Intuitive Hub: A Multimedia Platform to Support Surgical Education and Lifelong Learning

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Objective

The Intuitive Hub platform is a point-of-care media-management solution that enables capturing, editing, streaming, and sharing of images and videos to facilitate patient care, surgical training, and peer-to-peer education and collaboration. Media content is accessible through web and mobile applications, and a variety of tools support media management, live streaming, and telepresence.

Description of Technology

Intuitive Hub is touchscreen computer that can record video and images from da Vinci robotic surgical systems and other sources within a health-system environment.

The Hub Media Server integrates data and media from Intuitive Hub and enterprise-wide information technology sources, such as electronic health records (EHRs) and Picture Archiving and Capture Systems (PACS).



Methods of Use

A media management application provides immediate and secure access to images and videos through a web portal.

When paired with da Vinci systems, Hub enhances video capture through automating the start of video recording with camera activation and bookmarking of key events such as telestration, Firefly, or instrument use.

The telepresence functionality supports real time audio and video streaming by remote users from their own devices and permits interactions among observers and operating surgeons throughout the case.

Remote observers can communicate with surgeons and operating room personnel and add illustrations to the live view.

Preliminary Results

The Intuitive Hub Platform was released in July 2021 and implemented at Ballad Health System in January 2022, with access available at five hospitals in the tri-city region of northeastern Tennessee: Bristol Regional Medical Center, Franklin Woods Community Hospital, Holston Valley Medical Center, Indian Path Community Hospital, and Johnson City Medical Center.

Preliminary Results

1,252 da Vinci robotic surgical cases recorded by Hub

42 unique surgeons have logged at least 1 case

13 surgeons have logged onto Hub a total of **473** times (mean 34, range 1-233) and spend an average of **39** minutes on the app

As of 3/15/2023

Surgeons estimate Hub tools have reduced by half the amount of time to review and edit videos. The Intuitive Hub Platform has enabled the launch of monthly case-review meeting where surgeons review and discuss surgical videos to enhance training and peer-to-peer teaching. This meeting is attended by regional surgeons from across the integrated delivery network and local surgical trainees. A library of videos of recent and “favorite” cases has been established to allow residents to prepare for operating with dozens of different attending surgeons across the network and to enable new robotic surgeons to learn from one another. Telepresence capabilities have supported remote intra-operative consultations and post-operative video review among partners within the practice. With remote access, surgeons can answer urgent interoperative questions in real time from their offices, without having to disrupt busy clinics to travel to the operating room.

Conclusions/Future Directions

The Intuitive Hub Platform has served as a focal point of robotic surgery collaboration, fostering patient care, training, and lifelong learning.