



MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

Safety of same-day discharge after elective PCI:

Why put off to tomorrow what can be done today? Insights from the BMC2 registry



S. Nabeel Hyder, Milan Seth, Michael Thompson, Eric Thomas Walchak, Abdulfatah Abdelkarim Osman, Ryan Madder, Devraj Sukul, Hitinder S. Gurm.

Background

- Improvements in stent implantation techniques, radial artery utilization, and femoral closure devices can facilitate shorter durations of observation after elective percutaneous coronary intervention (PCI).
- Prior studies show that same-day discharge (SDD) for selected patients after elective PCI is a safe, cost-effective, and often a patient-preferred alternative to overnight observation.
- To guide broader SDD implementation efforts, contemporary trends in SDD, site-level variations, and readmission rates require further investigation.

Aim

- Using a real-world registry of PCI cases, we sought to describe the contemporary trends in SDD utilization, readmission rates following SDD, and site-level variations in this practice.

Methods

- The Blue Cross Blue Shield of Michigan Cardiovascular Consortium PCI (BMC2PCI) registry was utilized to identify PCI cases. The Michigan Value Collaborative (MVC) was utilized to identify outcomes following a PCI episode of care. The deidentified databases were linked using unique combinations of patient and institution features within the registries.
- Patients undergoing elective PCI at non-federal hospitals in Michigan from 4/2018 to 3/2023, were included. Patients without 90-day follow-up data were excluded. Acute MI, discharge to other acute care facility, hospice discharge, left against-medical-advice, in-hospital death, and comfort-measures-only cases were excluded.
- SDD was defined as discharge on the same day as PCI, whereas non-SDD was defined as a one-night hospital stay after PCI.
- The primary outcome was readmission, evaluated at 3, 7, 14, 30, and 90 days post discharge.
- A volume-weighted linear regression model was used to assess for any associations between site SDD rates and readmission rates.

Results

Fig 1. SDD trend among elective PCI patients, 2018-2023

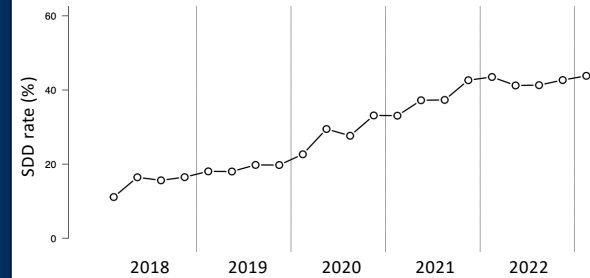


Fig 2. Readmission rates for SDD vs non-SDD

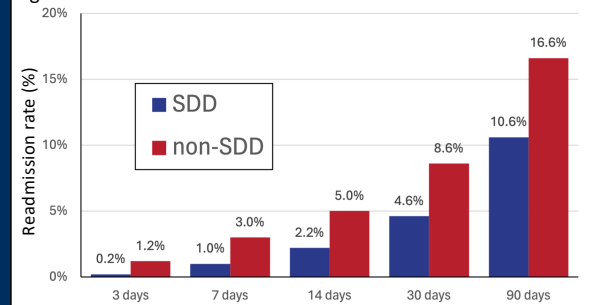
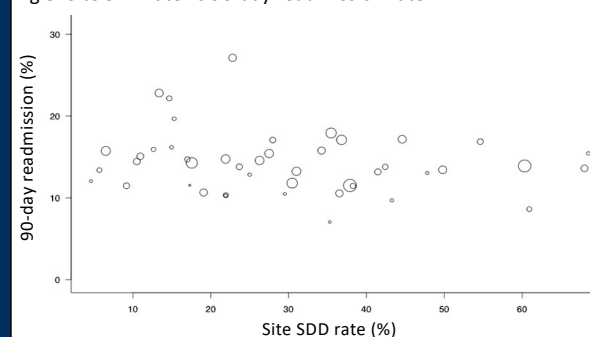


Fig 3. Site SDD rate vs 90-day readmission rate



Results

- 26,289 elective PCI patients were included in analysis, of whom 8,265 (31.4%) were managed with SDD.
- When restricted to only outpatient-claim encounters, 8,247/20,575 (40.1%) were managed with SDD.
- Radial access was used in 6,637/8,265 (80%) of SDD managed cases, compared to 9,763/18,024 (54%) of non-SDD cases.
- SDD utilization increased from 11.1% in 2018 to 43.8% in 2023 (figure 1).
- All-cause readmission amongst SDD patients remained lower than non-SDD patients at 3, 7, 14, 30, and 90 day endpoints (figure 2). 7-day readmission occurred in 1.0% of SDD versus 3.0% non-SDD cases ($p < 0.001$).
- During the final study year, site SDD rates ranged from 10.4% to 77.1% amongst 49 unique sites.
- No association was seen between site SDD rates and readmission rates ($p=0.162$, figure 3).

Conclusions

- SDD after elective PCI in selected patients is safe and associated with low risk of readmission in comparison to non-SDD.
- SDD utilization has increased over time, suggesting effectiveness of implementation efforts.
- Absence of a significant association between site SDD rates and readmission rates reinforces safety findings, and may suggest a “missed opportunity” for low-utilizers of SDD.
- The wide gap in SDD utilization between sites remains an important target for further quality improvement efforts.

References

- Rao SV et al. Prevalence and outcomes of same-day discharge after elective percutaneous coronary intervention among older patients. *JAMA*. 2011;306(13):1461-1467.
- Amin AP et al. Association of same-day discharge after elective percutaneous coronary intervention in the United States with costs and outcomes. *JAMA Cardiol*. 2018;3(11):1041-1049.
- Kim M et al. Assessing patient-reported outcomes and preferences for same-day discharge after percutaneous coronary intervention. *Circ Cardiovasc Qual Outcomes*. 2013;6:186-192.
- Rao SV et al. 2021 ACC expert consensus decision pathway on same-day discharge after percutaneous coronary intervention: A report of the American College of Cardiology solution set oversight committee. *J Am Coll Cardiol*. 2021; 77(6):811-825.
- Bradley SM et al. Trends in use and outcomes of same-day discharge following elective percutaneous coronary intervention. *J Am Coll Cardiol Intv*. 2021; 14(15):1655-1666.