

# University of Texas Harris County Psychiatric Center at Houston

## Medication Usage Evaluation Criteria

2009

Click the name of the medication to view the details.

### Antidepressant

- [Mirtazepine \(Remeron\)](#) (separate MUE)
- [Lexapro \(Escitalopram\)](#) (separate MUE)

### Antipsychotics

- [ProlixinDEC](#) (separate MUE)
- [Haldol DEC](#) (separate MUE)
- [Thioridazine\(Mellaril\)](#) (separate MUE)

### Atypical Antipsychotics

- [Clozaril \(Clozapine\)](#) (separate MUE)
- [Ziprasidone \(Geodon\)](#) (separate MUE)
- [Aripiprazole \(Abilify\)](#) (separate MUE)

### Mood Stabilizers

- [MAOI](#) (separate MUE)
- [Gabapentin \(Neurontin\)](#) (separate MUE)
- [Lamotrigine \(Lamictal\)](#) (separate MUE)
- [Topiramate \(Topamax\)](#) (separate MUE)

### Anxiolytics

[Strattera \(Atomoxetine Hcl\)](#) (separate MUE)

### EPS Medications

### Miscellaneous

- [Clonidine](#) (separate MUE)
- [Beta Blockers](#) (separate MUE)

## Medication Usage Evaluation Antidepressants

| MEDICATION USE PROCESS ELEMENTS   | S           | COMMENTS  |
|---|-------------|---|
| <p><b><u>PRESCRIBING</u></b></p> <p>A. Indications:</p> <ol style="list-style-type: none"> <li>1. Depression of any type, even in association with other primary psychiatric disorders</li> <li>2. Panic disorders</li> <li>3. Obsessive-compulsive disorder</li> <li>4. Chronic pain syndrome</li> <li>5. Dysthymic, cyclothymic disorder</li> <li>6. Bulimia</li> <li>7. Adjustment reaction with depressed mood (C&amp;A)</li> <li>8. Enuresis / encopresis (TCA's)</li> <li>9. Attention deficit</li> <li>10. Separation anxiety disorder (C&amp;A)</li> <li>11. Sedative/Hypnotic (Trazodone only)</li> </ol> <p>B. Contraindications:</p> <p><b><u>Absolute</u></b></p> <p><b><u>SSRI's, Trazodone, Nefazodone, &amp; Venlafaxine</u></b></p> <ol style="list-style-type: none"> <li>1. Concurrent administration of MAOI</li> <li>2. History of anaphylactic reaction or similarly severe significant hypersensitivity to the medication prescribed</li> </ol> <p><b><u>TCA's</u></b></p> <ol style="list-style-type: none"> <li>1. Recovery phase of myocardial infarction within 6 weeks</li> <li>2. History of anaphylactic reaction or similarly severe significant hypersensitivity to the medication prescribed</li> </ol> <p><b><u>Bupropion</u></b></p> <ol style="list-style-type: none"> <li>1. Anorexia nervosa and bulimia</li> <li>2. Seizure disorders</li> <li>3. Concomitant use of monoamine oxidase inhibitors</li> <li>4. History of anaphylactic reaction or similarly severe significant hypersensitivity to the medication prescribed</li> </ol> <p><b><u>Relative</u></b></p> <p><b><u>SSRI's, Trazodone, Nefazodone, &amp; Venlafaxine</u></b></p> <ol style="list-style-type: none"> <li>1. Severe hepatic function impairment</li> <li>2. Severe renal function impairment</li> <li>3. Seizure disorder or history of seizure disorder</li> <li>4. Terfenadine</li> </ol> <p><b><u>TCA's</u></b></p> <ol style="list-style-type: none"> <li>1. narrow angle glaucoma</li> <li>2. Prostatic hypertrophy</li> <li>3. Concomitant monoamine oxidase inhibitors</li> <li>4. Pregnancy/nursing mothers</li> <li>5. Concomitant use of anticholinergics</li> <li>6. TD (Amoxapine only)</li> <li>7. Alzheimer's disease</li> <li>8. History of bundle branch block</li> </ol> <p><b><u>Bupropion</u></b></p> <ol style="list-style-type: none"> <li>1. Recovery phase myocardial infarction (MI)</li> <li>2. Cyclic mood disorder</li> <li>3. Impaired hepatic function</li> <li>4. Renal impairment</li> <li>5. Psychosis</li> <li>6. Conditions which have a predisposition to seizures</li> </ol> | <p>100%</p> | <p>Note diagnosis if not one of the listed.</p> <p><b><u>NOTE:</u></b></p> <p>FDA and Wyeth Pharmaceuticals notified healthcare professionals of revisions to the WARNINGS, PRECAUTIONS, and DOSAGE AND ADMINISTRATION sections of labeling to alert healthcare providers of two important safety issues.</p> <p>Neonates exposed to Effexor, other SNRIs (Serotonin and Norepinephrine Reuptake Inhibitors), or SSRIs (Selective Serotonin Reuptake Inhibitors), late in the third trimester of pregnancy have developed complications requiring prolonged hospitalization, respiratory support, and tube feeding. Such complications can arise immediately upon delivery.</p> <p><b><u>NOTE:</u></b></p> <p>Patients with major depressive disorder, both adult and pediatric, may experience worsening of their depression and/or the emergence of suicidal ideation and behavior (suicidality), whether or not they are taking antidepressant medications. The warning recommends patients being treated with antidepressants be observed closely for clinical worsening and suicidality, especially at the beginning of a course of drug therapy, or at the time of dose changes, either increases or decreases.</p> |

**Medication Usage Evaluation  
Antidepressants**

**NOTE: PAXIL**

The FDA has determined that exposure to paroxetine in the first trimester of pregnancy may increase the risk for congenital malformations, particularly cardiac malformations. At the FDA's request, the manufacturer has changed paroxetine's pregnancy category from C to D and added new data and recommendations to the WARNINGS section of paroxetine's prescribing information.

**NOTE: NEFAZODONE**

- A baseline liver function test is required before initiating therapy.
  - Frequent liver panel for 1<sup>st</sup> 6 months of therapy/and d/c if liver enzymes are abnormal
  - Reduce dosage in the elderly
- Caution should be used in patients with**
- Pre-existing/History of liver disease.
  - Elevated liver enzymes

**NOTE: PAXIL**

Paxil should not be used in the treatment of children and adolescents with major depressive disorder. There is a possible increase risk of suicidal thinking and suicide attempts in children and adolescents under the age of 18 being treated with Paxil for MDD.

**NOTE: Venlafaxine**

In Pediatric clinical reports, there were increase reports of hostility, and especially in major depressive disorder related adverse events such as suicidal (thoughts) and self-harm

Relative contraindications must weigh risks versus benefit. Document in chart.

## Medication Usage Evaluation Antidepressants

### DISPENSING

A. Drug-related problem detected during new order screening

B. Dosage Range

1. Amitriptyline (Elavil®, Endep®)

C: PO 1-5 mg/kg/day

A & Adult: PO 25-300 mg/day

2. Amoxapine (Ascendin®)

Adult: PO 25-600 mg/day

3. Bupropion (Wellbutrin®)

C & A: PO 50-450 mg/day or 1.4-6 mg/kg/day

Adult: PO 200-450 mg/day

Bupropion ( Wellbutrin XR)

Adults : 150-400mg/day

4. Clomipramine (Anafranil®)

C & A: PO 25-200 mg/day or 2-3 mg/kg/day

Adult: PO 25-250 mg/day

5. Citalopram (Celexa®)

Adult: PO 20-60 mg/day

6. Desipramine (Norpramin®)

C & A: PO 50-150 mg/day or 2-5 mg/kg/day

Adult: PO 50-300 mg/day

6. Doxepin (Sinequan®, Adapin®)

Adult: PO 50-300 mg/day

7. Fluoxetine (Prozac®)

C & A: PO 10-60 mg/day

Adult: PO 20-80 mg/day

8. Imipramine (Tofranil®)

C & A: PO 25-200 mg/day or 1.5-5 mg/kg/day

Adult: PO 50-300 mg/day

9. Nefazodone (Serzone®) –

Adult: PO 100-600 mg/day

10. Nortriptyline (Pamelor®, Aventyl®)

C & A: PO 50-150 mg/day or 1-3 mg/kg/day

Adult: PO 25-150 mg/day

11. Paroxetine (Paxil®)

Adult: PO 10-60 mg/day

12. Sertraline (Zoloft®)

C & A: PO 25-200 mg/day

Adult: PO 25-200 mg/day

13. Trazodone (Desyrel®)

C & A: PO 50-400 mg/day or 1.5-6 mg/kg/day

Adult: PO 50-400 mg/day

14. Venlafaxine (Effexor®)

C & A: PO 75-375 mg/day or 1-3 mg/kg/day

Adult: PO 75-375 mg/day

Venlafaxine (Effexor XR®)

Adults: 37.5-225MG/DAY

C. Duration of Therapy

1. Treatment should be for at least 14 days with the same drug

D. Dosage

1. Should be regularly scheduled

2. Prn use not acceptable

3. Doses may be single or divided

E. Route

1. Concentrate switched to tabs/caps before discharge

100%

Must justify any variance in dose in the progress notes.

### NOTE:

**No single dose of wellbutrin should be greater than 150 mg/ dose. Dose interval should be ≥ 4 hours.**

**No single dose of Wellbutrin XR should be greater than 200mg/dose.**

**Clomipramine is indicated for For OCD only.**

Citalopram's maximum dosage is 60mg/day, however dosage above 40mg are not recommended

**Imipramine** use in enuresis, maximum dosage 50-75 mg/day.

**Trazodone** used as a sedative either alone or in combination with another antidepressant (i.e. SSRI's): dose ≤ 100 mg. Should not be used in combination with nefazodone.

**Because of increase blood pressure No daily dose of Venlafaxine should be > 225mg/day for the XR or 375mg/day for the Regular.**

### NOTE:

FDA and Bristol-Myers Squibb notified healthcare professionals of revisions to the CLINICAL PHARMACOLOGY and PRECAUTIONS sections of the Desyrel labeling. Desyrel is indicated

## Medication Usage Evaluation Antidepressants

|   |      |  |
|---|------|--|
|   |      | <p>for the treatment of depression. In vitro drug metabolism studies suggest that there is a potential for drug interactions when trazodone is given with the CYP3A4 inhibitors ketoconazole, ritonavir, and indinavir. It is likely that CYP3A4 inhibitors may lead to substantial increases in trazodone plasma concentrations with the potential for adverse effects. If trazodone is used with a potent CYP3A4 inhibitor, a lower dose of trazodone should be considered. Conversely, carbamazepine reduced plasma concentrations of trazodone when coadministered. Patients should be closely monitored to see if there is a need for an increased dose of trazodone when taken with carbamazepine.</p> <p>Justify in progress notes, if upon discharge, the patient must be sent out on the concentrate.</p> |
| <p><u>ADMINISTERING</u><br/> A. Incident report generated due to misadministration<br/> B. Patient education performed when required<br/> C. Oral solutions diluted prior to administration</p>   | 100% | Medication dose/education is correctly provided.   |
| <p><u>MONITORING</u><br/> A. Concomitancy:<br/> 1. May be combined with any other psychotherapeutic drug</p> <p>2. No two antidepressants with the same mechanism of action should be used simultaneously. Monotherapy is preferred but if combination of any antidepressant is necessary it will only be recommended for resistant depression and attending needs to document in progress notes</p> <p>3. TCA in combination with MAOI's are experimental</p> <p>B. Monitoring parameters:<br/> <u>SSRI's, Trazodone &amp; Nefazodone</u><br/> 1. Blood chemistries with emphasis on hepatic functions, renal functions, CBC and thyroid functions; baseline and annually<br/> 2. Pregnancy test-as indicated</p> <p><u>TCA's</u><br/> 1. EKG at baseline and prior to each dosage increase above 3 mg/kg/day (if age ≤ 18); baseline only (if age &gt;45) or for known cardiac disorder<br/> 2. CBC, differential, platelets, SMAC, Thyroid Function, UA baseline then annually or as indicated<br/> 3. Pregnancy test-as indicated<br/> 4. Plasma levels-monitoring is optional<br/> 5. AIMS baseline and every 6 months or as indicated (for Amoxapine only)</p> <p><u>Bupropion</u><br/> 1. EKG at baseline and prior to each dosage increase above 3 mg/kg/day (if age ≤ 18); baseline only (if age &gt;45)</p> | 100% | <p>Tricyclics should not be combined with Thioridazine (due to Quinidine-like effects of both drugs).<br/> Bupropion may be combined with an SSRI to reduce sexual dysfunction side effects.</p> <p>Note doses of each agent if given together.</p>  |

## Medication Usage Evaluation Antidepressants

|  |      |   |
|--|------|---|
| <p>2. CBC, differential, platelets, SMAC, Thyroid Function, UA baseline then annually or as indicated</p> <p>3. Pregnancy test-as indicated</p> <p><u>Venlafaxine (Effexor®)</u></p> <p>1. Blood pressure daily (inpatient) or every office visit (outpatient)</p> <p>2. Reduce or discontinue dose if sustained increase in blood pressure</p> <p>3. EKG if &gt; 40 or known cardiac disorder</p> <p>4. Monitor serum lipids in patients with known hyperlipidemia</p> <p>5. Blood chemistries with emphasis on hepatic functions, renal functions, CBC and thyroid functions; baseline and annually</p> <p>6. Pregnancy test-as indicated</p> <p>C. Clinical precautions:</p> <p>1. A 2 week time period should lapse after discontinuing Sertraline (Zoloft®) or Paroxetine (Paxil®) and starting an MAOI</p> <p>2. A 5 week time period should lapse after discontinuing Fluoxetine (Prozac®) and starting an MAOI</p> <p>D. Outcome:</p> <p>1. Decrease in signs/symptoms documented in chart</p> |      |   |
| <p><u>SYSTEMS/MANAGEMENT CONTROL</u></p> <p>A. Medication use is consistent with care plan</p> <p>B. Medication is appropriate with consideration of concomitant therapy</p>   | 100% | Patient care is planned and carried out |
|  |      |   |

**Medication Usage Evaluation  
Mirtazepine (Remeron)**

| MEDICATION USE PROCESS ELEMENTS   | S    | COMMENTS   |
|---|------|--|
| <p><u>PRESCRIBING</u></p> <p>A. Indications:</p> <ol style="list-style-type: none"> <li>1. Treatment of depression</li> </ol> <p>B. Contraindications:</p> <p><u><b>Absolute:</b></u></p> <ol style="list-style-type: none"> <li>1. Hypersensitivity to Mirtazapine</li> <li>2. Hypersensitivity to Mianserin</li> </ol> <p><u><b>Relative:</b></u></p> <ol style="list-style-type: none"> <li>1. Hypersensitivity to other antidepressants</li> <li>2. Mania/Hypomania</li> <li>3. Liver Impairment</li> <li>4. Renal Impairment</li> <li>5. Seizures</li> <li>6. Concomitant use of a monoamine oxidase inhibitors</li> <li>7. Pregnancy</li> <li>8. Hypotension</li> <li>9. Heart disease</li> </ol> | 100% | Relative contraindications must weigh the risk versus benefit. Document in charts.                                   |
| <p><u>DISPENSING</u></p> <p>A. Drug-related problem detected during new order screening</p> <p>B. Dosage range:</p> <p><u><b>Recommended Guidelines</b></u></p> <ol style="list-style-type: none"> <li>1. <b>Adult: PO 15-45mg/day</b></li> </ol> <p>C. Duration of Therapy:</p> <ol style="list-style-type: none"> <li>1. Dosage changes should not be made in less than 1 to 2 weeks</li> </ol> <p>D. Dosage:</p> <ol style="list-style-type: none"> <li>1. Should be on a regular schedule as single dose at bedtime</li> </ol>  | 100% | It is not necessary to increase the dose if the patient has obtained a good response to the medication at that dose. |

**Medication Usage Evaluation  
Mirtazepine (Remeron)**

|  |                            |   |
|--|----------------------------|---|
|  |                            |   |
| <p><u>ADMINISTERING</u><br/>A. Incident form report generated due to misadministration<br/>B. Patient education performed when required</p>  | <p align="center">100%</p> | <p>Medication dose/education is correctly provided.</p> |
| <p><u>MONITORING</u><br/>A. Monitoring parameters:<br/>1. Concomitancy<br/>    a. Combination with MAOIs is not acceptable. At least 14 days should be allowed between therapy with a MAOI.<br/>    b. Combination with Diazepam has accentuated the psychomotor impairment induced by Mirtazepine.<br/>    c. Combination with Ethanol has accentuated the psychomotor impairment induced by Mirtazepine.<br/>2. Monitoring Parameters<br/>    a. CBC<br/>    b. Improvement in signs and symptoms of depression<br/>3. Outcome<br/>    a. Initial response in 1 week</p> | <p align="center">100%</p> |   |
| <p><u>SYSTEMS/MANAGEMENT CONTROL</u><br/>A. Drug use is consistent with care plan<br/>B. Drug is appropriate with consideration of concomitant therapy</p>   | <p align="center">100%</p> | <p>Patient care is planned and carried out.</p>         |

REVISED SEPTEMBER 08



**Medication Usage Evaluation  
Lexapro(Escitalopram)**

|  |      |  |
|--|------|--|
| <ul style="list-style-type: none"> <li>▪ Do not drink alcohol while using this drug</li> <li>▪ Do not take this drug with celexa, other prescription drugs, or over the counter drugs before informing your doctor</li> <li>▪ Notify your doctor if you become pregnant or plan to become pregnant</li> <li>▪ Notify your doctor if you are breast feeding</li> <li>▪ Do not discontinue therapy abruptly without notifying your doctor</li> </ul> |      |  |
| <p><u>MONITORING</u></p> <p>A. Monitoring parameters:</p> <ul style="list-style-type: none"> <li>▪ Sodium levels</li> <li>▪ Manic symptoms</li> <li>▪ Seizures</li> </ul>  | 100% |  |
| <p><u>SYSTEMS/MANAGEMENT CONTROL</u></p> <p>A. Drug use is consistent with care plan</p> <p>B. Drug is appropriate with consideration of concomitant therapy</p>   | 100% | Patient care is planned and carried out. |

**REVISED: SEPTEMBER 08**



## Medication Usage Evaluation Antipsychotics

|   |      |   |
|---|------|---|
| <p style="text-align: center;">Decanoate 12.5-100 mg/dose</p> <p>6. Trifluoperazine (Stelazine®)<br/> <i>C &amp; A:</i> PO 1-15 mg/day<br/> IM 1-2 mg/dose<br/> <i>Adult:</i> PO 2-100 mg/day<br/> IM 1-6 mg/dose</p> <p>7. Perphenazine (Trilafon®)<br/> <i>A &amp; Adult:</i> PO 2-64 mg/day<br/> IM 5-30mg/day</p> <p>8. Mesoridazine (Serentil®)<br/> <i>Adult:</i> PO 50-400 mg/day -- DISCONTINUED<br/> IM 25 mg/dose</p> <p>9. Loxapine (Loxitane®)<br/> <i>Adult:</i> PO 20-250 mg/day<br/> IM 12.5-50 mg/dose</p> <p>10. Molindone (Moban®)<br/> <i>Adult:</i> PO 50-225 mg/day</p> <p>11. Pimozide (Orap®)<br/> <i>A &amp; Adults:</i> PO 1-10 mg/day (NTE. 0.2mg/kg/day)</p> |      | <p>current hospitalization. There should be adequate chart documentation of the efficacy and dose before administering the decanoate. See guidelines for administering haloperidol decanoate at the end of the antipsychotic section.</p> <p>For fluphenazine decanoate the usual conversion factor is for every 10 mg oral = 12.5 mg decanoate and is usually administered at 3 week intervals. Discontinue oral medication after the first injection has been given.</p> <p>Stelazine: dosage may be increased to 60 and 100mg for short intervals only</p> |
| <p><u>DISPENSING CONTINUED</u></p> <p>C. Duration of Therapy:<br/> 1. Patient should be on medication at least 7 days at adequate dose before switching to another antipsychotic</p> <p>D. Dosage:<br/> 1. Should be on a regular schedule as single or divided doses<br/> 2. At discharge patient should be on a single daily dose if possible to improve compliance</p> <p>E. Route:<br/> 1. IM switched to po after symptoms abate<br/> 2. Concentrate switched to tabs/caps before discharge</p>  | 100% | <p>Exception: Change in diagnosis or intolerable side effects.</p> <p>Prn doses may be ok if required in addition to regular schedule or during the first 72 hours after (begins when the order is written). Prn doses are not ok if they represent the sole pattern of use longer than 72 hours.</p> <p>Justify in progress notes, if upon discharge, the patient requires multiple daily doses.</p> <p>Justify in progress notes, if upon discharge, the patient must be sent out on the concentrate.</p>   |
| <p><u>ADMINISTERING</u></p> <p>A. Incident report generated due to misadministration<br/> B. Patient education performed when required<br/> C. Oral solutions diluted prior to administration</p>   | 100% | <p>Medication dose/education is correctly provided.</p>   |
| <p><u>MONITORING</u></p> <p>A. Concomitancy:<br/> 1. Combinations of any two or more antipsychotics on a scheduled basis are not acceptable<br/> 2. May be combined with most other psychotherapeutic medications or antiparkinson drugs<br/> 3. Thioridazine (Mellaril) should not be combined with Tricyclic antidepressants due to the Quinidine like side effects of both agents</p> <p>B. Monitoring parameters:</p>   | 100% | <p>Combination of two antipsychotics is permissible if one is for prn use only and follows exception in Dosage above</p>  |

## Medication Usage Evaluation Antipsychotics

|  |             |  |
|--|-------------|--|
| <ol style="list-style-type: none"> <li>1. EKG-baseline (if clinically indicated)</li> <li>2. CBC-baseline</li> <li>3. Blood chemistries with emphasis on hepatic and renal function; baseline and every 12 months</li> <li>4. Pregnancy test-as indicated</li> <li>5. Plasma levels as indicated</li> </ol> <p>C. Outcome:</p> <ol style="list-style-type: none"> <li>1. Relative improvement documented in patient's chart</li> <li>2. TD detection results in documentation with TD disclosure form</li> </ol> |             | <p><b>Exception:</b> Pimozide, should have EKG done before beginning medication.</p> |
| <p><u>SYSTEMS/MANAGEMENT CONTROL</u></p> <p>A. Medication use is consistent with care plan</p> <p>B. Medication is appropriate with consideration of concomitant therapy</p>   | <p>100%</p> | <p>Patient care is planned and carried out</p>                                       |

**REVISED SEPTEMBER 08**

**Medication Usage Evaluation  
Haldol DEC**

**GUIDELINES FOR ADMINISTERING FLUPHENAZINE DECANOATE**

AFTER THE OPTIMAL ORAL OR PARENTERAL (HCI) FLUPHENAZINE DOSE HAS BEEN ESTABLISHED AND DOCUMENTED IN THE CHART, FLUPHENAZINE DECANOATE MAY BE GIVEN BY AS FOLLOWS:

**APPROXIMATELY 1.2 TIMES THE ORAL DOSE GIVEN EVERY 3 WEEKS. THE DOSE SHOULD NOT EXCEED 100 MG PER INJECTION (MUE CRITERIA 3.125-100 MG IM/INJECTION)**

**1. ADULTS:**

**FIRST DOSE: 12.5-25MG/DOSE IM OR SC Q 1-3 WEEKS AS NEEDED  
FOR DOSES >50MG INCREASE CAUTIOUSLY IN INCREMENTS OF 12.5MG.  
SHOULD NOT EXCEED 100MG/INJECTION**

**2. ADOLESCENTS:**

**FIRST DOSE: 6.25-18.75MG/DOSE IM OR SC Q 1-3 WEEKS AS NEEDED  
FOR DOSES >50MG INCREASE CAUTIOUSLY IN INCREMENTS OF 12.5MG.  
SHOULD NOT EXCEED 100MG/INJECTION**

**3. CHILDREN (5-12 Y)**

**FIRST DOSE: 3.125-12.5MG/DOSE IM OR SC Q 1-3 WEEKS AS NEEDED  
SHOULD NOT EXCEED 12.5MG/INJECTION**

**SECOND DOSE AND FOLLOWING:** FLUPHENAZINE DECANOATE DOSE IS EITHER MAINTAINED OR REDUCED BASED ON CLINICAL RESPONSE (PRIOR TO THE 3<sup>RD</sup> DOSE, REDUCE DOSE BY EITHER LOWERING THE DOSE AT THE SAME INTERVAL OR USING THE SAME DOSE AT LONGER INTERVALS).

**COMMENTS ABOUT FLUPHENAZINE LOADING DOSE:**

- ❖ **NO SINGLE INJECTION SHOULD BE MORE THAN 12.5 MG (CHILDREN) AND 100MG (ADOLESCENTS AND ADULTS).**
- ❖ **LOADING DOSE BASED UPON TOTAL DOSE PER DAY OF ORAL FLUPHENAZINE (MUE CRITERIA MAX 40 MG/DAY) SHOULD NOT EXCEED 100 MG TOTAL.**
- ❖ **SHOULD BE GIVEN AT 3 WEEK INTERVALS OR INDIVIDUALIZED (RANGE 7-28 DAYS) [SHOULD NOT BE GIVEN MORE FREQUENTLY (I.E. DAILY, EVERY OTHER DAY.)].**
- ❖ **ORAL FLUPHENAZINE SHOULD BE STOPPED AFTER THE FIRST FLUPHENAZINE DECANOATE INJECTION HAS BEEN GIVEN.**

**Medication Usage Evaluation  
Haldol DEC**

**GUIDELINES FOR ADMINISTERING HALOPERIDOL DECANOATE**

AFTER THE OPTIMAL ORAL OR PARENTERAL (HCI) HALOPERIDOL DOSE HAS BEEN ESTABLISHED AND DOCUMENTED IN THE CHART, HALOPERIDOL DECANOATE MAY BE GIVEN BY ONE OF THE TWO METHODS:

1. **CONVENTIONAL METHOD:**

APPROXIMATELY 10-15 TIMES THE ORAL DOSE GIVEN EVERY 4 WEEKS. THE DOSE SHOULD NOT EXCEED 300 MG PER INJECTION (MUE CRITERIA 50-300 MG IM/INJECTION). ORAL HALOPERIDOL MAY NEED TO BE CONTINUED.

**LOADING DOSE METHOD:**

**MONTH 1:** APPROXIMATELY 20 TIMES THE ORAL DOSE GIVEN IN DIVIDED DOSES Q 3-7 DAYS UNTIL TOTAL LOADING DOSE IS GIVEN. SHOULD NOT EXCEED 100MG/INJ FOR THE FIRST INJECTION AND 300MG/INJ FOR SUBSEQUENT DOSES.

**EXAMPLE 1:** THE PATIENT IS ON 45 MG/DAY OF ORAL HALOPERIDOL. THE TOTAL LOADING DOSE=900 MG. THE ORDER COULD READ: HALOPERIDOL DECANOATE 100MG IM NOW, THEN 200 MG IM Q 3 DAYS X 4 DOSES.

**EXAMPLE 2:** THE PATIENT IS ON 10 MG/DAY OF ORAL HALOPERIDOL. THE TOTAL LOADING DOSE=200 MG. THE ORDER COULD READ: HALOPERIDOL DECANOATE 100 MG IM NOW, THEN 100MG IM NOW (3 DAYS LATER).

**MONTH 2:** HALOPERIDOL DECANOATE DOSE IS EITHER MAINTAINED OR REDUCED BASED ON CLINICAL RESPONSE (TYPICALLY REDUCE DOSE BY 25%).

**MONTH 3 AND FOLLOWING:** AS STEADY STATE APPROACHES, A MAINTENANCE REGIMEN WILL BE ESTABLISHED BASED ON CLINICAL RESPONSE (TYPICALLY REDUCE AGAIN BY 25% OF THE ORIGINAL HALOPERIDOL DECANOATE LOADING DOSE).

**COMMENTS ABOUT HALOPERIDOL LOADING DOSE:**

- ❖ **NO SINGLE INJECTION SHOULD BE MORE THAN 300 MG.**
- ❖ **LOADING DOSE BASED UPON TOTAL DOSE PER DAY OF ORAL HALOPERIDOL (MUE CRITERIA MAX 45 MG/DAY) SHOULD NOT EXCEED 900 MG IN DIVIDED DOSES.**
- ❖ **SHOULD BE GIVEN EVERY 3 TO 7 DAYS [SHOULD NOT BE GIVEN MORE FREQUENTLY (I.E. DAILY, EVERY OTHER DAY.)].**
- ❖ **ORAL HALOPERIDOL SHOULD BE STOPPED BY THE SECOND HALOPERIDOL DECANOATE INJECTION OR WITHIN 7 DAYS.**

**Medication Usage Evaluation  
Thioridazine (Mellaril)**

| MEDICATION USE PROCESS ELEMENTS  | S    | COMMENTS   |
|--|------|--|
| <p><b><u>PRESCRIBING</u></b></p> <p><b>A. Indications:</b><br/>Mellaril is now indicated <u>only</u> in schizophrenic patients who have failed to show response to an adequate course of treatment with other antipsychotics because of ineffectiveness/intolerable side effects</p> <p><b>B. Contraindications:</b></p> <p><b><u>Absolute</u></b></p> <ol style="list-style-type: none"> <li>1. Hypersensitivity to thioridazine</li> <li>2. Circulatory collapse</li> <li>3. Severe hypotension</li> <li>4. Bone marrow depression or history of blood dyscrasias</li> <li>5. CNS depression, coma or ingestion or large amounts of CNS depressants</li> <li>6. Congenital long QT syndrome or history of Cardiac Arrhythmias</li> <li>7. Co-administration with drugs that inhibit cytochrome P450 2D6</li> <li>8. Drugs that prolong the QT interval</li> </ol> <p><b><u>Relative</u></b></p> <ol style="list-style-type: none"> <li>1. History of myasthenia gravis</li> <li>2. Convulsive disorder</li> <li>3. History of breast cancer</li> <li>4. History of neuroleptic malignant syndrome</li> </ol> | 100% | <p><b><u>NOTE:</u> BASELINE EKG <u>MUST BE DONE BEFORE THE ADMINISTRATION OF MELLARIL TO PATIENTS</u></b></p> <p><b><u>NOTE:</u> Mesoridazine(Serentil) is a major active metabolite of Mellaril</b></p> <p><b><u>NOTE:</u> patients with QT interval &gt; 450msec should not receive Mellaril</b></p> <p>Relative contraindications must weigh the risk versus benefit. Document in charts.</p> <p><b><u>Drug interactions:</u></b></p> <ol style="list-style-type: none"> <li>1. Cytochrome P450 2D6 inhibitors like(flouxetine ,paxil)</li> <li>2. Drug that prolong the QT interval (fluvoxamine, propranolol, pindolo, persantine, quinidine, procainamidol)</li> </ol> |
| <p><b><u>DISPENSING</u></b></p> <p>A. Drug-related problem detected during new order screening</p> <p>B. Dosage range: <b><u>Recommended Guidelines</u></b></p> <p>C &amp; A: 30-600mg/day or 0.5-3mg/kg/day<br/>Adults : 30-800mg/day or 3-6mg/kg /day<br/>. Thioridazine (Mellaril®)</p>   | 100% | <p><b>It is not necessary to increase the dose if the patient has obtained a good response to the medication at that dose.</b></p> <p><b><u>NOTE :</u> Mellaril prolongs QT interval in a dose related manner this has been associated with torsade de pointes type Arrhythmias and sudden death syndrome</b></p> <p><b><u>NOTE:</u> Dose should not exceed 800mg/day, doses &gt; 1200mg-1500mg have been associated with irreversible blindness and pigmentation retinopathy.</b></p> <p><b><u>NOTE:</u> Doses &gt; 300mg/day only recommended for patients with severe psychosis</b></p>   |

**Medication Usage Evaluation  
Thioridazine (Mellaril)**

|   |                            |   |
|---|----------------------------|---|
|   |                            |   |
| <p><b><u>ADMINISTERING</u></b><br/> A. Incident form report generated due to misadministration<br/> B. Patient education performed when required</p>  | <p align="center">100%</p> | <p>Medication dose/education is correctly provided.</p> |
| <p><b><u>MONITORING</u></b></p> <p><b>A. Monitoring parameters:</b></p> <ol style="list-style-type: none"> <li>1. EKG evaluation and serum potassium levels</li> <li>2. CBC counts every 6 months</li> <li>3. Hepatic function test every 6 months</li> <li>4. Periodic eye examination for ocular changes(retinopathy)</li> <li>5. AIMS testing every 6 months</li> <li>6. Assessment for EPS during dose adjustment and every 3 months</li> </ol> | <p align="center">100%</p> |   |
| <p><b><u>SYSTEMS/MANAGEMENT CONTROL</u></b><br/> A. Drug use is consistent with care plan<br/> B. Drug is appropriate with consideration of concomitant therapy</p>   | <p align="center">100%</p> | <p>Patient care is planned and carried out.</p>         |

## Medication Usage Evaluation Atypical Antipsychotics

| MEDICATION USE PROCESS ELEMENTS   | S    | COMMENTS  |
|---|------|---|
| <p><b><u>PRESCRIBING</u></b></p> <p>A. Indications:</p> <ol style="list-style-type: none"> <li>Schizophrenic, schizoaffective disorder, other psychosis, or bipolar disorder unable to tolerate other antipsychotics</li> <li>Refractory schizophrenia, schizoaffective disorder or bipolar disorder defined as failure from two different chemical classes of Antipsychotics in a dose of 20 mg/day of haloperidol or equivalent for at least six weeks</li> </ol> <p>B. Contraindications:</p> <p><b><u>Absolute</u></b></p> <ol style="list-style-type: none"> <li>History of anaphylactic reaction or hypersensitivity</li> <li>Comatose State</li> <li>Concomitant use of epinephrine for treatment of shock</li> </ol> <p><b><u>Relative</u></b></p> <ol style="list-style-type: none"> <li>Pregnancy/nursing mothers</li> <li>History of drug induced agranulocytosis or leukemia</li> <li>History of neuroleptic malignant syndrome</li> <li>Narrow angle glaucoma</li> <li>Impaired hepatic function</li> <li>Prostatic hypertrophy</li> <li>Parkinson's disease</li> <li>Severe cardiovascular disease</li> </ol> | 100% | <p><b><u>Exceptions:</u></b></p> <p>A. Patients who cannot tolerate a therapeutic dose of standard antipsychotic due to extrapyramidal (EPS) side effects. Must document akathisia, dystonia, parkinsonism, dyskinesia.</p> <p>B. Patients with EPS where anticholinergic medications are contraindicated (must specify the medical condition).</p> <p>Relative contraindications: Must weigh the risk verses the benefit. Document in the chart.</p> <p><b><u>NOTE:</u></b></p> <p><b>The Food and Drug Administration (FDA) has issued a public health advisory to alert health care providers, patients, and patient caregivers to new safety information concerning an unapproved (i.e., "off-label") use of the "atypical antipsychotic drugs." These drugs are approved for the treatment of schizophrenia and mania, but clinical studies of these drugs to treat behavioral disorders in elderly patients with dementia have shown a higher death rate associated with their use compared to patients receiving a placebo (sugar pill).</b></p> |
| <p><b><u>DISPENSING</u></b></p> <p>A. Drug-related problem detected during new order screening</p> <p>B. Dosage:</p> <ol style="list-style-type: none"> <li><b>Risperidone (Risperdal ®)</b><br/>PO 0.5-6 mg/day</li> <li><b>Olanzapine (Zyprexa®)</b><br/>C&amp;A PO 2.5-20mg/day<br/>Adults PO 5-20 mg/day</li> <li><b>Quetiapine (Seroquel®)</b><br/>PO 50-800 mg/day</li> <li><b>Ziprasidone (Geodon®)</b><br/>PO 40-160mg/day</li> <li><b>Clozapine (clozaril®),</b><br/>See separate sheet for recommended guidelines/titration schedule</li> <li><b>Aripiprazole (Abilify®)</b><br/>See separate sheet for recommended guidelines/titration schedule</li> <li><b>Paliperidone (Invega®)</b><br/>PO 3-12 mg/day</li> </ol>  | 100% | <p>Document in the chart if dose &gt; than maximum indicated.</p> <p><b><u>NOTE: Caution:</u></b><br/>Risperidone dosages above 6mg increase the incidence of EPS and other side effects</p> <p><b><u>NOTE: Caution</u></b><br/><b>Resistant schizophrenia: olanzapine can be given at doses: NTE: 20mg/day</b><br/><b>Also document in progress note and on patients medication order sheet;</b><br/><b>Increments above 20mg/day should be done cautiously and with serious consideration because of the reported emergent increases in endocrine related and other untoward side effects. This also applies to all the atypical antipsychotics.</b></p> <p><b>Ziprasidone should not be used in patients</b></p>   |

## Medication Usage Evaluation Atypical Antipsychotics

|  |      |   |
|--|------|---|
| <p>C. Conversion from other antipsychotics:</p> <ol style="list-style-type: none"> <li>1. Gradually taper dose of previous antipsychotic agent while titrating up the dose of the atypical antipsychotic agent.</li> <li>2. If anticholinergics were used in combination with previous therapy and are to be discontinued, taper the anticholinergic dose</li> </ol> <p>D. Dose should be regularly scheduled, prn use is not acceptable</p>   |      | <p><b>with QTc syndrome and other cardiac abnormalities (see separate sheet on all the absolute contraindications)</b></p> <p><b>NOTE:</b><br/> <b>The atypical antipsychotics should not be combined with other antipsychotics or anticholinergics after 30 days. If this is a necessity, please document in the progress notes.</b></p> <p><b>May use another antipsychotic as a prn until patient is stable. Not enough studies to justify combining two atypical antipsychotics or a typical and an atypical.</b></p>   |
| <p><b><u>ADMINISTERING</u></b></p> <p>A. Incident report generated due to misadministration<br/>         B. Patient education performed when required</p>  | 100% | Medication dose/education provided correctly.   |
| <p><b><u>MONITORING</u></b></p> <p>A. Concomitancy:</p> <ol style="list-style-type: none"> <li>1. May be combined with other psychotropic medication</li> <li>2. Should not combine with other antipsychotics on a scheduled basis except as noted above in the dispensing section</li> </ol> <p>B. Monitoring Parameters:</p> <ol style="list-style-type: none"> <li>1. EKG as clinically indicated</li> <li>2. CBC</li> <li>3. Blood chemistry (Especially liver and renal functions)</li> <li>4. Pregnancy test as indicated</li> <li>5. Screening for abnormal involuntary movements using a standardized test (i.e. AIMS) prior to initiation and every 6 months</li> <li>6. Brief Psychiatric Rating Scale (BPRS) prior to initiation and every 3 months</li> </ol> <p>C. Outcome:</p> <ol style="list-style-type: none"> <li>1. Improvement in clinical status noted in progress notes</li> <li>2. TD detection results in documentation</li> </ol> | 100% | <p>Anticholinergics should be tapered as soon as possible as noted above in dispensing section.</p> <p><b>NOTE:</b><br/> <b>Atypicals have potentially serious adverse effects such as <u>Obesity</u>, <u>Diabetes</u>, and <u>Dyslipidemia</u></b></p> <p><b>Weight</b> should be checked at baseline, 4,8, and 12 weeks after starting or changing therapy and then every 3 months</p> <p><b>Fasting glucose</b> should be checked at baseline, 12 weeks, then at least annually</p> <p><b>Blood pressure:</b> should be checked at baseline, 12 weeks, then at least annually</p> <p><b>Lipids should</b> be checked at baseline, 12 weeks, then every 5 years if normal</p> |
| <p><b><u>SYSTEMS/MANAGEMENT CONTROL</u></b></p> <p>A. Drug use is consistent with care plan<br/>         B. Drug is appropriate with consideration of concomitant therapy.</p>   | 100% | Patient care is planned and carried out.  |

## Medication Usage Evaluation Clozaril (Clozapine)

| MEDICATION USE PROCESS ELEMENTS  | S    | COMMENTS  |
|--|------|---|
| <p><b><u>PRESCRIBING</u></b><br/> A. Indications:</p> <ol style="list-style-type: none"> <li>1. Refractory schizophrenia, schizoaffective disorder, or Bipolar disorder defined as failure on two antipsychotics from two different chemical classes in a dose of 20 mg per day of haloperidol equivalent for at least 6 weeks</li> <li>2. Schizophrenia, schizoaffective, other psychosis, or bipolar disorder, and unable to tolerate other neuroleptics</li> </ol> <p>B. Contraindications:</p> <p><b><u>Absolute</u></b></p> <ol style="list-style-type: none"> <li>1. History of anaphylactic reaction or similarly severe significant hypersensitivity to the medication prescribed</li> <li>2. Myeloproliferative disorders</li> <li>3. History of blood dyscrasia</li> <li>4. CNS depression</li> <li>5. Comatose states</li> <li>6. History of clozapine induced agranulocytosis or severe granulocytopenia</li> <li>7. Concomitant use of agents that may cause bone marrow suppression including carbamazepine</li> <li>8. Concomitant use of epinephrine for treatment of shock</li> <li>9. History of clozapine induced myocarditis/or history of myocarditis</li> </ol> <p><b><u>Relative</u></b></p> <ol style="list-style-type: none"> <li>1. Pregnancy/nursing mothers</li> <li>2. Prostatic hypertrophy</li> <li>3. Narrow Angle glaucoma</li> <li>4. History of seizure or abnormal EEG</li> <li>5. History of Neuroleptic malignant syndrome</li> <li>6. History of severe liver, cardiac, or renal disease</li> </ol> | 100% | <p>Exception: Patients who cannot tolerate a therapeutic dose of standard neuroleptic due to extrapyramidal (EPS) side effects. Must document akathisia, dystonia, parkinsonism, or dyskinesia.</p> <p><b><u>NOTE:</u></b><br/> <b>Common adverse effects related to clozapine treatment that may warrant discontinuation</b></p> <ul style="list-style-type: none"> <li>▪ <b>Agranulocytosis</b></li> <li>▪ <b>Seizures</b></li> <li>▪ <b>Cardiovascular and Respiratory effects</b></li> <li>▪ <b><u>Myocarditis</u></b> (most recent adverse effect noted within the first month of therapy with clozapine.) <b>patient should be monitored for: unexplained fatigue, dyspnea, tachypnea, fever, chest pain, palpitations, ST-T wave abnormalities, and eosinophilia? <u>Tachycardia</u> during 1<sup>st</sup> month of therapy has been associated with myocarditis close monitoring is warranted if this happens.</b></li> </ul> <p>Relative contraindications must weigh the risk versus benefit. Document in charts.</p> |
| <p><b><u>DISPENSING</u></b><br/> A. Drug-related problem detected during new order screening</p>   | 100% | <p>It is not necessary to increase the dose if the patient has obtained a good response to the medication at that dose.</p> <p>May use another antipsychotic as prn until the patient is stable.</p>  |

**Medication Usage Evaluation  
Clozaril (Clozapine)**

|   |                            |  |
|---|----------------------------|--|
| <p>B. Dosage range: (<i>Adults and C &amp; A</i>) <b><u>Recommended Guidelines</u></b></p> <p>Day 1: 25 mg po qam<br/> Day 2: 25 mg po qam &amp; qhs<br/> Day 3: 25 mg po qam &amp; 50 mg po qhs<br/> Day 4: 50 mg po qam &amp; qhs<br/> Day 5: 50 mg po qam &amp; 75 mg po qhs<br/> Day 6: 50 mg po qam &amp; 100 mg po qhs<br/> Day 7: 50 mg po qam &amp; 100 mg po qhs<br/> Day 8: 50 mg po qam &amp; 100 mg po qhs<br/> Day 9: 50 mg po qam &amp; 100 mg po qhs<br/> Day 10: 100 mg po qam &amp; 100 mg po qhs<br/> Day 11: 100 mg po qam &amp; 100 mg po qhs<br/> Day 12: 50 mg po qam &amp; 200 mg po qhs<br/> Day 13: 50 mg po qam &amp; 200 mg po qhs<br/> Day 14: 100 mg po qam &amp; 200 mg po qhs</p> <p>After 14 days of titration the physician would need to re-evaluate the patient. The physician can increase the dose up to 100 mg 1-2 times per week. Not to exceed a maximum dose of 900 mg per day.</p> <p>C. Dosage:<br/> 1. Regularly scheduled only - PRN use is not acceptable</p>   |                            | <p>Discontinuing treatment:<br/> Gradually reduce dosage over 1 to 2 week period. Document abrupt discontinuation due to side effects (e.g. leucopenia).and observe for reoccurrence of psychotic symptoms</p> |
| <p><b><u>ADMINISTERING</u></b><br/> A. Incident form report generated due to misadministration<br/> B. Patient education performed when required</p>  | <p align="center">100%</p> | <p>Medication dose/education is correctly provided.</p>  |
| <p><b><u>MONITORING</u></b><br/> A. Monitoring parameters:<br/> 1. EKG- as clinically indicated<br/> 2. Blood Chemistries with emphasis on hepatic, renal, and other metabolic functions and electrolytes; baseline and every 12 months or as clinically indicated<br/> 3. Pregnancy test as indicated<br/> 4. AIMS prior to initiation and every 6 months<br/> 5. Baseline EEG required in patients with history of seizure disorders or history of abnormal EEG<br/> 6. BPRS prior to initiation and every 3 months<br/> 7. CBC with differential must be obtained and result in the chart before medication will be dispensed. CBC with differential must be obtained every Monday during hospitalization if patient has been on Clozaril for six months or less. If patient has been on Clozaril for more than six months, CBC with differential must be obtained every two weeks during hospitalization.<br/> <u>WBC levels criteria:</u><br/> a. &gt; 3500 per mm<sup>3</sup> is normal<br/> b. 3000-3500 per mm<sup>3</sup>-twice weekly WBC and differential counts should be performed<br/> c. &lt; 3000 per mm<sup>3</sup> or granulocytes &lt; 1500 per mm<sup>3</sup>-therapy should be interrupted and patients closely monitored with CBC and differential every day. Rechallenge after improvement.<br/> d. &lt; 2000 per mm<sup>3</sup> or granulocytes &lt; 1000 per mm<sup>3</sup>-therapy should be discontinued and patient should never be rechallenged with clozapine</p> | <p align="center">100%</p> |  |

**Medication Usage Evaluation  
Clozaril (Clozapine)**

|  |      |  |
|--|------|--|
| SYSTEMS/MANAGEMENT CONTROL<br>A. Drug use is consistent with care plan<br>B. Drug is appropriate with consideration of concomitant therapy | 100% | Patient care is planned and carried out. |
|--|------|--|

REVISED SEPTEMBER 08

**Medication Usage Evaluation  
Ziprasidone (Geodon)**

| MEDICATION USE PROCESS ELEMENTS  | S    | COMMENTS  |
|--|------|---|
| <p><u>PRESCRIBING</u><br/>A. Indications: Schizophrenia</p> <p><b>B. Contraindications:</b><br/><u><i>Absolute</i></u></p> <ul style="list-style-type: none"> <li>▪ Hypersensitivity to Ziprasidone</li> <li>▪ Patients with a known history of QT prolongation</li> <li>▪ Includes congenital long QT syndrome, Recent acute MI, or with uncompensated heart failure.</li> <li>▪ Combining with drugs that prolong QT</li> <li>▪ Patients at risk for significant electrolyte disturbances(hypokalemia/and or hypomagnesia)</li> <li>▪ Bradycardia</li> <li>▪ Persistent QTc measurements of &gt; 500msec</li> </ul> <p><u><i>Relative</i></u></p> <ul style="list-style-type: none"> <li>▪ History of MI or ischemic heart disease</li> <li>▪ Heart failure or conduction abnormalities</li> <li>▪ Cerebrovascular disease or conditions which will predispose patients to hypotension( dehydration, hypovolemia, and concomitant antihypertensive therapy)</li> <li>▪ History of seizures</li> <li>▪ Hyperprolactinemia</li> <li>▪ Potential for cognitive and motor impairment</li> <li>▪ Dysphagia (patients at risk for aspiration pneumonia)</li> <li>▪ Hepatic impairment</li> <li>▪ Pregnancy category C</li> <li>▪ Suicidal ideation</li> <li>▪ Parkinson's disease</li> </ul> |      | <p><u><b>NOTE</b></u><br/><b>Some Listed drugs that prolong QT interval are ( quinidine, pimozide, sotalol, thioridazine, sparfloxacin Clarithromycin, erythromycin etc)</b><br/><b><u>Call pharmacy for the complete list.</u></b></p> <p>Relative contraindications must weigh the risk versus benefit. Document in charts.</p> |
| <p><u>DISPENSING</u><br/>A. Drug-related problem detected during new order screening</p> <p>B. Dosage range<br/><u><b>Recommended Guidelines</b></u></p> <p><u><b>Adults:</b></u> 40- 160mg/day<br/>(Available in 20mg,40mg,60mg, 80mg capsules)<br/><u><b>C and A:</b></u> Safe and effective use has not been established.<br/>The safety and effectiveness of Ziprasidone in pediatric</p>  | 100% | <p>It is not necessary to increase the dose if the patient has obtained a good response to the medication at that dose.</p> <ul style="list-style-type: none"> <li>▪ Initial daily dose of 20mg po bid. Dose adjustment should occur in not less than 2 days.</li> </ul>  |

**Medication Usage Evaluation  
Ziprasidone (Geodon)**

|  |      |   |
|--|------|---|
| <p>patients have not been established</p> <ul style="list-style-type: none"> <li>▪ Dosage adjustments are generally not required on the basis of age , gender, race or renal or hepatic impairment</li> <li>▪ An increase to a dose greater than 80mg bid is not generally recommended.</li> </ul>   |      | <ul style="list-style-type: none"> <li>▪ Daily dosage may be established in some patients on the basis of individual clinical status up to 80mg bid.</li> <li>▪ Since all strength are the same price it is not cost effective to have patients take two capsules of any one strength this will double the total daily cost.</li> </ul> |
| <p><u>ADMINISTERING</u><br/>A. Incident form report generated due to misadministration<br/>B. Patient education performed when required</p>  | 100% | Medication dose/education is correctly provided.  |
| <p><u>MONITORING</u><br/>A. Monitoring parameters:</p> <ul style="list-style-type: none"> <li>▪ Patients at risk of electrolyte disturbances and/or are receiving diuretic should be monitored closely</li> <li>▪ Consider baseline EKG and avoid starting Ziprasidone in patients with QTc greater than 440-450msec.Repeat EKG at steady state should be considered</li> <li>▪ Consider blood pressure monitoring during initial titration phase and if patient is receiving concomitant antihypertensives</li> </ul> | 100% |   |
| <p><u>SYSTEMS/MANAGEMENT CONTROL</u><br/>A. Drug use is consistent with care plan<br/>B. Drug is appropriate with consideration of concomitant therapy</p>   | 100% | Patient care is planned and carried out.  |

**Medication Usage Evaluation  
Ziprasidone (Geodon)**

**Medication Usage Evaluation  
Aripiprazole (Abilify)**

| MEDICATION USE PROCESS ELEMENTS   | S           | COMMENTS   |
|---|-------------|--|
| <p><b><u>PRESCRIBING</u></b><br/> A. Indications:<br/>     Schizophrenia<br/>     Major Depressive Disorder (MDD) - Children<br/> B. Contraindications:<br/>     <b><u>Absolute</u></b><br/> <i>Hypersensitivity to Aripiprazole</i></p> <p>    <b><u>Relative</u></b></p> <ul style="list-style-type: none"> <li>▪ Concurrent use with CNS depressants</li> <li>▪ Patients with history of Seizures</li> <li>▪ Patient with history of suicide attempts(give smallest dose to avoid overdose)</li> <li>▪ Patients with history of NMS</li> <li>▪ Patients with Cardiovascular disease(Aripiprazole may induce hypotension)</li> <li>▪ Patients with risk factors for Torsades de pointes(bradycardia,electrolyte imbalance,)</li> <li>▪ Concurrent use of agents known to prolong QT(Potentially enhance risk of torsades de pointes)</li> <li>▪ Parkinson disease or other movement disorders</li> <li>▪ Elderly patients with Psychosis associated with Alzheimer's disease</li> <li>▪ Dehydration or Hypovolemia (enhance risk /severity of hypotension from Aripiprazole).</li> <li>▪ Pregnancy category C</li> <li>▪ Breastfeeding</li> </ul> | <p>100%</p> | <p><b><u>Note :</u></b><br/> The long- term efficacy of Aripiprazole in the treatment of Schizophrenia for &gt; 6 weeks has not been established. If any Physician elects to use Aripiprazole for &gt; 6weeks they should periodically re-evaluate the long-term usefulness of the drug for the individual patient.</p> <p><b><u>Note :</u></b><br/> Special population: No dosage adjustment is required on the basis of patient's age, gender, race, smoking status, hepatic function or renal function.</p> <p>Relative contraindications must weigh the risk versus benefit. Document in charts.</p> |



**Medication Usage Evaluation  
Aripiprazole (Abilify)**

|  |                            |  |
|--|----------------------------|--|
|  |                            |  |
| <p><b><u>ADMINISTERING</u></b><br/> A. Incident form report generated due to misadministration<br/> B. Patient education performed when required</p>   | <p align="center">100%</p> | <p>Medication dose/education is correctly provided.</p>  |
| <p><b>A. <u>MONITORING:</u></b><br/> A. Monitoring Parameters:</p> <ul style="list-style-type: none"> <li>▪ EKG as clinically indicated</li> <li>▪ Routine blood chemistry periodically</li> <li>▪ Screening for abnormal involuntary movements using a standardized test (AIMS) prior to initiation and every six months.</li> <li>▪ Brief Psychiatric Rating Scale (BPRS) prior to initiation and every three months and PANSS)</li> <li>▪ Signs and symptoms of other toxicity such as persistence nausea, Somnolence, Postural dizziness, Palpitations, Micturition disturbances, Mood changes, Sexual Dysfunction, Skin Rash.</li> </ul> <p><b>B. <u>Possible Side Effects:</u></b></p> <ul style="list-style-type: none"> <li>▪ NMS (Neuroleptic malignant syndrome)</li> <li>▪ TD (Tardive dyskinesia)</li> <li>▪ Weight gain</li> <li>▪ QTc prolongation</li> <li>▪ Postural dizziness</li> <li>▪ Orthostatic hypotension</li> <li>▪ Somnolence, Anxiety /insomnia, Akathesia, tremor*</li> <li>▪ Nausea , vomiting and constipation*</li> </ul> | <p align="center">100%</p> | <p><b><u>Note :</u></b><br/> * Some of these adverse events were reported in at least 2% of patients treated with Aripiprazole compared to placebo</p> |

**Medication Usage Evaluation  
Aripiprazole (Abilify)**

|   |      |  |
|---|------|--|
| <ul style="list-style-type: none"><li>▪ Headache, Asthenia*</li><li>▪ Rhinitis, cough*</li></ul>  |      |  |
| <p style="text-align: center;"><b>SYSTEMS/MANAGEMENT CONTROL</b></p> A. Drug use is consistent with care plan<br>B. Drug is appropriate with consideration of concomitant therapy | 100% | Patient care is planned and carried out. |

REVISED SEPTEMBER 08

## Medication Usage Evaluation Mood Stabilizers

| MEDICATION USE PROCESS ELEMENTS  | S    | COMMENTS  |
|--|------|---|
| <p><b><u>PRESCRIBING</u></b></p> <p>A. Indications:</p> <ol style="list-style-type: none"> <li>1. Bipolar (manic-depressive) disorder</li> <li>2. Adjunct to antidepressants in treatment-resistant depression or to antipsychotics in treatment resistant schizophrenia</li> <li>3. Intermittent explosive disorder or impulsive aggressive disorder associated with other psychiatric disorders.</li> <li>4. Carbamazepine or Valproate may be used separately as an anticonvulsant or to treat suspected temporal lobe epilepsy and generalized seizures</li> </ol> <p>B. Contraindications:</p> <p><b><u>Absolute</u></b></p> <p><b><u>Carbamazepine</u></b></p> <ol style="list-style-type: none"> <li>1. History of anaphylactic reaction or similarly severe significant hypersensitivity to Carbamazepine or Tricyclic antidepressants</li> <li>2. Concomitant use of clozapine (Clozaril®)</li> </ol> <p><b><u>Lithium</u></b></p> <ol style="list-style-type: none"> <li>1. History of anaphylactic reaction or similarly severe significant hypersensitivity to the medication prescribed</li> <li>2. History of leukemia</li> </ol> <p><b><u>Valproate</u></b></p> <ol style="list-style-type: none"> <li>1. History of anaphylactic reaction or similarly severe significant hypersensitivity to the medication prescribed</li> </ol> <p><b><u>Relative</u></b></p> <p><b><u>Carbamazepine</u></b></p> <ol style="list-style-type: none"> <li>1. History of blood dyscrasia</li> <li>2. Myoclonic seizure, atonic seizures</li> <li>3. Heart block</li> <li>4. History of bone marrow depression</li> <li>5. Concomitant use of monoamine oxidase inhibitors</li> <li>6. Coronary artery disease</li> <li>7. Hyponatremia, dilutional</li> <li>8. Renal function impairment</li> <li>9. Pregnancy/nursing mothers</li> <li>10. Hepatic function impairment</li> </ol> <p><b><u>Lithium</u></b></p> <ol style="list-style-type: none"> <li>1. Cardiovascular disease</li> <li>2. Severe dehydration</li> <li>3. Goiter or hypothyroidism</li> <li>4. Organic brain disease</li> <li>5. Psoriasis</li> <li>6. Severe acne</li> <li>7. Pregnancy/nursing mothers</li> <li>8. Renal insufficiency</li> <li>9. Hyperparathyroidism</li> <li>10. Severe infections</li> <li>11. Concomitant use of diuretics</li> </ol> | 100% | <p>Note diagnosis if not one of the listed.<br/>Note any use of these drugs by themselves in the treatment of schizophrenia or depression.</p> <p>Relative contraindications must weigh risk versus benefit. Document in the chart.</p> |
| <p><b><u>PRESCRIBING CONTINUED</u></b></p> <p>B. Contraindications: (<i>cont.</i>)</p>   | 100% |   |

## Medication Usage Evaluation Mood Stabilizers

|   |             |   |
|---|-------------|---|
| <p><b>Relative (cont.)</b><br/><u>Valproate</u></p> <ol style="list-style-type: none"> <li>1. Hepatic disease/impairment</li> <li>2. Blood dyscrasia</li> <li>3. Hypoalbuminemia</li> <li>4. Renal impairment</li> <li>5. Pregnancy/nursing mothers</li> <li>6. Thrombocytopenia</li> </ol>   |             | <p>Relative contraindications must weigh risk versus benefit. Document in the chart.</p>  |
| <p><b>DISPENSING</b></p> <p>A. Drug-related problem detected during new order screening</p> <p>B. Dosage Range</p> <ol style="list-style-type: none"> <li>1. Carbamazepine (Tegretol®)</li> </ol> <p>C : PO 200-1000mg/day (6-15 y) -1200mg/day (&gt;15 y)<br/>or 10-35 mg/kg/day</p> <p>A &amp; Adult: PO 400-1800 mg/day</p> <ol style="list-style-type: none"> <li>2. Lithium (Eskalith7, Lithobid7, &amp; Eskalith CR®)</li> </ol> <p>C &amp; A: PO 600-2400 mg/day or 10-30 mg/kg/day</p> <p>Adult: PO 600-2800 mg/day</p> <ol style="list-style-type: none"> <li>3. Valproate (Depakene®)<br/>&amp; Depakote®)</li> </ol> <p>C &amp; A: PO 10- 60 mg/Kg/day</p> <p>Adult: PO 500-4000 mg/day (Max dose 60 mg/Kg/day)</p> <p>C. Duration of Therapy</p> <ol style="list-style-type: none"> <li>1. Should be at least 7 days before trying another treatment</li> </ol> <p>D. Dosage</p> <ol style="list-style-type: none"> <li>1. Regularly scheduled - No prn use acceptable</li> </ol> <p>E. Route</p> <ol style="list-style-type: none"> <li>1. Concentrate switched to tabs/caps before discharge</li> </ol> | <p>100%</p> | <p>Must justify any variance in dose in the progress notes.</p> <p>Clinical response necessitates greater than maximum dose and levels are within therapeutic range.</p> <p>Exception: Diagnosis changed or intolerable side effects.</p> <p>Justify in progress notes, if upon discharge, the patient must be sent out on the concentrate.</p> |
| <p><b>ADMINISTERING</b></p> <ol style="list-style-type: none"> <li>A. Incident report generated due to misadministration</li> <li>B. Patient education performed when required</li> </ol>   | <p>100%</p> | <p>Medication dose/education is correctly provided.</p>   |
| <p><b>MONITORING</b></p> <p>A. Concomitancy:</p> <ol style="list-style-type: none"> <li>1. May be combined with each other or with any other psychotherapeutic drugs</li> <li>2. Lithium given with diuretics - dose should be reduced by at least 25%. Monitor serum levels and clinical symptoms for signs of toxicity</li> <li>3. Depakote and Tegretol, when given together should have liver functions monitored .</li> </ol>  | <p>100%</p> | <p>Documentation as to why patient is on more than one mood stabilizer.</p> <p>-Weekly monitoring while in the hospital. This may be done as the same time the serum levels of these two medications are drawn.</p> <p>-Every other day monitoring while in the hospital if there is a significant increase in the</p>                          |

## Medication Usage Evaluation Mood Stabilizers

|   |             |  |
|---|-------------|--|
| <p>B. Monitoring parameters:</p> <p><u>Carbamazepine</u></p> <ol style="list-style-type: none"> <li>1. EKG - baseline, annually or as clinically indicated</li> <li>2. CBC with platelets - baseline, then every 2 weeks for 2 months, then quarterly</li> <li>3. Blood chemistries with emphasis on hepatic, renal functions and electrolytes; baseline and annually</li> <li>4. Pregnancy test - as indicated</li> <li>5. Carbamazepine level - 3-5 days after dose changes</li> </ol> <p><u>Lithium</u></p> <ol style="list-style-type: none"> <li>1. EKG - baseline and every 12 months or as indicated</li> <li>2. CBC - baseline and every 12 months or as indicated</li> <li>3. Thyroid studies - baseline and every 12 months or as indicated</li> <li>4. Blood chemistries with emphasis on renal functions and electrolytes; baseline and annually</li> <li>5. UA - baseline and as indicated</li> <li>6. Pregnancy test - baseline and as indicated</li> <li>7. Lithium level - with dose changes and as clinically indicated</li> </ol> <p><u>Valproate</u></p> <ol style="list-style-type: none"> <li>1. EKG (Age 45 or over - baseline and annually)</li> <li>2. CBC - with differential and platelet count - baseline, then monthly for 6 months, then every 6 months</li> <li>3. Blood chemistries with emphasis on hepatic and renal functions; monthly for 6 months, then every 6 months or as clinically indicated</li> <li>4. UA - baseline and every 6 months or as indicated</li> <li>5. Pregnancy test - as indicated</li> <li>6. Valproic acid level - approximately 3 days after dose changes</li> </ol> |             | <p>liver enzymes. An ammonia level should also be ordered if there is a significant increase in the liver enzymes. If the liver enzymes exceed 3x the upper normal limit and/or the patient shows clinical signs of hepatotoxicity, the medications should be stopped.</p> <p>NOTE:<br/>The FDA has analyzed reports of suicidality (suicidal behavior or ideation) from antiepileptic drugs used to treat epilepsy as well as psychiatric disorders, and other conditions. The warning recommends patients being treated with antiepileptics be closely monitored for notable changes in behavior that could indicate the emergency or worsening of suicidal thoughts or behavior or depression.</p> <p>Prolonged therapy with and/or high doses of phenytoin, carbamazepine, and valproic acid can increase bone loss and should be monitored closely by healthcare providers and decreased or discontinued when possible.<br/>(AHFS DRUG INFORMATION® (2008))</p> |
| <p><u>SYSTEMS/MANAGEMENT CONTROL</u></p> <p>A. Medication use is consistent with care plan</p> <p>B. Medication is appropriate with consideration of concomitant therapy</p>  | <p>100%</p> | <p>Patient care is planned and carried out</p>   |

REVISED SEPTEMBER 08



## Medication Usage Evaluation MAOI

|   |      |   |
|---|------|---|
| 3. Prn use not acceptable   |      |   |
| <u>ADMINISTERING</u><br>A. Incident report generated due to misadministration<br>B. Patient education performed when required   | 100% | Medication dose/education is correctly provided.                |
| <u>MONITORING</u><br>A. Concomitancy:<br>1. May be used in combination with benzodiazepines, antipsychotics, and Lithium<br>2. Combination with tricyclics is experimental<br><br>3. Contraindicated drugs:<br>a. Sympathomimetics (Nasal decongestants & anorexiant)<br>b. Opioid narcotics<br><br>B. Monitoring parameters:<br>1. EKG - baseline, annually or as clinically indicated (Age > 45)<br>2. Blood chemistries with emphasis on hepatic and renal function; baseline and annually<br>3. Thyroid studies - baseline, annually or as indicated<br>4. Pregnancy test - as indicated<br>5. Diet orders should indicate "Diet Suitable for MAOI's"<br>6. Orthostatic blood pressure should be measured at least once weekly and absence of orthostatic symptoms should be noted<br>7. If a patient has been on an MAOI, allow at least a 14 day interval before beginning a tricyclic or another MAOI, or another antidepressant (with the exception of Fluoxetine - see 9)<br>8. A 5 week period should elapse between discontinuation of Fluoxetine and initiation of a MAOI<br><br>D. Outcome:<br>1. Clinical improvement noted | 100% | If used, start with low doses of each agent and titrate slowly. |
| <u>SYSTEMS/MANAGEMENT CONTROL</u><br>A. Medication use is consistent with care plan<br>B. Medication is appropriate with consideration of concomitant therapy   | 100% | Patient care is planned and carried out                         |

**Medication Usage Evaluation  
Gabapentin (Neurontin)**

| MEDICATION USE PROCESS ELEMENTS  | S                          | COMMENTS  |
|--|----------------------------|---|
| <p><b>PRESCRIBING</b></p> <p>A. Indications:</p> <p><b>FDA Approved</b></p> <ol style="list-style-type: none"> <li>Adjunct therapy – Partial Seizures</li> </ol> <p align="center"><b>Off –Label Uses</b></p> <ol style="list-style-type: none"> <li>Bipolar disorder</li> <li>Diabetic neuropathy</li> <li>Carpal Tunnel Syndrome</li> <li>Multiple Sclerosis complications</li> <li>Orthostatic tremor</li> <li>Postherpetic Neuralgia</li> <li>Seizures – Acute Intermittent Porphyria</li> <li>Seizures – Generalized</li> <li>Social Phobia</li> <li>Spasticity</li> </ol> <p>B. Contraindications:</p> <p><b><u>Absolute</u></b></p> <ol style="list-style-type: none"> <li>Hypersensitivity to Gabapentin</li> <li>Pancreatitis</li> </ol> <p><b><u>Relative</u></b></p> <ol style="list-style-type: none"> <li>Renal insufficiency</li> <li>Abrupt discontinuation may precipitate status epilepticus</li> <li>Patients less than 12 years of age (no data available)</li> </ol> | <p align="center">100%</p> | <p>Exception:</p> <p><b>Note:</b> call pharmacy for a complete list of therapeutic uses.</p> <p>Relative contraindications must weigh the risk versus benefit. Document in charts.</p>  |
| <p><b>DISPENSING</b></p> <p>A. Drug-related problem detected during new order screening</p> <p>B. Dosage range: <i>(Adults and C &amp; A)</i></p> <p><b><u>Recommended Guidelines</u></b></p> <p>C &amp; A: 10 – 15 mg/kg/day (age 3 – 12)<br/>Adults: 300 – 3600 mg/day</p>   | <p align="center">100%</p> | <p>It is not necessary to increase the dose if the patient has obtained a good response to the medication at that dose.</p> <p><b>Note:</b> Doses should be given in three divided doses. Maximum time between doses should not exceed 12 hrs.</p> <p><b>Note:</b> Renal dosing<br/>CrCl &lt;15 ml/min – 300 mg QOD<br/>CrCl 15-30 ml/min – 300mg QD<br/>CrCl 30-60 ml/min – 300mg bid</p> <p><b>Note:</b> There has been some incidence of fecal and urinary incontinence reported in some clinical literature..</p> <p><b>Note:</b> Discontinue slowly over at least one week</p> |

**Medication Usage Evaluation  
Gabapentin (Neurontin)**

|   |      |  |
|---|------|--|
|   |      |  |
| <u>ADMINISTERING</u><br>A. Incident form report generated due to misadministration<br>B. Patient education performed when required  | 100% | Medication dose/education is correctly provided. |
| <u>MONITORING</u><br>A. Monitoring parameters: <ul style="list-style-type: none"> <li>▪ Reduction in seizure frequency</li> <li>▪ There is no well-defined therapeutic range for Gabapentin and optimal plasma concentrations have not been established</li> <li>▪ Routine monitoring of clinical laboratory parameters is not recommended with Gabapentin</li> </ul> | 100% |  |
| <u>SYSTEMS/MANAGEMENT CONTROL</u><br>A. Drug use is consistent with care plan<br>B. Drug is appropriate with consideration of concomitant therapy   | 100% | Patient care is planned and carried out.         |

**REVISED SEPTEMBER 08**

**Medication Usage Evaluation  
Lamotrigine (Lamictal)**

| MEDICATION USE PROCESS ELEMENTS  | S                               | COMMENTS  |
|--|---------------------------------|---|
| <p><b><u>PRESCRIBING</u></b></p> <p>A. Indications:<br/> <b>FDA Approved:</b><br/>           Lenox-Gastaut Syndrome<br/>           Partial Seizures</p> <p><b>OFF-LABEL USES:</b><br/>           Bipolar Disorder<br/>           Brain Injury<br/>           Chlreoathetosis<br/>           Dementia – Frontal Lobe<br/>           Epilepsy (absence, reflex and refractory)<br/>           Epileptic Psychosis<br/>           Headache<br/>           Infantile Neuronal Ceroid Lipofuscinosis<br/>           Migraine<br/>           Pain<br/>           Rett Syndrome<br/>           Sexual Dysfunction<br/>           Status Epilepticus<br/>           Tinnitus<br/>           Trigeminal Neuralgia</p> <p>B. Contraindications:<br/>           Absolute</p> <ul style="list-style-type: none"> <li>• Hypersensitivity to Lamotrigine</li> </ul> <p align="center"><b>Relative</b></p> <ul style="list-style-type: none"> <li>• Renal, hepatic, or cardiac functional impairment</li> </ul> | <p align="center">100<br/>%</p> | <p>Exceptions:</p> <p>Call pharmacy for a complete list.</p> <p>Caution with concomitant use of other anticonvulsants.</p> <p><b>NOTE:</b><br/>           Discontinue at first sign of rash.</p> <p>Rash may occur on rapid titration or with concomitant therapy with valporic acid.</p> <p>Relative contraindications must weigh risk versus benefit. Document in chart</p> |

**Medication Usage Evaluation  
Lamotrigine (Lamictal)**

|  |                                 |   |
|--|---------------------------------|---|
| <p><b><u>DISPENSING</u></b></p> <p>A. Drug related problem detected during new order screening</p> <p>B. Dosage Range<br/>Effective dose<br/>C &amp; A: PO 0.15 – 15 mg/kg/ day<br/>Adult: PO 300 mg – 500 mg/day</p> <p>Renal: Use reduced maintenance dose</p> <p>Hepatic: moderate – reduce doses by 50%<br/>Severe – reduce doses by 75%</p> <p>C. <b>Dosage</b><br/>Regularly Scheduled. No prn use acceptable</p> <p>D. <b>Route</b><br/>Lamotrigine chewable dispersible tablets may be swallowed whole, chewed, or dispersed in water or diluted in fruit juice.</p> | <p align="center">100<br/>%</p> | <p>Must justify any variance in dose in the progress notes</p> <p>Lower doses of 100 – 150 mg/d are used with concomitant valporic acid therapy but may be as low as 25 mg every other day</p> <p>Initial dose in adults is 50mg daily for 2 weeks</p> <p>Titrate doses upwards by 100 mg/d every 1 – 2 weeks to effective dose in adults.</p> <p>Titrate by increments of 1-3 mg/kg/day bid in 1-2 week intervals in children.</p> <p>May reach doses of up to 200 mg/d in patients on valporic acid</p> <p>May reach doses of 400-500mg/d in patients on enzyme-inducing drugs</p> <p>Clinical response should be considered during escalation and maintenance doses</p> <p>Chewed tablets should be taken with water or dilute fruit juice</p> |
|--|---------------------------------|---|

**Medication Usage Evaluation  
Lamotrigine (Lamictal)**

|   |                  |  |
|---|------------------|--|
| <p><b><u>ADMINISTERING</u></b></p> <p>A. Incident form report generated due to misadministration<br/>B. Patient education performed when required</p>   | <p>100<br/>%</p> | <p>Medication dose/education is correctly provided</p>   |
| <p><b><u>MONITORING</u></b></p> <p>A. Monitoring Parameters:<br/>Discontinue at the first sign for rash</p> <p>B. Concomitancy</p> <ol style="list-style-type: none"> <li>1. Use with Valporate may require lower doses</li> <li>2. Lamotrigine can be used with hepatic enzyme inducers without valporic acid</li> </ol> | <p>100<br/>%</p> | <p>Monitor patient for life threatening Steven – Johnson syndrome or toxic epidermal necrolysis and discontinue drug immediately. Slower dose titration is recommended especially in children to prevent the occurrence of rash. Avoid abrupt discontinuation of drug therapy because of withdrawal seizures, drug should be taper off slowly.</p> |
| <p><b><u>SYSTEM/MANAGEMENT CONTROL</u></b></p> <p>A. Medication use is consistent with care plan<br/>B. Medication is appropriate with consideration of concomitant therapy</p>   | <p>100<br/>%</p> | <p>Patient care is planned and carried out</p>   |

**Medication Usage Evaluation  
Topiramate (Topamax)**

| MEDICATION USE PROCESS ELEMENTS   | S                               | COMMENTS   |
|---|---------------------------------|--|
| <p><b><u>PRESCRIBING</u></b></p> <p><b>C. Indications:</b><br/> <b>FDA Approved:</b><br/>           Generalized Tonic-Clonic Seizures<br/>           Lenox-Gastaut Syndrome(adjunct )<br/>           Partial Onset Seizures(adjunct)</p> <p><b>Off –LABEL USES:</b><br/>           Bipolar Disorder/ Mood Stabilizer<br/>           Angelman’s Syndrome<br/>           Binge-eating Disorder<br/>           Bulimia Nervosa<br/>           Cluster Headache<br/>           Tourette’s Syndrome<br/>           Infantile spasm</p> <p><b>D. Contraindications:</b><br/>           Absolute</p> <ul style="list-style-type: none"> <li>• Hypersensitivity to Topiramate</li> </ul> <p align="center"><b>Relative</b></p> <ul style="list-style-type: none"> <li>• Urolithiasis</li> <li>• Paresthesia</li> <li>• Renal impairment or hepatic impairment</li> <li>• Behavioral disorder with cognitive deficits</li> </ul> | <p align="center">100<br/>%</p> | <p><b><u>NOTE:</u></b><br/>           FDA notified healthcare professionals reports of medication dispensing or prescribing errors between Toprol-XL (metoprolol succinate) extended release tablets, indicated for the treatment of hypertension, long-term treatment of angina pectoris, and heart failure NYHA Class II or III, and Topamax (topiramate), a product of Ortho-McNeil Neurologics, Inc, indicated for the treatment of epilepsy and migraine prophylaxis. There have also been reports of medication errors involving confusion between Toprol-XL and Tegretol or Tegretol-XR (carbamazepine), products of Novartis Pharmaceuticals Corporation, indicated for the treatment of complex partial seizures, generalized tonic-clonic seizures, and trigeminal neuralgia. These reports include instances where Toprol-XL was incorrectly administered to patients instead of Topamax, Tegretol, or Tegretol-XR, and vice versa, some of them leading to adverse events.</p> <p>Relative contraindications must weigh risk versus benefit. Document in chart</p> |
| <p><b><u>DISPENSING</u></b></p> <p><b>E.</b> Drug related problem detected during new order screening</p> <p><b>F.</b> Dosage Range<br/>           C &amp; A: PO 5 – 9 mg/kg/ day<br/>           Adult: PO 50 mg – 400 mg/day</p> <p>Renal: CrCl &lt; 70ml/min/1.73m(2) ½ adult dose</p> <p><b>G.</b> Dosage<br/>           Regularly Scheduled. No prn use acceptable</p>  | <p align="center">100<br/>%</p> | <p>Must justify any variance in dose in the progress notes</p> <p>Initial dose of 50 mg po qpm x 1 week. Then bid on a weekly basis</p> <p>Titrate doses upwards by 50 mg a week to effective dose in adults.</p> <p>Titrate by increments of 1-3 mg/kg/day bid in 1-2 week intervals.</p> <p>May reach doses of up to 1600 mg/d in the treatment of seizures. Doses &gt;1600mg/day have not been used.</p> <p>Note: dosage adjustment with enzyme - inducing anti-epileptic drugs.</p>  |

**Medication Usage Evaluation  
Topiramate (Topamax)**

|   |              |  |
|---|--------------|--|
| <p>H. Route<br/>Capsule maybe swallowed whole or opened and sprinkled on a small amount of soft food (about 1 teaspoon).</p>  |              | <p>Rapid upward titration may cause dizziness, somnolence, and paresthesias</p> <p>The food mixture must be swallowed whole and not chewed</p>   |
| <p><b><u>ADMINISTERING</u></b></p> <p>C. Incident form report generated due to misadministration<br/>D. Patient education performed when required</p>   | <p>100 %</p> | <p>Medication dose/education is correctly provided</p>   |
| <p><b><u>MONITORING</u></b></p> <p>C. Monitoring Parameters:<br/>Body Weight – may cause weight loss and decrease in appetite<br/>Clinical Evidence of cognitive dysfunction (memory impairment, poor judgment, confusion)<br/>Monitor body temperature (<b>hyperthermia</b>)<br/>Monitor for decrease sweating (<b>oligohidrosis</b>)</p> <p>D. Concomitancy</p> <ol style="list-style-type: none"> <li>1. Use with Valporate may require upward dose modification of both drugs</li> <li>2. Use with Tegretol may require upward dose modification of Topiramate when Tegretol is added on</li> </ol> | <p>100 %</p> | <p>Note: withdraw drug gradually. Drug may cause acute myopia and secondary angle glaucoma.</p> <p><b><u>Note:</u></b><br/><b>Oligohidrosis and Hyperthermia has been reported in association with Topamax. This report has primarily involved children: Thus avoid elevated environmental temperatures /vigorous activity and proper hydration is recommended .</b></p> |

**Medication Usage Evaluation  
Topiramate (Topamax)**

|  |                  |  |
|--|------------------|--|
| <p><u>SYSTEM/MANAGEMENT CONTROL</u></p> <p>C. Medication use is consistent with care plan<br/>D. Medication is appropriate with consideration of concomitant therapy</p> | <p>100<br/>%</p> | <p>Patient care is planned and carried out</p> |
|--|------------------|--|

REVISED SEPTEMBER 08



## Medication Usage Evaluation Anxiolytics

|   |             |   |
|---|-------------|---|
| <p><i>C &amp; A:</i> PO 0.5-10 mg/day<br/>IM 0.5-2.0 mg/dose</p> <p><i>Adult:</i> PO 0.5-16 mg/day<br/>IM 2-4 mg/dose</p> <p>8. Oxazepam (Serax7)<br/><i>Adult:</i> PO 30-120 mg/day</p> <p>9. Temazepam (Restoril7)<br/><i>Adult:</i> PO 7.5-30 mg/day (for insomnia)</p> <p>C. Duration of Therapy<br/>1. Buspirone - an adequate trial would be at least 4 weeks on an optimum dose</p> <p>D. Dosage<br/><u>Benzodiazepines</u><br/>1. May be regularly scheduled divided doses, single bedtime doses, or prn doses<br/><u>Buspirones</u><br/>1. Should use divided doses, regularly scheduled</p> |             | <p>Discontinued due to intolerable side effects or the diagnosis changes.</p>                 |
| <p><u>ADMINISTERING</u><br/>A. Incident report generated due to misadministration<br/>B. Patient education performed when required</p>  | <p>100%</p> | <p>Medication dose/education is correctly provided.</p>                                       |
| <p><u>MONITORING</u><br/>A. Concomitancy:<br/>1. May be used with other psychotherapeutic medications<br/>2. Should not be combined with another benzodiazepine</p> <p>B. Monitoring parameters:<br/>1. Blood chemistries with emphasis on hepatic and renal functions; baseline and annually<br/>2. Pregnancy test - as indicated</p>  | <p>100%</p> | <p>Provide documentation in the progress notes if more than one benzodiazepine is needed.</p> |
| <p><u>SYSTEMS/MANAGEMENT CONTROL</u><br/>A. Medication use is consistent with care plan<br/>B. Medication is appropriate with consideration of concomitant therapy</p>  | <p>100%</p> | <p>Patient care is planned and carried out</p>  |

**Medication Usage Evaluation  
Strattera ( Atomoxetine Hcl )**

| MEDICATION USE PROCESS ELEMENTS  | S           | COMMENTS  |
|--|-------------|---|
| <p><b>PRESCRIBING</b></p> <p>A. <b>Indications:</b> Treatment of Attention Deficit Hyperactivity Disorder.</p> <p>B. <b>Contraindications:</b></p> <p><b><u>Absolute:</u></b></p> <ul style="list-style-type: none"> <li>• Closed - angle glaucoma</li> <li>• Monoamine oxidase inhibitors</li> <li>• Hypersensitivity to atomoxetine</li> </ul> <p><b><u>Relative:</u></b></p> <ul style="list-style-type: none"> <li>• <i>Hypertension and other cardiovascular diseases</i></li> <li>• <i>Renal disease</i></li> <li>• <i>Liver disease</i></li> <li>• Patients at risk for hypotension</li> <li>• <i>Pregnancy category C</i></li> <li>• <i>Breastfeeding</i></li> <li>• Urinary retention and bladder dysfunction</li> <li>• Concomitant administration with CYP 2D6 inhibitors(paxil,zoloft,quinidine)</li> <li>• Concomitant administration of Atomoxetine with a B-agonist(Albuterol)</li> <li>• Concomitant administration of Atomoxetine with Vasopressors and Sympathomimetics</li> </ul> | <p>100%</p> | <p><b><u>NOTE:</u></b><br/>The FDA directed the manufacturer of Strattera (atomoxetine), to revise the prescribing information to include a boxed warning and additional warning statements that alert health care providers of an increased risk of suicidal thinking in children and adolescents being treated with this medication. FDA also informed Lilly that a Patient Medication Guide (MedGuide) should be provided to patients when Strattera is dispensed. The MedGuide advises patients of the risks associated with and precautions that can be taken when Strattera is dispensed. Further, pediatric patients being treated with Strattera should be closely observed for clinical worsening, as well as agitation, irritability, suicidal thinking or behaviors, and unusual changes in behavior, especially during the initial few months of a course of drug therapy, or at times of dose changes, either increases or decreases.</p> <p><b><u>Note :</u></b> Wait at least two weeks after discontinuing a Monoamine Oxidase Inhibitor before starting Atomoxetine.<br/>Relative contraindications must weigh the risk versus benefit.<br/>Document in charts.</p> <p><b><u>Note :</u></b> Dosage adjustment may be needed when combining Atomoxetine with drugs that inhibit the CYP2D6(increase in Atomoxetine AUC)</p> <p><b><u>Note:</u></b> increase heart rate and blood pressure has been potentiated when Atomoxetine has been coadministered with B-agonist.</p> |

**Medication Usage Evaluation  
Strattera ( Atomoxetine Hcl )**

**DISPENSING**

**A. Drug-related problem detected during new order screening:**

- Dyspepsia
- Somnolence
- Dizziness
- Anxiety
- Weight loss
- Anorexia
- Decreased appetite
- Nausea/Vomiting
- Abdominal pain
- Rash
- Urinary retention
- Impaired sexual dysfunction
- Fatigue
- Mood swings.

**B. Dosage range: (Adults and C & A)**

**Recommended Guidelines**

- **Adults/elderly/adolescents/children/ > 6yrs and weight >70kg** Initial dose 40mg/day in one or two divided doses

**After 3 days may titrate to 80mg in one or two divided After 2-4weeks in patients with suboptimal response titratedose up to 100mg/day in one or two divided doses.**

- **Adolescents/children/ > 6yrs and weight <70kg**

Initially 0.5mg/kg/day in one or two divided doses  
**After 3 days may increase to a target dose of 1.2mg/kg/day.No additional benefit seen in dose >1.2mg/kg/day**

- **Children < 6yrs safe and effective use has not been established.**

C. Dosage :10mg, 18mg, 25mg, 40mg, 60mg.(capsules)

100%

It is not necessary to increase the dose if the patient has obtained a good response to the medication at that dose.

**Note :**

- **Atomoxetine** may be given as a single dose in the morning or in evenly divided doses in the morning and the late afternoon/early evening. Patients with insomnia should take their last dose before 6pm.
- **Atomoxetine** may be given without regards to food. If nausea occurs give each dose after a meal.
- **Atomoxetine** may be discontinued without tapering.

**Note maximum dosage limits**

- **Adults** : 100mg/day
- **Elderly**: 100mg/day
- **Adolescent(weight >70kg)**:100mg/day
- **Adolescents(weight <70kg/day)**: 1.4mg/kg/dayor 100mg po whichever is less.
- **Children >6yrs(weight >70kg)**: 100mg/day
- **Children >6yrs (weight <70kg)**: 1.4mg/kg/day or 100mg/day whichever is less
- **Children <6yrs** safe and effective use not established.

**Note: Patients with hepatic impairment:**

Moderate hepatic impairment(Child-Pugh Class B) Reduce initial and target does by 50%  
Severe hepatic impairment(Child-

**Medication Usage Evaluation  
Strattera ( Atomoxetine Hcl )**

|   |      |  |
|---|------|--|
|   |      | Pugh Class C) Reduce initial and target dose by 75% of normal. |
| <u>ADMINISTERING</u><br>A. Incident form report generated due to misadministration<br>B. Patient education performed when required <ul style="list-style-type: none"> <li>• Can be taken with or without food.</li> <li>• Patient should not operate machinery or drive until certain of medication effect.</li> <li>• Consult physician if pregnant or nursing.</li> <li>• General adverse effects.</li> </ul> | 100% | Medication dose/education is correctly provided.               |
| <u>MONITORING</u><br>A. Monitoring parameters: Growth   | 100% |  |
| SYSTEMS/MANAGEMENT CONTROL<br>A. Drug use is consistent with care plan<br>B. Drug is appropriate with consideration of concomitant therapy  | 100% | Patient care is planned and carried out.                       |

**Medication Usage Evaluation  
Strattera ( Atomoxetine Hcl )**

| MEDICATION USE PROCESS ELEMENTS  | S    | COMMENTS  |
|--|------|---|
| <p><b><u>PRESCRIBING</u></b><br/> A. Indications:<br/> 1. Treatment of Parkinson's disease<br/> 2. Alleviation of extrapyramidal side effects (EPS) induced by antipsychotic drugs<br/> 3. Use in prophylaxis of EPS induced by antipsychotic drugs</p> <p>B. Contraindications:<br/> <b><u>Absolute</u></b><br/> 1. History of anaphylactic reaction or similarly severe significant hypersensitivity to the medication prescribed<br/> <b><u>Relative</u></b><br/> 1. Allergies<br/> 2. Angle closure (narrow angle) glaucoma<br/> 3. Prostatic hypertrophy<br/> 4. Tardive dyskinesia<br/> 5. Alzheimer's disease</p>   | 100% | <p>Note diagnosis if not one of the listed</p> <p>Relative contraindications must weigh risk versus benefit. Document in the chart.</p> |
| <p><b><u>DISPENSING</u></b><br/> A. Drug-related problem detected during new order screening</p> <p>B. Dosage Range<br/> 1. Amantadine (Symmetrel®)<br/> C &amp; A: PO 50-400 mg/day<br/> Adult: PO 50-400 mg/day<br/> 2. Benzotropine (Cogentin®)<br/> C &amp; A: PO 0.5-8 mg/day<br/> IM 1-2 mg/dose<br/> Adult: PO 0.5-8 mg/day<br/> IM 1-2 mg/dose<br/> 3. Diphenhydramine (Benadryl®)<br/> C &amp; A: PO 25-400 mg/day<br/> IM 25-50 mg/dose<br/> Adult: PO 25-400 mg/day<br/> IM 25-50 mg/dose<br/> 4. Trihexyphenidyl (Artane®)<br/> C &amp; A: PO 2-15 mg/day<br/> Adult: PO 2-15 mg/day</p> <p>C. Dosage<br/> 1. PO may be given in 1 to 3 divided doses per day or used prn</p> <p>D. Route<br/> 1. IM switched to po after symptoms abate</p> | 100% | <p>Must justify any variance in dose in the progress notes.</p>   |
| <p><b><u>ADMINISTERING</u></b><br/> A. Incident report generated due to misadministration<br/> B. Patient education performed when required</p>  | 100% | <p>Medication dose/education is correctly provided.</p>   |
| <p><b><u>MONITORING</u></b><br/> A. Concomitancy:<br/> 1. Should not use with Chlorpromazine, Thioridazine, or</p>   | 100% | <p>Documentation of use if patient is extremely</p>   |

**Medication Usage Evaluation  
Strattera ( Atomoxetine Hcl )**

|  |      |   |
|--|------|---|
| <p>Mesoridazine</p> <ol style="list-style-type: none"> <li>2. Should use with caution with other anticholinergic agent such as tricyclic antidepressants</li> <li>3. Amantadine may be used in combination with other EPS agents</li> </ol> <p>B. Monitoring parameters:</p> <ol style="list-style-type: none"> <li>1. EKG (Age &gt; 45) baseline and annually or as indicated</li> <li>2. CBC, renal and hepatic functions - baseline and annually or as indicated</li> <li>3. UA - baseline</li> </ol> |      | sensitive to these antipsychotics.      |
| <p><u>SYSTEMS/MANAGEMENT CONTROL</u></p> <p>A. Medication use is consistent with care plan</p> <p>B. Medication is appropriate with consideration of concomitant therapy</p>   | 100% | Patient care is planned and carried out |



**Medication Usage Evaluation  
EPS Medications**

|  |      |   |
|--|------|---|
| <p>Mesoridazine</p> <ol style="list-style-type: none"> <li>2. Should use with caution with other anticholinergic agent such as tricyclic antidepressants</li> <li>3. Amantadine may be used in combination with other EPS agents</li> </ol> <p>B. Monitoring parameters:</p> <ol style="list-style-type: none"> <li>1. EKG (Age &gt; 45) baseline and annually or as indicated</li> <li>2. CBC, renal and hepatic functions - baseline and annually or as indicated</li> <li>3. UA - baseline</li> </ol> |      | sensitive to these antipsychotics.      |
| <p><u>SYSTEMS/MANAGEMENT CONTROL</u></p> <p>A. Medication use is consistent with care plan</p> <p>B. Medication is appropriate with consideration of concomitant therapy</p>   | 100% | Patient care is planned and carried out |





**Medication Usage Evaluation  
Beta Blockers**

|   |      |   |
|---|------|---|
| hospital  |      |   |
| <u>SYSTEMS/MANAGEMENT CONTROL</u><br>A. Medication use is consistent with care plan<br>B. Medication is appropriate with consideration of concomitant therapy | 100% | Patient care is planned and carried out |

REVISED SEPTEMBER 08