AHS Pediatric Eating And Swallowing (PEAS) presents

# Understanding Pediatric Feeding Disorders: Introduction to assessment, treatment planning, and clinical management

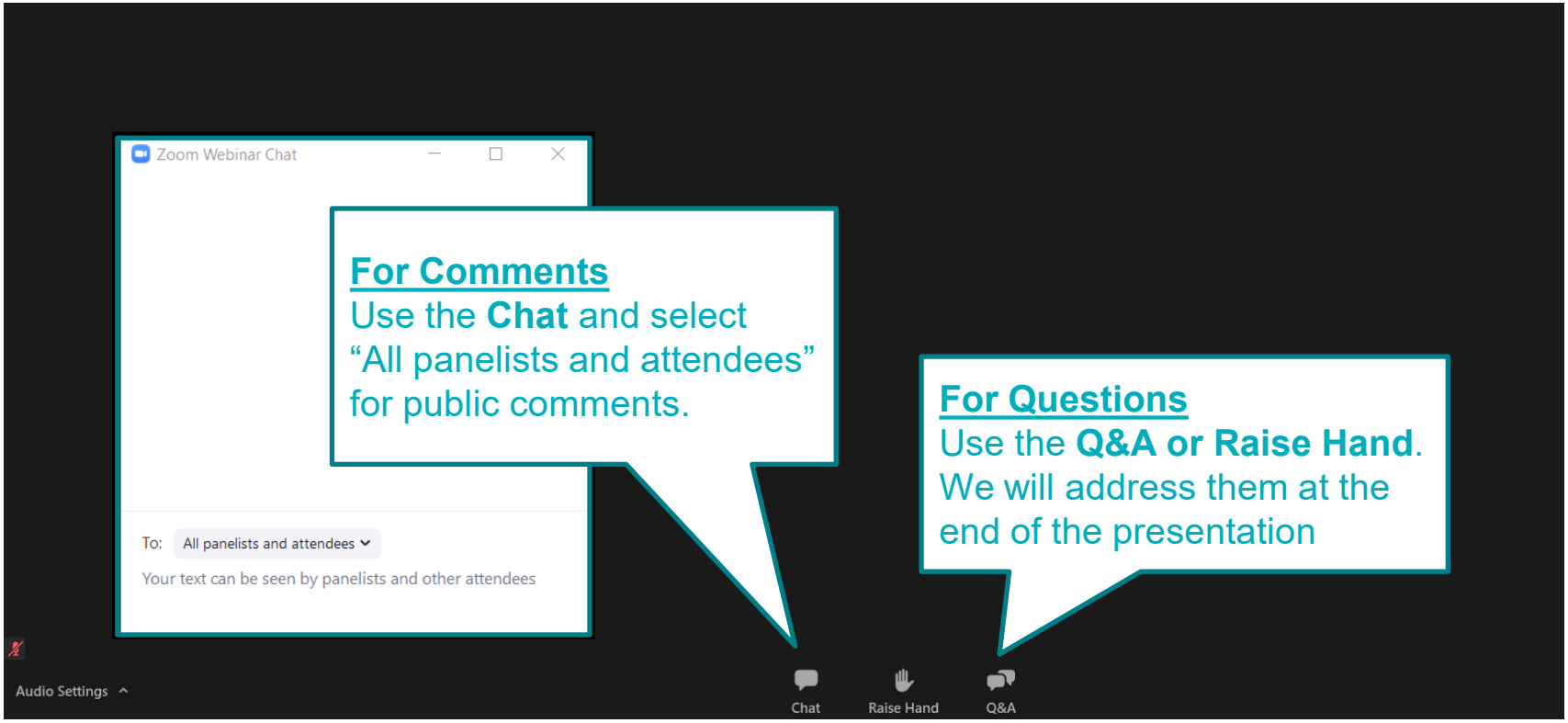

## Alan Silverman, PhD

Feeding, Swallowing and Nutrition Center,
Children's Hospital of Wisconsin
Medical College of Wisconsin


Alberta Health Services
Pediatric Eating
And Swallowing

April 14, 2021

# AHS Pediatric Eating And Swallowing (PEAS)




Alberta Health Services
Pediatric Eating And Swallowing

# CERTIFICATE

## OF ATTENDANCE

*Name*

Attended the 1 hour webinar

**Understanding Pediatric Feeding Disorders:**

Introduction to assessment, treatment planning, and clinical management

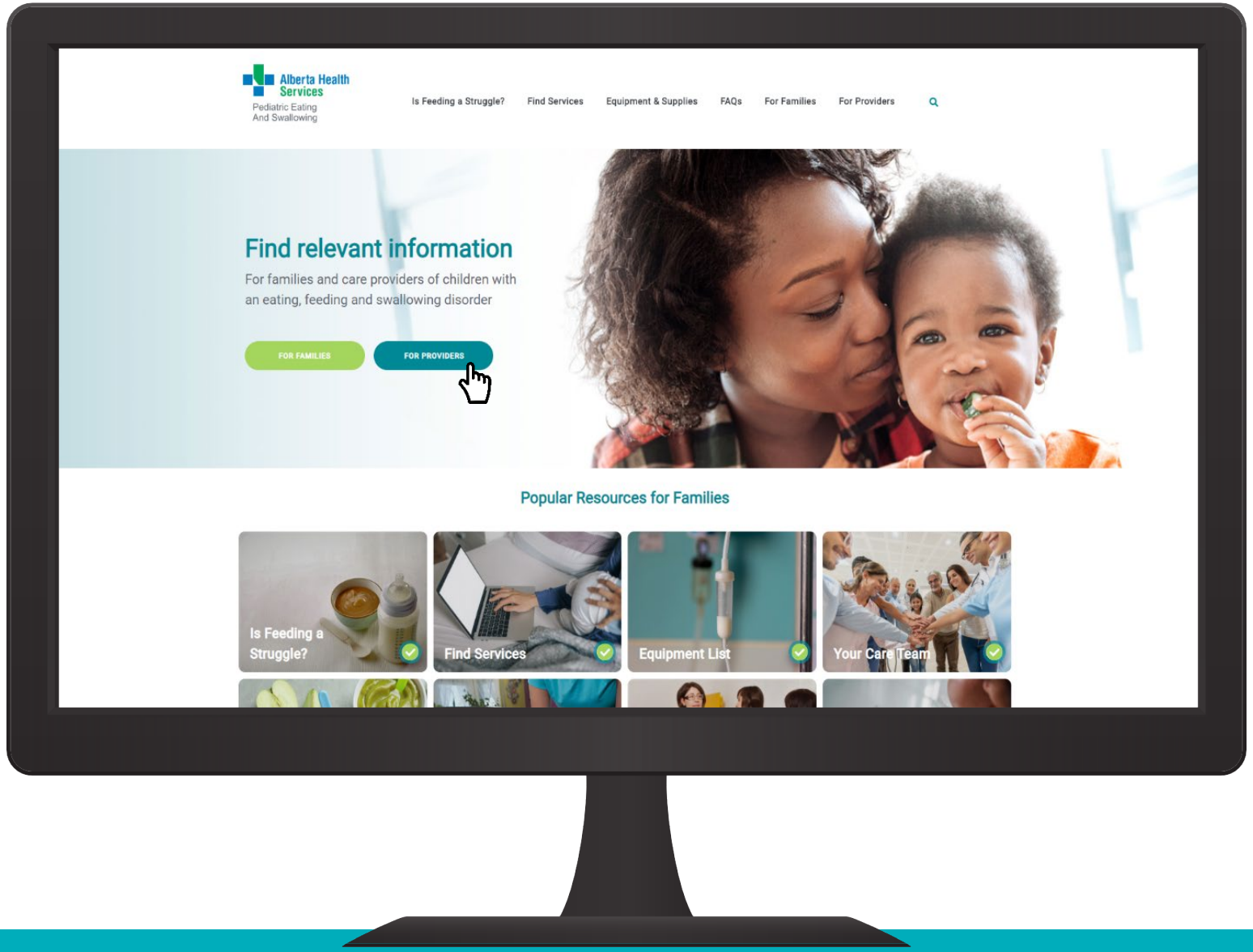
offered on April 14, 2021

Dr. Justine Turner, MD PhD
On behalf of the PEAS Project

# Project Scope

The Pediatric Eating And Swallowing (PEAS) Project is a provincial **quality improvement** initiative with the purpose of developing a provincial eating, feeding, and swallowing **clinical pathway** to standardize and improve care for children with a **pediatric feeding disorder**.[1]

[1]Goday PS, Huh SY, Silverman A, Lukens CT, Dodrill P, Cohen SS, Delaney AL, Feuling MB, Noel RJ, Gisel E, Kenzer A, Kessler DB, Kraus de Camargo O, Browne J, Phalen JA. Pediatric Feeding Disorder: Consensus Definition and Conceptual Framework. J Pediatr Gastroenterol Nutr. 2019 Jan;68(1):124-129.




https://peas.ahs.ca

# Understanding Pediatric Feeding Disorders: Introduction to Assessment, Treatment Planning, and Clinical Management

Alan Silverman
Professor of Pediatrics
Medical College of Wisconsin

# Disclosure

I have no financial relationships with a commercial entity to disclose.

# Objectives

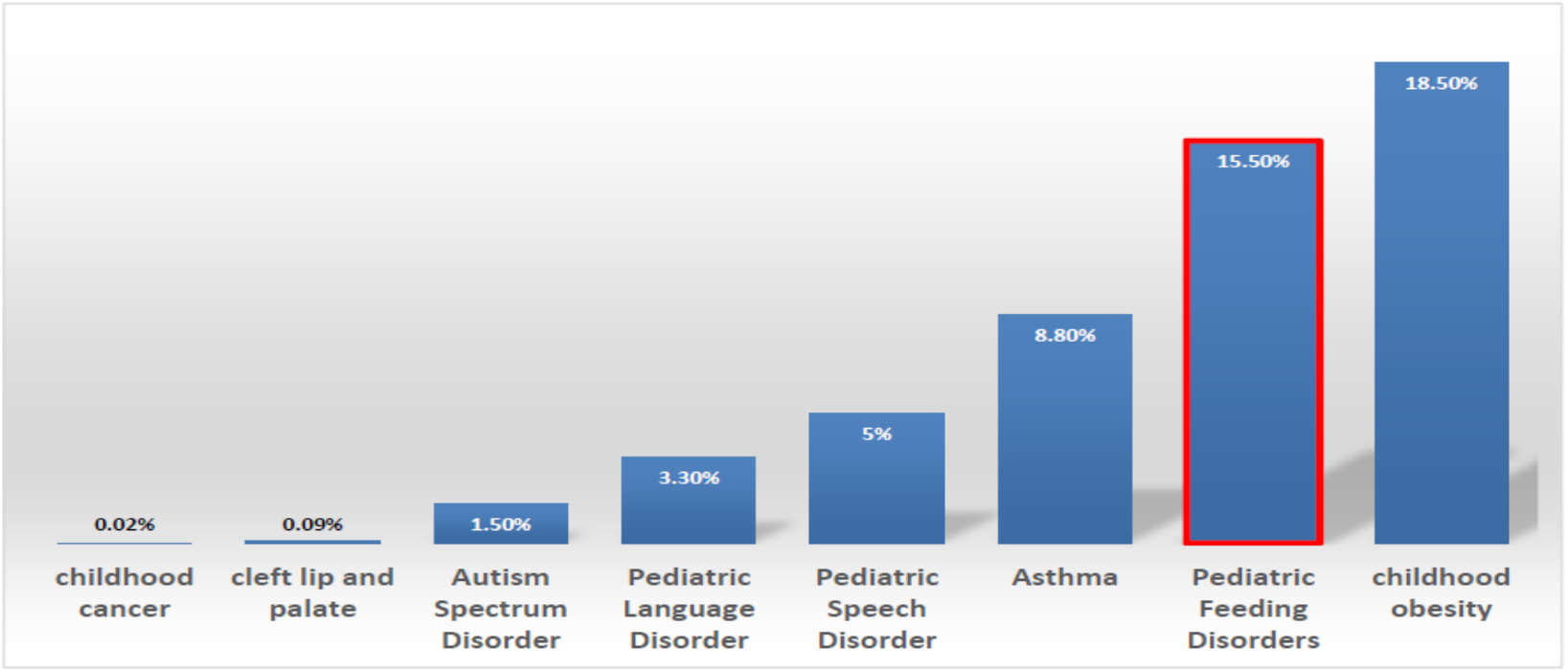
1) Introduction to PFD diagnosis
2) Differential diagnosis consideration of eating disorders and ARFID
3) Roles of providers
4) Illustrative case studies
5) Take home points and questions

# I. Introduction to PFD diagnosis

# PFD: Why should we care

## Prevalence of Pediatric Feeding Disorders compared to other high priority pediatric disorders

(Hay et al, 2010)




Median prevalence points were used when ranges were published. This occurred for cleft lip and palate, autism spectrum disorder, asthma, and pediatric feeding disorders.

OPEN

# Pediatric Feeding Disorder—Consensus Definition and Conceptual Framework

*Praveen S. Goday, †‡Susanna Y. Huh, *Alan Silverman, §Colleen T. Lukens, ||Pamela Dodrill, ¶Sherri S. Cohen, *Amy L. Delaney, #Mary B. Feuling, **Richard J. Noel, ††Erika Gisel, ‡‡Amy Kenzer, §§Daniel B. Kessler, ||||Olaf Kraus de Camargo, ¶¶Joy Browne, and ##James A. Phalen

## ABSTRACT

Pediatric feeding disorders (PFDs) lack a universally accepted definition. Feeding disorders require comprehensive assessment and treatment of 4 closely related, complementary domains (medical, psychosocial, and feeding skill-based systems and associated nutritional complications). Previous diagnostic paradigms have, however, typically defined feeding disorders using the lens of a single professional discipline and fail to characterize associated functional limitations that are critical to plan appropriate interventions and improve quality of life. Using the framework of the World Health Organization *International Classification of Functioning, Disability, and Health*, a unifying diagnostic term is proposed: ''Pediatric Feeding Disorder'' (PFD), defined as impaired oral intake that is not age-appropriate, and is associated with medical, nutritional, feeding skill, and/or psychosocial dysfunction. By incorporating associated functional limitations, the proposed diagnostic criteria for PFD should enable practitioners and researchers to better characterize the needs of heterogeneous patient populations, facilitate inclusion of all relevant disciplines in treatment planning, and promote the use of common, precise, terminology necessary to advance clinical practice, research, and health-care policy.

**Key Words:** dysphagia, failure to thrive, feeding disorder

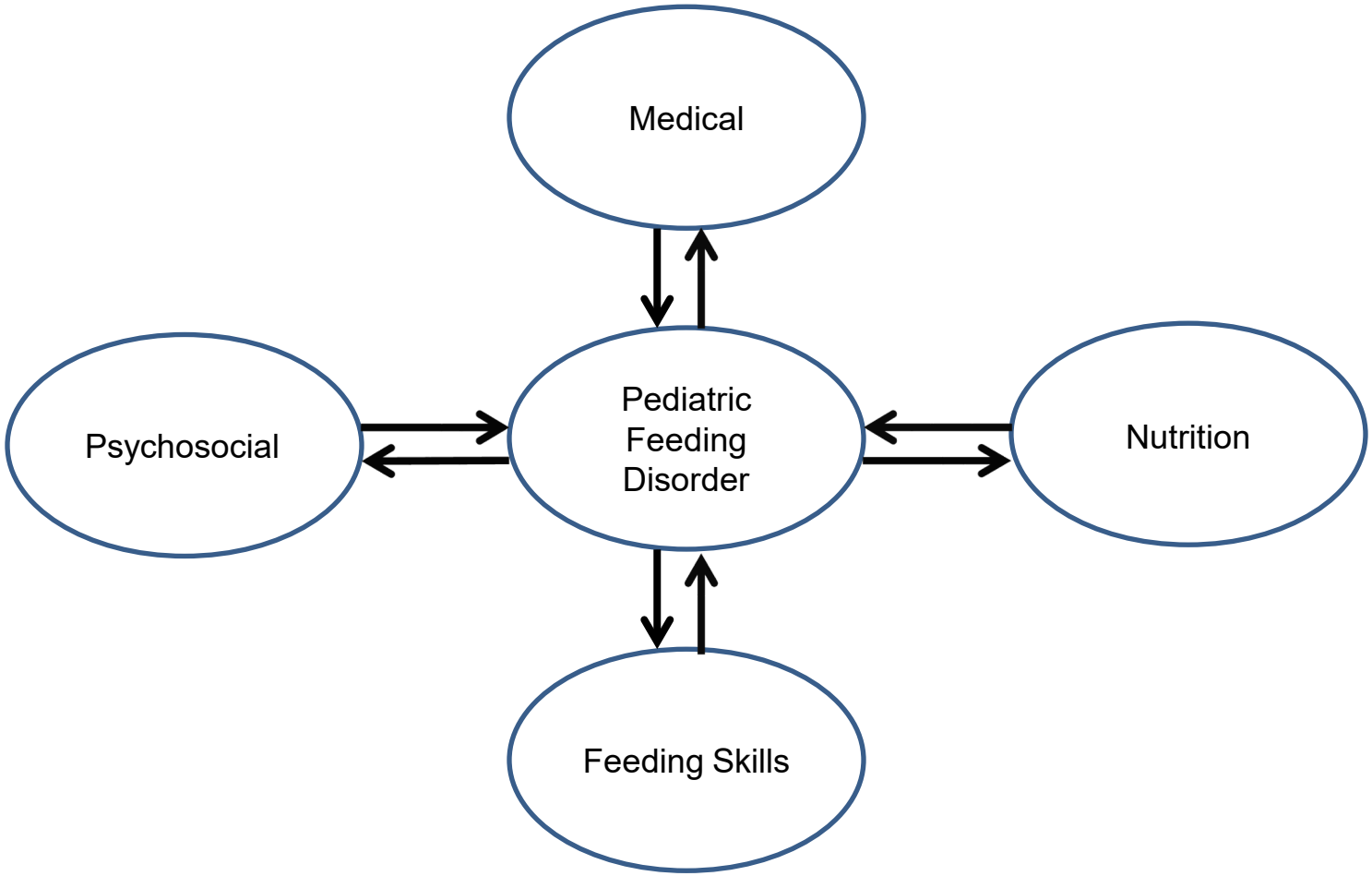
(*JPGN* 2019;68: 124–129)

**What Is Known**

- Pediatric feeding disorders lack a universally accepted definition.
- Previous diagnostic paradigms have defined feeding disorder from the perspective of a single medical discipline.

**What Is New**

- A unifying diagnostic term, ''Pediatric Feeding Disorder'', using the framework of the World Health Organization International Classification of Functioning, Disability, and Health is proposed.
- This term unifies the medical, nutritional, feeding skill, and/or psychosocial concerns associated with feeding disorders.
- The proposed diagnostic criteria should promote the use of common, precise, terminology necessary to advance clinical practice, research, and health care policy.


Medical
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Nutrition
Feeding Skills

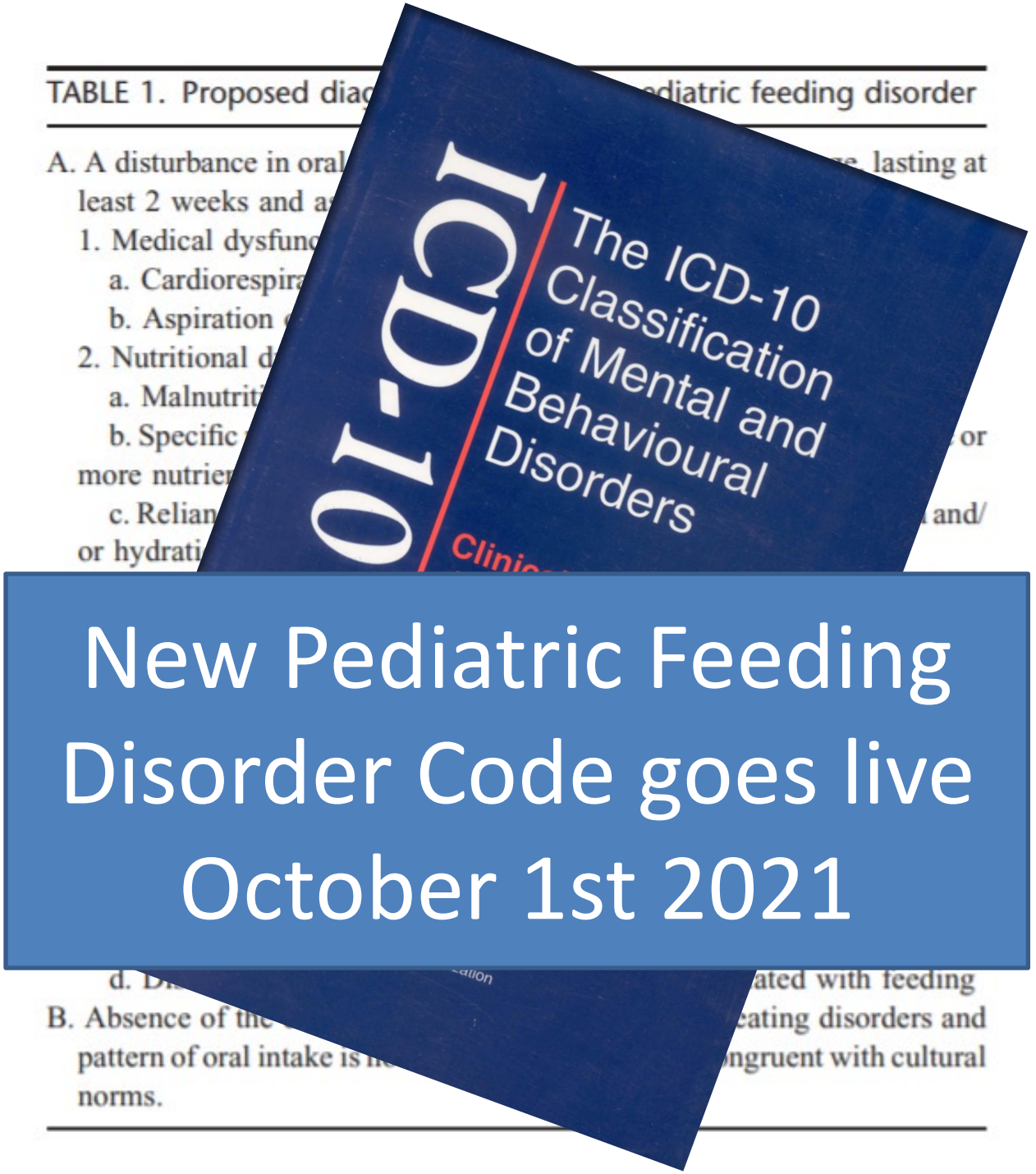

ICD-10
The ICD-10 Classification of Mental and Behavioural Disorders
New Pediatric Feeding Disorder Code goes live October 1st 2021

TABLE 1. Proposed diagnostic criteria for pediatric feeding disorder

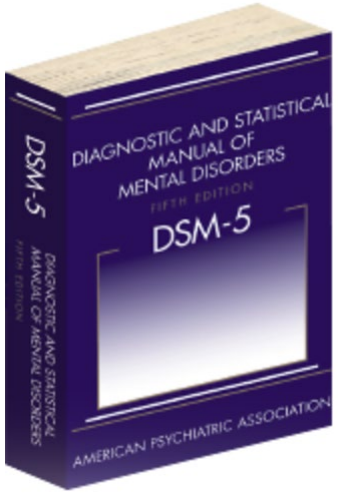
A. A disturbance in oral intake of nutrients, inappropriate for age, lasting at least 2 weeks and associated with 1 or more of the following:
   1. Medical dysfunction, as evidenced by any of the following*:
      a. Cardiorespiratory compromise during oral feeding
      b. Aspiration or recurrent aspiration pneumonitis
   2. Nutritional dysfunction, as evidenced by any of the following†:
      a. Malnutrition
      b. Specific nutrient deficiency or significantly restricted intake of one or more nutrients resulting from decreased dietary diversity
      c. Reliance on enteral feeds or oral supplements to sustain nutrition and/or hydration
   3. Feeding skill dysfunction, as evidenced by any of the following‡:
      a. Need for texture modification of liquid or food
      b. Use of modified feeding position or equipment
      c. Use of modified feeding strategies
   4. Psychosocial dysfunction, as evidenced by any of the following§:
      a. Active or passive avoidance behaviors by child when feeding or being fed
      b. Inappropriate caregiver management of child's feeding and/or nutrition needs
      c. Disruption of social functioning within a feeding context
      d. Disruption of caregiver-child relationship associated with feeding

B. Absence of the cognitive processes consistent with eating disorders and pattern of oral intake is not due to a lack of food or congruent with cultural norms.

# II. Differential diagnosis consideration of eating disorders and ARFID

## Diagnostic and Statistical Manual of Mental Disorders (DSM)

- Published by American Psychiatric Association
- Provides common language and diagnostic criteria for all relevant providers
- The 5th edition (DSM-5) was published in 2013, 19 years after DSM-4
- Changes intended to emphasize gaps where research is needed and increase consistency with ICD




2013

# 307.59 (DSM-4)
# Feeding Disorder of Infancy or Early Childhood

A. Feeding disturbance as manifested by persistent failure to eat adequately with significant failure to gain weight or significant loss of weight over at least 1 month.

B. The disturbance is not due to an associated gastrointestinal or other general medical condition

C. The disturbance is not better accounted for by another mental disorder or by lack of available food.

D. The onset is before age 6 years.

# 307.59 (DSM-4)
# Feeding Disorder of Infancy or Early Childhood

A. Feeding disturbance as manifested by persistent failure to eat adequately with signific ure to gain weight or significant loss at least 1 month.

B. The distur gas cal condition

C. The ter accounted for by anoth sorder or by lack of available food.

D. The onset is before age 6 years.

RETIRED

Significant gaps; needs revision

# 307.59 (DSM-5)
# Avoidant/Restrictive Food Intake Disorder (ARFID)

A. Eating/feeding disturbance as manifested by persistent failure to meet appropriate energy needs leading to one or more of the following:

   1. Weight loss or unmet growth expectations
   2. Nutritional deficiency
   3. Dependence on caloric supplements
   4. **Marked interference with psychosocial functioning**

B. Not related to food scarcity or a culturally-sanctioned practice

**C. Not related to body image or weight concerns**

**D. Not better explained by different medical or psychological process**

**307.59 (R**

**Avoidant/R** **RFID)**

A. ailure to the

2

3

**4.**

B. No

**C. Not**

**D. Not** **edical or psychological proc**

Take Home Point 1:

ARFID is a psychiatric disorder with anxiety etiology resulting in nutritional sequela

# 307.1 (DSM-5)
# Anorexia nervosa

**A.** **Restriction of energy intake relative to requirements** leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than that minimally expected.

**B.** **Intense fear of gaining weight** or becoming fat, or persistent behavior that interferes with weight gain, even though at a significantly low weight.

**C.** **Disturbance in the way in which one's body weight or shape is experienced**, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

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Take Home Point 2:
Eating Disorders are psychiatric disorders with dysmorphia etiology resulting in medical sequela

# Compare & Contrast

Impaired oral intake that is not age-appropriate and is associated with medical, nutritional, feeding skill, and/or psychosocial dysfunction

**ARFID**

**dysphagia**

**malnutrition**

**cerebral palsy**


**Common terminology across relevant disciplines**

**Impact on:**

1. **Clinical practice**
2. **Education**
3. **Research**
4. **Advocacy**

Goday et al, JPGN, 2018/19

# & Contrast

Impaired
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## Take Home Point 3:

PFD is a multifaceted Disorder with functional impairments impacting feeding in children

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Goday et al, JPGN, 2018/19

| | ARFID | Feeding disorder | Eating disorder (AN) |
|---|---|---|---|
| **Age criteria ?** | Generally younger | | Generally older |
| **Nutritional compromise ?** | | | |
| **Association with medical event ?** | | | |
| **Dysphagia ?** | | | |
| **Fear of gaining weight ?** | | | |
| **Disturbance of body image ?** | | | |

| | ARFID | Feeding disorder | Eating disorder (AN) |
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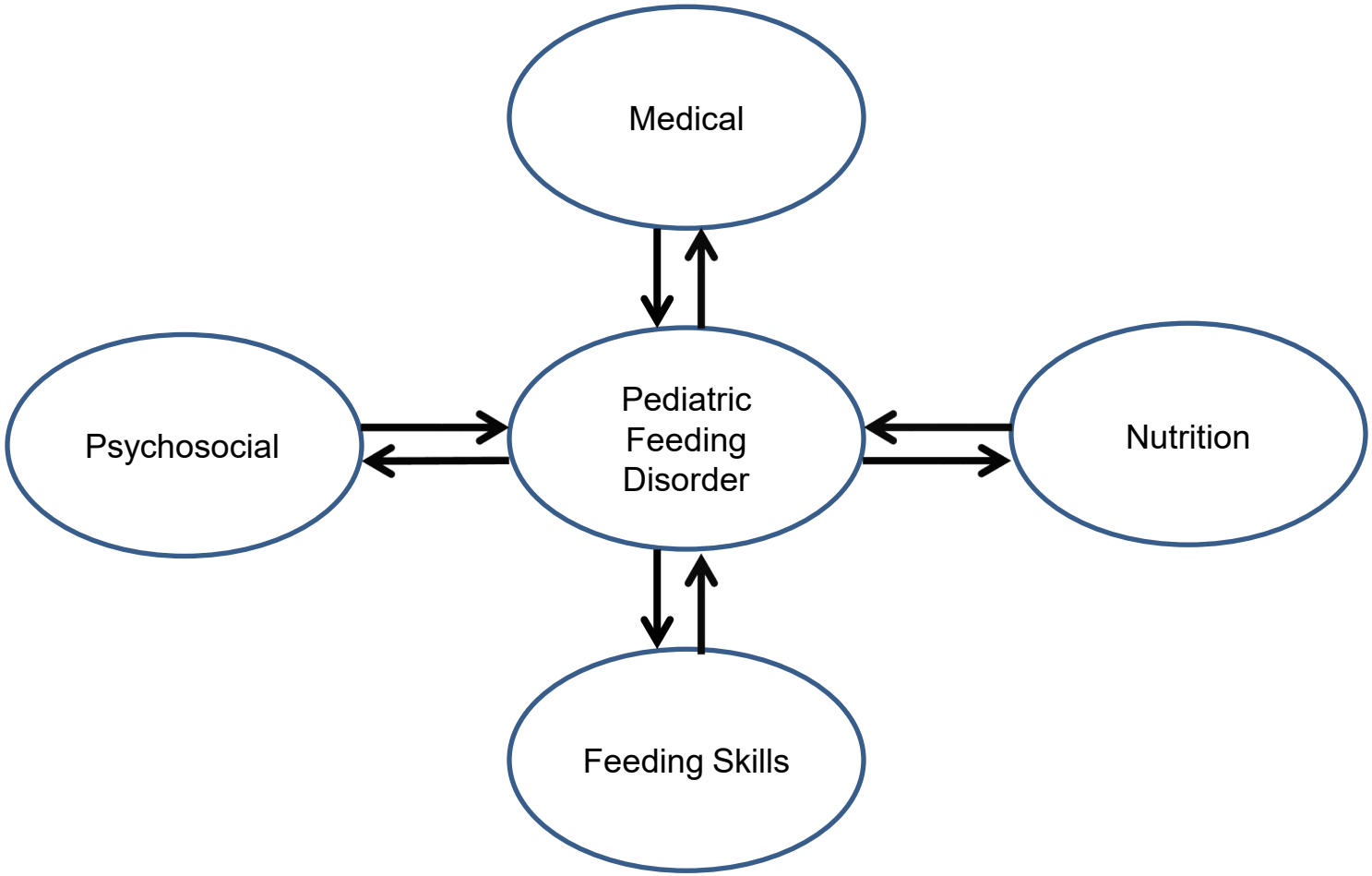
| **Disturbance of body image ?** | - | - | + |

# III. Roles of Providers


Medical
Psychosocial
Pediatric Feeding Disorder
Nutrition
Feeding Skills

# 1. Medical Assessment & Management

- Oropharyngeal and laryngeal anomalies & Inflammatory diseases of the upper GI tract
- Motility and functional GI disease (repaired esophageal atresia, post-fundoplication, and feeding volume intolerance)
- Pulmonary components of “aerodigestive disease” (suck-swallow-breathe coordination, chronic lung disease, aspiration)
- Congenital heart disease, chronic hypoxia, & vagal injury may result in feeding intolerance and vomiting
- Neurologic impairments (cerebral palsy)
- Neurodevelopmental disorders (ASD)
- Disorder of appetite

# 2. Nutrition Assessment & Management

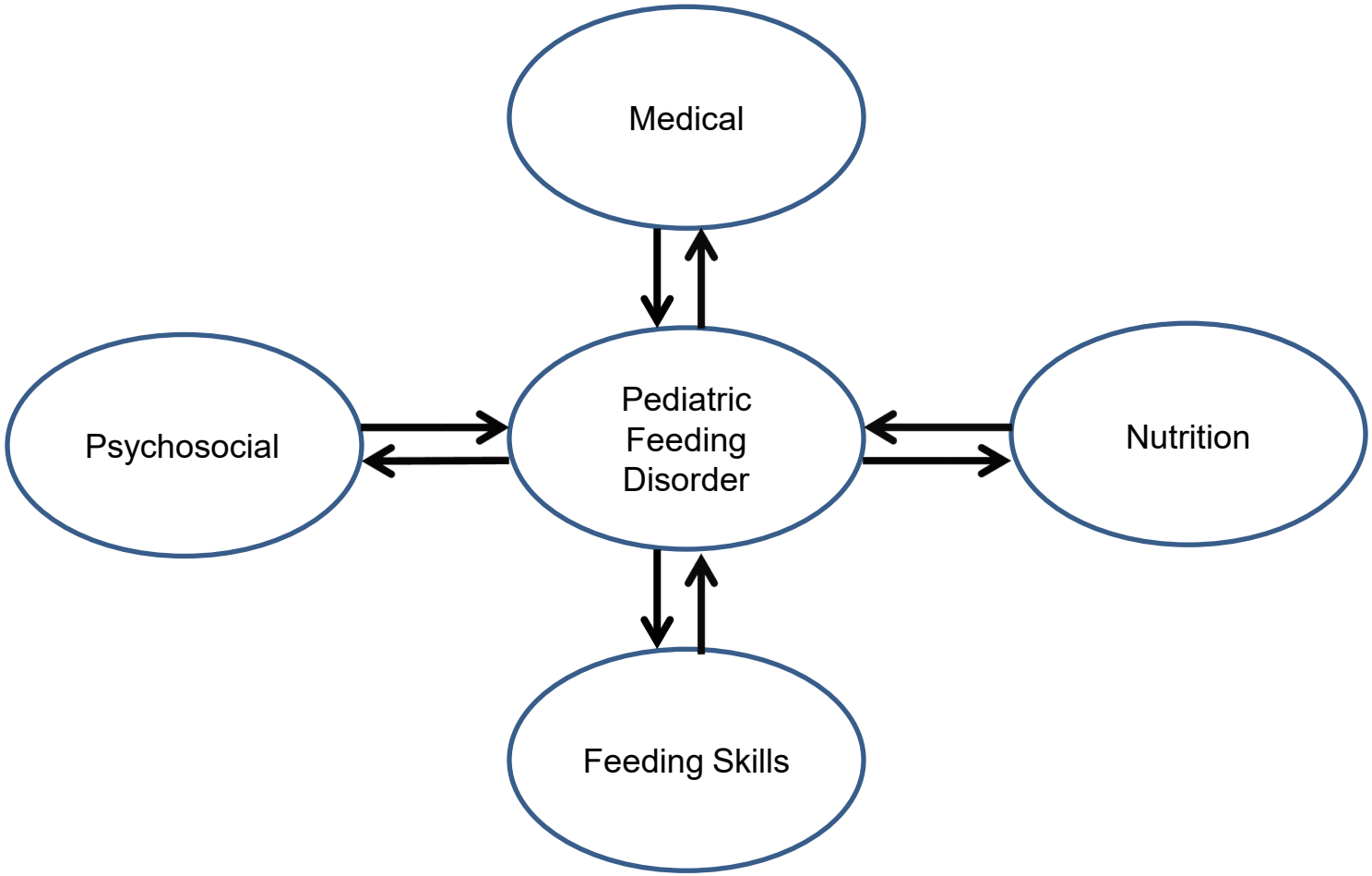
- Malnutrition affects 25% to 50% of children with PFD
- Risk of malnutrition, overnutrition, micronutrient deficiency or toxicity, and dehydration
- Restricted dietary diversity can have other nutrition consequences
  - √ Exclusion of entire food groups, such as fruits and vegetables, can result in micronutrient deficiency despite adequate macronutrient intake
  - √ Children with excessive intake of specific foods, beverages, or dietary supplements can experience micronutrient excess or, rarely, toxicity
  - √ Excessive energy intake, especially in the setting of lower energy requirements, can result in obesity

# 3. Feeding Skills Assessment & Management

- Altered feeding experiences lead to impairment of feeding skills
- Neurodevelopmental delays become evident in the first few years of life
- Specific impairments in oral and pharyngeal sensory-motor functioning may also inhibit feeding skills
  - √ Impairment in *oral sensory functioning*
  - √ Impairment in *oral motor functioning*
  - √ Impairment in *pharyngeal sensation* inhibits airway protection and efficient swallowing
  - √ Impairment in *pharyngeal motor functioning* inhibits pharyngeal movements

# 4. Psychosocial Assessment & Management

- *Psychosocial factors* are characterized as Developmental Factors, Mental and Behavioral Health Problems, Social Factors, or Environmental Factors
  - √ *Developmental factors* often result in a mismatch between the feeding abilities of the child and the feeding expectations of adult caregivers
  - √ *Mental and behavioral health problems* in the child, caregiver, or dyad can adversely influence feeding behavior
  - √ *Social influences* including caregiver-child interactions and cultural expectations
  - √ *Environmental factors* prevent caregivers from providing appropriate responses to mealtime behavior or lead to the inadvertent reinforcement of problematic mealtime behavior. An inconsistent mealtime schedule can adversely affect appetite and subsequently mealtime behavior. Unavailability of food resources can affect how and what a caregiver feeds their child.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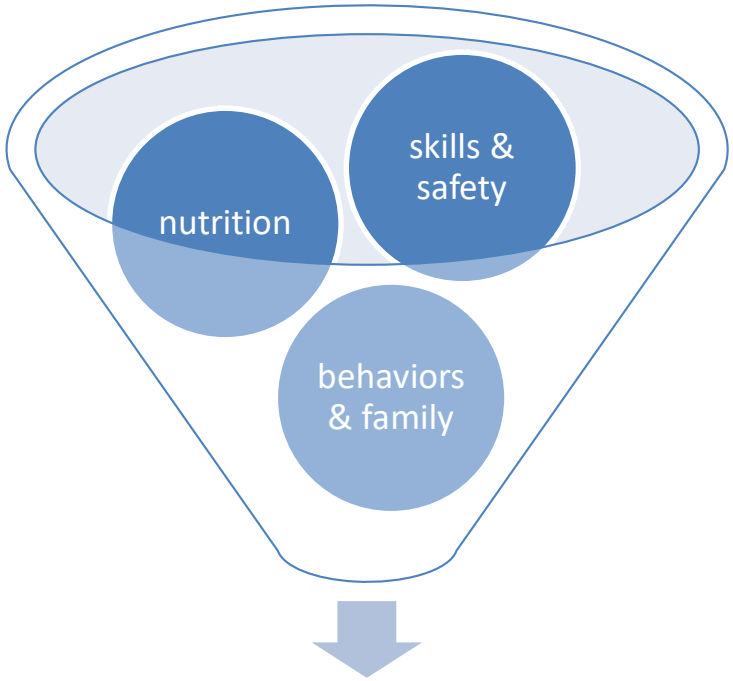
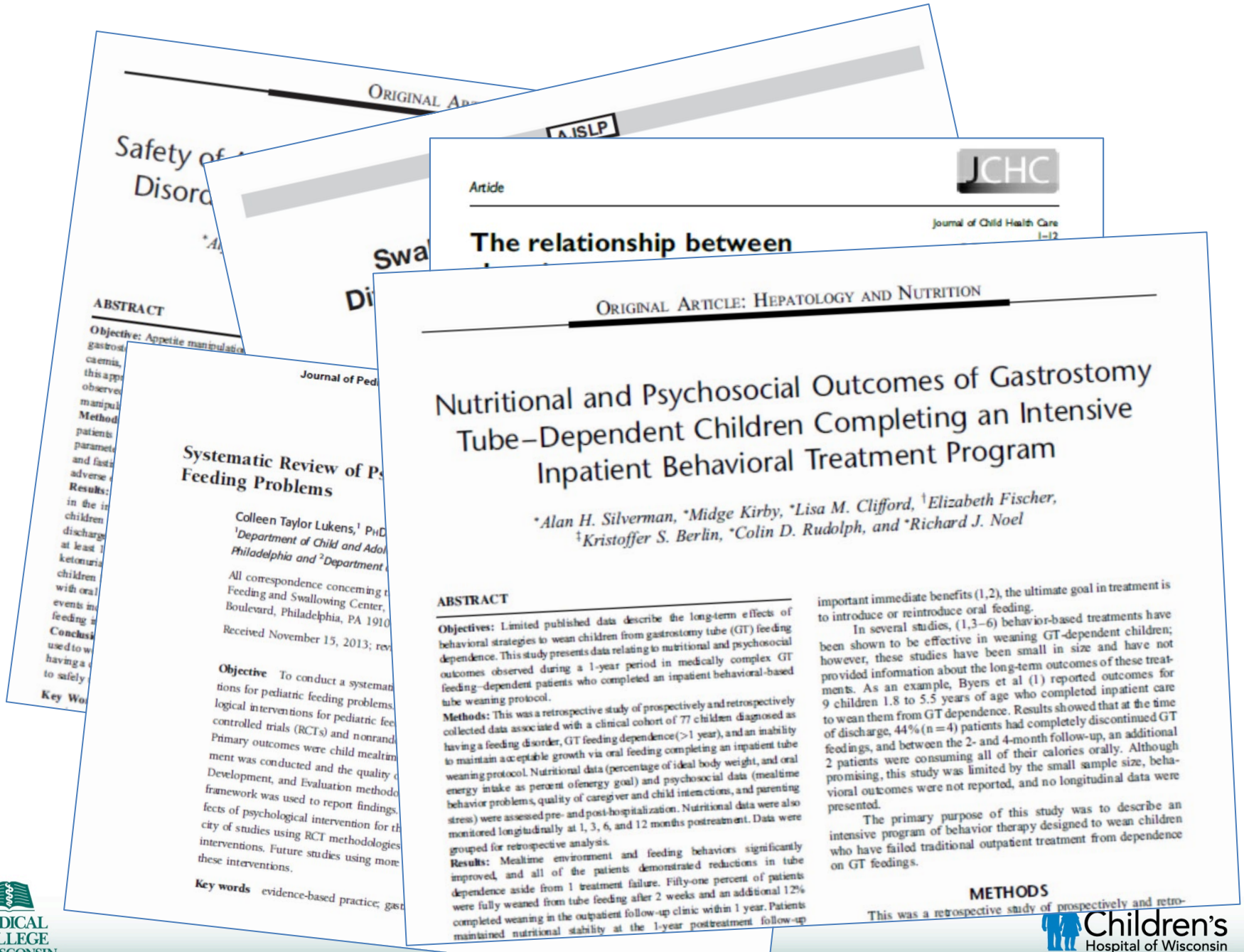
# How To Provide Care




Integrated Assessment &
Treatment



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The relationship between

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Systematic Review of Ps
Feeding Problems

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Boulevard, Philadelphia, PA 1910
Received November 15, 2013; rev

Objective To conduct a systemat
tions for pediatric feeding problems.
logical interventions for pediatric fee
controlled trials (RCTs) and nonrand
Primary outcomes were child mealtim
ment was conducted and the quality
Development, and Evaluation methodo
framework was used to report findings.
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city of studies using RCT methodologies
interventions. Future studies using more
these interventions.

Key words evidence-based practice; gast

ORIGINAL ARTICLE: HEPATOLOGY AND NUTRITION

# Nutritional and Psychosocial Outcomes of Gastrostomy Tube–Dependent Children Completing an Intensive Inpatient Behavioral Treatment Program

*Alan H. Silverman, *Midge Kirby, *Lisa M. Clifford, †Elizabeth Fischer, ‡Kristoffer S. Berlin, *Colin D. Rudolph, and *Richard J. Noel


## ABSTRACT

**Objectives:** Limited published data describe the long-term effects of behavioral strategies to wean children from gastrostomy tube (GT) feeding dependence. This study presents data relating to nutritional and psychosocial outcomes observed during a 1-year period in medically complex GT feeding–dependent patients who completed an inpatient behavioral-based tube weaning protocol.

**Methods:** This was a retrospective study of prospectively and retrospectively collected data associated with a clinical cohort of 77 children diagnosed as having a feeding disorder, GT feeding dependence (>1 year), and an inability to maintain acceptable growth via oral feeding completing an inpatient tube weaning protocol. Nutritional data (percentage of ideal body weight, and oral energy intake as percent of energy goal) and psychosocial data (mealtime behavior problems, quality of caregiver and child interactions, and parenting stress) were assessed pre- and post-hospitalization. Nutritional data were also monitored longitudinally at 1, 3, 6, and 12 months posttreatment. Data were grouped for retrospective analysis.

**Results:** Mealtime environment and feeding behaviors significantly improved, and all of the patients demonstrated reductions in tube dependence aside from 1 treatment failure. Fifty-one percent of patients were fully weaned from tube feeding after 2 weeks and an additional 12% completed weaning in the outpatient follow-up clinic within 1 year. Patients maintained nutritional stability at the 1-year posttreatment follow-up


important immediate benefits (1,2), the ultimate goal in treatment is to introduce or reintroduce oral feeding.

In several studies, (1,3–6) behavior-based treatments have been shown to be effective in weaning GT-dependent children; however, these studies have been small in size and have not provided information about the long-term outcomes of these treatments. As an example, Byers et al (1) reported outcomes for 9 children 1.8 to 5.5 years of age who completed inpatient care to wean them from GT dependence. Results showed that at the time of discharge, 44% (n = 4) patients had completely discontinued GT feedings, and between the 2- and 4-month follow-up, an additional 2 patients were consuming all of their calories orally. Although promising, this study was limited by the small sample size, behavioral outcomes were not reported, and no longitudinal data were presented.

The primary purpose of this study was to describe an intensive program of behavior therapy designed to wean children who have failed traditional outpatient treatment from dependence on GT feedings.

## METHODS

This was a retrospective study of prospectively and retro-

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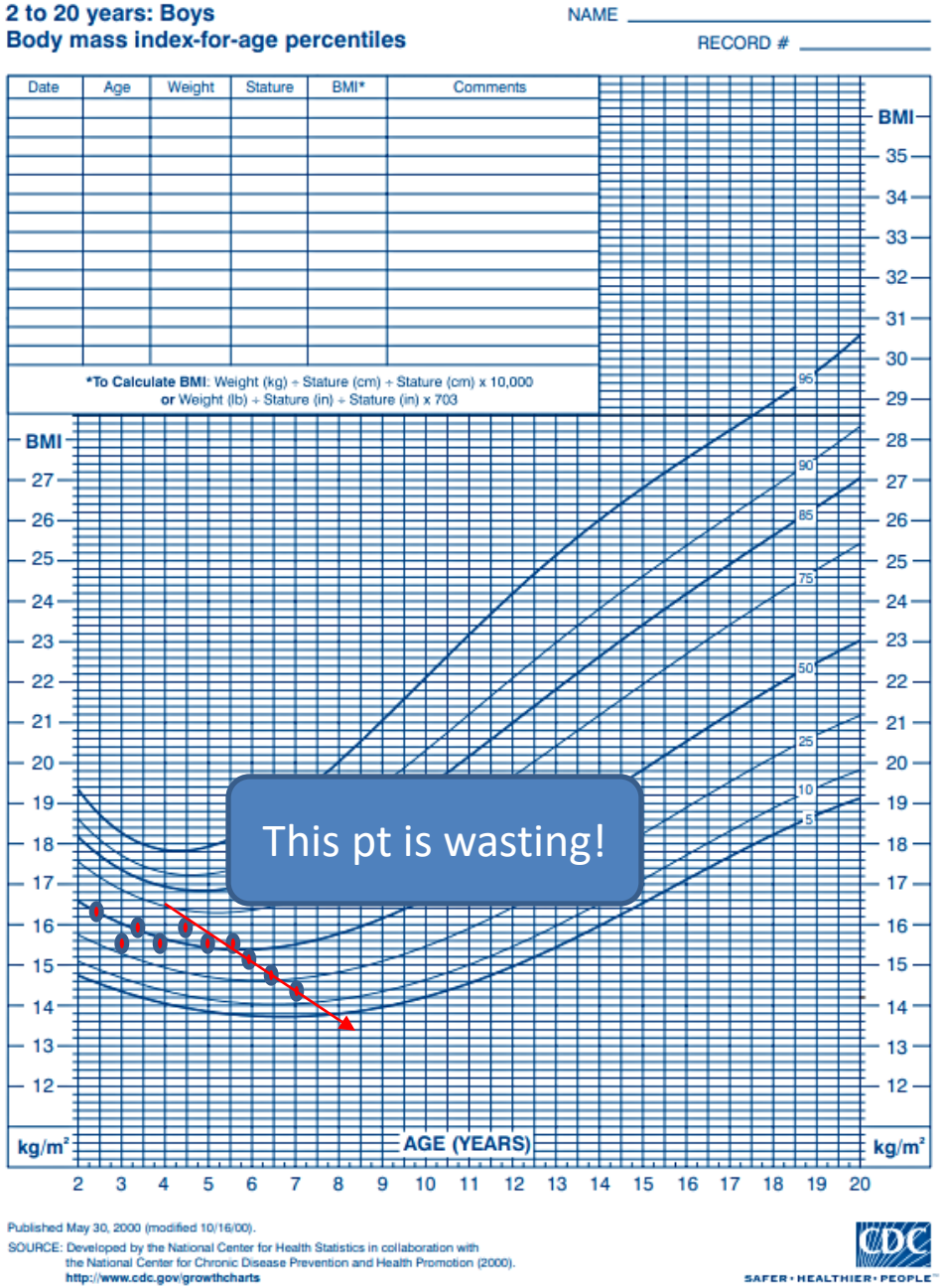
# Illustrative Case 1

- 7-year-old male with 3-year history of selective eating
- Pt missing Fruits and Vegetables, mostly eats highly processed meats and carbohydrates
- Z BMI score -1.2
- Pt experiences chronic constipation
- No history of gagging, choking
- Parents are distressed but child is happy to eat preferred diet
- Child actively resists parent efforts to expand diet (tantrums, cries, elopement from feeding environment)


2 to 20 years: Boys
Body mass index-for-age percentiles
NAME
RECORD #
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BMI*
Comments
*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703
BMI
kg/m²
AGE (YEARS)
95
90
85
75
50
25
10
5
This pt is wasting!
Published May 30, 2000 (modified 10/16/00).
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts
SAFER · HEALTHIER · PEOPLE

| | ARFID | Feeding disorder | Eating disorder (AN) |
|---|---|---|---|
| **Age criteria ?** | Generally younger | | Generally older |
| **Nutritional compromise ?** | + | +* | + |
| **Association with medical event ?** | - | +* | - |
| **Dysphagia ?** | - | +* | - |
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| **Fear of gaining weight ?** | - | - | + |
| **Disturbance of body image ?** | - | - | + |

# ARFID

This patient will need…

Behavior

Nutrition

# Illustrative Case 2

- 4-year-old African American female (adopted at 6 months)
- Pt has not progressed to solids and takes all nutrition orally (PediaSure)
- Z BMI within normal limits/child is well nourished
- Pt reports fear of choking and globus sensation
- Pt actively resists parent attempts to offer any foods other than PediaSure

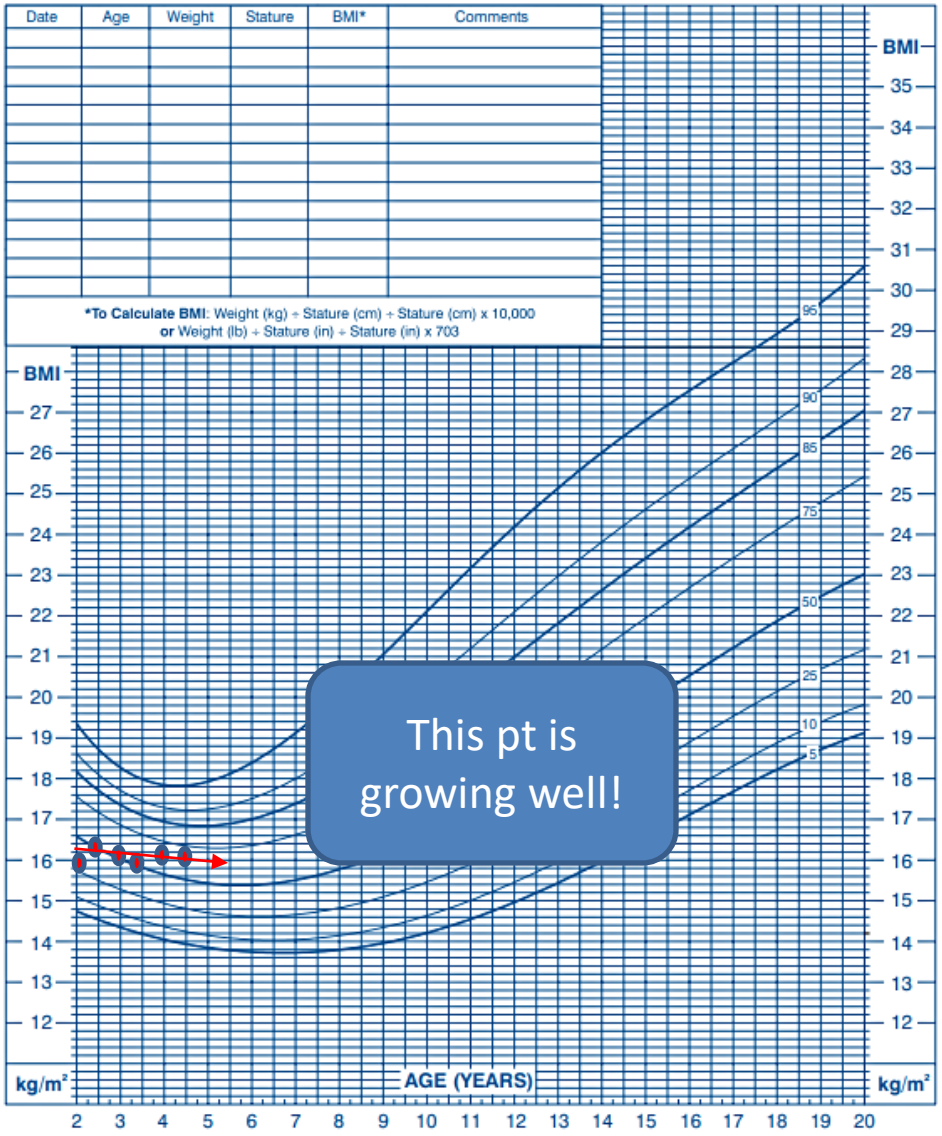
## 2 to 20 years: Boys
## Body mass index-for-age percentiles

NAME _____

RECORD # _____

| Date | Age | Weight | Stature | BMI* | Comments |
|---|---|---|---|---|---|
| | | | | | |

*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703

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CDC
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| **Disturbance of body image ?** | - | - | + |

| | | sorder (AN) |
|---|---|---|
| Age | | ally older |
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| Disturbance | | + |

**PFD**

This child will need…

Medical

Nutrition

Skills/safety

Behavioral

# Take Home Points

- PFD is common affective about 15% of the children
- The differential diagnosis between PFD and other related disorders can be sorted out by considering the etiology
- Accuracy of diagnosis is key to selecting the appropriate management techniques
- PFD assessment and treatment are best managed from a multidisciplinary perspective

# Questions & Comments?

# Contact Us

PEAS.Project@ahs.ca

Alberta Health Services

FOR PROVIDERS
CLINICAL PRACTICE GUIDE
CLINICAL TOOLS & FORMS
COLLABORATIVE PRACTICE
PROFESSIONAL DEVELOPMENT
COMMUNITY OF PRACTICE
FAMILY RESOURCES

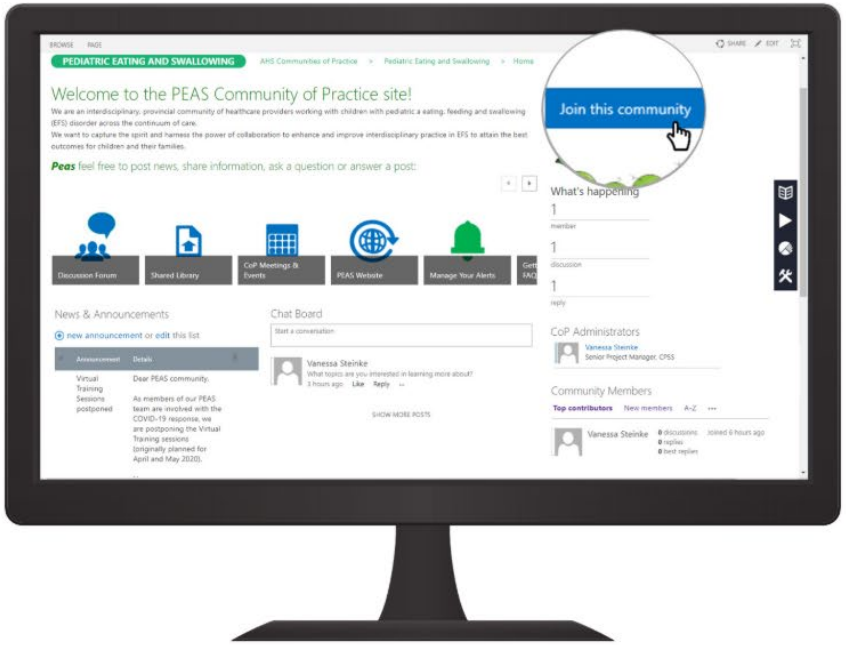
QUICK LINKS
- CPG QUICK REFERENCE
- ORDER FORMS & HANDOUTS
- FIND SERVICES
- VIRTUAL HEALTH
- EQUIPMENT & SUPPLIES
- FUNDING INFORMATION
- FOR FAMILIES
- NEWS AND EVENTS

# Community of Practice

We have just launched the Pediatric Eating And Swallowing Community of Practice (CoP) for healthcare providers who work with children with a pediatric eating, feeding and swallowing (EFS) disorder. This virtual CoP is an interdisciplinary community of healthcare providers across the continuum of care in Alberta. The goal of this CoP is to capture the spirit and harness the power of collaboration to enhance and improve interdisciplinary practice in EFS to attain the best outcomes for children and their families.

**To join the PEAS Community of Practice:**

1. You must be a healthcare provider with an AHS account.
   *See below for information on how to obtain an AHS account.
2. Go to the PEAS CoP website here: https://extranet.ahsnet.ca/teams/CoP/PEAS/SitePages/Home.aspx
   If prompted, enter your AHS account name and password.
3. Click "Join this community" as shown below. That's it!



# Thank you!

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