Item #6: California Cardiovascular Outcomes Reporting Program (CCORP) Updates

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CAP Statutory Authority

Health and Safety Code Section	Details
128745(c)(2)	Recommendation interventional cardiovascular procedure for public reporting.
128745(c)(3-4)	Recommendation on clinical data elements to collect from hospitals (Society of Thoracic Surgeons' database or other relevant databases).
128748(d)(3)	Review and approve risk adjustment model to be used in preparation of outcome report.
128750(b)(3)	CABG Surgeon Outcomes Reports review of physician statements.

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CCORP Program Update

2024 Coronary Artery Bypass Graft (CABG) Data

- Audit completed in November - results shared today
- Risk-models completed – methods and models shared today

2025 CABG Data

- Jan-June Completed
- July-Dec Ongoing
  - Stage 1 closed April 1st
  - Stage 2 closes May 8th

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CCORP Public Reporting Updates

Transcatheter Aortic Valve Replacement (TAVR) Outcomes Report 2024 Data released April 7, 2026 – 85 hospitals

- In-hospital/30-day mortality 1.55%
- In-hospital/30-day stroke 1.79%
- One outlier hospitals for mortality
- No outlier hospitals for stroke
- Three hospitals non-compliant

Elective PCI Program 2024 Public Report In Progress – 24 hospitals

- In-hospital mortality
- Post-op stroke
- Emergency CABG (not risk-adjusted)

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CCORP Program Ongoing Work

Data Visualizations 2023 CABG

- CABG complications/readmissions – to be released soon
- CABG volume per capita and mortality – to be released soon
- Cardiovascular program landing page

Collaborative and Outreach efforts

- Bi-monthly calls with CABG/TAVR hospitals
- Bi-monthly calls with California Cardiovascular Quality Collaborative (CCQC)

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CABG Hospital Volume Statistics Over Time

	2003	2004	2005	2006	2007	2008	2009	2010		2018	2019	2020	2021	2022	2023	2024
Total # CABG hospitals	121	120	120	121	121	120	119	120		123	124	120	118	118	119	118
Mean/range iso CABG volume	176	159	141	129	122	117	112	103		104	107	92	103 1-579	106 10-664	109 3-619	110 5-651
Mean non-iso CABG volume	37	38	37	36	35	34	33	33		27	25	22	23 1-155	24 1-150	25 1-162	25 1-188
# hospitals w/ only iso CABG	5	3	2	2	4	3	1	3		3	5	5	2	6	5	4
# hospitals < 100 CABGs	31	32	36	44	51	50	54	60		68	65	79	65	69	66	67
# hospitals < 30 CABGs	3	5	6	9	8	7	7	6		8	7	13	11	10	8	11
CABGs at lowest vol hospital	25	5	7	2	1	6	8	4		6	7	4	2	11	3	6

Steady numbers from 2011-2017

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CABG Hospital Volume Statistics Over Time

	2003	2004	2005	2006	2007	2008	2009	2010		2018	2019	2020	2021	2022	2023	2024
Total # CABG surgeons	284	287	267	270	262	264	259	258		262	270	263	262	267	276	279
Mean iso CABG volume	75	67	64	58	56	53	51	49		49	49	42	46 1-267	47 1-226	48 1-190	46 1-204
Mean non-iso CABG volume	16	16	17	16	16	15	15	15		13	11	10	10 1-57	10 1-52	11 1-56	10 1-45
Surgeons w/ < 30 CABGs	66	73	60	69	61	72	69	68		84	85	86	84	80	86	81
Surgeons w/ < 10 CABGs	31	30	27	31	29	41	28	28		32	41	38	33	37	33	37

Steady numbers from 2011-2017

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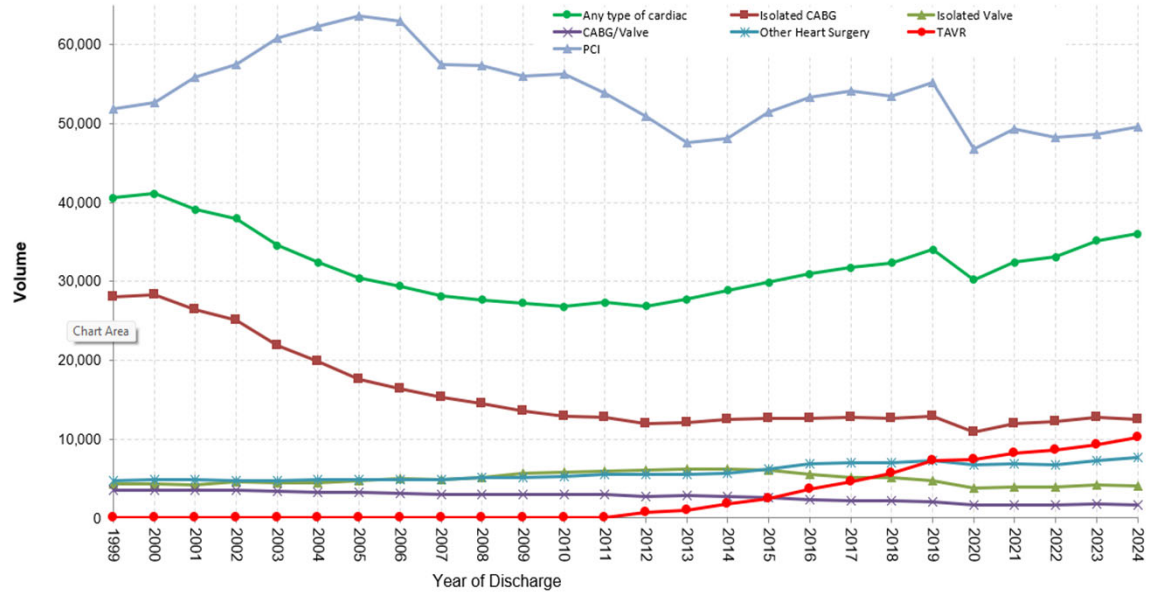
Volume of Cardiovascular Procedures and Interventions 1999-2024



Source: HCAI Administrative Data (inpatient, ambulatory surgery, emergency department)
Abbreviations: Coronary Artery Bypass Graft (CABG), Percutaneous Coronary Intervention (PCI), Transcatheter Aortic Valve Replacement (TAVR)

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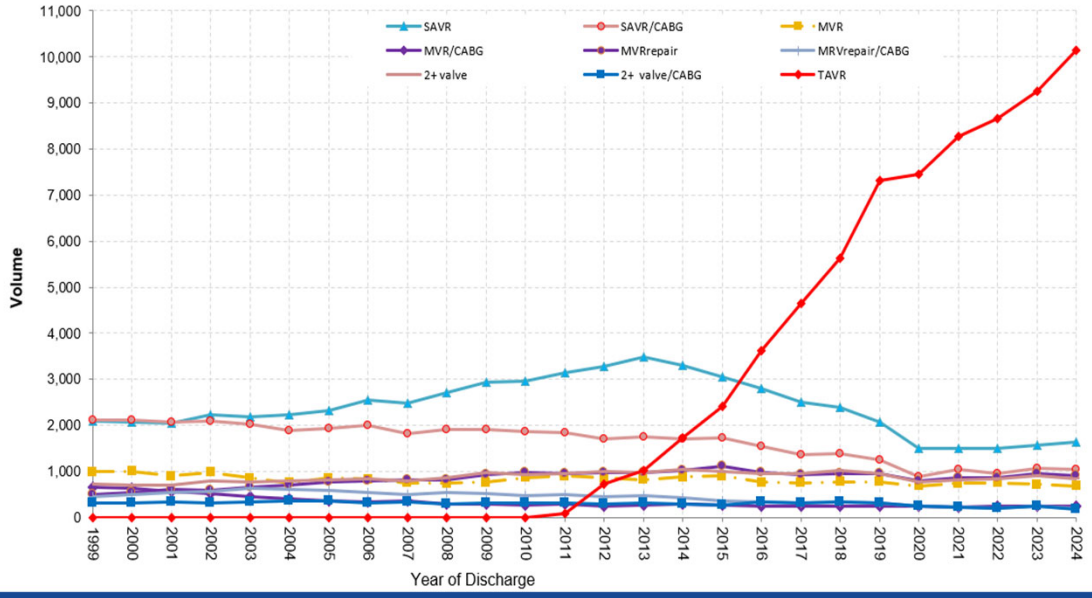
Volume of Valve Procedures and Interventions 1999-2024



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Source: HCAI Administrative Data (inpatient, ambulatory surgery, emergency department)
Abbreviations: Coronary Artery Bypass Graft (CABG), Mitral Valve Replacement (MVR), Surgical Aortic Valve Replacement (SAVR), Transcatheter Aortic Valve Replacement (TAVR)

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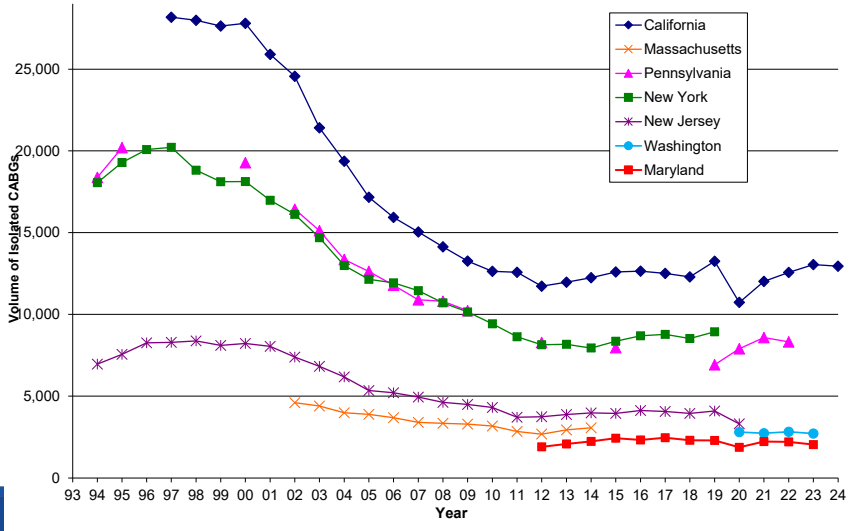
Isolated CABG Surgery Volume Selected States 1994-2024

STS Volume for Isolated CABG

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
168,027	167,329	160,819	149,649	146,520	147,894	148,770	155,529	161,113	161,997	160,935	161,863	132,385	142,189	157,234	163,260	159,980



10 4/30/2026

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2024 CABG Data Audit

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Goals of 2024 CABG Data Audit

- Determine quality of coding of risk factors and outcomes captured by CABG
- Evaluate whether over-coding or under-coding of risk factors can change hospital outlier status
- Verify data quality in hospitals with poor response to data discrepancy / risk factor coding reports

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2024 Audit Sample Design

- 15,760 CABGs from 118 hospitals were reported to HCAI
- 12,934 isolated; 2,826 non-isolated CABGs
- Audit target hospitals:
  - Mortality/stroke hospital outlier or near-outlier after isolated CABG surgery
  - Coding problems or other reasons (such as using AI abstraction)
  - Hospitals without audit for five years
- Total 17 hospitals for audit
- 17 hospitals remote audit, 0 on-site

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2024 Audit Sample Design

Select primary cases for each hospital:

- Proportional to isolated and non-isolated CABG volume
- Minimum of 35 and maximum of 112 total CABG cases
- Strive to have least 20% of all audited CABGs should be non-isolated CABG cases per hospital

For primary cases selection:

- Select all in-hospital deaths
- Select all post-operative stroke case
- Select patients proportional to predicted risk of deaths/strokes

Select secondary records for each hospital:

- Secondary records will be used only when primary cases are not located/not CABGs

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2024 Audit Sample Description

Sample includes 7.5% of all isolated CABGs
Oversampling for isolated CABGs: 26.6% of in-hospital deaths 23.0% of post-op strokes

		Surgeries	In Hospital Deaths	Post-OP Strokes	Rate of Death or Post-Op Stroke
HCAI					
	Isolated CABGs	12,934	218	174	2.9%
	Non-Isolated CABGs	2,826	173	121	9.4%
	All CABGs	15,760	391	295	4.0%
Hospitals for Audit					
	Isolated CABGs	2,188	58	40	4.2%
	Non-Isolated CABGs	387	25	17	10.3%
	All CABGs	2,575	83	57	5.1%
Surgeries Targeted for Audit (primary sample)					
	Isolated CABGs	976	58	40	9.2%
	Non-Isolated CABGs	254	23	17	15.0%
	All CABGs	1,230	81	57	10.5%

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2024 Audit CABG Numbers

2024 Audit

- 1,230 CABG surgeries at 17 hospitals
- Pre audit: 976 isolated and 254 non-isolated
- Post audit: 1004 isolated and 226 non-isolated

2024 CABGs Results

- isolated CABGs increased from 12,934 to 12,962
- non-isolated CABGs decreased from 2,826 to 2,798

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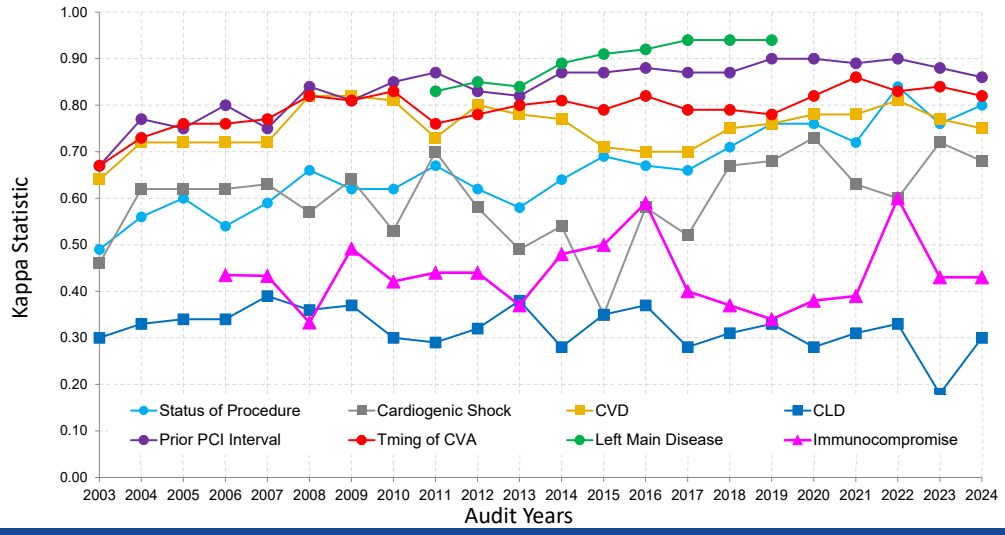
Coding Quality in CABG Data Audit

Trends in Kappa for Selected Risk Factors (2003-2024)



Abbreviations: Cerebrovascular Accident (CVA), Cerebrovascular Disease (CVD), Chronic Lung Disease (CLD), Percutaneous Coronary Intervention (PCI)

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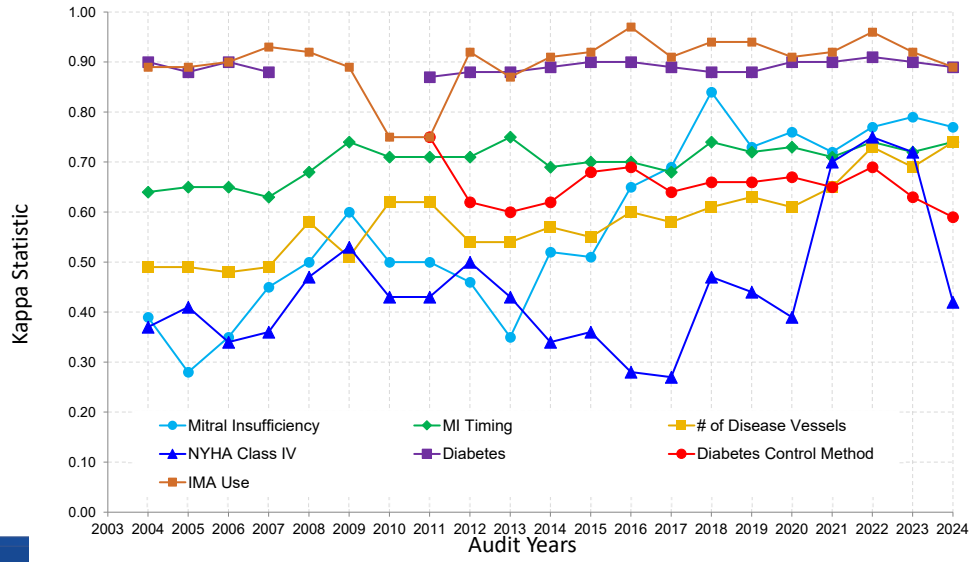
Coding Quality in CABG Data Audit

Trends in Kappa for Selected Risk Factors (2003-2024)



Abbreviations: Internal Mammary Artery (IMA), Myocardial Infarction (MI), New York Heart Association (Functional Class, NYHA)

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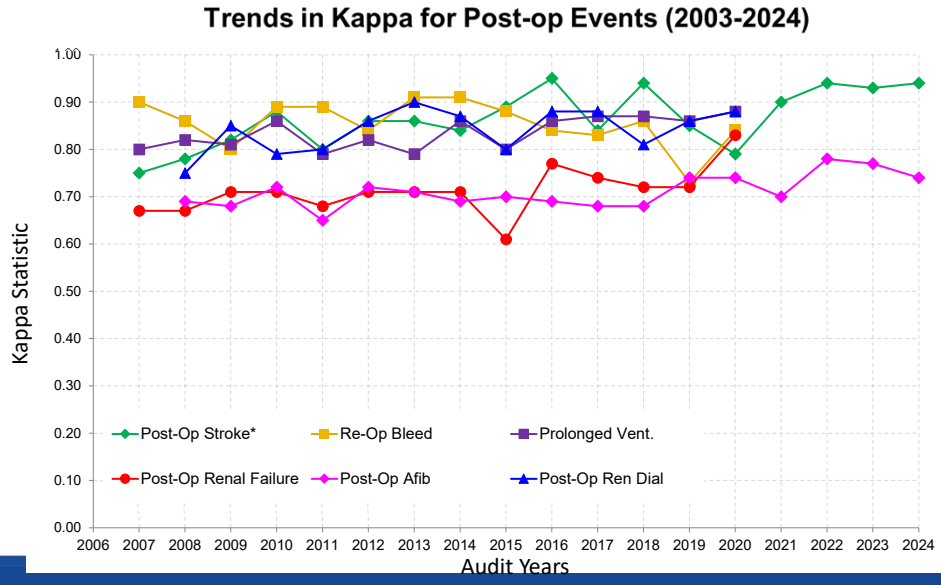
Coding Quality in CABG Data Audit



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Pre/Post 2024 Audit Hospital Outlier Status*

Pre/post Audit Status in Isolated CABGs	Operative Mortality	Post-Operative Stroke	30-Day Readmissions
Total Pre Audit Better	1	1	4
Stay Better	1	1	4
Better → No Different	0	0	0
No Different → Better	0	1	0
Total Post Audit Better	1	2	4
Total Pre Audit Worse	3	8	3
Stay Worse	3	7	3
Worse → No Different	0	1	0
No Different → Worse	1	0	1
Total Post Audit Worse	4	7	4

* Results based on pre-audit risk models and may not match outliers based on final models

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2024 Audit Summary

- Previous interventions, CVA and timing, Diabetes, Cardiac Arrhythmia, Incidence, IMA Use, post-op stroke have high levels of agreement
- Most risk factors measured as continuous coded well
- Chronic Lung Disease agreement low, but remains consistent.
- Hospital average kappa ranged from 0.38 to 0.88
- Changes in hospital outlier status:
  - Operative mortality:
    - 1 hospitals classified as no-different was re-classified as worse post-audit.
  - Stroke:
    - 1 hospitals classified as no-different was re-classified as Better and
    - 1 hospitals classified as worse was re-classified as no-different post-audit.
  - Readmissions:
    - 1 hospitals classified as no-different was re-classified as worse post-audit.

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Discussion

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Public Comment

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