

2026 Lecture: Thomas Lendvay, MD, FACS

AAPU Origins

In the early 1980s, small regional groups of pediatric urologists began gathering for weekend meetings to discuss interesting cases, new techniques, and seek advice on challenging cases.

Around 1986, Mark Zaontz and David Roth had the idea to create a similar organization for younger pediatric urologists across the U.S., with a focus on longer, more social meetings that included families.

AAPU EST · 1988
AMERICAN ASSOCIATION OF PEDIATRIC UROLOGISTS

AAPU Origins

The inaugural meeting of the "Society of Young University Pediatric Urologists" was held in 1987 in La Quinta, California.

Several years later, the organization evolved and was renamed the American Association of Pediatric Urologists (AAPU).

AAPU EST · 1988
AMERICAN ASSOCIATION OF PEDIATRIC UROLOGISTS

AAPU Academic Activities

- Annual Meeting
- Wee Willies Dinner
- Annual SPU Fall Meeting – AAPU Lecture
- AAPU Research Award

AAPU Membership

- Completed at least a 12-month Pediatric Urology Fellowship or a comparable international fellowship.
- Submit two letters of support from active U.S. or Canadian AAPU members
- Pay Dues ($200)

AAPU 2027: Hyatt Regency Grand Reserve Puerto Rico



From Threat to Opportunity: Reimagining Surgical Practice through Coaching

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AAPU Lecture: 10/17/2026



Disclosures

- **No relevant associations with presentation**
- Tend/Amend Pet, Inc. – Co-Founder, CEO, Board member (active)
- Singletto, Inc. – Co-Founder, CMO, Board member (active)
- Spi Surgical, Inc. – Co-Founder (active)
- CSATS, Inc. – Co-Founder, acquired by JnJ 2018 (no affiliation)

Agenda

- History of surgical skills training
- Definition of coaching
- Barriers to coaching
- Evidence for coaching value
- Implementation
- Future of coaching



"Personal Best" *The New Yorker*, 2011

Traditional Apprenticeship Model (Halsteadian)

- Systematic residency programs
- Focus on surgical technique
- Observation-based learning
- Trial and error approach
- Minimal structured feedback
- High variability in training quality
- Gradual progression of responsibility

"See one, do one, teach one"

Reznick RK, MacRae H. Teaching surgical skills--changes in the wind. N Engl J Med. 2006;355(25):2664-2669.
Halsted WS. The training of the surgeon. Bull Johns Hopkins Hosp. 1904;15:267-275.
Cameron JL. William Stewart Halsted. Our surgical heritage. Ann Surg. 1997;225(5):445-458.
Osler W. The training of the physician. JAMA. 1889;12(7):81-85.

Modern conflict with Halsteadian education



80hr work week dropped exposure 25%-30%

Patient safety prioritized





Advanced procedures and tech



Legal liability and malpractice

ACS NSQIP®

Quality measures and assessments

Nasca TJ, et al. The next GME accreditation system--rationale and benefits. N Engl J Med. 2012;366(11):1051-1056.
Ahmed N, et al. The impact of duty hour restrictions on surgical residents and faculty. Am J Surg. 2014;207(6):899-903.

Why do we need a different way?

Gaps in perceived graduating urology resident competence

- Lower volume cases or increased complexity

< 50% of graduates feel competent performing perc and lap procedures

- ~ 33% feel comfortable with robotic surgery

Pediatric urology – risks to competency

- Decline in birth rates
- Decline in infants born with complex GU anomalies - bladder exstrophy

Cruz AP, Skolarus TA, Ambani SN, Hafez K, Kraft KH. Aligning Urology Residency Training With Real-World Workforce Needs. J Surg Educ 2021, 78(3): 820-827.
Okhunov Z, Safiullah S, Patel R, Juncal S, Garland H, Khajeh NR, et al. Evaluation of Urology Residency Training and Perceived Resident Abilities in the United States. J Surg Educ. 2019 Jul 1;76(4):936–48.
Martin JA, Hamilton BE, Osterman MJK, Driscoll AK. National Vital Statistics Reports Volume 70, Number 2, March 23 Births: Final Data for 2019. 2019.
Lloyd JC, Wiener JS, Gargollo PC, Inman BA, Ross SS, Routh JC. Contemporary epidemiological trends in complex congenital genitourinary anomalies. J Urol 2013,190(4 Suppl):1590–5.


Trainee


Attending

Do not edit
How to change the design



Do you have a surgical coaching program at your institution ?

The Slido app must be installed on every computer you're presenting from

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Have you participated in a coaching program at your institution ?

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Would you like to see coaching in your program ?

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Have you been formally trained as a surgical coach ?

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Pediatric Urology Survey

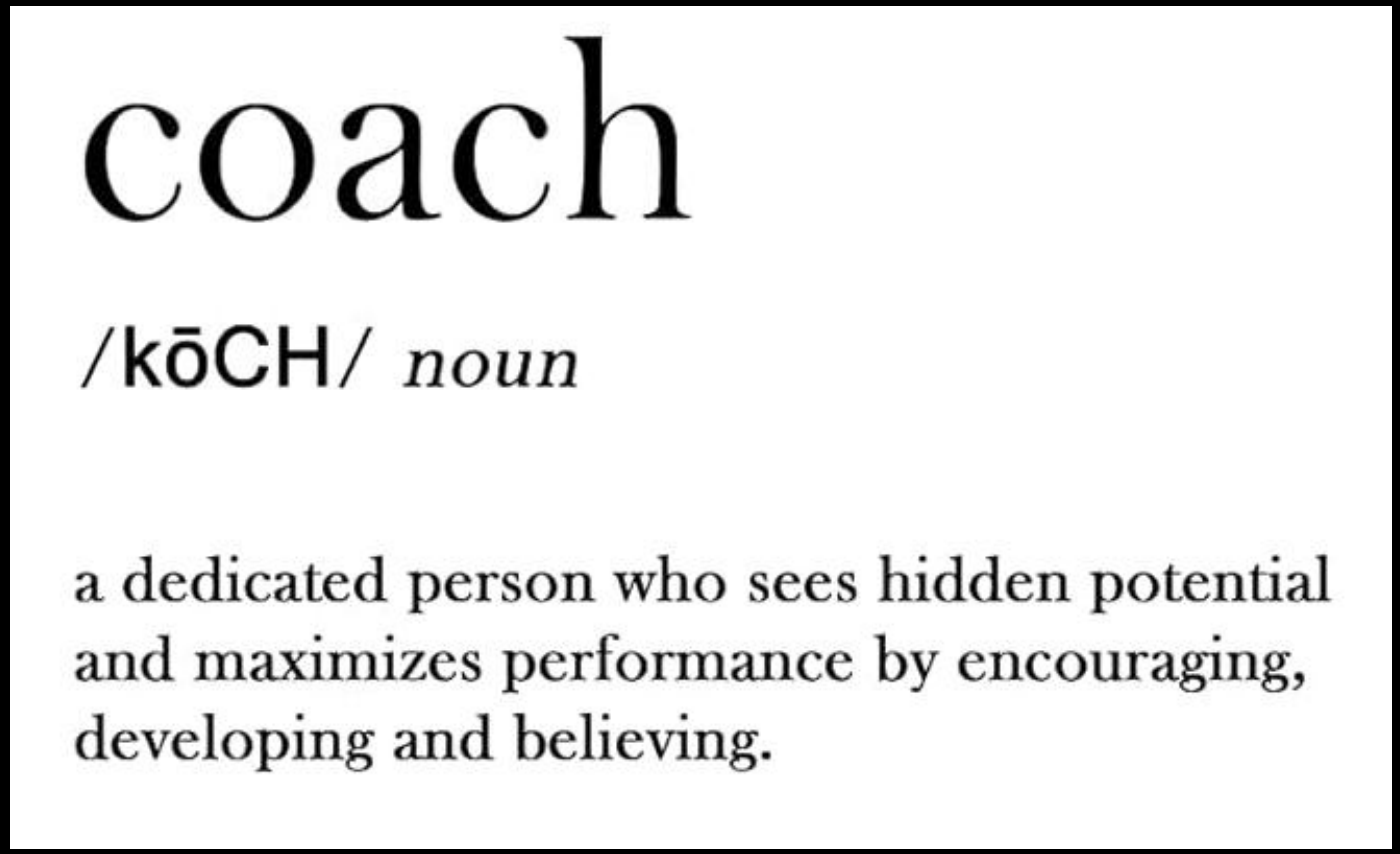
- SPU survey assessed member coaching knowledge
- 146/674 (22%) response rate
- 46% correctly defined ’coaching’
- 27% are involved in a coaching program
- 4% (formally trained
- **79% expressed interest in coaching**



Silverii H, Cain MP, Ahn J, Fernandez N, Lendvay T, Gupta A, Joyner B, Kieran K, Shnorhavorian M, Merguerian P. Putting the coach in the game: Current and future state of surgical coaching in pediatric urology. J Pediatr Urol. 2024 Aug;20(4):608.e1-608.e8.



What is Coaching?



Coaching is a collaborative, individualized learning process that involves ongoing observation, feedback, and guidance to improve performance and develop expertise.

Hu YY, et al. Coaching surgeons: a systematic review. J Surg Educ. 2021;78(4):1116-1127.
Greenberg CC, et al. Coaching surgical teams: a consensus statement. Ann Surg. 2021;273(6):. 1058-1062

Severin Lüthi

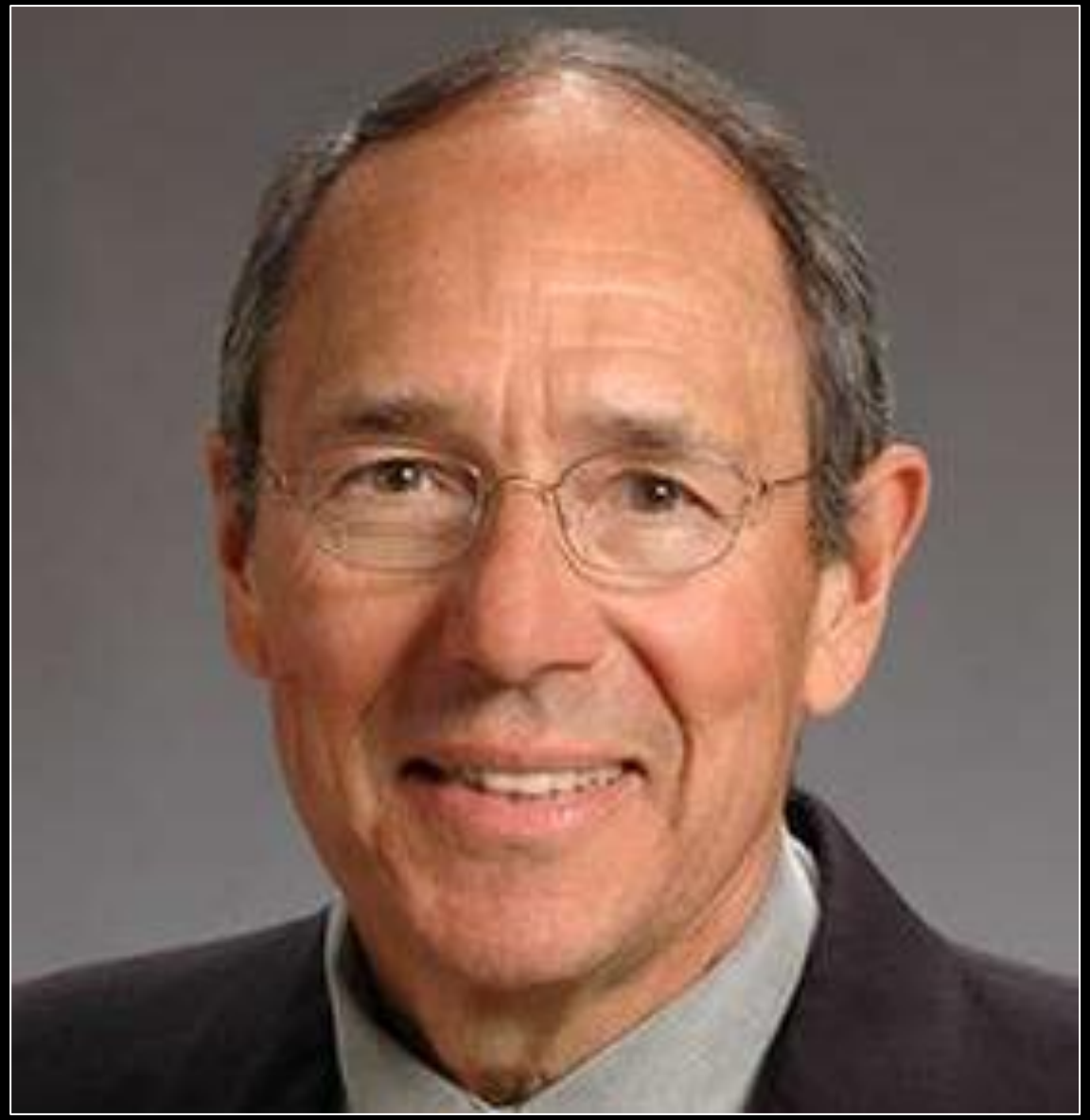


Patrick Mouratoglou



Butch Harmon







Teacher/Mentor ≠ Coach

Coaching vs. Teaching vs. Mentoring

Dimension	Coaching	Teaching	Mentoring
Focus	Performance improvement and self-reflection	Knowledge transfer and skill acquisition	Career guidance and psychosocial support
Approach	Collaborative, question-driven, goal-focused	Directive, instructor-led	Advisory, experience-based
Feedback Style	Non-judgmental, eliciting insight	Corrective, evaluative	Contextual, wisdom-sharing
Duration	Short-term, episodic	Structured around curriculum	Long-term relationship
Surgery Example	Peer surgeon reviews operative video and facilitates reflection	Faculty demonstrates robotic suturing technique	Senior surgeon advises on career trajectory

Dedy NJ, et al. Teaching and assessing surgical competency in Canadian medical schools. Can J Surg. 2016;59(4):251-258.
Sturm LP, et al. A systematic review of skills transfer after surgical simulation training. Ann Surg. 2008;248(2):166-179.

Types of Surgical Coaching



Technical Coaching

Instrument handling

Procedural techniques

Surgical anatomy

Decision-making skills



Non-Technical Coaching

Communication skills

Leadership abilities

Team coordination

Situational awareness

Yule S, et al. Non-technical skills for surgeons in the operating room: a review. Surgery. 2006;139(2):140-149.
Hull L, et al. The impact of nontechnical skills on technical performance in surgery. J Am Coll Surg. 2012;214(2):214-230.

Wisconsin Framework: Four Focuses

Technical Skill

- Efficiency
- Technique
- Exposure
- Blood Loss
- Outcomes

Cognitive Skill

- Surgical Planning
- Judgment
- Focus
- Situational Awareness

Interpersonal Skills

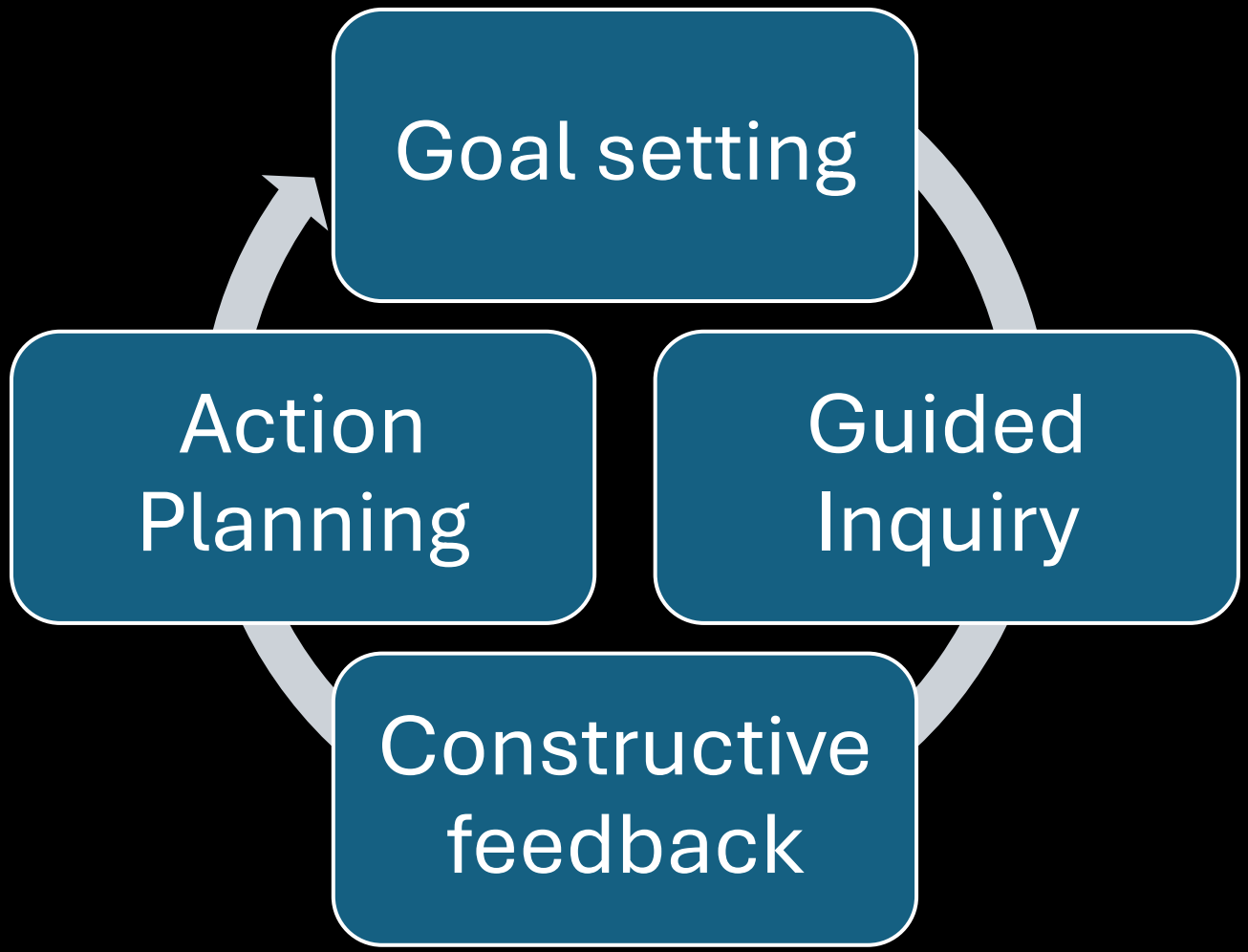
- Teaching Ability
- Leadership
- Communication

Self-Regulation

- Stress
- Coping
- Time Management
- Burnout

Vande Walle KA, Quamme SRP, Beasley HL, Leverson GE, Ghousseini HN, Dombrowski JC, Fry BT, Dimick JB, Wiegmann DA, Greenberg CC. Development and Assessment of the Wisconsin Surgical Coaching Rubric. JAMA Surg. 2020 Jun 1;155(6):486-492.

Wisconsin Framework: Coaching Principals



Vande Walle KA, Quamme SRP, Beasley HL, Leverson GE, Ghousseini HN, Dombrowski JC, Fry BT, Dimick JB, Wiegmann DA, Greenberg CC. Development and Assessment of the Wisconsin Surgical Coaching Rubric. JAMA Surg. 2020 Jun 1;155(6):486-492.



Barriers to Coaching

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What barriers might there be at your institution to a coaching program ? (select all that apply)

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Cultural and individual barriers

Traditional surgical culture

- Our environment emphasizes independence and self-reliance

Fixed mindset

- Belief that skills are innate

Hierarchy and ego

- Reluctance to admit need for improvement

Fear of vulnerability and judgment

- Concern appearing incompetent

Competitive environment

- Individual achievement over collaborative learning

Resistance to change

- "We've always done it this way"

LaDonna KA, et al. "I was a little surprised": insights into feedback encounters in the operating room. Med Educ. 2017;51(12):1248-1258.
Byrnes ME, Engler TA, Greenberg CC, Fry BT, Dombrowski J, Dimick JB. Coaching as a Mechanism to Challenge Surgical Professional Identities. Ann Surg. 2021 Aug 1;274(2):319-323.

Cultural barriers

N=34 bariatric surgeons

Surveyed after 2 years of coaching

Concern:

- Participation might **destabilize their surgical identity**

Might be viewed as vulnerable

After coaching:

- Surgeons interested in improvement
- No concerns of losing their surgical identity

Byrnes ME, Engler TA, Greenberg CC, Fry BT, Dombrowski J, Dimick JB. Coaching as a Mechanism to Challenge Surgical Professional Identities. Ann Surg. 2021 Aug 1;274(2):319-323.

Institutional barriers

Administrative

- Lack of leadership support

Time

- Average surgeon works 60-80hrs/wk

Staffing

- Limited # qualified coaches, expertise

FTE

- Cost of dedicated coaching personnel

Equipment $

- Expensive video capture technology

Samantha J. Rivard, Christopher Varlamos, Clarice E. Hibbard, Ashley Duby, Matthew J. Callow, Justin B. Dimick, John C. Byrn, Mary E. Byrnes, A national qualitative study of surgical coaching: Opportunities and barriers for colorectal surgeons, Surgery,172:546-551, 2022.
Pradarelli JC, Yule S, Panda N, Craig M, Lowery KW, Ashley SW, Gee DW, Waters PM, Knight J, Smink DS. Optimizing the Implementation of Surgical Coaching Through Feedback From Practicing Surgeons. JAMA Surg. 2021 Jan 1;156(1):42-49



Evidence for Value of Coaching

Systematic review of coaching

>3000 articles sampled

23 studies – 4 RCTs, 19 observational

Majority showed improvement

- 25%-40% in technical skills
- 20%-35% in procedure time

Technical improvement from non-technical coaching

Improvement in surgeon confidence

Reduction in complication rates

Majority patient outcome studies - improvement

Effects durable 6-12 months

Hyeyoun Min, Dianali Rivera Morales, Dennis Orgill, Douglas S. Smink, Steven Yule. Systematic review of coaching to enhance surgeons' operative performance, Surgery,158: 1168-1191, 2015.
Greenberg CC, et al. A statewide surgical coaching program provides opportunity for continuous professional development. Ann Surg. 2018;267(5):868-873.
Hung JJ, et al. Coaching for surgeons: a scoping review of the quantitative evidence. Ann Surg. 2022;276(6):e544-e553.



Survey of Video-Based Coaching

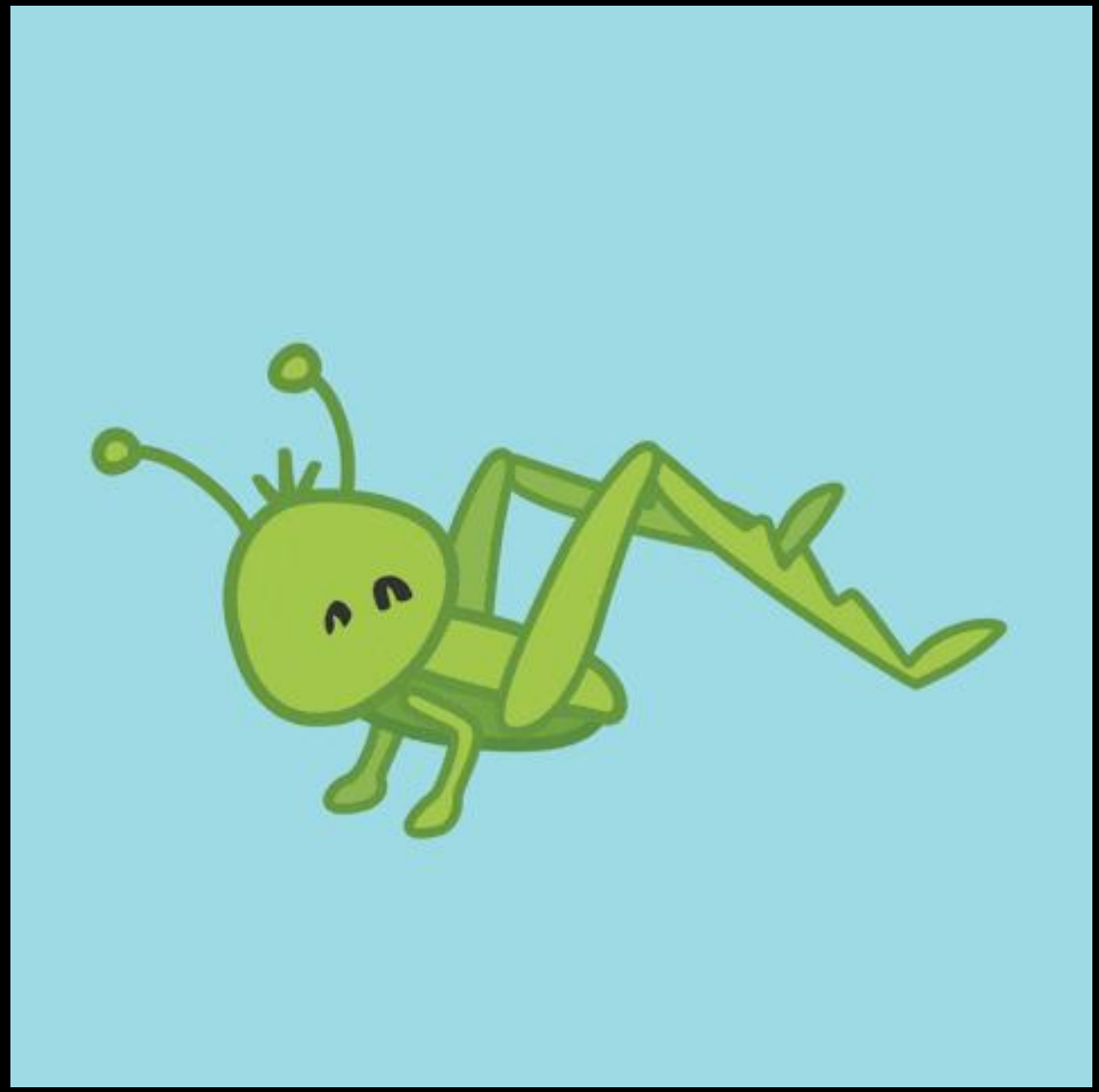
- Review of 52/828 articles on VBC
- 5% of residents use VBC
- 94-100% say that VBC was helpful
- Reduced stress, private environment

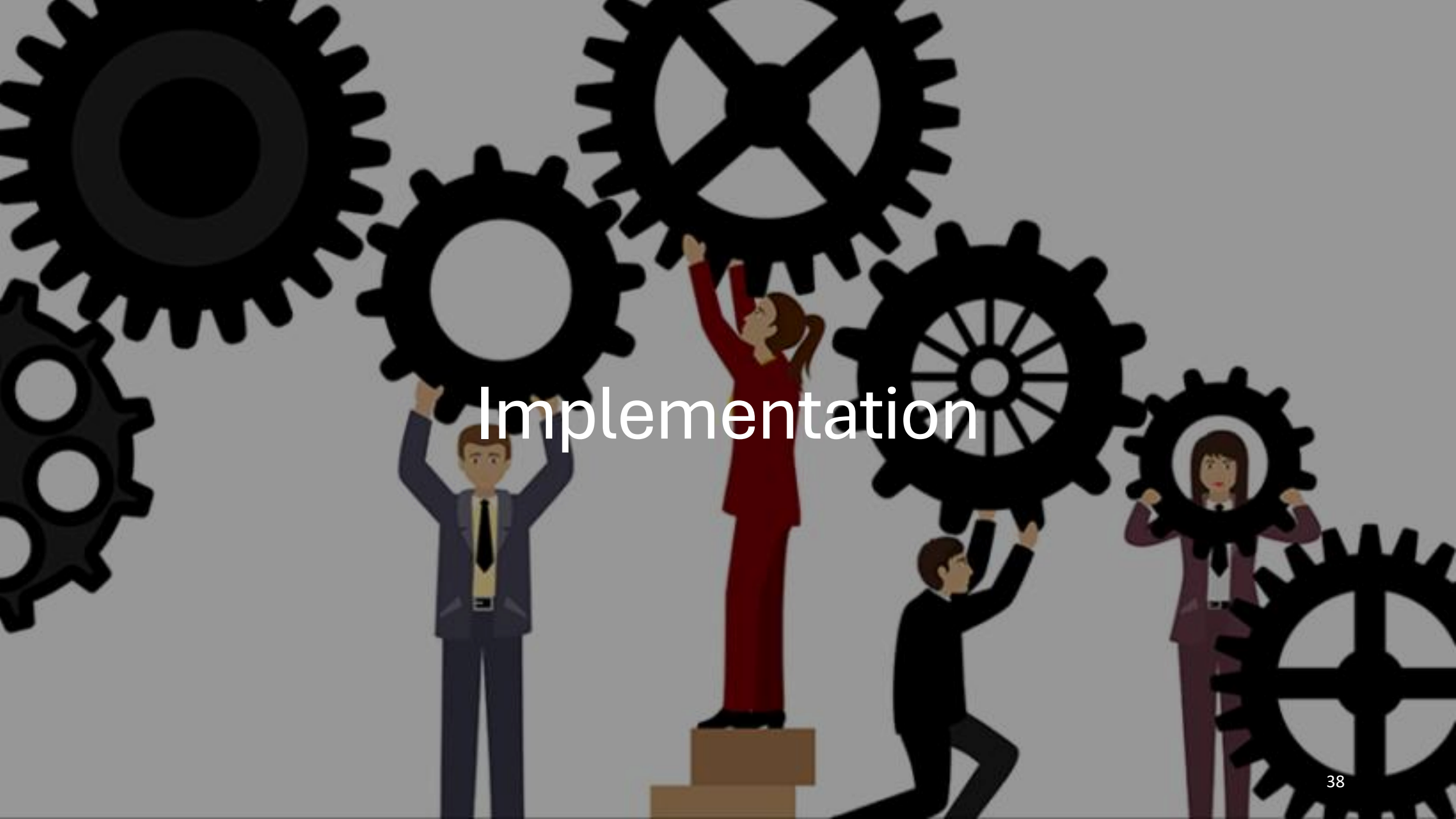
- “I don’t think there is any operation that you can’t do better…when I went to tennis camp. The first thing they do is video your serve. You realize, I thought I looked like Nadal, and I don’t look like Nadal at all.”



Andrew C. Esposito, Nathan A. Coppersmith, Erin M. White, Peter S. Yoo. Video Coaching in Surgical Education: Utility, Opportunities, and Barriers to Implementation, Journal of Surgical Education, 79: 717-724, 2022.

Position statements: ACS, ABU, ABS





Implementation

What do you need?



Coaching Feasibility Study



8-week pilot

3 coachees (median yrs of practice 5); 3 coaches (median yrs of practice 30)

Coaches selected as experts in niche and > 15 yrs practice

Robotics, hypospadias, exstrophy, reconstruction experience

The Academy for Surgical Coaching course

0.1FTE dedicated for coaching



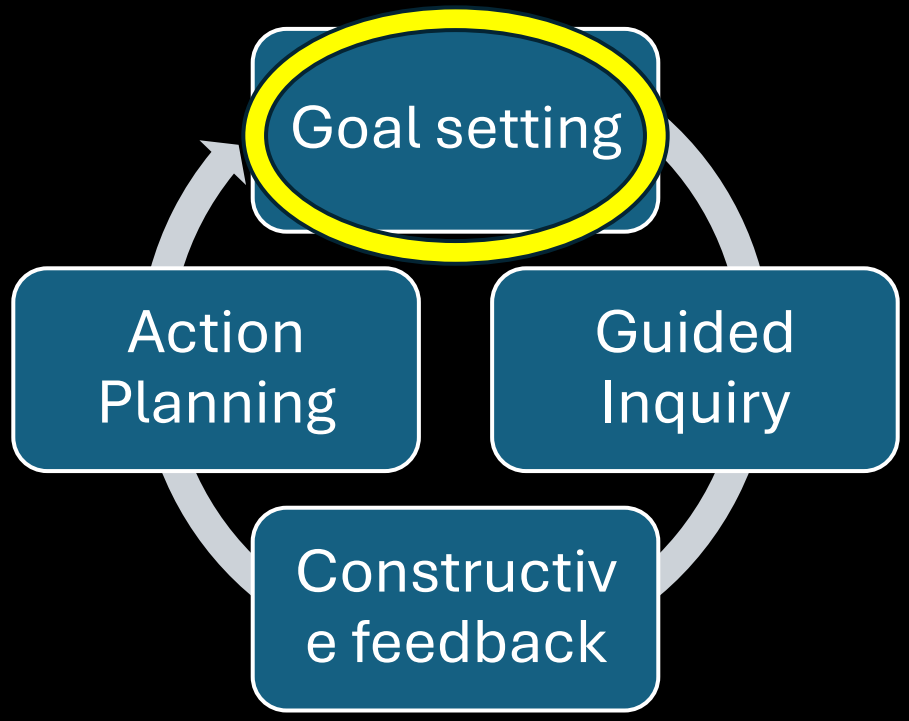
Silverii H, Fernandez N, Ahn J, Lendvay T, Shnorhavorian M, Joyner B, Kieran K, Cain M, Merguerian P. Standardization and Implementation of a Surgical Coaching Model for Pediatric Urology. J Surg Educ. 2024 Mar;81(3):319-325.

Steps

Be very specific about goals

Hands-on or observatory role

“How do you learn new things?”




COACH

Steps

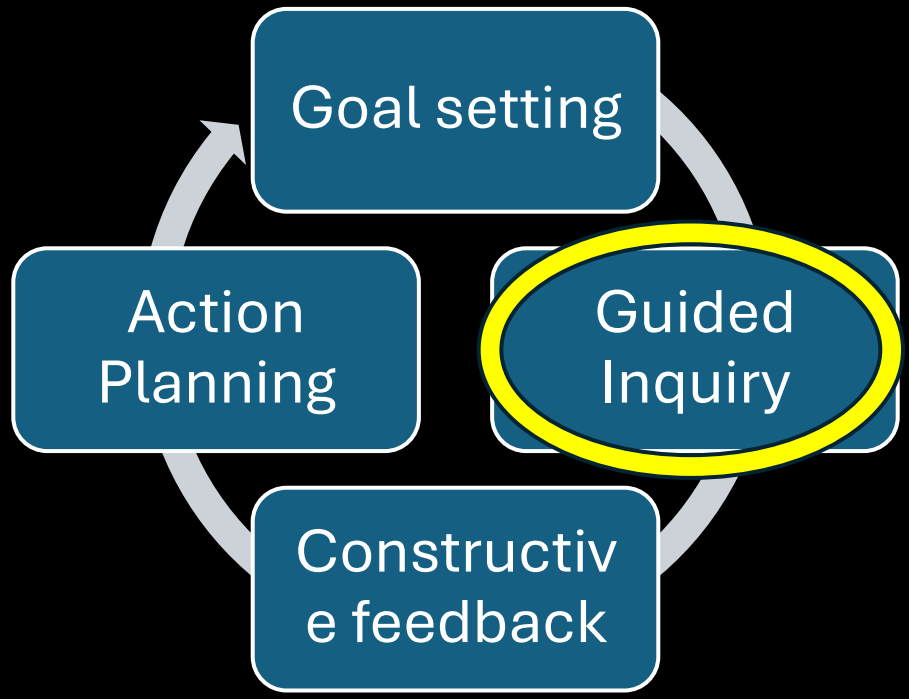
Debrief – w/ or w/o video review

Listen for understanding; tolerate discomfort

Shift coachee from ‘what’ to ‘why’

Be alert for “feeling” words; go deeper

What’s another way this might have played out?



“Most people do not listen with the intent to understand. They listen with the intent to reply.”

Steps

Keep the goals in mind

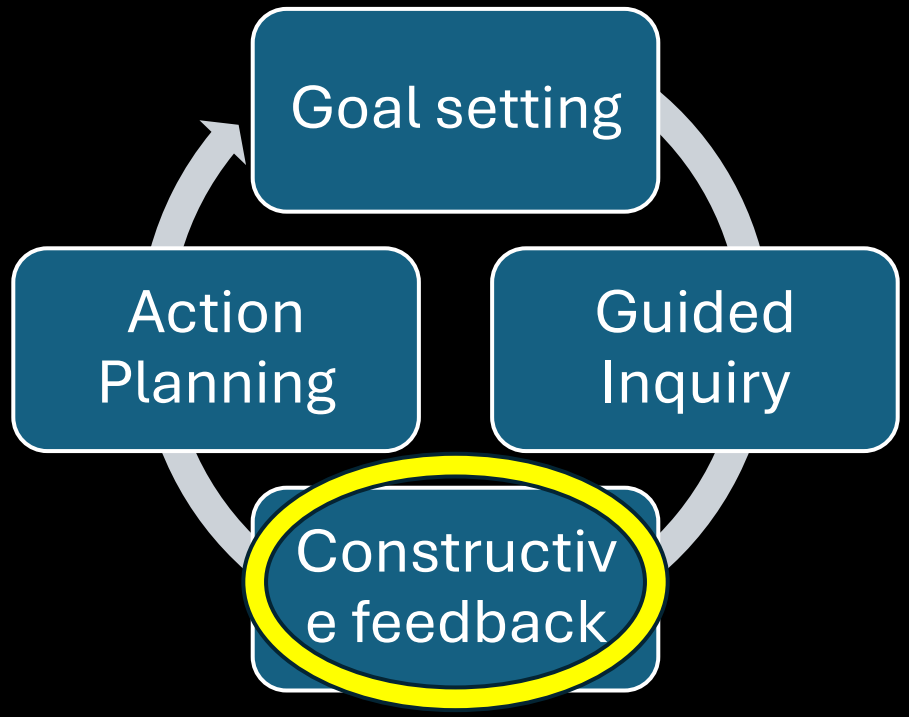
Be descriptive, non-judgmental

Focus on behavior observations/impact

“I observed you __”

“What I appreciate is __”

“I feel you could be even more effective if __”



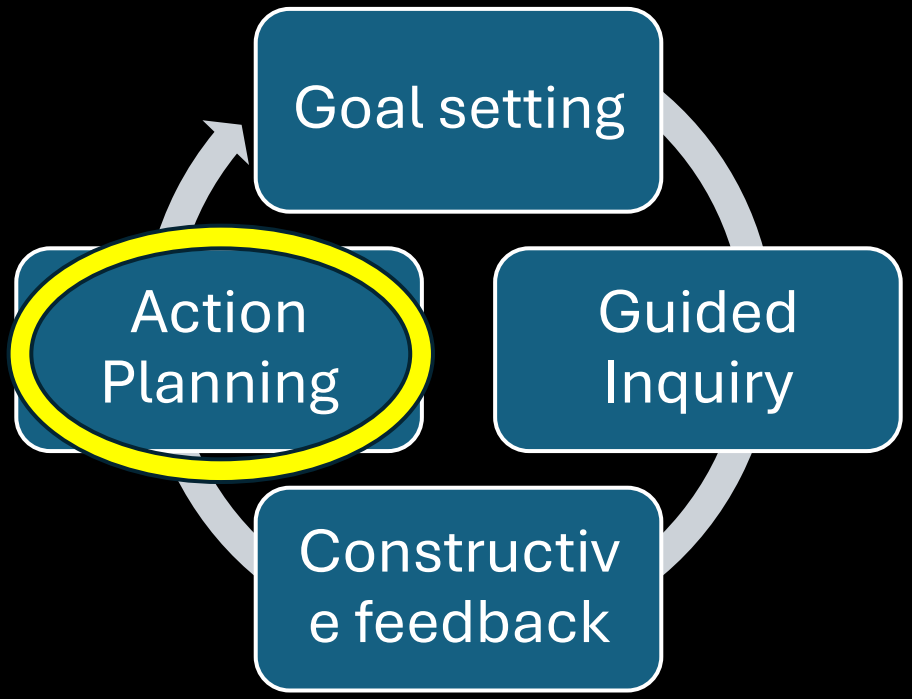
Steps

Coachee plan of action

“What next action might help you to achieve ____?”

Examples of action plan:

- New tools to utilize with trainees/staff
- Video review
- Talk with surgeons about similar issues



Pilot observations



Goal setting

- Most appreciated by all surgeons

Debrief

- Most challenging (time)

Trainee experience

- Positive experience w/o affecting perceived autonomy

Improvements

- Pre-scheduling debrief
- Limiting to 2-4 case/mo
- Reduce assessment tool #
- Tailor technical assessment tools to procedure

Silverii H, Fernandez N, Ahn J, Lendvay T, Shnorhavorian M, Joyner B, Kieran K, Cain M, Merguerian P. Standardization and Implementation of a Surgical Coaching Model for Pediatric Urology. J Surg Educ. 2024 Mar;81(3):319-325.

What do the coaches get?





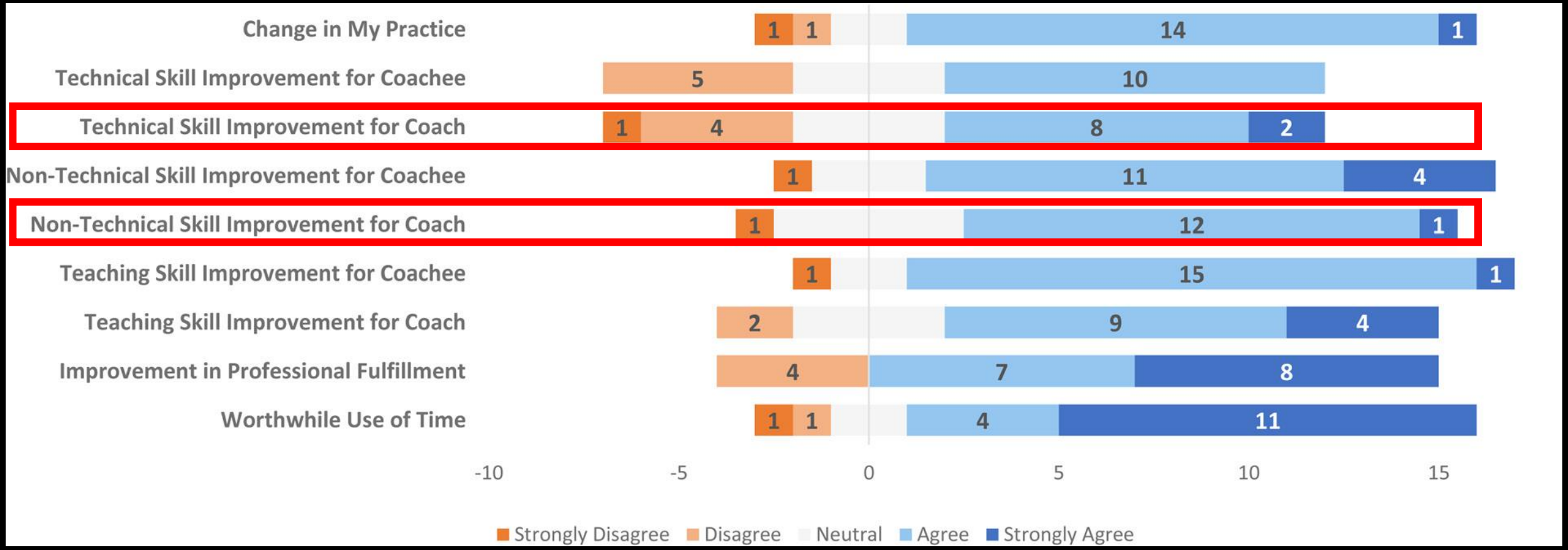
Surgical Coaching for Operative Performance Enhancement (SCOPE) study – Brigham/MGH

Direct observation peer-coaching structure

Multiple surgical disciplines

Quantitative surveys and exit interviews

Gunn, E. G., Sinyard, R. D., Cummins, E. R., Yule, S., & Smink, D. S. (2025). What About the Coach? Mixed-Methods Study Assessing the Experience of Coaches in a Peer Surgical Coaching Program. *Journal of the American College of Surgeons*, *241*(6), 955–962



15/19 coaches (79%) agreed/strongly agreed that practice significantly changed

Benefits as good for coach as coachee; "better than CME"

Challenge – time constraints

"Programs should promote coach and coachee professional development…"

$$$$?



?

At SCH – coached cases billing split

- Primary attending (coachee) – 80%
- Assistant Surgeon (coach) – 20%

”Admin” time partly for coaching

- Is 0.10 FTE the right amount?
- In practice, coaching 1-2 cases/month
- Usually bigger complex cases



Future of Coaching









Surgical Collaboratives



Video-Based Assessment Study

THE AMERICAN BOARD OF SURGERY

Survey surgeons on knowledge/interest

- 4,853 diplomates responded
- 54% - no knowledge of video review
- 77% - no knowledge of objective skills assessment tools

Pilot 3 VBA platforms

- Caresyntax, C-SATS, Surgical Safety Technologies

Reviewers were reviewees

74% thought VBA would help their practice

81% liked VBA for CME

Same barriers as other coaching studies

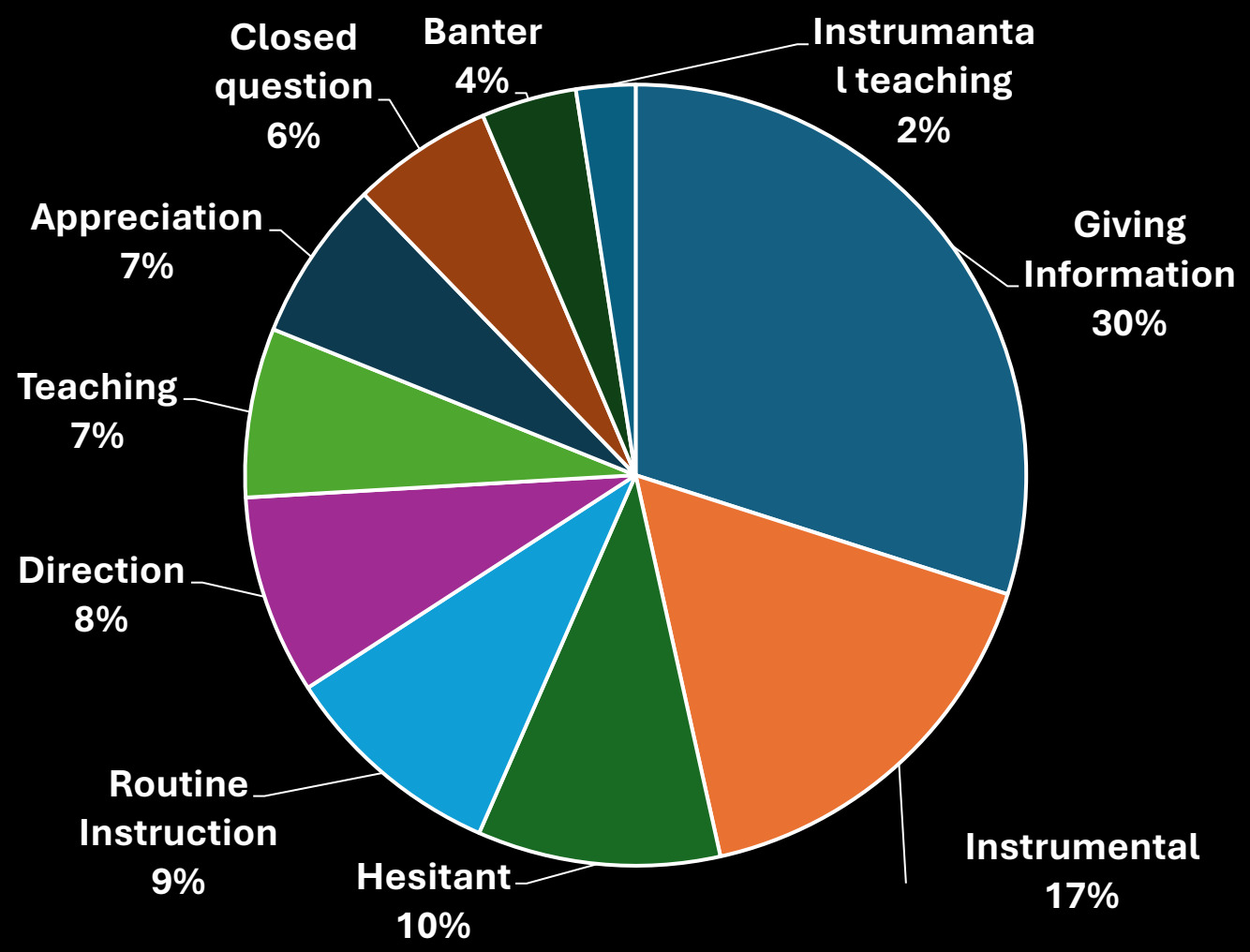
Pryor AD, Lendvay T, Jones A, Ibáñez B, Pugh C. An American Board of Surgery pilot of video assessment of surgeon technical performance in surgery. Annals of Surgery. 2023 Apr 1;277(4):591-5.

What about quantifying non-technical skills (NTS)?



Natural Language Processing (NLP) coupled with Biometric data

- Self regulation
- Leadership skills
- Communication
- Decision making



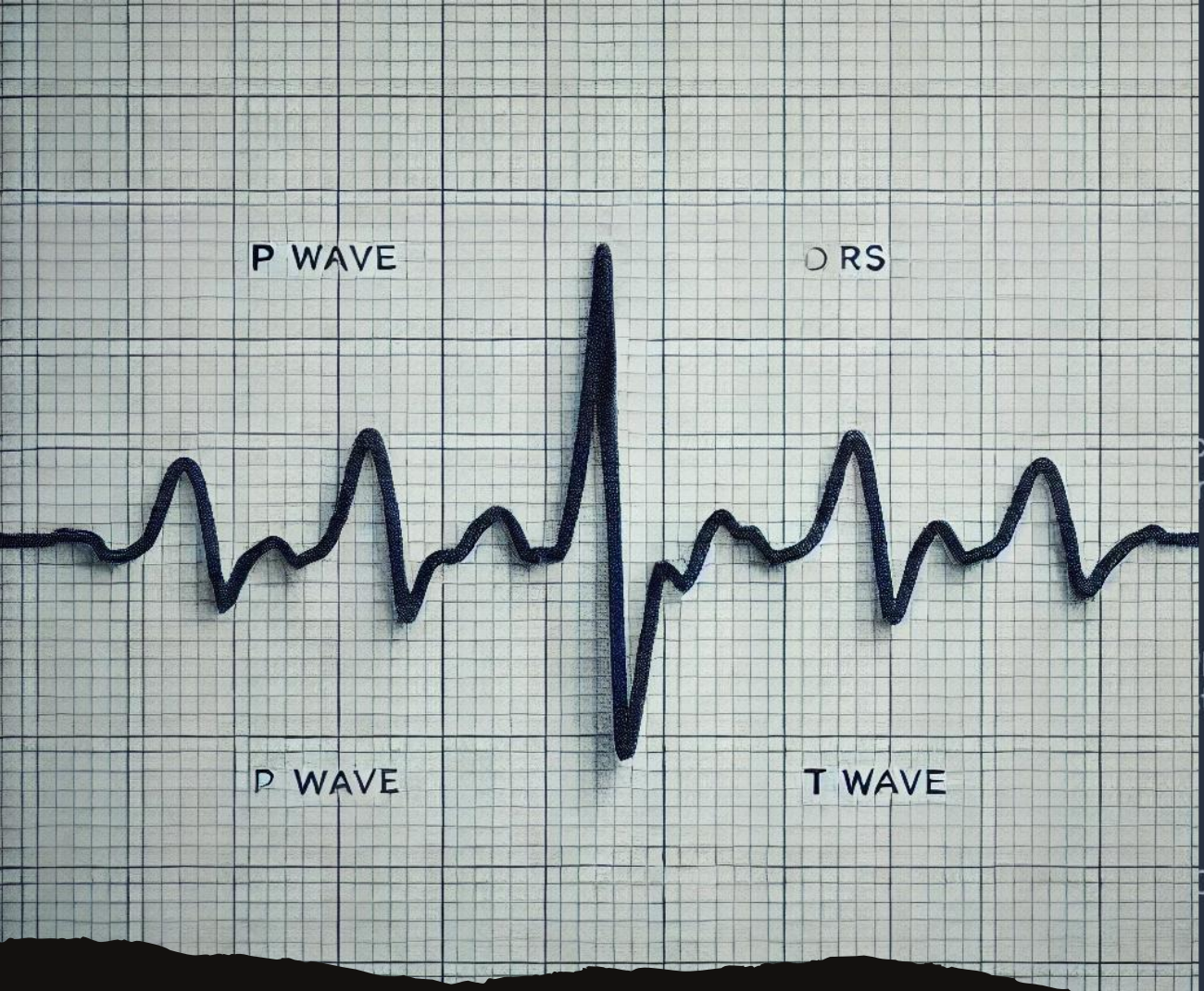
Systematic Review (BJS): NTS link to patient outcomes

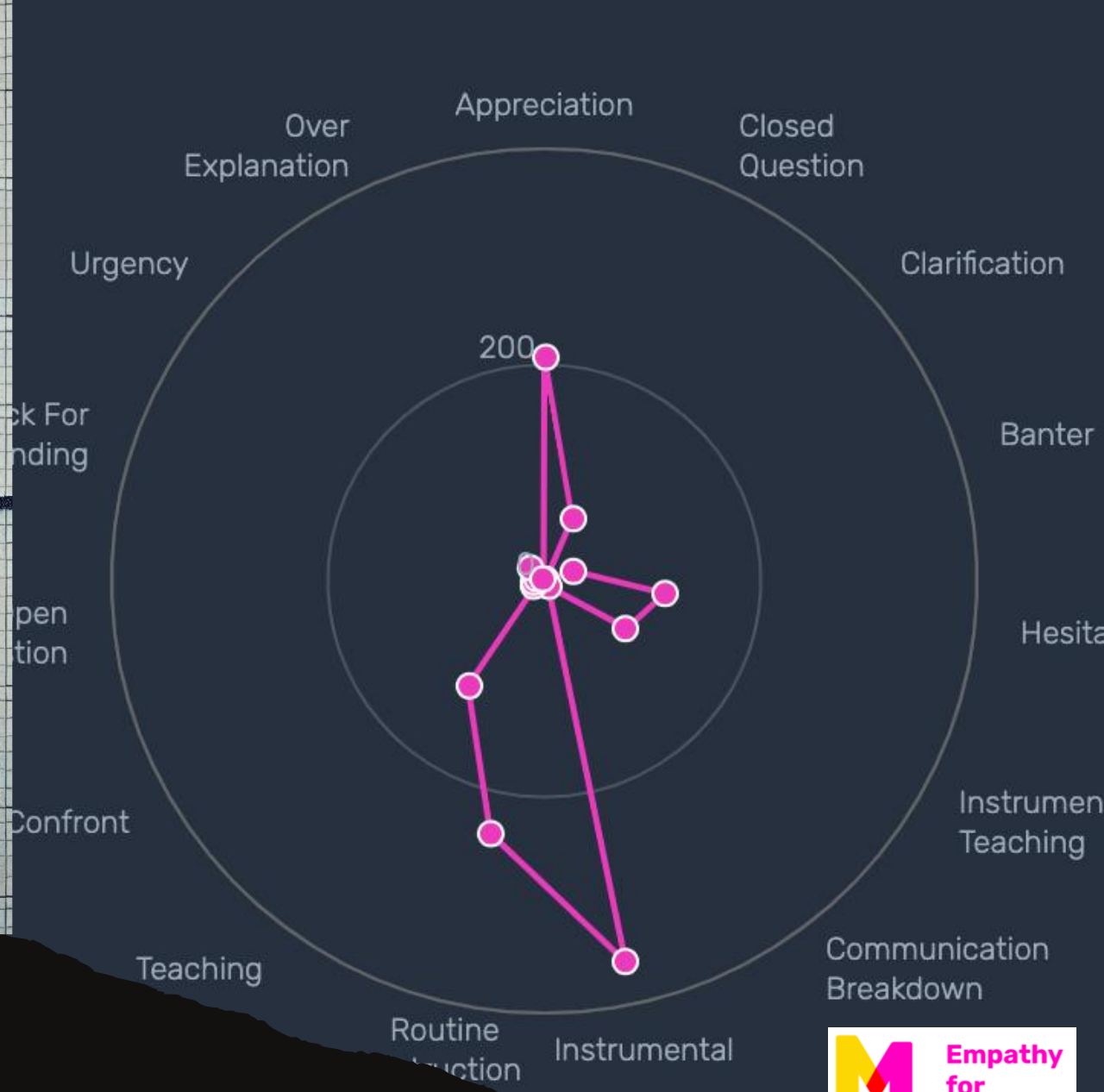
21 studies included; >250,000 case across 13 specialties

- Estimated blood loss
- Length of stay
- Mortality
- Postoperative complications
- Readmission
- Return to the OR
- Surgical-site infection
- Combined postoperative complications and mortality

54%

Norton J, Janda AM, Howie E, Pohl N, Abahuje E, Harrington SD, Popov V, Bauer TM, Borges P, Querejeta Roca G, Mathis MR. Impact of surgical non-technical skills on clinical outcomes: systematic review. British Journal of Surgery. 2026 Jan;113(1) .znaf271.

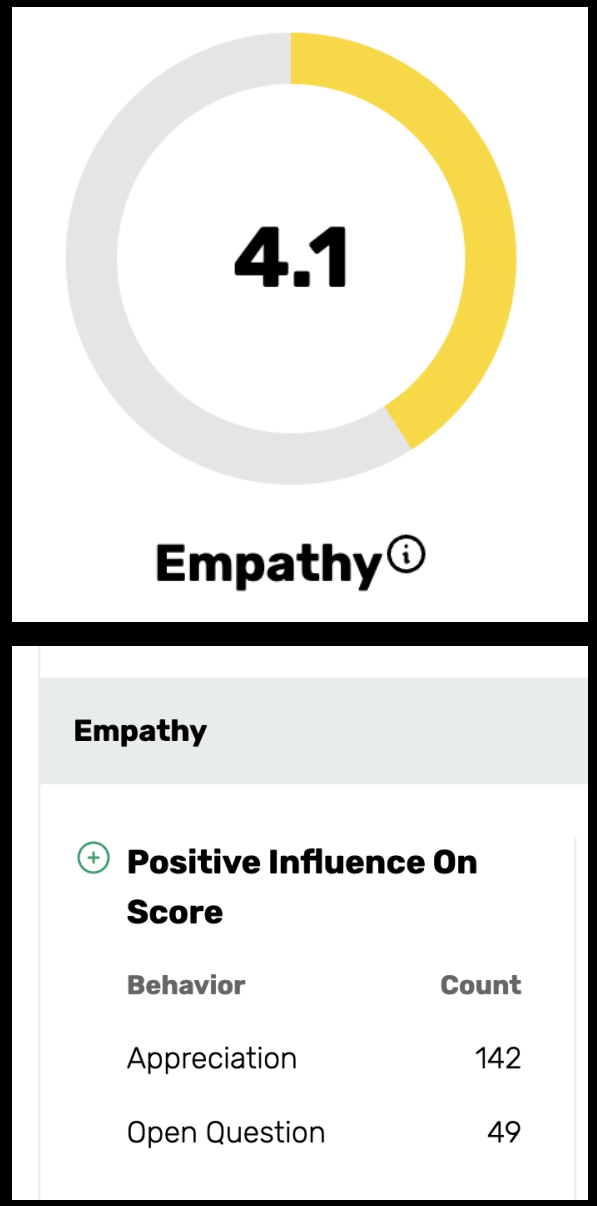


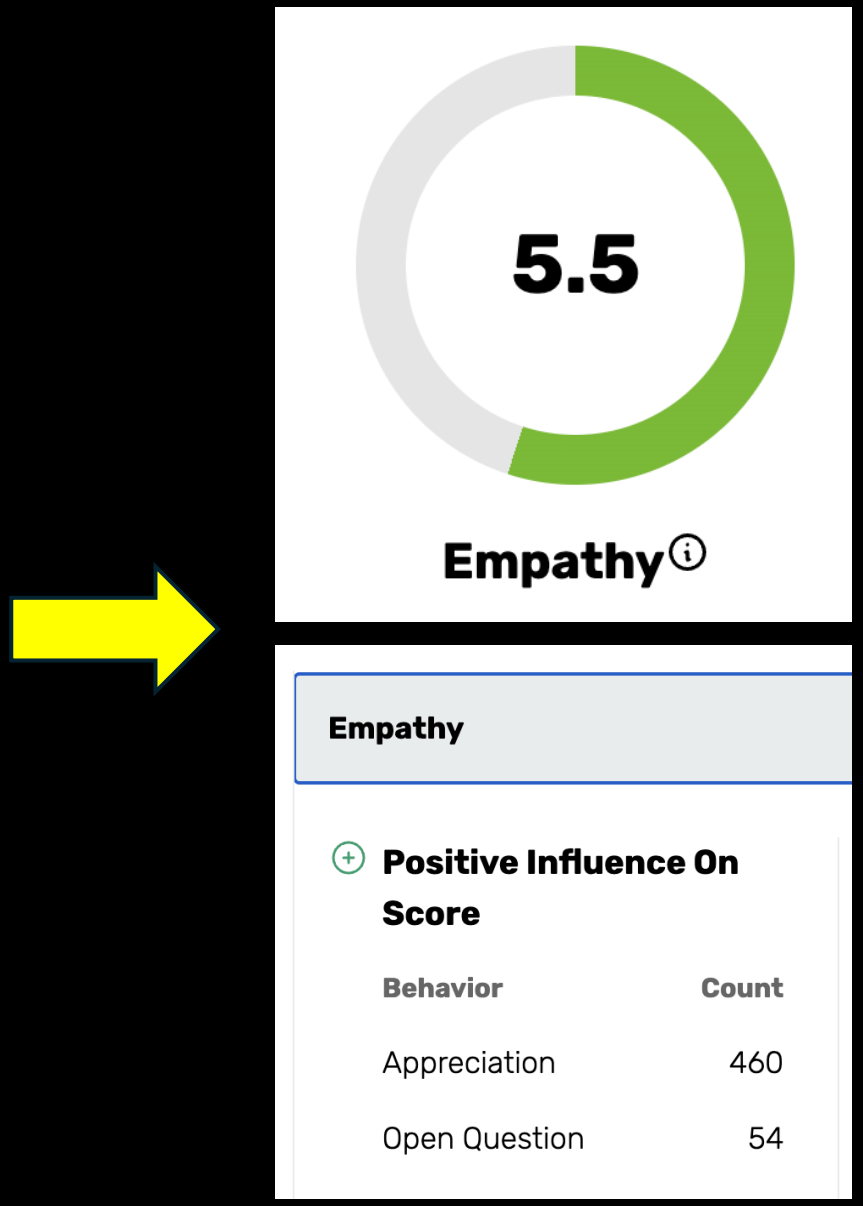


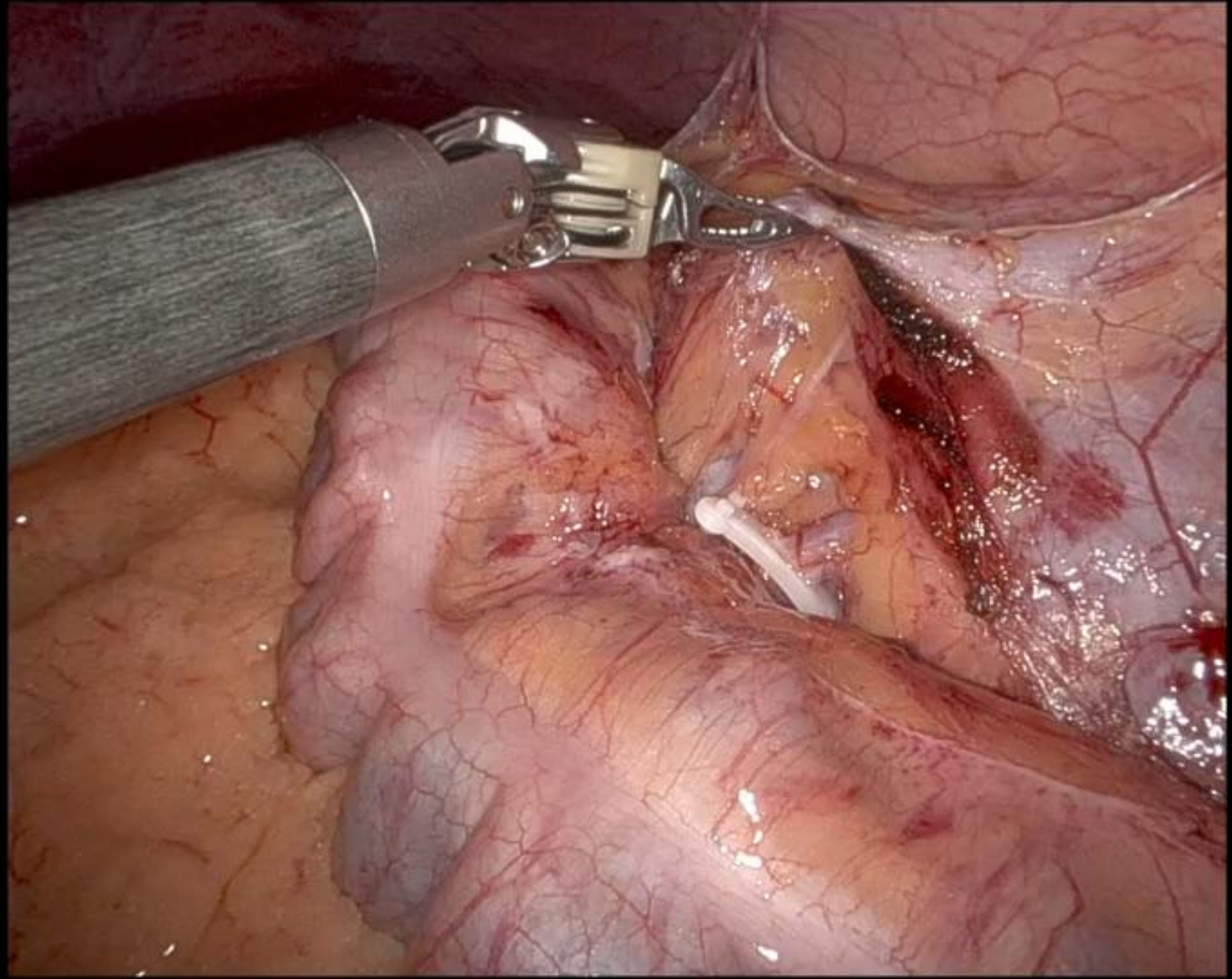
Objective Metrics

Empathy for Everyone

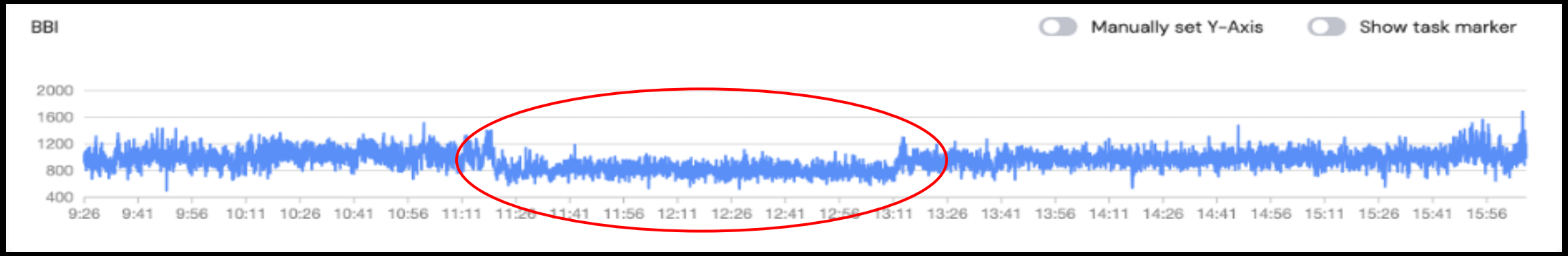
Striving for empathy







Autonomic Metrics







Task Force of the European Society of Cardiology and the North American Society of Pacing and Electrophysiology. (1996). Heart rate variability: Standards of measurement, physiological interpretation, and clinical use. Circulation, 93(5), 1043–1065. https://doi.org/10.1161/01.CIR.93.5.1043

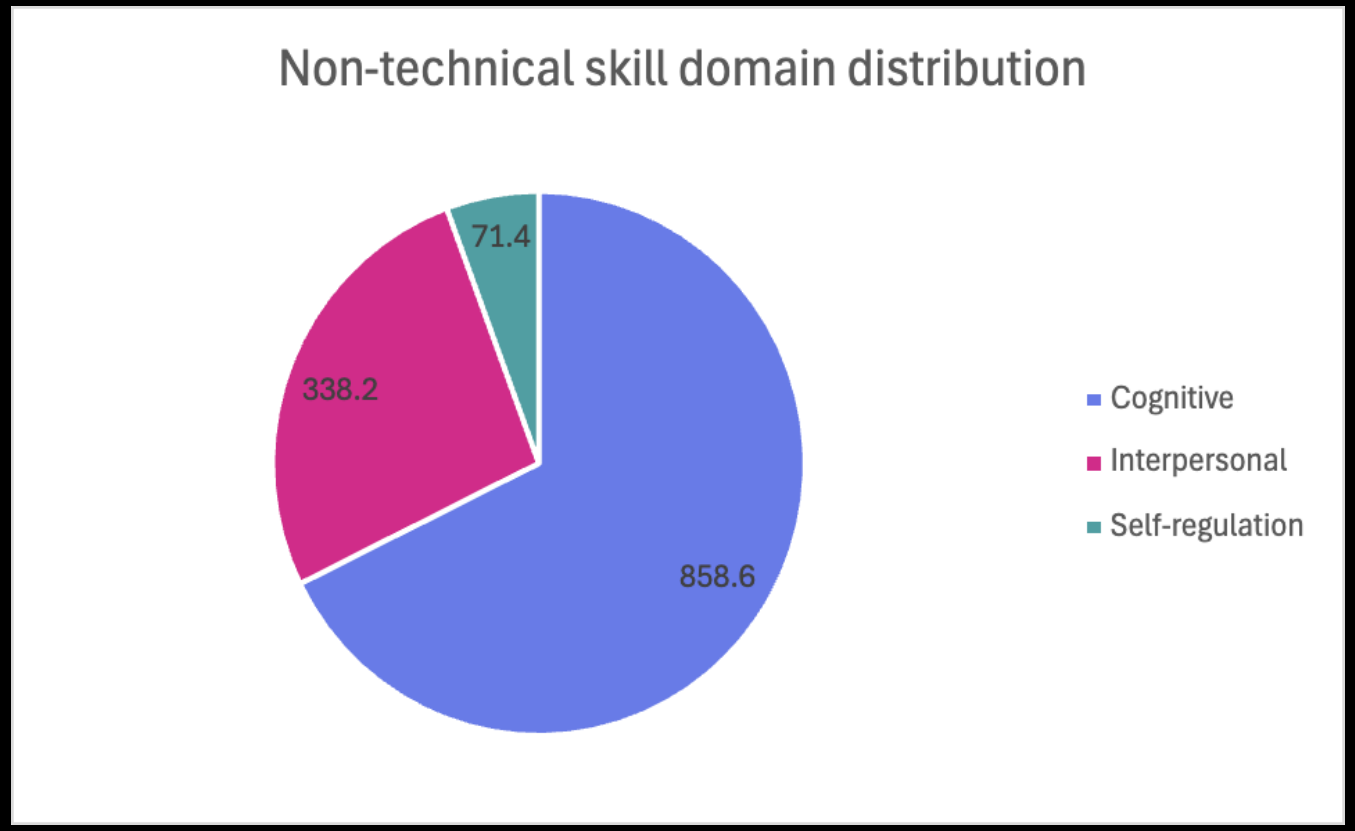
AI-supported intraoperative communication feasibility study

Incorporate non-technical skills monitoring with video

51 surgeries with audio and video recordings

- 11 for logistics and feasibility
- 40 for prospective data capture

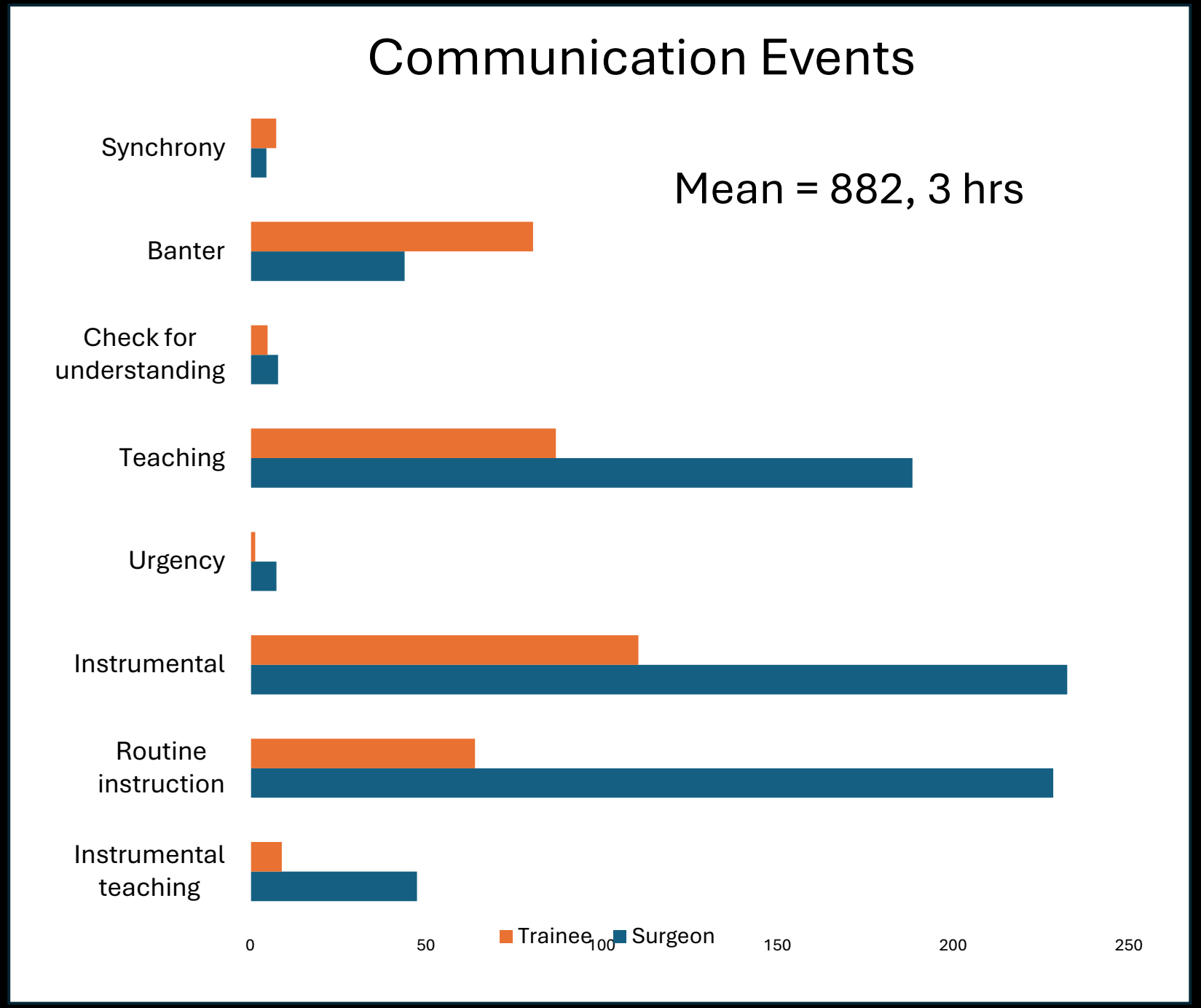
Unstructured conversations → structured data



Fernandeez N, Cerezo A Gopalan M, Lord S, Ahn J, Lendvay T. Feasibility of AI-Supported Intraoperative Communication Analysis for Surgical Coaching in Pediatric Robotic Surgery. J Pediatric Urology, j- doi. 10.1016/j.jpurol.2026.106333. Accepted October, 2026

Results

- Longer cases: communication rate decreased (p=0.0034)
- Empathy *decreased* with increased case complexity

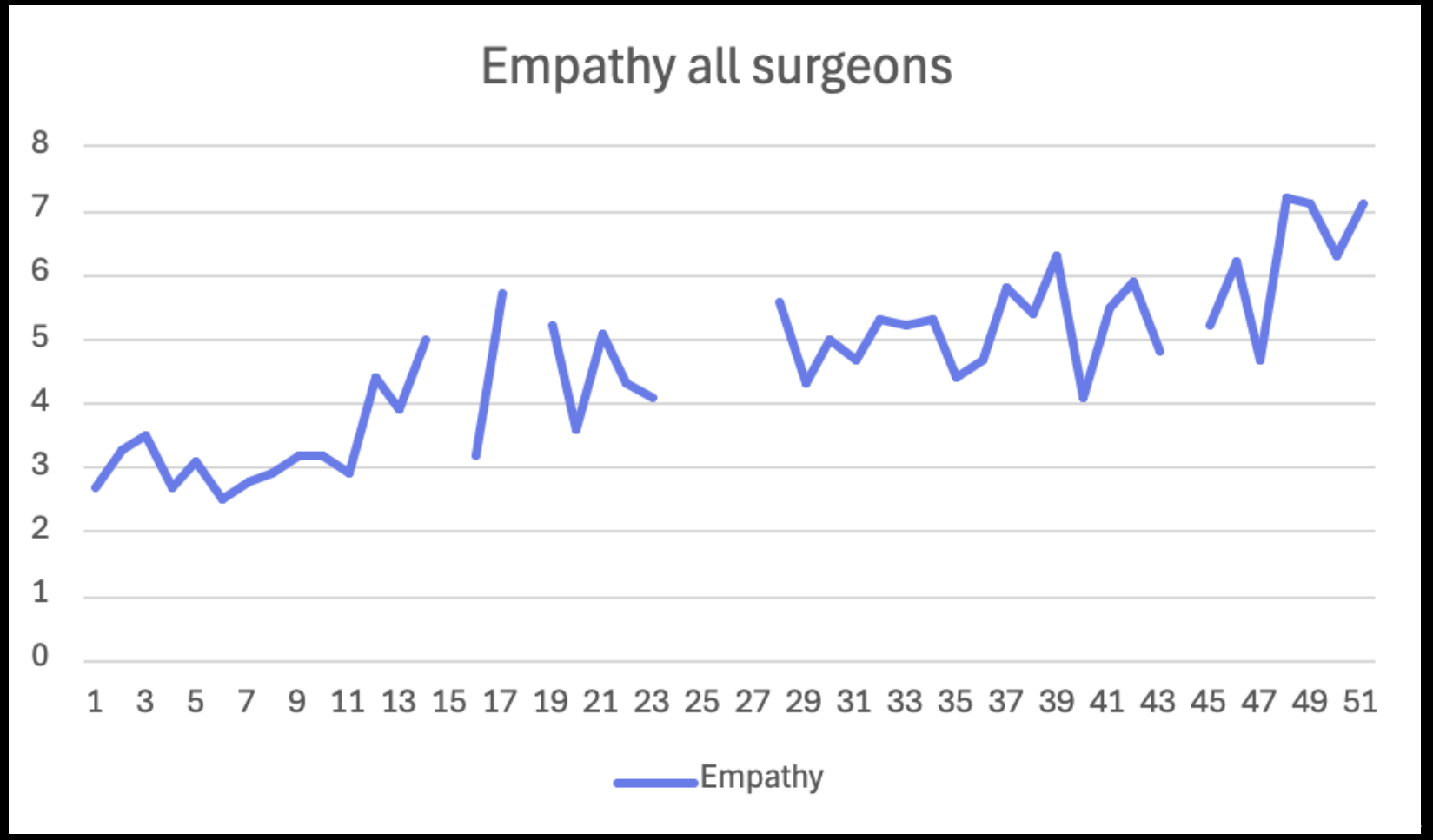


Empathy

Empathy improved over the study period

Scalable, objective, focus on non-technical skills

Now need to link to patient outcomes





What about our fellows?

Implications for fellowship training

Status quo

- Graduated advancement through 2 ACGME years

The Billing and “Coached” Fellow

- Should we go back to the 2nd year being supervised attendingship w/ coaching rubric?

Institutionalized coaching after graduation

- Then could the fellowship be ONE year?
- May address pediatric urology ‘interest’ cliff

Final Thoughts

Evidence strongly supports coaching

Technology allows for objective metrics

Barriers need to be reconciled

Look for jobs where coaching is offered

ABU: I will help with SOP if you provide CME

Next steps…





There are too many coaching opportunities and not enough certified coaches

Become a Coach!