REVOLUTIONIZING INFORMED CONSENT:

INTEGRATING AI AVATAR TECHNOLOGY TO ENHANCE CLINICAL COMMUNICATION

Yusuke Watanabe MD, PhD[1, 2]

1 Hokkaido University Hospital Institute of Health Science Innovation for Medical Care 2 Department of Advanced Robotic and Endoscopic Surgery, Fujita Health University

HOKKAIDO UNIVERSITY

Background

In-person informed consent (IC) is a critical component of clinical practice and research, yet it poses significant challenges, such as time constraints and considerable demands on healthcare professionals. Recent advancements in digital technologies, including artificial intelligence (AI) and large language models (LLMs), offer promising solutions to address these issues and improve the efficiency of IC procedures. In response, we developed an innovative digital avatar-based system utilizing generative AI technologies to streamline and enhance the IC process. This study describes the system's development and reports its preliminary impact on the efficiency and quality of IC.

Methods

Key challenges in traditional IC procedures, such as prolonged duration and the need for personalized communication, were identified. To address these issues, we developed a system that generates a realistic avatar of the attending physician, capable of delivering customized explanations via video. This system simulates a near face-to-face interaction, providing patients with an experience akin to direct communication with their healthcare provider. A pilot study was conducted to evaluate the system's impact on IC duration, patient satisfaction, and trust in the physician. Data were collected through patient surveys and objective measurements of IC duration before and after the system's implementation.

Results

The AI avatar-based video IC system was utilized by over 600 patients, resulting in a significant reduction in IC time by approximately 40% ($p<0.05$). The use of avatar explanations did not compromise patient satisfaction or trust. Patients who interacted with the avatar system reported positive experiences, including improved understanding and a sense of familiarity with their physician prior to an in-person consultation. The survey indicated no significant concerns or negative feedback regarding the use of AI avatar videos.

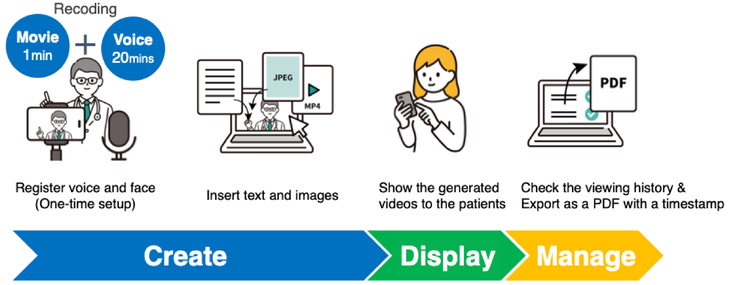
Conclusion

The AI avatar-based IC system demonstrated substantial potential for enhancing the operational efficiency of IC procedures while maintaining high standards of communication quality, patient satisfaction, and trust. Continued integration of emerging digital technologies will be essential for further advancing and optimizing IC processes.

DICTOR | AI-Powered IC Video Generation Platform

Text to Speech Video Generation Technology

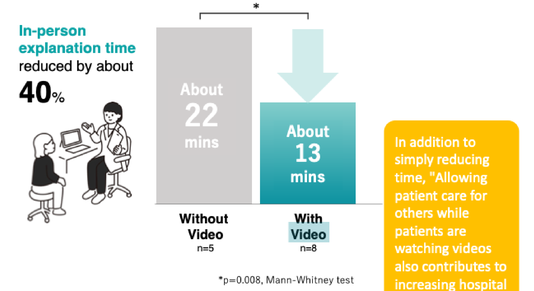
A **web application** that generates a digital clone from the healthcare provider's own voice and face, allowing them to create explanation videos easily based on content needs.



Key features and functionalities (SWOT & MVP analysis):

- **AI-Driven Digital Avatar:** Personalized, natural-looking video explanations using the doctor's own face and voice
- **Easy Editing & Customization:** Enables quick modifications of scripts and insertion of images/videos
- **On-Demand Patient Access:** Web-based platform allows easy video sharing with patients without app installation
- **Viewing Management & Records:** Tracks patient viewership and generates PDF reports for documentation and compliance.

Explanation of GI Surgery | Avatar surgeon videos were implemented for patients undergoing surgery.



Sample videos

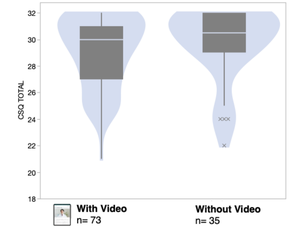
Doc A Japanese ver.

Doc B Japanese ver.

Doc A English ver.

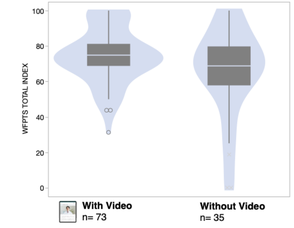
Patients' Satisfaction

Japanese ver. of Client Satisfaction Questionnaire

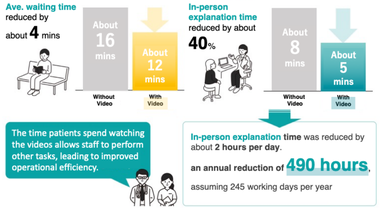


Trust Level

Short Wake Forest Physician Trust Scale



Admission and Discharge Center | Explanation time data for 334 patients was collected over three days each, with/without video implementation. The average workload is 50–60 patients per day.



Implementation at the Admission & Discharge Center

Medical staff can perform other administrative tasks while patients and their families watch the explanatory videos, optimizing workflow efficiency in each situation.



COI This project has been supported by joint research funding from TOPPAN Inc., Japan. The web system developed in this research is currently available on the market under the product name "DICTOR."
https://www.toppan.com/ja/joho/dictor/