



Driving change and quality care in a healthcare—the Efficiency Quality Index

Robert J. Cerfolio[^]

Division of Thoracic Surgery, New York University Langone Health, New York, NY, USA

Correspondence to: Robert J. Cerfolio, MD, MBA. Division of Thoracic Surgery, New York University Langone Health, 530 First AV, Suite 9V, New York, NY 10016, USA. Email: robertjcerfolio77@gmail.com.

Keywords: Efficiency Quality Index (EQI); quality care; leadership; metrics

Received: 02 February 2023; Accepted: 10 October 2023; Published online: 30 November 2023.

doi: 10.21037/vats-23-18

View this article at: <https://dx.doi.org/10.21037/vats-23-18>

We are lucky to serve patient and deliver wellness. We have learned much from the practice of thoracic surgeon for over 27 years, from over 18,800 operation and from the many diverse patients. In addition, I also served as Executive Vice President, Chief Operating Officer and Vice Dean in New York City at The New York University Langone Healthcare System for over four years. In that position, I was humbled to serve our 60,000 employees and 5,000 doctors. Perhaps our most important assignment during that time was to improve patient care and patient experience. This came down to changing culture, which required us to engage the hearts and minds of our excellent physicians. We had to try to convince them that we can all get better by changing our practices.

Changing and/or improving physicians' practices is challenging. Too many of us adhere to dogma and practice how we were trained as opposed to how we can best practice now. Most do not see the need to change because our results are already quite good. Moreover, when asked to consider it, we too often hide behind the "safety card" to avoid change. The administrative report cards that we provide to our physicians are to inspire change and to improve patient care. Yet, they are often met with suspicion. We too often hear, our physicians say, "Your data is wrong", "You measure the wrong quality metrics" and "You are comparing apples and oranges". We hear, "You administrators do not fully understand and cannot objectively measure the complexities of my practice". We hear, "I have been doing this my

whole life, no-one does this better than me", "I have a vast life-time experience" and "I am the world's experts". For these reasons, we created, vetted, published and now have validated the Efficiency Quality Index (EQI) (1). The EQI by definition only compares physician's performance for similar task and only measures quality indices that the physicians themselves decide that are the best surrogates of quality and that they choose to compare (2). They are different for each specific task, operation or codes. In addition, the physician receives their dataset and can correct or amend it. However, data changes only occur after they are vetted with their colleagues that their scores are compared. Then the entire group agrees on which data should be included and/or changed. The various metrics are scored and then weighted (as shown in *Figure 1*) and then tabulated and the total EQI scores are then provided (as shown in *Figure 2*) for each provider. In addition, we add Citizenships Scores to the total procedure specific EQI scores. Once the scores are verified, the physician's performance is compared in an open, transparent, fun collaborative forum. The main import of that meeting is not only to celebrate the high achievers but also to stimulate a conversation on how we can all get better together. Neither bonus nor salary is considered with the EQI and there are no pecuniary concerns connected to it.

Each quarter our team traveled to the different department's grand rounds and showed the different EQI scores for each physician for some of the most common

[^] ORCID: 0000-0002-5598-599X.

Quality													
Weight		2.5		2		2			1.4		1.5		
SEQI Procedure	Surgeon	30-day mortality	Pts	90-day mortality	Pts	HACs (#)	HAC rate	Pts	SSIs (#)	SSI rate	Pts	HCAHPs	Pts
Lobectomy	1	0%	25.00	0%	20.00	0	0%	20.00	0	0%	14.00	3.90	8.57
Lobectomy	2	0%	25.00	1%	0.00	1	0.5%	0.00	0	0%	14.00	3.77	0.00
Lobectomy	3	0%	25.00	0%	20.00	0	0%	20.00	0	0%	14.00	3.82	3.11
Lobectomy	4	0%	25.00	0%	20.00	0	0%	20.00	0	0%	14.00	4.00	15.00
Lobectomy	5	0%	25.00	0%	20.00	0	0%	20.00	0	0%	14.00	4.00	15.00
Segmentectomy	1	0%	25.00	0%	20.00	0	0%	20.00	0	0%	14.00	3.90	15.00
Segmentectomy	2	0%	25.00	0%	20.00	0	0%	20.00	0	0%	14.00	3.77	0.00
Segmentectomy	3	0%	25.00	0%	20.00	0	0%	20.00	0	0%	14.00	3.82	5.44

Efficiency/financial															
Weight		1.8			1.2		1		1		1		1	0	
SEQI Procedure	Surgeon	O/E LOS	Pts	Readmission (#)	Readmission rate	Pts	CMI-VDC/Case	Pts	Early discharge rate (1.2*DB9+DB12+0.8*DB3)	Pts	OR minutes - procedure	Pts	OR minutes - total	Procedure timing accuracy	
Lobectomy	1	0.76	1.13	1	3%	12.00	\$ 6,241	0.00	83%	9.63	232.90	1.94	166.49	2.78	31%
Lobectomy	2	0.53	12.60	13	6.4%	4.94	\$ 5,265	7.29	68%	6.40	195.46	5.81	136.51	6.69	32%
Lobectomy	3	0.42	18.00	7	7%	3.17	\$ 4,902	10.00	84%	10.00	154.88	10.00	111.16	10.00	45%
Lobectomy	4	0.47	15.24	1	9%	0.00	\$ 5,093	8.57	40%	0.00	199.45	5.40	143.45	5.78	27%
Lobectomy	5	0.79	0.00	1	6%	5.90	\$ 5,983	1.93	64%	5.32	251.71	0.00	187.76	0.00	12%
Segmentectomy	1	0.94	0.00	1	2%	11.43	\$ 5,788	0.00	72%	4.39	205.95	0.00	145.35	0.00	32%
Segmentectomy	2	0.52	13.16	7	8.6%	0.00	\$ 5,610	2.55	52%	0.00	183.41	3.07	123.65	3.57	38%
Segmentectomy	3	0.36	18.00	1	1%	12.00	\$ 5,089	10.00	98%	10.00	132.63	10.00	84.52	10.00	49%

Procedure-specific															
Weight		2		1.5		1		1		1		1.5		1	
SEQI Procedure	Surgeon	Total lymph node stations/case	Pts	Lung staging number nodes/case	Pts	Return to OR for bleeding	Pts	Pneumonia from tracheostomy	Pts	Vascular complication	Pts	Conversion to thoractomy	Pts	Tranfusion in OR	
Lobectomy	1	4.2	6.66	16.89	9.99	0	10.00	0	10.00	1	6.67	3	0.00	0	10.00
Lobectomy	2	7.0	13.32	31.62	15.00	1	0.00	3	0.00	3	0.00	0	15.00	0	10.00
Lobectomy	3	7.3	20.00	28.69	15.00	0	10.00	2	3.33	0	10.00	0	15.00	0	10.00
Lobectomy	4	6.0	13.32	22.89	15.00	0	10.00	0	10.00	0	10.00	0	15.00	0	10.00
Lobectomy	5	5.8	13.32	22.07	15.00	0	10.00	1	6.67	0	10.00	0	15.00	0	10.00
Segmentectomy	1	3.5	6.66	12.52	5.00	0	10.00	1	0.00	1	0.00	3	0.00	0	10.00
Segmentectomy	2	6.0	13.32	20.65	15.00	0	10.00	1	0.00	0	10.00	0	15.00	1	0.00
Segmentectomy	3	7.2	20.00	23.06	15.00	0	10.00	0	10.00	0	10.00	0	15.00	0	10.00

Figure 1 The EQI for pulmonary lobectomy and segmentectomy. SEQI, Surgeon Efficiency Quality Index; HAC, hospital acquired complications; SSI, surgical site infection; HCAHP, Health Consumer Assessment of Healthcare Providers and Systems; O/E, Observed to Expected Mortality; LOS, length of stay; CMI, Case Mix Index; VDC, variable direct costs; DB, discharge billing; OR, operating room; EQI, Efficiency Quality Index.

Thoracic EQI													
Surgeon	Total EQI	Lobectomy EQI	Segmentectomy EQI	1	3	0.5	2	2					
				First Case On Time Start	Pts	MD Communications with Family	Pts	Op Notes w/in 24 Hours	Pts	Teaching Score from Residents	Pts	Teamwork Score	Pts
MD 1	354.33	168.37	141.48	91%	0.00	89%	26.70	95%	4.17	8.60	10.00	3.90	3.62
MD 2	354.60	136.04	164.67	99%	8.89	85%	20.00	96%	5.00	8.80	20.00	3.77	0.00
MD 3	554.38	226.61	244.44	100%	10.00	97%	30.00	94%	3.33	8.80	20.00	4.50	20.00
MD 4	493.09	212.31	-	100%	10.00	90%	30.00	92%	1.67	8.70	15.00	4.20	11.80
MD 5	410.60	187.14	-	100%	10.00	85%	20.00	90%	0.00	8.40	0.00	4.00	6.33

Figure 2 Total scores for EQI for pulmonary lobectomy and segmentectomy, and citizenship scores. EQI, Efficiency Quality Index; MD, medical doctor; op note, operative note.

conditions that they treated or operations they performed. This is done publically for all to see and names are included on the slides. Ours is a culture of transparency and accountability and ownership. It also is one of kindness, empathy and forgiveness as we all make mistakes and all of us can better in many areas. Most importantly, we share best of practice and best processes and encourage the highest performers for each metric to tell us “how they do it”. We gave them the platform, listened and learned. This helps the lower achievers perform better. Over time, their patients got better care and we quickly rose in the U.S. News and World Report for Hospital ranking.

This EQI culture quickly improved physicians performance in most every metric we measured such as: observed to expected length of stay, observed to expected morbidity and mortality, hospital acquired conditions, discharge before noon and 10 am, patient experience scores, patient wait-time to see medical doctor (MD)’s, patient dwell time in the operating room and emergency room, on time starts in the operating room, total operative times and operative skin-to-skin time, physician citizenship scores, teaching score and many others metrics we decided to measure and report. In essence, you as a leader can drive and change culture by measuring and reporting the desired metric you want to improve. What you measure, what you report and what you value defines your culture. However, this only occurs if the data is correct. You have to measure and report metrics that clinically matter. The doctors must agree with it up front and fully understand how it is measured and reported in order to improve it. Finally, better patients care only occurs if you truly care about the doctors you serve. They need to know that you support them as they do the hard work to change and to serve our patients better and improve their EQI score.

Acknowledgments

Funding: None.

doi: 10.21037/vats-23-18

Cite this article as: Cerfolio RJ. Driving change and quality care in a healthcare—the Efficiency Quality Index. Video-assist Thorac Surg 2023;8:36.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Video-Assisted Thoracic Surgery*. The article has undergone external peer review.

Peer Review File: Available at <https://vats.amegroups.com/article/view/10.21037/vats-23-18/prf>

Conflicts of Interest: The author has completed the ICMJE uniform disclosure form (available at <https://vats.amegroups.com/article/view/10.21037/vats-23-18/coif>). The author has no conflicts of interest to declare.

Ethical Statement: The author is accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Open Access Statement: This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

1. Cerfolio RJ, Chang SH. Efficiency Quality Index (EQI)-Implementing a Novel Metric That Delivers Overall Institutional Excellence and Value for Patients. *Front Surg* 2021;7:604916.
2. Cerfolio RJ. Resistance to Change From Super Performers: The EQI, Ego, and the Safety Card. *Ann Thorac Surg* 2023;115:1360.