Consultation on Improving Access to Drugs and Other Health Products in Canada

The Canadian Association of Radiologists welcomes the opportunity to provide feedback and recommendations on the challenges and opportunities as it relates to drug and health product shortages in Canada.

Canadians deserve a healthcare system that delivers timely and effective care. A key component of that delivery is medical imaging services. To achieve safe and effective execution of medical imaging in Canada, the availability of certain health products is essential. Over the past several years, there have been shortages of these resources, threatening the provision of medical imaging services for Canadians. These shortages are largely due to under investment and unreliable production of materials which have been further exacerbated by extended plant maintenance outages, supply chains interruptions impacted by geopolitical issues including COVID-19 and international conflicts.

Specifically, shortages of medical imaging equipment are of major concern as medical imaging backlogs continue to grow. Additionally, iodinated contrast media (Iohexol and Iodixanol) and helium have faced global shortages, thus inhibiting radiology departments and specialists' ability to deliver essential healthcare services to patients.

Recent Examples of Medical Imaging Resource Shortages

Medical Imaging Equipment

Access to timely medical imaging (MI) has been an ongoing issue for Canadians for years. With a shortage of MI equipment, patients have been waiting an exorbitant amount of time for these lifesaving procedures. The COVID-19 pandemic further exacerbated the situation. Canadians who postponed diagnostic imaging and necessary follow-up treatment are in more urgent need of care. Combined with an aging population, this has created a massive influx of patients, worsened by the number of people requiring more extensive treatment due to delayed diagnoses and worsening conditions. This demand, combined with capacity limitations in radiology departments will combine to hinder our healthcare system if we do not act now.

Prior to the pandemic, Canadians were waiting an average of 50 to 82 days for CT scans and up to 89 days for MRI imaging. This is 20 to 52 days longer than the recommended 30-day wait time for these potentially lifesaving modalities. During the pandemic, waitlists lengthened, creating dire circumstances for people needing cancer screening, or patients requiring treatment or ongoing management of their disease.

Pandemic realities have piled on to existing healthcare pressures associated with a growing population of aging and older adults. Radiology departments across the country are seeing a massive influx of patients, beyond existing waitlists for imaging in Canada. Our healthcare system is not equipped to handle this capacity: we are at risk of leaving many patients undiagnosed and untreated. The Canadian Cancer Society (CCS) is advocating for rapid access to care for those suspected of having cancer, with an emphasis on equitable access to screening, diagnostics, and treatment regardless of where someone lives. Lives are at stake. One study predicts the possibility of more than 20,000 additional cancer-related deaths over the next 10 years. However, that could be reduced by almost 80% if the cancer care, including diagnostic, is increased 10% above pre-pandemic levels.

Risk Mitigation Measures

The current backlog is insurmountable, and patients will simply not be seen within an acceptable timeframe. To mitigate the risk facing MI in Canada, we recommend that the Federal Government invest in new equipment, both to replace aging technology and keep pace with growing demand.

Iodinated Contrast Media (ICM)

Iohexol and Iodixanol (Omnipaque, and Visipaque, GE Healthcare) are the predominant iodinated contrast agents in North America. These drugs are given to patients to allow for visualization of blood vessels and organs on medical images such as X-rays or computed tomography (CT) scans. During the COVID-19 pandemic several challenges occurred with the international supply chain of ICMs which created delays in distribution and transportation. This included the GE Healthcare manufacturing shutdown in Shanghai, China due to COVID-19 related lockdowns impacting the production of Omnipaque, and the other major location producing Iohexol and Iodixanol in Cork, Ireland which had to assume many of these unfilled orders dividing supply internationally.

Due to these shortages during the pandemic, facilities across Canada were forced to delay non-urgent CT exams to prioritize major trauma, urgent GI, possible stroke, and critical care patients[1]. Also, many hospitals had to perform medical imaging services without ICM or by using alternative imaging method.

Risk Mitigation Measures

There are both short-term and long-term risk mitigation factors that can help prevent disruption to patient care when it comes to access to ICMs in Canada. In the short-term, the most effective way forward is to coordinate and communicate with local, regional, and provincial leads on inventory and conservation of the existing ICMs.

This includes:

1) Regularly taking inventory of the amount of contrast on-hand as well as evaluate previous usage and projected usage?

2) Checking with multiple vendors for supply and consider alternative versions of contrast for each clinical scenario.
3) Coordinating within regional areas/health networks to determine if there are opportunities to share existing supplies of IV contrast during this time of limited availability.
4) Evaluating requisitions to determine if alternate imaging modalities can be used without sacrificing diagnostic quality.
5) Where feasible evaluate for the clinical indication, consider scanning without ICM.
6) Where available, consider the implementation of imaging protocols that can optimize contrast dose (i.e., dual energy CT).
7) Implement measures to minimize wastage of ICM.
    a. Optimize contrast dosages to limit waste;
    b. Dosing according to patient body weight; and
    c. Work with institutional pharmacies to determine whether higher volume single-dose vials can be repackaged into smaller dose vials to extend available supply.
8) Avoid reducing ICM dose to an extent that will sacrifice image quality.

In the long-term, the financial investment and expansion of legislation by both the Federal Government and Provinces and Territories to build manufacturing facilities in Canada would help mitigate risk and improve sustainable access to these resources and therefore ensure consistent care for Canadian patients.

Helium

Helium is a precious, non-renewable resource that is a side-product of natural gas production and is used in medical, industrial, and research applications. Its primary use in healthcare settings and research applications is to supercool the large superconducting magnets used in medical magnetic resonance imaging (MRI) scanners and in nuclear magnetic resonance (NMR) spectrometers. Disruptions in the supply chain for helium are a threat to the fields that depend on a consistent supply of liquid helium to function optimally. The diminished availability of helium presents unique challenges and risks, it also creates supply-and-demand issues that cause significant fluctuations in helium pricing. Persistent price increases and disruption in the supply of helium have negatively impacted Canadian helium users.

Risk Mitigation Measures

These disruptions provide an opportunity to develop a national helium supply chain, which will mitigate the risk of ongoing and future global supply chain challenges and price fluctuations for Canadian helium users, while simultaneously promoting the environmental sustainability of the system through funding support for helium recycling and recovery systems.

- We must establish a sustainable, stable, and secure helium (liquid and gas) supply in Canada to overcome these impacts.

- Short and medium-term investments in helium recovery systems would permit the re-use and conservation of helium at a local level.

Long-term investment in large-scale Canadian helium purification and liquefaction facilities would support a "Made in Canada" solution for helium production, distribution, and self-sustainability.

The Government of Saskatchewan's "Helium Action Plan: From Exploration to Exports" outlines their innovative plan to explore, produce, process and export helium.[2] The plan strives to have Saskatchewan produce 10% of the world's helium by 2030. If these goals are achieved and liquefication available, this plan would support all Canadian helium needs and provide a significant surplus for export.

Grants to explore sites and produce helium are already bearing fruit with the North America Helium (NAH) plant in Battle Creek recently becoming operational, and, by the end of 2022, NAH had five sites online. An additional grant to develop an industrial scale liquefication hub would add the potential to optimize the helium supply in Canada.

Ultimately, having a national production facility to fill the gaps during times of crisis would mitigate the remaining risks associated with limited supply. This approach would be effective at a national level and would help to protect significant research investments that have already been made by Canadian and Provincial Governments.

Conclusion

To ensure timely and uninterrupted access to vital medical imaging resources in Canada the government needs to support organized and effective short-term mitigation plans, as well as Made in Canada solutions for long-term access and control. This includes closed national supply chains of helium and ICMs, the development of manufacturing plants in Canada, stockpiles of necessary ingredients where possible as well as contingency plans in case of drug shortage emergencies. All of these short-term and long-term solutions require effective communication between Federal, Provincial and Municipal governments to ensure Canadians are always able to receive timely and accurate medical imaging, which is vital to healthcare and modern health systems.

References

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2. Government of Saskatchewan. Helium Action Plan: From Exploration to Exports. Published online November 2021. Accessed August 8, 2022. https://www.saskatchewan.ca/helium-action-plan#utm_campaign=q2_2015&utm_medium=short&utm_source=%2Fhelium-action-plan