

TELESURGERY MENTORING TO TEACH ARTHROSCOPIC SHOULDER SURGERY IN DEVELOPING COUNTRIES

14th Biennial ISAKOS Congress
Boston, Massachusetts
Jun 18-21, 2023

William B. Stetson, M.D.

CEO and Founder, SurgTime

Kristen N. Reikersdorfer, B.A.

Samuel Polinsky, BA.A

Steven Wren, B.A.



ISAKOS
CONGRESS
2023



Boston
Massachusetts
June 18–June 21



DISCLOSURES:

The following relationship exists for William B. Stetson M.D.:

- **Royalties:** None
- **Stock Options:** OrthoBullets, Mednition, Regroup, Berkeley Lights, Bonjovi Medical
- **Research Support:** None
- **Operation Arthroscopy Non-Profit Foundation:** Founder & CEO
- **SurgTime:** Founder & CEO

No Conflicts for Kristen Reiksdorfer, B.A., Samuel Polinsky, B.A., or Steven Wren, B.A.



WHAT IS TELESURGERY AND TELEMENTORING?

Telesurgery: Surgery Transmitted Live

- Allows real-time and live interaction
- Joined and viewed by other surgeons, students, and industry reps
- Secure communication pathway

Telementoring: Live Virtual Assistance

- Collaborate with other surgeons over a standard internet connection



WHAT IS SURGTIME AND HOW IS IT USED FOR TELEMENTORING?

SurgTime: Online Telesurgery Platform

A *global network* of expert surgeons to collaborate with their surgical colleagues and advance surgical skills.

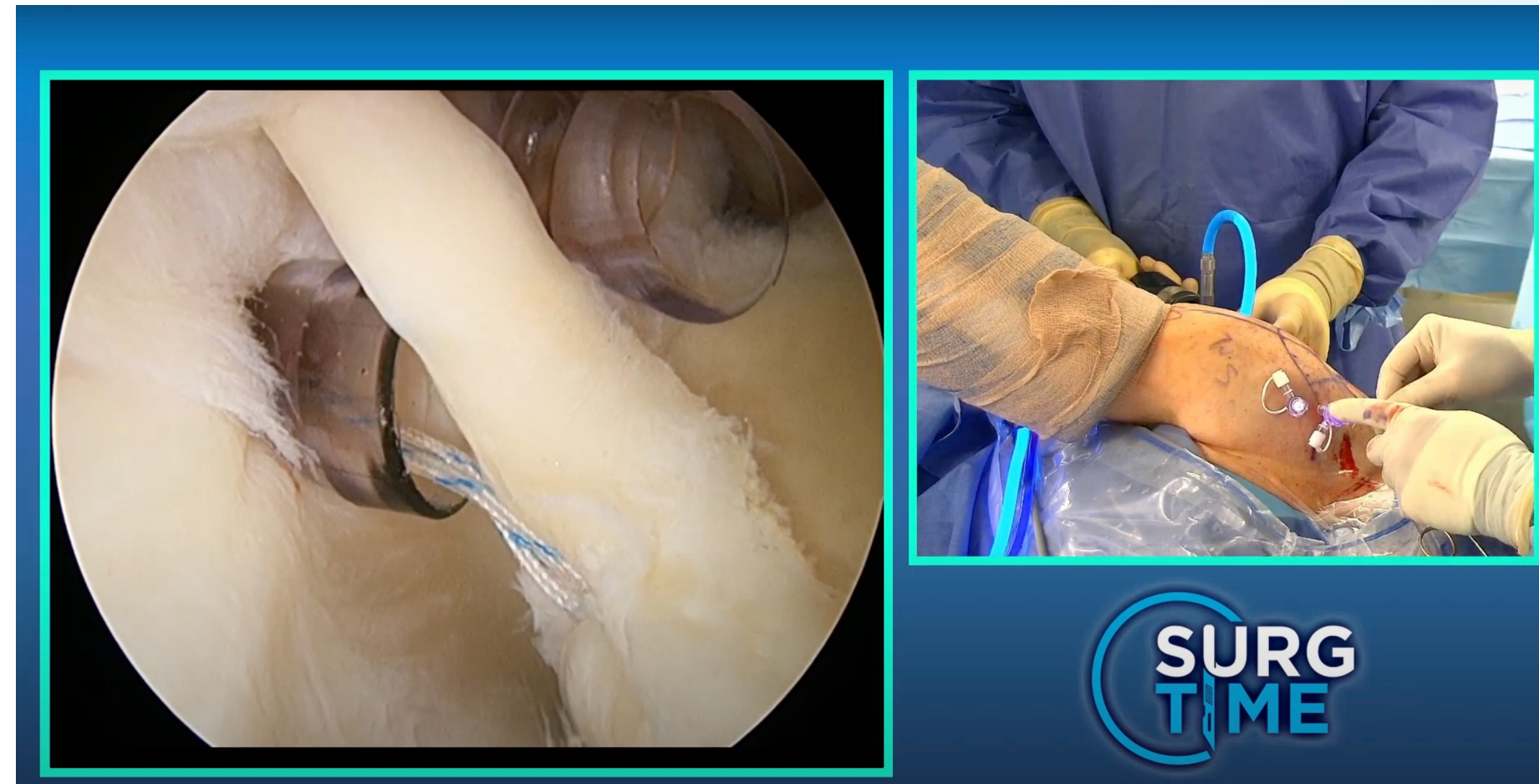
Connects the operating room to other surgeons and students *regardless of their geographic location* and *allows real-time interacting and surgical instruction.*



DUAL-VIEW BROADCAST

Intra-articular View

- Mirrors the operating surgeon's arthroscope in real-time
- Visualization of relevant anatomy and surgical maneuvers



External View

- Depicts a view of the sterile field
- Visualization of gross surgical technique, patient positioning, and equipment

Split-screen view where a surgeon can simultaneously observe both internal and external technique



PROOF OF CONCEPT: DOES SURGTIME WORK?

Methods:

WHO: 12 orthopaedic surgeons from developing countries (Romania, Serbia, & Bosnia)

HOW: Connect via SurgTime to the telementoring surgeon in the United States

WHAT: Visualize the arthroscopic surgery and ask real-time questions during the procedure

TIMELINE: Bimonthly basis for 18 months



OUR QUESTIONS

Is SurgTime easy to use?

Is SurgTime reliable?

Is the video and audio quality on SurgTime satisfactory?

Is SurgTime safe?

Does SurgTime interfere with the surgical procedure?



RESULTS

30 successful connections

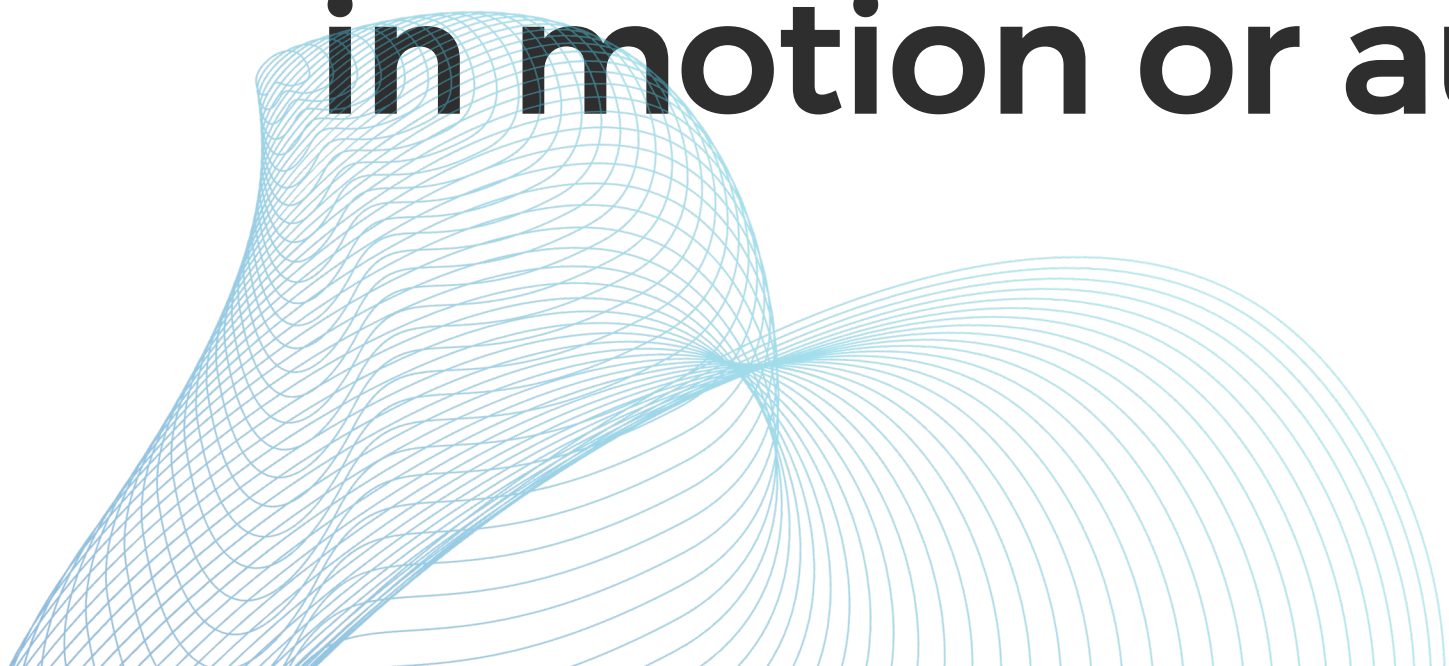
3 surgeons viewing (on average)

100% approval rate



OUR FEEDBACK

All of the observing surgeons strongly agreed that SurgTime was easy to use & connect to, reliable, and had sufficient image resolution with no significant lag in motion or audio transmission.



GLOBAL APPLICATIONS

SurgTime can be used to accelerate the learning curve of doctors in developing countries & enhance knowledge transfer and skill acquisition of the techniques required to perform arthroscopic shoulder surgery.



**SURG
TIME**

References

1. Nwachukwu BU, Kunze KN. Unlocking opportunities for Innovation and digitization of Musculoskeletal Care Delivery. *Journal of the American Academy of Orthopaedic Surgeons*. 2022;30(20):965-970. doi:10.5435/jaaos-d-22-00170
2. Buvik A, Bugge E, Knutsen G, Småbrekke A, Wilsgaard T. Patient reported outcomes with remote orthopaedic consultations by telemedicine: A randomised controlled trial. *Journal of Telemedicine and Telecare*. 2018;25(8):451-459. doi:10.1177/1357633x18783921
3. Greif DN, Shallop BJ, Rizzo MG, et al. Telehealth in an Orthopedic Sports Medicine Clinic: The first 100 patients. *Telemedicine and e-Health*. 2021;27(11):1275-1281. doi:10.1089/tmj.2020.0462
4. Makhni MC, Riew GJ, Sumathipala MG. Telemedicine in Orthopaedic Surgery. *Journal of Bone and Joint Surgery*. 2020;102(13):1109-1115. doi:10.2106/jbjs.20.00452
5. Tuckson RV, Edmunds M, Hodgkins ML. Telehealth. *New England Journal of Medicine*. 2017;377(16):1585-1592. doi:10.1056/nejmsr1503323
6. Global Telehealth Market Size [2021-2028] | to reach USD 636.38 billion and exhibit a CAGR of 32.1%. Yahoo! https://www.yahoo.com/now/global-telehealth-market-size-2021-094800237.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAHdKGiYWfmmk-29K09bYzQgHadnh33ZBolCtecYIKTEJhueXObSirft3r4Y3iQRwE-hQ0nFj8DjUgeTurawvN_6M06oin2VtyZm9aygqKq5momMwgoOLUIHIZz1KMIBXaV9SeujnKYY6L1rUtzwEsO4zQuaF1euZhCILWHq2qU58. Published October 25, 2021.
7. Greif DN, Shallop BJ, Rizzo MG, et al. Telehealth in an Orthopedic Sports Medicine Clinic: The first 100 patients. *Telemedicine and e-Health*. 2021;27(11):1275-1281. doi:10.1089/tmj.2020.0462
8. Stetson WB, Polinsky S, Dilbeck S, Chung BC. The use of telesurgery mentoring and augmented reality to teach arthroscopy. *Arthroscopy Techniques*. 2022;11(2). doi:10.1016/j.eats.2021.10.008



THANK YOU!

William B. Stetson, M.D.

CEO and Founder, SurgTime

Kristen N. Reikersdorfer, B.A.

Samuel Polinsky, BA.A

Steven Wren, B.A.

www.surgtime.com

