Wisconsin Drug Utilization Review DUR PROJECT

September 2015

Affected Programs: BadgerCare Plus, Medicaid
To: Advance Practice Nurse Prescribers with Psychiatric Specialty, Nurse Practitioners, Pharmacies, Physician Assistants, Physicians

Stimulant Drug Use in Children and Adolescents

Due to the high volume, cost, and daily dosages of stimulants prescribed to BadgerCare Plus and Medicaid members, the Wisconsin Drug Utilization Review (DUR) Board initiated a review of stimulants prescribed to children enrolled in BadgerCare Plus and Medicaid. The DUR Board established dosage limits and conducted a review of stimulants prescribed to children 14 years of age or younger in dosages exceeding 125 percent of the maximum daily dosage.

In November 2013, the DUR Board sent letters to prescribers who had two or more children under their care exceeding the dosage threshold to inform them of this fact. A total of 155 prescribers and 352 children were identified in the intervention. These letters included the children's BadgerCare Plus or Medicaid prescription claim history, along with a survey form. (For information regarding this survey, see the Primary Findings of Survey Results section of this letter.)

In July 2014, the DUR Board performed a follow-up review of stimulant prescription data for the same population. Significantly, this data showed a 50 percent reduction in the number of children who exceeded the maximum daily dosage threshold. This data also showed a 41 percent reduction in the number of prescribers who had members exceeding the maximum daily dosage threshold.

The following table includes maximum daily dosage limits established by the DUR Board, the member's average daily dosage pre- and post-intervention, as well as the percentage change.

Drug	Maximum Daily Dosage Limit	Average Pre-intervention Daily Dosage (n=352)	Average Post-intervention Daily Dosage (n=339)	Percentage Change
Amphetamine Mixed Salts (Adderall)	75	92.4	77.5	-16.1%
Dexmethylphenidate (Focalin)	37.5	50.5	35.6	-29.6%
Dextroamphetamine	50	67.4	38.7	-42.6%
Lisdexamphetamine (Vyvanse)	87.5	102.8	70.0	-32.0%
Methylphenidate	75	88.5	55.4	-37.4%
Methylphenidate ER (Concerta)	90	106.8	91.1	-14.7%
Methylphenidate Transdermal (Daytrana)	37.5	47.9	37.3	-22.1%

Primary Findings of Survey Results

More than 90 percent of the prescribers submitted feedback on prescribing practices and the use of symptom checklists. The critical findings were:

- Prescribers use varying strategies for determining stimulant dosages, including the following:
  - Dose on a milligram/kilogram basis.
  - Employ the "start low, go slow" method, which uses clinical response and absence of adverse effects to guide dosage maximum.
  - Use larger dosages for children felt to be "rapid metabolizers." (*Note:* This approach is rarely verified with genetic studies. While there is genetic variability in the metabolism of amphetamines, there is little evidence for similar variable metabolism of methylphenidate compounds.)
- Prescribers use Attention Deficit Hyperactivity Disorder (ADHD) symptom checklists inconsistently. One purpose of these checklists is to track target symptoms for monitoring dosage response. Clinic managers and prescribers indicated that the use of checklists depends greatly on clinic infrastructure variables such as staffing patterns and adherence to procedures for distributing, tracking, and retrieving checklists. By specialty, prescribers who reported using checklists for at least 75 percent of their members are as follows:
  - 87 percent of pediatricians.
  - 50 percent of nurse practitioners.
  - 40 percent of family practitioners or physician assistants.
  - 40 percent of psychiatrists.

Clinical Consideration

Epidemiological data suggest approximately 8 percent of children are diagnosed with ADHD. There is widespread national concern regarding potential overuse and abuse of stimulants among all ages. Fortunately, there are well-established guidelines for the diagnosis and treatment of ADHD, which are published by the American Academy of Child and Adolescent Psychiatry (AACAP) and the American Academy of Pediatrics (AAP). In particular, prescribers should note the following points from the AACAP, which emphasize issues of comorbidity, medication management, and monitoring of side effects:

- The prescriber is required to evaluate the patient with ADHD for the presence of comorbid psychiatric disorders. It is critical for successful treatment to identify and treat coexisting conditions of mood, thought, and behavior that also impact impulsivity and attention.
- The initial psychopharmacological treatment of ADHD should be a trial with an agent approved by the Food and Drug Administration (FDA) for the treatment of ADHD. Prescribers have several long-acting stimulants now available that conveniently cover most of the school day. Of these, Vyvanse is the least likely to be abused due to its activation only after ingestion. Concerta tablets and Daytrana patches also have less potential for abuse due to the difficulty of stimulant medication extraction.
- Rather than dosing on a milligram-per-kilogram basis, both the AAP and AACAP recommend dosing titration up to the maximum recommended dosage, stopping when the optimum clinical effect has been reached without adverse side effects. If the patient is to exceed maximum daily dosage, the prescriber would need to monitor for diversion.
- The alpha-adrenergic agents, clonidine and guanfacine, may be used as an adjunct with a stimulant for hyperactivity and impulsivity in order to minimize stimulant dosage. These agents may also be helpful as monotherapy for tics, sleep disorders, or aggression.
- During a psychopharmacological intervention for ADHD, the patient should be monitored for treatment-emergent side effects. Height and weight should be monitored with every office visit. Stimulants have cardiovascular effects so every prescriber would ideally obtain a clear family and individual history regarding congenital heart problems or suspicious cardiac

symptoms before prescribing a stimulant. This is especially critical if maximum daily recommended dosages are being exceeded.

Additional Considerations

The following should also be considered when prescribing stimulants:

- Through the prior authorization (PA) process required for the use of antipsychotic medications in children 7 years of age and younger, it has been noted that many children are prescribed stimulants in addition to antipsychotic medications. Prescribers should especially strive to be familiar with the newly established diagnostic category, Disruptive Mood Dysregulation Disorder. It is important to carefully identify children with comorbid ADHD and depression/anxiety, rather than labeling and treating them inappropriately as having bipolar disorder.
- Some children on long-acting stimulants may have activation in the late afternoon/evening that can contribute to insomnia. Clinicians may attribute this problem to a continued stimulant effect from the morning dose; however, since most stimulants are fully metabolized within 10 hours, it is more likely a rebound effect. As a result, these children may benefit from an early evening short-acting stimulant and/or a bedtime dose of clonidine or guanfacine.

The DUR Board considers the diagnosis and treatment of ADHD in children and youth critical for the health and functioning of Wisconsin's future generations. Because of the prevalence of ADHD, the high volume of stimulant medications being prescribed in Wisconsin, and the continuing concerns about diversion and potential for abuse of stimulants, the Board will continue to monitor and track this important public health issue. The DUR Board appreciates any feedback or suggestions prescribers may have. To provide feedback or suggestions, prescribers can contact the Pharmacy DUR Team at *VEDSChildrensMHG@wisconsin.gov*.

References

1) ADHD: Clinical Practice Guideline for the Diagnosis, Evaluation, and Treatment of Attention-Deficit/Hyperactivity Disorder in Children and Adolescents. Subcommittee on Attention-Deficit/Hyperactivity Disorder, Steering Committee on Quality Improvement and Management. Pediatrics Volume 128. Number 5. Nov. 1, 2011. pp. 1007-1022. (See also "Process of Care Supplemental Appendix".) *http://pediatrics.aappublications.org/content/128/5/1007.full?sid=3e35fb0c-a46c-48ea-acca-242c27660ab1*

2) Practice Parameter for the Assessment and Treatment of Children and Adolescents With Attention-Deficit/Hyperactivity Disorder. Journal of the American Academy of Child and Adolescent Psychiatry. Volume 46. Issue 7. July 2007. pp. 894-921. Pliszka, Steven MD. *http://www.jaacap.com/article/S0890-8567(09)62182-1/pdf*