ADHD in Offender Health

Challenges & Rewards

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Disclosure: Dr. Risk Kronfli (Past Two Years)

Company	Speaker Bureau	Advisory Board and/or Similar Committees
Allergan	X	X
Dalhousie University	X	X
Janssen	X	X
Lundbeck	X	X
Otsuka	X	X
Shire	X	X
Sunovion	X	X

Learning Objectives

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

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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

	ADHD in children, teens (age 5–19)	ADHD in adults (age 20–59)
Total Population *(estimates)*	6,182,933	18,567,976
Prevalence (%)	6%	4.4%
Patients with ADHD	370,976	816,990
% Diagnosed and Treated	33%	7%
Patients Diagnosed and Treated	122,422	57,189

How many adults are left untreated? 759,801

Kessler RC, et al, Am J Psychiatry 2006; Statistics Canada, 2004 projected to 2005;
% diagnosed calculated based on estimate of treated patients in Canada.

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.
    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
- 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)

American Psychiatrist Association: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Arlington, VA, American Psychiatrist Association, 2013

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

ASRS Screener v1.1

1. Inattention	Never	Rarely	Some-times	Often	Very Often
How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?	0	1	2*	3*	4*
How often do you have difficulty getting things in order when you have to do a task that requires organization?	0	1	2*	3*	4*
When you have a task that requires a lot of thought, how often do you avoid or delay getting started?	0	1	2	3*	4*
How often do you have problems remembering appointments or obligations?	0	1	2*	3*	4*
1. HyperactivityImpulsivity					
How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?	0	1	2	3*	4*
How often do you feel overly active and compelled to do things, like you were driven by a motor?	0	1	2	3*	4*

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

Patient Name		Today's Date	

Please answer the questions below, rating yourself on each of 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.

	Never	Rarely	Sometimes	Often	Very Often
1. How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done?					
2. How often do you have difficulty getting things in order when you have to do a task that requires organization?					
3. How often do you have problems remembering appointments or obligations?					
4. When you have a task that requires a lot of thought, how often do you avoid or delay getting started?					
5. How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?					
6. How often do you feel overly active and compelled to do things, like you were driven by a motor?					

Part A

7. How often do you make careless mistakes when you have to work on a boring or difficult project?					
8. How often do you have difficulty keeping your attention when you are doing boring or repetitive work?					
9. How often do you have difficulty concentrating on what people say to you, even when they are speaking to you directly?					
10. How often do you misplace or have difficulty finding things at home or at work?					
11. How often are you distracted by activity or noise around you?					
12. How often do you leave your seat in meetings or other situations in which you are expected to remain seated?					
13. How often do you feel restless or fidgety?					
14. How often do you have difficulty unwinding and relaxing when you have time to yourself?					
15. How often do you find yourself talking too much when you are in social situations?					
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?					
17. How often do you have difficulty waiting your turn in situations when turn taking is required?					
18. How often do you interrupt others when they are busy?					

Part B

NAME: DATE: / /

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

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
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	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3
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
- ☐ Somewhat difficult
- ☐ Very difficult
- ☐ Extremely difficult

TOTAL SCORE:

PREVIOUS SCORE:

PREVIOUS DATE: / /

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

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

THE MOOD DISORDER QUESTIONNAIRE

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

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

Name: _____ Date: _____

Burns Anxiety Inventory

Please indicate how much each of the following 33 symptoms has been bothering you **in the past several days.**

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

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]

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders. Fourth Edition, Text Revision*. 2000; 2. McCann BS, Roy-Byrne P. *Compr Psychiatry*. 2004;45:175-183.

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.[28-30]
- 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

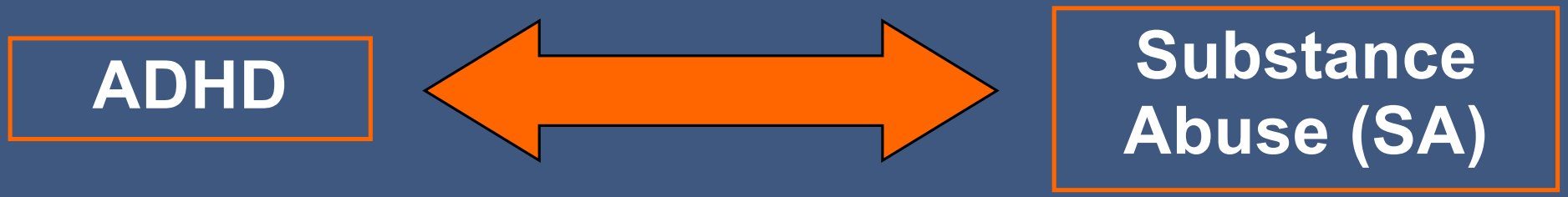
Factors That May Lead to Over-diagnosis of ADHD

- 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

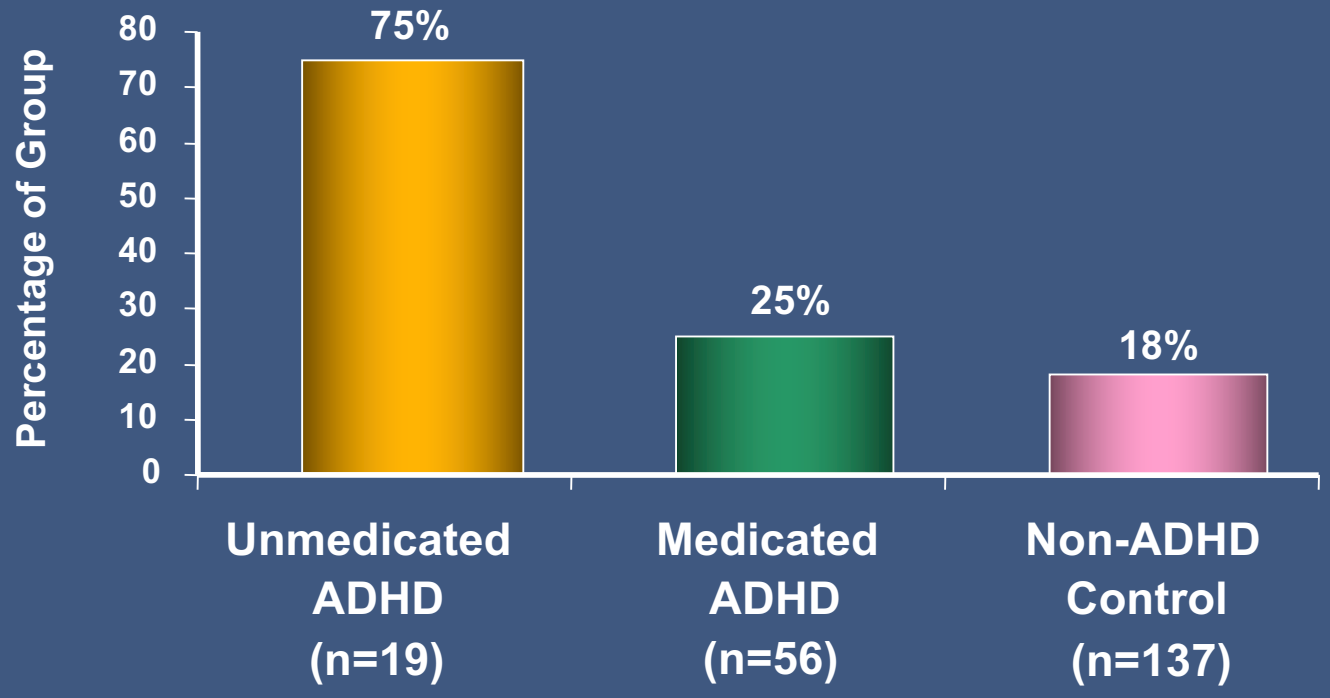
Wilens TE. *J Clin Psychiatry*. 2004;65(Suppl 3):38-45. Biederman J, et al. *Biol Psychiatry*. 1998;44(4):269-273.
Wilens TE, et al. *J Nerv Ment Dis*. 1997;185(8):475-482.

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



P<.001 across groups.

Biederman J, et al. *Pediatrics.* 1999;104:e20.

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?

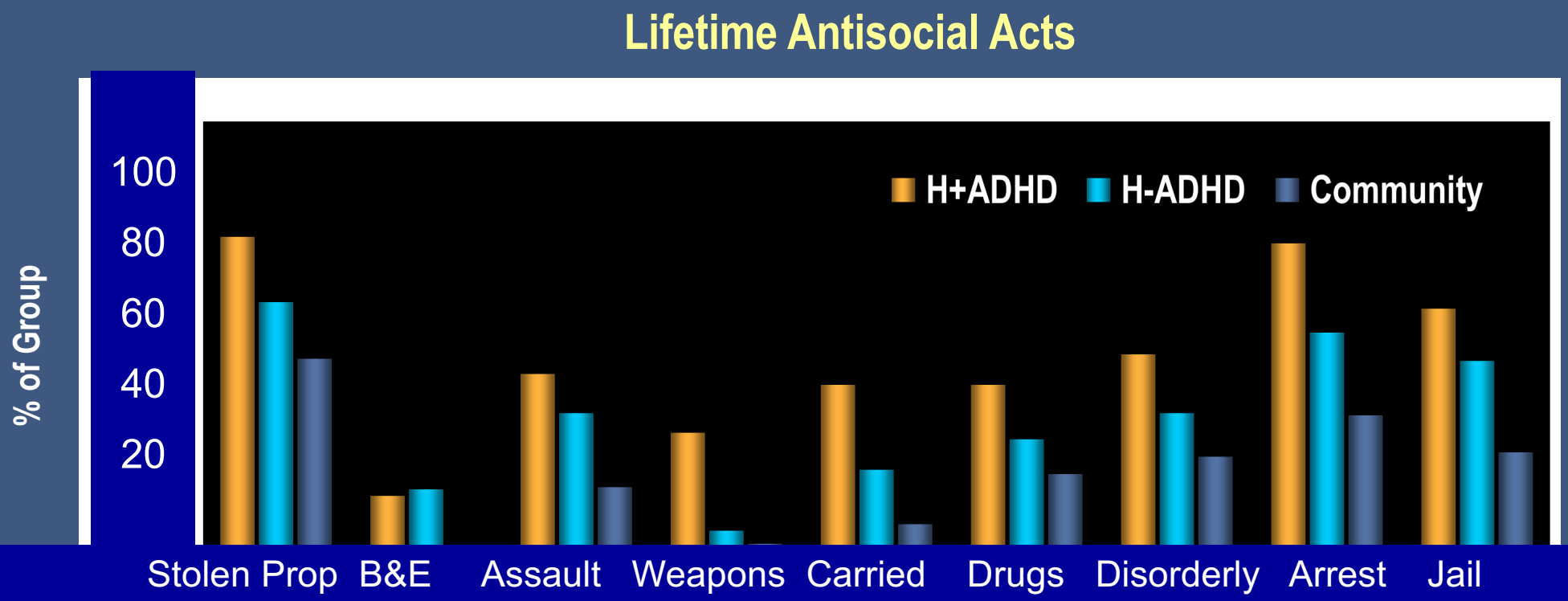
- The following studies were identified:

- 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)
- (Wilens et al, Pediatrics 2003, 111:179-185; Farsone & Wilens, J Clin Psch:In press)

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)



H+ADHD=hyperactive as a child and still ADHD at adult outcome (4+ symptoms and 1+ impairments). H-ADHD=hyperactive as a child but is not diagnosable at adult outcome
Controls=community control group.

Barkley RA, et al. *ADHD in Adults: What the Science Says*; 2008.

Differential Diagnosis of ADHD and Antisocial Personality Disorder

ADHD

- Oblivious
- Unable to manage activities of daily living
- Self-esteem poor rather than unstable
- Non-malicious (remorseful immediately following impulsive act)

ASPD

- Manipulative
- Absence of remorse
- Deliberate cruelty
- Generates antipathy in others rather than frustration
- Lack of empathy

1. Weiss, Adolescent ADHD; 2. Brown, T.E., 2009.

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)

American Psychiatrist Association: Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition. Arlington, VA, American Psychiatrist Association, 2013

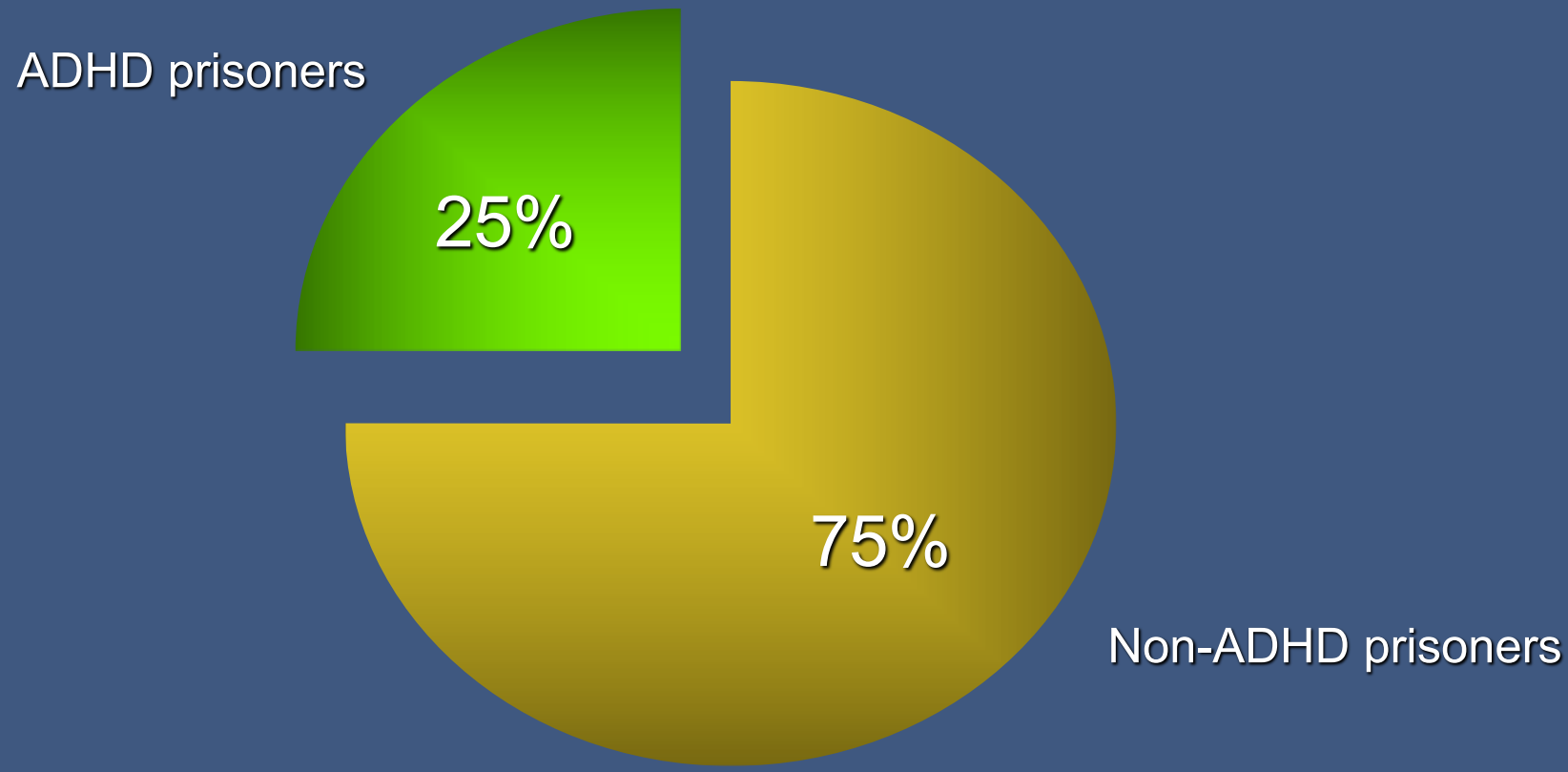
Road Map: Diagnosis

- 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



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

Challenges

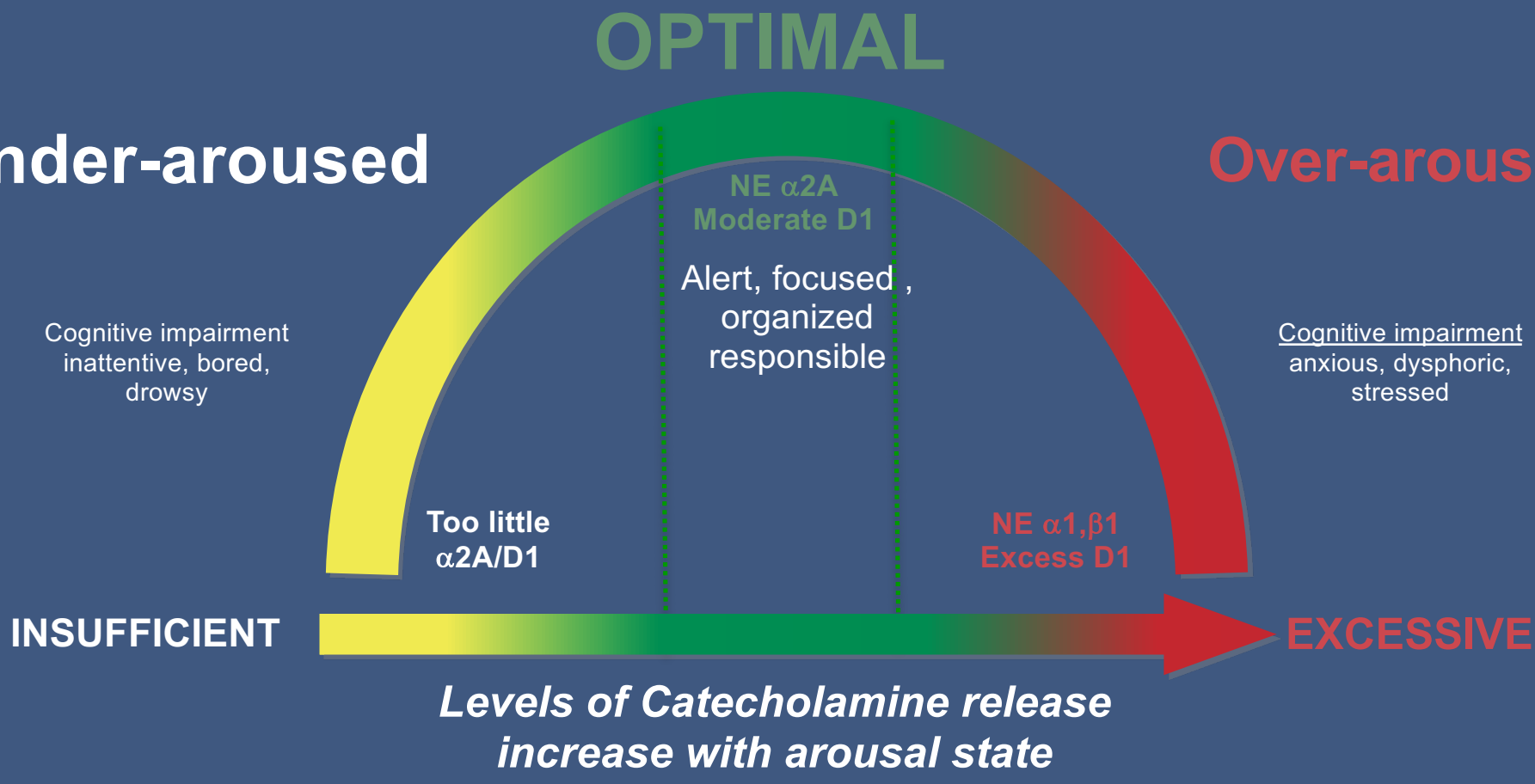
- The attribution of violent, rule-breaking, or antisocial behaviors to untreated ADHD should be made on a patient-by-patient basis, because such behaviors are not necessarily evidence of ADHD or targets of ADHD treatment
- Risk management (containment, security)
  - Level of Substance Abuse is high
  - 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



Adapted from Arnsten. *J Pediatr* 2009;154:I-S43.

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

Effect Sizes for Classes of Medications

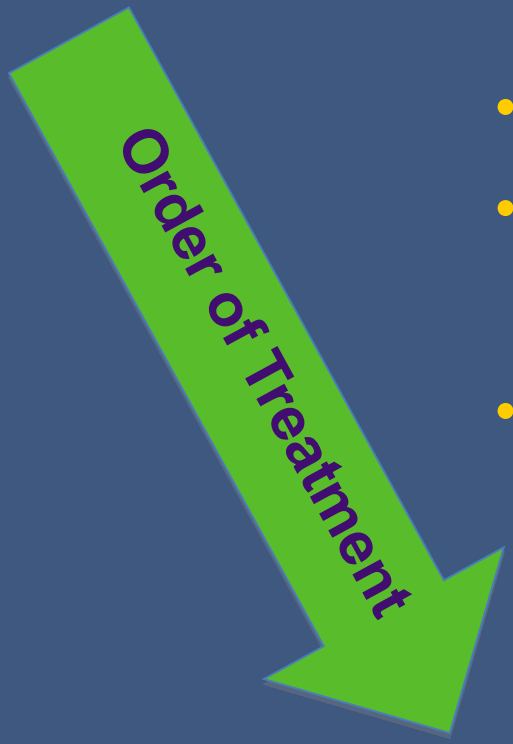
Medication	Condition	Effect size
IR stimulants	ADHD	0.90
Long-acting stimulants	ADHD	0.95
Non-stimulants	ADHD	0.62
Prodrug stimulant	ADHD	0.98
SSRIs	OCD / Depression	0.50
Atypical antipsychotics	Schizophrenia	0.25

Adapted from:
Faraone SV, *et al*: Presented at the APA 2003. Gale C, *et al: Clin Evid* 2002; 8:883-95. Geddes J, *et al: Clin Evid* 2002; 7:867-82. Hay P, *et al: Clin Evid* 2002; 7:834-45. Soomro GM: *Clin Evid* 2002; 8:896-905.
Leucht S, et al: *Schizophr Res* 1999; 35:51-68. Biederman J et al. *Clin Ther*. 2007;29:450-63;

Long-acting Stimulants Indicated for ADHD in Canada

Brand Name	Active Agent	Delivery System
Concerta®	Methylphenidate	Osmotic-controlled release oral system (OROS®)
Adderall® XR	Mixed amphetamine salts	Beaded dual-pulse capsule
Biphentin®	Methylphenidate	Multi-layer Release™
Vyvanse®	d-amphetamine	Prodrug
Foquest®	Methylphenidate	Controlled-Release Capsule

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.

Goodman D. Treatment and assessment of ADHD in adults. In: ADHD across the lifespan: From research to clinical practice – an evidence based understanding. 2005.

Prioritization for Pharmacotherapy

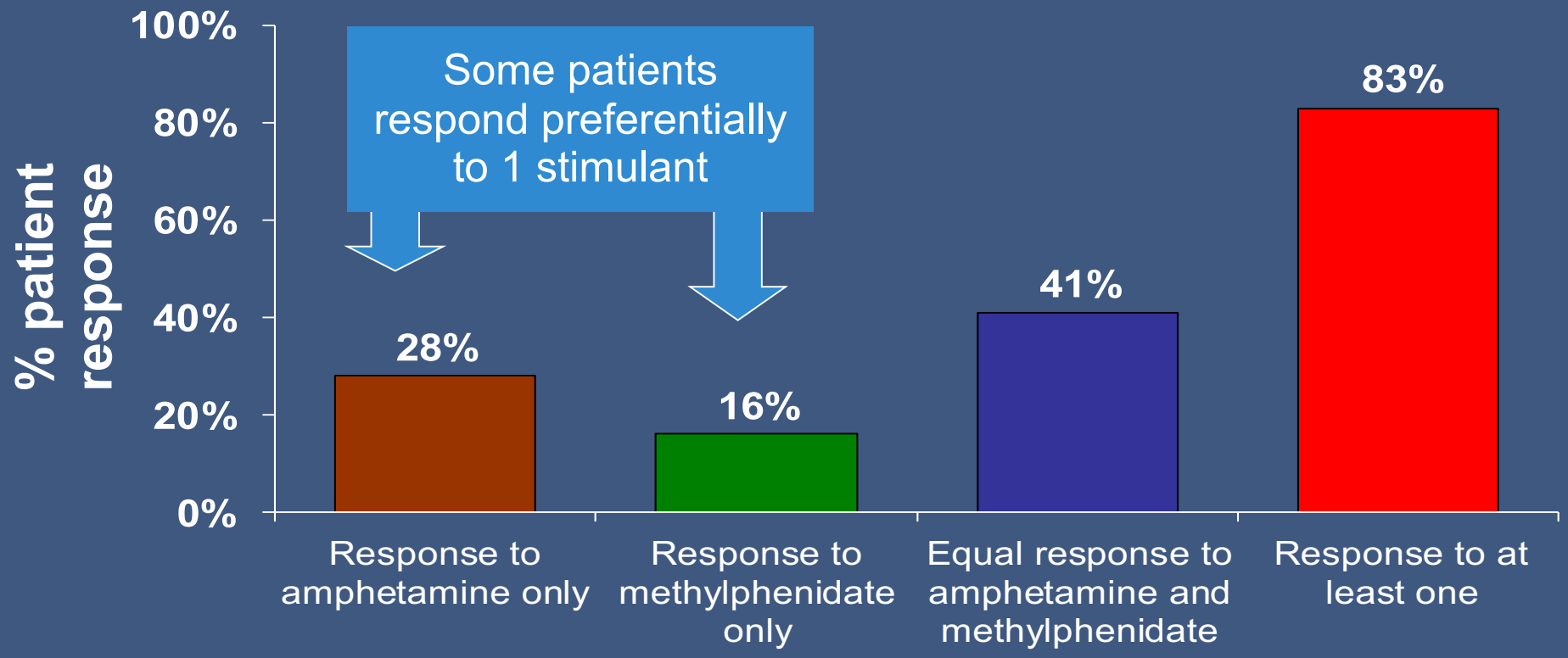
Order of Treatment

- 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



Arnold LE. *J Atten Disord.* 2000;3(4):200-211.

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.

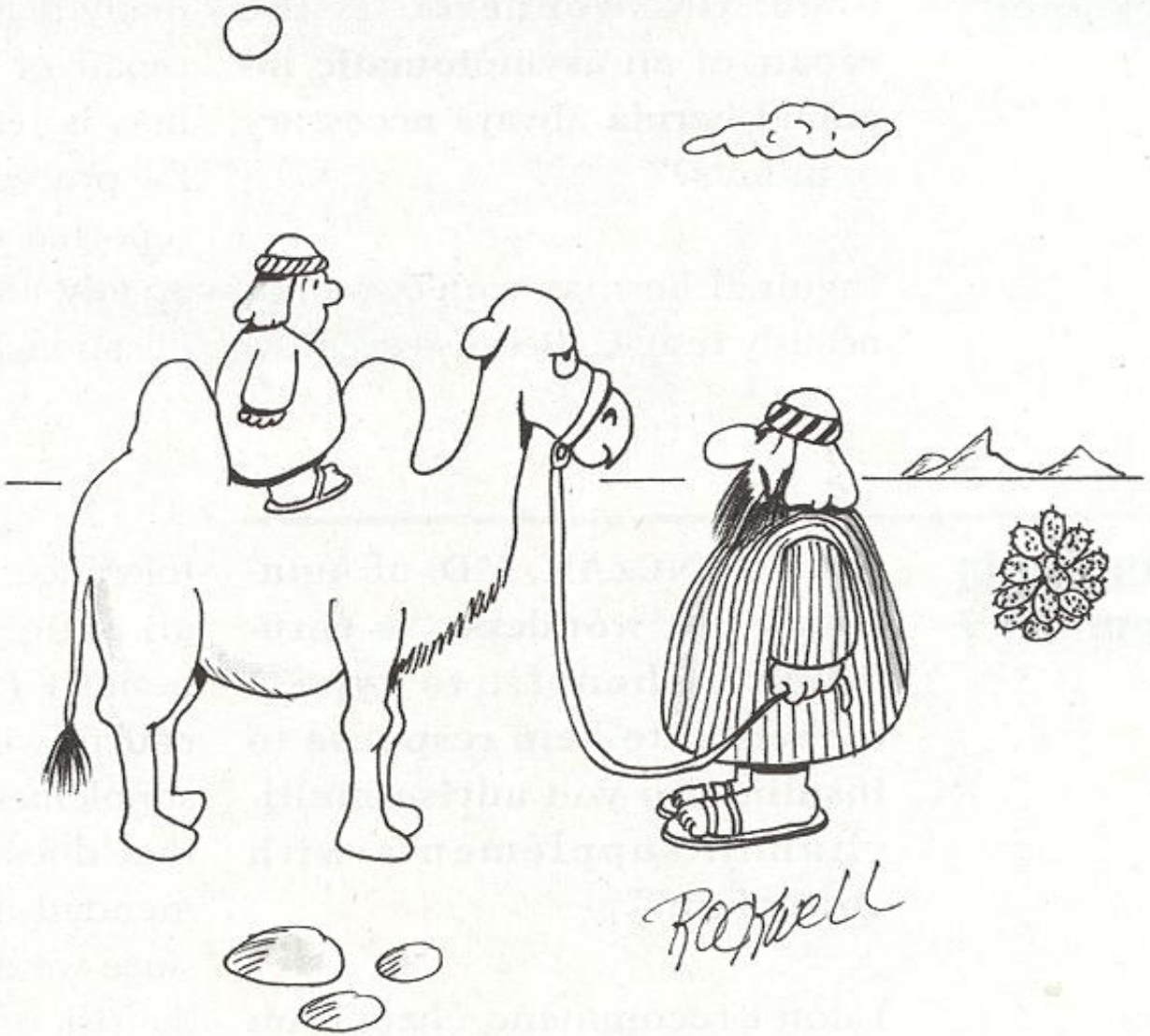
Conclusion

- 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

- *Expert Opinion and Recommendations for the Management of Attention-Deficit/Hyperactivity Disorder in Correctional Facilities.* Journal of Correctional Health Care, 2016, Vol. 22(1) 46-61. Duncan A. Scott, MD, Martin Gignac, MD, Risk N. Kronfli, MD, Anthony Ocana, MD and Gunter W. Lorberg, MD

- *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!"

Questions, Comments?

Maybe ask me instead of this guy…

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