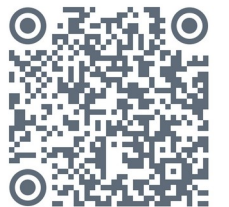
The background of the slide features a photograph of two men in white lab coats. They are standing and looking at a tablet computer held by the man on the right. The man on the left is pointing at the screen. The entire image is overlaid with a semi-transparent purple filter.

Bridging Diagnostic Gaps and Increasing Awareness of Emerging Therapies in Tourette Syndrome Through Web-Based CME

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Disclosures



Carole Drexel, PhD: Nothing to disclose



Donald L. Gilbert, MD, MS: *Consultant, Advisor, Speaker:* Emalex Biosciences, Illumina, Noema, PTC Therapeutics, Synendos Therapeutics, Vima Therapeutics; *Researcher:* Emalex Biosciences, Neurocrine Biosciences, PTC Therapeutics, Quince Therapeutics; *Royalties or Patent Beneficiary:* Elsevier, Wolters Kluwer



Erica L. Greenberg, MD: *Consultant, Advisor, Speaker:* Emalex Biosciences

Background

Advances in Tourette syndrome neurobiology—particularly involving CSTC circuitry and dopaminergic signaling—have expanded understanding beyond traditional D2 antagonism

However, Tourette syndrome management remains inherently complex and largely experience-driven, particularly in the setting of comorbidities

Goals: To evaluate the impact of a multi-format continuing medical education (CME) curriculum designed to improve diagnostic accuracy, clinical recognition, and understanding of evolving therapeutic strategies in Tourette syndrome

The image shows a video player interface. On the left, there are two video thumbnails: the top one shows a man in a white shirt, and the bottom one shows a woman with glasses. The main content area is a presentation slide with the following text:

medlive neuro

Tourette Syndrome: *Not an Uncommon Condition*

Presented by:

- Donald L. Gilbert, MD, MS**
Professor of Pediatrics and Neurology
Cincinnati Children's Hospital Medical Center
University of Cincinnati College of Medicine
- Erica L. Greenberg, MD**
Director, Pediatric Psychiatry OCD and Tic Disorders Program
Child and Adolescent Psychiatrist, Massachusetts General Hospital
Assistant Professor, Harvard Medical School

This activity is supported by an independent medical education grant from Emalex Biosciences, Inc.

The video player controls at the bottom include a play button, a volume icon, a '1x' speed indicator, a full-screen icon, and a progress bar.

Materials and Methods



Educational Interventions



2 video activities



Nov 2025 -
Nov 2026



2.0 CME credits



2 long-form videos



Pediatricians, pediatric neurologists, and pediatric psychiatrists



7 x 2 min micro-learning videos pushed to NPI-verified pediatricians, pediatric neurologists, and pediatric psychiatrists via LinkedIn



Learning Objectives

1. Summarize the characteristics of manifestations of TS to differentiate it from other tic disorders
2. Discuss the limitations of current management options for TS in the context of comorbidities and risk of adverse effects from drug therapy
3. Summarize the current understanding of the pathophysiology of TS and the role of central D1 receptors
4. Discuss safety and efficacy data on emerging agents for TS



Outcome Measurements and Analytics

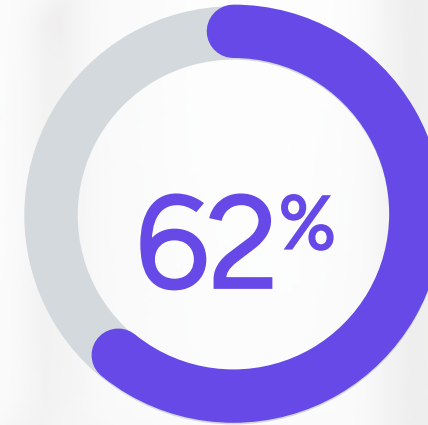
- Knowledge (MCQ)
- Competence (case-based questions)
- Self-reported attitudes, barriers, and practice changes
- Analysis of pre/post-activity comparisons
- Chi-square test for aggregate pre- vs post-activity comparisons

Participants Demographics



12,463 Total Clinicians

- 107 live CME
- 1,374 enduring CME
- 10,982 micro-learning



of those who claimed CME credit identified as Tourette-syndrome treaters seeing an average of **6** patients with Tourette syndrome each year (n=331)

Degree*

- 93%** MDs/DOs
- 2%** NPs/PAs
- 2%** RNs
- 3%** Other

Specialty*

- 44%** Pediatrics
- 36%** Psychiatry
- 13%** Pediatric Neurology
- 2%** Primary Care
- 5%** Other

Changes in Knowledge and Competence

	Area evaluated	Pre (n)	Post (n)	Δ	P value
Multiple-choice knowledge questions	Diagnostic criteria	50% (738)	94% (613)	+44%	0.01
	Complexity of current management in the presence of psychiatric comorbidities	30% (738)	62% (613)	+32%	0.01
	Psychiatric comorbidities as predictor of functional impairment	41% (738)	87% (613)	+46%	0.01
	Pathophysiology and D2 role	51% (403)	93% (345)	+42%	0.01
	Clinical trials with ecopipam (efficacy outcome)	32% (403)	69% (345)	+37%	0.01
Case-based competence questions	Diagnosis	34% (738)	83% (613)	+49%	0.01
	Management decision in the presence of comorbid ADHD	38% (403)	69% (345)	+31%	0.01

Strongest improvements in diagnosis, clinical recognition, and pathophysiology (>40%)

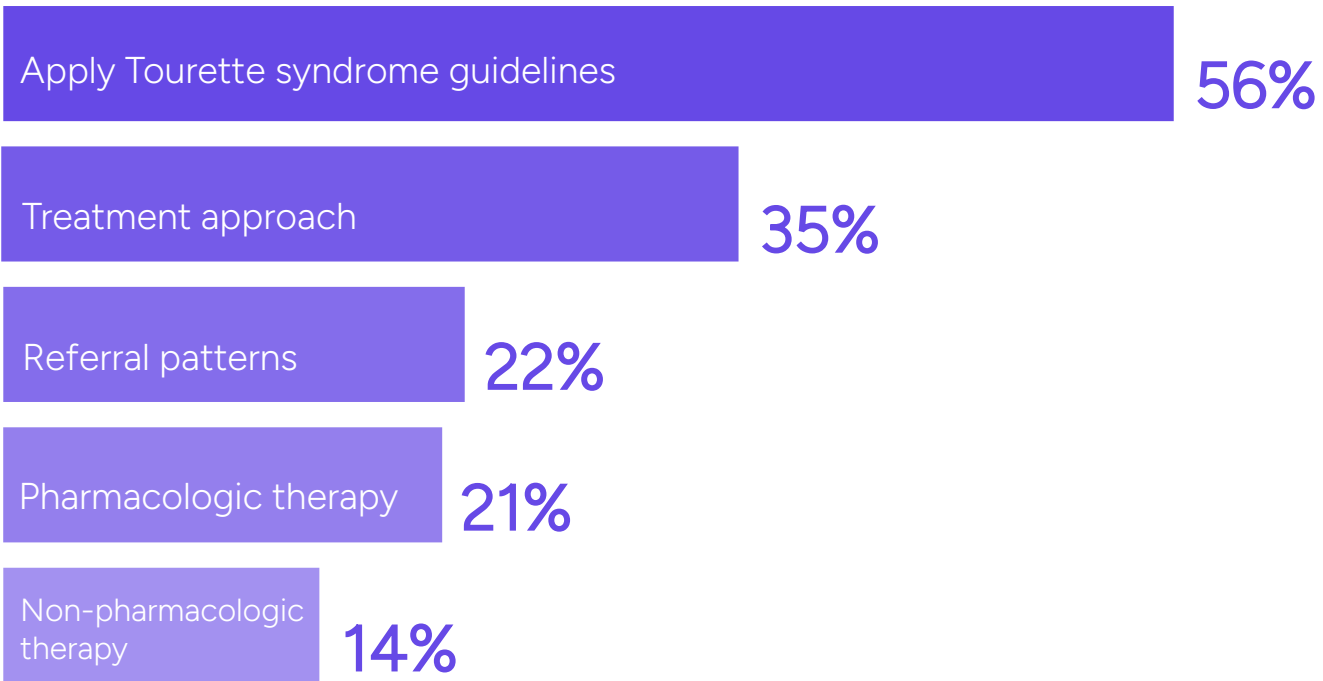
Moderate gains in emerging therapies (>30%)

Lowest gains in understanding of treatment limitations (~30%)

- Difficulty selecting and sequencing therapies when ADHD, OCD, anxiety coexist
- Ongoing uncertainty in longitudinal care strategies

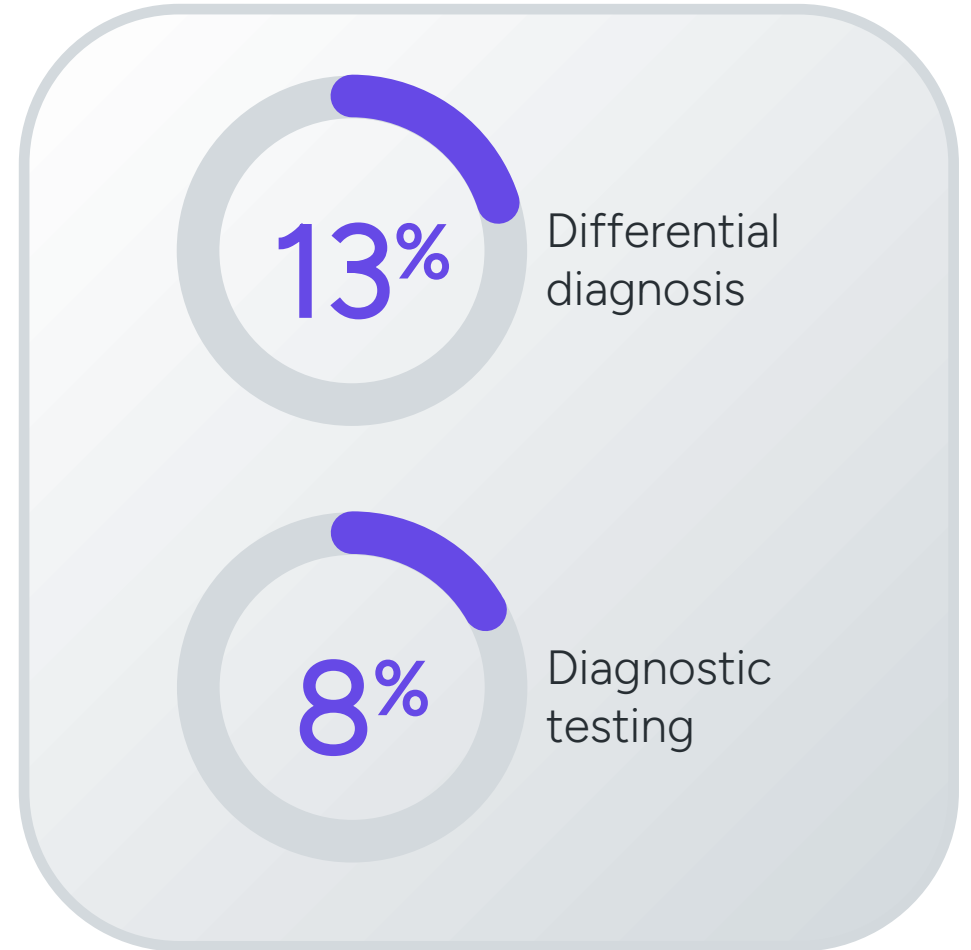
Practice Changes (Self-reported)

Management-related Changes*



Management changes reported 2-to-4× more often than diagnostic changes

Diagnostic-related changes*



Among those who claimed CME credit, *n=331

Where Do Gaps Persist in Tourette Syndrome Management?

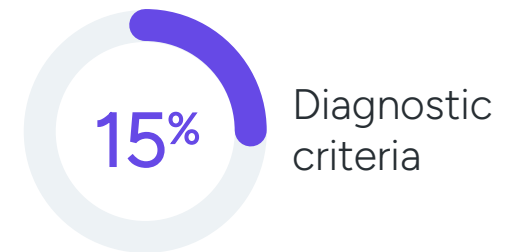
Clinician Question topics (n=56)

- Pharmacotherapy and monitoring
- Diagnostic differentiation
- Comorbidity-driven management
- Patient selection for emerging therapies
- Behavioral integration and care models

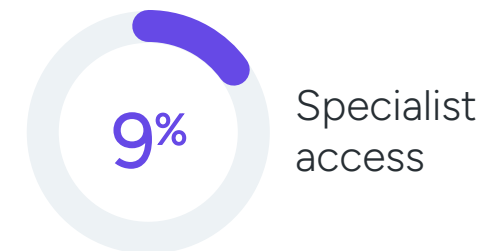
Management gaps are driven by comorbidity-related complexity, compounded by knowledge and system barriers

Key Gaps in TS Care Identified (n=425, self-reported)

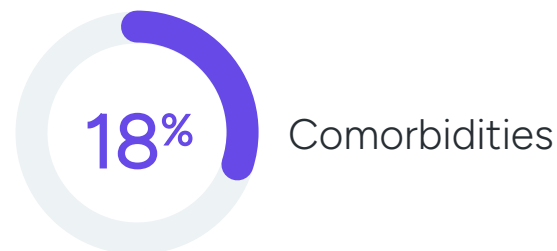
Clinical knowledge gaps



System level barriers



Clinical complexities



Conclusions

This large-scale, multi-format educational initiative improved clinician knowledge and diagnostic accuracy in Tourette syndrome.

Persistent gaps in treatment sequencing, comorbidity management, and integration of emerging therapies highlight the need for education focused on real-world clinical decision-making, rather than knowledge acquisition alone.

