ADHD in Offender Health

Challenges & Rewards

W.O. McCormick Academic Day
May 10, 2019
Westin Nova Scotian

R. Kronfli, MB FRCPC
Psychiatrist in Chief
MIOU and Offender Mental Health
CZ, Nova Scotia Health Authority
Assistant Professor of Psychiatry
Dalhousie University
# Disclosure: Dr. Risk Kronfli (Past Two Years)

<table>
<thead>
<tr>
<th>Company</th>
<th>Speaker Bureau</th>
<th>Advisory Board and/or Similar Committees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergan</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Dalhousie University</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Janssen</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Lundbeck</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Otsuka</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Shire</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sunovion</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Learning Objectives

• Simplifying the Diagnosis
• Appreciate need to treat ADHD in Offender Health
• Understand the Challenges

kronflipsychiatry@gmail.com
Why is it important to identify and treat?

- ADHD is a Risk Factor for Criminal Behaviour
- Prevalence is about 10 to 50% depending on the study
- Improve the overall safety of the facility for both inmates and staff
- Increase participation in rehabilitation
- Allow patients to address psychiatric comorbidities such as SUD, ASPD, anxiety, and mood disorders more successfully
### ADHD Sufferers in Canada in 2005

<table>
<thead>
<tr>
<th></th>
<th>ADHD in children, teens (age 5–19)</th>
<th>ADHD in adults (age 20–59)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>6,182,933</td>
<td>18,567,976</td>
</tr>
<tr>
<td>Prevalence (%)</td>
<td>6%</td>
<td>4.4%</td>
</tr>
<tr>
<td>Patients with ADHD</td>
<td>370,976</td>
<td>816,990</td>
</tr>
<tr>
<td>% Diagnosed and Treated</td>
<td>33%</td>
<td>7%</td>
</tr>
<tr>
<td>Patients Diagnosed and Treated</td>
<td>122,422</td>
<td>57,189</td>
</tr>
</tbody>
</table>

**How many adults are left untreated?** 759,801

Prevalence of Adult ADHD in Your Practice

Total # of adult patients  x  Prev rate 4.4%  =  Potential patients with Adult ADHD

5000 patients practice = 220 patients
SIMPLIFY
Attention Deficit Hyperactivity Disorder – DSM-5

- Diagnostic criteria
  - > 6 of 9* symptoms of inattention X > 6 mos.
    * if 17 or older, 5 of 9 symptoms required
  - > 6 of 9* symptoms of hyperactivity-impulsivity X > 6 mos.
    * if 17 or older, 5 of 9 symptoms required
  - Several symptoms were present prior to age 12.
  - Impairment in more than one setting
  - Social, academic, or occupational impairment
    - Settings added
      - Being with friends or relatives
  - Symptoms not accounted for by another mental disorder such as a psychotic disorder, mood disorder, anxiety disorder, etc.

- Subtypes:
  - Inattentive
  - Hyperactive-Impulsive
  - Combined (most common)

ADHD: New Criterion Descriptions for Adults

- Difficulty focusing during lectures, conversations, or lengthy reading
- Often forgetful in daily activities
- Often interrupts other people
When to Screen for ADHD?

- Family history or children with ADHD
- Mood and Anxiety symptoms including poor response to treatment
- Drug abuse or drug dependence
- Disruptive behaviour with no secondary gains
- Poor school performance (GED attempts)
- Frequent changes or moving often
- Frequent conflicts
- Higher number of accidents
Screening
### 1. Inattention

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?</td>
<td>0</td>
<td>1</td>
<td>2*</td>
<td>3*</td>
<td>4*</td>
</tr>
<tr>
<td>How often do you have difficulty getting things in order when you have to do a task that requires organization?</td>
<td>0</td>
<td>1</td>
<td>2*</td>
<td>3*</td>
<td>4*</td>
</tr>
<tr>
<td>When you have a task that requires a lot of thought, how often do you avoid or delay getting started?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3*</td>
<td>4*</td>
</tr>
<tr>
<td>How often do you have problems remembering appointments or obligations?</td>
<td>0</td>
<td>1</td>
<td>2*</td>
<td>3*</td>
<td>4*</td>
</tr>
</tbody>
</table>

### 1. Hyperactivity

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3*</td>
<td>4*</td>
</tr>
<tr>
<td>How often do you feel overly active and compelled to do things, like you were driven by a motor?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3*</td>
<td>4*</td>
</tr>
</tbody>
</table>

Significant items in Red (*p=0.5); Likely to have ADHD with ≥ 4 significant items

World Health Organization
### Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Today's Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please answer the questions below, rating yourself on the criteria shown using the scale on the right side of the page. As you answer each question, place an X in the box that best describes how you have felt and conducted yourself over the past 6 months. Please give this completed checklist to your healthcare professional to discuss during today's appointment.

1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?  
   - Next  - Rarely  - Sometimes  - Often  - Very Often

2. How often do you have difficulty getting things in order when you have to do a task that requires organization?  
   - Next  - Rarely  - Sometimes  - Often  - Very Often

3. How often do you have problems remembering appointments or obligations?  
   - Next  - Rarely  - Sometimes  - Often  - Very Often

4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?  
   - Next  - Rarely  - Sometimes  - Often  - Very Often

5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?  
   - Next  - Rarely  - Sometimes  - Often  - Very Often

6. How often do you feel overly active and compelled to do things, like you were driven by a motor?  
   - Next  - Rarely  - Sometimes  - Often  - Very Often

### Part A

7. How often do you make careless mistakes when you have to work on a boring or difficult project?  
   - Next  - Rarely  - Sometimes  - Often  - Very Often

8. How often do you have difficulty keeping your attention when you are doing boring or repetitive work?  
   - Next  - Rarely  - Sometimes  - Often  - Very Often

9. How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?  
   - Next  - Rarely  - Sometimes  - Often  - Very Often

10. How often do you misplace or have difficulty finding things at home or at work?  
    - Next  - Rarely  - Sometimes  - Often  - Very Often

11. How often are you distracted by activity or noise around you?  
    - Next  - Rarely  - Sometimes  - Often  - Very Often

12. How often do you leave your seat in meetings or other situations in which you are expected to remain seated?  
    - Next  - Rarely  - Sometimes  - Often  - Very Often

13. How often do you feel restless or fidgety?  
    - Next  - Rarely  - Sometimes  - Often  - Very Often

14. How often do you have difficulty unwinding and relaxing when you have time to yourself?  
    - Next  - Rarely  - Sometimes  - Often  - Very Often

15. How often do you find yourself talking too much when you are in social situations?  
    - Next  - Rarely  - Sometimes  - Often  - Very Often

16. When you're in a conversation, how often do you find yourself finishing the sentences of the people you are talking to, before they can finish them themselves?  
    - Next  - Rarely  - Sometimes  - Often  - Very Often

17. How often do you have difficulty waiting your turn in situations where turn taking is required?  
    - Next  - Rarely  - Sometimes  - Often  - Very Often

18. How often do you interrupt others when they are busy?  
    - Next  - Rarely  - Sometimes  - Often  - Very Often

### Part B
NAME:                        DATE:  /  /

› OVER THE LAST 2 WEEKS, HOW OFTEN HAVE YOU BEEN BOTHERED BY ANY OF THE FOLLOWING PROBLEMS?

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead or of hurting yourself in some way</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

SCORE

› If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

☐ Not difficult at all  ☐ Very difficult
☐ Somewhat difficult  ☐ Extremely difficult

TOTAL SCORE:

PREVIOUS SCORE:

PREVIOUS DATE:  /  /

› DURING THE PAST 7 DAYS, HOW OFTEN DID YOU...

<table>
<thead>
<tr>
<th></th>
<th>Never in the past 7 days</th>
<th>Rarely (once or twice)</th>
<th>Sometimes (3 to 5 times)</th>
<th>Often (about once a day)</th>
<th>Very often (more than once a day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have trouble getting things organized?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have trouble concentrating on what you were reading?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Forget the date unless you looked it up?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Forget what you talked about after a telephone conversation?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Feel like your mind went totally blank?</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
THE MOOD DISORDER QUESTIONNAIRE

**Instructions:** Please answer each question to the best of your ability.

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has there ever been a period of time when you were not your usual self and...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...you felt so good or so hyper that other people thought you were not your normal self or you were so hyper that you got into trouble?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...you were so irritable that you shouted at people or started fights or arguments?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...you felt much more self-confident than usual?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...you got much less sleep than usual and found you didn’t really miss it?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...you were much more talkative or spoke much faster than usual?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...thoughts raced through your head or you couldn’t slow your mind down?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...you were so easily distracted by things around you that you had trouble concentrating or staying on track?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...you had much more energy than usual?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...you were much more active or did many more things than usual?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...you were much more social or outgoing than usual, for example, you telephoned friends in the middle of the night?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...you were much more interested in sex than usual?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...you did things that were unusual for you or that other people might have thought were excessive, foolish, or risky?</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>...spending money got you or your family into trouble?</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

2. If you checked YES to more than one of the above, have several of these ever happened during the same period of time? | ○   | ○  |

3. How much of a problem did any of these cause you – like being unable to work, having family, money or legal troubles, getting into arguments or fights? Please circle one response only:

<table>
<thead>
<tr>
<th>No Problem</th>
<th>Minor Problem</th>
<th>Moderate Problem</th>
<th>Serious Problem</th>
</tr>
</thead>
</table>

4. Have any of your blood relatives (i.e. children, siblings, parents, grandparents, aunts, uncles) had manic-depressive illness or bipolar disorder? | ○ | ○ |

5. Has a health professional ever told you that you have manic-depressive illness or bipolar disorder? | ○ | ○ |

© 2000 by The University of Texas Medical Branch. Reproduced with permission. This instrument is designed for screening purposes only and is not to be used as a diagnostic tool.
Burns Anxiety Inventory

Please indicate how much each of the following 35 symptoms has been bothering you in the past several days.

<table>
<thead>
<tr>
<th>CATEGORY I: ANXIOUS FEELINGS</th>
<th>Absent</th>
<th>Somewhat</th>
<th>Moderately</th>
<th>A lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety, nervousness, worry, or fear</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling things around you are strange or foggy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling detached from all or part of your body</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sudden unexpected panic spells</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apprehension or a sense of impending doom</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling tense, stress, &quot;uplift&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CATEGORY II: ANXIOUS THOUGHTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty concentrating</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Racing thoughts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frightening fantasies or daydreams</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling on the verge of losing control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fears of cracking up or going crazy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fears of fainting or passing out</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fears of illnesses, heart attacks or dying</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fears of looking foolish in front of others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fears of being alone, isolated or abandoned</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fears of criticism or disapproval</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fears that something terrible will happen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CATEGORY III: PHYSICAL SYMPTOMS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skipping, racing or pounding of the heart</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain, pressure or tightness in the chest</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tingling or numbness in the toes or fingers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Butterflies or discomfort in the stomach</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constipation or diarrhea</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restlessness or jitters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tight, tense muscles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweating not brought on by heat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A lump in the throat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trembling or shaking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rubbery or &quot;jelly&quot; legs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling dizzy, lightheaded or off balance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choking or smothering sensations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headaches or pains in the neck or back</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot flashes or cold chills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling tired, weak or easily exhausted</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How do I confirm the diagnosis of Adult ADHD?
Diagnosing ADHD in Adults May Be Complex

- Diagnosis of ADHD requires presence of symptoms of inattention and/or hyperactivity-impulsivity\(^1\)
- Individual symptoms may be present in healthy adults but are more severe, frequent, or impairing in adults with ADHD\(^2\)
- Individual symptoms may also be seen in other psychiatric disorders\(^2\)

Factors That May Lead to Under-diagnosis of ADHD

- Symptoms not developmentally appropriate
- Age criterion
  - If an adult patient recalls symptoms in elementary school but not before the age of 7, still consider the patient for intervention
- Clinician does not recall or “detect” symptoms
- Other psychiatric disorders take precedence over ADHD
Factors That May lead to Under-diagnosis of ADHD in SUD

- Alcohol-dependent, opiate-dependent, methamphetamine-dependent individuals have cognitive deficits compared with those who do not abuse substances.  
  
- Deficits shown to persist with abstinent alcoholics

- Early-onset cannabis users (<17 years old) exhibit poorer cognitive performance compared to late-onset users

- Lack of corroboration from older family members

- May have estranged relationships and does not want family to be contacted
Factors That May Lead to Under-diagnosis of ADHD in SUD (cont)

- If parents used alcohol / drugs, they may not remember details either
- Assuming other psychiatric disorders take precedence
  - SUD treatment settings often focus on depression, severe anxiety, or psychotic disorders
  - Requiring clinician to recall symptoms when carrying out an assessment
  - In SUD treatment settings, clinicians may not be familiar with or consider the diagnosis if ADHD
- Not recognizing that symptoms may be fewer, less obvious, or compensated for in adults
Factors That May Lead to Over-diagnosis of ADHD

♦ Not ensuring that symptoms occur in more than 1 setting
  • Lack of concentration at work but not other settings: job dissatisfaction
  • Impulsive behavior while on vacation, ie, excessive gambling, but not when home or at work

♦ Not ensuring symptoms cause impairment
  • Situations in which individuals may procrastinate or get impatient, but not impact on functioning

♦ Desire to get special consideration with test-taking
  • May be more likely to see with adolescents but possible with adults
Factors That May Lead to Over-diagnosis of ADHD in SUD Population

- Cocaine and other stimulants Withdrawal
- Alcohol withdrawal: restlessness, agitation
- Sedative-hypnotics withdrawal: restlessness, agitation
- THC withdrawal: restlessness, agitation, irritability
- Nicotine withdrawal: restlessness, irritability, frustration, anger, difficulty concentrating
- Cocaine Use: psychomotor agitation, difficulty concentrating
Overlap Between ADHD and Substance Abuse

- Excessive overlap of ADHD in SA
- ADHD ± comorbidity is risk factor for SA

RX Abuse and Diversion

- Most commonly abused prescription medication in OHS:
  - Opioids
  - Benzodiazepines/Hypnotics
  - Bupropion
  - Quetiapine
  - Gabapentin
  - Stimulants

- 70% of drugs abused are from MD prescription

- Abuse and/or Diversion can be for:
  - Euphoria
  - Sleeping through
  - Currency/reward
Prevalence of SUD: Prospective 4-Year Follow-up Study

Overall Rate of Substance Use Disorder

- Unmedicated ADHD (n=19): 75%
- Medicated ADHD (n=56): 25%
- Non-ADHD Control (n=137): 18%

*P* < .001 across groups.
Try to differentiate

- Complete a timeline for ADHD symptoms:
  - When was the onset of symptoms?
  - What type of symptoms did you have?
  - Did they change over time?

- Complete a timeline for SUD:
  - When was the onset of symptoms?
  - How heavy was the substance use?
  - Were there periods of abstinence or reduced use?
Does the Pharmacotherapy of ADHD Beget Later Substance Abuse?

- The following studies were identified:

- Loney et al. 1998, 2001 also cited in Paternite et al. 1999 (tx=182, untx=37)
- Lambert et al. 1999 (tx=93, untx=81)
- Biederman et al. 1999 & Wilens et al. 1999 (tx=145, untx=45, crtls)
- Molina et al. 1999 (tx=53, untx=73)
- Huss et al. 1999 (tx=103, untx=103)
- Barkley et al. 2003 (tx=98, untx=21)
- Huss et al., 2002, 2003 (tx=92, untx=69)
- Total sample = 766 Tx with stimulants and 429 unTx with stimulants (N=1195)
Road Map: Minimize the Abuse, Misuse and Diversion Potential of Stimulant Medications

• Beware of patient who has:
  • Past history of substance abuse
  • Unclear history
  • Family history
  • Requests for a specific medication

• Use long-acting stimulants
  • Less potential for changing route of administration
  • Less amount of circulating medication

• Provide supportive counselling during visit
• Clear guidelines and clear consequences for diversion
Antisocial Activities (by Age 27)

Lifetime Antisocial Acts

### Differential Diagnosis of ADHD and Antisocial Personality Disorder

<table>
<thead>
<tr>
<th>ADHD</th>
<th>ASPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Oblivious</td>
<td>• Manipulative</td>
</tr>
<tr>
<td>• Unable to manage activities of daily living</td>
<td>• Absence of remorse</td>
</tr>
<tr>
<td>• Self-esteem poor rather than unstable</td>
<td>• Deliberate cruelty</td>
</tr>
<tr>
<td>• Non-malicious (remorseful immediately following impulsive act)</td>
<td>• Generates antipathy in others rather than frustration</td>
</tr>
<tr>
<td></td>
<td>• Lack of empathy</td>
</tr>
</tbody>
</table>

Impact of Co-morbidity

- Increase Severity of Illness
- Makes patient less responsive to treatment
- Detracts from principle recovery
- Causes greater functional improvement
- Course and outcome for concurrent disorders is mutually deleterious
Attention Deficit Hyperactivity Disorder – DSM-5

Diagnostic criteria
(American Psychiatric Association Diagnostic and Statistical Manual [DSM-5])

- > 6 of 9* symptoms of inattention X > 6 mos.
  and/or
- > 6 of 9* symptoms of hyperactivity-impulsivity X > 6 mos.
  * if 17 or older, 5 of 9 symptoms required

Several symptoms were present prior to age 12.

Impairment in more than one setting (e.g. both school and home)

Social, academic, or occupational impairment

Symptoms not accounted for by another mental disorder such as a psychotic disorder, mood disorder, anxiety disorder, etc.

Subtypes:
- Inattentive
- Hyperactive-Impulsive
- Combined (most common)
Road Map: Diagnosis

- Evaluate comorbidity (PHQ 9, MDQ, Burns)
- Identify presence of Criteria (ASRS)
- Explore childhood history
  - Inattention
  - Impulsivity
  - Hyperactivity
**Wender-Utah and Family members are an excellent source for information**
- Assess functional impairment by asking the patient about:
  - Work/school
  - Family relationships
  - Social interactions
**Weiss Functional Impairment Tool or Sheehan Disability Scale may be valuable**
% ADHD in Adult Prisons

- ADHD prisoners: 25%
- Non-ADHD prisoners: 75%

Eyestone & Howell. 1994
Need To Treat

- Potentially altering trajectory into offending by early intervention
- Reducing substance abuse, criminal behaviour and recidivism
- Improving disruptive behaviour and aggression in inmates while incarcerated with the added benefit of reducing additional time on their sentences.
- Improving treatment for coexisting mental health disorders, suicidality and substance abuse, which commonly co-occur with ADHD and are much more effectively treated if ADHD is treated
- Allowing for better access to rehabilitation and education programs when available
The attribution of violent, rule-breaking, or antisocial behaviors to untreated ADHD should be made on a patient-by-patient basis, because such behaviors are not necessarily evidence of ADHD or targets of ADHD treatment.

- Risk management (containment, security)
  - Level of Substance Abuse is high
  - Risk of intimidation, conflict, and violence for inmates and staff
  - Diversion potential is high
    - Currency/Commodity that may be bought, sold, bartered, or stolen
    - Abuse
    - Threats to person and family

- Co-morbid conditions
- Transient patient population
- Lack of consistent policies
- Poor access to health care records
- Discontinuation of treatment upon release
Managing
Treatment Considerations

- Awareness and screening
- Efficacy Data
- Substance Abuse or Diversion
- Impact on Co-morbid Conditions
  - Worsening
  - Avoiding multiple medications
- Adherence and Convenience
  - Single dose
  - Diversion and Abuse potential
- Side Effects
PFC Requires Proper Catecholamine Levels for Optimal Function

Levels of Catecholamine release increase with arousal state

Under-aroused

Cognitive impairment inattentive, bored, drowsy

Too little $\alpha_2A/D1$

INSUFFICIENT

NE $\alpha_2A$

Moderate D1

Alert, focused, organized responsible

OPTIMAL

NE $\alpha_1,\beta_1$

Excess D1

Cognitive impairment anxious, dysphoric, stressed

EXCESSIVE

Over-aroused

DA = dopamine; NE = norepinephrine; PFC = prefrontal cortex

# Effect Sizes for Classes of Medications

<table>
<thead>
<tr>
<th>Medication</th>
<th>Condition</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR stimulants</td>
<td>ADHD</td>
<td>0.90</td>
</tr>
<tr>
<td>Long-acting stimulants</td>
<td>ADHD</td>
<td>0.95</td>
</tr>
<tr>
<td>Non-stimulants</td>
<td>ADHD</td>
<td>0.62</td>
</tr>
<tr>
<td>Prodrug stimulant</td>
<td>ADHD</td>
<td>0.98</td>
</tr>
<tr>
<td>SSRIs</td>
<td>OCD / Depression</td>
<td>0.50</td>
</tr>
<tr>
<td>Atypical antipsychotics</td>
<td>Schizophrenia</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Adapted from:
## Long-acting Stimulants Indicated for ADHD in Canada

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Active Agent</th>
<th>Delivery System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concerta®</td>
<td>Methylphenidate</td>
<td>Osmotic-controlled release oral system (OROS®)</td>
</tr>
<tr>
<td>Adderall® XR</td>
<td>Mixed amphetamine salts</td>
<td>Beaded dual-pulse capsule</td>
</tr>
<tr>
<td>Biphentin®</td>
<td>Methylphenidate</td>
<td>Multi-layer Release™</td>
</tr>
<tr>
<td>Vyvanse®</td>
<td>d-amphetamine</td>
<td>Prodrug</td>
</tr>
<tr>
<td>Foquest®</td>
<td>Methylphenidate</td>
<td>Controlled-Release Capsule</td>
</tr>
</tbody>
</table>
Diagnostic Prioritization for Initiation of Treatment on Initial Presentation

- Alcohol and substance abuse
- Mood Disorders
  - Bipolar and MDD
- Anxiety Disorders
  - Obsessive Compulsive Disorder, generalized anxiety disorder, panic
- ADHD

Order of treatment also considers the severity of the concurrent disorders.

Prioritization for Pharmacotherapy

Order of Treatment

- Alcohol and substance abuse
- Mood Disorders
  - Bipolar and MDD
- Anxiety Disorders
  - Obsessive Compulsive Disorder, generalized anxiety disorder, panic
- Schizophrenia
- ADHD

Order of treatment also considers the severity of the concurrent disorders.
Response to Psychostimulants

Meta-analysis of clinical response rate in research protocols in which the same subjects were exposed to 2 types of psychostimulant.

- Some patients respond preferentially to 1 stimulant: 28%
- Response to methylphenidate only: 16%
- Equal response to amphetamine and methylphenidate: 41%
- Response to at least one: 83%

Extended-release Stimulants

- Reduced diversion and abuse
- Improvement of co-morbidities
- Improved physical well-being
- Improved functioning/control throughout the day
- Improved skills
- Reduce staff workload
- Reduction of antisocial behaviours
- Improved convenience and adherence
Treatment of ADHD

- Efficient treatment recommendations require careful consideration of the individual co-morbidity structure.
- Biological and psychosocial treatment separate or in combination.
- Pharmacological: stimulants and non-stimulant medication.
- Stimulants are the most effective medications for the treatment of ADHD, with responsiveness rates in the 70%–80% range.
- Long-acting stimulant preparations are recommended as they result in better patient compliance and longer-lasting, smoother improvement of symptoms.
Conclusion

- Higher Percentage of ADHD in Offender Population
- Many Challenges exist but rewards are worth it
- Establish guidelines for treatment AND NON-treatment
- Establish outcomes
- Screen for other co-morbidities
- Treat with compassion and empathy despite the challenges or complaints (CPSNS)
Extra Read


• The Benefits of Recognizing and Treating ADHD in Canadian Justice and Correction Systems CADDAC
“Stop asking if we’re there yet!
We’re nomads, we’re never going to be there!”
Maybe ask me instead of this guy...

“When you talk about emotional chemical imbalances in people, there is no science behind that.”