# Using Data Aggregation to Determine Thematic Knowledge Transfer and Lasting Performance Change in Multiple Continuing Education Activities on IBD

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A current challenge within medical education is how to use the acquired pre-post data to understand the continuing needs and future educational recommendations in a given therapeutic area.



Often, implications of the effect of CME are difficult to determine due to reliance on single data points of pre-post knowledge questions.



Using aggregation methodology, we were able to thematically combine the assessments of three similar educational activities to determine the immediate and lasting effect of education on inflammatory bowel disease (IBD) practice.

# METHODOLOGY

# Three Unique CME Activities

I. Surveys designed based on learning objectives of three accredited CME activities on IBD were analyzed for commonalities. Questions were grouped by themes including changes in confidence, recognizing risk factors of IBD, establishing evidence-based goals of treatment, using guideline-based treatment, and recognizing clinical trial results.



- 2. Data from immediate pre-post test scores were aggregated for each of these five themes. Data from measurements of the learners 30 days after the education compared to a sample of similar non-learners were aggregated in three of the themes more focused on performance change: recognizing risk factors of IBD, establishing evidence-based goals of treatment, and using guideline-based treatment.
- 3. Mean scores were calculated for all data sets. Hedges' g effect size (ES) scores were used for all data to compare the effect of education on each of the themes.

# EDUCATION

#### **Three Unique CME Activities**

# Fact or Fiction? Sorting Out Common Misconceptions About Ulcerative Colitis to Improve Patient Care

It is well established that ulcerative colitis (UC) is a heterogeneous disease with symptoms that wane over time. The disease course for 50% of individuals is persistently active over time with worsening and relapsing symptoms and is associated with long-term anemia, colonic dysfunction, and increased risk for colorectal cancer. Evidence indicates that treating the inflammation to achieve improvement in endoscopic appearance of the mucosa early in the course of UC is effective for current flares and also reduces the risk of future relapse.



The American Gastroenterological Association (AGA) Care Pathways provide practical tools to help providers risk-stratify their patients with IBD into those with low- or moderate-/high-risk disease. This stratification helps identify the most appropriate therapy for each patient that will lead to low disease activity or endoscopic remission. Unfortunately, several gaps have been noted in these areas. Clinicians are not appropriately using biologic agents for the treatment of UC, and personalized plans such as the UC Care Pathway are often underutilized.

# 2019 Management of Ulcerative Colitis: Where, When, Who, and What Now?

While the management of UC has for some time focused on simple control of symptoms, strategies for managing UC have progressed, with treatment goals shifting from resolution of symptoms to full control of the disease, with a final aim of halting or preventing disease progression. Management strategies have shifted from a step-up to a top-down approach to achieve these goals, which include mucosal healing; prevention of complications, surgery, and disability; and restoration of quality of life.

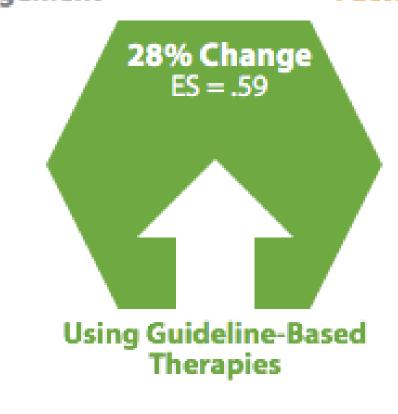
# RESULTS

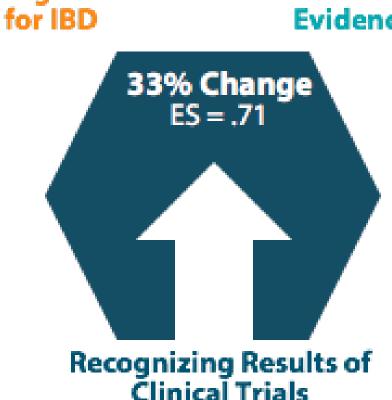
#### **Pre-Post**

	Group	N	Mean	% Change	Effect Size
Confidence in Management	Pre	864	2.40	4%	.35
	Post	394	2.76		
Recognizing Risk Factors of IBD	Pre	577	45.9%	35%	.75
	Post	383	80.7%		
Establishing Evidence-Based Goals	Pre	267	70.8%	17%	.40
	Post	199	87.4%		
Using Guideline-Based Therapies	Pre	886	43.7%	28%	.59
	Post	569	71.9%		
Recognizing Results of Clinical Trials	Pre	587	47.1%	33%	.71
	Post	381	80.1%		







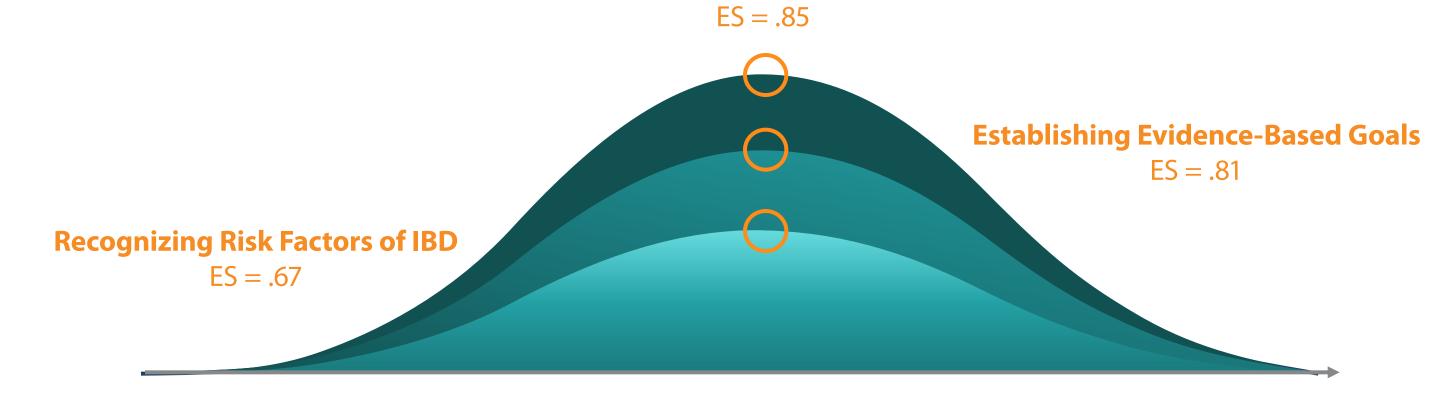


17% Change ES = .40

# **Post-Control**

	Group	N	Mean	% Change	Effect Size
Recognizing Risk Factors of IBD	Learner	70	72.9%	32%	.67
	Non- learner	86	40.1%		
Establishing Evidence-Based Goals	Learner	71	78.9%	37%	.81
	Non- learner	84	41.7%		
Using Guideline-Based Therapies	Learner	60	70%	38%	.85
	Non- learner	71	32.4%		

# **Using Guideline-Based Therapies**



# CONCLUSIONS

gathered from
learners at three
unique live symposia
and their online
enduring webcasts on
UC were analyzed and
compared to nonparticipant controls.
These activities
focused on distinct
themes: confidence
in the management
of UC; recognizing
risk factors that may
result in colectomy;

The results of data

information – audience response was great! The algorithms provided on how to proceed are fantastic."

"I now use the AGA UC Clinical Pathway.
I was not as informed about the pathway as
I should have been. It is easy to use and I
learned where some treatment options
sit that I did not realize. I thought I had
to wait to fail a biologic before
trialing vedolizumab."

"Faculty and their clinical translation was outstanding! I feel much more confident in identifying high-risk patients."

establishing evidencebased goals for treatment; using guideline-based therapies; and knowledge of the results of clinical trials.

• These results demonstrate that education is effective in delivering information on how to manage patients with UC. The theme, recognizing risk factors for colectomy, had the largest change (ES = .75) from pre-survey to posttest.

"Thank you for this valuable

- Retention of the knowledge following the activity is important to implementation in clinical practice. The effect of CME lasts 30 days post-activity. While there is roughly a 10% drop in scores from post-activity to 30 days after on average for each of the three themes, learners perform better than their peers who did not attend these activities.
- This unique approach to outcomes design and reporting using large data sets will allow internal and external educational stakeholders to observe the effects of education overall. Additionally, certain needs become more obvious when using aggregated data. For example, higher pre-post effects were seen in areas where knowledge is imparted (risk factors, clinical trial results) rather than areas of practice change (goals and therapy choice). While some of this difference in effect could be due to higher baseline scores, getting physicians to change the way they manage patients is often more difficult than changing knowledge on a concept.
- Learners at posttest and follow-up consistently outperformed the control group. The theme, using guideline-based therapies for the management of UC, had the largest difference (ES = .85) indicating a need for further education on guideline-based therapies.
- The impact of the education is noteworthy as previous publications have noted effect size benchmarks for national/international conferences or large general conferences to be 0.2 0.45 (low to moderate).

# REFERENCES

Collier JA. Teaching and Learning in Medicine. 2002;14:206-210.
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# FUNDING

The educational activities described in this presentation were supported by an educational grant from Takeda Pharmaceuticals U.S.A., Inc.



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