



Challenge

Every day in Canada, health care providers order, perform, and analyze important diagnostic medical imaging tests using medical isotopes. The isotope technetium-99m (^{99m}Tc) is involved in about 80% of these tests. It is used in imaging for a broad range of medical conditions, including tests for heart disease, cancer, and bone fractures.



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^{99m}Tc comes from a small number of nuclear reactors and can be subject to periods of constrained supply.

Canada and much of the world experienced recent shortages of ^{99m}Tc stemming from the shutdown of the National Research Universal (NRU) reactor in Chalk River, Ontario.

It is important that ^{99m}Tc be managed as efficiently and effectively as possible during a supply disruption so that Canadians can continue to rely on timely and effective diagnostic imaging.

Project

The Canadian Agency for Drugs and Technologies in Health (CADTH) is undertaking a multifaceted project to support greater efficiency and effectiveness in the health system management of ^{99m}Tc .

CADTH will be evaluating a variety of clinical uses of the isotope to assess the priority uses and how ^{99m}Tc compares with other medical imaging options. CADTH will consider factors such as availability and cost of ^{99m}Tc versus alternative medical imaging options.

The goal is to provide decision-makers in the Canadian health care system with evidence-based guidance on policies, protocols, and standards related to ^{99m}Tc that help support access to appropriate medical imaging for Canadians. The guidance document is being designed to support various levels of the health system:

- Federal/provincial/territorial governments
- Health regions
- Hospitals and other health institutions
- Health care providers
- Patients and the public.

Health Canada has allocated \$3 million for this two-year study, which is expected to conclude in March 2012.

Project Components

Given that factors such as the availability of alternative imaging options vary between jurisdictions, CADTH is gathering information from across the country. The Agency will secure input and insight from a variety of stakeholders in the Canadian health care system, including government policy-makers, senior executives in health regions, and health care institutions, as well as front-line care providers. CADTH will also be consulting with stakeholders at key phases throughout the project.

The project has six principle components:

- **Environmental Scans** — Short reports on current or emerging issues in health care technology. These scans include limited literature reviews or surveys of health care decision-makers. Each report provides background information to support the medical isotopes project.

- **Research and Guidance Development** — Evidence reports are produced and information is synthesized into a single document. CADTH is using a multi-criteria decision analysis (MCDA) approach for this specific project. The MCDA approach will be used as a tool to assist in the development of a list of priority uses for ^{99m}Tc .
- **Knowledge Exchange** — Identification and engagement of stakeholders occurs throughout the project. Knowledge Exchange efforts include understanding stakeholder needs, and engaging and informing stakeholders during the project.
- **Current Utilization Analysis** — A utilization analysis is performed to estimate the quantity of ^{99m}Tc used in practice in Canada and to examine the patterns of use with respect to time, geographic location, age, and sex of patients.
- **Identification of Gaps and Key Messages** — Data derived from the Current Utilization Analysis is compared with the evidence-based optimal use guidance to identify practice and knowledge gaps. Key messages are developed to address these gaps.
- **Implementation Tools, and Implementation Support and Evaluation** — To facilitate uptake of the guidance document in the health care system, CADTH will develop various Knowledge Exchange tools to aid stakeholders in implementing the project findings. The type of tools produced will be determined by the guidance document and stakeholder needs. The project will also include a formal evaluation.

Stakeholders may receive more than one request for information during different project phases.

Advisory Committee

CADTH has assembled a committee of 23 distinguished representatives from health professions, institutions, regions, ministries of health, the public, and experts in scientific research and methodology. The [Medical Isotopes and Imaging Modalities Advisory Committee](#) (MIIMAC) will provide oversight for the project, and help CADTH develop guidance on optimal policies, protocols, and standards for managing ^{99m}Tc for diagnostic imaging.

National Guidance

A key outcome of the medical isotopes project is the publication of a national guidance document summarizing the findings, analysis, and guidance of CADTH and MIIMAC. The document will be complemented by knowledge exchange tools designed to help health care decision-makers understand and implement the guidance. These tools will be posted on CADTH's website as they become available.

Questions?

Email: info@cadth.ca

The Canadian Agency for Drugs and Technologies in Health is a national body that provides Canada's federal, provincial, and territorial health care decision-makers with credible, impartial advice and evidence-based information about the effectiveness and efficiency of drugs and other health technologies.
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