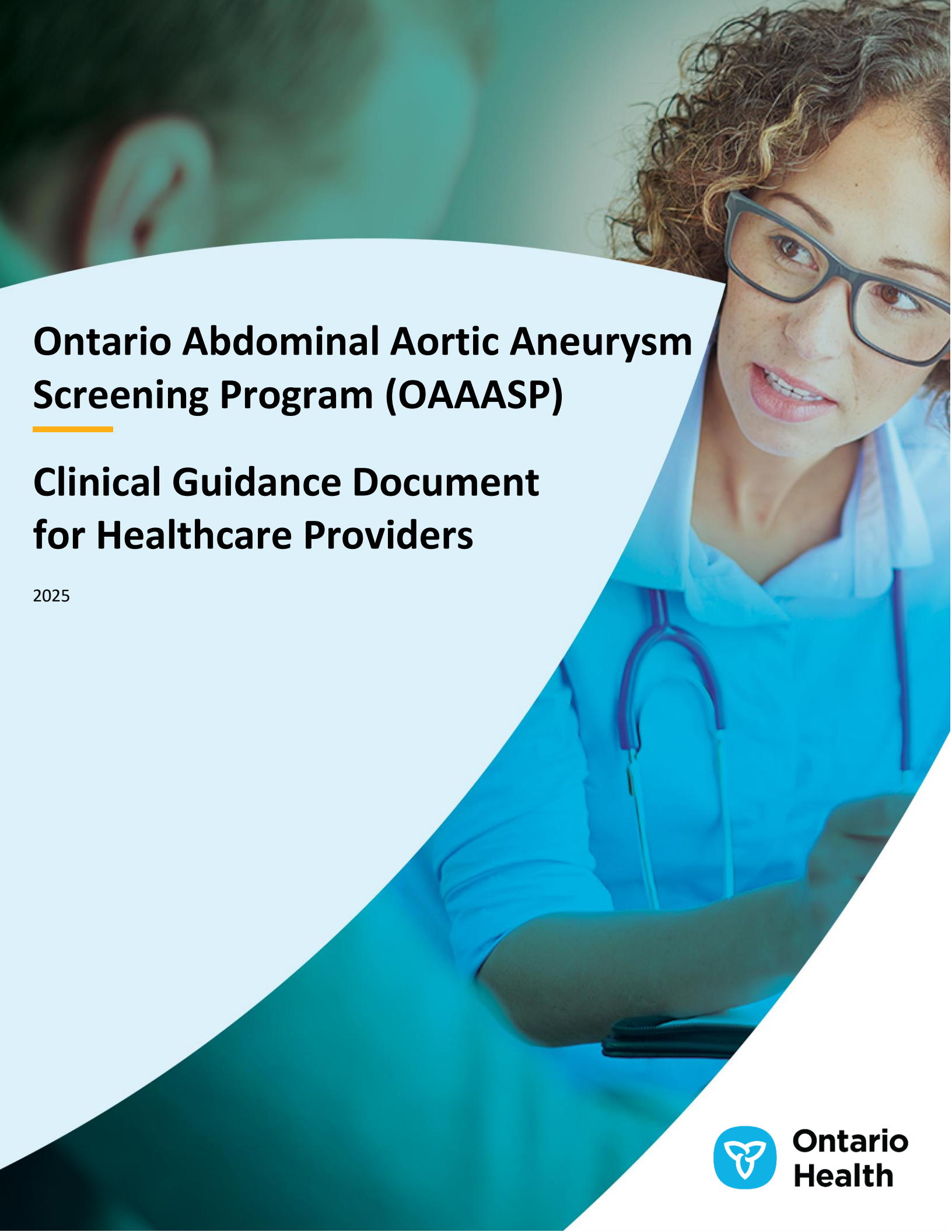


Ontario Abdominal Aortic Aneurysm Screening Program (OAAASP)

Clinical Guidance Document for Healthcare Providers

2025

Ontario Health

Table of Contents

1. What is the Ontario Abdominal Aortic Aneurysm (AAA) Screening Program?

What is an Abdominal Aortic Aneurysm (AAA)?

- The heart pumps blood to the abdomen and lower body through the aorta, the body's largest blood vessel. This vessel carries oxygen-rich blood to essential organs. In adults, a normal abdominal aorta is about 2-2.5 cm wide.

- An abdominal aortic aneurysm (AAA) is when the abdominal section of the aorta expands to over 3 cm, roughly 1.5 to 2 times its normal size. An aorta measuring 2.5-3 cm is considered "ectatic" and may eventually develop into an AAA. Although AAAs usually grow slowly, at a rate of 1-5 mm per year, regular surveillance is needed. Intervention is often considered when an AAA reaches 5.5 cm in men and 5 cm in women.

- Most AAAs are asymptomatic until they are about to or have already ruptured, and a ruptured AAA is often fatal.

Importance of early detection and screening

- Physical exams alone are usually ineffective for detecting AAAs, so many cases are missed or only found by chance during imaging for other issues.

- There remains an opportunity to improve early detection and prevent ruptures. Most patients with a ruptured AAA were unaware they had the condition, highlighting a need for better screening practices.

- Screening for an AAA has several key benefits for both patients and the healthcare system:
    - It reduces AAA ruptures, lowers mortality, and is cost-effective for both men and women.
    - Early detection allows clinicians to educate patients and address cardiovascular risk factors common to other heart conditions.
    - It enables screening for first-degree relatives who may be at risk.
    - It provides the option for elective endovascular aneurysm repair (EVAR), a minimally invasive procedure that usually takes just over an hour, requires minimal anesthesia, and typically has a hospital stay of less than 24 hours without ICU care.

- The number needed to screen (NNS) to prevent one AAA-related death in men and women aged 65 [1](222 and 588 respectively) is as effective as many well-established cancer screening programs including Fecal Occult Blood Testing (FOBT) (377), Prostate Cancer (1410), and Breast Cancer (1724).

- With abdominal ultrasounds for AAA screening being widely available, non-invasive, quick, and accurate, it remains a highly effective method to reduce deaths of AAA patients in Ontario.[2]

Ontario Abdominal Aortic Aneurysm (AAA) Screening Program

- Beginning in June 2025, men and women turning 65 will receive a letter inviting them to get screened for AAA. They will be required to schedule an appointment with their primary care provider, who will create a referral for a limited study abdominal ultrasound.

- Once the ultrasound has been completed, the results will be sent to the primary care provider for review and appropriate follow up. See screening pathway below.

2. Who is eligible for AAA Screening?

Current recommendations for AAA screening

- Current recommendations are primarily derived from 4 large, randomized control trials (RCTs), population level health studies, and other center-level experience.

- Canadian, American, and international guidelines generally agree on recommendations for men but differ somewhat for women. Men aged 65–80 are generally advised to have a one-time abdominal ultrasound for AAA screening.

- Screening high-risk women for AAA is beneficial, as 20-25% of AAA surgeries, including emergency intervention for ruptures, involve women. Although AAA is less common in women, it is more deadly; women have a higher risk of rupture, often at smaller sizes, with worse outcomes.

[1] Kapila V, Jetty P, Wooster D, Vucemilo V, Dubois L; Canadian Society for Vascular Surgery. Screening for abdominal aortic aneurysms in Canada: 2020 review and position statement of the Canadian Society for Vascular Surgery. *Can J Surg*. 2021;64(5)
. doi:10.1503/cjs.009120

[2] Vervoort D, Hirode G, Lindsay TF, Tam DY, Kapila V, de Mestral C. One-time screening for abdominal aortic aneurysm in Ontario, Canada: A model-based cost-utility analysis. *CMAJ*. 2024;196(4). doi:10.1503/cmaj.230913

- Women were mostly excluded from major AAA screening studies, but recent Ontario research shows screening is cost-effective for women. Screening is recommended for women aged 65-80, especially those who smoke, have a family history of AAA, or a history of cardiovascular disease.[3]

Identifying risk factors for AAA

- Risk factors for AAA development include smoking, male-sex, age, hypertension, dyslipidemia, and family history. These risk factors overlap with those for other cardiovascular diseases like coronary and carotid artery disease, and peripheral artery disease.

- Viewing AAA as part of broader cardiovascular diseases helps identify opportunities for screening, prevention, and treatment of related conditions.

- Smoking is a significant modifiable risk factor for AAA development and growth, so smoking cessation support is an essential therapy for managing AAA.

3. Which imaging modalities should I refer my patients to for accurate AAA screening?

Abdominal Ultrasound for AAA screening

- A focused/limited study abdominal ultrasound is the preferred initial screening method for AAA because it is non-invasive, accurate, widely available, and radiation-free. It typically takes 10-15 minutes and is accessible at most facilities in Ontario.

- Although certain factors like large body habitus or bowel gas can affect views of the aorta, ultrasound should always be the first choice, with other screening modalities used only if needed, such as CT or MRI.

[3] Canadian Task Force on Preventive Health Care. (2017). Recommendations on screening for abdominal aortic aneurysm in primary care. *CMAJ*, *189*(36), E1137–E1145. https://doi.org/10.1503/cmaj.170118

4. How can I play a role in supporting my patient's decision to screen for AAA?

- As a primary care provider, you remain the most important component of any screening program. Engaging patients in shared decision-making and informing them about the benefits and risks of screening can improve participation, while also noting that most screened patients will not have an AAA.

- Remind patients that the NNS for AAA detection with ultrasound is as effective as many cancer screenings. Emphasize the availability, safety, and accuracy of this quick, focused ultrasound.

- Since AAA is often related to smoking, offer support for smoking cessation to improve health outcomes. Encourage lifestyle changes and risk factor management, including hypertension management, lipid control, a heart-healthy diet, and exercise, due to the overlap with other cardiovascular diseases.

5. What do I do if my patient has an abnormal screening result?

- Approximately 1-5% of eligible patients screened are diagnosed with an AAA, though this rate may be decreasing due to better risk factor management, such as reduced rates of smoking. However, AAA ruptures, deaths, and repair rates have stayed relatively constant.

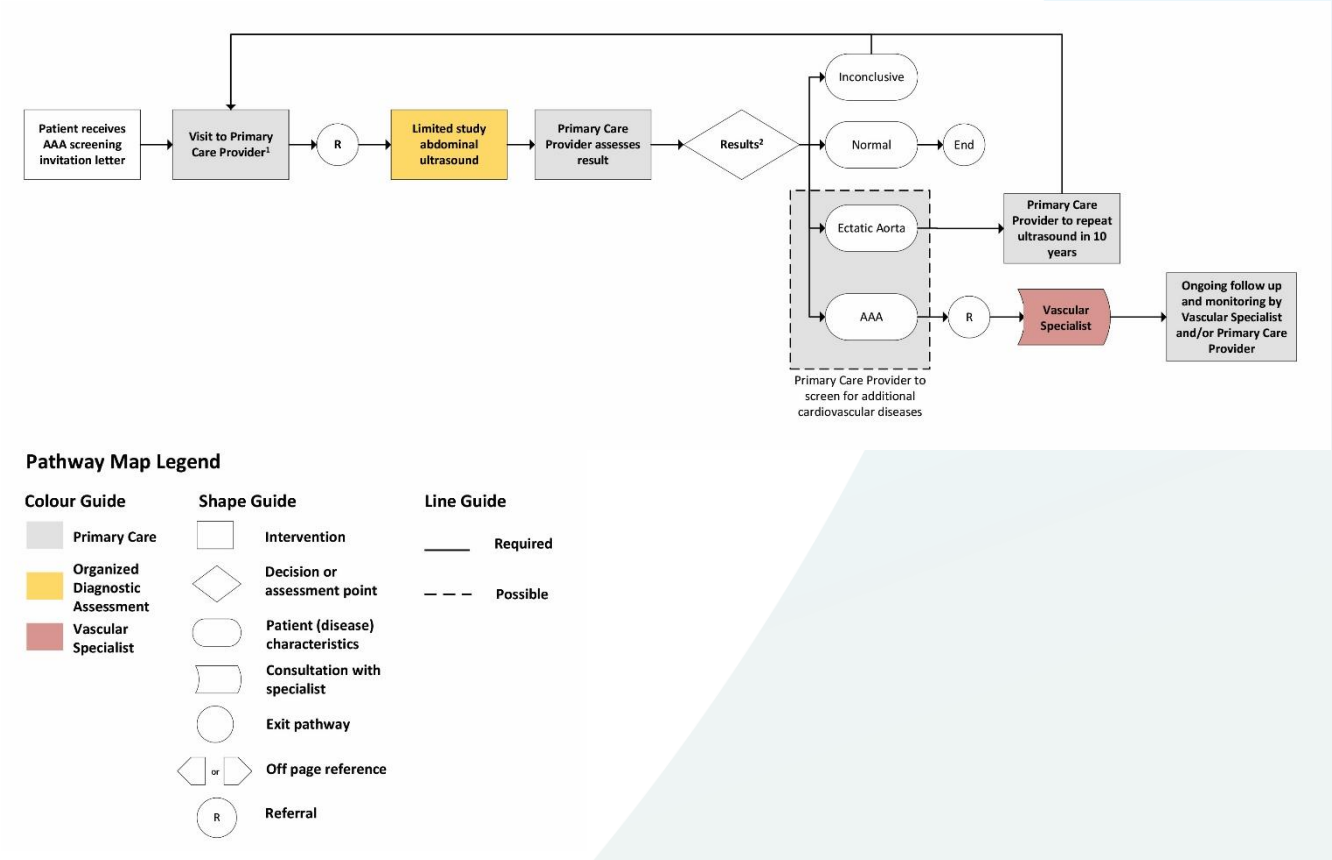
- If your patient has an abnormal screening result, refer them to one of Ontario's 20 designated vascular programs across the 6 health regions. These programs offer 24/7 access to world class vascular care, with vascular surgeons, interventional radiologists, and other care-providers available to ensure timely treatment for patients with AAA.

Ontario Health Region	Ontario Hospitals with Designated Vascular Programs	Hospital Site	Vascular Program Level
Central	Oakville Trafalgar Memorial Hospital	Oakville Trafalgar Memorial Hospital	Level 2
	Royal Victoria Hospital	Royal Victoria Hospital	Level 2

Ontario Health Region	Ontario Hospitals with Designated Vascular Programs	Hospital Site	Vascular Program Level
	Southlake Regional Health Centre	Southlake Regional Health Centre	Level 2
	Trillium Health Partners	Mississauga Hospital	Level 1
	William Osler Health System	Brampton Civic Hospital	Level 2
East	Kingston Health Sciences Centre	Kingston General Hospital	Level 1
	Peterborough Regional Health Centre	Peterborough Regional Health Centre	Level 2
	The Ottawa Hospital	Ottawa Civic Hospital	Level 1
Northeast	Health Sciences North	Health Sciences North	Level 1
Northwest	Thunder Bay Regional Health Sciences Centre	Thunder Bay Regional Health Sciences Centre	Level 2
Toronto	Humber River Hospital	Humber River Hospital - Wilson Site	Level 2
	Scarborough Health Network	Scarborough General Hospital	Level 2
	Sunnybrook Health Sciences Centre	Sunnybrook Health Sciences Centre - Bayview Campus	Level 1
	Unity Health Toronto	St. Michael's Hospital	Level 1
	University Health Network	Toronto General Hospital	Level 1
West	Guelph General Hospital	Guelph General Hospital	Level 2
	Hamilton Health Sciences Centre	Hamilton General Hospital	Level 1
	London Health Sciences Centre	London Health Sciences Centre - University Hospital	Level 1
	Niagara Health System	Niagara Health - St. Catharines Site	Level 2
	Windsor Regional Hospital	Windsor Regional Hospital - Ouellette Campus	Level 2

6. For More Information
(Resources for Healthcare Providers)

Executive Summary of the Screening Pathway



References and Guidelines for Further Reading

Kapila V, Jetty P, Wooster D, Vucemilo V, Dubois L; Canadian Society for Vascular Surgery. Screening for abdominal aortic aneurysms in Canada: 2020 review and position statement of the Canadian Society for Vascular Surgery. *Can J Surg*. 2021;64(5)
. doi:10.1503/cjs.009120

Vervoort D, Hirode G, Lindsay TF, Tam DY, Kapila V, de Mestral C. One-time screening for abdominal aortic aneurysm in Ontario, Canada: A model-based cost-utility analysis. *CMAJ*. 2024;196(4). doi:10.1503/cmaj.230913

Abbreviations and Acronyms

AAA	Abdominal Aortic Aneurysm
CT	Computerized Tomography
EVAR	Endovascular Aneurysm Repair
FOBT	Fecal Occult Blood Testing
ICU	Intensive Care Unit
MRI	Magnetic Resonance Imaging
NNS	Number Needed to Screen
RCT	Randomized Control Trial
US	Ultrasound

Acknowlegements

We would like to thank the following individuals and committees for their contributions to this document:

Name	Organization
Dr. Varun Kapila	Provincial Clinical Lead, Vascular Ontario Health
Dr. Elizabeth Muggah	Senior Clinical Advisor, Primary Care Ontario Health
Ontario Health Vascular Services Table (OH VST)	Ontario Health
Ontario Health Primary Care Leadership Table (OPCLT)	Ontario Health