



ACO ADVISORIES

EMERGING TECHNOLOGY

Effective April 25, 2025



Emerging Technology Advisory

Optometry Health Advisory: Emerging Technologies in Eye Care for Alberta Practices

As the field of optometry continues to evolve, emerging technologies are reshaping how eye care is delivered; thus, enhancing diagnostic capabilities, treatment options, and overall patient experiences. These innovations provide significant benefits, such as earlier disease detection and more personalized care. However, as with all new technologies, Alberta's optometrists must approach these advancements with careful consideration of patient safety, effectiveness, and the evolving regulatory landscape.

Exploring practices beyond evidence-based conventional medicine can include approaches not yet part of widely accepted clinical guidelines, such as complementary and alternative medicine, as well as emerging therapies that offer new possibilities for care. When considering such practices, optometrists should ensure they align with the **ACO's code of ethics**, prioritizing patient safety, informed consent, and the responsible integration of innovative care.

Examples of Emerging Technologies in Optometry:

1. **Artificial Intelligence (AI) in Diagnostics:** AI-driven tools are being integrated into diagnostic equipment to assist in analyzing retinal scans and other eye images with greater accuracy. These systems may detect early signs of conditions like diabetic retinopathy, glaucoma, and age-related macular degeneration. In Alberta, optometrists may consider AI as a complement to, rather than a replacement for, clinical judgment and expertise, helping to improve diagnostic precision and patient outcomes.
2. **Tele-optometry and Remote Eye Exams:** Tele-optometry allows for remote consultations and certain aspects of eye exams, particularly valuable in rural or remote areas of Alberta. Patients can complete visual acuity tests, upload eye images, and sometimes receive updated prescriptions online. While this technology provides great convenience, Alberta optometrists should ensure that comprehensive eye exams—especially those that require hands-on evaluation of the internal eye structures—are conducted in person to maintain high care standards.
3. **Microcurrent Technology:** Microcurrent stimulation, involving low-level electrical currents, is being explored for treating ocular conditions like dry eye and macular degeneration. While promising, its use in optometry remains under regulatory and clinical scrutiny. Clinical evidence remains limited. Use caution and rely on peer-reviewed research when considering microcurrent therapy.

Considerations for Alberta Optometrists and Patients:

- **Patient Education:** Alberta optometrists should educate patients about the potential benefits, limitations, and risks of emerging technologies. Informed consent is critical, especially for patients considering new treatments or diagnostic tools. Clear communication is essential to ensure patients understand how these innovations may impact their care and outcomes.

- **Cost and Accessibility:** While new technologies can significantly improve patient care, they may come with high costs, which can impact both patients and clinics. Alberta optometrists should assess the affordability and accessibility of emerging technologies, ensuring that they align with provincial health policies and insurance coverage where applicable.
- **Cost and Accessibility (2):** While emerging technologies may offer promising benefits to patient care, they can also involve significant costs and uncertain outcomes. Alberta optometrists should carefully evaluate the **risk-to-benefit ratio**, considering both the clinical value and financial impact on patients and clinics. Adoption should align with **provincial health policies, insurance coverage**, and the overall **accessibility and affordability** of care.
- **Data Privacy and Security:** As tele-optometry and AI-driven tools collect patient data, ensuring privacy and security is a top priority. Alberta optometrists must comply with provincial privacy laws, such as the **Personal Information Protection Act (PIPA)**, and the **Health Information Act (HIA)** to protect patient data when using these technologies.
- **Regulatory Compliance:** Many emerging technologies are still subject to rigorous testing and regulatory approval. Alberta optometrists must ensure that any new technology they adopt complies with both provincial regulations and Canadian healthcare standards. It is essential to stay informed about ongoing clinical trials and new approvals from agencies like Health Canada.

Final Thoughts:

Emerging technologies in optometry hold tremendous potential to enhance patient care in Alberta. By improving early diagnosis, streamlining treatment, and offering personalized solutions, these innovations can lead to better outcomes for patients. However, it is essential for Alberta optometrists to balance the integration of these technologies with clinical expertise, patient safety, and regulatory compliance.

Optometrists should remain committed to staying informed about advancements in the field, ensuring that new technologies are adopted responsibly. As always, patients should be encouraged to discuss any new technologies or treatment options with their optometrist to make informed decisions about their eye health.

By integrating the latest technologies while adhering to Alberta's healthcare standards, optometrists can continue to provide high-quality care that benefits all patients across the province.