



An APA and SAMHSA Initiative



CLINICIANS ▾

INDIVIDUALS & FAMILIES ▾

OUR TOOLS ▾

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CLINICIANS HOME

CONSULT REQUEST

KNOWLEDGE BASE

EDUCATION CATALOG

CENTERS OF EXCELLENCE

# A BETTER TOMORROW

Find answers that help people with serious mental illness live their best lives.



Clinicians  
& Providers

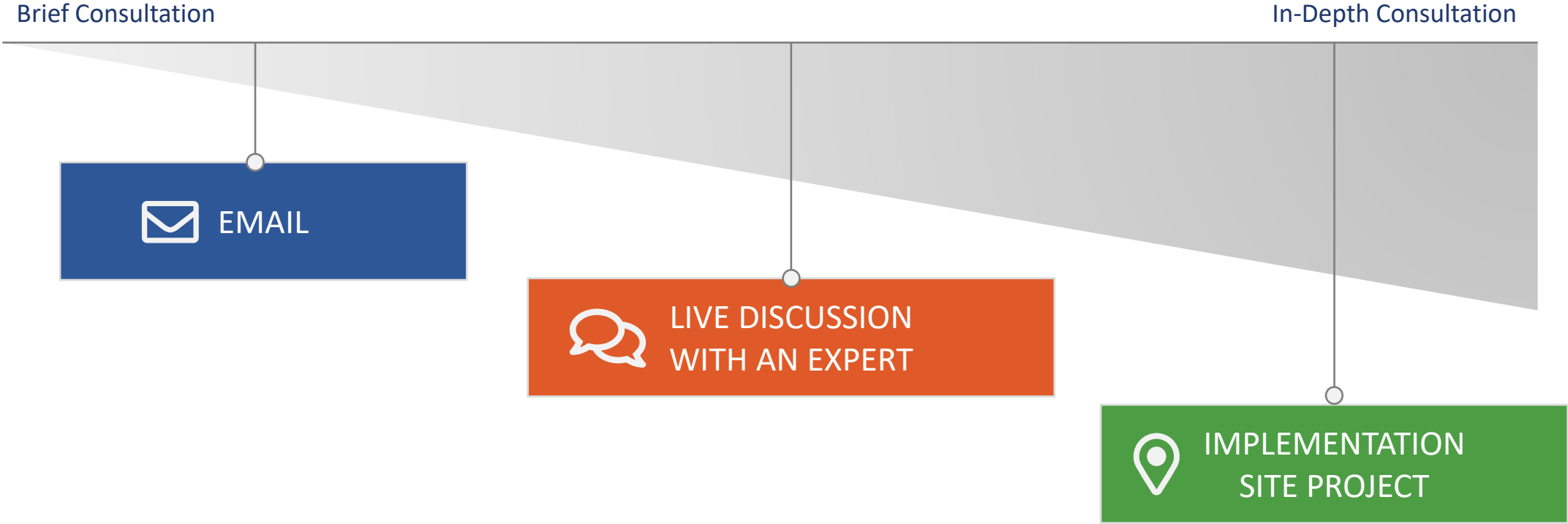


Individuals  
& Families



www.SMladviser.org

# CONTINUUM OF CONSULTATIONS



# CONSULTATIONS FROM EXPERTS IN SMI



✓ Ask about psychopharmacology, therapies, recovery supports, patient and family engagement, education, and more

✓ Receive guidance within one business day

# CLINICIAN-TO-CLINICIAN CONSULTATIONS

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Total Number of  
Consultations  
**5,700+**

*“Excellent info and very timely. Got back to me in less than 12 hours with all relevant resources. Like an extremely knowledgeable research library consult with good clinical chops to acknowledge the edges of the data!” – Psychiatrist*

*“THANK YOU this is a wonderful idea and tool. I plan to use it often and just downloaded the app.” – Social Worker*

*“I had a genuine clinical question but was also “testing out” this consult service to see how it worked and what type of information came back. I was very impressed with the quality, detail, and speed of the response. Thanks!” – Psychiatrist*

# PSYCHOPHARMACOLOGY CONSULTATIONS

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- Of around 1,100 uses of the written consultation system
  - 489 psychopharmacology-related
    - 177 clozapine
    - 143 LAI
- Most common clozapine consultation question:
  - Persistent symptoms while on clozapine



# SPECIALIZED RESOURCES

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ALL THE INFORMATION ON A SPECIFIC TOPIC  
IN ONE EASY-TO-ACCESS PLACE





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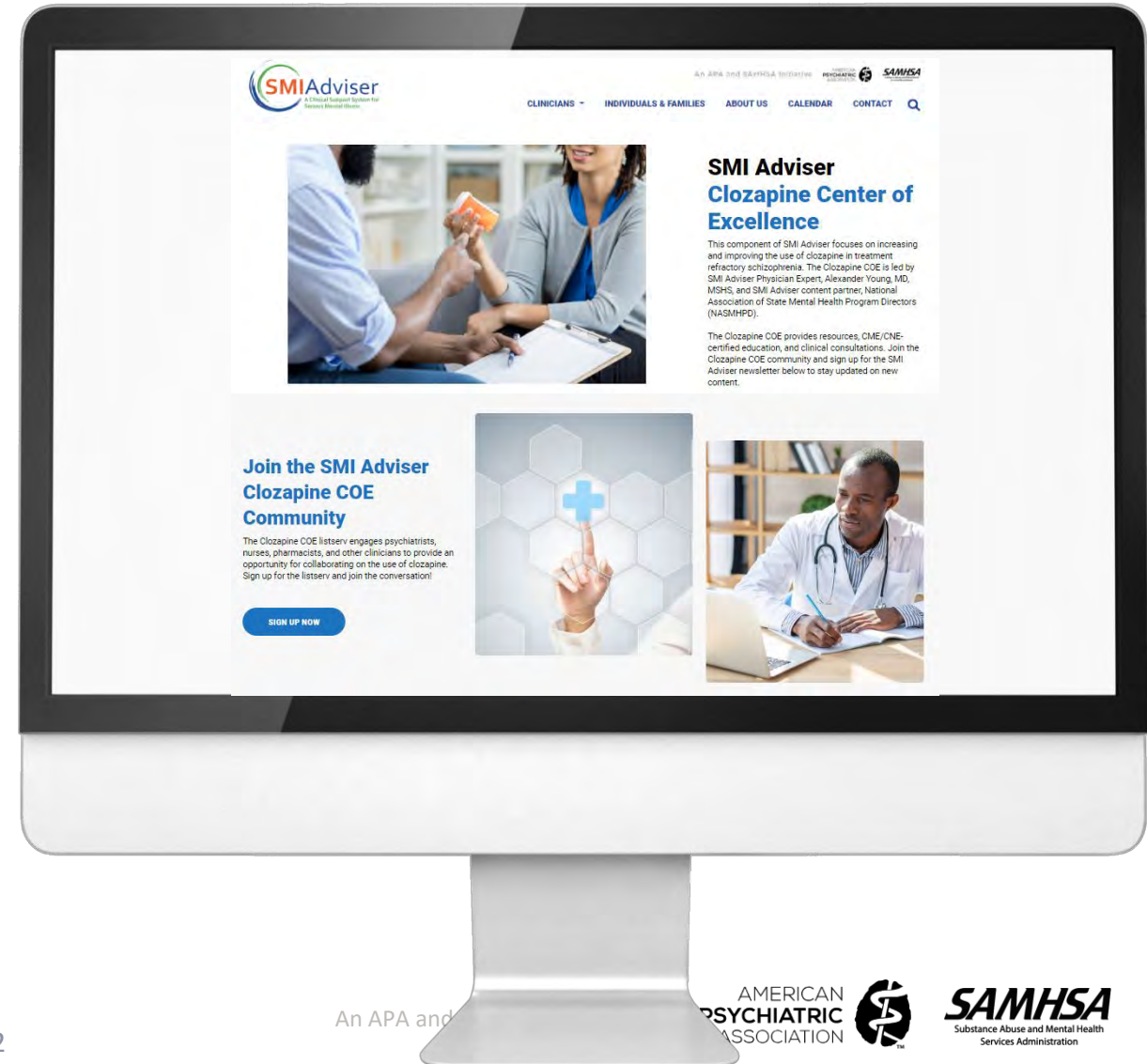


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# CLOZAPINE CENTER OF EXCELLENCE

- SMI Adviser created the Clozapine COE to promote the safe and effective use of clozapine. The ultimate goal of this effort is to improve the lives of individuals who have treatment-resistant schizophrenia. The Clozapine COE provides clinicians with training opportunities, technical assistance, and vetted resources.
- <http://SMIAdviser.org/clozapine>





# Resources on the Clozapine COE

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**Tips on Starting Clozapine**



**Tips on Monitoring**



**Tips on Common Side Effects**



**Tips on Important Uncommon Side Effects**



**Tips on Challenges**



**Clozapine Dose Planner**



**Guidelines and Research**



**Information and Handouts for Individuals and Families**



# CLOZAPINE DOSE PLANNER



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## Clozapine Dose Planner

This tool has been developed to assist you in thinking about the pharmacokinetics of clozapine. The information here is synthesized from clinical research studies and may not be representative of an individual patient response.

**This tool is not intended to influence prescribing practices but should be used to provide an estimate of what plasma level might be obtained, given the parameters of age, gender, weight, and smoking status.**

Clinical decisions should be based upon your knowledge of the patient's situation and history and the plasma level itself, not an estimate. Clozapine levels should be drawn in the morning 12 hours after the last dose. If there is a morning clozapine dose, it should be held until the level can be drawn.

Which of the following scenarios would you like to explore? *(Required)*


I would like to predict the clozapine level based on the clozapine dose, smoking status, sex, weight, and age

I would like to predict the clozapine dose that would be needed to achieve a clozapine level that I determine (e.g. 350 ng/mL) based on the patient's smoking status, sex, weight, and age.




# CLOZAPINE DOSE PLANNER

Smoker




Smoking




Non-Smoking

Sex



Male



Female

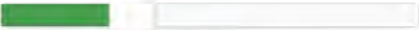
Please note, this tool was not developed to be used for transgender individuals.

Pounds (lbs)

▼

Weight (lbs)

186lbs




186lbs

186

Clozapine dose predictions may not be accurate for individuals with very low or very high body weight.

Age

43




43

43

Clozapine Dose (FDA maximum 900 mg)

500mg



500mg

500

Concentration: 346.84 ng/mL

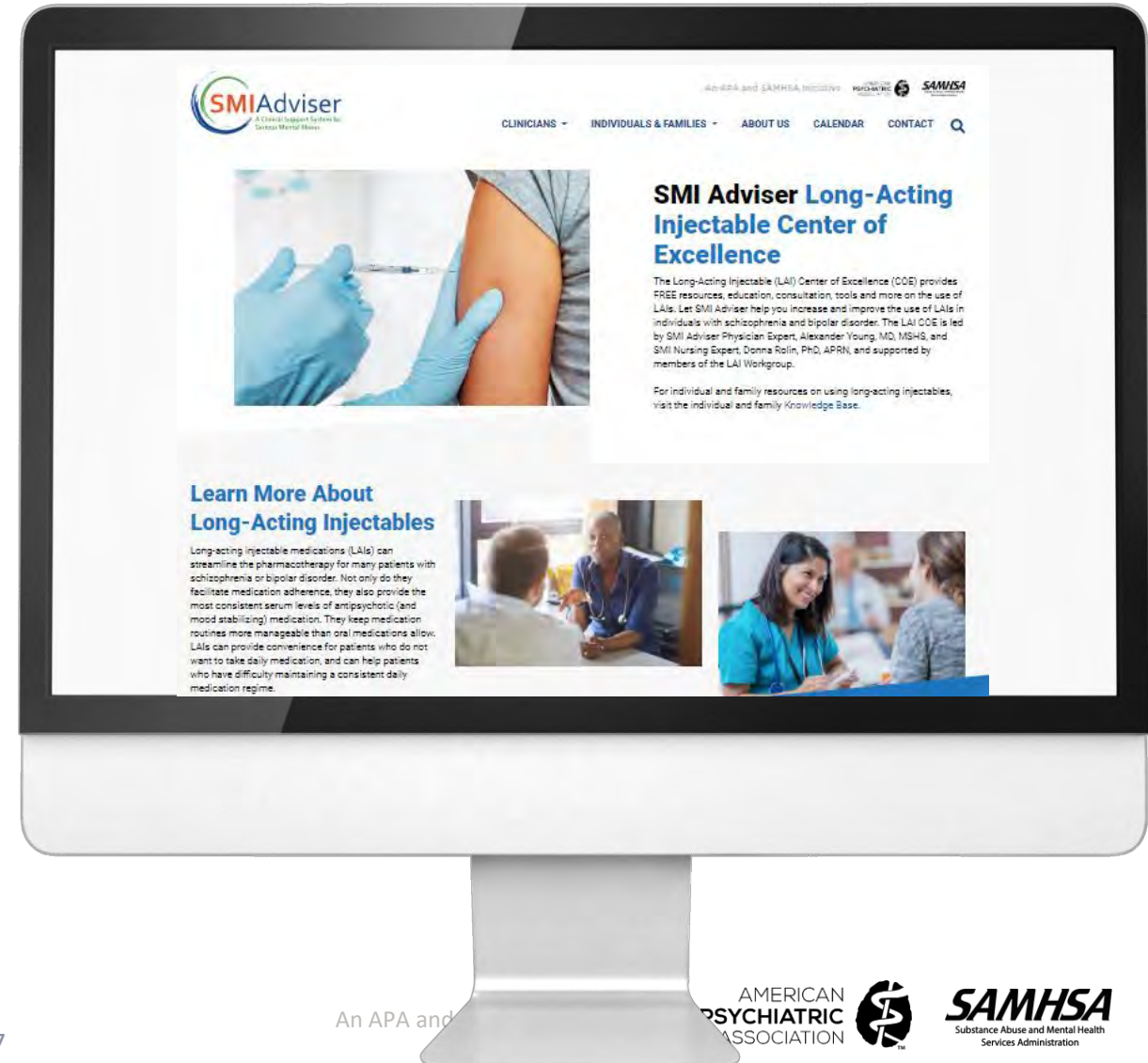
# RESOURCES IN DEVELOPMENT: TREATING SIALORRHEA

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- Encouraging prescribers to use atropine 1% ophthalmic drops or ipratropium bromide 0.06% nasal spray rather than systemic anticholinergics
- Videos in development on how exactly to use these options

# LONG-ACTING INJECTIBLE CENTER OF EXCELLENCE

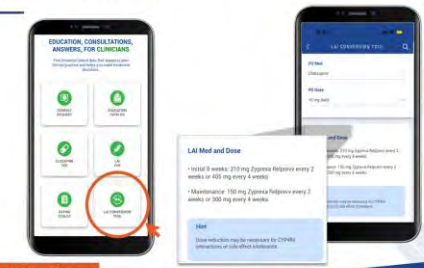
- Provides resources, education, consultation, and tools on using LAIs
- Led by Donna Rolin, PhD, APRN and Robert Cotes, MD
  - <http://SMIAdviser.org/lai>





# SMI ADVISER ASSETS ON LONG-ACTING INJECTABLES

## LAI DOSE CONVERSION TOOL



Download at [SMIAdviser.org/app](https://SMIAdviser.org/app)





# SMI ADVISER ASSETS ON LONG-ACTING INJECTABLES



## Injection Sites and Volumes for LAIs Available in the U.S.

Drug	Site <sup>a</sup>	Injection Volume
<b>First Generation Antipsychotics</b>		
<a href="#">Haldol Decanoate</a> (haloperidol decanoate)	Deltoid IM or Gluteal IM <sup>b</sup>	3 mL max
<a href="#">Prolixin Decanoate</a> (fluphenazine decanoate)	Typically IM, with deltoid or gluteal injections possible <sup>b</sup>	0.5-2 mL
<b>Second Generation Antipsychotics</b>		
<a href="#">Abilify Asimtufii</a> (aripiprazole extended-release suspension)	Gluteal IM	2.4–3.2 mL
<a href="#">Abilify Maintena</a> (aripiprazole monohydrate LAI)	Deltoid IM or Gluteal IM	0.8–2 mL
<a href="#">Aristada</a> (aripiprazole lauroxil LAI)	1.6 mL: Deltoid IM or Gluteal IM Higher doses: Gluteal IM	1.6–3.9 mL
<a href="#">Aristada Initio</a> (aripiprazole lauroxil LAI)	Deltoid IM or Gluteal IM	2.4 mL
<a href="#">Invega Hafvera</a> (paliperidone palmitate 6-month LAI)	Gluteal IM only	3.5-5 mL
<a href="#">Invega Sustenna</a> (paliperidone palmitate LAI)	Both loading doses: Deltoid IM Maintenance doses: Deltoid IM or Gluteal IM	0.25–1.5 mL
<a href="#">Invega Trinza</a> (paliperidone palmitate 12-week LAI)	Deltoid IM or Gluteal IM	0.875–2.625 mL
<a href="#">Perseris</a> (risperidone subcutaneous LAI)	Abdominal SC or Upper Lateral Arm SC	0.6 or 0.8 mL
<a href="#">Risperdal Consta</a> (risperidone microspheres LAI)	Deltoid IM or Gluteal IM	2 mL
<a href="#">Rykindo</a> (risperidone for extended-release suspension)	Gluteal IM	2 mL
<a href="#">Uzedv</a> (risperidone for extended-release suspension)	Abdominal SC or Upper Lateral Arm SC	0.14-0.7 mL
<a href="#">Zyprexa Relprevv</a> (olanzapine LAI)	Gluteal IM only <sup>b</sup>	1–2.7 mL

**Note:** IM = intramuscular injection; SC = subcutaneous injection

<sup>a</sup>For all injections, rotate injection sites

<sup>b</sup>Aspiration method advised by FDA prescribing information

# LAI CONVERSION TOOL



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## LAI Conversion Tool

This tool is designed to provide dosing recommendations for initial and maintenance doses of long-acting injectable antipsychotic medications based on an oral dose of antipsychotic medication.

Oral tolerability with all medications should be verified prior to consideration of a long-acting injectable antipsychotic medication.

Select the current oral medication and oral dose that the patient is receiving. The LAI dosing recommendations will populate with links to additional tips on the corresponding long-acting injectable antipsychotic medication.

PO Med *(Required)*

Aripiprazole

PO Dose *(Required)*

20 mg

LAI Med and Dose

**Initial Dose:**

- 400 mg Abilify Maintena plus 14 days of oral aripiprazole
- 882 mg Aristada plus 21 days of oral aripiprazole
- 882 mg Aristada PLUS 30 mg oral aripiprazole PLUS 675 Aristada Initio
- 960 mg Abilify Asimtufii plus 14 days of oral aripiprazole

**Initial dose for patient already on Abilify Maintena:**

- 960 mg Abilify Asimtufii; no oral overlap required



# CLOZAPINE AND LAI CENTER OF EXCELLENCE EXCHANGE

- 620+ clinicians subscribe to this listserv
- Ask questions, share ideas, and engage with peers across the country
- Discussions on dosing, managing side effects, monitoring
- Interactive community forum
- Moderated by SMI Adviser clinical experts
- Practical, evidence-based answers

The screenshot shows the 'Clozapine and LAI Centers of Excellence Exchange' forum. At the top, there's a blue header with the title and a 'SETTINGS 2' button. Below the header, a breadcrumb trail reads 'Communities / Community Home / Discussion'. A navigation bar includes 'COMMUNITY HOME', 'DISCUSSION 131', 'LIBRARY 25', 'BLOGS 0', and 'MEMBERS 621'. On the right, there are dropdown menus for 'Most Recently Updated', 'Posts in my communities', and '50 per page', along with a 'POST NEW MESSAGE' button. The main content area is a table with columns: 'THREAD SUBJECT', 'REPLIES', 'LAST POST', and 'STATUS'. The table lists several threads, including 'FDA news release on Clozapine REMS reevaluation', 'Hands-On Guidance on the Use of Clozapine and LAIs: Virtual Learning Collaboratives Available NOW', and two 'PLEASE JOIN US FOR THE SEPTEMBER VIRTUAL FORUM' and 'AUGUST VIRTUAL FORUM' threads. Each thread entry shows the number of replies and the time since the last post by a specific user.

THREAD SUBJECT	REPLIES	LAST POST	STATUS
FDA news release on Clozapine REMS reevaluation	0	37 seconds ago by Robert Cotes	
Hands-On Guidance on the Use of Clozapine and LAIs: Virtual Learning Collaboratives Available NOW	0	yesterday by Maggie Coyle	
PLEASE JOIN US FOR THE SEPTEMBER VIRTUAL FORUM	1	21 days ago by Maggie Coyle	
Clozapine Dose Planner Available in App	0	one month ago by Maggie Coyle	
PLEASE JOIN US FOR THE AUGUST VIRTUAL FORUM	1	one month ago by Maggie Coyle	
EXT: Clozapine and LAI Centers of Excellence Exchange : PLEASE JOIN US FOR THE AUGUST VIRTUAL FORUM	0	one month ago by Jim McGrory	

# CLOZAPINE/LAI VIRTUAL FORUM

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- Short, interactive, engaging format so busy clinicians can participate
- Started at 30 minutes, expanded to 45 minutes based on feedback
- Opportunity to ask questions and hear actionable ideas from peers



# CLOZAPINE/LAI VIRTUAL FORUM

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- Hot topic around clozapine or LAIs drives each discussion
  - Long-Acting Injectable Antipsychotic Discontinuation
  - Benign Ethnic Neutropenia (BEN)
  - LAIs and Antipsychotic Polypharmacy
  - Non-antipsychotic, pharmacologic augmentation for clozapine partial responders





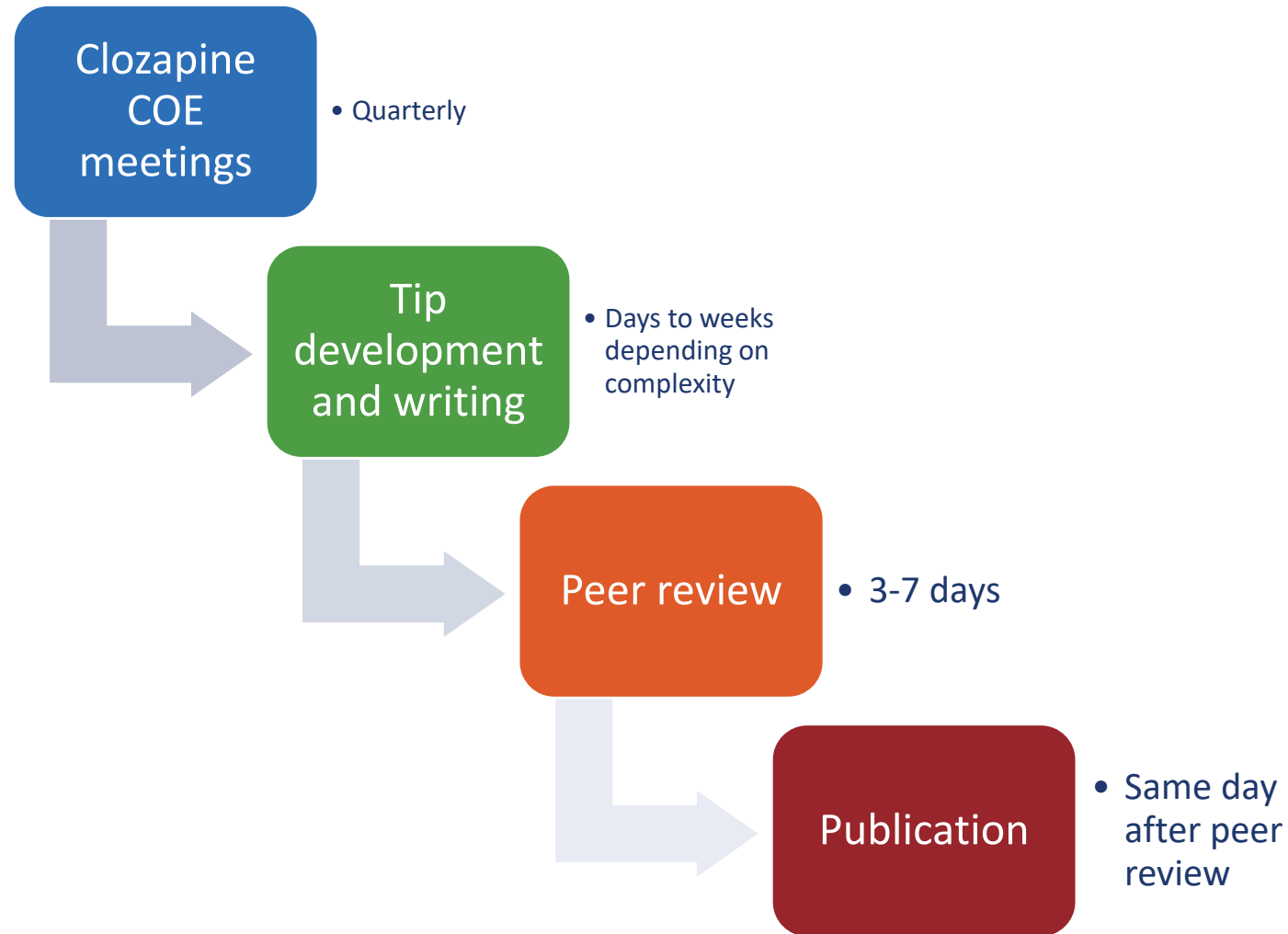
# How SMI Adviser can rapidly disseminate key information

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# Tip development process



## 2 Key Tips

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### Recommendations for Managing Patients on Pimozide, Lurasidone, or Clozapine During a Treatment with a 5-Day Course of Paxlovid

Written 1/13/22

Distributed to Clozapine LAI listserv

Posted to smiadvise.org  
Website 713 views

### Vigilance and Monitoring for Clozapine Toxicity During COVID-19 Infection and Recommendations for Management

Written 11/9/22

Distributed to Clozapine/LAI Exchange

Posted to smiadvise.org  
Website 898 Views

# Other situations where quick guidance has been needed

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New FDA  
approved  
products

Changes to  
Clozapine  
REMS

Updates to  
the Ryan  
Haight Act

New landmark  
research  
papers

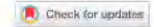
# CLOZAPINE REMS

- Clozapine shared system approved 2015, updated 2021
  - 11/2/22: Inpatient pharmacies may dispense a supply of clozapine that aligns with the patient's monitoring frequency
- All prescribers must certify and complete a monthly Patient Status Form for each patient, which includes reporting ANC lab data
- Some pharmacies still require faxed bloodwork documenting the ANC

EXPERT REVIEW OF CLINICAL PHARMACOLOGY  
2023, VOL. 16, NO. 3, 177–179  
<https://doi.org/10.1080/17512433.2023.2183192>



## EDITORIAL



### Improving clozapine utilization will require continued advocacy, drug sponsor interest, and FDA support to address REMS issues

Jonathan G Leung<sup>a\*</sup>, Megan Ehret<sup>b</sup>, Raymond C Love<sup>b</sup> and Robert O Cotes<sup>c</sup>

<sup>a</sup>Department of Pharmacy, Mayo Clinic, Rochester; <sup>b</sup>Department of Practice, Sciences, and Health Outcomes Research, University of Maryland School of Pharmacy, Baltimore, MD, USA; <sup>c</sup>Department of Psychiatry and Behavioral Sciences, Emory University School of Medicine, Atlanta, GA, USA

**ARTICLE HISTORY** Received 19 January 2023; Revised 15 February 2023; Accepted 17 February 2023

#### 1. Introduction

Significant research and clinical efforts have improved the safety of clozapine since FDA approval. This includes work resulting in strategies to prevent, detect, and manage clozapine-related adverse drug reactions (ADRs) such as gastrointestinal hypomotility and inflammatory reactions [1–4]. Tools and guidelines to screen for clozapine-related ADRs and awareness of how clozapine clinics help support the use of clozapine have also advanced care [5–7]. Continued efforts to improve clozapine prescribing are critical as clozapine is the only FDA approved medication

#### 2. How did we get here?

The complex history of clozapine has been described in detail by Crilly [12]. In short, the manufacturer (i.e. Sandoz) of branded clozapine in 1989 established the Clozaril Patient Management System (CPMS) following FDA requirements to ensure prescribers completed hematologic monitoring. To do this, Sandoz contracted with Caremark to collect and analyze blood samples before clozapine could be dispensed to a patient. Required participation in CPMS was discontinued following federal antitrust action [12]. A merger involving Sandoz in 1996 led to the creation of the pharmaceutical



# CLOZAPINE REMS UPDATES

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- Update 9/21/23
- “FDA is conducting a thorough reevaluation of the Clozapine REMS to determine whether the REMS can be modified to minimize burden...”
- Steps in progress:
  - Analysis of clozapine utilization, adherence to REMS requirements, and clinical outcomes
  - VA study looking at the incidence and severity of neutropenia
  - Study of the Sentinel System to understand adherence to the monitoring requirements



# RESOURCES FOR INDIVIDUALS AND FAMILIES

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EVIDENCE-BASED ANSWERS ON MANY TOPICS  
AROUND SMI





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GUIDANCE

KNOWLEDGE BASE

PERSON-FIRST LANGUAGE

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# FIND ANSWERS TO COMPLEX QUESTIONS

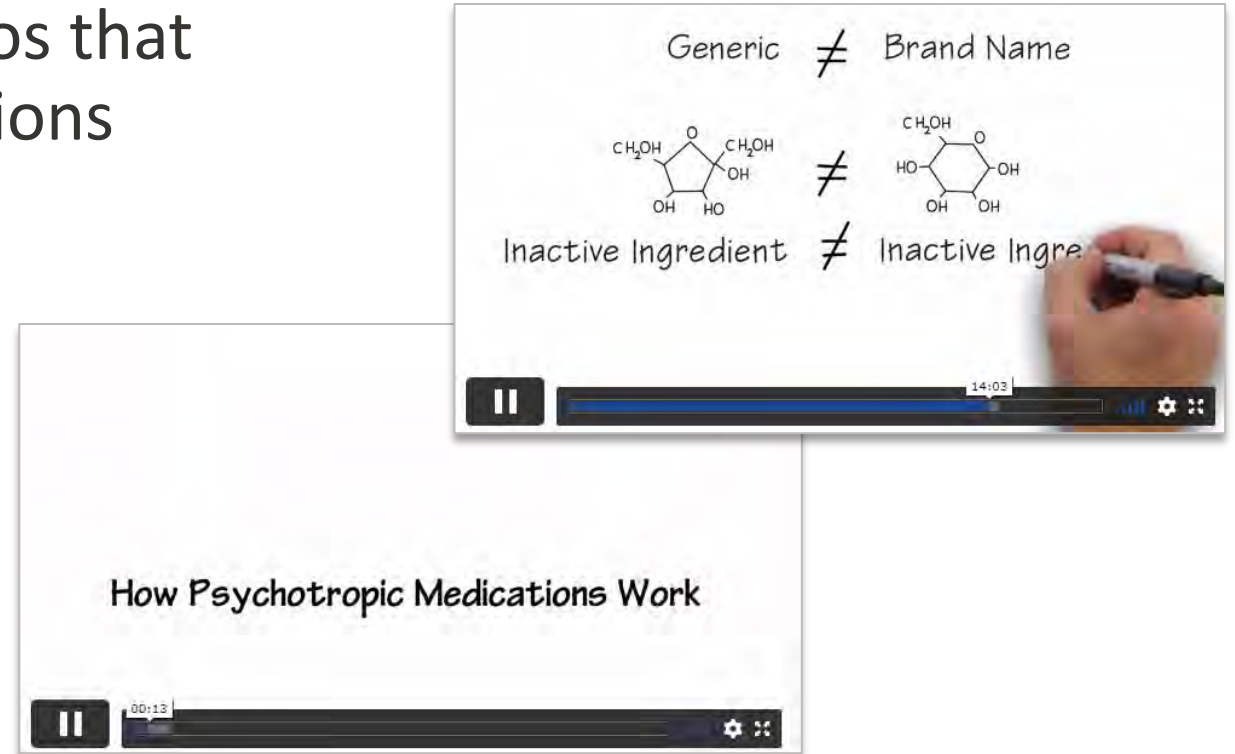
500+ resources  
for individuals and families



# WHITEBOARD VIDEOS

Series of animated whiteboard videos that illustrate answers to common questions people have about SMI

- Are you born with it?
- The biology of mental health conditions
- The brain
- How messages travel through the brain
- How psychotropic medications work
- Specific medications
- What to know about a new diagnosis



# TESTIMONIALS

Firsthand accounts from individuals and families on:

- Clozapine
- Living with SMI
- Support systems
- Working together with clinicians








# INFOGRAPHICS

Infographic on how individuals and family members can use compassionate, stigma-free, person-first language

The way we think about mental illness and the terms we use have thankfully advanced over the years. These outdated words can be offensive, hurtful, and belittle a person who is living with an illness that they did not ask for.

❌ <b>Mentally ill</b>	✅ <b>A person with mental illness</b>
❌ <b>Mental patient</b>	✅ <b>A person living with a mental health condition</b>
❌ <b>Lunatic</b>	✅ <b>People with mental health conditions</b>
❌ <b>Disturbed</b>	



### When It Comes To Serious Mental Illness... Words Matter

Words are influential—they can heal, and they can harm.

People often identify with roles and words that help them find meaning. Compassionate, stigma-free, person-first words play a role in helping each individual on their road to improved health and functioning from serious mental illness (SMI). So when you choose person-first language, you support their pursuit of healing, progress, and goals.

**Language Examples**

Want to know how to speak about SMI in a way that avoids stigma? Let us help you out with some suggested terms and phrases to get you started.

You can use "mental illness" and "mental health condition" interchangeably. Many people who have mental health concerns may not have a formal diagnosis or a fully developed illness. They may feel more comfortable with the use of general terms.

❌ <b>Brain disorder</b>	✅ <b>Mental illness</b>
❌ <b>Brain disease</b>	✅ <b>Mental health condition</b>

Use person-first language. Put the person first, not the illness. You wouldn't say someone "is cancer." So we should not identify a person by the mental illness they have either.

❌ <b>She is bipolar</b>	✅ <b>She lives with bipolar disorder</b>
❌ <b>Schizophrenic person</b>	✅ <b>She experiences schizophrenia</b>

Illness and the terms we use have thankfully advanced over the years. These outdated words can be offensive, hurtful, and belittle a person who is living with an illness that they did not ask for.

✅ <b>A person with mental illness</b>
✅ <b>A person living with a mental health condition</b>
✅ <b>People with mental health conditions</b>

avoid seeking life-saving treatment because they fear being labelled with these terms. People with mental illness to feel isolated or "different." We want to use words that




✅ <b>Person with lived experience</b>
✅ <b>Person in recovery</b>
✅ <b>Survivor</b>

# FACT SHEETS

## Series of fact sheets and social media graphics on important topics around SMI

- Bipolar disorder
- Crisis preparation
- Major depressive disorder
- Schizophrenia
- Suicide prevention

CATEGORY	DEPRESSIVE EPISODE
MOOD	<ul style="list-style-type: none"><li>Depressed, sad or very irritable; can't be cheered up</li><li>Loss of interest and pleasure in daily activities</li></ul>
PHYSICAL	<ul style="list-style-type: none"><li>Insomnia or sleeping too much</li><li>Change in appetite or significant, unintentional change in weight</li><li>Visibly slowed down or agitated</li><li>Extreme fatigue and lack of energy</li><li>Decreased sex drive</li><li>Catatonia (possible psychotic stage)</li></ul>



## MAJOR DEPRESSIVE DISORDER

Major depressive disorder is much more than feeling sad or having a bad day.

It is a serious mental illness (SMI) that requires understanding, compassion and medical care. It can present different symptoms in different people. Yet for most people, a depressive disorder changes how they function day-to-day.

CATEGORY	DEPRESSIVE EPISODE
MOOD	<ul style="list-style-type: none"><li>Depressed, sad or very irritable; can't be cheered up</li><li>Loss of interest and pleasure in daily activities</li></ul>
PHYSICAL	<ul style="list-style-type: none"><li>Insomnia or sleeping too much</li><li>Change in appetite or significant, unintentional change in weight</li><li>Visibly slowed down or agitated</li><li>Extreme fatigue and lack of energy</li><li>Decreased sex drive</li><li>Catatonia (possible psychotic stage)</li></ul>
BEHAVIORAL	<ul style="list-style-type: none"><li>Decreased motivation</li><li>Decreased task performance</li><li>Withdrawal and isolation</li><li>Attention to hygiene and appearance</li><li>Can't talk, interact, socialize</li><li>Disorganized (possible psychotic stage)</li><li>Self-blaming thoughts</li><li>Worthlessness or excessive guilt</li><li>Low self-esteem</li><li>Indecisiveness or the inability to think, remember or concentrate</li><li>Thoughts of death, suicidal thoughts, suicidal plans (possible psychotic stage)</li><li>Disorganized, incoherent speech (possible psychotic stage)</li><li>Sensitivity to noise, light, stress</li><li>Paranoia (possible psychotic stage)</li></ul>

Individuals with major depressive disorder will have one episode. But in more than half of all cases, symptoms return within a year. In these recurrent cases, the average number of episodes in a lifetime is about seven. An episode may last a few months to years, but treatment can shorten the episode. Those with recurrent major depressive disorder are at a very high risk for a suicide attempt. Tragically, many individuals will die by suicide.





# Q&A

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