Long-Acting Injectables: A New Solution for Nonadherence in Patients with Schizophrenia

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Target Audience: Pharmacists
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Disclosures

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Susie Park is a paid consultant for Lexicomp.

The American Pharmacists Association is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.
Learning Objectives

1. Describe the prevalence of medication nonadherence among patients with mental illness and the potential role of long-acting injectable (LAI) antipsychotics in improving adherence.
2. Compare the currently available LAI antipsychotics.
3. Discuss the clinical and economic advantages and disadvantages of LAI antipsychotics.
4. Describe the role of pharmacists in ensuring medication adherence in patients using LAI antipsychotics.
5. Select the most appropriate LAI antipsychotic for a given patient case.
1. Assessment Question

Medication nonadherence in patients with schizophrenia is estimated to be as high as:

A. 30%
B. 65%
C. 75%
D. 90%
2. Assessment Question
Which of the following long-acting injectable antipsychotics requires a 3-week oral supplementation with the first injection?

A. Risperdal Consta
B. Invega Sustenna
C. Abilify Maintena
D. Zyprexa Relprevv
3. Assessment Question
Which of the following is NOT a key component of a care coordination intervention for LAI antipsychotics?:

A. Readiness for change among stakeholders
B. Availability of LAI medications
C. Perceived complexity of the intervention
D. Communication within organization
4. Assessment Question

Which of the following is considered an advantage of using LAIs over oral antipsychotics?

A. Slower dose titration
B. Fewer severe adverse drug reactions
C. Longer time to reach steady state concentrations
D. More predictable correlation between dose and plasma levels
Introduction

- Estimated that 20 - 30% of medication prescriptions are never filled and half of chronic medications are not taken as directed.
- Medication nonadherence contributes to 10% of hospitalizations annually, resulting in $100 - $300 billion.
- Reasons for nonadherence
  - Side effects
  - Forgetfulness
  - Cost
  - Lack of awareness
  - Personal beliefs


“Drugs don’t work in patients who don’t take them.”
-C. Everett Koop, M.D.
Impact of Medication Nonadherence

- 2014 Mortality Data (Centers for Disease Control & Prevention)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause of death (based on ICD-10)</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>All causes</td>
<td>2,626,418</td>
</tr>
<tr>
<td>1</td>
<td>Diseases of heart</td>
<td>614,348</td>
</tr>
<tr>
<td>2</td>
<td>Malignant neoplasms</td>
<td>591,700</td>
</tr>
<tr>
<td>3</td>
<td>Chronic lower respiratory diseases</td>
<td>147,101</td>
</tr>
<tr>
<td>4</td>
<td>Accidents (unintentional injuries)</td>
<td>135,928</td>
</tr>
<tr>
<td>5</td>
<td>Cerebrovascular diseases</td>
<td>133,103</td>
</tr>
<tr>
<td>6</td>
<td>Alzheimer’s disease</td>
<td>93,541</td>
</tr>
<tr>
<td>7</td>
<td>Diabetes mellitus</td>
<td>76,488</td>
</tr>
<tr>
<td>8</td>
<td>Influenza and pneumonia</td>
<td>55,227</td>
</tr>
<tr>
<td>9</td>
<td>Nephritis, nephrotic syndrome and nephrosis</td>
<td>48,146</td>
</tr>
<tr>
<td>10</td>
<td>Intentional self-harm (suicide)</td>
<td>42,826</td>
</tr>
<tr>
<td>11</td>
<td>Septicemia</td>
<td>38,940</td>
</tr>
<tr>
<td>12</td>
<td>Chronic liver disease and cirrhosis</td>
<td>38,170</td>
</tr>
<tr>
<td>13</td>
<td>Essential hypertension and hypertensive renal disease</td>
<td>30,221</td>
</tr>
<tr>
<td>14</td>
<td>Parkinson’s disease</td>
<td>26,150</td>
</tr>
<tr>
<td>15</td>
<td>Pneumonitis due to solids and liquids</td>
<td>18,792</td>
</tr>
<tr>
<td>...</td>
<td>All other causes (residual)</td>
<td>535,737</td>
</tr>
</tbody>
</table>

Patient Nonadherence: 125,000

Patient Case

- TM is a 42 year-old Caucasian male who was brought to the ED by the police.
- TM has become increasingly disorganized, religiously preoccupied and paranoid over the past week.
- He reports seeing images that looked like the devil, colored red and yellow, and has been seen talking to imaginary people.
- He states that he hears 4 different voices, which are usually “muted” but sometimes they tell him that he is “worthless” and “stupid.”
- His roommate reports that TM has become increasingly withdrawn socially, isolative and has not been showering regularly.
Patient Case

- TM has only been sleeping for 2-3 hours/night for the past week and notes difficulty with both sleep onset and sleep maintenance.
- Current stressors include the death of a close family friend and possible eviction from his apartment secondary to his current behaviors.
- He has also been non-adherent with his medications for the past week.
- Last evening, TM broke into a neighbor’s apartment and threatened to kill him with a knife.
- No one was harmed since the neighbors were able to gain control over the situation.
- TM was subsequently brought to the ED by the police on a 5150 for danger to others (DTO).
Audience Participation

- Based upon the patient case, would you recommend starting an oral antipsychotic medication for TM?

- What about initiating a long-acting injectable antipsychotic for TM?
Schizophrenia

Positive Symptoms
- Delusions, hallucinations
- Disorganized speech
- Behavior disturbance

Mood Symptoms
- Depression
- Anxiety

Negative Symptoms
- Flattened speech
- Social withdrawal
- Anhedonia

Cognitive Impairment
- Poor memory
- Confusion
- Disorganization

Goals of Treatment:
- Control symptoms
- Minimize side effects

Rates of Medication Nonadherence Among Patients with Mental Illness

- Increased hospitalizations
- Increased cost
- Improvement in social function
- Increased job maintenance with less absenteeism
- Reduced substance abuse and violence

Adherence

Rates of Medication Nonadherence Among Patients using Antipsychotics

- In schizophrenia, poor adherence estimated to be 40-90%
- In CATIE trial, 74% of patients discontinued medication before 18 months
- Partial adherence associated with symptom exacerbation, relapse, increased hospitalization stay and self-harm behavior
- Long-acting injectable (LAI) antipsychotics can result in decreased risk of relapse and re-hospitalization, better global outcome, less variability in plasma levels

Provider Perception

• Physicians over-estimated patients’ adherence to meds

• Physicians determined adherence based on patient report and clinical appearance

Identification of Adherent Patients

Medication Nonadherence Among Patients with Schizophrenia: Impact on Prognosis

<table>
<thead>
<tr>
<th>Drug</th>
<th>Re-Hospitalization</th>
<th>Re-Hospitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haldol® (haloperidol decanoate)</td>
<td>10-35%</td>
<td>40%</td>
</tr>
<tr>
<td>Prolixin® (fluphenazine decanoate)</td>
<td>10-21%</td>
<td>7-66%</td>
</tr>
<tr>
<td>Invega Sustenna® (paliperidone palmitate)</td>
<td>10-17%</td>
<td>22%</td>
</tr>
<tr>
<td>Risperdal Consta® (risperidone)</td>
<td>10-16%</td>
<td>25%</td>
</tr>
<tr>
<td>Abilify Maintena® (aripiprazole)</td>
<td>10-14%</td>
<td>37%</td>
</tr>
</tbody>
</table>

*LAIA – long-acting injectable antipsychotic

Patient and Provider Attitudes Toward LAI Antipsychotics

- In a survey of 891 European psychiatrists and nurses
  - Chronic schizophrenia: 96% preferred LAI medications vs. oral
  - First episode: 40% preferred LAI medications vs. oral
- Patients (especially in U.S.) perceive injectable medications as negative or coercive
- Contributing factors
  - Lack of awareness or input into treatment decision
- Among those who tried LAIs have preferred injectables than orals

Currently Available LAI Antipsychotics

- Fluphenazine decanoate [1967]
- Haloperidol decanoate [1986]
- Risperidone long-acting (Consta®) [2001]
- Paliperidone palmitate (Invega Sustenna®) [2006]
- Olanzapine pamoate (Zyprexa Relprevv®) [2009]
- Aripiprazole long-acting (Maintena) [2010]
- Aripiprazole lauroxil (Aristada®) [2015]
- Paliperidone palmitate (Trinza®) [2015]
Boxed Warning on All Antipsychotics

- **Increased morality in elderly patients with dementia-related psychosis**

- Elderly patients with dementia-related psychosis treated with antipsychotic drugs are at an increased risk of death

- No antipsychotic is approved for the treatment of patients with dementia-related psychosis
Pharmacokinetics of LAIs

- LAIs bypass the initial deactivating process by avoiding first-pass metabolism in the liver
- Appropriate prescribing and dosing of LAIs considerations:
  - Long half-lives
  - Delayed release
  - Oral formulation-to-injection formulation transition
- Inconsistent dose - response data: variability in predicting onset of therapeutic effect
- All are administered intramuscularly
  - Deltoid
  - Gluteal

### First Generation LAI Antipsychotics Still Have a Role in Practice: Comparing Fluphenazine to Haloperidol Decanoate

<table>
<thead>
<tr>
<th>Agent</th>
<th>Vehicle</th>
<th>Usual Starting Dose</th>
<th>Dose Range (mg)</th>
<th>Dosing Interval</th>
<th>PO Overlap</th>
<th>Option for Loading Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluphenazine</td>
<td>Sesame oil</td>
<td>12.5 mg – 50 mg IM (or SC)</td>
<td>12.5 – 100</td>
<td>2 – 4 weeks</td>
<td>Continue PO, decreasing dose by half after first injection - d/c PO after second injection</td>
<td>No</td>
</tr>
<tr>
<td>Haloperidol</td>
<td>Sesame oil</td>
<td>10 – 15 times the oral daily dose IM</td>
<td>50 – 450</td>
<td>4 weeks</td>
<td>Continue PO for the first 2-3 injections if loading dose not used</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Both may be injected into either the gluteal or deltoid muscles. Both require administration using the Z-track technique.
Risperidone Long-Acting (Consta®)

- The first atypical LAI
- Also indicated for maintenance treatment of bipolar I disorder
- Dosing interval: every 2 weeks
- Requires PO overlap for 3 weeks with the first injection
- Requires reconstitution
- Refrigerated
Consta®: Oral Overlap with the First Injection is Required
Dose Equivalencies of Risperidone and Paliperidone Oral to 
Consta®

<table>
<thead>
<tr>
<th>Risperidone oral (mg/day) (bioavailability = 70%)</th>
<th>Paliperidone oral (mg/day) (bioavailability = 28%)</th>
<th>Risperidone LAI (Consta) (mg/2 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>37.5</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
<td>50</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>-</td>
</tr>
</tbody>
</table>
Paliperidone Palmitate (Sustenna®)

- Also indicated for schizoaffective disorder
- No oral overlap required*
- Initiation doses
  - First: 234 mg
  - Second: 156 mg

Dosing interval: every 4 weeks

*Some data to suggest that some acutely psychotic individuals may benefit from several days to weeks of oral overlap
# Dose Conversion form Paliperidone Oral to Sustenna®

Doses of INVEGA® and INVEGA® SUSTENNA® needed to attain similar paliperidone exposure during maintenance treatment

<table>
<thead>
<tr>
<th>Formulation</th>
<th>INVEGA® Extended-Release Tablet</th>
<th>INVEGA® SUSTENNA® Injection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosing Frequency</td>
<td>Once daily</td>
<td>Once every 4 weeks</td>
</tr>
<tr>
<td>Dose (mg)</td>
<td>12</td>
<td>234</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>117</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>39-78</td>
</tr>
</tbody>
</table>
Paliperidone Palmitate (Trinza®)

- Administered every 3-months
- To be initiated only after they have been adequately treated with Invega Sustenna (1-month paliperidone palmitate) for at least four months
## Dose Transition from Sustenna® to Trinza®

<table>
<thead>
<tr>
<th>If the last INVEGA SUSTENNA® dose was:</th>
<th>Initiate INVEGA TRINZA® at the following dose:</th>
</tr>
</thead>
<tbody>
<tr>
<td>78 mg</td>
<td>273 mg</td>
</tr>
<tr>
<td>117 mg</td>
<td>410 mg</td>
</tr>
<tr>
<td>156 mg</td>
<td>546 mg</td>
</tr>
<tr>
<td>234 mg</td>
<td>819 mg</td>
</tr>
</tbody>
</table>
Olanzapine Pamoate (Zyprexa® Relprevv®)

- Unique boxed warning limits its use
- **Post-Injection Delirium / Sedation Syndrome**
- Patients are at risk for severe sedation (including coma) and/or delirium after each injection and must be observed for at least 3 hours in a registered facility with ready access to emergency response services
- Because of this risk, ZYPREXA RELPREVV is available only through a restricted distribution program called ZYPREXA RELPREVV Patient Care Program and requires prescriber, healthcare facility, patient, and pharmacy enrollment
### Relprevv® Dosing

<table>
<thead>
<tr>
<th>Target dosages (Zyprexa P.O.)</th>
<th>Dosing first 8 weeks (Zyprexa Relprevv I.M.)</th>
<th>Maintenance dosage after 8 weeks (Zyprexa Relprevv I.M.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 mg/day</td>
<td>210 mg/ 2 weeks or 405 mg/ 4 weeks</td>
<td>150 mg/ 2 weeks or 300 mg/ 4 weeks</td>
</tr>
<tr>
<td>15 mg/day</td>
<td>300 mg/ 2 weeks</td>
<td>210 mg/ 2 weeks or 405 mg/ 4 weeks</td>
</tr>
<tr>
<td>20 mg/day</td>
<td>300 mg/ 2 weeks</td>
<td>300 mg/ 2 weeks</td>
</tr>
</tbody>
</table>
Aripiprazole Long-Acting (Maintena®)

- Two indications:
  - Treatment of schizophrenia in adults
  - Maintenance monotherapy treatment of bipolar I disorder in adults
- Recommended starting and maintenance dose is 400 mg administered monthly as a single injection
  - Dose can be reduced to 300 mg in patients with adverse reactions
- Oral overlap required for 14 days
Aripiprazole Lauroxil (Aristada®)

- Aripiprazole *lauroxil*
- Dosing frequency: every four to eight weeks

<table>
<thead>
<tr>
<th>ARISTADA Dosage Strength</th>
<th>Dosing Interval</th>
<th>Total Daily Oral Aripiprazole Dose*</th>
<th>Intramuscular Injection Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>1064 mg</td>
<td>EVERY 2 MONTHS</td>
<td>15 mg PER DAY</td>
<td>GLUTEAL ONLY</td>
</tr>
<tr>
<td>882 mg</td>
<td>EVERY 6 WEEKS</td>
<td>15 mg PER DAY</td>
<td>GLUTEAL ONLY</td>
</tr>
<tr>
<td></td>
<td>MONTHLY</td>
<td>20 mg or HIGHER PER DAY</td>
<td>GLUTEAL ONLY</td>
</tr>
<tr>
<td>662 mg</td>
<td>MONTHLY</td>
<td>15 mg PER DAY</td>
<td>GLUTEAL ONLY</td>
</tr>
<tr>
<td>441 mg</td>
<td>MONTHLY</td>
<td>10 mg PER DAY</td>
<td>GLUTEAL or DELTOID</td>
</tr>
</tbody>
</table>
## Differences Between Aristada® and Maintena®

<table>
<thead>
<tr>
<th>Aristada®</th>
<th>Maintena®</th>
</tr>
</thead>
<tbody>
<tr>
<td>A pre-filled syringe</td>
<td>Either as a single use vial in a dual chamber syringe</td>
</tr>
<tr>
<td></td>
<td>-One chamber contains powder and the other contains the diluent</td>
</tr>
<tr>
<td></td>
<td>-Prior to administration, the diluent has to be released into the other chamber by twisting the plunger</td>
</tr>
<tr>
<td>441 mg, 662 mg, 882 mg, 1064 mg</td>
<td>300 mg, 400 mg</td>
</tr>
<tr>
<td>At its highest dose (882 mg), there is an option to give Aristada® every 6 weeks</td>
<td>Abilify Maintena® has to be given every 4 weeks</td>
</tr>
</tbody>
</table>
Patient Case: Past Medical History

- GERD x 2 years
- Diabetes mellitus type 2 (x 5 years)
- Obesity (x 10 years)
- NKDA
Patient Case: Past Psychiatric History

- TM was diagnosed with schizophrenia at the age of 22
- He has had multiple prior psychiatric hospitalizations at numerous institutions with his most recent admission 4 months ago
Patient Case: Social and Family History

- Denies current illicit drug or EtOH use; history of methamphetamine use d/o, in remission x 5 years
- Tobacco – 2 ppd
- Single, unemployed
- Receiving SSI for support
- Mother with schizophrenia
Audience Participation

- You are convinced that TM needs a long-acting injectable antipsychotic medication.
- Which long-acting injectable antipsychotic would you recommend for TM?
Clinical Advantages of LAI Antipsychotics: Adherence Issues

- No need for daily administration
- Guaranteed administration and transparency of adherence
- Overcome partial adherence or overt nonadherence
- Allows healthcare professionals to be alerted and to intervene appropriately if patients fail to take their medication
- Regular contact between the patient and mental healthcare team
- Lower relapse rates
  - If a relapse occurs, it is due to other reasons beyond noncompliance
  - Reduced hospitalizations
- Less probability for rebound symptoms and rapidly occurring/abrupt relapses

Clinical Advantages of LAI Antipsychotics: Pharmacologic Parameters

- Minimal gastrointestinal absorption problems, circumventing first-pass metabolism
- Reduced risk of unintentional or deliberate overdose
- More consistent bioavailability
- More predictable correlation between dosage and plasma levels
- Reduced peak-trough plasma levels

Disadvantages of LAI Antipsychotics

- Slow dose titration
- Longer time to achieve steady state levels
- Less flexibility of dose adjustment
- Delayed disappearance of distressing and/or severe side effects
- Pain at the injection site can occur, and leakage into the subcutaneous tissue and/or the skin may cause irritation and lesions (especially for oily long-acting injectable)
- Burden of frequent travel to outpatient clinics or home visits by community nurses for their administration
- Risperidone long-acting injectable needs refrigeration, which may be cumbersome in some latitudes
- Perception of stigma
The Economics of Schizophrenia

- Nonadherence to antipsychotic medication represents an economic burden in the treatment of schizophrenia.
- Inpatient care accounts for up to two-thirds of the total direct healthcare costs for schizophrenia patients in the U.S.
- Relapses are associated with high medical and non-medical costs.
- Rehospitalization in schizophrenia is the most expensive healthcare cost component of psychosis.
- A relevant relapse measure.


LAI Improves Medication Adherence

- Real-world study of patients with schizophrenia and bipolar I disorder
  - 5638 patients with schizophrenia diagnosis
- Patients with schizophrenia initiating LAIs, compared to PO users:
  - Had better medication adherence (8% higher)
  - Had higher adjusted mean adherence (5%)
  - Had 73 days longer median time to medication discontinuation
  - Were 20% less likely to discontinue their medication during the entire follow-up period (> 365 days)

Impact on Re-Hospitalization

- Study among schizophrenia patients who relapsed on an oral antipsychotic
- The impact of switching to atypical LAI therapy versus continuing oral APs on second hospitalization and emergency room (ER) visit recurrence was compared
- U.S.-based cohort; matched controls; mimics real-world experience and exposure to LAIs

Decreased Rehospitalization Rates and ER Visits

- Over a mean 30-month follow-up period, LAI - patients were associated with a significantly lower mean number of
  - All-cause rehospitalizations (1.25 vs 1.61, p < .0001)
  - Mental disorder-related rehospitalizations (1.24 vs 1.59, p < .0001)
  - Schizophrenia-related rehospitalizations (1.15 vs 1.41, p = .0005)
  - All-cause ER visits (2.33 vs 2.67, p = .0158)

The Economics of LAI Antipsychotics

- Electronic Schizophrenia Treatment Adherence Registry (e-STAR)
  - Long-term, ongoing, observational study of schizophrenia patients
  - International, multicenter trial

- Results: a higher percentage of patients who did not require hospitalization (89.1%), did not relapse (85.4%) or neither required hospitalization nor relapsed (82.4%) as compared retrospectively with the same period for the previous oral therapy

- Cost-effectiveness per month per patient was lower for LAIs

Role of Pharmacists in Ensuring Medication Adherence in Patients Using LAI Antipsychotics

- Insufficient literature describing role of pharmacists or outcomes in care coordination process for LAI antipsychotics
- Recent workflow process study completed at an urban psychiatric hospital in Pennsylvania
- New pharmacist consult intervention implemented to reduce inappropriate use and cost associated with inpatient LAI treatment

Role of Pharmacists in Ensuring Medication Adherence in Patients Using LAI Antipsychotics

- **Intervention:** Psychiatrist orders pharmacy consult in HER for all LAI antipsychotic orders
  - Clinical pharmacist assigned to complete consult by either approving, denying or requesting additional information or modifications for the order
  - Approval pending 1) patient’s established efficacy/tolerability of oral med, 2) prescription insurance coverage verification, 3) plan for continued outpatient treatment, 4) clear timeframe for discharge, 5) reasonable expectation of adherence to LAI
- Patients received first injection in the hospital or at a “day of discharge” injection clinic administered by nurse

Role of Pharmacists in Ensuring Medication Adherence in Patients Using LAI Antipsychotics

- Transitions of Care Program
  - Pharmacist-led
  - Medication delivery and patient education prior to hospital discharge available for all patients
  - Not mandatory but at discretion of inpatient treatment team

- Interviews conducted as part of study
  - Healthcare team members (psychiatrists, nurses, pharmacists, pharmacy technicians, social workers)
  - Patients

Role of Pharmacists in Ensuring Medication Adherence in Patients Using LAI Antipsychotics

- **Major Workflow Process Themes**
  - Pharmacist Consultation
  - In-Hospital LAI administration
  - Discharge planning
  - Outpatient Treatment
Role of Pharmacists in Ensuring Medication Adherence in Patients Using LAI Antipsychotics

- **Pharmacist Consultation**
  - Reservations about pharmacy involvement included reduced prescribing control, feelings of challenged decision-making, concern for discontinuation of LAI antipsychotics, additional paperwork, change in workflow, delay of care
  - “It was a little bit strange and jarring to suddenly be working with pharmacists.” – Psychiatrist
  - “‘You must’ or ‘you should,’ physicians were not taking warmly to that language. Recommendations, and options within those recommendations, I think has worked better so I think the language has been an important thing.” – Psychiatrist

Challenges in Ensuring Care Coordination of LAI

- Lack of knowledge or understanding of LAI
  - Underestimation of care coordination that is required for appropriate use
  - "There's a severe lack of knowledge when it comes to the oral and the injectable." – Pharmacist
  - "It can be difficult to understand how best to utilize these medications." – Psychiatrist

- Transitions of care and coordination with outpatient providers
  - "Not everybody goes directly and sees a psychiatrist within that first week or two after discharge, so that's why it falls on responsibility of the inpatient psychiatrist to make sure there's a prescription for at least one to two injections [at the outpatient pharmacy]." – Pharmacist
Ensuring Success of Future Implementation

- Perceived complexity of the intervention
- Knowledge and beliefs about the intervention, readiness for change, and self-efficacy
- Understanding of patient needs and resources
- Culture and implementation climate
- Networks and communication within organization
- Available resources

Additional Models of Care

- Pharmacist-Run KentuckyOne Health’s Injection Clinic
  - Kentucky Board of Pharmacy: Scope of practice allows administration of medications or biologics in the course of dispensing or maintaining a prescription drug order
  - Long-acting injectable antipsychotics and opioid addiction treatment
  - Infusion pharmacy permit with same address as inpatient facility to allow 340B Drug Pricing Program

Thompson CA. Pharmacists provide novel injection services for community. https://www.ashp.org/news/2017/05/15/19/56/pharmacists-provide-novel-injection-services-for-community
Additional Models of Care

- Manufacturer Sponsored LAI Programs
  - Janssen Connect (Risperidone, Paliperidone products)
  - ASSURE Program (Aripiprazole product)
  - Zyprexa Relprevv Patient Care Program

- Coordinates with pharmacies to provide convenient locations for patients to receive LAI products
  - Train pharmacists to provide injections
  - Care coordination built into program to ensure adherence

Patient Case

- TM is a 42 year-old Caucasian male who was brought to the ED by the police.
- TM has become increasingly disorganized, religiously preoccupied and paranoid over the past week.
- He reports seeing images that looked like the devil, colored red and yellow, and has been seen talking to imaginary people.
- He states that he hears 4 different voices, which are usually “muted” but sometimes they tell him that he is “worthless” and “stupid”.
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- He has had multiple prior psychiatric hospitalizations at numerous institutions with his most recent admission 4 months ago
Patient Case: Social and Family History

- Denies current illicit drug or EtOH use; history of methamphetamine use d/o, in remission x 5 years
- Tobacco – 2 ppd
- Single, unemployed
- Receiving SSI for support
- Mother with schizophrenia
Audience Participation Questions

1. TM will be discharged from the psychiatric unit in 2 days. As the pharmacist, how can you ensure that TM will be adherent to his LAI after discharge?

2. As the pharmacist, what is your monitoring plan for TM at the next clinic visit? What would be an appropriate frequency of follow-up visits for TM?
Summary

- Pharmacists should aid in overcoming misperceptions that LAIs are a “last resort” treatment option for patients with schizophrenia.
- The future of schizophrenia pharmacotherapy should evolve to include better long-term delivery systems to more effectively address the high risk of relapse due to nonadherence in all phases of the illness.
- Goals of treatment include achieving and maintaining clinical remission: better social functioning and improving quality of life.