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## Telemedicine Considerations for Post-Operative Care

Telemedicine has been gradually penetrating surgical practices (Contreras et al., 2020). Recent studies conclude that in certain cases, a post-operative telemedicine visit can be a safe and effective substitute for the traditional in-person clinic visit (Gunter et al., 2016; Williams et al., 2018; Zheng et al., 2019). Benefits include time and cost savings for patients and physicians. Particularly in view of global fee periods for surgical procedures, which typically include post-surgical care, some surgeons may use telemedicine to maximize efficiency by freeing up physician time and clinic resources (Kummerow Broman, et al., 2015, p. 1063).

Researchers have used various telemedicine modalities, including picture-focused smartphone applications (apps), to monitor patients' incisions during the post-operative period (Williams et al., 2018, p. 3).

Modality	Surgery Type	Method
Phone call (Hwa & Wren, 2013)	Open hernia repair/lap cholecystectomy	Physician assistant used a scripted template to ask about infection signs/symptoms, swelling, incision appearance, and any discharge.
Videoconference (Canon et al, 2014)	Pediatric urological surgeries	Patients participated from a satellite clinic while surgeon was at a hospital 200 miles away; in a few cases where video clarity of images was insufficient, a digital photo was emailed to the physician.
Videoconference (Zheng et al., 2019)	Thyroid/parathyroid procedures	Visits were used to monitor wound healing and voice function, and were completed on a HIPAA-compliant, secure web channel using Cisco WebEx and Zoom Video Communications software.
Smartphone app (Gunter et al., 2018)	Vascular surgery	Patients used HIPAA-compliant Wound-Check app daily to answer yes/no questions and upload digital images of the wound. A physician or nurse practitioner reviewed the answers and pictures daily and called patients as needed for more information or to make care recommendations.
Smartphone app (Semple & Armstrong, 2017)	Breast reconstruction following cancer surgery	Patients used the QoC Health (Toronto) mobile app daily to answer questions and take pictures of their incision site. The Surgeon and healthcare team viewed information uploaded to a secure cloud server.
Secure online patient portal (Kummerow Broman et al., 2015)	Elective general surgeries: lap cholecystectomy, ventral hernia repair, umbilical hernia repair, inguinal hernia repair	Patients used a tablet, smartphone, or computer and camera to complete a symptom survey and upload wound photos through a HIPAA-compliant portal. Surgeons reviewed and responded to patients via the portal and documented online patient conversations in the electronic medical record. The surgeon saw the patient in person one week after the online visit.

Although these studies report comparable clinical outcomes between telemedicine and in-person post-operative visits, clinicians using telemedicine to assess and monitor surgical incisions should remain cognizant of the challenges and limitations of this technology. Surgeons and practices may consider the following when deciding whether, and how, to conduct post-operative telemedicine visits:

- Some, but not all, patients and procedures are amenable to telemedicine follow-up. The studies involve straightforward surgeries with low rates of serious post-operative complications (Zheng et al., 2019, p. 618).
- A reliable broadband connection with sufficient bandwidth is essential (Contreras et al., 2020, p.3; Williams et al., 2018, p. 2).
- HIPAA requires a robust privacy and security plan to protect patient information but does not set forth a standardized technological approach to compliance. Though some HIPAA-compliant messaging applications exist, most are lacking in security and privacy. Furthermore, standard SMS texting cannot be encrypted. Practices should select a technology vendor that can explain and recommend security features. By reducing the threat of data breaches, practices can boost patient confidence in telemedicine (Gunter et al. 2016, p. 7; Semple & Armstrong, 2017; Williams et al., 2018, p. 5).
- Videoconferencing presents the possibility of technical failure during a visit. Even established programs, such as The University of Arizona's Telemedicine Program, occasionally experience unexpected technical problems on either end of a videoconference, including dropped audio and video interruptions (York & Fimbres, 2020). Assess the software vendor's customer service and response time, and arrange for multiple practice employees to complete vendor troubleshooting training. Before the appointment, give patients instructions for technical problems. For example, in case of video failure, give patients a number to call to continue the visit, or direct patients to access a secure portal to send a photo of their incision (Zheng et al., 2019, p. 619).
- Phone calls prohibit visual assessment and typically convey less information (Kummerow Broman et al., 2015, p. 1062; Contreras et al., 2020, p. 3).
- Consider your patient's comfort level with smartphones or other technology, and provide instruction on accessing the videoconference, app, or portal (Kummerow Broman et al., 2015, p. 1058).
- Determine whether your patient has access to a reliable data connection either at home or in another private location (Contreras et al., 2020, pp. 4-5). If not, some patients with mobile devices sit in their vehicle during their appointment, while parked outside a library or other location where signal is available.
- If multiple physicians and other professionals will review patient data such as wound images and survey responses, consider implementing a standardized data review policy and procedure (Gunter et al., 2018, p. 4).
- Frequent monitoring through an app or online portal may facilitate early detection and outpatient management of surgical site infections. This may decrease hospital readmissions due to advanced wound complications not recognized until the first in-person post-operative clinic visit (Gunter et al., 2018, p. 2).
- Signs of infection or complication detected during a telemedicine visit should trigger a clinic visit (Hwa & Wren, 2013, p. 2; Zheng et al., 2019, p. 618).
- If you are using telemedicine in lieu of a clinic visit, allow patients the option to schedule in-person visits if they prefer (Zheng et al., 2019, p. 618).
- Encourage patients to call with any questions or concerns about their post-operative course or the telemedicine process.

Senior Risk Management Consultants are ready to help with questions and provide more information. You can reach a Consultant Monday- Friday 8:30 am-5:00 pm MST at (800) 352-0402 x2137, (602) 808-2137, or [rm\\_info@mica-insurance.com](mailto:rm_info@mica-insurance.com).

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