# Adoption and Impact of On-Demand Telepresence for Intraoperative Consultation and Lifelong Learning

Authors: Thomas E. Etter, DO[1]; John F. Robertson III, MD[2] Deborah Handler, MSCT, CCRC, NBC-HWC[3]; Gretchen Purcell Jackson, MD PhD[3,4]

1. Cody Surgical Associates, Cody, WY, CA ; 2. John Lawson Surgical Group, Johnson City, TN; . 3. Intuitive Surgical, Sunnyvale, CA; 4. Vanderbilt University, Medical Center, Nashville, TN

## Introduction

Intuitive Telepresence supports secure, real-time, two-way audio and visual communication during surgical procedures and has been widely adopted for pre-scheduled events such as remote proctoring and remote case observations.

In August of 2023, Intuitive enabled On-Demand Telepresence on the da Vinci robotic surgical system to allow remote collaboration for urgent and unplanned collaboration needs. We examined the adoption and impact of On-Demand Telepresence at pilot sites during the first year after release.

## Methods

On-Demand Telepresence was implemented at multiple hospitals within the Ballad Heath System in rural eastern Tennessee; Northeast Georgia Health System, Gainesville, Alabama; St. Vincent Regional Hospital, Billings, Montana; and Cody Regional Health, Cody, Wyoming.

Operating surgeons used On-Demand Telepresence to consult trusted surgeons in their network whenever needed during an operation. With their own devices (e.g., laptop computers or microphone- and camera-enabled hospital workstations), the remote surgeons were able to livestream the console view and operating room environments and to interact with the operating surgeons.

Remote users could point to anatomy using a live cursor. System usage data from August 28, 2023 to November 13, 2024 were analyzed to characterize adoption, and selected surgeons took part in semi-structured interviews about their experiences. The WCG Institutional Review Board approved the study protocol.

## Results

On-Demand Telepresence was launched August 23, 2023 at **Ballad Health**; February 8, 2024 at **St. Vincent Hospital and Health Center**; March 26, 2024 at **Cody Regional Hospital**; and April 18, 2024 at **Northeast Georgia Health System**.

During the study period, On-Demand Telepresence was used at **11 hospitals** and accessed by a total of **14 operating** and **19 remote surgeons**. A total of **29 hours** of On-Demand Telepresence were utilized in **41 unique sessions**, with an **average session duration** of **46 (+54.2) minutes** with a range of 4 minutes to 3 hours and 23 minutes. At all sites, experienced robotic surgeons were able to support their colleagues with interactions that varied from providing a brief second opinion and reassurance to extensive guidance in managing complex cases. Several surgeons reported receiving direction that enabled completion of complex cases and avoided conversion to open operations or reoperation.

One mid-career surgeon adopting robotic surgery in an underserved, rural area had On-Demand Telepresence available from his very first case. This surgeon rapidly mastered the robotics platform with readily available On-Demand interactions that increased confidence and allowed him to take on complex procedures in his first few weeks of robotics practice. On-Demand Telepresence support accelerated his learning curve and enabled the level of expertise and collaborative decision making that is typically only available in tertiary academic medical centers.



## Conclusions

In the first year after release, On-Demand Telepresence allowed surgeons to get immediate intraoperative consultations in situations where prompt in-person engagement would not have been possible.

The use of On-Demand supported increased access to state-of-the-art expertise and care in rural communities. Adoption of On-Demand Telepresence can improve patient experiences, clinical outcomes, and health equity.