Cleveland Clinic Children’s has developed an ADHD Medication Monitoring Clinic (MMC) for rapid, precise and closely monitored titration of stimulant medications (separate IRB protocol #IRB 4901). Patients receive one medication from each stimulant class (methylphenidate or dexamphetamine) each at low dose and moderate dose for a week at a time (4 total weeks of medication). Table 1 shows the different classes of stimulants and commonly prescribed brand name medications.

### Table 1: Stimulant Classes and their common Brand Name Medications

<table>
<thead>
<tr>
<th>Amphetamine</th>
<th>Methylphenidate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adderall</td>
<td>Focalin</td>
</tr>
<tr>
<td>Vyvanse</td>
<td>Concerta</td>
</tr>
<tr>
<td>Amphetamine</td>
<td>Ritalin</td>
</tr>
<tr>
<td>Methylphenidate</td>
<td>Metadate</td>
</tr>
<tr>
<td>A_FILL</td>
<td>Daytrana</td>
</tr>
<tr>
<td>Aptensio</td>
<td></td>
</tr>
</tbody>
</table>

### Background

- Cleveland Clinic Children’s has developed an ADHD Medication Monitoring Clinic (MMC) for rapid, precise and closely monitored titration of stimulant medications (separate IRB protocol #IRB 4901).
- Patients receive one medication from each stimulant class (methylphenidate or dexamphetamine) each at low dose and moderate dose for a week at a time (4 total weeks of medication). Table 1 shows the different classes of stimulants and commonly prescribed brand name medications.

### Significance/Rationale

- ADHD is one of the most prevalent conditions found within the pediatric patient population affecting 6-12% of children. The American Academy of Pediatrics practice guidelines recommend stimulant medication as the first line therapy for follow-up visits with the prescriber within 30 days of starting a medication or changing a dose is also recommended; however, the literature shows the average time to follow-up is 72 days. Lack of routine monitoring puts patients at an increased risk of side effects and discontinuation of therapy.

### Methodology

- This current study aims to assess the effectiveness and efficiency of the MMC titration process. Through a retrospective chart review, we will compare the MMC approach to that of routine management in primary care.
- Data collection will be done using a RedCap secure database and EPIC systems.
  - Types of care—Traditional Primary Care vs. Medication Monitoring for initial titration
  - Types of care for long-term follow up (PCP vs MMC)
  - # of visits and the amount of time in weeks until optimal dosage of appropriate medication is found for the patient
  - Data from 1 year and 2 year follow up:
    - Is the treatment the same medication and dosage? If no, what changed.
    - Same medication, different dosage?
    - Different stimulant medication, same class?
    - Amphetamine vs. Methylphenidate
    - Addition of a 2nd medication
    - Change in therapy to a non-stimulant medication
    - No medication

### Inclusion criteria:

- Pediatric patients ages 6-18 YO with a new diagnosis of ADHD who are started on stimulant therapy through the MMC from 2005-2015
- Age & gender matched controls with a new diagnosis of ADHD who are started on stimulant therapy 2005-2015

### Exclusion criteria:

- Patients ages less than 6 YO and greater than 18 YO.
- Patients who are treated with non-stimulant medications.
- Patients who do not have at least one full year of follow-up records in Epic.

### Targets of the Study

- Pending IRB Approval, the Retrospective Chart Review will be done throughout the Fall of 2017 and Spring of 2018.
- During this chart review it is imperative to gather data from all eligible patients across the Cleveland Clinic Health System.
- Our hope with this study is to see if there is substantial evidence to believe that MMC will be best suited to treat those diagnosed with ADHD.
- If data supports the hypothesis, the implementation of MMC will be suggested to standardize care for primary care physicians in treating ADHD.
- Our goal is to find the best treatment route to provide the best outcome and care for the ever-growing pediatric population diagnosed with ADHD.

### Civic Education

- Applied Medicine Internship Program