

Creating a Critical Access Hospital Robotic Surgery Program

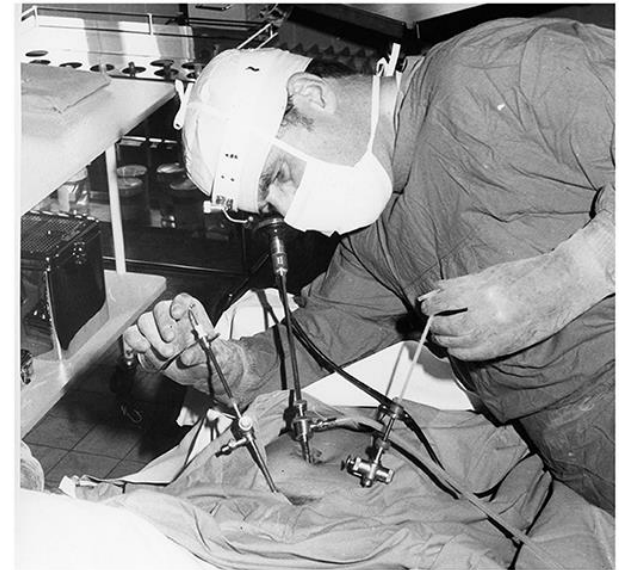
Brian Hong, MD FACS
Surgical Associates of Neenah

Disclosures

- None

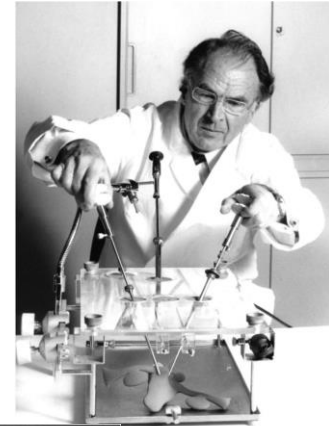
Minimally Invasive Surgery

- Use of insufflation and laparoscopy to perform abdominal operations through small incisions



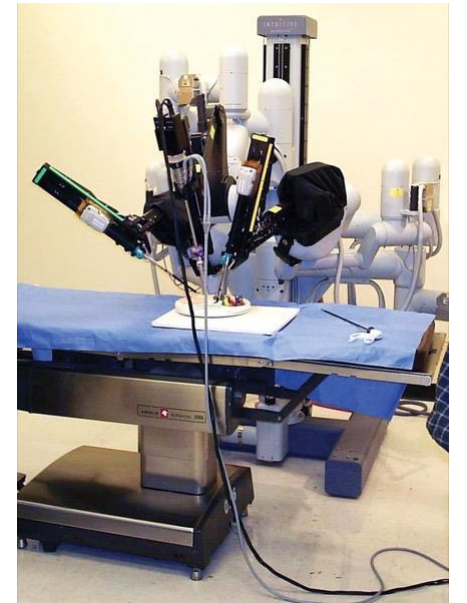
History of Minimally Invasive Surgery

- 1912 Hans Jacobaeus- thoracoscopy to free lung adhesions from TB
- 1930-40- Gyns used laparoscopy for diagnostic procedure
- 1970s- Kurt Semm performed gynecologic procedures and lap appy
- 1985- Erich Mühe performed lap chole
- 1980s- Advances in solid state cameras and fiberoptics



Origins of Robotic Surgery

- Zeus- 1990s-2000s
- Intuitive- Fred Moll MD- 1990s
 - FDA approval for general surgery procedures in 2000
 - Slow adoption
 - 2014 Xi robot
 - No need for surgical assistant
 - Multi quadrant surgery



Felix EL. The History of Robotic Assisted Surgery. General Surgery News. Sept 10,2021.

Robotic Surgery Today



Intuitive.com





Reasons to start a critical access robotics program

Decrease open surgery rate

Improve length of stay

Improve cost

Keep patients local

Decompress Level 2 and 3 hospitals

My Journey

- Residency: University of Illinois Chicago
- 2016: ThedaCare Medical Center New London
- 2020: Surgical Associates of Neenah



How Does Robotics Align to Quad Aim?

Enhanced Patient Experience

- Less Pain
- Faster Recovery
- Reduced Conversions
- Outpatient vs. Inpatient

Improved Clinical Outcomes

- Length of Stay
- Complications
- SSI
- Return to OR
- Readmission
- Consistency of Outcomes

Lower Total Cost of Care

- Reduced Clinical Variation
- Pathway friendly
- Decrease LOS and Readmissions
- Unified Ecosystem

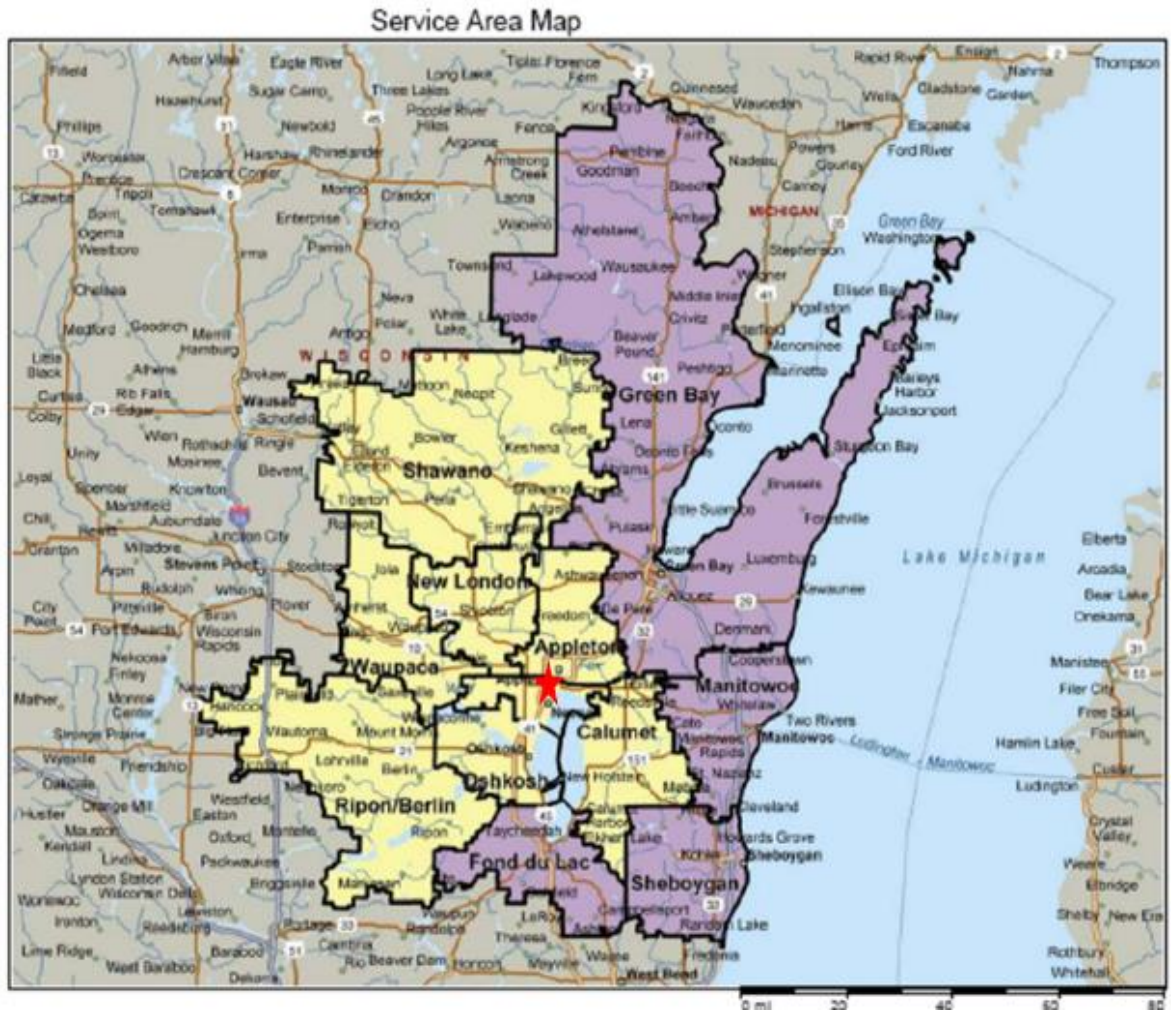
Enhanced Provider Experience

- Ergonomics
- Dedicated Teams
- OR Efficiencies
- Analytics
- Training
- Marketing

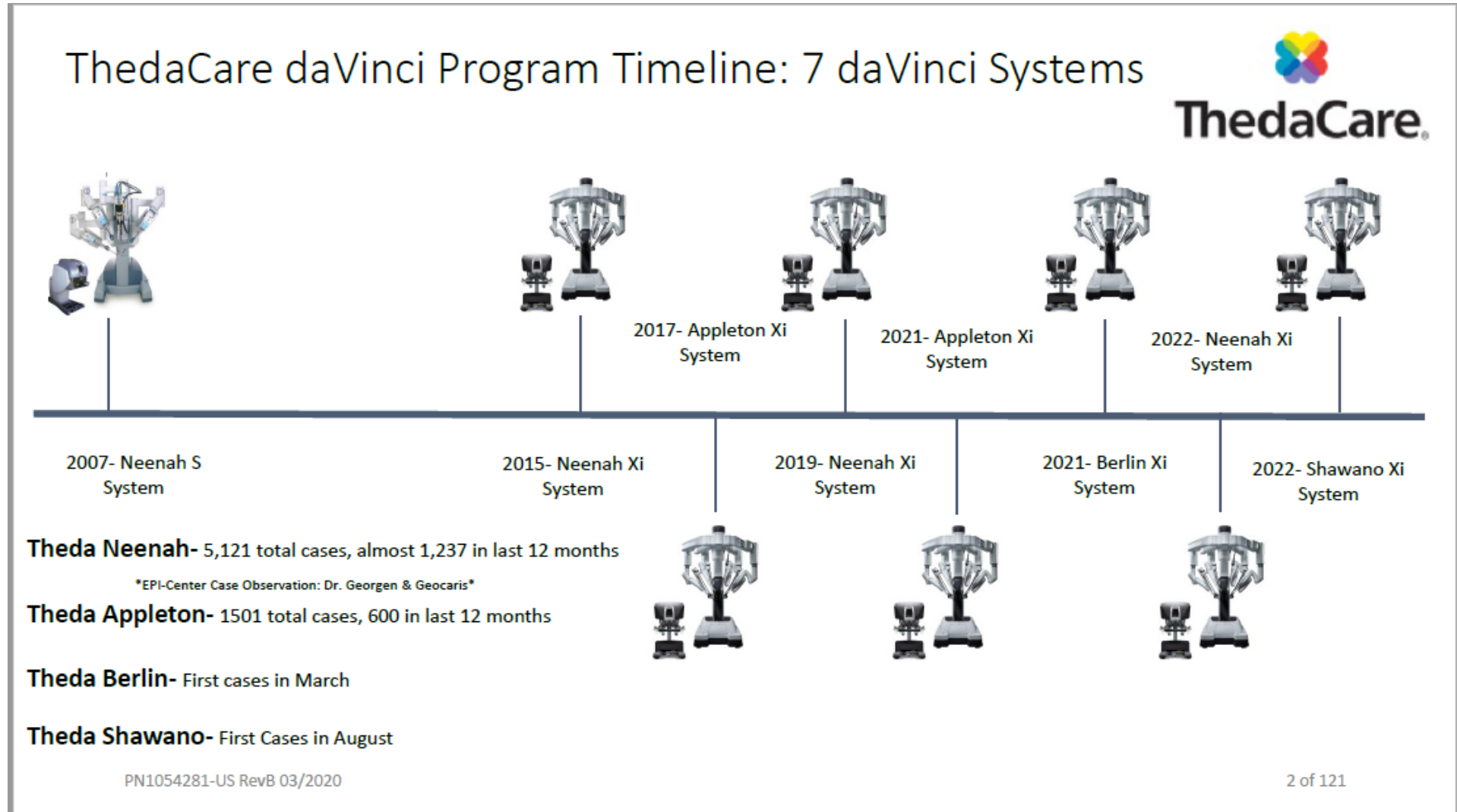
ThedaCare as a healthcare system



- 2 Regional Medical Centers
- 1 Ortho, Spine & Pain Medical Center
- 5 Critical Access Hospitals
- 37 Primary Care Clinics
- 7 Urgent Cares/Walk-in Clinics
- 6 Behavioral Health Locations
- 25 Employer/Occupational Health Locations
- Transitions of Care
 - Home Care
 - Skilled Nursing Facilities
 - Hospice
 - DME



Theda Care Robotic Timeline- adding 3 systems 2023



ThedaCare – 2022 clinical outcomes all procedures

Clinical Key Performance Indicators

Appendectomy, Cholecystectomy, Colon Resection and 21 more

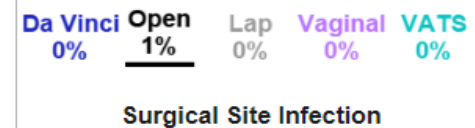
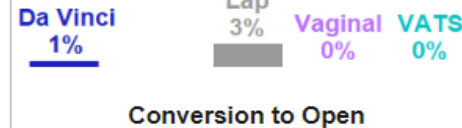
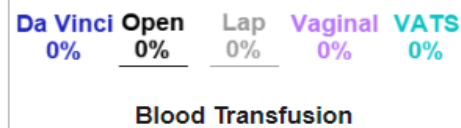
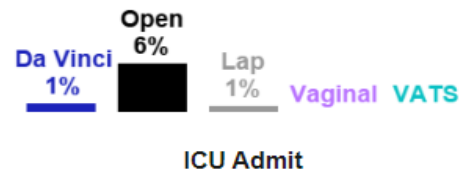
Da Vinci
2,039

Open
563

Lap
920

Vaginal
60

VATS
18



This data comparison is not case-matched for patient complexity and/or disease status and may not be comparable across these surgical modalities. The data analysis has not been peer-reviewed and published. Data presented here may or may not be reproducible and is not generalizable.



ThedaCare Neenah

3 Xi's

Level 2 Trauma

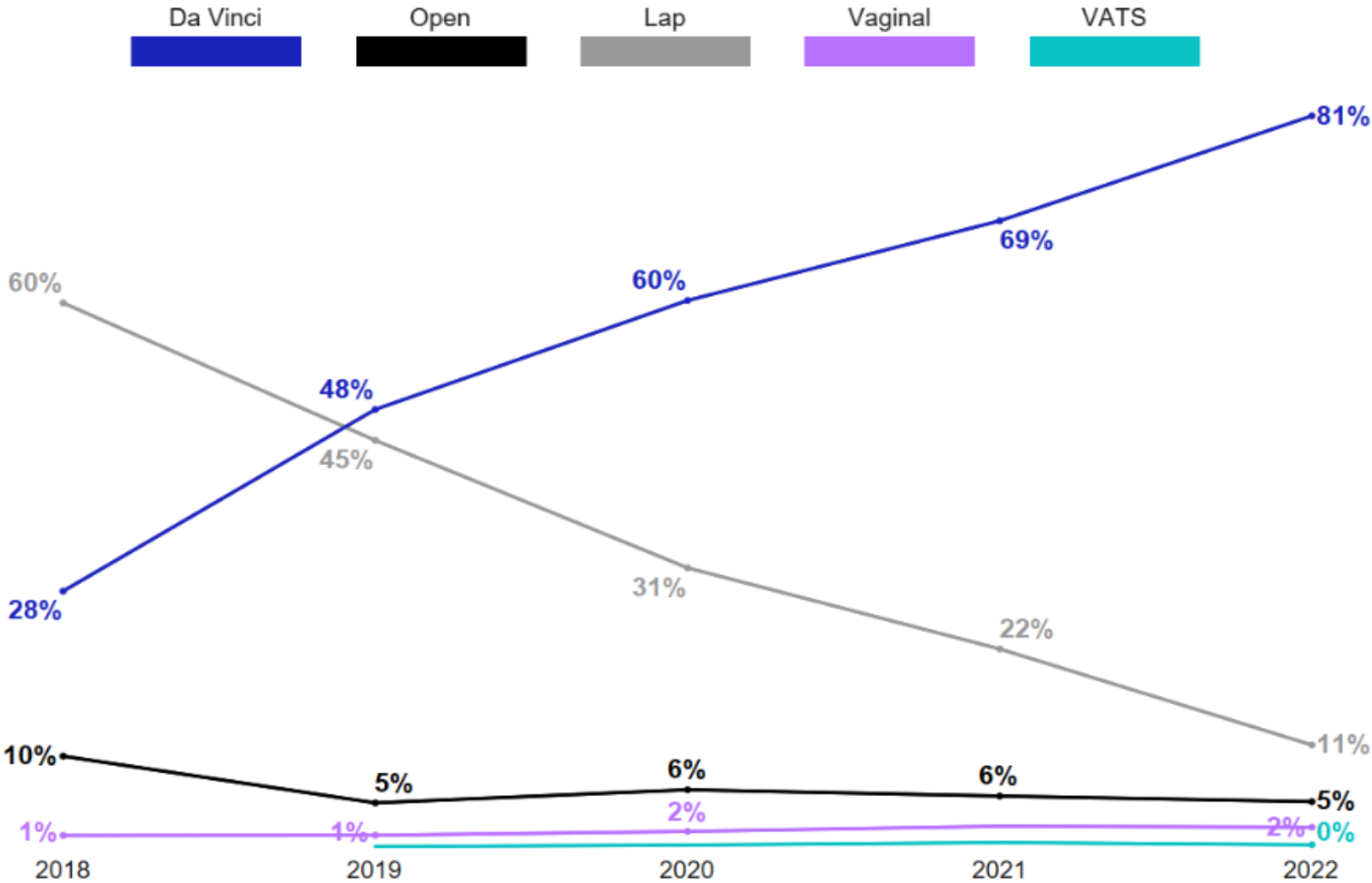
ALL STAFF
da Vinci TRAINED

6 Specialties

Case observation

Train Residents

ThedaCare – Neenah modality trends- 81%robotic

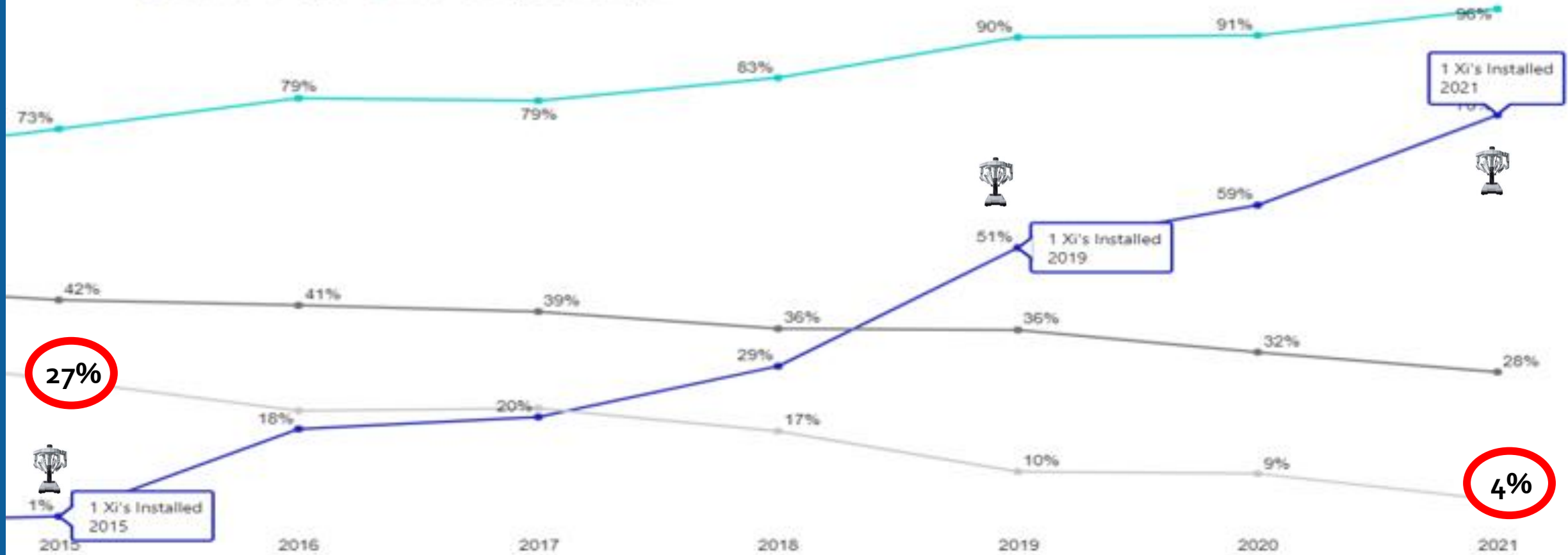


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27% Open Rate decreased to 4%

Modality Breakdown by Year

Da Vinci Open MIS Avg Benchmark Open



27%

4%

1 Xi's Installed 2015

1 Xi's Installed 2019

1 Xi's Installed 2021

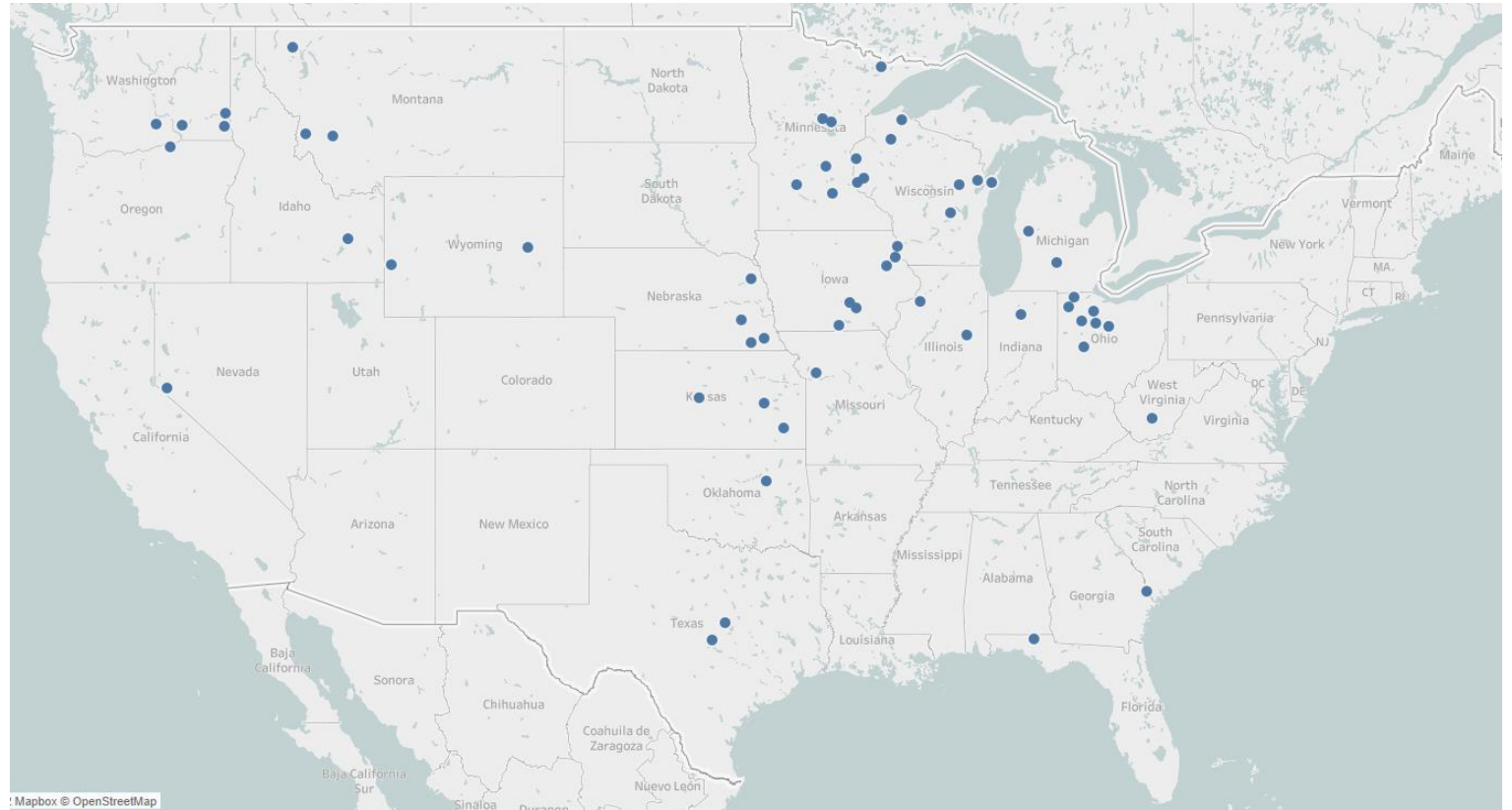
Critical Access Robotics

~60 CAHs have a
DaVinci robot

CAHs averaged
106 robotic
procedures in
2021

CAHs perform
mostly benign
general surgery
with their robot

Where are
CAHs with
a DaVinci
robot?



General Surgery Dominates Procedures

■ Urology ■ Thoracic ■ GYO ■ Foregut ■ Colorectal ■ Cardiac ■ Benign GYN ■ Benign GenSu... ■ Bariatrics ■ All Others



Data from 7/1/2021 through 6/30/2022.

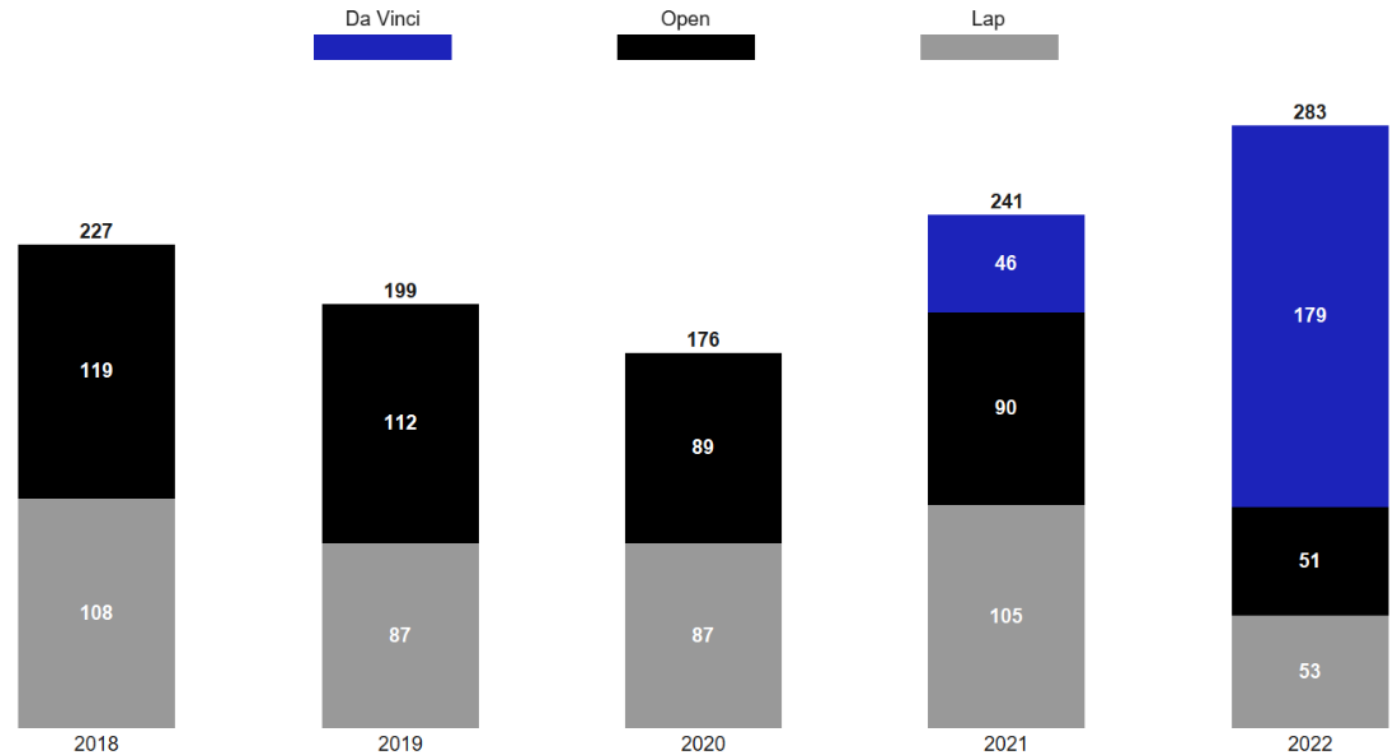
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General Surgery- Volumes Increasing since adding robotics

Surgical Adoption Trends by Volume

Appendectomy, Cholecystectomy, Colon Resection and 4 more

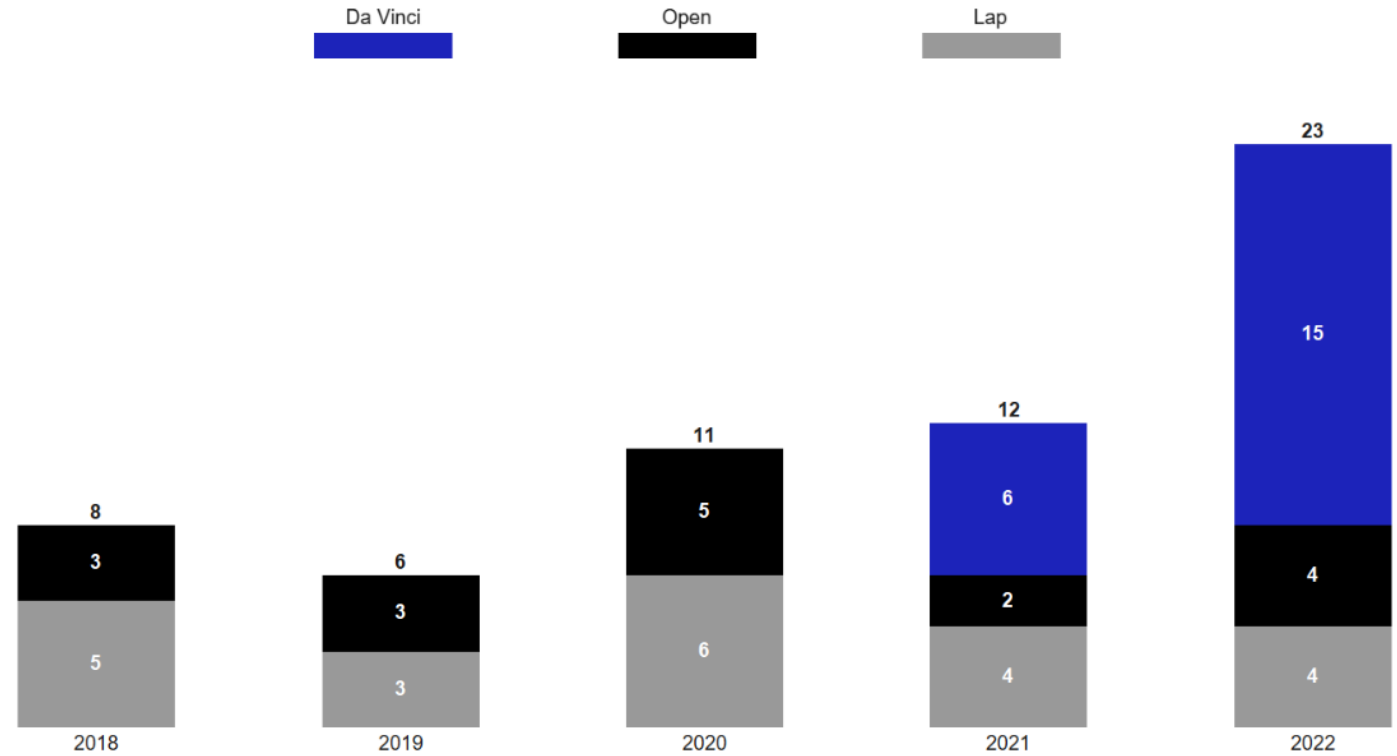


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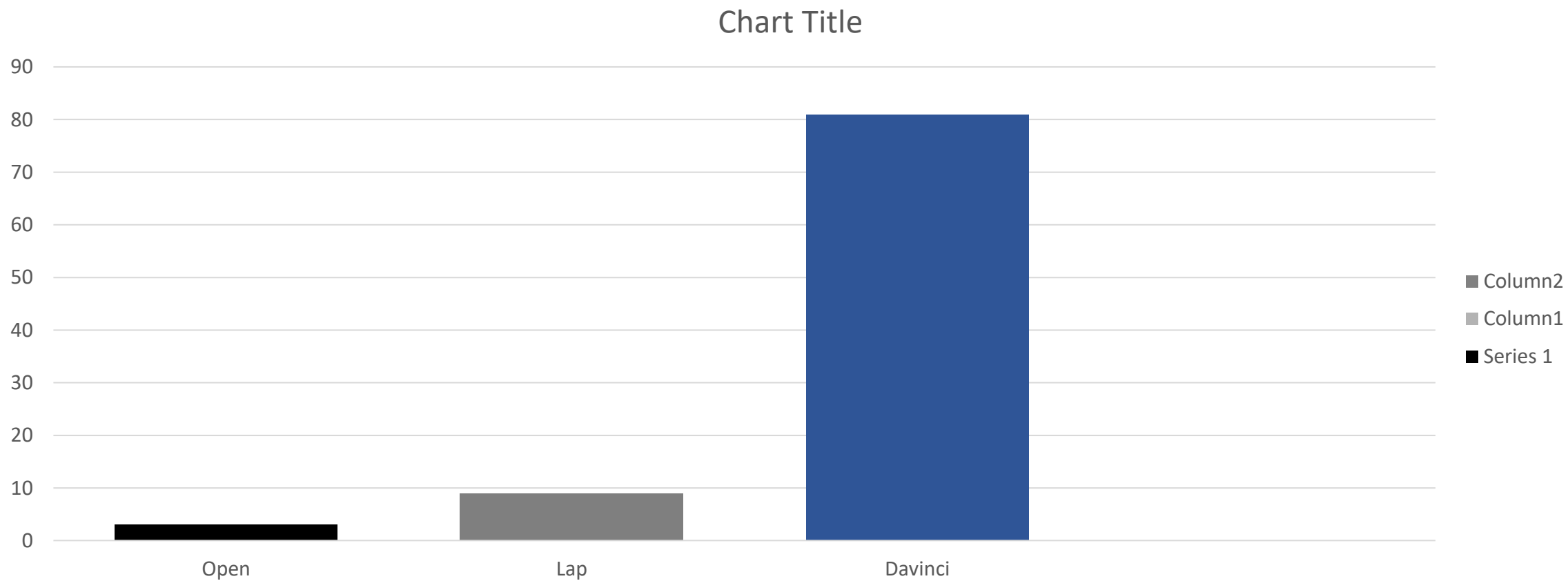
Emergent General Surgery- more cases kept local

Surgical Adoption Trends by Volume

Cholecystectomy, Colon Resection, Inguinal Hernia and 2 more



Shawano 2023 Q1- 87% robotic



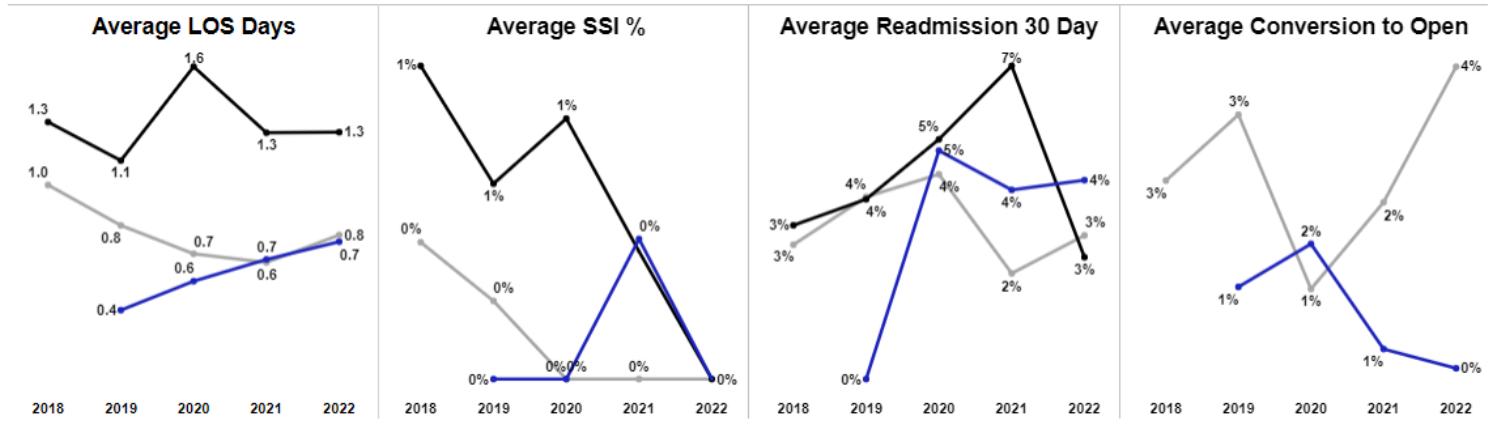
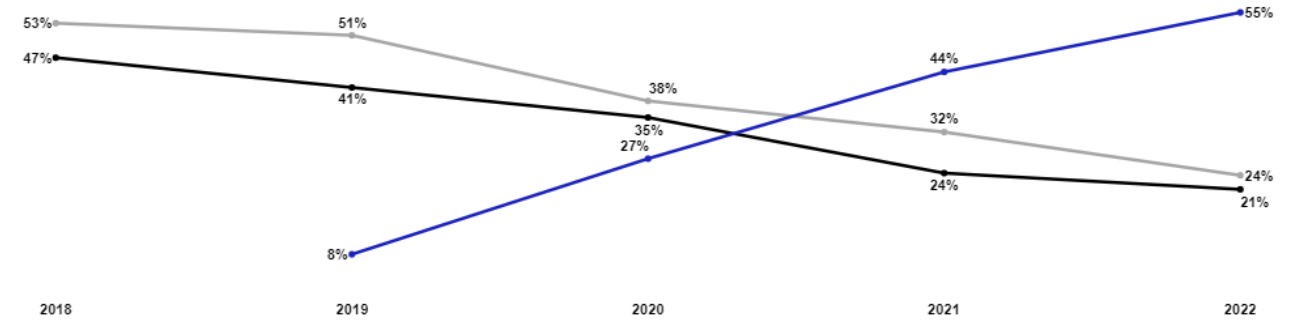
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Critical Access National Average (6 Accounts)

All Metrics by Modality

■ da Vinci ■ Open ■ Lap

Adoption by Modality

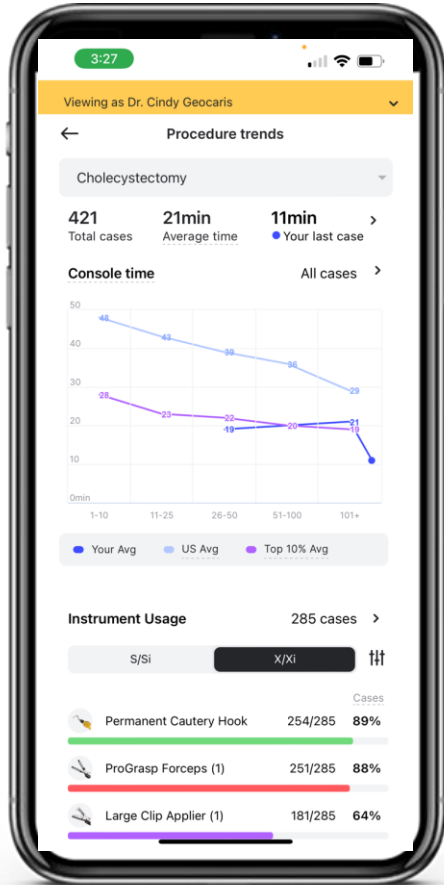


Reduced Staffing 1 Scrub and 1 Circulator

Yes, it is possible!



Quantified Performance- My Intuitive App



Track your progress!

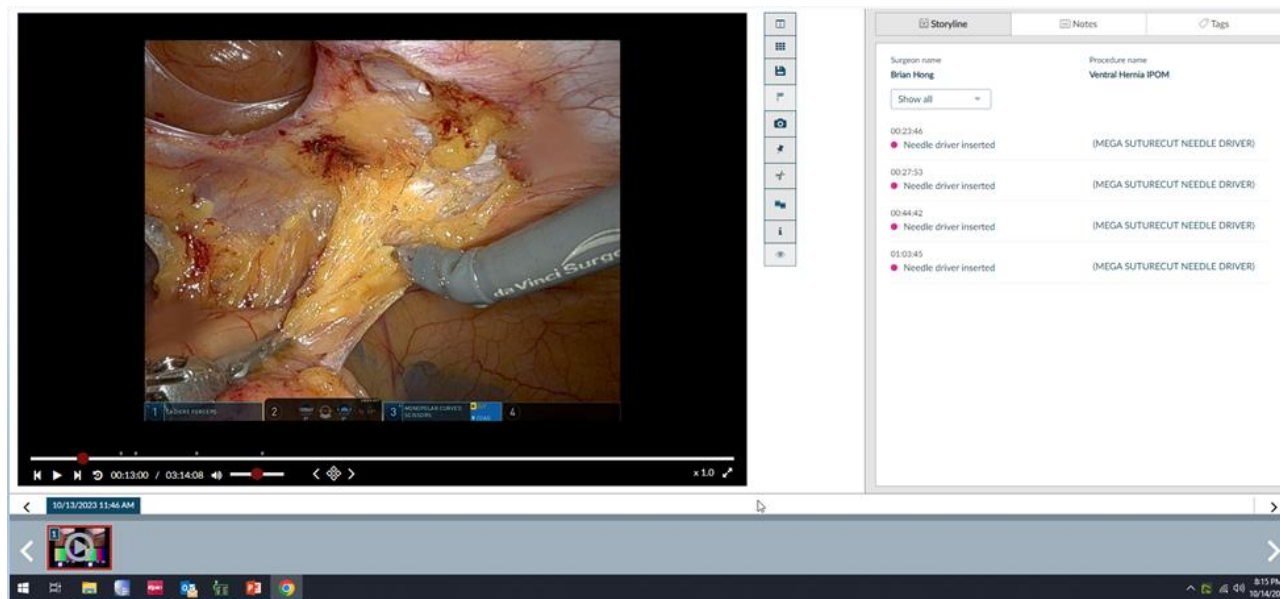
Console times

Instrument use

Types of cases

Case volume

Intuitive HUB



- Ability to review cases and share with colleagues
- Ability to have others log in and see live cases for consultation in real time

Critical Access Robotic Surgery Experience

- Actually need less staff
- Surgeon engagement and teaching is critical
- Need a lead person
- A great satisfier for patients being able to get care close to home

Questions

- Thanks for Cynthia Geocarlis, MD for contributing much of the slides and data for this presentation