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Research Article

Correlation of Medicare Patient Volume and Online Ratings for Retinal Physicians

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Abstract

Importance: Online ratings are a growing part of social media in healthcare and will have an increasing impact on how patients choose healthcare providers in the years to come.

Objective: To explore the correlation between Medicare patient volume and online reviews for retinal physicians.

Design: Database case series of Medicare patient exams by Ohio retinal physicians in 2016.

Setting: Databases from the American Academy of Ophthalmology, the American Society of Retinal Specialists, and Centers for Medicare and Medicaid Services.

Participants: Medicare patients who had retinal exams in Ohio in the year 2016.

Interventions: None. The number of Medicare patient exams was correlated with online ratings (Google.com, Vitals.com, Healthgrades.com, and Yelp.com)

Main Outcome Measures: Correlations of number of exams with number of online ratings and with average rating

Results: For the total number of ratings (average 30, median 16) vs. total Medicare exams per physician (average 1436, median 1454), there was a positive and close to significant correlation (Spearman rank correlation of 0.190; p=0.08). The average ratio of an exam resulting in a ranking was approximately 2% (30/1436). The cumulative average online rating (1 to 5 stars) per retinal physician in Ohio seemed to be unrelated to the number of patients examined (Spearman rank correlation of -0.017, p=0.874), although for Google and Yelp, there were significant Spearman rank correlations of about 0.3, P=.041 and .048 respectively.

Conclusion: The cumulative number of exams positively correlated with the number of online ratings. The cumulative average rating for retinal MDs in Ohio seemed to be unrelated to the number of patients examined, although for there were significant correlations for Google and Yelp ratings, suggesting that different rating systems may have different characteristics.

Keywords: Correlation of Medicare Patient Volume and Online Ratings for Retinal Physicians; Online Ratings; Medicare Patient Volume; Vitals; Healthgrades; Social Media; Retina Specialists in Ohio; Online Review

Social media sites are becoming an integrated part of healthcare. Online ratings are a growing part of social media in healthcare and will continue to have an increasing impact on how patients choose healthcare providers in the years to come. A study found that 41% of patients said that social media have impacted their choice of hospital and physician [1]. Another study found that 80% of patients trust an online review as much as a personal recommendation [2].

The sample of patients rating their physicians is small; however, the number of online ratings may correlate with number of patient visits. There are some suggestions that medical staff will solicit online rankings from pleased patients [3]. Solicitation can then cause the online results to be skewed and less accurate for patients. The results of online reviews may then be highly variable with a narrow range and preclude meaningful interpretation by consumers [4,5].

In order to explore how patient volume relates to online reviews for physicians, we sought to evaluate the correlation of the number of retinal physician Medicare patient exams with online ratings for all retinal physicians in the state of Ohio.

Methods

Sterling IRB determined that this submission did not constitute human subjects research. As this was not human subjects research, the Declaration of Helsinki was not applicable.

Databases from the American Academy of Ophthalmology and American Society of Retinal Specialists were used to generate a list of retinal specialists in Ohio. The subspecialties retina-medical only and retina/vitreous-medical and surgery were used to refine the search. Total Medicare patient exams for each physician in 2016 were gathered from the Centers for Medicare and Medicaid Services (CMS) and tabulated using the Current Procedural Terminology (CPT) codes for eye exams (New patient 92002, 92004; Established patient 92012, 92014) and evaluation and management codes (New patient 99202-99205, Established patient 99211-99215). The number of ratings and average value of ratings were recorded from four different online physician rating services: Google.com, Vitals.com, Healthgrades.com, and Yelp.com. A cumulative summary was calculated for each physician. The statistical analysis used the Spearman rho rank correlation coefficient due to the presence of extreme values with p-values based on testing the null hypothesis of zero correlation.

Results

A total of 90 retina specialists in Ohio had their data examined; 88 yielded data usable for analysis. The number of reviews for each site is shown in Figure 1. For the total number of ratings, there was a positive and close to significant correlation (Spearman rank correlation of 0.190; p=0.08) (Figure 2). The average ratio of an exam resulting in a ranking was approximately 2% (30/1436). The cumulative average online rating (1 to 5 stars) per retinal physician in Ohio seemed to be unrelated to the number of patients examined (Spearman rank correlation of -0.017, p=0.874) (Figure 3). For Google and Yelp average online rating (1 to 5 stars) vs. total CMS exams per physician, there were significant Spearman rank correlations of about 0.3, P=.041 and .048 respectively. However, these sites combined for a small share of total reviews (274/2653 or 10.3%).

Figure 1: Number of reviews for each website.

Discussion and Conclusion

For physicians seeing more patients, we would expect a correlation of more total online rankings. There was a positive correlation for this when considering all online ranking sites in this review. If the number of patients ranking a physician is well correlated with patient visit volume, this adds validity to online rankings.

Figure 2: Total number of reviews vs. number of CMS visits per retinal specialist (visits divided by 100).

Figure 3: Average rating, all sites, vs. number of CMS visits per retinal specialist (visits divided by 100).

On the other hand, we would not expect the average rating of a retinal physician to be affected by the number of patient exams performed. However, two of the online ranking sites show a correlation between number of exams and average rankings. There should be no correlation between the average ranking (1-5 stars, for example) and number of exams performed. The reasons for such a result in this limited review could be multifactorial, such as intrinsic differences to the rating sites. Another such possibility would be solicitation of favorable reviews that may skew the results. If physicians or staff are soliciting reviews from pleased customers, and directing them to certain online rating sites, the average rating of these physicians on these rating sites will be artificially higher and will increase more with higher number of CMS exams, compared with physicians with fewer CMS exams. Interestingly, when assessing the cumulative average rating across all 4 rating sites, there was no correlation to number of CMS exams.

This limited review of online ratings correlating with CMS exams count has several shortcomings. Some of the study weaknesses included the low number of rankings (median 16) versus the number of visits (median 1454), suggesting very few patients

are completing online rankings. Intuitively, this small a sampling would detract from the validity of online ratings in general. Another weakness is the low numbers of online reviews in some ranking services, often times zero, and limiting the physician pool to Ohio only. Still, this review does add some insight to the validity of online rankings of physicians and yet also raises some cautionary results.

Acknowledgement

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None.

Conflict of Interest

No conflicting relationship exists for any author.

Key Points

Question: How do Medicare patient volumes correlate with online social media reviews for retinal physicians in Ohio?

Findings

This database study showed that, for number of ratings (average 30, median 16) vs. Medicare exams per physician (average 1436, median 1454), there was a positive and close to significant correlation. The cumulative average online rating (1 to 5 stars) per retinal physician seemed unrelated to the number of patients examined.

Meaning

The cumulative Medicare patient volumes positively correlated with the number of online ratings.

Summary Statement

The cumulative Medicare patient volumes positively correlated with the number of online ratings for retinal physicians in Ohio.

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