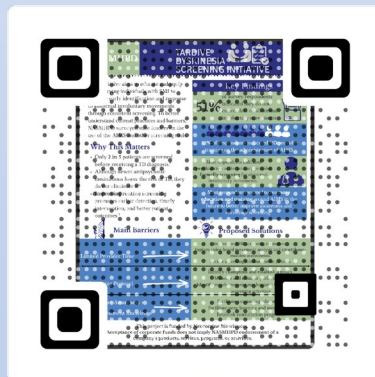


Screening for Abnormal Involuntary Movements for Individuals with Serious Mental Illness

NASMHPD 2026 Annual Meeting



NASMHPD

Disclaimer

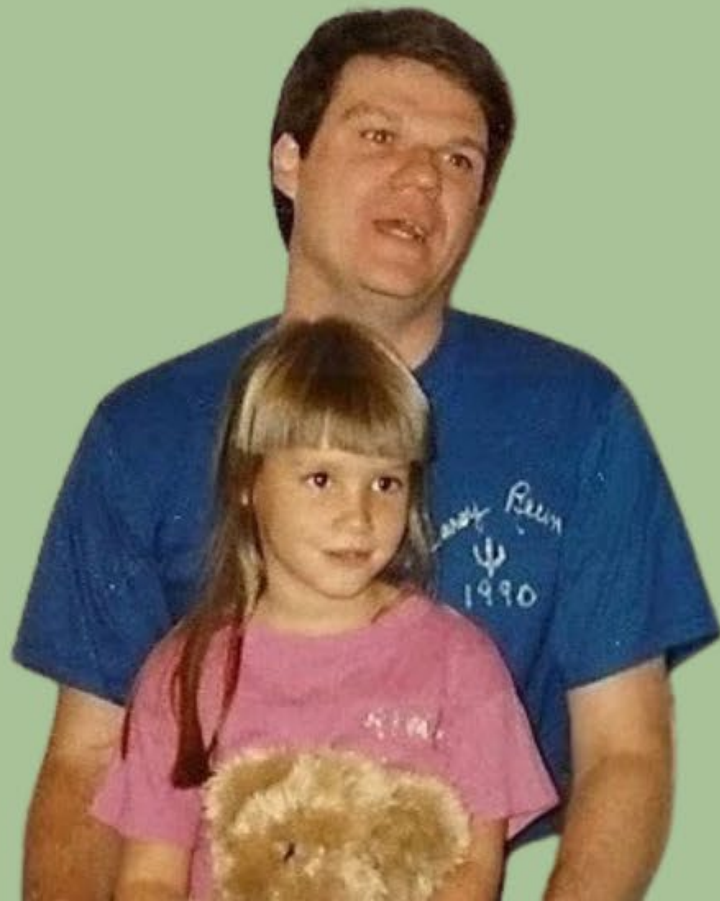
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Project Overview

- Neurocrine Biosciences partnered with NASMHPD to evaluate barriers and opportunities for improving routine screening for tardive dyskinesia (TD) among individuals with serious mental illness receiving antipsychotic medications.
- Our charge was to develop national recommendations for standardized AIMS screening, identify implementation strategies, and engage stakeholders across behavioral health systems to strengthen awareness, education, and early identification of TD.
- The following survey results informed these recommendations and highlight current practices, challenges, and opportunities for improvement.

Overcoming My Fear of Tardive Dyskinesia



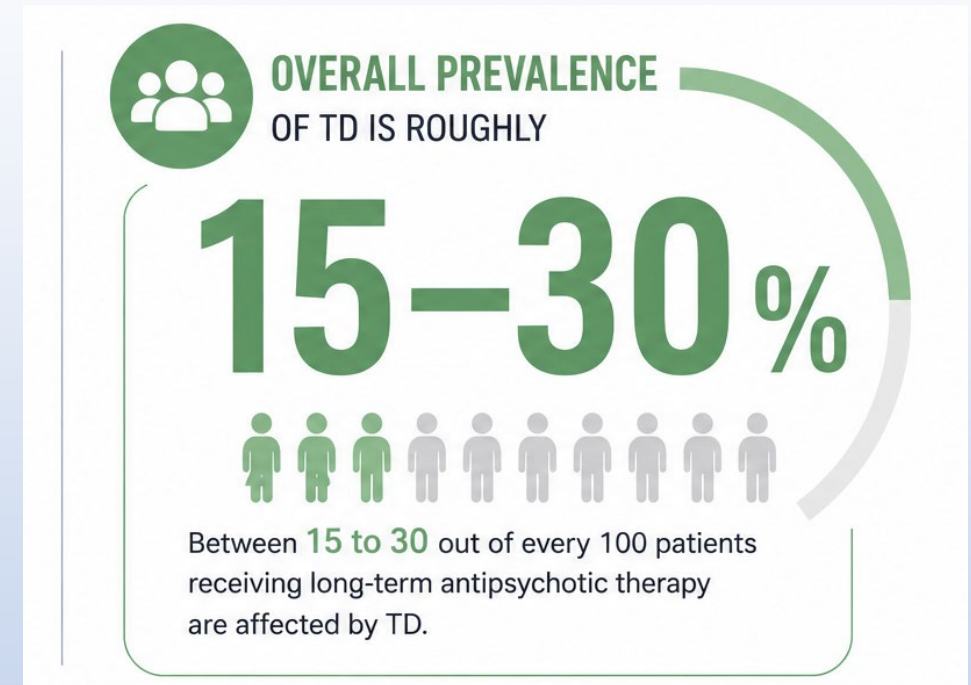
“

I have a family history of psychosis. My uncle is a creative, funny, and kind person who has been in and out of psychiatric hospitals for most of my life. When I was little, I remember running to greet him when he came to visit. He was a videographer for a blues artist and had a fiancée. Though he had experienced episodes of mania and psychosis in the past, at that time, he was stable.

”

Abnormal Involuntary Movements

- Abnormal involuntary movements are **unintentional, repetitive, or irregular movements** that occur without the person's conscious control.¹
- **Tardive Dyskinesia (TD)** is a serious and sometimes irreversible abnormal movement disorder that emerges after prolonged exposure to dopamine receptor–blocking agents, such as antipsychotics.²
- Missed early signs can lead to progression, **reduced quality of life**, disability, and fewer opportunities to adjust treatment safely.³
- TD also places a substantial burden on **caregivers and healthcare systems** through psychological distress, impaired daily functioning and work productivity.³



Policy Problem

- Routine TD screening at **every clinical encounter** is recommended by the **APA** and other expert groups for patients taking antipsychotic or other dopamine receptor–blocking medications.⁴
- Only **2 in 5** TD patients are screened prior to being diagnosed with TD.⁵
- Although newer antipsychotics have a lower risk of TD than older medications, **the risk remains**.
- TD may still affect about **20%** of individuals taking second-generation antipsychotics (SGAs).⁶



Types of Abnormal Involuntary Movements

- **Drug-Induced Movement Disorders (DIMDs)** result from dopamine receptor–blocking agents (e.g., antipsychotics, antiemetics)⁷
 - Includes: **Tardive dyskinesia (TD)**, **dystonia**, **akathisia**, **drug-induced parkinsonism (DIP)**
- **Key Differentiation**⁸
 - **DIP:** tremor, rigidity, bradykinesia, shuffling gait
 - **Akathisia:** inner restlessness + pacing/inability to sit still
 - **Dystonia:** sustained muscle contractions → abnormal postures
 - **TD:** Involuntary, repetitive, irregular movements (often insidious onset)
- **TD is:** Often preventable, frequently under-recognized, potentially persistent and most importantly treatable if identified early



MIND-TD. (n.d.). *MIND-TD | Understanding TD to make a difference.* <https://www.mind-td.com/>

Role of Screening in Identifying TD

INFORMAL SCREENING

Involves routine **clinical observation** and patient or caregiver **inquiry** during usual care.



Routine observation



Patient or caregiver inquiry



During usual care

FORMAL SCREENING

Uses a structured tool such as the **AIMS** or **DISCUS** to **systematically assess, document, and track** abnormal movements **over time**.

AIMS / DISCUS	
Face & Mouth	☒
Arms & Hands	☒
Trunk	☒
Legs & Feet	☒



Systematically assess



Document findings



Track over time

- **Routine screening** is the primary mechanism for identifying TD.
- While direct RCT evidence is limited, a **strong supporting** rationale for screening includes:
 - TD is common and often underdiagnosed
 - May be persistent and functionally impairing
 - Structured tools improve detection and tracking
 - Effective treatments are now available
- Screening is **inconsistently documented**:
 - ~51% AIMS documentation in outpatient settings⁹
 - ~58.9% in VA populations¹⁰
- Highlights need for **standardized monitoring**

Clinical Interventions

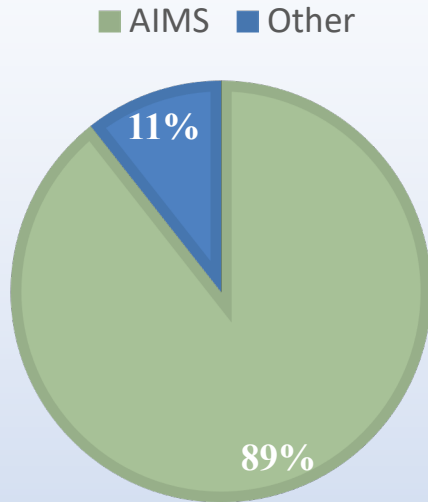
- **Prevention is key:** Use antipsychotics only when indicated, at the **lowest effective dose** for the **shortest necessary duration**, with regular reassessment.
- **If TD is suspected:** Review medication history, perform a structured **AIMS assessment**, and monitor symptoms over time.
- **Avoid common pitfalls:**
 - Do **not** increase the antipsychotic dose to suppress TD symptoms.
 - **Anticholinergics (e.g., benztropine)** do not treat TD and may worsen it.
- **First-line treatment: VMAT2 inhibitors** (*valbenazine* and *deutetrabenazine*) are FDA-approved and have the strongest evidence for reducing involuntary movements.¹¹
- **When appropriate:** Consider reducing or changing the antipsychotic only if it can be done safely. For selected patients with persistent psychosis, switching to *clozapine* may help reduce TD risk.¹²



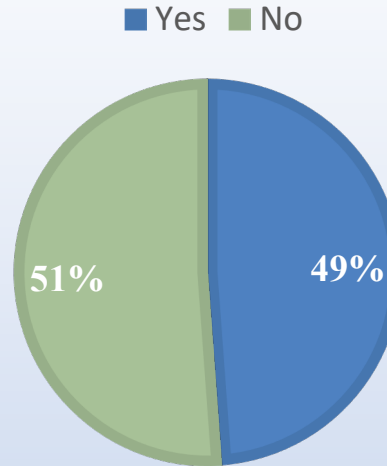
Consistent screening and monitoring can lead to earlier detection, **better outcomes**, and **improved quality of life** for patients.

Survey Results

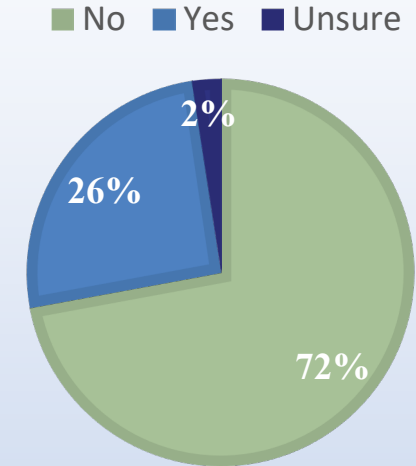
UTILIZATION OF AIMS



DATA COLLECTION ON ABNORMAL INVOLUNTARY MOVEMENTS



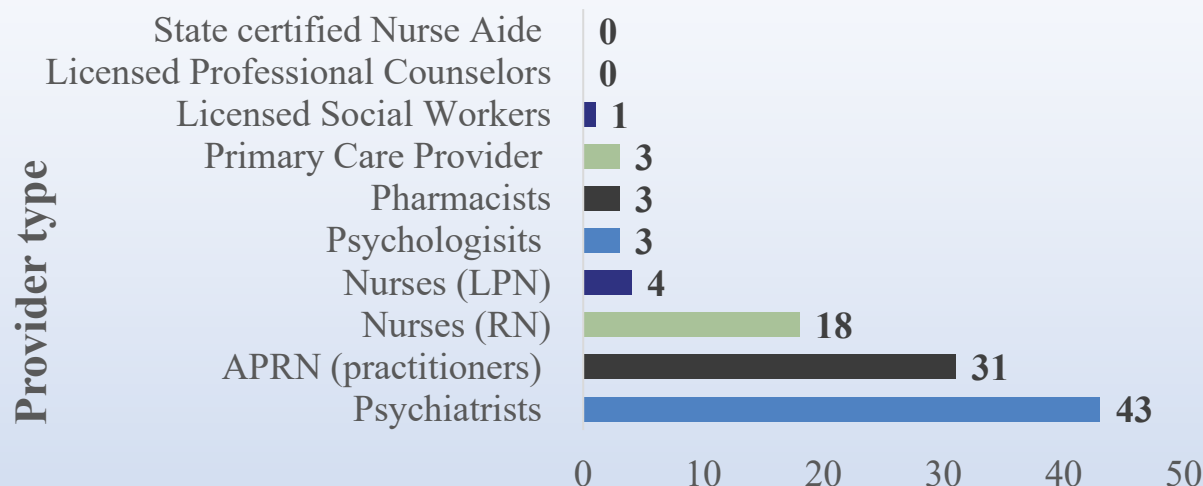
PROVIDER TRAINING ON ADMINISTRATION OF AIMS



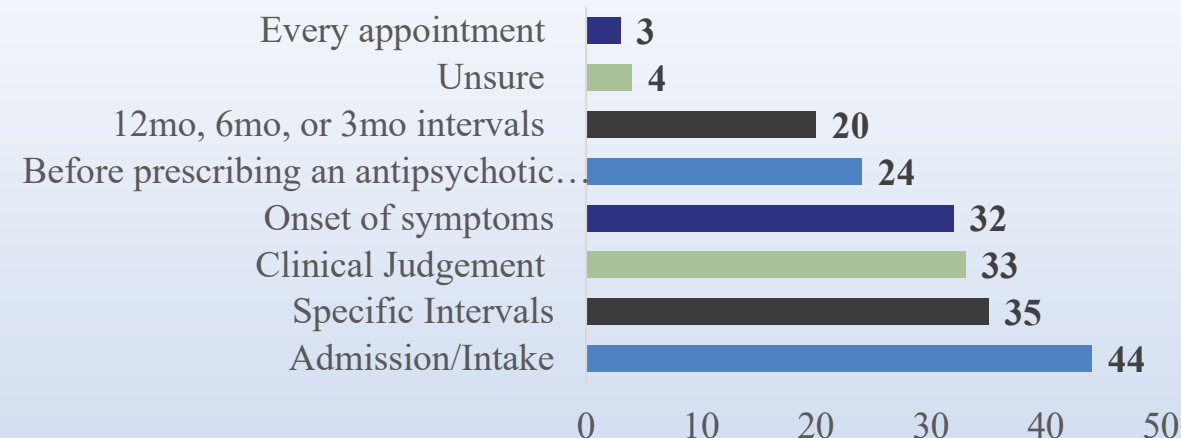
- Most respondents indicated they use **AIMS** as a screening tool
- 51% of respondents indicated **no data collection** on abnormal involuntary movements
- Most respondents (72%) indicated **no provider training** on the administration of AIMS as a screening tool

Survey Results

Type of care providers formally screening for abnormal involuntary movements



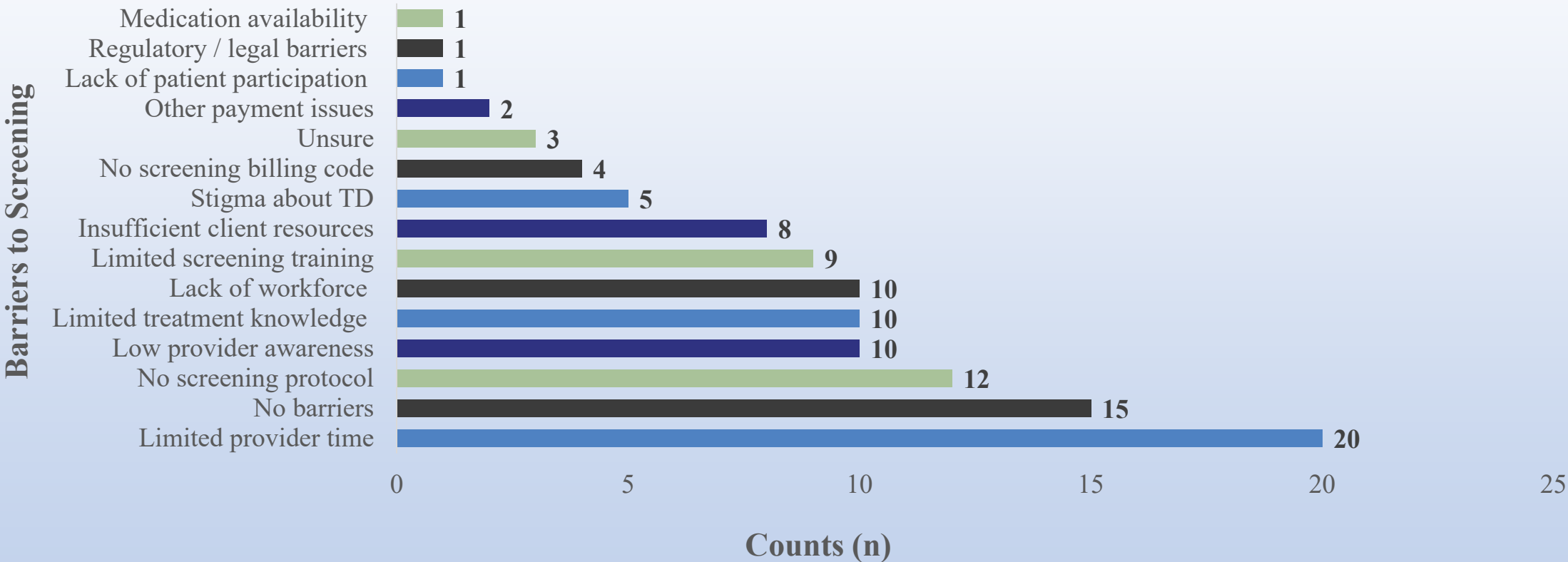
Points of care where individuals with SMI on antipsychotics are formally screened for abnormal involuntary movements



- Most respondents indicated **psychiatrists** as the primary provider **formally screening** for abnormal involuntary movements, with APRN's and RN's following behind.
- While many respondents indicated **informal screening** is done at every appointment and the onset of symptoms, **formal screening** was done most frequently at admission/intake and specific intervals of **3mo, 6mo, or 12mo periods**.

Survey Results

Barriers to Routine Screening, Identification, and Usage of Validated Screening Tools for Abnormal Involuntary Movements



- The **main barriers to routine screening** were limited provider time and no screening protocol

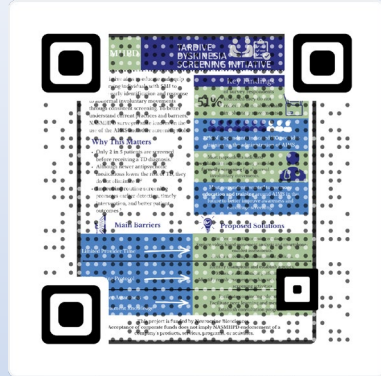
Role of Peer Support

- **Peer Support Specialist (PSS)** – provides lived-experience based support to individuals with SMI, helping promote recovery, engagement, and self-advocacy.¹³
 - **Increase awareness and reduce stigma** by creating safe spaces to discuss challenges affecting quality of life.
 - **Support early identification through observation and advocacy**
-
- **Education gaps remain:** TD and abnormal involuntary movements are rarely included in peer training
 - **Protecting peer role integrity is essential** to prevent “peer drift” and maintain the relationship-centered foundation of peer services.



TalkAboutTD. (n.d.). *Support for tardive dyskinesia (TD)*.
<https://www.talkabouttd.com/carepartner-support-for-tardive-dyskinesia-td>

Policy Considerations



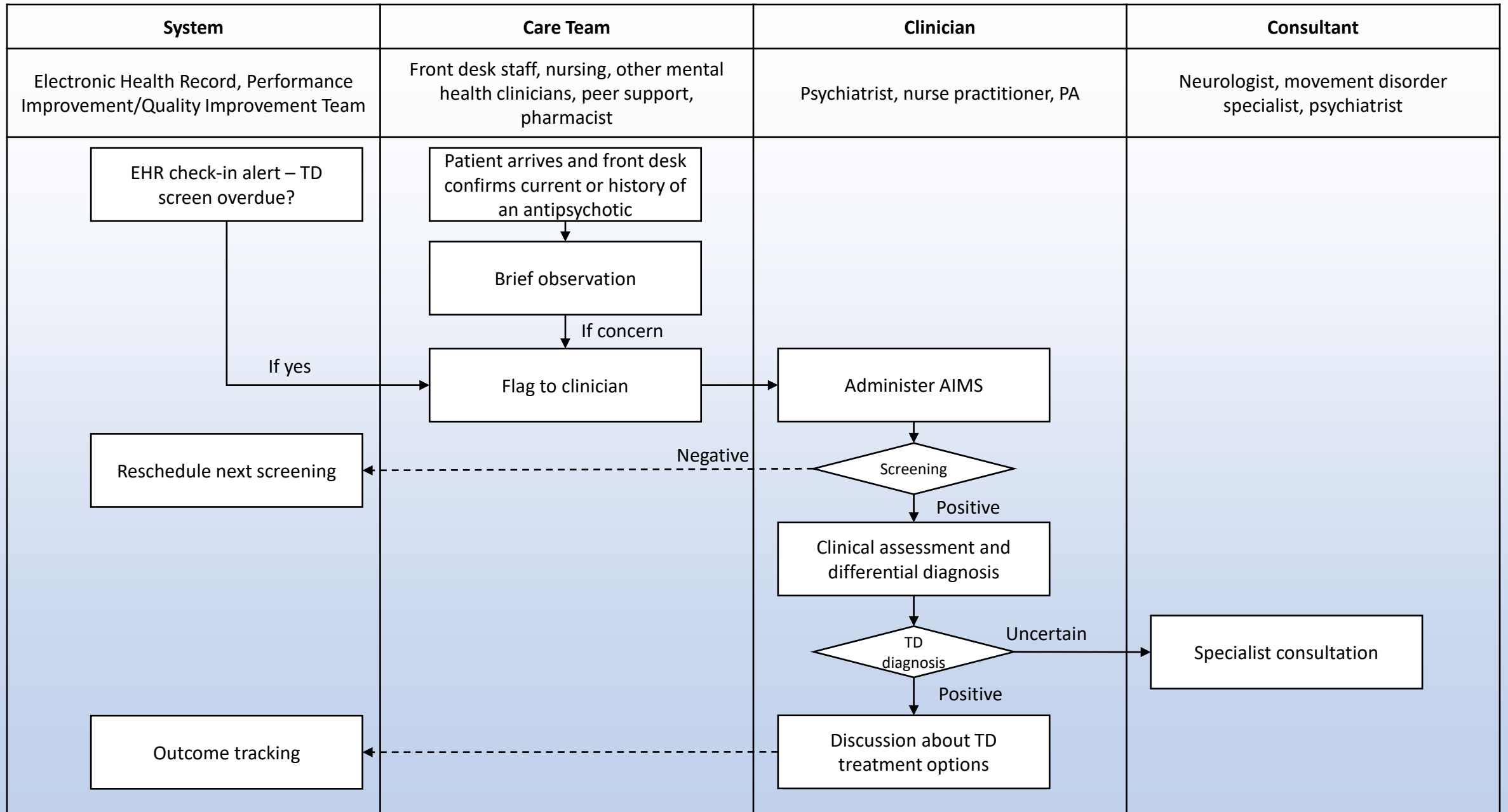
Barrier	Strategy
 Lack of Screening Protocol	 • Identify champions and establish a policy • Measure and monitor performance • Identify reimbursement mechanisms that support TD screening activities
 Limited provider awareness, Limited knowledge of screening and treatment, No or limited screening training opportunities	 • Facilitate continuing education • Facilitate peer learning and mentorship • Establish consultation programs
 Limited provider time. Workforce shortages	 • Implement EHR screening reminders • Evaluate video-based movement analysis and smartphone-enabled assessments • Review screening reimbursement policies • Implement team-based screening models and tiered screening pathways • Leverage CCBHCs and collaborative care models
 Limited or insufficient resources for people served to improve their TD awareness and address screening and treatment reluctance	 • Facilitate patient education to promote shared decision making • Leverage peer support • Engage families and caregivers • Normalize conversation about TD and engage in motivational interviewing • Address financial barriers • Address social determinants

Recommendations for State Screening Policy

- Screen all individuals with current or prior exposure to dopamine receptor blocking agents (DRBAs), regardless of diagnosis or care setting. Incorporate two levels of screening:
 - Informal observation at **every clinical encounter**
 - Formal assessment using a standardized tool (e.g., **AIMS**) at recommended intervals
- **Perform structured screening:** At baseline or shortly after DRBA initiation
- After significant medication changes or when abnormal movements are suspected
- **Screen at least annually (every 6 months for high-risk patients).**
- **Integrate screening into EHR workflows and multidisciplinary care.**
- **Engage patients, families, and peer support specialists** through education and reporting of abnormal movements.
- **Ensure timely access to evidence-based treatment** (e.g., VMAT2 inhibitors) and specialist referral when indicated.

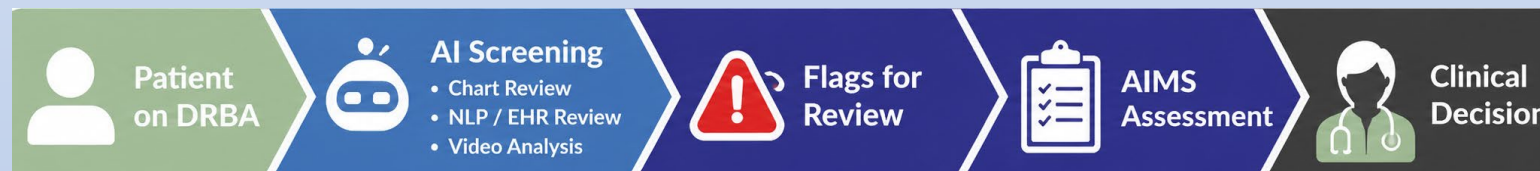


MIND-TD. (n.d.). *MIND-TD | Understanding TD to make a difference.* <https://www.mind-td.com/>



Future Directions

- **Automated EHR review** to identify patients overdue for TD screening
- **Natural Language Processing and computer vision** may improve early detection of TD
 - NLP successfully identified potential TD cases in **164,417** antipsychotic-treated patients.
- Early studies show **promising diagnostic accuracy** and performance comparable to or better than human raters¹⁶
- **AI should support, not replace, clinical assessment and decision-making**



Discussant

Sheri Dawson, R.N.

Senior Behavioral Health Advisor

NASMHPD

Discussant

Joseph Parks, M.D.

Principle Medical Advisor

Strategy and Growth Office

National Council for Mental Wellbeing

References

1. Caroff, S. N., Widschwendter, C. G., & Hofer, A. (2019). Antipsychotic-induced tardive dyskinesia: Update on epidemiology and management. *Current Opinion in Psychiatry*, 32(3), 179–184. <https://doi.org/10.1097/YCO.0000000000000491>
2. Raza, M., & Mars, J. A. (2026). Tardive Dyskinesia. In StatPearls. StatPearls Publishing.
3. Tanner, C. M., Caroff, S. N., Cutler, A. J., Lenderking, W. R., Shalhoub, H., Pagé, V., Franey, E. G., Serbin, M., & Yonan, C. (2023). Impact of possible tardive dyskinesia on physical wellness and social functioning: Results from the real-world RE-KINECT study. *Journal of Patient-Reported Outcomes*, 7(1), 21. <https://doi.org/10.1186/s41687-023-00551-5>
4. American Psychiatric Association. (2020). The American Psychiatric Association Practice Guideline for the Treatment of Patients With Schizophrenia (Third Edition). American Psychiatric Association Publishing. <https://doi.org/10.1176/appi.books.9780890424841>
5. Harris Insights & Analytics. (2025). Tardive dyskinesia (TD) patient survey [Research report prepared for Neurocrine Biosciences]. Neurocrine Biosciences.
6. Carbon, M., Hsieh, C. H., Kane, J. M., & Correll, C. U. (2017). Tardive Dyskinesia Prevalence in the Period of Second-Generation Antipsychotic Use: A Meta-Analysis. *The Journal of clinical psychiatry*, 78(3), e264–e278. <https://doi.org/10.4088/JCP.16r10832>
7. Frei, K., Truong, D. D., Fahn, S., Jankovic, J., & Hauser, R. A. (2018). The nosology of tardive syndromes. *Journal of the Neurological Sciences*, 389, 10–16. <https://doi.org/10.1016/j.jns.2018.02.008>
8. van Harten, P. N., Hoek, H. W., Matroos, G. E., Koeter, M., & Kahn, R. S. (1997). The inter-relationships of tardive dyskinesia, parkinsonism, akathisia and tardive dystonia: The Curaçao Extrapyramidal Syndromes Study II. *Schizophrenia Research*, 26(2–3), 235–242. [https://doi.org/10.1016/s0920-9964\(97\)00058-3](https://doi.org/10.1016/s0920-9964(97)00058-3)
9. North, C. S., McDonald, K., Hunter, J., & Burruss, J. (2022). Prevalence of Tardive Dyskinesia in an Electronic Medical Record Study at a Large Community Mental Health Treatment Center. *The Primary Care Companion for CNS Disorders*, 24(4), 21m03069. <https://doi.org/10.4088/PCC.21m03069>
10. Caroff, S. N., Leong, S. H., Roberts, C. B., Berkowitz, R. M., & Campbell, E. C. (2020). Correlates of the Abnormal Involuntary Movement Scale in Veterans With Tardive Dyskinesia. *Journal of Clinical Psychopharmacology*, 40(4), 373–380. <https://doi.org/10.1097/JCP.0000000000001229>
11. Solmi, M., Fornaro, M., Caiolo, S., Lussignoli, M., Caiazza, C., De Prisco, M., Solini, N., de Bartolomeis, A., Iasevoli, F., Pigato, G., Del Giovane, C., Cipriani, A., & Correll, C. U. (2025). Efficacy and acceptability of pharmacological interventions for tardive dyskinesia in people with schizophrenia or mood disorders: A systematic review and network meta-analysis. *Molecular Psychiatry*, 30(3), 1207–1222. <https://doi.org/10.1038/s41380-024-02733-z>
12. Wong, J., Pang, T., Cheuk, N. K. W., Liao, Y., Bastiampillai, T., & Chan, S. K. W. (2022). A systematic review on the use of clozapine in treatment of tardive dyskinesia and tardive dystonia in patients with psychiatric disorders. *Psychopharmacology*, 239(11), 3393–3420. <https://doi.org/10.1007/s00213-022-06241-2>
13. Baron, R. C., Melillo, S., Rimer, B. K., Coates, R. J., Kerner, J., Habarta, N., Chattopadhyay, S., Sabatino, S. A., Elder, R., Leeks, K. J., & Task Force on Community Preventive Services (2010). Intervention to increase recommendation and delivery of screening for breast, cervical, and colorectal cancers by healthcare providers a systematic review of provider reminders. *American journal of preventive medicine*, 38(1), 110–117. <https://doi.org/10.1016/j.amepre.2009.09.031>
14. Alexiuk, M., Elgubtan, H., & Tangri, N. (2023). Clinical Decision Support Tools in the Electronic Medical Record. *Kidney international reports*, 9(1), 29–38. <https://doi.org/10.1016/j.ekir.2023.10.019>
15. Loughlin, A. M., Lin, N., Abler, V., & Carroll, B. (2019). Tardive dyskinesia among patients using antipsychotic medications in customary clinical care in the United States. *PloS One*, 14(6), e0216044. <https://doi.org/10.1371/journal.pone.0216044>
16. Trosch, R., Sterns, A., Grimm, B., Larsen, L., Talbot, B., Ma, F., Ranjan, R., MacMillan, C., Hughes, J., Friedman, J., & Muir, O. (2026). Cross-Dataset Evaluation of an Automated Video-Based Model for Detecting Tardive Dyskinesia Using the Clinician’s Tardive Inventory: Validation Study. *JMIR Mental Health*, 13(1), e92197. <https://doi.org/10.2196/92197>