

How well is surgical improvement being conducted?

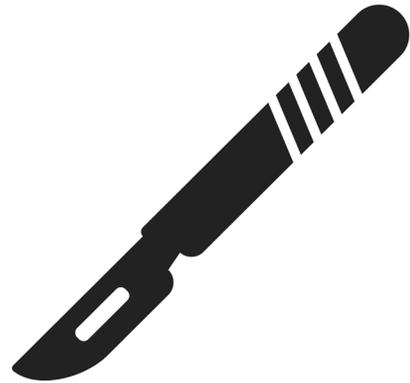
Pilot study evaluating small-scale surgical improvement efforts

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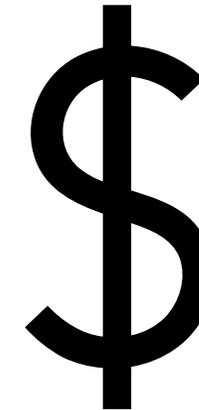
Disclosure

- No relevant disclosures

Challenges in Surgical Quality



Surgical Patients are **2x** as likely to experience harm as non-surgical patients¹

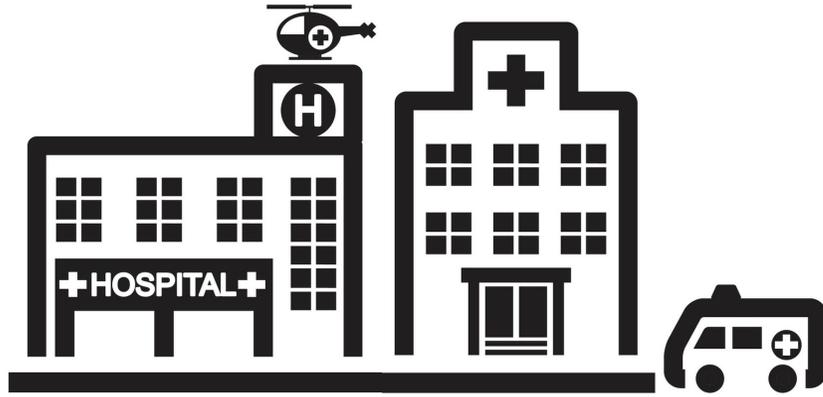


Care cost of harmed surgical patient is **2x** that of non-harmed surgical patients²

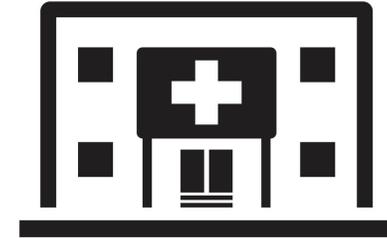
1. Rubinfeld, I., Different Harm and Mortality in Critically Ill Medical vs Surgical Patients: Retrospective Analysis of Variation in Adverse Events in Different Intensive Care Units. The Permanente Journal, 2018.

2. Adams, P.D., et al., The differential effects of surgical harm in elderly populations. Does the adage: "they tolerate the operation, but not the complications" hold true? The American Journal of Surgery, 2014. 208(4): p. 656-662.

Large versus Small Scale Improvement Efforts



- Span an organization or across organizations¹
- Resourced and Funded
- Published Results



- Local Hospital, Ward, Unit, Clinical Team²
- Non-Resourced and Unfunded
- Not Published

¹Peden, C.J., et al., Effectiveness of a national quality improvement programme to improve survival after emergency abdominal surgery (EPOCH): a stepped-wedge cluster- randomised trial. *The Lancet*, 2019. 393(10187): p. 2213-2221.

²Harvey, G., Methods for evaluation of small scale quality improvement projects. *Quality and Safety in Health Care*, 2003. 12(>3): p. 210-214.

Evaluation of Large Scale Improvement Efforts in Healthcare



- Less than 20% of efforts using PDSA method fully documented the application of a sequence of iterative cycles.
- Only 15% of efforts reported the use of quantitative data at monthly or more frequent data intervals to inform progression of cycles.

Study Aims

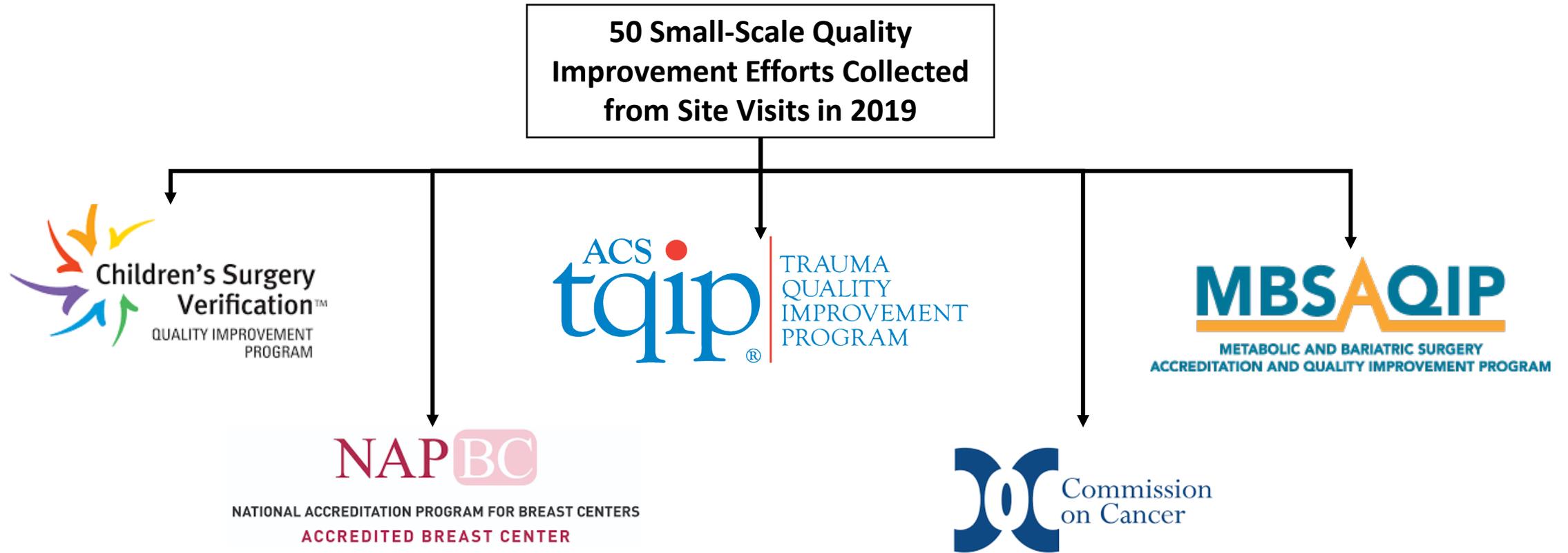
- Evaluate local small-scale surgical improvement efforts to elucidate how well they are executed and whether opportunities exist to improve surgical improvement efforts.

Hypothesis

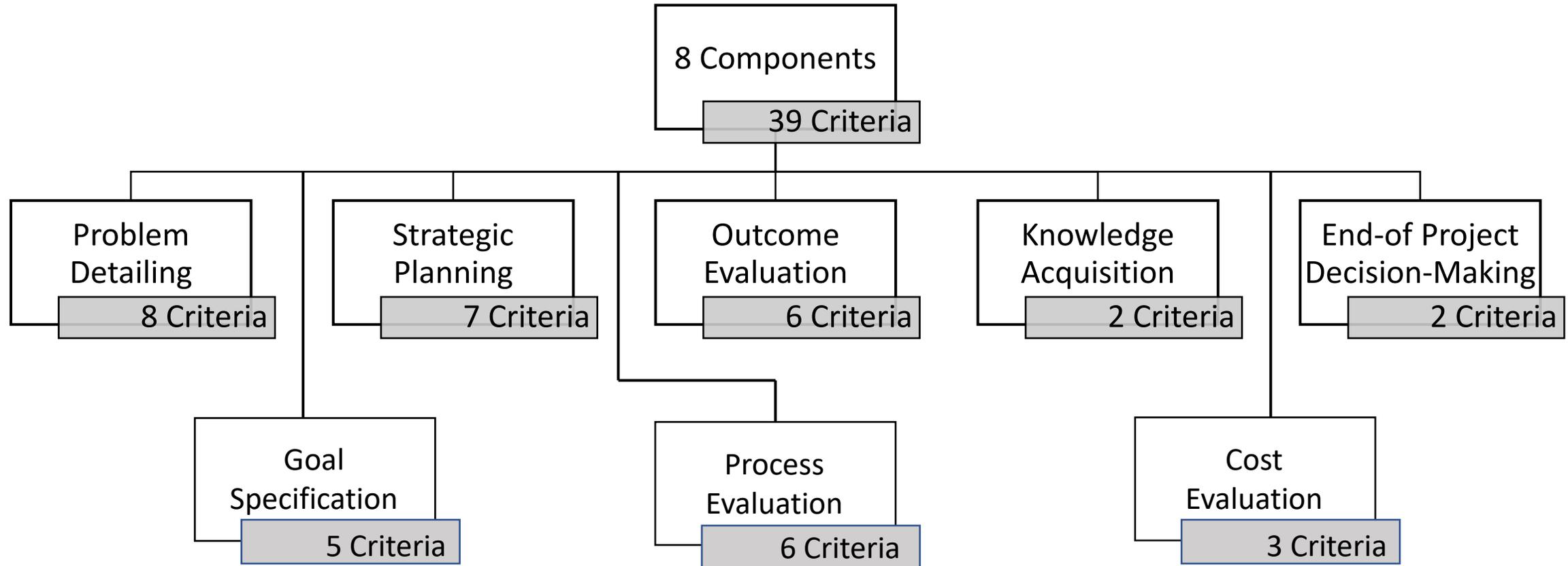
- Local small-scale surgical improvement efforts are poorly conducted and will have gaps that require improving.

Methods

Identification of Surgical Quality Improvement Efforts

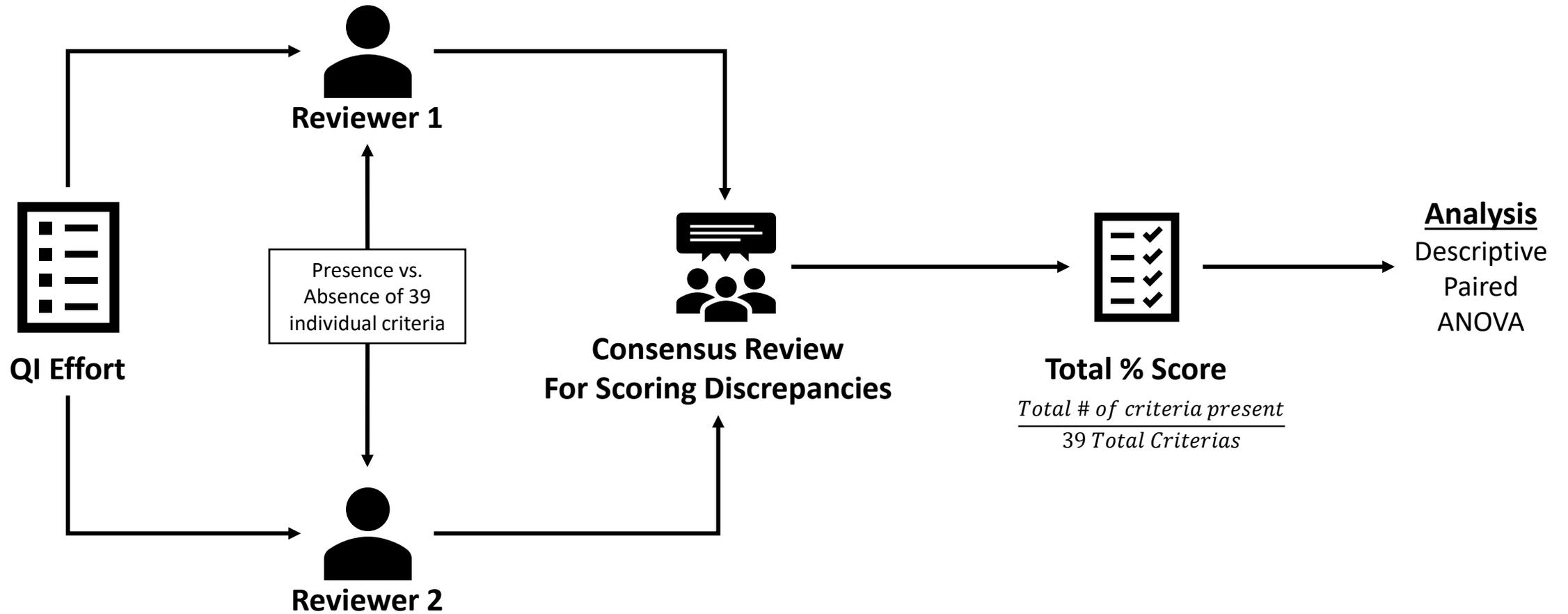


The ACS Quality Improvement Framework



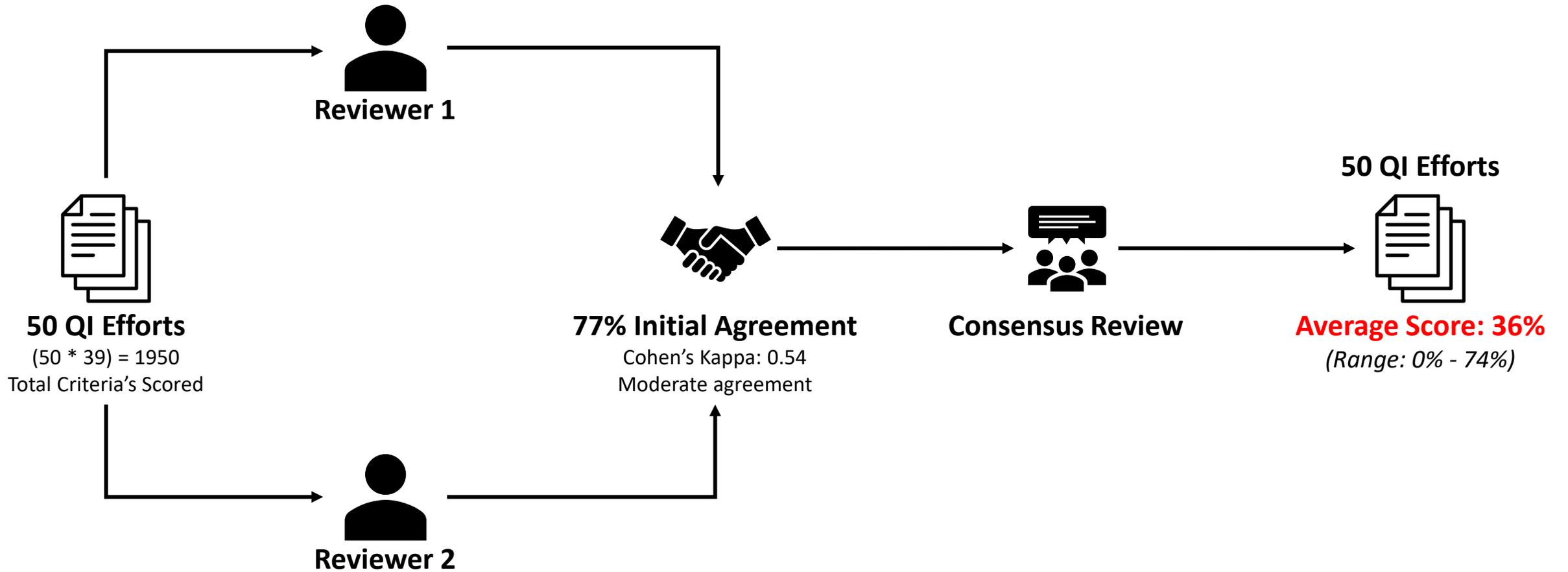
Ko, C. Y., Shah, T., Nelson, H., & Nathens, A. B. (2022). Developing the American College of Surgeons Quality Improvement Framework to Evaluate Local Surgical Improvement Efforts. *JAMA surgery*.

Scoring of QI Efforts using the ACS Quality Framework



Results

Scores of Surgical Improvement Efforts



Scores by Framework Components and Criteria's

Framework Component	Framework Criteria	Percent Present	Average Component Score
Problem Detailing	1. Problem Statement	80%	46%
	2. Local Issue	74%	
	3. Local Data	46%	
	4. Significance of Problem	56%	
	5. Patient Facing	6%	
	6. Improvement Team Input	64%	
	7. Internal Stakeholders	26%	
	8. External Stakeholders	16%	

Scores by Framework Components and Criteria's

Framework Component	Framework Criteria	Percent Present	Average Component Score
Goal Specification (SMART Goals)	1. Specific	64%	41%
	2. Measurable	48%	
	3. Achievable	18%	
	4. Relevance	36%	
	5. Timely	38%	

Scores by Framework Components and Criteria's

Framework Component	Framework Criteria	Percent Present	Average Component Score
Strategic Planning	1. Improvement Planning	82%	45%
	2. Strategic Rationale	52%	
	3. Stakeholder Involvement	44%	
	4. Resources	50%	
	5. Data	58%	
	6. Probable Limitations	2%	
	7. Contextual Issues	24%	

Scores by Framework Components and Criteria's

Framework Component	Framework Criteria	Percent Present	Average Component Score
Process Evaluation	1. Description of Project Execution	56%	27%
	2. Evaluation During Implementation	24%	
	3. Problems Encountered	18%	
	4. Changes Undertaken	14%	
	5. Data	26%	
	6. Stakeholder Involvement	22%	

Scores by Framework Components and Criteria's

Framework Component	Framework Criteria	Percent Present	Average Component Score
Outcome Evaluation	1. Data / Analytics	70%	37%
	2. Outcome Quantification	70%	
	3. Goal Achievement	56%	
	4. Biggest Limitations	4%	
	5. Unintended Consequences	2%	
	6. Stakeholders	18%	

Scores by Framework Components and Criteria's

Framework Component	Framework Criteria	Percent Present	Average Component Score
Cost Evaluation	1. Cost of Project	8%	3%
	2. Value	0%	
	3. Stakeholder Perspective	0%	
Knowledge Acquisition	1. Lessons	26%	23%
	2. Current Actions	20%	
End-of-Project Decision-Making	1. Future Actions	50%	47%
	2. Surveillance Plans	44%	

Summary: Score by Framework Components and Criteria's

Component with highest scores:

1. End of Project Decision-Making (47%)
2. Problem Detailing (46%)
3. Strategic Planning (45%)



Criteria with highest scores:

1. Improvement Planning (82%)
2. Problem Statement (80%)
3. Local Issue Characterization (74%)

Component with lowest scores:

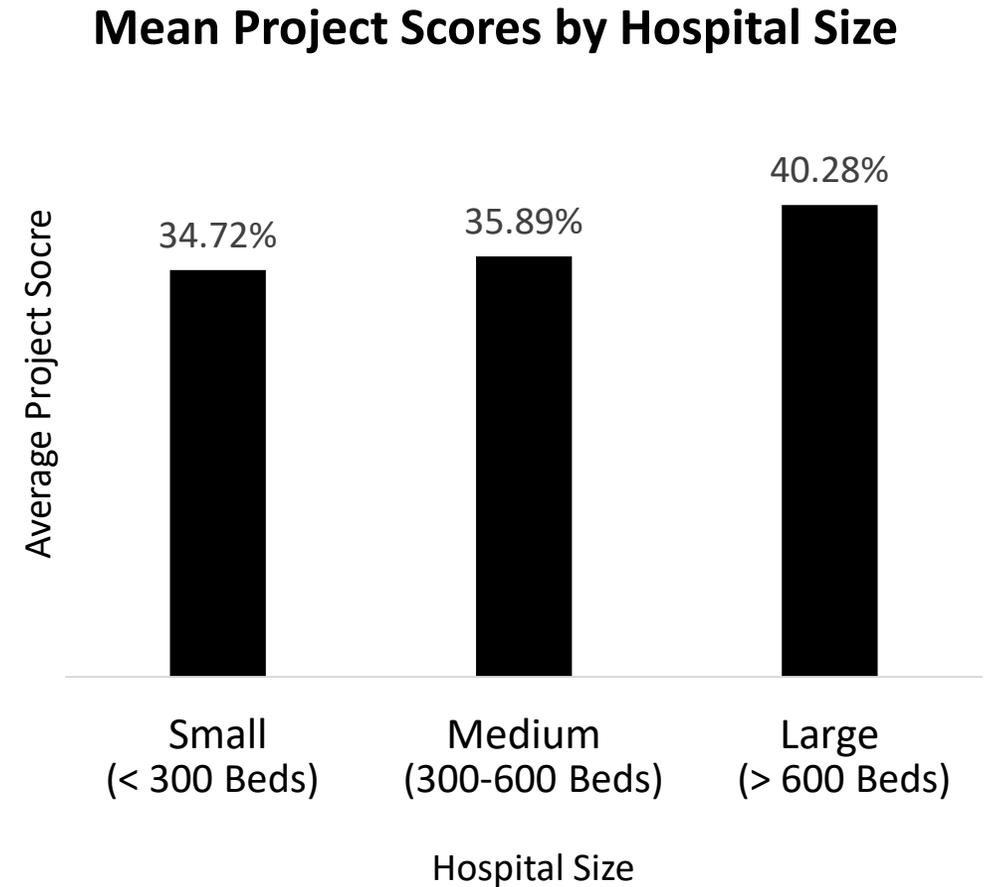
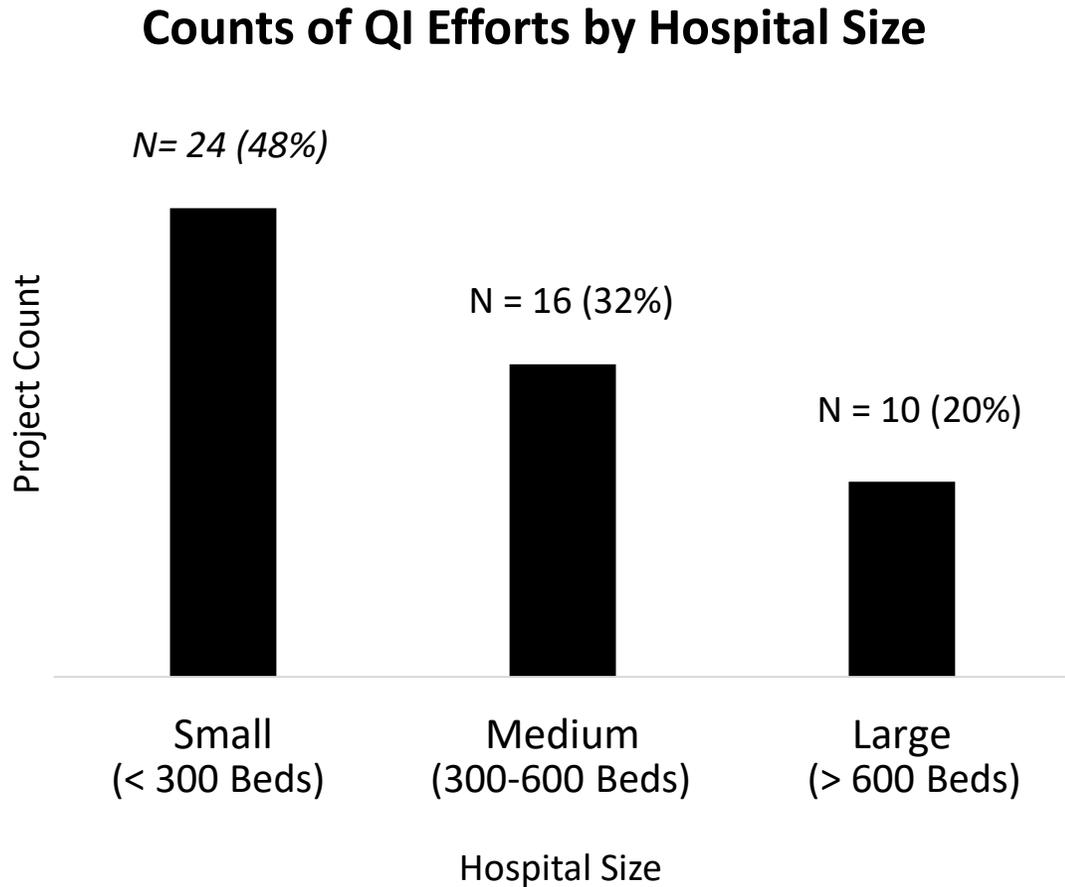
1. Cost Evaluation (3%)
2. Knowledge Acquisition (23%)
3. Process Evaluation (27%)



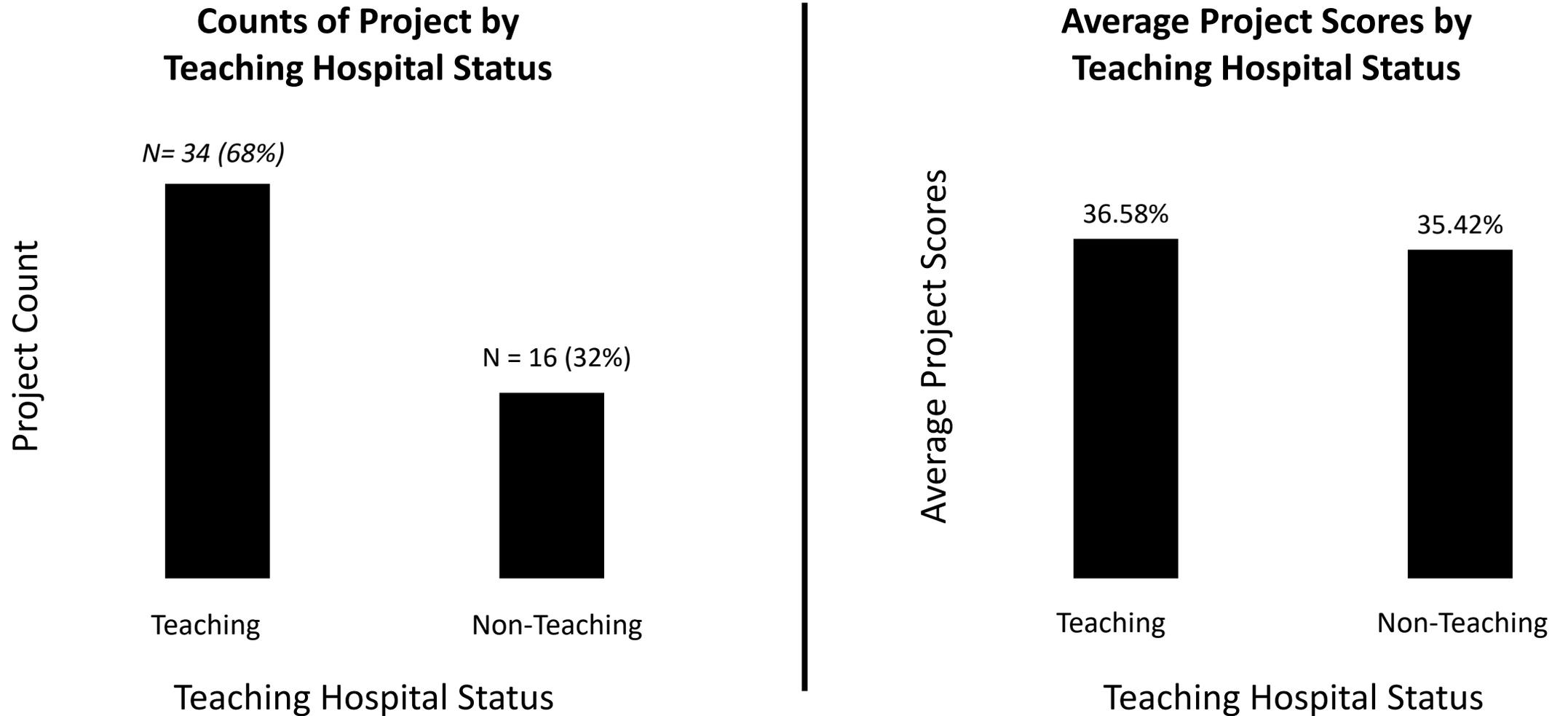
Criteria with lowest scores:

1. Value Assessments (0%)
2. Stakeholder Value Perspective (0%)
3. Unintended consequences (2%)

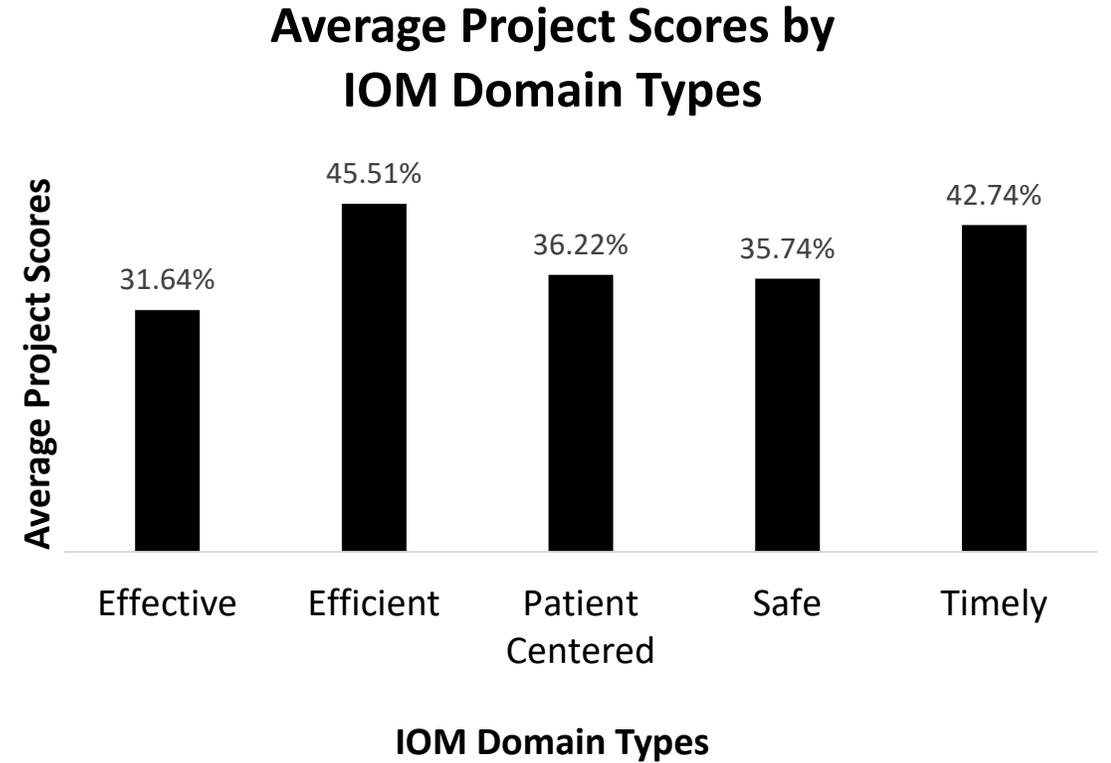
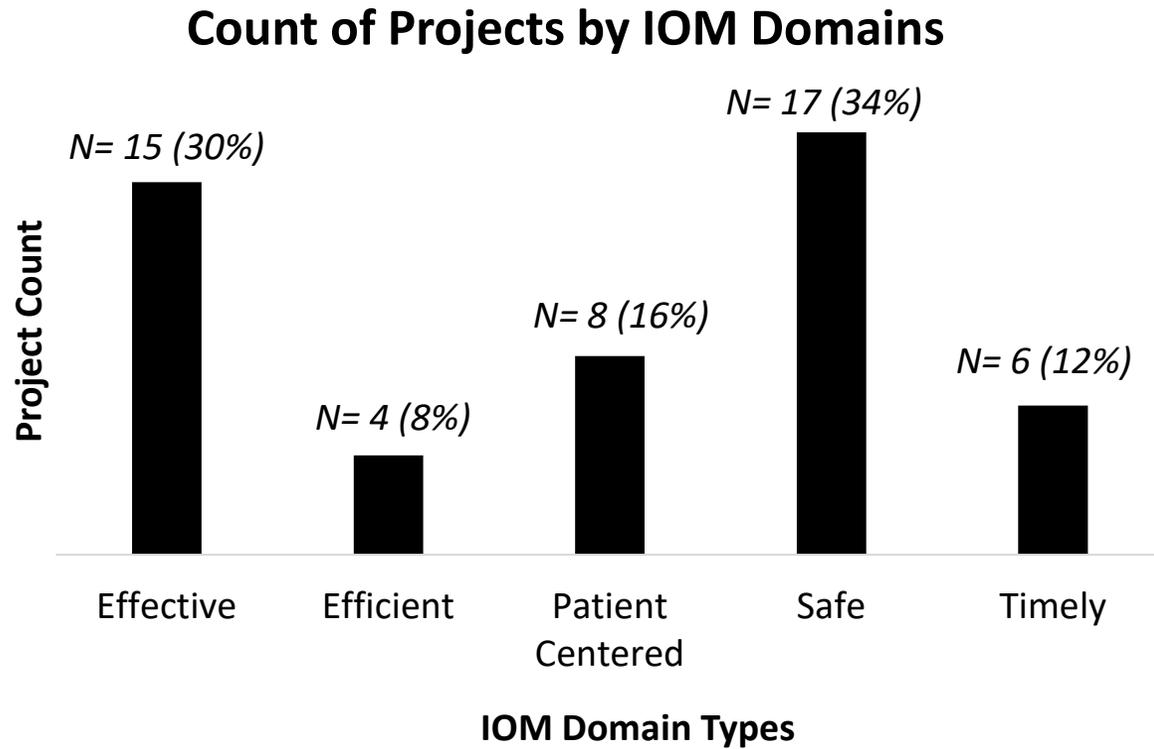
QI Effort Scores: Not Associated with Hospital Size



QI Effort Scores: Not Associated with Hospital Teaching Status



QI Effort Scores: Not Associated with IOM Quality Domains



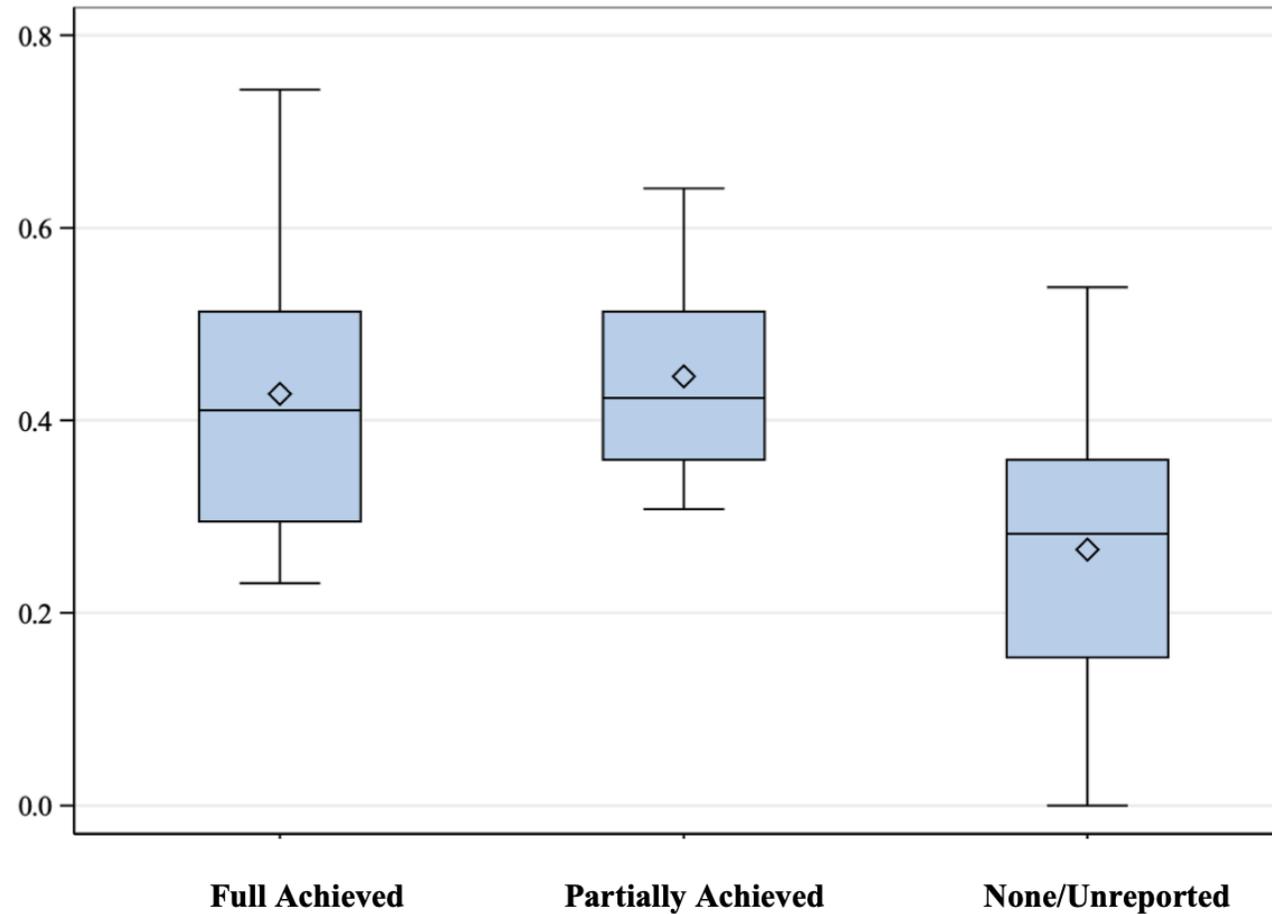
No projects focusing on equity domain

QI Effort Scores by Primary Improvement Strategy

Primary Improvement Strategy	# of QI Efforts	% of QI Efforts	Mean QI Effort Score
Checklists	3	6%	27%
Clinical Decision Support Tools	3	6%	39%
Clinical Pathways	6	12%	26%
Education/Training	9	18%	38%
Incorporate Guidelines	3	6%	43%
New Resource	3	6%	51%
Process Change	6	12%	39%
Safety / Teamwork Culture	2	4%	55%
Standardize Care	12	24%	38%
No Strategy	2	4%	5%
Strategy not described	1	2%	28%

Average Project Scores by Project Effectiveness

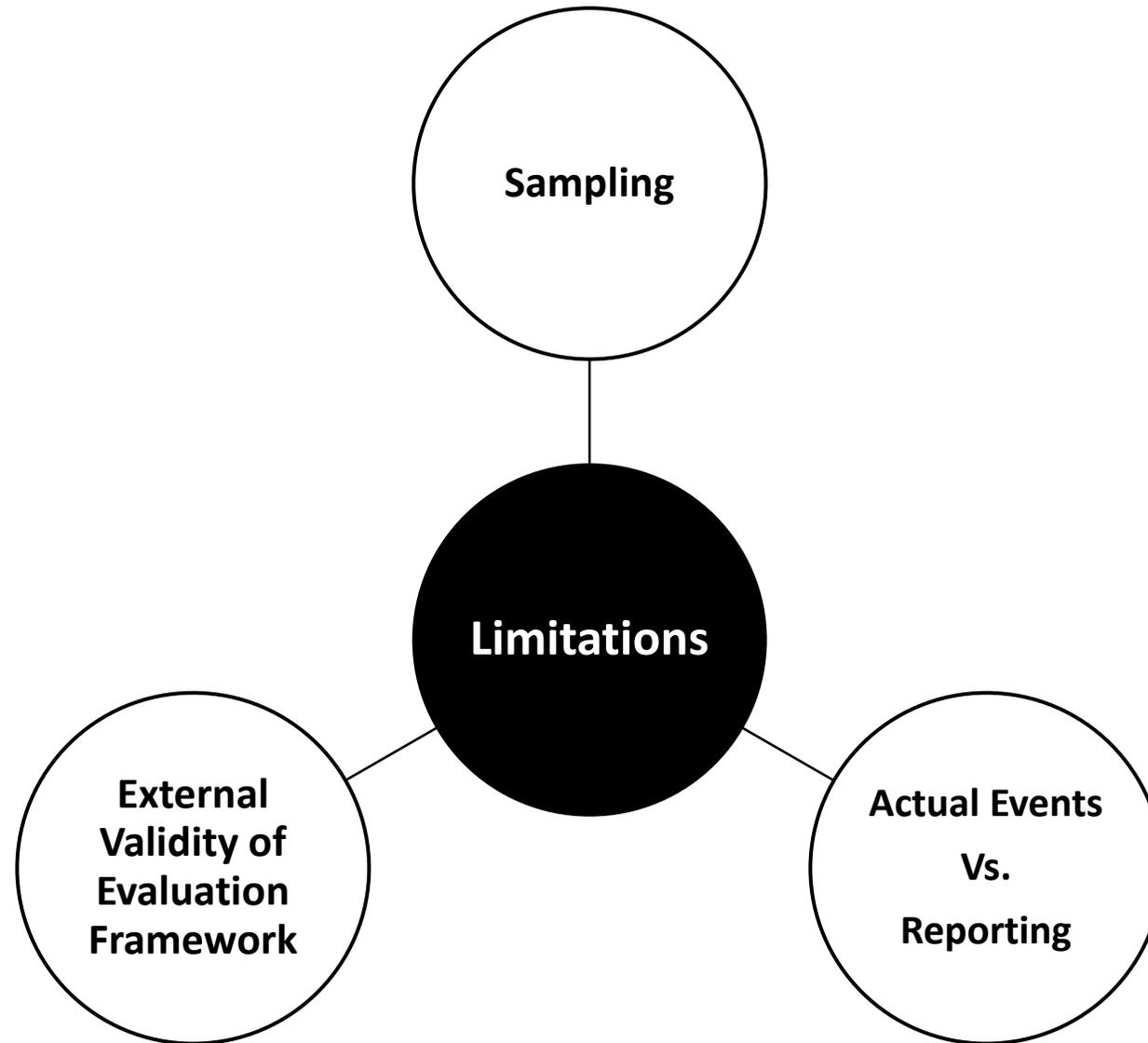
Project effectiveness categorized as fully achieved goals vs. partially achieved goals vs. goals not achieved / unreported



Results Summary

- Small scale quality improvement efforts have gaps in execution with average project score of 36%
- Average scores were low with none of the framework's 8 components scoring above 50th percentile, 3 scored below 30th percentile.
- 27/39 criteria scored at or below the 50th percentile





Take Home Points

- Evaluation of local small scale surgical improvement efforts shows opportunities for improvement.
- Better conducted improvement efforts were associated with more effective improvement.
- To support better surgical quality of care, improvement efforts need to improve.

Acknowledgements

- Dr. Clifford Ko
- Dr. Stacy Brethauer
- Dr. Avery Nathens
- Dr. Heidi Nelson
- Karen Pollitt
- Catherine Grant
- Kim Evans-Labok
- Lynn Modla
- Tammy Morgan
- Erin DeKoster Reuter

Thank You!



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