



# MHAT

Mental Health Assessment Technology

# Introduction to MHAT





## Harrison Vision

Prevention & personalization of care

Early assessments and management

Beyond cardiovascular disease

Address mental health in primary care

Clinical support technology



## Current mental health assessments

1. Time consuming
2. Not standardized (i.e., every provider has different system for conducting assessment / asking questions)
3. Difficult to accurately screen for a number of potentially co-morbid conditions / always wondering "did I miss something?"
4. Accurate diagnosis requires remembering diagnostic criteria for 25-40 most common conditions
5. Referral requires completing a large amount of paperwork



# MHAT

MHAT is an evidence-based tool designed for primary healthcare providers that:

1. Reduces the time needed for conducting comprehensive mental health assessments.
2. Standardizes mental health assessments.
3. Assists healthcare providers with accurately identifying mental health conditions.
4. Facilitates referrals to mental health specialists.



## MHAT is NOT

1. MHAT is NOT a diagnostician
2. MHAT does NOT replace human judgment.
3. MHAT is NOT a symptom tracking tool.
4. MHAT is NOT more work for practitioners

What is MHAT?









# Diagnostic Interview for Anxiety, Mood, and OCD and Related Neuropsychiatric Disorders (DIAMOND)

Patient name: \_\_\_\_\_

Date of birth: \_\_\_\_\_ Age: \_\_\_\_\_

Interviewer: \_\_\_\_\_

Date: \_\_\_\_\_

Version 1.5

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# Psychometric Properties of a Structured Diagnostic Interview for *DSM-5* Anxiety, Mood, and Obsessive-Compulsive and Related Disorders

Assessment  
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## Abstract

Three hundred sixty-two adult patients were administered the Diagnostic Interview for Anxiety, Mood, and OCD and Related Neuropsychiatric Disorders (DIAMOND). Of these, 121 provided interrater reliability data, and 115 provided test–retest reliability data. Participants also completed a battery of self-report measures that assess symptoms of anxiety, mood, and obsessive-compulsive and related disorders. Interrater reliability of DIAMOND anxiety, mood, and obsessive-compulsive and related diagnoses ranged from very good to excellent. Test–retest reliability of DIAMOND diagnoses ranged from good to excellent. Convergent validity was established by significant between-group comparisons on applicable self-report measures for nearly all diagnoses. The results of the present study indicate that the DIAMOND is a promising semistructured diagnostic interview for *DSM-5* disorders.

## Keywords

anxiety disorders, mood disorders, obsessive-compulsive and related disorders, interview, diagnosis



## Inter-rater reliability

- kappa range= 0.62 (very good) – 1.00 (excellent)

## Test-retest reliability

- kappa range= 0.59 (good) – 1.00 (excellent)

## Convergent validity

- Median Cohen's  $d$  = 1.10 (large)



## Anxiety disorders

- Agoraphobia
- Generalized Anxiety
- Panic Disorder
- Social Anxiety / Phobia
- Specific Phobia

## Mood disorders

- Bipolar I and II
- Major depressive disorder
- Persistent depressive disorder/dysthymia

## Other disorders

- Attention-deficit hyperactivity disorder
- Posttraumatic stress disorder
- Substance use disorder

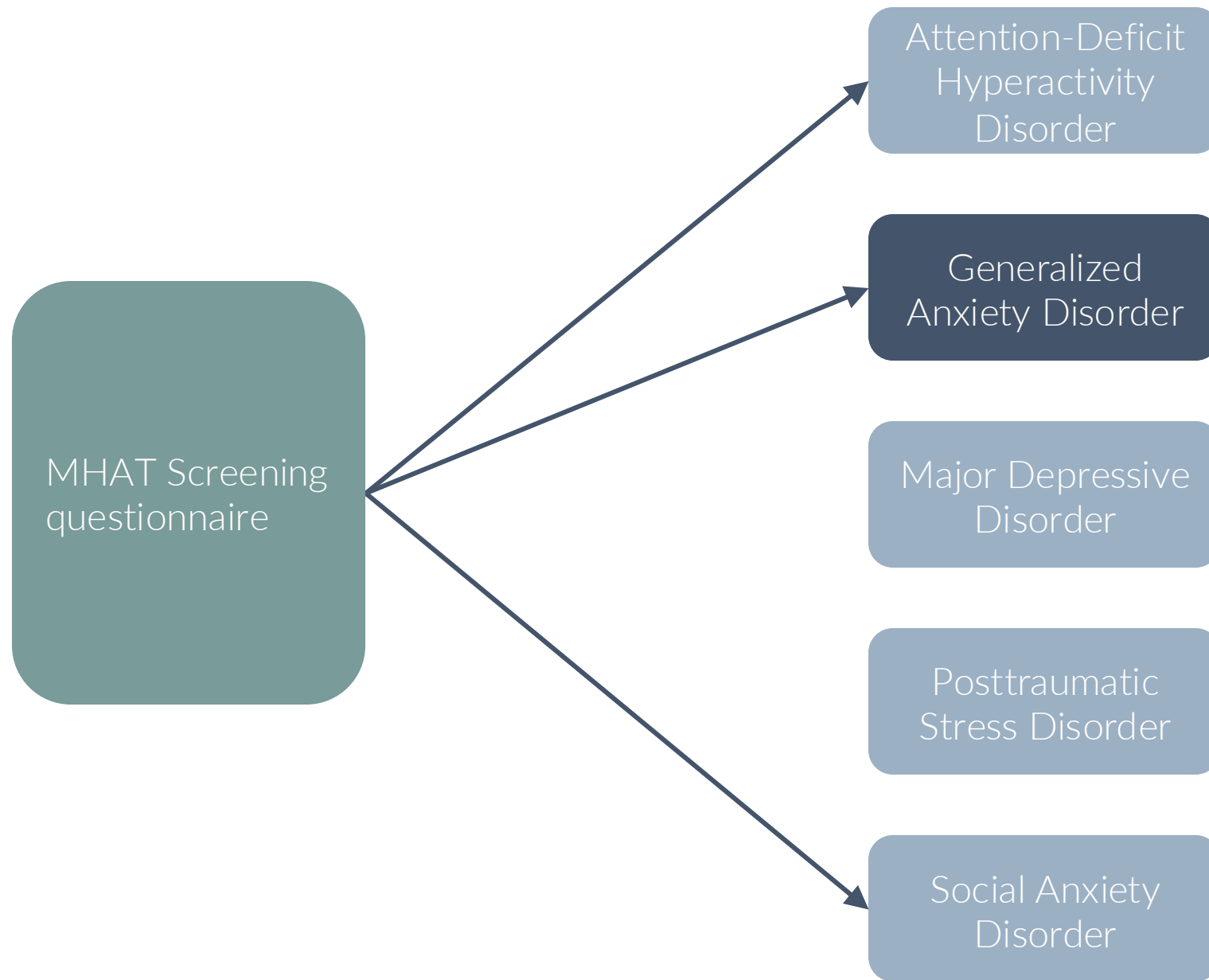


Below is a list of common worries and fears that some people experience.

Please read these carefully and select any statement you feel applied to you during the **past month**.

- ☐ Feeling very anxious or fearful in social situations or when you are being observed.
- ☐ Experiencing one or more panic attacks that involved a lot of fear and physical sensations that came out of the blue.
- ☐ Feeling very fearful or anxious in situations where it's difficult to escape quickly or get help.
- ☐ Frequently feeling excessively anxious or worried about many things, a lot of the time (for example, worry about finances, responsibilities at work/school, your health or the health of others).





# MHAT Report





Patient profile: Male, early 40s, married,

Presenting Sxs: Increased anxiety,  
Irritability  
Difficulties paying attention  
Occasional low mood

History: Substance use (teens-30s)

Stressors: Relationship difficulties  
Work stress





# MHAT Report: Cover Page

### Patient Reported Diagnoses


NEURODEVELOPEMENTAL CONDITIONS	DATE (APPROX)	DIAGNOSED BY	UNDERGOING TREATMENT
ADHD	2020	Family Physician	

### MENTAL HEALTH CONDITIONS

MENTAL HEALTH CONDITIONS	DATE (APPROX)	DIAGNOSED BY	UNDERGOING TREATMENT
Major Depressive Disorder	2015/02	Family Physician	<input checked="" type="checkbox"/>
Panic Disorder	2017/03	Psychiatrist	<input checked="" type="checkbox"/>
PTSD	2008/08	Psychiatrist	<input checked="" type="checkbox"/>

### Specialists involved in patient's mental/developmental healthcare

SPECIALITY	NAME	CLINIC	REASON
Psychiatrist	Dr. Freen	Smile Minds	Mental health
Occupational Therapist	James Leverson	Infinity Health	Sensory issues



## HealthChart

### Mental Health Assessment (MHAT) Report

Jane Smith, Female, 67 (1956-10-04)  
October 13, 2023

The Mental Health Assessment (MHAT) by Harrison Healthcare aids in the early identification and diagnosis of mental health conditions. Using self-reported information from patients, MHAT initiates with a brief broad screening questionnaire, advancing to a deeper targeted analysis if indicated. MHAT employs empirically validated decision algorithms to assimilate patients' responses and suggest mental health conditions for healthcare providers to explore further with their patients. Information on other potential symptom causes is also provided to bolster differential diagnosis, and a detailed report of the patient's symptoms is generated to assist specialist referral.

#### Patient Reported Diagnoses

NEURODEVELOPEMENTAL CONDITIONS	DATE (APPROX)	DIAGNOSED BY	UNDERGOING TREATMENT
ADHD	2020	Family Physician	

#### MENTAL HEALTH CONDITIONS

MENTAL HEALTH CONDITIONS	DATE (APPROX)	DIAGNOSED BY	UNDERGOING TREATMENT
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Panic Disorder	2017/03	Psychiatrist	<input checked="" type="checkbox"/>
PTSD	2008/08	Psychiatrist	<input checked="" type="checkbox"/>

#### Specialists involved in patient's mental/developmental healthcare

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# MHAT Report: Patient Reported Diagnoses

## Patient Reported Diagnoses

MENTAL HEALTH CONDITIONS	DATE (APPROX)	DIAGNOSED BY	UNDERGOING TREATMENT
Substance Use Disorder	2003-2010	University Councillor	No

## Specialists involved in patient's mental/developmental healthcare

The patient reported they are not seeing any mental health specialists.



# MHAT Report: Summary of Findings

## Summary of Findings

Results from MHAT are aligned with the latest diagnostic criteria for DSM-5-TR conditions. However, some DSM-5-TR conditions have yet to be integrated into MHAT. If a patient indicated symptoms of a condition not yet integrated into MHAT, that condition will be noted as an "Incomplete Assessment". The specific symptoms endorsed will be listed under the "Additional Symptoms" section at the end of this report.

MEETS CRITERIA	↑↓	COMPLETED	↑↓	UNDERGOING TREATMENT
Attention-Deficit / Hyperactivity Disorder		Oct 4, 2023		<a href="#">Check criteria</a>
Generalized Anxiety Disorder		Oct 4, 2023		<a href="#">Check criteria</a>
DOESN'T MEET CRITERIA	↑↓	COMPLETED	↑↓	UNDERGOING TREATMENT
Major Depressive Disorder		Oct 4, 2023		<a href="#">Check criteria</a>

# MHAT Report: Symptoms & Differential Diagnosis

## Generalized Anxiety Disorder

Check criteria

### Symptoms endorsed

Hide ↑

- Worries are experienced as intrusive ( $\geq 6$  months)
- Functional impairment caused by worries ( $\geq 6$  months)
- Persistent anxiety and worry ( $\geq 6$  months)
- Worries related to responsibilities at work or school ( $\geq$  Past month)
- Difficulty controlling worries ( $\geq 6$  months)
- Persistent muscle tension ( $\geq 6$  months)
- Frequent difficulty paying attention or concentrating ( $\geq 6$  months)
- Worries about minor things (e.g., chores, being on time) ( $\geq$  Past month)
- Believes worries are excessive and/or out of proportion ( $\geq$  Past month)
- Persistent difficulty sleeping ( $\geq 6$  months)
- Significant distress caused by worries ( $\geq 6$  months)
- Persistent irritability ( $\geq 6$  months)
- Frequent restlessness ( $\geq 6$  months)
- Worries about finances ( $\geq$  Past month)

### Factors to consider for differential diagnosis

Review ↓



# MHAT Report: Symptoms & Differential Diagnosis

Generalized Anxiety Disorder

Check criteria

Symptoms endorsed

Review

Factors to consider for differential diagnosis

Hide

OTHER MENTAL HEALTH CONDITIONS

**Obsessive-Compulsive Disorder (OCD)**

GAD is typically characterized by excessive worry about upcoming problems. In OCD, obsessions take the form of intrusive and unwanted thoughts, urges, or images.

**Adjustment Disorder**

Adjustment disorder is diagnosed only when criteria for GAD are not met, and the anxiety in adjustment disorder does not persist for more than 6 months after termination of the stressor or its consequences.

**Social Anxiety Disorder**

In GAD, worry is about a number of events or situations that are not limited to fears of being negatively evaluated by others.

**Posttraumatic Stress Disorder (PTSD)**

In PTSD, anxiety and worry are about trauma-related events or situations, whereas in GAD the worries are more general. If criteria for PTSD are met and the worries and physical symptoms can be explained by that diagnosis, PTSD but not GAD should be diagnosed.

**Psychotic and Mood Disorders**

If anxiety, worry, and physical symptoms have occurred only during the course of a psychotic or mood disorder but are still sufficient to warrant clinical attention, then both the psychotic or mood disorder and GAD may be diagnosed.

BIOLOGICAL FACTORS

- Hyperthyroidism or hyperparathyroidism
- Pheochromocytoma
- CNS stimulant intoxication
- Cannabis intoxication
- CNS depressant withdrawal



# MHAT in practice

MHAT Report

MD &  
MHN review

MD & MHN  
implement  
plan



# Support & Resources

- Technical issues (access, crash) - Vera Gladkikh ([vgladkikh@harrisonhealthcare.ca](mailto:vgladkikh@harrisonhealthcare.ca))
- Scientific explanations, psychometric properties – Boaz Saffer ([bsaffer@harrisonhealthcare.ca](mailto:bsaffer@harrisonhealthcare.ca))
- Clinical explanation/demystifying findings - Marty MacLure ([mmaclure@harrisonhealthcare.ca](mailto:mmaclure@harrisonhealthcare.ca)),  
Amra Dizdarevic ([adizdarevic@harrisonhealthcare.ca](mailto:adizdarevic@harrisonhealthcare.ca))  
Dr. Eric Gulliver ([egulliver@harrisonhealthcare.ca](mailto:egulliver@harrisonhealthcare.ca))

Support Team Office Hours – Amra and Marty  
Wednesdays at 3 pm  
Thursdays at 2 pm





A full-page background image showing a family of four running along a sandy beach. In the foreground, a man with a beard and grey hair is running towards the camera, smiling broadly. He is wearing a grey sweater and light blue trousers. A woman with long brown hair is running behind him, her hands on his shoulders, also smiling. In the background, an older woman with white hair and a young boy are also running. The beach is wide and sandy, with gentle waves in the distance under a clear sky.

Questions?



# FAQs

- How does a client get to complete MHAT?
- When is it appropriate for a client to complete MHAT?
- MHAT Research?
- How long does it take to review the MHAT report?
- What if they do not meet criteria for an expected dx?
- Adding to JUNO ?
- MHAt ok for billing



## What MHAT is not:

MHAT will **NOT diagnose** your patients.

\*MHAT as a diagnosis optimization tool that is designed to identify patients' mental health concerns and suggest diagnoses for providers to review with their patients.

It is up to the providers to (a) confirm that their patients are experiencing the symptoms identified by MHAT, (b) determine whether patients meet the criteria for the diagnoses, (c) explore whether their patients experience additional symptoms missed / not included in MHAT, and (d) use the cheat sheets and their training to determine the most appropriate diagnosis.

**(2) MHAT does NOT replace human judgment.**

MHAT does not replace GP or human factor.

If anything in strengthens the rapport between client and physician and helps to navigate clearer conversations. The physician is still deciding care plan options – including if/when to refer clients. \*Food for thought; it is in the best interest of all parties to get familiar with the first and graduating versions of MHAT as psychiatry referrals are often lacking thus PG are more pillars for client's mental health care then previously.

**(3) MHAT is NOT a symptom tracking tool.**

MHAT should not be administered on a weekly or monthly basis to track client progress because it does not quantitatively estimate the severity of patients' mental health symptoms. There are appropriate tools for this (e.g., PHQ-9, GAD-7, etc) that can be administered weekly/bi-weekly/monthly and should therefore be used instead of MHAT.

That said, MHAT can be re-administered at a later date (ideally after quantitative estimates suggest that the patient's symptoms have meaningfully reduced) *to help providers determine whether the improvement in a patients' condition is significant enough that they now longer meet diagnostic criteria for their previous condition, which can be used by providers to guide their decision-making (e.g., if a patient is ready to return to work / school, etc).*

**(4) MHAT is NOT more work for PCPs.**

As per Amra's points on how much time is spent on mental health factors earlier - this tool is designed efficiency and clarity.

The client is the one completing the questionnaires and the design of MHAT is to clarify currently struggles to save time, struggles and frustration for the future.

MHAT currently screens for the following mental health conditions:

**Anxiety Disorders**

Agoraphobia  
General Anxiety Disorder  
Panic Disorder  
Social Anxiety Disorder  
Specific Phobia

**Mood Disorders**

Mania (Bipolar I / Bipolar II)  
Major Depressive Disorder  
Persistent Depressive Disorder

**Neurodevelopmental Disorders**

ADHD

**Stressor & Substance-related Disorders**

Acute Stress Disorder  
Posttraumatic Stress Disorder  
Alcohol Use Disorder  
Substance Use Disorder

## Additional modules in development for MHAT integration:

### **Anxiety Disorders**

Separation Anxiety Disorder

### **Mood Disorders**

Premenstrual Dysphoric Disorder

### **Feeding & Eating Disorders**

Anorexia Nervosa

Avoidant/Restrictive Food Intake  
Disorder

Binge Eating Disorder

Bulimia Nervosa

### **Obsessive-Compulsive & Related Disorders**

Body Dysmorphic Disorder

Excoriation/ Skin Picking

Hoarding Disorder

Obsessive-Compulsive Disorder

Trichotillomania

### **Schizophrenia Spectrum & Other Psychotic Disorders**

Delusional disorder

Schizophrenia

Schizoaffective Disorder

Schizophreniform Disorder

### **Somatic Symptom & Related Disorders**

Illness Anxiety Disorder

Somatic Symptom Disorder

### **Trauma & Stressor-Related Disorders**

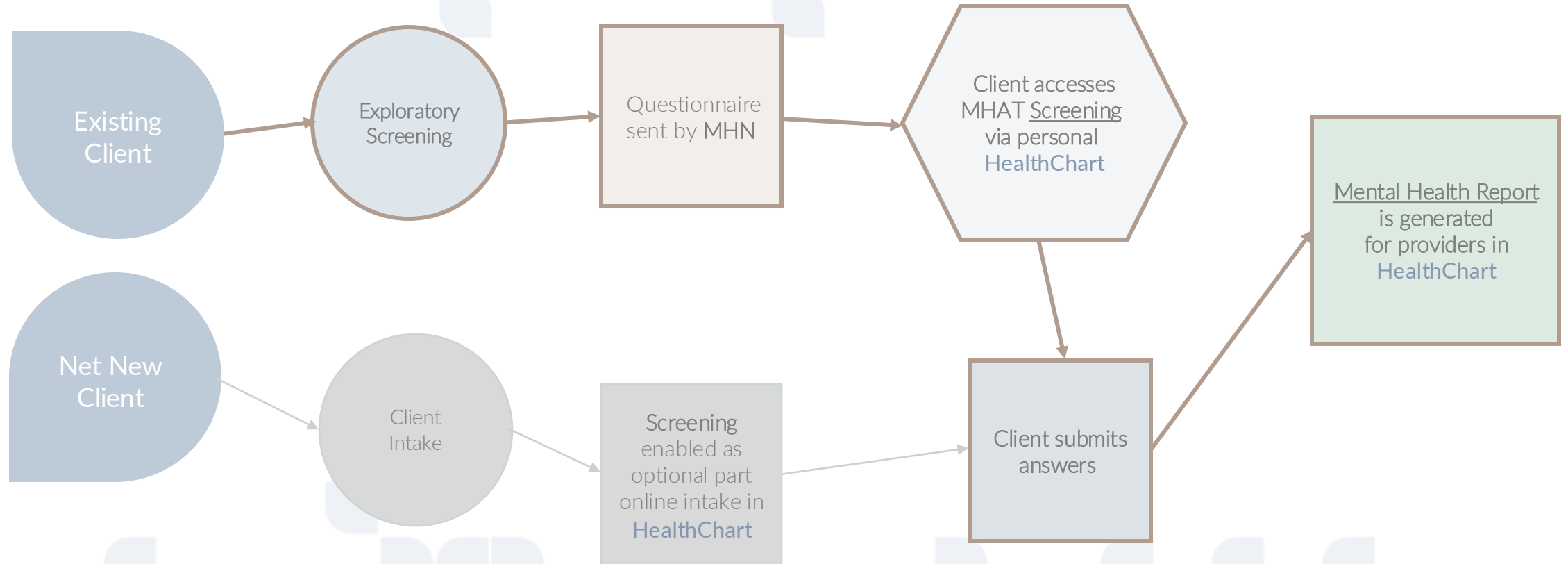
Adjustment Disorder

*A Mental Health (MHAT) Screening invitation is sent to the client by the Mental Health Navigator, at the request of the physician.*

- Clients access the Mental Health Assessment via their personal and secure HealthChart account.

A screenshot of a web application interface for HealthChart. The interface is white with a blue border. At the top right is the HealthChart logo. Below it, the text 'Sign in with email' is displayed. Underneath is an input field labeled 'Email'. At the bottom right is a blue button with the text 'Next'.

# MHAT Workflow





## Current mental health assessments

1. Time consuming
2. Not standardized (i.e., every provider has different system for conducting assessment / asking questions)
3. Difficult to accurately screen for a number of potentially co-morbid conditions / always wondering "did I miss something?"
4. Accurate diagnosis requires remembering diagnostic criteria for 30-50 most common conditions
5. Referral requires completing large amount of paperwork



## MHAT Tool

MHAT is an evidence-based tool designed for primary healthcare providers (PCPs) that:

- (1) Reduces the time needed for conducting comprehensive mental health assessments.
- (2) Standardizes mental health assessments.
- (3) Assists PCPs with accurately diagnosing mental health conditions.
- (4) Facilitates referrals to mental health specialists.



*Expand on the diff screening vs. Dx*



## MHAT is NOT

- (1) MHAT will NOT diagnose your patients.
- (2) MHAT does NOT replace human judgment.
- (3) MHAT is NOT a symptom tracking tool.
- (4) MHAT is NOT more work for PCPs.



## Rise in mental health conditions

### ***Prior to the COVID-19 pandemic:***

Depression: 12.9%

Anxiety 11.6%

### ***The effect of the pandemic:***

Depression 38%

Anxiety 39%

Irritability 41%

Attention span 41%

Hyperactivity 23%

Obsessions/compulsions 13%

Eating disorders 50%