

Quality of Care in Coronary Revascularization

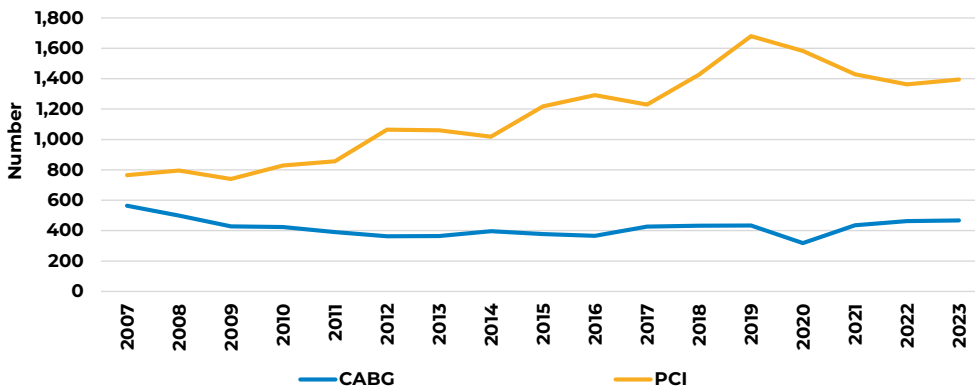
Objective

To evaluate metrics of quality for coronary artery bypass surgery in Newfoundland and Labrador (NL) to match actual practice with best practice.

Methods

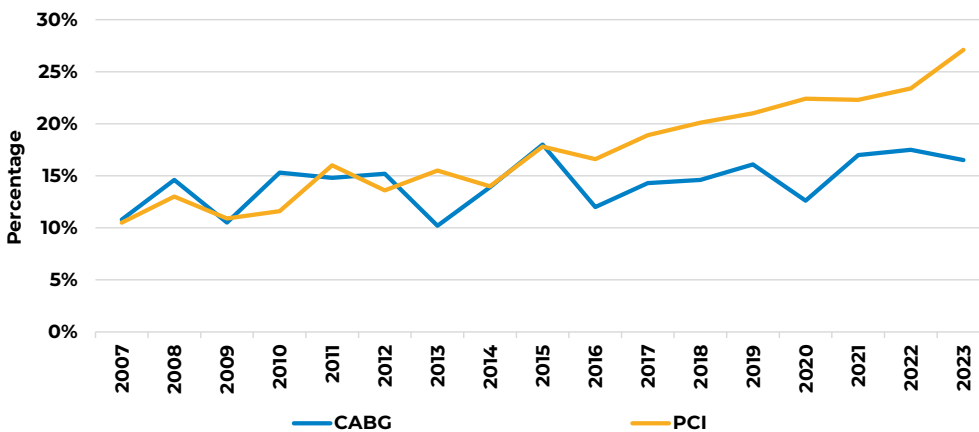
1. Data were obtained from APPROACH (a 16 year old cardiac care database).
2. Metrics for utilization, access, timeliness, and appropriateness were evaluated.

Results



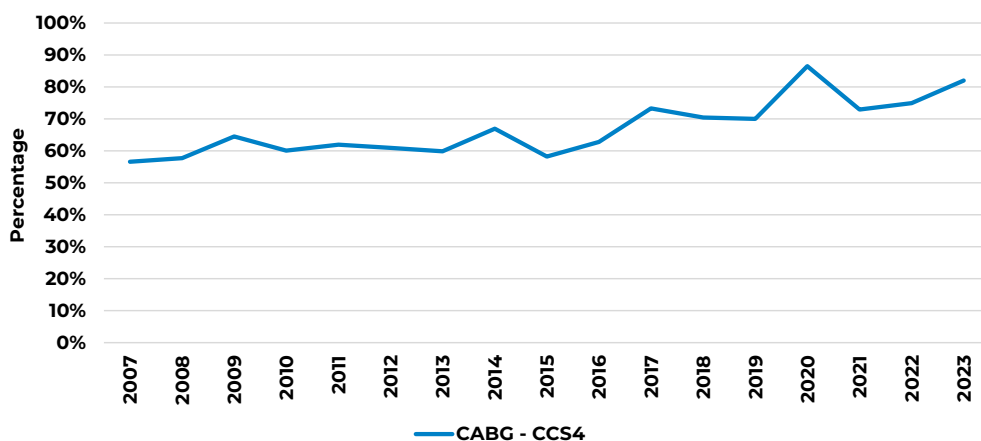
- Increased demand for coronary revascularization is expected from NL's aging population and this demand has been met by PCI but not CABG. In NL, PCI volumes have increased by 82% annually from 2007 to 2023, while CABG volumes have remained around 400 annually.

Figure 1. Percutaneous Coronary Intervention (PCI) and Coronary Artery Bypass Graft (CABG) Totals, 2007–2023



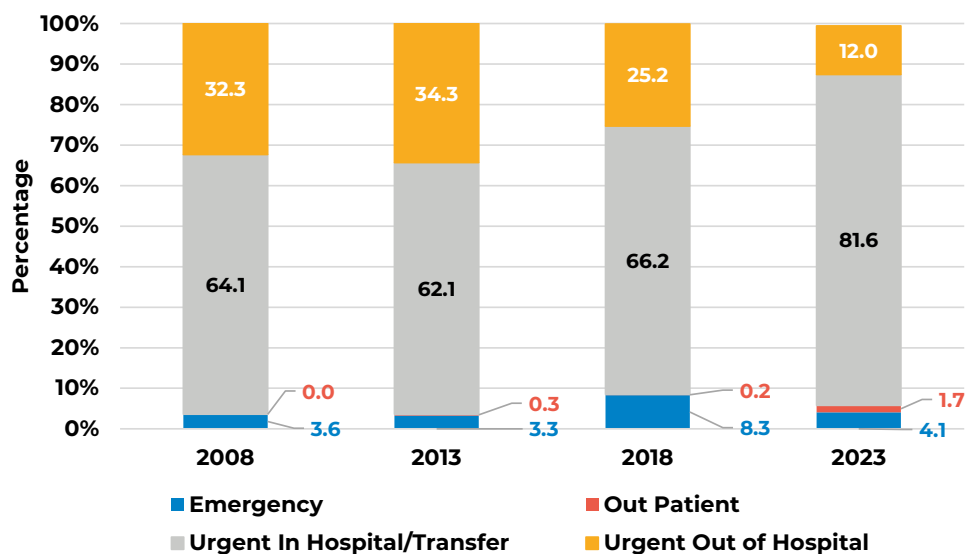
- Over the past 15 years in NL, the percent of CABG procedures performed on patients ≥ 75 years old has fluctuated around 15%, whereas the proportion of PCI procedures on patients ≥ 75 years has increased by 160%.

Figure 2. Percentage of PCI and CABG Procedures Performed on Patients 75 Years or Older, 2007–2023



- The highest angina score on the CCS scale is 4: inability to carry on any physical activity without discomfort; angina symptoms may be present at rest. In NL, the proportion of CABG patients with a score of 4 has increased from 57% in 2007 to 82% in 2023.

Figure 3. Percentage of CABG Procedures Performed on Patients with a Canadian Cardiovascular Society (CCS) Score of 4



- In NL, the proportion of CABG patients who were urgent-in-hospital has increased from 64% in 2008 to 82% in 2023. In 2022, a further 12% of patients were urgent-out-of-hospital and <2% of CABG procedures were elective.

Figure 4. Percentage of CABG Procedures Performed in 5-Year Intervals by Priority

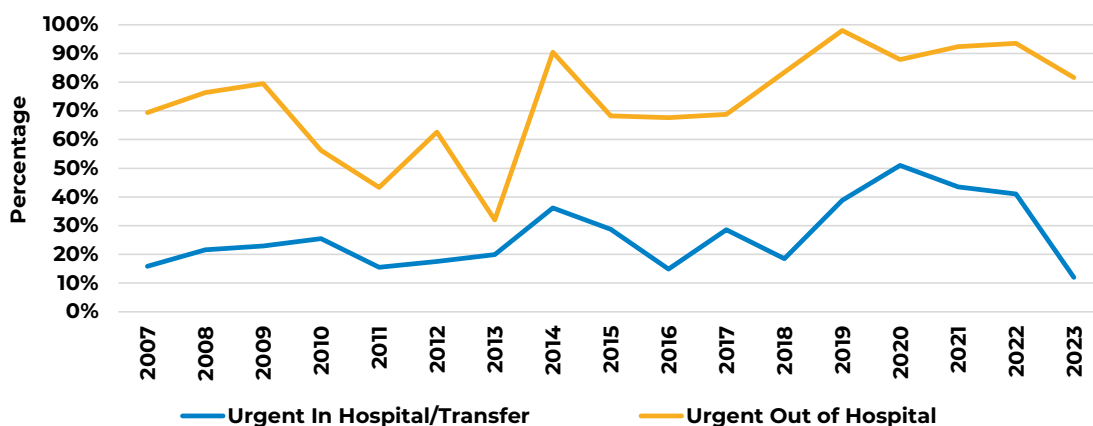


Figure 5. CABG Percentage Over Benchmark Wait Time by Priority

- The benchmark time for CABG from decision to surgery in those who are urgent-in-hospital is 14 days. In 2022, 40% of patients in NL waited longer than 14 days. In 2023, 47.5% of patients in NL waited longer than 14 days and the average length of stay in hospital awaiting CABG was 22 days.
 - The benchmark wait time for urgent-out-of-hospital patients is six weeks. In 2023, 95% of patients in NL waited longer than six weeks.
2. There has been no increase in the annual volume of CABG procedures in the last 15 years and the program fails to operate on its weekly target of 14 patients. In addition, the number of CABG patients ≥ 75 years old has not changed over 15 years.
 3. The length of stay prior to CABG surgery is unacceptable in NL. Stabilization of cardiac surgery and optimal patient care will require a functional, patient-centered, team approach to achieve the target number of surgeries per week.

Conclusions

1. The CABG surgery program in NL is operating virtually as an urgent care program, with the vast majority of patients being urgent-in-hospital and with the highest angina symptom score. In addition, 47.5% of patients wait in hospital longer than the 14-day benchmark wait time. On 24 April 2023, 21 of 44 beds in cardiology were occupied by patients waiting for CABG.
4. Current use of CABG is highly appropriate and has good outcomes. However, very few elective surgeries are undertaken and waitlist numbers are high, implying that the current volume of surgeries should be higher.
5. PCI has provided the increase in coronary revascularization expected as a result of NL's aging population.