IMPLEMENTATION OF EATING DISORDER SCREENING TOOLS IN THE PEDIATRIC PRIMARY CARE SETTING

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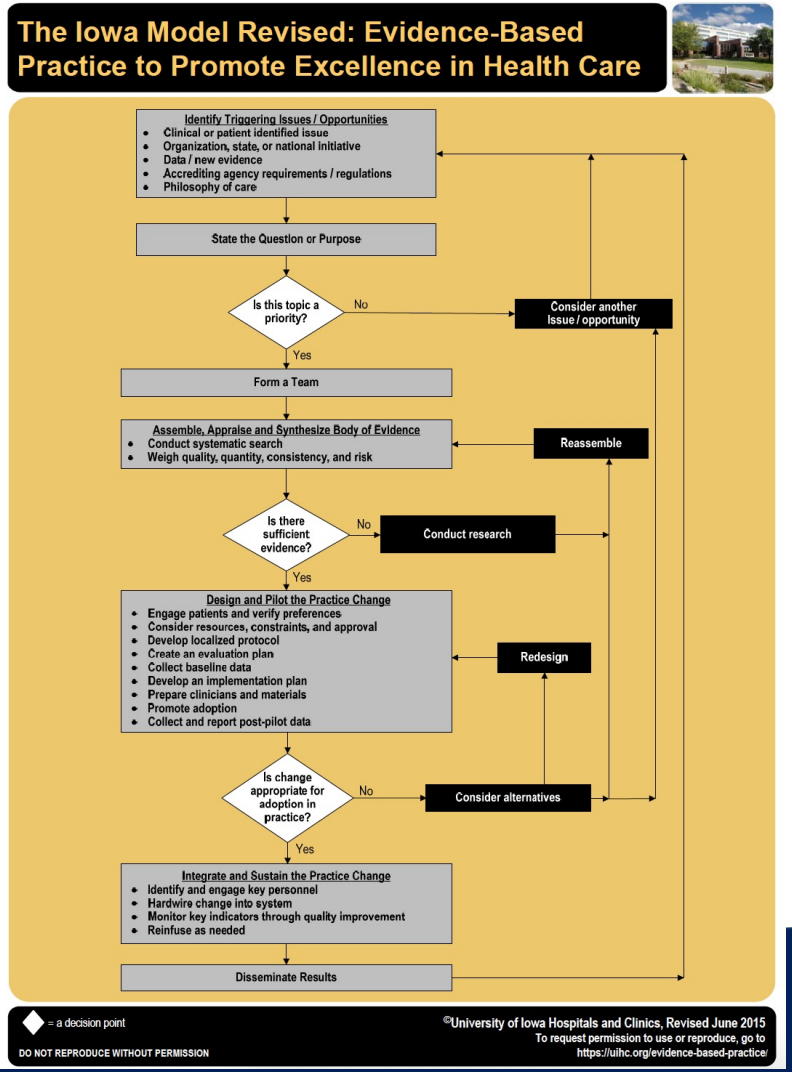
BACKGROUND

- Eating disorders (EDs) affect nearly all body systems leading to hypotension and osteopenia to potentially fatal arrhythmias (Harrington et al., 2015)
- Among people diagnosed with an ED, 95% are between the ages of 12 and 25 (Johns Hopkins All Children's Hospital, 2021)
- EDs have the highest mortality rate compared to any other mental illness (Johns Hopkins All Children's Hospital, 2021)
- Anxiety and depression are the most common co-morbid diagnoses in EDs (Sander et al., 2021)
- Suicide completion rates for those diagnosed with an ED are 18x the completion rates compared to that of their peers. (Klein et al., 2021)

BACKGROUND

- The yearly economic cost attributed to EDs is $64.7 billion with an estimated $23.5 billion loss for individuals and families (Deloitte Access Economics, 2020)
- Since the 1950s, epidemiologic studies have indicated a steady ***increase*** in ED rates among children and adolescents (Rosen & the Committee on Adolescence, 2010)
- **Early intervention** is key in the treatment of EDs as it has the potential to decrease the risk of long-term pathology and disability (Klein et al., 2021)
- The majority of pediatric patients with an ED present to their pediatrician *first* with symptoms related to disordered eating (Lebow et al., 2021)



EVIDENCE-BASED PRACTICE:

IOWA MODEL

7-STEP IMPLEMENTATION FRAMEWORK

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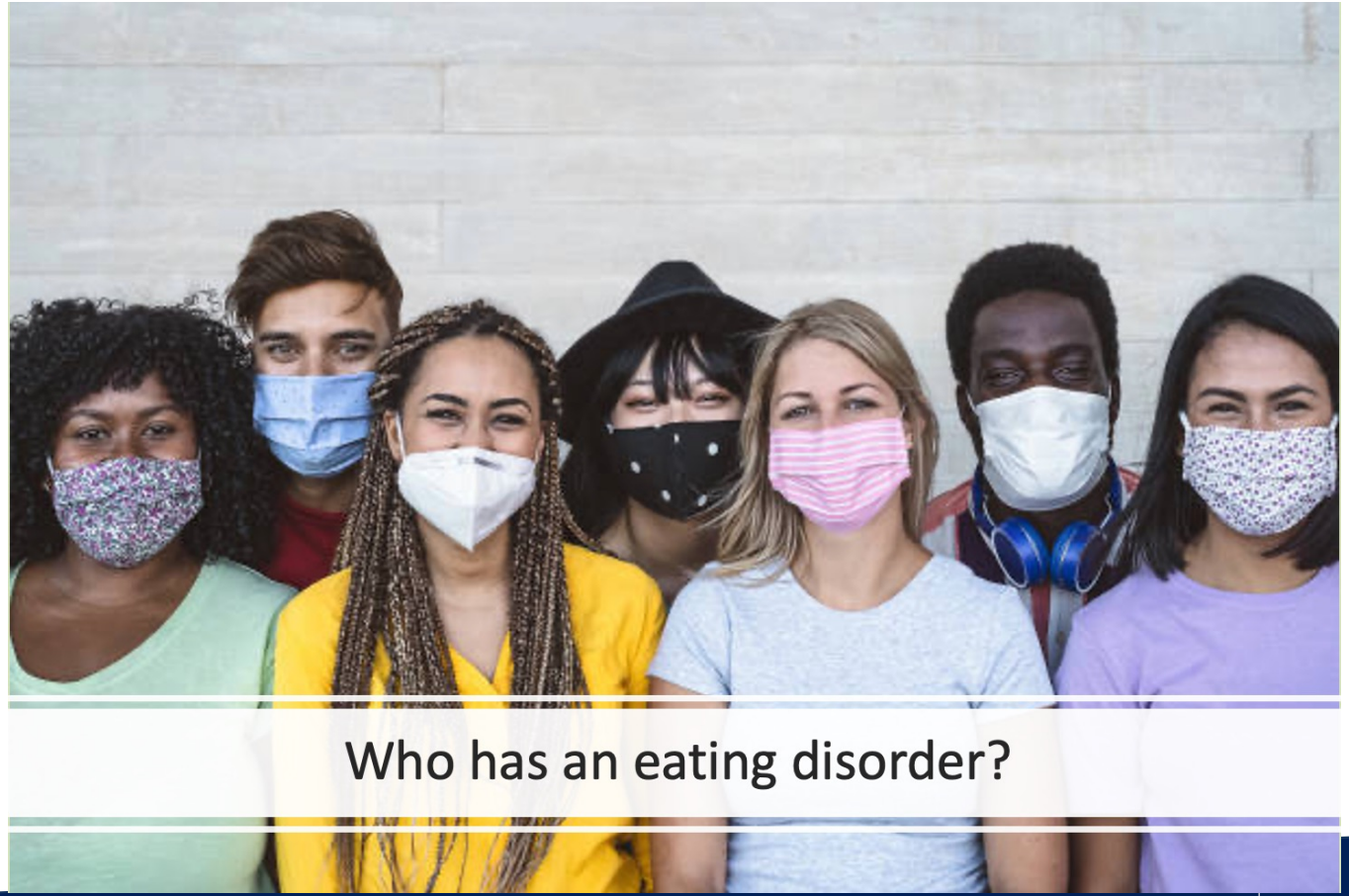
STEP 1: TRIGGERING ISSUES/OPPORTUNITIES

- ED rates are *on the **rise*** and the **demographics** of this disorder have been **evolving**. (Rosen & the Committee on Adolescence, 2010)
- The COVID-19 pandemic has exacerbated the burden of eating disorders and simultaneously has highlighted the **urgent** need to *raise awareness* of these disorders. (Zipfel et al., 2022)
- Early intervention is key in the treatment of EDs (Klein et al., 2021)
- The first step to establishing optimal care for patients struggling from an ED is an improvement in awareness and recognition in primary care to facilitate early engagement in treatment (Zipfel et al., 2022)



Who has an eating disorder?

STEP 2: PURPOSE OF THE PROJECT

To implement and measure the impact of a standardized screening process for identifying previously undiagnosed eating disorders in pediatric patients during well child or mental health encounters.

STEP 3: FORM A TEAM

Setting: Pediatric Primary Care clinic in Northern Virginia (5 sites)

Interdisciplinary Team:

- 1 academic advisor, Dr. Amy Boitnott
- 1 MD/CEO, project mentor, Dr. Elizabeth Watts
- 1 RN/nurse navigator
- 5 pediatric providers (MD, DNP), “super users”
- 1 licensed professional counselor, ED specialist

STEP 4: ASSEMBLE, APPRAISE AND SYNTHESIZE BODY OF EVIDENCE

Comprehensive database search

- PubMed, CINAHL, Web of Science, PsycINFO

Search terms included:

- "Eating Attitudes Test" OR "Children's Eating Attitudes Test"
- "early diagnosis" OR "early detection" OR "primary care" OR "primary health care" OR preventative OR "mass screening" OR screening

Filters utilized:

- Publication in the last 10 years
- English language
- Academic Journals

REVIEW OF LITERATURE

Three themes:

1. Valid and reliable

(Noma et al., 2006)

"Gold standard" instrument for EDs

(Rivas et al., 2013)

Research shows that the EAT-40 is a reliable and valid tool for differentiating between subjects with and without ED in Hispanic samples

2. Early Identification

(Legendre et al., 2021)

Early detection of attitudes and behaviors (weight, shape, and eating) to **prevent development of serious mental and physical problems** like ED and obesity in adolescence

3. Generalizable

(Rivas et al., 2013)

Despite changes in diagnostic criteria for ED over time, ED-40 has proved to have some sound psychometric properties and has become one of the **most widely used self-reports in the field of ED** across a number of cultures

(Kelly et al., 2012)

Results suggest scores are likely not equivalent across races for several popular measures of ED symptoms and risk factors. Recommended for researchers and clinicians obtain additional information regarding **racial/cultural factors** when using these instruments with Black women.

STEP 5: DESIGN AND PILOT PRACTICE CHANGE

Inclusion Criteria:

- Age 8 years +
- If age 8-11, scored + PSC-17
- If age 12-17, scored + PHQ-9
- No current diagnosis of an ED
- 4th grade reading level

Exclusion Criteria:

- Existing diagnosis of an ED
- Declined screening forms

STEP 5: DESIGN AND PILOT PRACTICE CHANGE

Screening Measure: ChEAT

- Children age 8-11
- 26 items scored on 6-point Likert scale
- Score interpretation:
    - < 20: low level of concern
    - **> : high level of concern about dieting, body weight or problematic eating behaviors**

Red Flag: 4, 9, 10, or 18

Screening Measure: EAT

- Children age 12 +
- 26 items scored on 6-point Likert scale
    - *Same scoring interpretation as described above*

Red Flag: 4, 9, 10, 18, or 21

Children's Eating Attitude Test (ChEAT)

		Always	Very often	Often	Sometimes	Rarely	Never
1.	I am scared about being overweight	(3)	(2)	(1)	(0)	(0)	(0)
2.	I stay away from eating when I am hungry	(3)	(2)	(1)	(0)	(0)	(0)
3.	I think about food a lot of the time	(3)	(2)	(1)	(0)	(0)	(0)
4.	I have gone on eating binges where I feel that I might not be able to stop	(3)	(2)	(1)	(0)	(0)	(0)
5.	I cut my food into small pieces	(3)	(2)	(1)	(0)	(0)	(0)
6.	I am aware of the energy (calorie) content in foods that I eat	(3)	(2)	(1)	(0)	(0)	(0)
7.	I try to stay away from foods such as breads, potatoes, and rice	(3)	(2)	(1)	(0)	(0)	(0)
8.	I feel that others would like me to eat more	(3)	(2)	(1)	(0)	(0)	(0)
9.	I vomit after I have eaten	(3)	(2)	(1)	(0)	(0)	(0)
10.	I feel very guilty after eating	(3)	(2)	(1)	(0)	(0)	(0)
11.	I think a lot about wanting to be thinner	(3)	(2)	(1)	(0)	(0)	(0)
12.	I think about burning up energy (calories) when I exercise	(3)	(2)	(1)	(0)	(0)	(0)
13.	Other people think I am too thin	(3)	(2)	(1)	(0)	(0)	(0)
14.	I think a lot about having fat on my body	(3)	(2)	(1)	(0)	(0)	(0)
15.	I take longer than others to eat my meals	(3)	(2)	(1)	(0)	(0)	(0)
16.	I stay away from foods with sugar in them	(3)	(2)	(1)	(0)	(0)	(0)
17.	I eat diet foods	(3)	(2)	(1)	(0)	(0)	(0)
18.	I think that food controls my life	(3)	(2)	(1)	(0)	(0)	(0)
19.	I can show self-control around food	(3)	(2)	(1)	(0)	(0)	(0)
20.	I feel that others pressure me to eat	(3)	(2)	(1)	(0)	(0)	(0)
21.	I give too much time and thought to food	(3)	(2)	(1)	(0)	(0)	(0)
22.	I feel uncomfortable after eating sweets	(3)	(2)	(1)	(0)	(0)	(0)
23.	I have been dieting	(3)	(2)	(1)	(0)	(0)	(0)
24.	I like my stomach to be empty	(3)	(2)	(1)	(0)	(0)	(0)
25.	I enjoy trying new rich foods	(3)	(2)	(1)	(0)	(0)	(0)
26.	I have the urge to vomit after eating	(3)	(2)	(1)	(0)	(0)	(0)

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Red Flags:
Question 4
Question 9
Question 10
Question 18

Eating Attitudes Test© (EAT-26)

Instructions: This is a screening measure to help you determine whether you might have an eating disorder that needs professional attention. This screening measure is not designed to make a diagnosis of an eating disorder or take the place of a professional consultation. Please fill out the below form as accurately, honestly and completely as possible. There are no right or wrong answers. All of your responses are confidential.

Part A: Complete the following questions:

1) Birth Date Month: ..... Day: ..... Year: ..... 2) Gender: ❑ Male ❑ Female

3) Height Feet: ..... Inches: .....

4) Current Weight (lbs.): ..... 5) Highest Weight (excluding pregnancy): .....

6) Lowest Adult Weight: ..... 7) Ideal Weight: .....

Part B: Please check a response for each of the following statements:	Always	Usually	Often	Sometimes	Rarely	Never
1. Am terrified about being overweight.	❑	❑	❑	❑	❑	❑
2. Avoid eating when I am hungry.	❑	❑	❑	❑	❑	❑
3. Find myself preoccupied with food.	❑	❑	❑	❑	❑	❑
4. Have gone on eating binges where I feel that I may not be able to stop.	❑	❑	❑	❑	❑	❑
5. Cut my food into small pieces.	❑	❑	❑	❑	❑	❑
6. Aware of the calorie content of foods that I eat.	❑	❑	❑	❑	❑	❑
7. Particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)	❑	❑	❑	❑	❑	❑
8. Feel that others would prefer if I ate more.	❑	❑	❑	❑	❑	❑
9. Vomit after I have eaten.	❑	❑	❑	❑	❑	❑
10. Feel extremely guilty after eating.	❑	❑	❑	❑	❑	❑
11. Am preoccupied with a desire to be thinner.	❑	❑	❑	❑	❑	❑
12. Think about burning up calories when I exercise.	❑	❑	❑	❑	❑	❑
13. Other people think that I am too thin.	❑	❑	❑	❑	❑	❑
14. Am preoccupied with the thought of having fat on my body.	❑	❑	❑	❑	❑	❑
15. Take longer than others to eat my meals.	❑	❑	❑	❑	❑	❑
16. Avoid foods with sugar in them.	❑	❑	❑	❑	❑	❑
17. Eat diet foods.	❑	❑	❑	❑	❑	❑
18. Feel that food controls my life.	❑	❑	❑	❑	❑	❑
19. Display self-control around food.	❑	❑	❑	❑	❑	❑
20. Feel that others pressure me to eat.	❑	❑	❑	❑	❑	❑
21. Give too much time and thought to food.	❑	❑	❑	❑	❑	❑
22. Feel uncomfortable after eating sweets.	❑	❑	❑	❑	❑	❑
23. Engage in dieting behavior.	❑	❑	❑	❑	❑	❑
24. Like my stomach to be empty.	❑	❑	❑	❑	❑	❑
25. Have the impulse to vomit after meals.	❑	❑	❑	❑	❑	❑
26. Enjoy trying new rich foods.	❑	❑	❑	❑	❑	❑

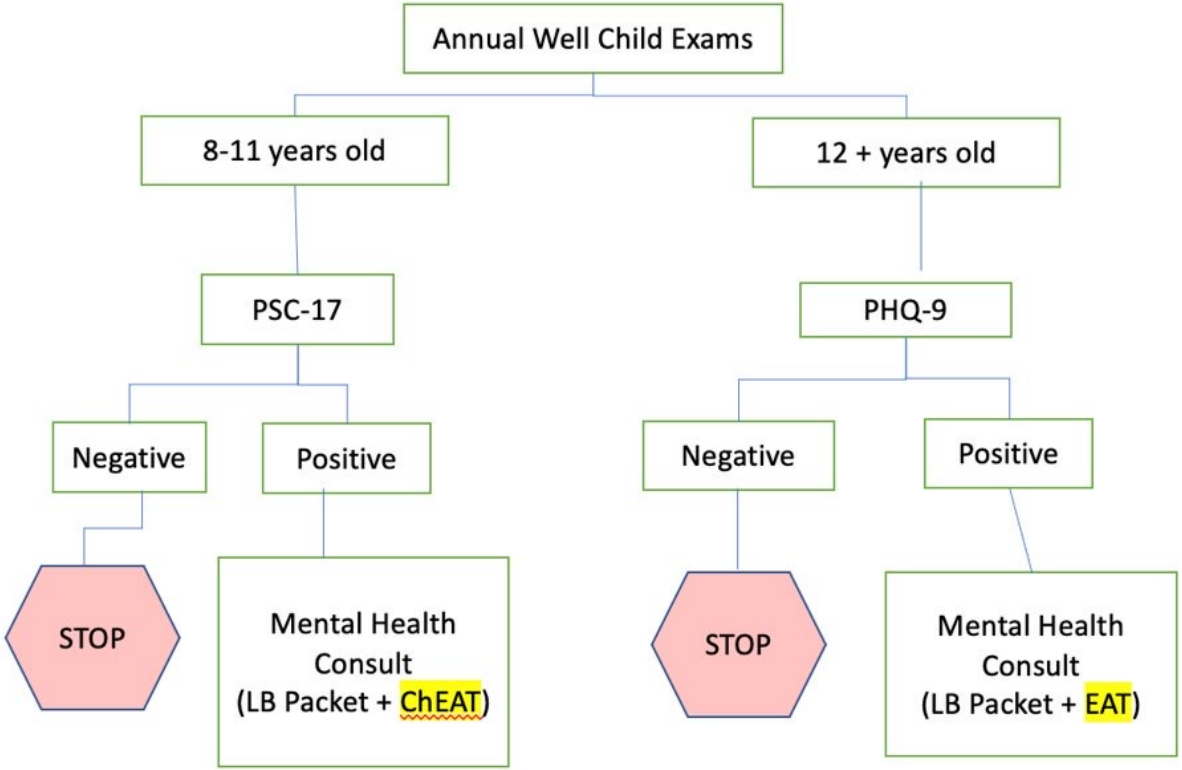
Part C: Behavioral Questions. In the past 6 months have you:	Never	Once a month or less	2-3 times a month	Once a week	2-6 times a week	Once a day or more
A. Gone on eating binges where you feel that you may not be able to stop?	❑	❑	❑	❑	❑	❑
B. Ever made yourself sick (vomited) to control your weight or shape?	❑	❑	❑	❑	❑	❑
C. Ever used laxatives, diet pills or diuretics (water pills) to control your weight or shape?	❑	❑	❑	❑	❑	❑
D. Exercised more than 60 minutes a day to lose or to control your weight?	❑	❑	❑	❑	❑	❑
E. Lost 20 pounds or more in the past 6 months		❑ Yes			❑ No	

• Defined as eating much more than most people would under the same circumstances and feeling that eating is out of control.

EAT-26: Garner et al. 1982, Psychological Medicine, 12, (871 878); adapted/reproduced by D. Garner with permission.

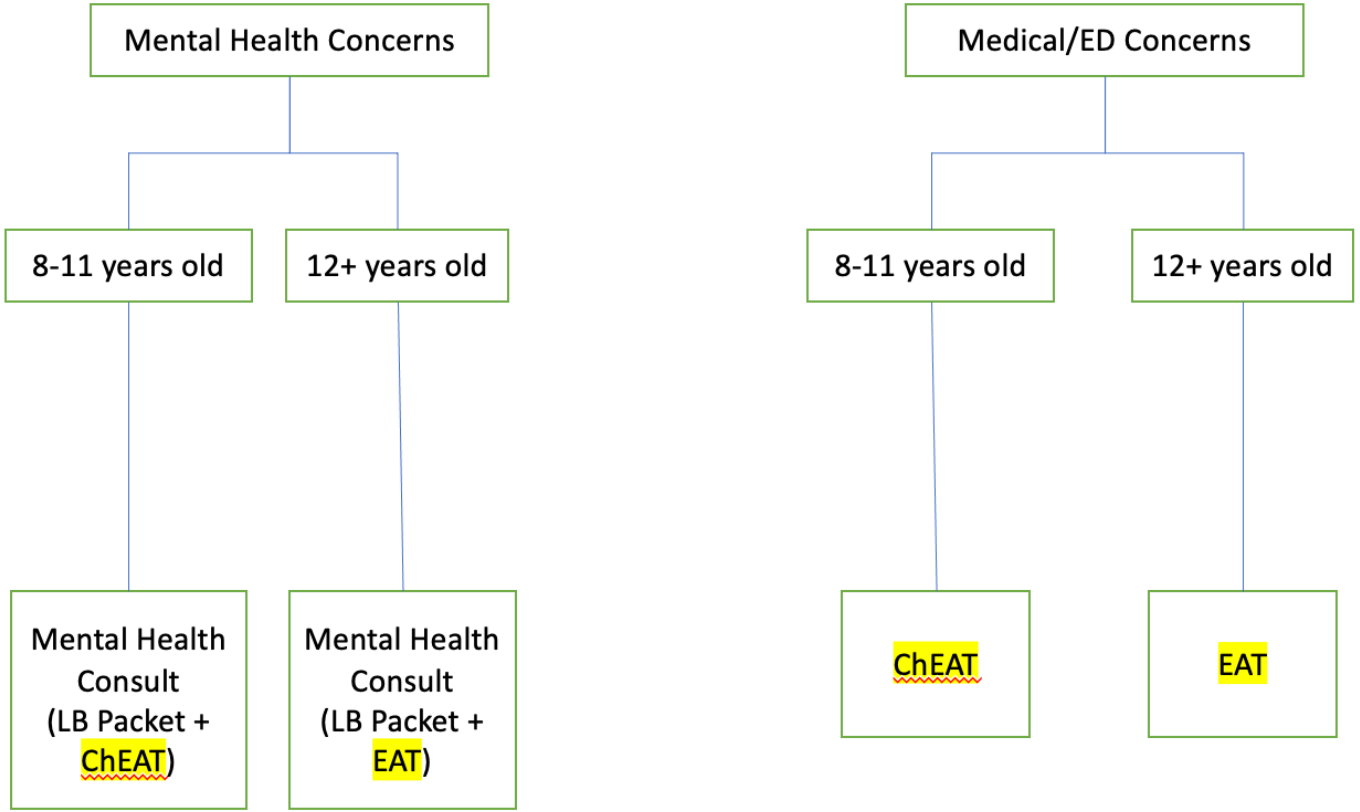
Red Flags:
Question 4
Question 9
Question 10
Question 18
Question 21

STEP 5: DESIGN AND PILOT PRACTICE CHANGE



Highlight: ChEAT and EAT will be added to our current routine workflow. If a concern for an eating disorder arises after assessment, to follow up with in-house therapist for guidance and to develop a care plan with PCP.

STEP 5: DESIGN AND PILOT PRACTICE CHANGE



STEP 5: DESIGN AND PILOT PRACTICE CHANGE

1. IRB determination of not human subjects' research
2. Permission to perform this project by the clinic CEO
3. Permission to use the ChEAT and EAT

STEP 5: DESIGN AND PILOT PRACTICE CHANGE

Overview

- Led Town Hall Meeting with all providers
- Created team of “super users” at every site
    - 1 MD or DNP at each of the 5 clinics
- Uploaded pertinent documents to EMR or Basecamp
    - Project overview and documentation
    - Support for + screens
- Ran reports
    - Updated all providers on progress and elicited motivation

STEP 5: DESIGN AND PILOT PRACTICE CHANGE

Data Collection Plan:

ED ICD-10 codes over a 3-month period (Sept-Dec 2022) compared to the same 3-month period one year prior (Sept-Dec 2021)

- ICD-10 Diagnosis
  - De-identified data
- Screening forms
  - Paper handout or electronic completion
- Demographics (gender, ethnicity)

STEP 5: DESIGN AND PILOT PRACTICE CHANGE

Data Source

- Electronic medical record (EMR)
- IBM SPSS

Descriptive statistics

- Demographic data
- ICD-10 Diagnostic comparison
- Time to Diagnosis

STEP 5: DESIGN AND PILOT PRACTICE CHANGE

2021

N = 8

Mean age = 15.67

Female (87.5%)

White (50%)

75% were diagnosed outside of a well child encounter

2022

N = 18*

Mean age = 15.67

Female (83.3%)

White (66.7%)

66.7% were diagnosed outside of a well child encounter

*7 were administered an EAT

39% captured using EAT

STEP 5: DESIGN AND PILOT PRACTICE CHANGE

2021

83% reported weight loss as their initial concern to PCP

100% of patients referred to therapy

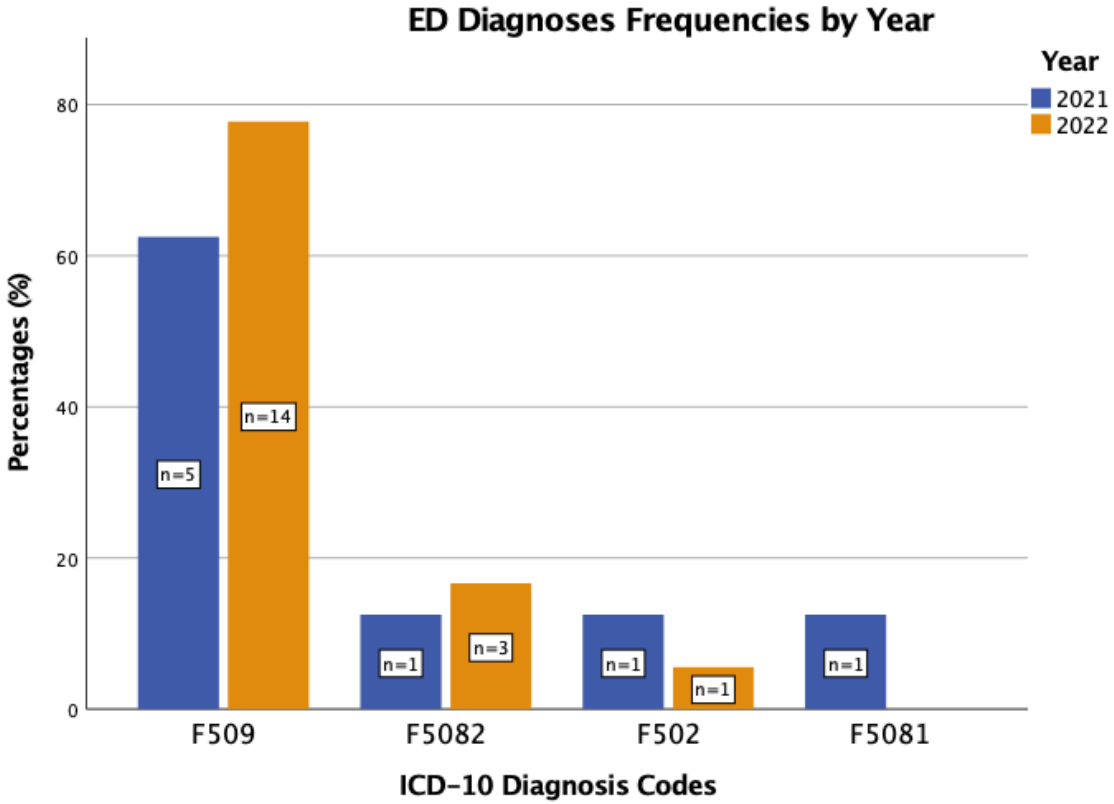
2022

81% reported weight loss as their initial concern to PCP

94% of patients referred to mental health services

- 1 partial hospitalization
- 1 admitted inpatient

STEP 5: DESIGN AND PILOT PRACTICE CHANGE



ICD-10 Diagnosis Codes:

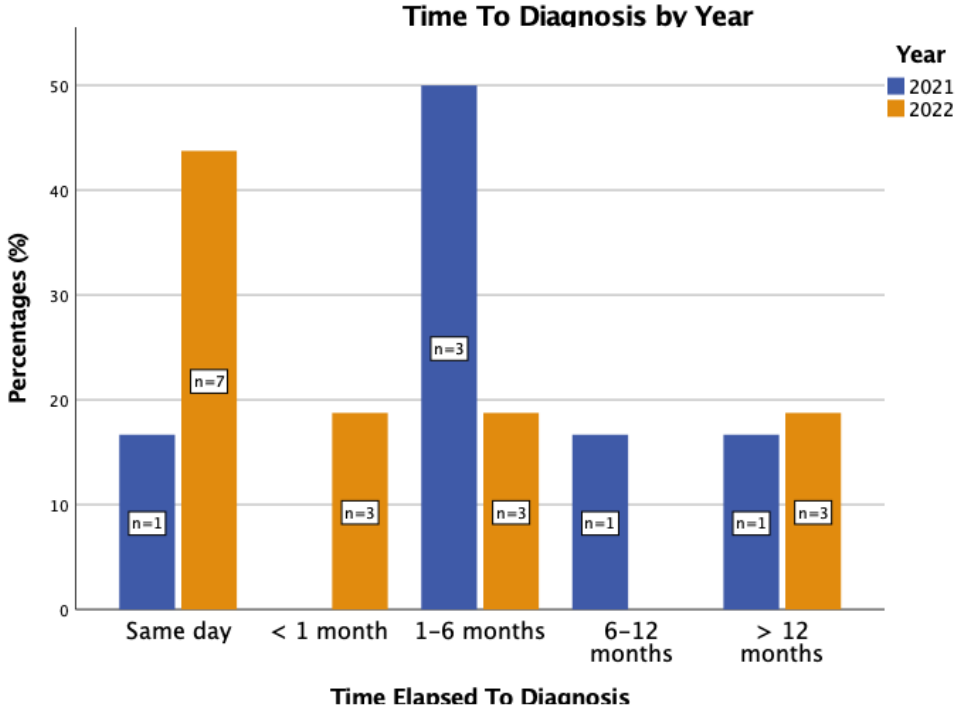
F509: Eating Disorder Unspecified

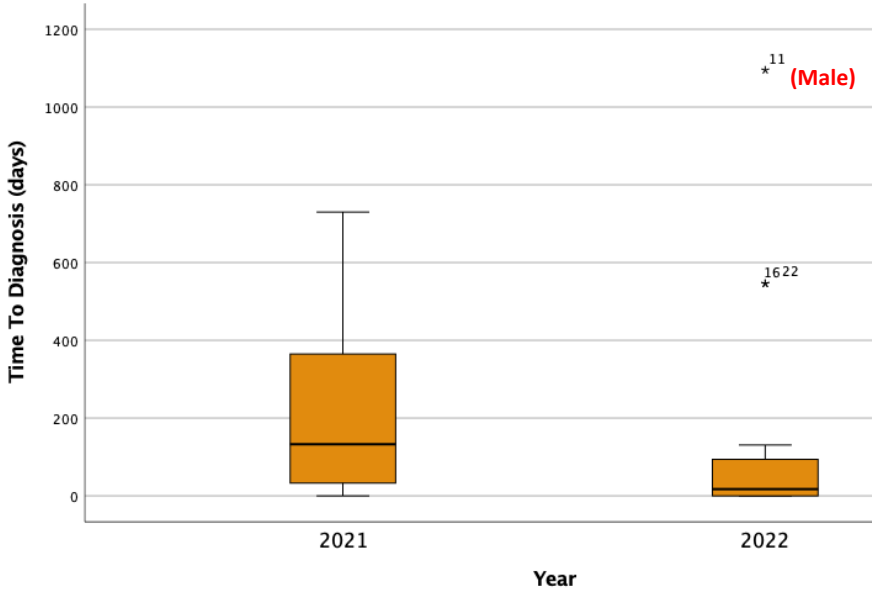
F5082: Avoidant/Restrictive Food Intake Disorder (ARFID)

F502: Bulimia Nervosa

F5081: Binge Eating Disorder

STEP 5: DESIGN AND PILOT PRACTICE CHANGE





STEP 5: DESIGN AND PILOT PRACTICE CHANGE

Financial Impact

- ✓ Patient savings for early detection of ED
  - Less missed work/school days
  - Less office visits/labs without a diagnosis
- ✓ Publicly available screening tools *(free of cost)*
- ✓ Provider time for administering and scoring CHEAT/EAT
  - *Seek to have unlicensed personnel complete these tasks in the future*
- ✓ Future billing for ChEAT and EAT

CONCLUSION

ED screening tools (ChEAT and EAT) proved to be effective in the identification of previously undiagnosed eating disorders among pediatric primary care patients

A clinically significant number of patients were diagnosed with an ED during the period of data collection in 2022 compared to 2021

A clinically significant number of patients were diagnosed earlier, measured by time to diagnose from first mention of concern or symptom onset, during 2022 compared to 2021

STEP 6: INTEGRATE AND SUSTAIN PRACTICE CHANGE

Nursing Practice Implications

Universal screening for eating disorders among the pediatric primary care population

- Not limited to well child encounters

Provider education, support and resources

Team-based approach

Primary care providers

Therapist

Nurse clinical care coordinator

STEP 6: INTEGRATE AND SUSTAIN PRACTICE CHANGE

Sustainability Plan

- Incorporate screeners into existing mental health packet
- 3-6 month follow up

Ethical Considerations

- Vulnerable population
    - Minors
- Sensitive MH diagnosis
    - Stigma/shame/guilt

STEP 6: INTEGRATE AND SUSTAIN PRACTICE CHANGE

Strengths

- Clinical Significance
- Validated and reliable instruments for pediatrics
- Cost effective
- Clear and feasible approach: Easily integrated into current workflow
- Dedicated team with growing mental health awareness and interest

Limitations

- Multiple influential factors contributing to ED diagnosis
- Screening tool subjectivity
- Unable to assess sustainability

STEP 7: DISSEMINATE RESULTS

Final report: Libra

Presentation: American Academy of Eating Disorders

ICED 2023 Conference, Washington DC

Manuscript submission for publication to:

Eating Disorders *The Journal of Treatment & Prevention*

"The most effective screening device probably remains the general practitioner thinking about the possibility of an eating disorder"

NICE Guidelines 2017

Thank you!
Questions?

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