0.0107594530	544.3143240592	<.0001
FAGECAT2	Female, Age 25-29	1	0.1458485184	0.0112576196	167.8459633780	<.0001
FAGECAT3	Female, Age 30-34	1	-0.0144988508	0.0101817668	2.0277801859	0.1544
FAGECAT4	Female, Age 35-39	1	-0.1026008470	0.0093158093	121.2999752607	<.0001
FAGECAT5	Female, Age 40-44	1	-0.1504914310	0.0083090720	328.0337312069	<.0001
FAGECAT6	Female, Age 45-49	1	-0.1710741725	0.0075836075	508.8821276328	<.0001
FAGECAT7	Female, Age 50-54	1	-0.2039521982	0.0067723490	906.9390991123	<.0001
FAGECAT8	Female, Age 55-59	1	-0.2247059972	0.0061687524	1326.8891859807	<.0001
FAGECAT9	Female, Age 60-64	1	-0.1927150072	0.0058516161	1084.6245084294	<.0001
FAGECAT10	Female, Age 65-69	1	-0.1376261349	0.0058463744	554.1515838258	<.0001
FAGECAT11	Female, Age 70-74	1	-0.0484138672	0.0058445188	68.6186285113	<.0001

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT12	Female, Age 75-79	1	-0.0103603052	0.0060087256	2.9729003905	0.0847
FAGECAT13	Female, Age 80-84	1	0.0082224681	0.0062752422	1.7168937002	0.1901

c-statistic=0.753

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Table 14. Risk Adjustment Coefficients (non SES) for PQI 93 - Prevention Quality Diabetes Composite

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
Intercept	Intercept	1	-5.315955735	0.0098308065	292404.7437140090	<.0001
FEMALE	Female	1	-0.5432826822	0.0138018900	1549.4394266639	<.0001
AGECAT1	Age 18-24	1	-1.486504471	0.0125372405	14058.1615280121	<.0001
AGECAT2	Age 25-29	1	-1.364235543	0.0129969966	11017.7449155523	<.0001
AGECAT3	Age 30-34	1	-1.234891468	0.0125922419	9617.2623980358	<.0001
AGECAT4	Age 35-39	1	-1.066528467	0.0122836057	7538.6428930973	<.0001
AGECAT5	Age 40-44	1	-0.7864785396	0.0118458748	4407.9786241960	<.0001
AGECAT6	Age 45-49	1	-0.5253443299	0.0115233147	2078.4197053673	<.0001
AGECAT7	Age 50-54	1	-0.3059432653	0.0111426420	753.8855828791	<.0001
AGECAT8	Age 55-59	1	-0.1148166028	0.0109080318	110.7940910853	<.0001
AGECAT9	Age 60-64	1	-0.0555714482	0.0108785750	26.0951264621	<.0001
AGECAT10	Age 65-69	1	-0.0308346460	0.0110312887	7.8131369106	0.0052
AGECAT11	Age 70-74	1	-0.0626047698	0.0113322664	30.5197725685	<.0001
AGECAT12	Age 75-79	1	0.0507359285	0.0119111581	18.1435911000	<.0001
AGECAT13	Age 80-84	1	0.1053027845	0.0129484135	66.1373197220	<.0001
FAGECAT1	Female, Age 18-24	1	0.5988173791	0.0176270343	1154.0650590142	<.0001
FAGECAT2	Female, Age 25-29	1	0.4967027108	0.0184663556	723.4869003992	<.0001
FAGECAT3	Female, Age 30-34	1	0.3355120955	0.0181734652	340.8324030875	<.0001
FAGECAT4	Female, Age 35-39	1	0.2785588429	0.0178009544	244.8766218133	<.0001
FAGECAT5	Female, Age 40-44	1	0.1692494246	0.0172654208	96.0948399852	<.0001
FAGECAT6	Female, Age 45-49	1	0.1248485813	0.0167718175	55.4124009261	<.0001
FAGECAT7	Female, Age 50-54	1	0.0568382843	0.0162009300	12.3084121260	0.0005
FAGECAT8	Female, Age 55-59	1	-0.0607996183	0.0158867975	14.6463358154	0.0001
FAGECAT9	Female, Age 60-64	1	-0.0833168409	0.0158269245	27.7122973490	<.0001
FAGECAT10	Female, Age 65-69	1	-0.0510712283	0.0160154240	10.1689408649	0.0014
FAGECAT11	Female, Age 70-74	1	0.0219161065	0.0163940231	1.7871282629	0.1813

AHRQ Quality Indicators
Prevention Quality Indicators (PQI) Parameter Estimates, v2024

Parameter	Label	DF	Estimate	Standard Error	Wald Chi Square	Prob Chi Square
FAGECAT12	Female, Age 75-79	1	0.0273598889	0.0172524131	2.5149477355	0.1128
FAGECAT13	Female, Age 80-84	1	0.0411427912	0.0186648043	4.8589297749	0.0275

c-statistic=0.642

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).

C-statistics for area level indicators are based on the full reference population data (2021 HCUP reference population).

Appendix: Additional Tables

Table A.1. Population Age Categories

Age Category	Range
5	Age 18-24
6	Age 25-29
7	Age 30-34
8	Age 35-39
9	Age 40-44
10	Age 45-49
11	Age 50-54
12	Age 55-59
13	Age 60-64
14	Age 65-69
15	Age 70-74
16	Age 75-79
17	Age 80-84
18	Age 85+