Impact of Personalized Educational Initiatives on Otolaryngologists' Knowledge and Confidence in CRSwNP Management

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INTRODUCTION

Chronic rhinosinusitis with nasal polyps (CRSwNP) is a heterogeneous, type 2 inflammation–driven disease that often requires long-term management and has a substantial impact on patient quality of life.

The recent introduction of biologic therapies has expanded treatment options but also created new challenges for otolaryngologists.

Traditional continuing education formats may not fully address the variability in clinicians' baseline knowledge and confidence.

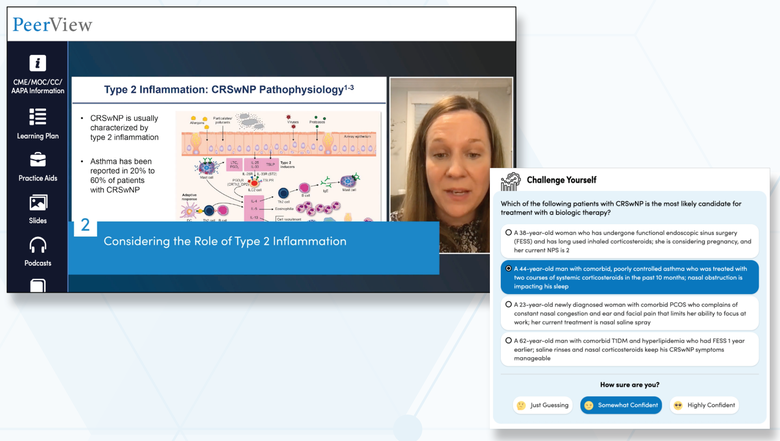
To optimize patient outcomes, we designed and compared adaptive, personalized educational initiatives that targeted individual knowledge, competence, and confidence gaps in CRSwNP management.

METHODS

Two online adaptive learning activities were launched in 2022 and 2024. Each activity used baseline self-assessment and branching pathways to tailor content to individual learner needs, allowing those with high baseline knowledge and confidence to bypass familiar material and focus on areas of uncertainty.

Educational objectives included identifying patients who may benefit from biologic therapy, recognizing and managing type 2 inflammatory comorbidities, and applying evidence-based treatment strategies.

Outcomes were assessed through pre- and post-activity multiple-choice questions paired with confidence ratings, enabling measurement of gains in knowledge, skills, and self-efficacy.



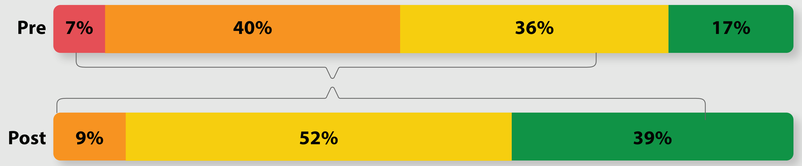
RESULTS

More than 2,050 otolaryngologists participated in the two activities.

% who were:

- Correct / Confident
- Incorrect / Not Confident
- Correct / Not Confident
- Incorrect / Confident

Activity 1 (September 2022 - September 2023)
N = 492

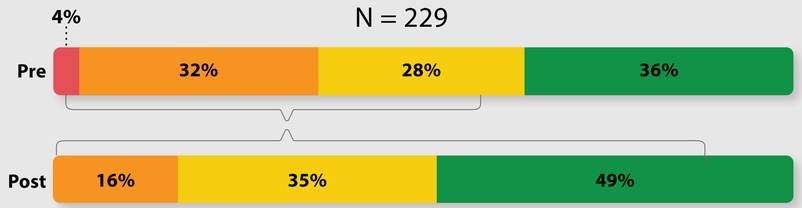


In the first activity (N = 492), the proportion of learners who were **Correct / Confident** increased from 17% preactivity to 39% postactivity.

Those who were **Correct / Not Confident** also rose from 36% to 52%, while the share of learners who were **Incorrect / Not Confident** dropped substantially from 40% to 9%.

Learners who were **Incorrect / Confident** decreased from 7% to 0% postactivity.

Activity 2 (July 2024 - July 2025)
N = 229



In the second activity (n = 229), similar gains were observed: **Correct / Confident** rates increased from 36% to 49%, and **Correct / Not Confident** rates rose from 28% to 35%.

At the same time, learners who were **Incorrect / Not Confident** declined from 32% to 16%, and those who were **Incorrect / Confident** decreased from 4% to 0%.

These patterns demonstrate consistent improvements in knowledge, skills, and confidence, with fewer learners persisting in low-knowledge categories and more moving into higher-skill, higher-confidence groups over time.

Notably, the percentage of learners entering as **Correct / Confident** doubled at baseline between 2022 and 2024 (17% vs 36%), suggesting that overall competence in CRSwNP management is rising within the ENT community.

CONCLUSIONS

Scores were highest in understanding clinical signs of CRSwNP, diagnostic criteria, identifying severity, and association with comorbid type 2 inflammatory disorders.

Room for improvement remains in skills needed to integrate biologics appropriately, including determining which therapy to use and discussing options with patients. Overall, learners indicating low confidence post activity decreased (61% to 51%).

These results indicate that this educational approach can be successful in reinforcing key concepts and skills and reducing learners' uncertainty.

ACKNOWLEDGEMENT

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