Generative Artificial Intelligence in Clinical Practice: Real Applications and Opportunities for Belize

Inteligencia Artificial Generativa en la práctica clínica: aplicaciones reales y oportunidades para Belice

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Abstract

Generative artificial intelligence has gone from being a technological novelty to becoming a practical tool for medicine. This editorial discusses how it can be applied in primary care and chronic disease management in Belize, a country with unique cultural, linguistic, and healthcare access characteristics. Specific examples of available tools are presented, and the advantages of their responsible use are highlighted: alleviating the administrative burden on physicians, improving patient education, and optimizing the monitoring of conditions such as diabetes and hypertension. GAI does not replace clinical judgment, but it can become a strategic ally for daily practice in resource-limited settings.

Keywords: Artificial intelligence; Medicine; Belize

Resumen

La inteligencia artificial generativa ha pasado de ser una novedad tecnológica a convertirse en una herramienta práctica para la medicina. Este editorial expone cómo puede aplicarse en la atención primaria y en el manejo de enfermedades crónicas en Belice, un país con particularidades culturales, lingüísticas y de acceso a servicios de salud. Se presentan ejemplos concretos de herramientas disponibles y se destacan las ventajas de su uso responsable: aliviar la carga administrativa del médico, mejorar la educación del paciente y optimizar el seguimiento de condiciones como diabetes e hipertensión. La IAG no sustituye al juicio clínico, pero puede convertirse en un aliado estratégico para la práctica diaria en entornos con recursos limitados.

Palabras clave: Inteligencia artificial; Medicina; Belice

INTRODUCTION

Generative artificial intelligence (GAI), with models such as ChatGPT, Gemini, and Med-PaLM, is already being used in internationally renowned hospitals to write clinical notes, support diagnoses, and facilitate digital patient care. In Belize, where limitations in specialized personnel and inequalities in connectivity persist, GAI represents a unique opportunity to make better use of available resources. Its implementation can be particularly valuable in primary care and chronic disease monitoring, two areas that account for much of the burden on the healthcare system.

Advantages in daily medical practice

The daily work of general practitioners and specialists can be transformed with the use of these tools. For example, AI assistants such as Microsoft Copilot for Healthcare already allow for the automatic generation of progress notes, referrals, and clinical summaries, freeing up time and reducing transcription errors. Platforms such as Glass Health can summarize international guidelines and generate management plans, which are useful in consultations with multiple pathologies. In addition, medical chatbots on mobile phones offer patients quick answers to frequently asked questions and medication reminders, improving therapeutic adherence and reducing unnecessary visits.

Applications in primary care

In rural or community clinics, AI has immediate value. Digital triage systems allow patients to be guided according to their

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symptoms, prioritizing urgent cases. AI-assisted translation facilitates communication in English, Spanish, Kriol, and Mayan languages, ensuring more equitable access to medical information. In addition, automated reminders via messaging, integrated into clinic schedules, help reduce absenteeism and improve coverage in vaccination and prenatal care programs.

Support in managing chronic diseases

IAG can be a valuable tool for controlling prevalent diseases in Belize. Applications such as MySugr, which integrate data from glucometers and generate automatic reports, support diabetes monitoring. In hypertension, messaging systems allow blood pressure to be recorded and remind patients to take their medication, reducing treatment abandonment. For patients with asthma or COPD, digital platforms help detect early crises and adjust management based on objective data. In the field of mental health, psychoeducational chatbots such as Woebot expand access to emotional support tools in communities with limited availability of specialists.

Considerations for Belize

The advantages of integrating AGI include reduced administrative burden, improved continuity of care in rural areas, and the possibility of offering multilingual education to patients. A pilot experience was recently published comparing the detection rate of diabetic retinopathy in a resource-limited area in Belize, before and after the implementation of an AI Fundus Photograph analysis. The detection rate increased significantly in the Post-AI period. This innovative approach can be integrated into primary care settings, with technicians capturing images quickly and efficiently and reducing the need of ophthalmologists in the field.

However, the challenges are significant: irregular connectivity, the need for validation in local contexts, and the risk of errors if there is no medical supervision. A viable strategy would be to start with pilot projects in public and private clinics, evaluating their safety, acceptance, and benefits before moving toward wider adoption.

CONCLUSION

AI should not be viewed as a threat or a panacea, but rather as a complementary resource that can be responsibly integrated into medical practice. Adopted with caution and professional oversight, it can become an ally in improving the quality and accessibility of care in Belize. This is an opportune moment for the local medical community to share experiences and best practices, contributing to a future in which artificial intelligence is a true support to clinical work.

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