Office of the Auditor General of Ontario
Bureau de la vérificatrice générale de l'Ontario

Cardiac Disease and Stroke Treatment 2021 Value-for-Money Audit

Why we did this audit

- In Ontario, there were about 242,000 emergency room visits and 151,000 hospital stays for heart disease and stroke in 2019/20, an increase of about 5% for both compared to 2015/16 data.
- Ministry funding for cardiac and stroke procedures and care grew about from about $942 million in 2016/17 to about $1.1 billion in 2020/21, and increase of about 18%.
- Our Office has never conducted an audit of cardiac disease and stroke treatment in Ontario.

Why it matters

- Due to aging population and unhealthy lifestyles, cardiac disease and stroke have become more common in Canada. Specifically:
  - Cardiac disease and stroke are the second and fourth leading causes of death, respectively.
  - Cardiac disease and stroke were responsible for about 66,000 deaths in 2019.

What we found

Hospitals are Often Not Providing Timely Emergency Treatment of Heart Attacks

- Hospitals are not providing timely emergency treatment for heart attacks.
  - Fewer than 60% of heart attack patients received treatment to reopen the artery and restore blood flow within the treatment-time targets. (Target is 75% within 90 minutes of arriving at a hospital and 120 minutes if the patient has to be transferred to another hospital.)
- Wait lists for cardiac procedures have grown.
  - In the five years before COVID-19, wait lists for cardiac procedures grew about 44%; wait listed patients dying grew about 42%.
  - Since COVID-19, the list grew by over 6%; and patients dying grew by over 10%.

RECOMMENDATION 1, 15

Cardiac Treatment Improvements Not Adopted

- Cost-effective, proven cardiac treatment practices have not been adopted, even though they can shorten hospital stays, reduce hospitalizations and costs, and improve patient outcomes.
  - These practices include remote monitoring, rapid assessment clinics, and integrated comprehensive care.

RECOMMENDATION 2, 3, 4

Cardiac Test Improvements Not Adopted

- A CT-Angiogram is a non-invasive test recommended for certain patients with non-urgent chest pain.
- Only one hospital in Ontario uses this regularly, though many hospitals have the CT scanner and could potentially perform the test.

RECOMMENDATION 5

Cardiac Rehabilitation Care Under-Used

- Cardiac rehabilitation is under-utilized, despite its effectiveness in reducing deaths and health-care costs. A 2017 study by the University Health Network found:
  - the province saved about $3,000 per year per patient with cardiac rehabilitation through reducing the need for other health-care services, such as emergency department visits.
  - only about one-in-three patients completed the majority (at least two-thirds) of their rehab program.

RECOMMENDATION 6

Stroke Emergency Intervention Treatment Not Always Timely

- The target to provide a drug to restore blood flow to stroke patients is within 30 minutes, but the actual median time in 2019/20 was within 45 minutes.
- The target to remove blood clots from the brain is within 60 minutes of a patient's arrival at hospital, but the actual median time during the first two quarters of 2020/21 was within 75 minutes.

RECOMMENDATION 7

Low Awareness of Stroke Signs and Stroke Hospital Care

- In 2020/21, provincial funding for a stroke awareness program ceased, despite the need to increase public understanding of signs of a stroke and appropriate actions to take such as which hospital can best treat an emergency stroke.
  - There are 28 stroke centres in Ontario – not every hospital in Ontario is classified as a stroke centre.
  - In 2019/20, over 11,900 (about 30%) of stroke patients did not seek care from a hospital (such as a stroke centre) that is well-equipped for stroke treatment.
  - only 54% of stroke patients were treated in designated stroke units, despite the 75% target set by CorHealth.

RECOMMENDATION 8

Stroke Test Not Adopted

- Of the 44 hospitals that CorHealth identified should use CT-Perfusion diagnostic test to determine appropriate stroke treatment, only 16 of them have been doing so.

RECOMMENDATION 9

Insufficient Availability of Stroke Rehabilitation Treatment Time

- The median amount of inpatient stroke rehabilitation was only about 69 minutes per day in 2019/20, about 60% below the 180-minute target
  - some providers offer only 30 minutes or less per day
- Stroke survivors aged 20 to 64 who require physiotherapy but who are not hospitalized are still being turned away from publicly funded physiotherapy at community physiotherapy clinics.

RECOMMENDATION 10

Inability to Transfer Cardiac and Stroke Patients

- Hospitals are not able to transfer cardiac and stroke patients to other settings like inpatient rehabilitation or long-term care, which may be more appropriate.
- The province could have saved over $150 million in 2019/20 if these patients had been transferred to an appropriate care facility.

RECOMMENDATION 11

Lack of Authority of CorHealth to Improve Care

- CorHealth has limited authority to improve cardiac disease and stroke care. It cannot:
  - require hospitals to follow standards or adopt any best practices; and
  - direct or modify funding to encourage performance improvement.

RECOMMENDATION 12

Different Costs for Same Cardiac Supplies and Equipment Due to Procurement Practices

- The difference in price that Ontario hospitals pay for the same types of cardiac supplies and equipment can vary by as much as 367% because hospitals procure their own supplies and equipment instead of coordinating provincially.
- Funding rates for cardiac procedures should be reviewed annually; however, the last comprehensive review of these rates was in 2006/07.
  - Due to outdated funding, some hospitals have been delaying some procedures to the next year when additional dedicated funding will be provided.

RECOMMENDATION 13, 14

Conclusions

- Cardiac disease and stroke treatment is generally being provided in alignment with bet practice standards and guidance. The overall mortality following cardiac and stroke events in Ontario is similar to, or better than the average of the other Canadian provinces.
- However, hospitals are often not providing timely emergency treatment for heart attacks, which risks permanent heart damage for patients.
- The Ministry, with CorHealth and hospitals, does not have fully effective systems and procedures for timely, equitable and cost-efficient cardiac and stroke services.
  - Cardiac urgent and emergency procedures were generally done within the treatment-time targets, but such targets were met less often for emergency procedures for heart attacks as well as semi-urgent and non-urgent procedures.
  - Stroke procedures took longer to provide than treatment-time targets; key targets for stroke patients treated on designated stroke units, and inpatient stroke rehab care were not met.
  - The ability to transfer cardiac and stroke patients to alternative appropriate settings as soon as patients were medically cleared for discharge would result in significant hospital savings.
- Ministry measurement and reporting on the results and effectiveness of key cardiac disease and stroke services and initiatives through CorHealth Ontario could be expanded. For example,
  - The Ministry did not require cardiac rehab providers to track or report the number of referrals or the number of patients who complete programs.