

Assessing the Quality of Tracheostomy Education on YouTube: Insights and Implications

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Background

- Common ENT indications for tracheostomy include upper airway obstruction from tumors or trauma, prolonged ventilation after head and neck surgery, and protection of the airway in severe laryngeal or pharyngeal dysfunction.^{1, 2}
- Home tracheostomy care can be challenging due to the need for frequent suctioning, meticulous cleaning of the tube and stoma, risk of infection or accidental decannulation, and the emotional and logistical burden on caregivers.³
- YouTube is a leading platform for health information, yet the quality of content for patient education for tracheostomy care has been insufficiently evaluated.⁴



Fig 1: Screen capture of intraoperative video⁵

Objectives

- Evaluate the current state of YouTube videos available to patients' seeking assistance with understanding how to care for their tracheostomy.
- Understand factors that predict which videos will be of higher educational value.
- Analyze whether the current YouTube algorithm adequately promotes high-quality videos for patients.

Score	Global Quality Score Index Criteria
1	Poor quality, poor flow, most information missing, not useful
2	Generally poor quality and poor flow, some information missing, very limited use
3	Moderate quality, suboptimal flow, some important information discussed but others not, somewhat useful
4	Good quality and generally good flow, most of the relevant information is listed but some topics not covered, useful
5	Excellent quality and excellent flow, very useful

Methods

- YouTube was searched using the phrases “Trach”, “Tracheostomy, and “Tracheostomy Care”.
- The first 50 videos from each search were included.
- Duplicates, YouTube shorts, non-English videos, and non-medical content was excluded.
- Videos were analyzed using Modified DISCERN, Global Quality Score (GQS), and JAMA Benchmark metrics of video quality, educational value, and transparency, respectively.
- Analysis of video metadata and scores was performed.

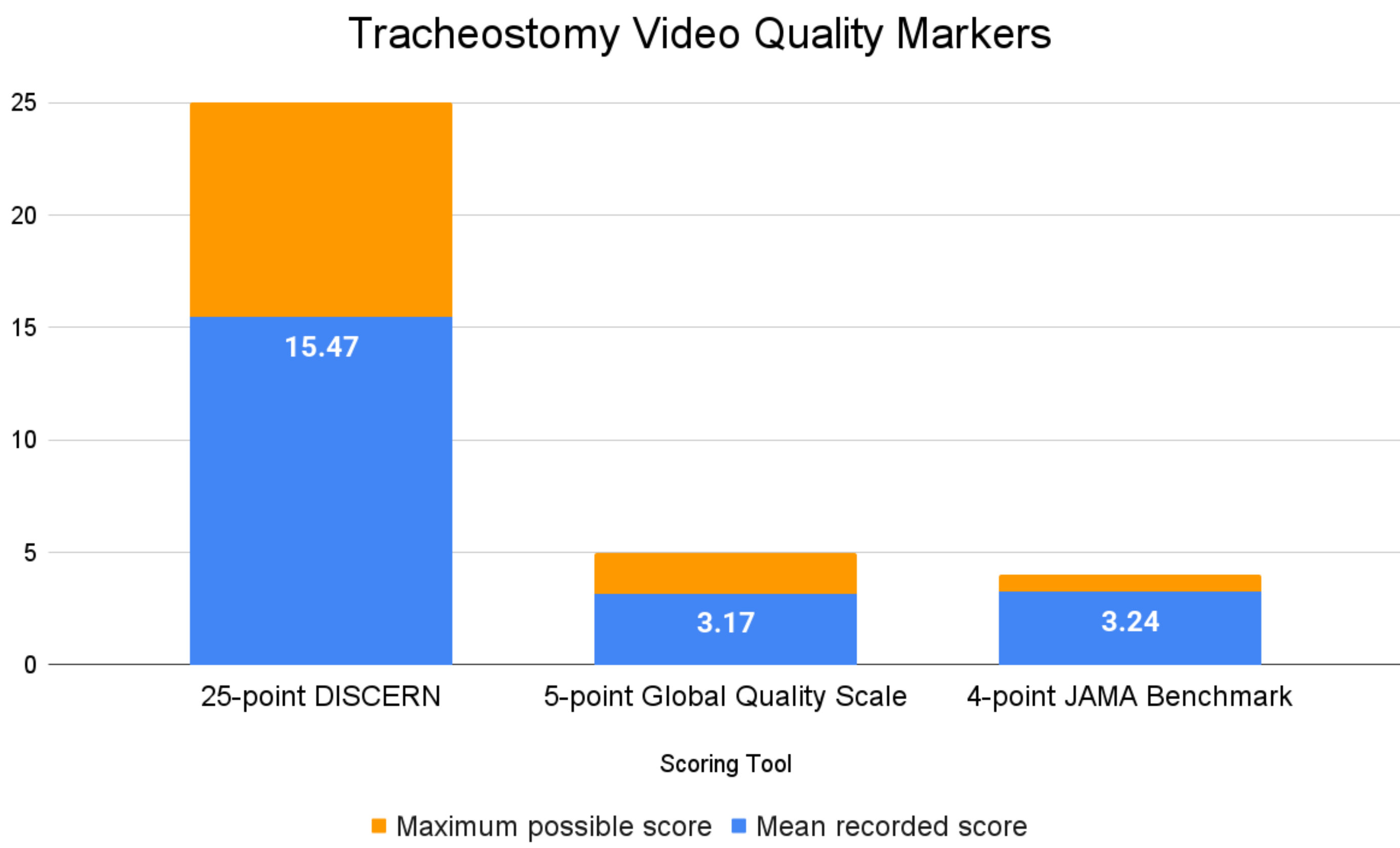


Fig 2: Tracheostomy video quality markers

Results

- Analysis of 150 videos (20.9M views) revealed that 66% were created within 5 years, primarily by third parties (50%) or healthcare organizations (42.67%).
- Most were for healthcare professionals (59.33%), with 32.02% for patient education.
- The mean scores were DISCERN 15.47/25, GQS 3.17/5, and JAMA 3.27/4.
- DISCERN and GQS were higher if the video was intended for medical professionals ($p < 0.001$), and videos created by healthcare organizations scored higher ($p < 0.0001$).
- JAMA scores were weakly audience-dependent ($p = 0.045$) but were mainly higher for educational videos oriented towards the healthcare community ($p = 0.011$).

Item	Modified DISCERN Criteria Questions
1	Are the aims clear and achieved?
2	Are reliable sources of information used?
3	Is the information both balanced and unbiased?
4	Are additional resources listed for reference?
5	Are areas of uncertainty mentioned?

Discussion

- Our study found that most videos on the topic of tracheostomy care were intended for healthcare professionals, with only 32.02% intended for patients.
- Videos created by healthcare organizations were associated with higher scores for video quality and educational value.
- Videos with higher DISCERN scores were only weakly associated with higher view counts, indicating that YouTube’s popularity-based algorithm does not reliably promote higher-quality content.

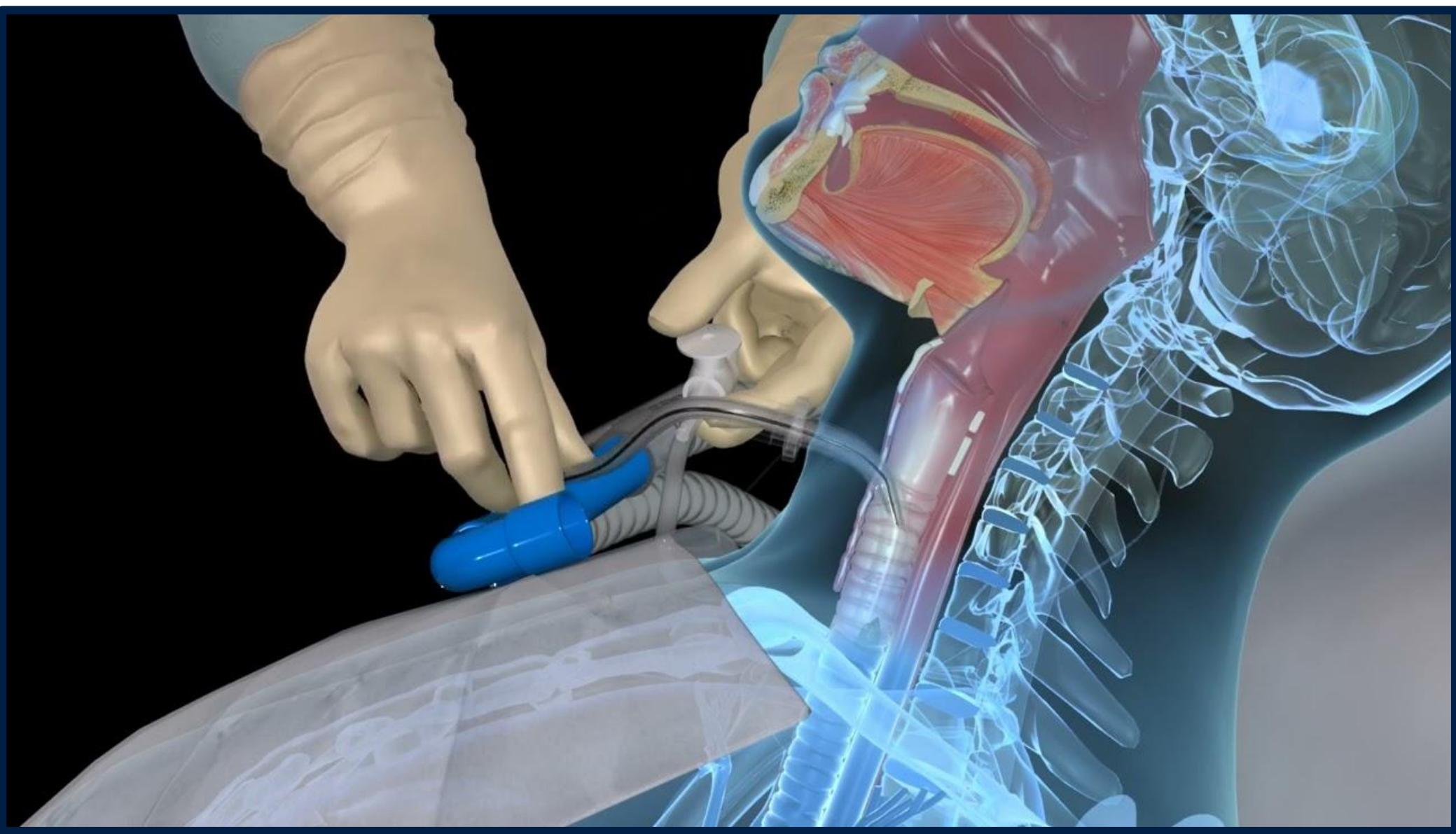


Fig 3: Screen capture of animation⁶

Conclusion

As the modern patient continues to turn to YouTube as a source of educational materials, they are likely to encounter videos not intended for patient education (67.98%), not created by healthcare organizations (58.23%), and that are of an average quality and educational value. This underscores the importance for medical professionals to curate medical education resources for their patients to avoid their utilization of substandard guidance that could jeopardize their health outcomes.

Item	JAMA Benchmark Criteria
1	Authorship – Authors and contributors, their affiliations and relevant credentials, should be provided
2	Attribution – References and sources for all content should be listed clearly, along with copyright information
3	Disclosure – Video “ownership” should be prominently and fully disclosed, as should any sponsorship, advertising, underwriting, commercial funding
4	Currency – Dates that content was posted and updated should be indicated

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