Logistical considerations for establishing reliable surgical telementoring programs: a report of the SAGES Project 6 Logistics Working Group

Diego R. Camacho¹,⁵ - Christopher M. Schlachta² - Oscar K. Serrano³ - Ninh T. Nguyen⁴

Abstract
Surgical telementoring programs (STMPs) as educational tools have consistently demonstrated success in the training of surgeons in a variety of surgical disciplines. The goal of an STMP is to train and educate practicing surgeons by improving or remediating surgical skills or assisting in the safe adoption of new procedures. STMPs may even have a role in assisting with recertification. In 2015, the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) launched the SAGES Telementoring Initiative at the Project 6 Summit. Herein, we provide a report on the SAGES Project 6 Logistics working group and lay out a plan for the recommended logistical framework to carry out an STMP.

Keywords Telementoring · Project 6 Summit · www.TelementOR.com · Logistics

The rapid advancement of surgical technology has afforded patients access to complex surgical procedures with reduced morbidity and shorter convalescence. While the evolution of minimally invasive surgical techniques has been welcomed by the medical community and the public, the training of surgeons in these techniques has not caught up with this flourishing surgical discipline. Although training in these techniques during post-graduate surgical education is now a standardized requisite [1], a large population of practicing surgeons exists who have not been afforded the adequate rigorous education necessary to perform these procedures safely and comfortably [2, 3]. To alleviate this gap, educators across surgical disciplines have designed programs, formally known as surgical telementoring programs (STMPs). STMPs have consistently demonstrated success in the training of surgeons in a variety of disciplines, such as trauma, laparoscopy, orthopedic, pediatric, and transplant surgery [4–7]. What is more significant about STMPs are the ability to train and educate practicing surgeons to improve or remediate their surgical skills, to adopt new procedures, and potentially serve as an option for recertification of surgeons [8]. Thus, STMPs have the potential to expand our surgical workforce providing surgeons the opportunity to grow professionally and offer a more varied array of surgical services to a wider patient population.

In 2015, the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) launched the SAGES Telementoring Initiative at the Project 6 Summit [9]. The elements of the program are focused on building a mentoring relationship rather than simply relying on technology to solve a geographical distance barrier. STMPs foster an established relationship between the mentor and the mentee, making telementoring different from teleconsultation. By forging this mentoring relationship ahead of time, the skills and knowledge of both mentor and mentee are understood through a relationship developed prior to the telementored event. STMPs must occur within an educational framework [10]. The intent is for both the mentor and mentee to work together within this framework with clear goals, objectives,
and an endpoint for the mentoring experience. STMPs are conducted with a competent mentee who should be capable of managing their patients’ disease in the absence of the mentor. The role of telementoring is to enable the mentee to adopt a new technology or technique into his or her clinical practice.

**SAGES Project 6 Logistics Working Group**

The Logistics Working Group of the SAGES Project 6 Summit consisted of surgeons and industry representatives with a vested interest in developing successful telementoring programs. The working group was co-chaired by two surgeons with extensive prior expertise in surgical telementoring (NN and DC). The working group adopted as its focus to provide a framework for efficiently organizing the overall telementoring experience. The goals of the Logistics Working Group were to propose a robust solution that would

1. provide the infrastructure to match mentors with mentees,
2. centralize the scheduling of telementored cases, and
3. establish a reliable means of communication between the mentor and mentee on the designated day and time of telementoring.

In the pilot phase of the SAGES Telementoring Initiative, there have been some early successes by members of the Logistics Working Group in developing this program [11]. Current technology platforms are able to support STMPs with readily available information technology personnel to assist on the day of transmission. The SAGES endorsement has been crucial in carrying out STMPs, as it has translated into a number of volunteer educators to facilitate these programs.

Despite these accomplishments, barriers still exist. Scheduling of cases for STMPs and pre-telementoring communication between mentors and mentees remains a challenge. Furthermore, technological issues continue to linger, specifically overcoming telecommunication interfaces and software compatibility between the telementoring sites. There are also financial constraints of STMPs (i.e., cost and reimbursement) and limited support for these programs from hospital administration. Finally, there are medical–legal questions that remain regarding the responsibility and liability of a mentor in the mentee’s practice, which can impact the formation of mentor–mentee pairings across state jurisdictions.

The Logistics Working Group recommends a solution to bridge the difficulty of matching the appropriate mentor with their respective mentee through a web-based platform called [http://www.TelementOR.com](http://www.TelementOR.com). This proposed software database platform will enable mentors and mentees to schedule cases to participate in the program and coordinate all logistics STMPs.

**Potential telementoring mentees**

Participation in STMPs can be a very enriching experience that can assist in the transition to independent surgical practice or learning or mastering a specific procedure. It could also serve as an opportunity for growth in areas where deficiencies exist. Surgeons interested in applying to be mentored through an STMP should consider the following:

1. Personal expectations for participating in the STMP.
2. Type of procedures for the telementoring focus.
3. Current experience with that particular procedure.
4. Flexibility and personal availability for the program.
5. Local availability of suitable telecommunications equipment and information technology staff.
6. Sources of available funding.
7. Board certification and hospital credentialing for the proposed procedure.
8. Geographic location relative to planned mentor.

The prerequisites for participating in an STMP include the following:

1. Attending a pre-STMP hands-on course.
2. Pre-STMP observation of one or more procedures.
3. Availability and familiarity with telementoring web-based technology.

**Potential telementoring mentors**

Surgeons interested in serving as mentors for STMPs should consider the following:

1. Area of personal expertise with documented case volume and diversity.
2. Availability to participate in the program.
3. Local availability of suitable telecommunications equipment and information technology staff.
4. Geographic location relative to planned mentee.
5. Board certification and hospital credentialing in the proposed procedure.
7. Preparation through a SAEGS “Training the Trainer” course.
STMP match

Matching of mentors with mentees should occur through a centralized computerized matching system based on the following criteria:

1. Type of the procedure or technique to be telementored.
2. Availability of the surgeon pairing on the date of the case.
3. Compatibility of the information technology support.
4. Geographic location of the surgeon pairing (i.e., within the same state/region).

A list of mentors would be made available to the mentee who can make a selection based on availability. Once mentors are chosen, an introduction is required by video or teleconference during which the goals and objectives of the relationship will be established, the cases to be used for telementoring are discussed, and the objectives and endpoints of the joint educational framework are established. Additionally, the specific telecommunication equipment needs should be discussed, ideally with the information technology staff available, to ensure this logistic infrastructure is in place.

http://www.TelementOR.com

Through http://www.TelementOR.com telementoring cases could be scheduled. A mentee could list multiple dates when he or she is available for telementoring. Once the mentor is able to coordinate a date that is agreeable with his or her schedule, the date is finalized and a notification is sent to both mentee and mentor. This date is also linked to multiple scheduling venues such as Microsoft Outlook™ and Google Calendars™. Importantly, the telementoring event must be discussed with the planned patient and informed consent must include the specifics of the STMPs.

On the day of the telementored event, certain logistical steps must be reviewed. The testing of the telecommunication equipment by the information technology staff is critical. Prior to the procedure, the operating room staff must be briefed on the actual logistics of the case for a smooth execution of the telementoring experience and the surgical plan. Finally, the mentor and mentee will have a private, debrief, teleconference covering the highlights of the experience, including areas for improvement and questions that may not have been answered by the mentor. Within 24 h of the telementoring experience, an online evaluation must be completed by both the mentor and mentee. A certificate will be provided to the mentee for taking part in the training experience.

Conclusion

As surgical practice continues to evolve and surgeons are tasked with adopting more sophisticated surgical procedures in response to quality improvement and patient complexity, there is a demand on surgeons to continuously upgrade their surgical skills. SAGES has launched the Telementoring Initiative in an effort to provide surgeons with a resource for continuing surgical education from expert surgical educators. There are a large number of moving parts that must be aligned to execute a successful telementoring session and relationship. These can be managed with sufficient planning, foresight, and access to evolving telementoring resources. This could all be facilitated by a centralized platform for scheduling of telementored procedures such as the proposed http://www.TelementOR.com.

Compliance with ethical standards

Disclosures Diego R. Camacho, Christopher M. Schlachta, Oscar Serrano, and Ninh T. Nguyen have no conflicts of interest or financial ties to disclose.

References
