HHP Care Model and Disease Management Webinar Series

Optimizing Care Coordination in Pediatric Neurology

Thursday, February 25, 2021
5:30pm – 6:30pm

HAWAIʻI PACIFIC HEALTH | HAWAIʻI HEALTH PARTNERS

Moderator – 02/25/21

Andy Lee, MD
Medical Director, *Hawai‘i Health Partners*
Chief of Staff, *Pali Momi Medical Center*
Hawai‘i Pacific Health

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Disclaimer:

- The following is intended as information resource only for HHP/HPH providers, clinicians, administrative and clinical leaders.

- Specific areas may not pertain directly to your clinical practice area and/or may not be applicable to your practice based on your existing workflows, infrastructure, software (e.g. EHR), and communications processes.

Webinar Information

- You have been automatically muted.
  You cannot unmute yourself.
- You will be able to submit questions via the Q&A section.
  - Due to time constraints, any unanswered questions will be addressed this week and posted on the HHP website
- A recording of the meeting will be available tomorrow on the HHP website and intranet.

How to Claim CME Credit

1. Step 1: Confirm your attendance
   - You should have completed a brief questionnaire before joining today's live webinar.

2. Step 2: HPH CME team will email you instructions
   - Complete and submit evaluation survey that will be emailed to you within one week of the offering.
   - Your CE certificate will be immediately available to you upon completion of your evaluation.
   - Questions? Email hphcontinuingeduc@hawaiipacifichealth.org

CME Accreditation Statement

- In support of improving patient care, Hawai‘i Pacific Health is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.
- Hawai‘i Pacific Health designates this webinar activity for a maximum of AMA PRA Category 1 Credit (s) ™1.0 for physicians. This activity is assigned 1.0 contact hour for attendance at the entire CE session.

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INTERPROFESSIONAL CONTINUING EDUCATION

Disclosures

- Except as noted below, the planners and presenters of this activity report no relationships with companies whose products or services (may) pertain to the subject matter of this meeting, :

HHP Care Model and Disease Management Webinar Series

- Purpose and Goals:
  - To promote integration across the network
  - To increase awareness of network expertise
  - To standardize best practices addressing clinical effectiveness, efficiency, appropriateness and patient experience
  - To improve population level outcomes and the overall performance
  - Billed as a conversation: the set-up is a dyad presentation by a Primary Care Physician and Specialist on a clinical topic of interest

- Occurrence:
  - 2nd and last Thursday of the month from 5:30—6:30 pm

QPP/SSP: Attendance at HHP Webinars

- QPP & SSP
  - 0.5 Point = attended ≥10 live webinars
  - 1 Point = attended ≥15 live webinars

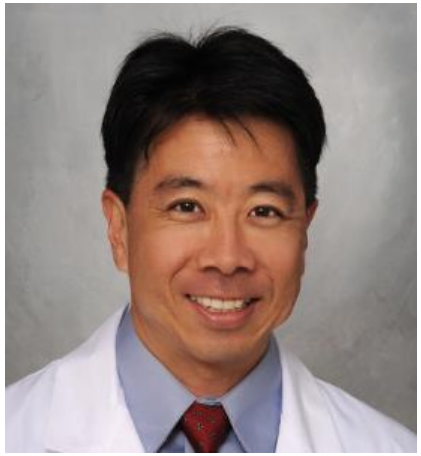
- Providers must register via the pre-survey form and attend at least 10 live webinars in 2021

- Credit will **not** be given for watching the recording

Date	Topic/*Speaker*
1/28	**Chronic Kidney Disease (CKD) #1:** *Dr. Rick Hayashi & Dr. Marti Taba*
2/11	Wound Care: *Dr. Mike Shin & Dr. Sandra Noon*
2/25	Pediatric Neurology: *Dr. Keith Abe & Dr. Justin Hino*
3/11	**Congestive Heart Failure (CHF) #1:** *Dr. Carol Lai & Dr. Rajive Zachariah*
3/25	**SPRING BREAK**
4/8	Chronic Kidney Disease (CKD)#2
4/29	Congestive Heart Failure (CHF) #2
5/13	Opioids - Acute
5/27	Peds Nephrology: Hematuria
6/10	Dermatology: Skin Cancer
6/24	Chronic Kidney Disease (CKD) #3

Date	Topic/Speaker
7/8	Congestive Heart Failure (CHF) #3
7/29	Hospital at Home/Home Visits
8/12	Diabetes Mellitus
8/26	Dementia
9/9	Opioids - Chronic
9/30	Diabetic Foot
10/14	Hypertension
10/28	Chronic Kidney Disease (CKD) #4
11/11	Psychiatric Meds: Adult & Peds
11/25	**THANKSGIVING**
12/16	Congestive Heart Failure (CHF) #4
12/30	**NEW YEAR'S EVE**

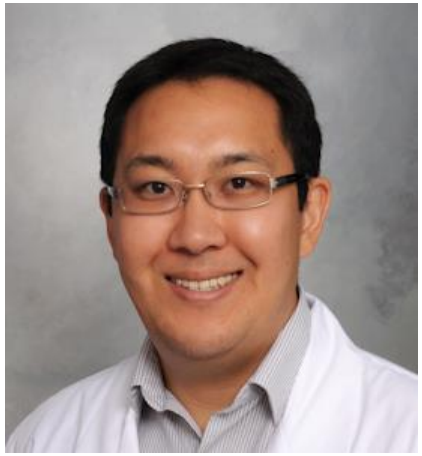
Optimizing Referral in Pediatric Neurology



Keith Abe, MD

Pediatric Neurologist, Hawai‘i Pacific Health Medical Group

Assistant Professor, Department of Pediatrics, John A. Burns School of Medicine, University of Hawaii



Justin Hino, MD

Pediatrician, Straub Kaneohe Family Health Center

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Pre-survey Responses from Referring PCPs

How do you decide when to refer to pediatric neurology?

- complexity, comfort level
- failed conservative measures
- seizures, DD, migraines
- need for EEG or MRI…

What challenges in referral process to pediatric neurology?

- 90% response "long wait time"
- duplicated documentation

What could help your referral process to pediatric neurology?

- more neurologists
- guidelines on when to refer
- guidelines on imaging
- help us to pick the specialist rather than throw out a net

A goal for all of us:

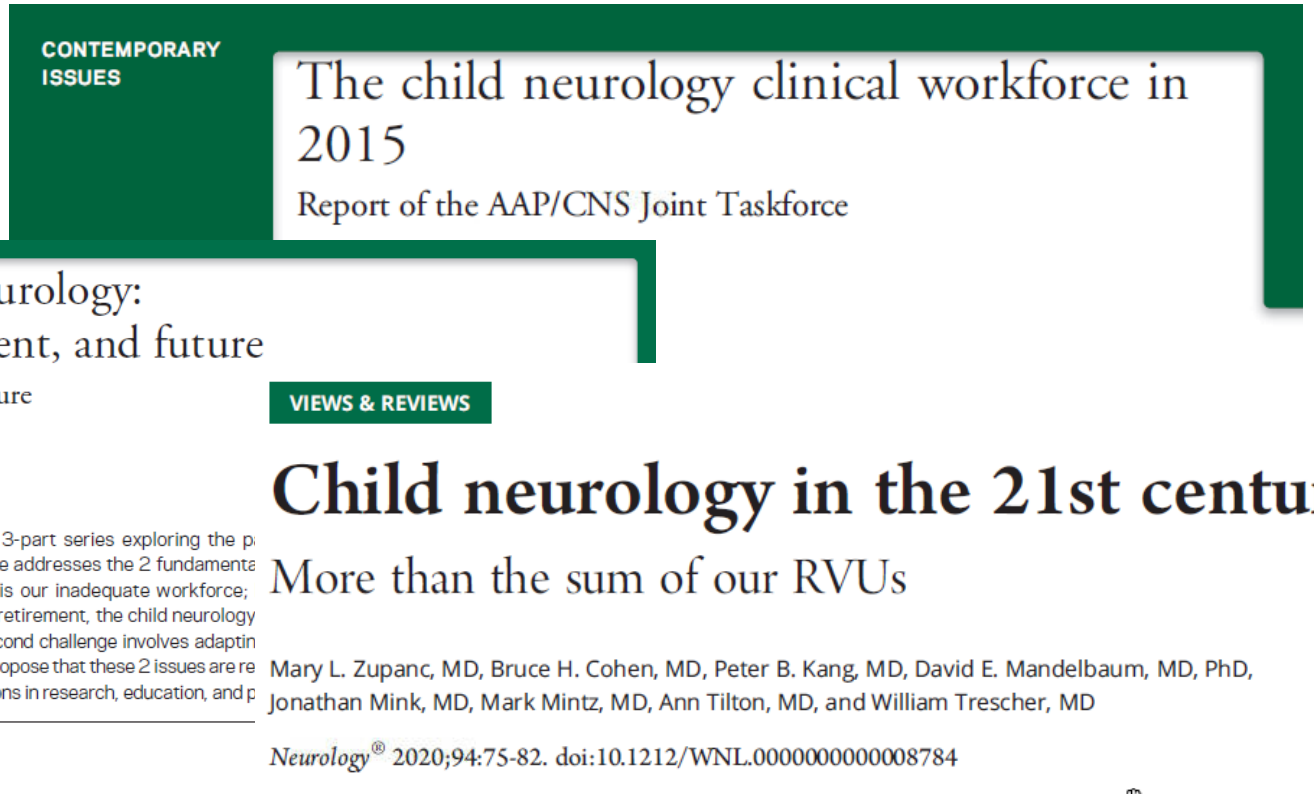
The right patients,
seen by the right provider,
at the right time

Overview

- Current situation in pediatric neurology
- Improving referral efficiency
- Optimizing our resource utilization
  - Seizures
  - Headaches
  - Developmental Delay
  - Tics
- Focusing on the best target vs. overlap referrals

Current Situation in Pediatric Neurology

- We love to help in the neurological care of your patients
- Nationally



CONTEMPORARY ISSUES

The child neurology clinical workforce in 2015

Report of the AAP/CNS Joint Taskforce

RESIDENT & FELLOW SECTION

Section Editor Mitchell S.V. Elkind, MD, MS

Child Neurology: Past, present, and future

Part 3: The future

Keith R. Ridel, MD
Donald L. Gilbert, MD, MS

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ridelkands@gmail.com

ABSTRACT

This is the last of a 3-part series exploring the p
neurology. This article addresses the 2 fundamenta
important challenge is our inadequate workforce;
terns, and projected retirement, the child neurology
likely worsen. The second challenge involves adaptin
changes ahead. We propose that these 2 issues are re
eration of career options in research, education, and p

VIEWS & REVIEWS

Child neurology in the 21st century

More than the sum of our RVUs

Mary L. Zupanc, MD, Bruce H. Cohen, MD, Peter B. Kang, MD, David E. Mandelbaum, MD, PhD, Jonathan Mink, MD, Mark Mintz, MD, Ann Tilton, MD, and William Trescher, MD

Neurology® 2020;94:75-82. doi:10.1212/WNL.0000000000008784

Nationally in Pediatric Neurology

RESIDENT & FELLOW SECTION

Section Editor Mitchell S.V. Elkind, MD, MS

Child Neurology:
Past, present, and future

Part 3: The future

Keith R. Ridel, MD

ABSTRACT

THE FUTURE OF THE CLINICAL FIELD IN CHILD NEUROLOGY Long waiting lists for new child neurology visits around the country led to various efforts to estimate future workforce needs. The American Academy of Neurology published a report in 2000 revealing a 20% deficiency of child neurologists until 2020.[4] A more recent survey found similar results.[5] In addition, a survey of child neurology resi-

Riddell KR, et al, Neurology 2010

Nationally in Pediatric Neurology

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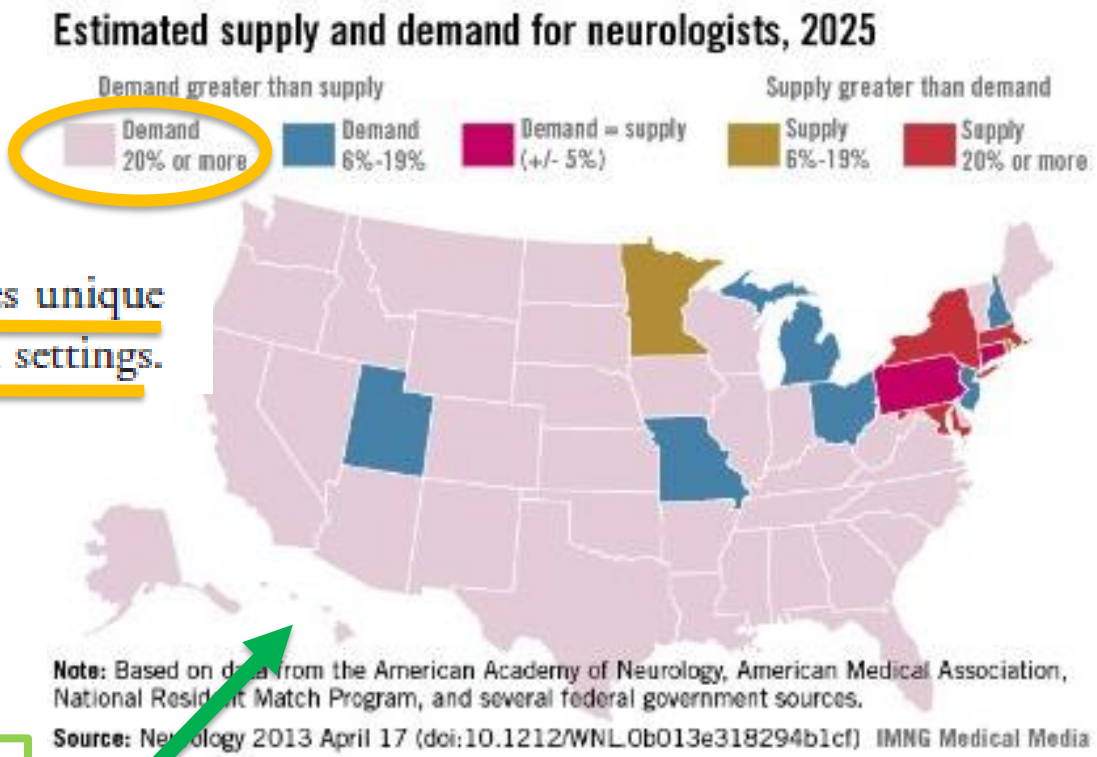
decreased emergency room visits, fewer unscheduled hospitalizations, and less burden on the primary care provider.

A developing critical shortage of child neurologists is making patient access difficult and increasing the burden on the remaining and strained workforce. Increasing the number of child neurologists is therefore essential for the future of children with neurologic disorders. To help

Zupanc ML, et al, Neurology 2019

Nationally / Locally in Pediatric Neurology

The shortage of child neurologists poses unique challenges for both outpatient and hospital settings.



We have a >20% supply vs. demand deficit

Riddell KR, et al, Neurology 2010

Local Situation in Pediatric Neurology

- Local community:
  - 2018: 1 moved out of state
  - 2019: 1 closed practice
  - 2020: 2 moved out of state + Dr. Aileen Tanaka arrived ☺

- HPH MG currently
  - 70-80 incoming new consult referrals per month
  - ~ 50 available appt/month, <u>starting 3 months out</u>

  → accumulating supply vs. demand deficit

Real Life Referral Vignettes:

"Epic makes everything faster and more efficient?"

- Re: Headaches
- Chart review:
  - Patient message to PCP: " _____ has had bad headaches for 2 days"
  - PCP reply: "No problem, we will send a neurology referral"
  - No other notes in the chart regarding evaluation or treatment of HA

"Urgent due to long duration"

- Re: Headaches for 2 years, urgent
- Chart review:
  - Patient had 2 well child visits and other non-specific acute visits with no mention of headaches
  - Patient recently informed mom he recently had headaches and with further questioning, that he actually has had HA for 2 years and just didn't mention it to her
  - No further headache history or headache directed exam on chart, follow up as needed

Improving Referral Efficiency

- Reason for referral?
- Pertinent notes on condition available?
- Urgent or routine?

- Any prior specialist care?
  - Prior records available?
  - Second opinion or transfer of care?

Improving Referral Efficiency

- Reason for referral?
  - Diagnosis? +/- Treatment? +/- long-term management?
- Pertinent notes on condition available?
  - Epic vs. fax
  - Notes Hx and PE and relevant tests
- Urgent or routine?
  - Why urgent?
    - ✓Unprovoked seizure
    - ✓Red flag headaches
    - ✓Regression and/or new focal deficit(s)
    - ✓Concerned about _____

Real Life Referral Vignettes:

"Urgent needs seizure medication"

- Re: Epilepsy, urgent
- Chart review:
  - Patient moved to Hawai‘i 6 months prior, seen for numerous acute and well child visits
  - Needs refill of epilepsy medication
  - No records available on prior neurology care, diagnosis, treatment

Improving Referral Efficiency

- Any prior specialist care?
  - **All prior records should be available for reference** (e.g. neurology consult notes, EEG, MRI, genetic tests, etc.)
  - **Second opinion or transfer of care?**

Reasons for Pediatric Neurology Referral

- Seizures, seizure-like episodes ~ 40%
- Headaches ~ 30%
- Developmental delay ~ 10-20%
- Tics ~ 5-10%
- Other ~ 5-10%

Reasons for Pediatric Neurology Referral

- **Seizures, seizure-like episodes ~ 40%**
- Headaches ~ 30%
- Developmental delay ~ 10-20%
- Tics ~ 5-10%
- Other ~ 5-10%

Seizures

- Was it a seizure?
- Was it an unprovoked seizure?
- Do they have epilepsy?

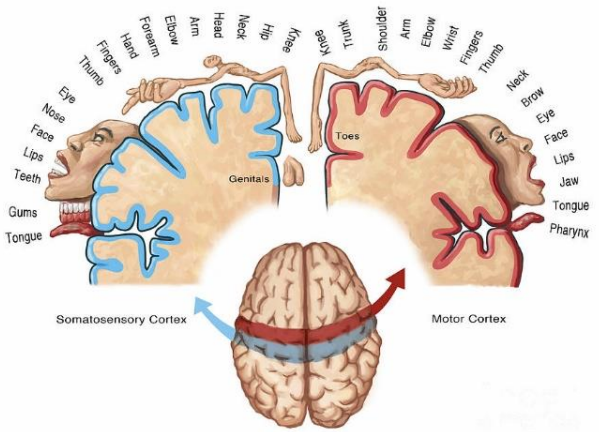
Real Life Referral Vignettes:

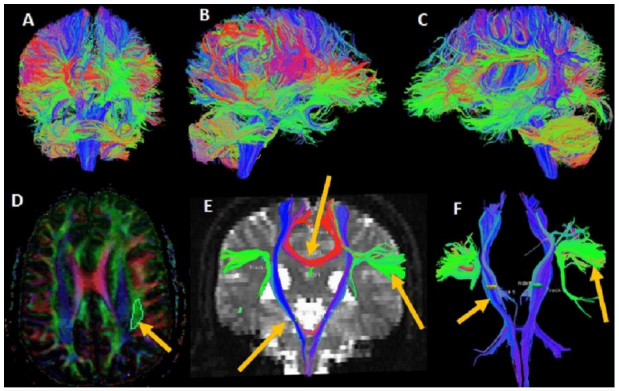
"Agitated behavior, concern for seizure"

- Re: Concern for new onset seizures
- Chart review:
  - 6 year old boy with autism spectrum disorder (ASD)
  - Recurrent episodes of agitated behaviors, ripping papers, climbing on chairs, throwing things, pushing desks over, spitting, pushing others away, running away, not listening to verbal redirection
  - Goes on for 15-30 minutes or more
  - Triggers: being told can't do something, bed time, stopping screen time

Was it a Seizure?

- A seizure is a paroxysmal event caused by hypersynchronous discharge of a group of neurons





General characteristics:

- **Abrupt onset** of non-purposeful activity:
  - Alteration in awareness
  - Motor: jerking, twitching, posturing; guttural
  - Sensory: tingling
  - Autonomic: tachycardia, tachypnea, desaturation, flushing, hypersalivation, emesis
  - Other: speech changes
- Often eyes involved (gaze deviation, nystagmus, unable to fix and track)
- **Non-interruptible**
- Usually <3 minutes (not always)

https://www.epilepsy.com/learn/about-epilepsy-basics/what-seizure

“Agitated Behavioral Seizure?”

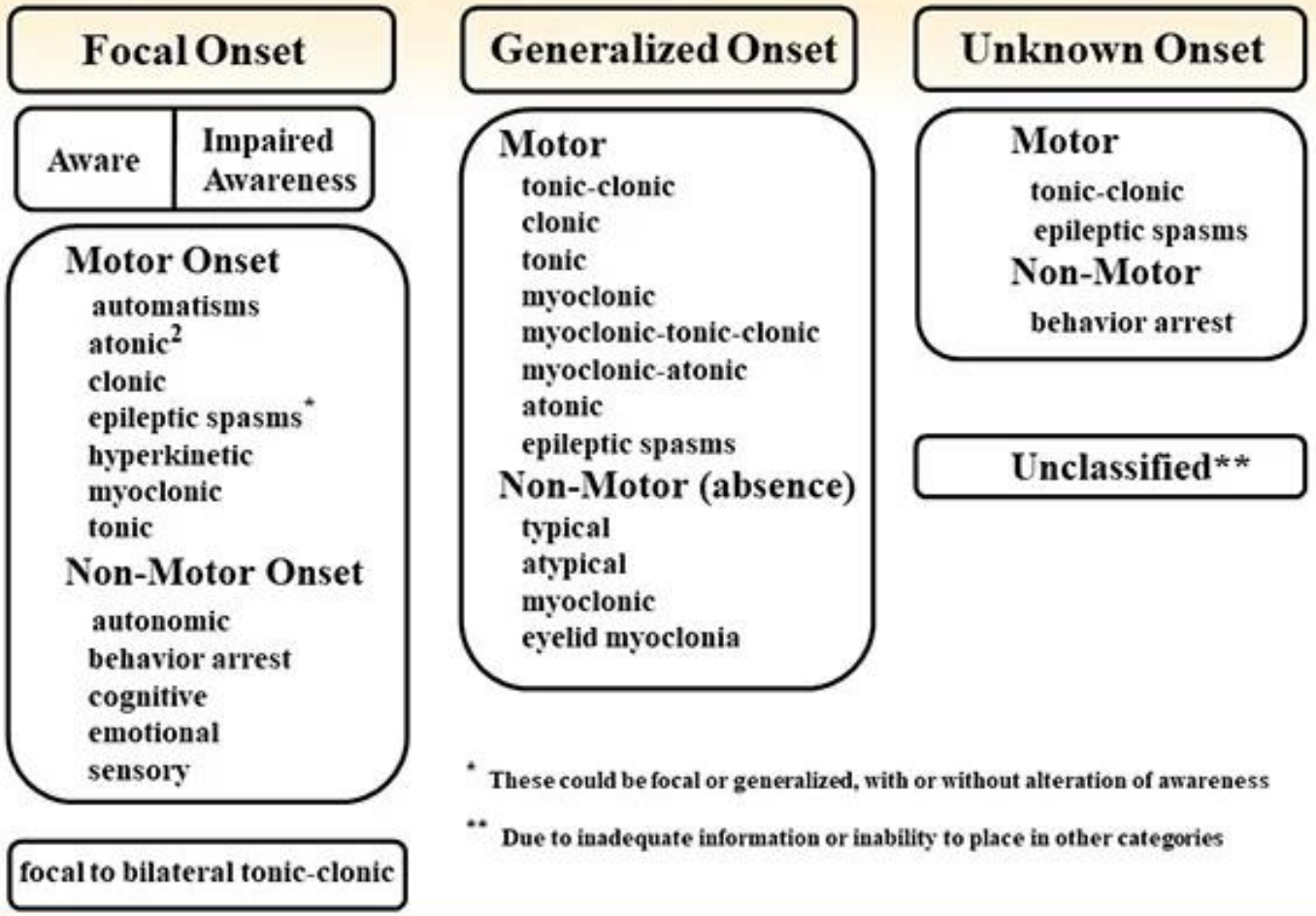
- Re: Concern for new onset seizures
- Chart review:
  - 6 year old boy with autism spectrum disorder (ASD)
  - Recurrent episodes of agitated behaviors, ripping papers, climbing on chairs, throwing things, pushing desks over, spitting, pushing others away, running away, not listening to verbal redirection
  - Goes on for 15-30 minutes or more
  - Triggers: being told can’t do something, bed time, stopping screen time

>> **Doubtful to be a seizure**

  - Triggered/provoked event
  - Complex purposeful behaviors
  - Relatively prolonged

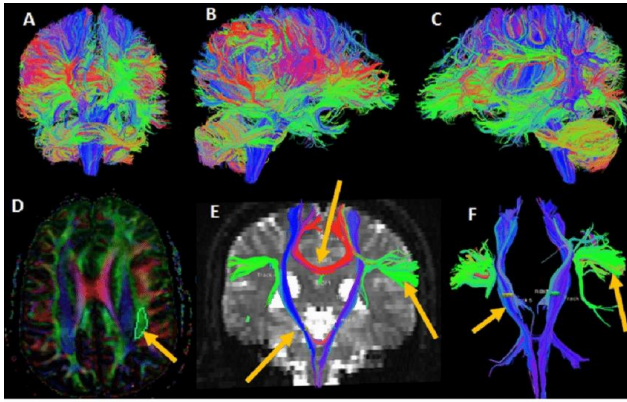
>> Epilepsy and EEG abnormalities are more common in patients with ASD, but do not feel EEG would be helpful in this situation

ILAE 2017 Classification of Seizure Types Expanded Version



Medscape

Focal Seizure Manifestations:

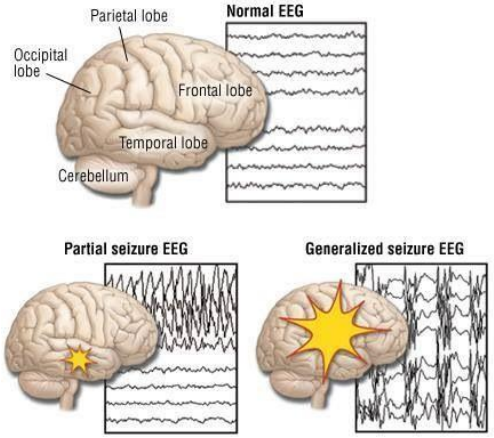


Frontal lobe seizures

- Head and eye movement to one side
- Complete or partial unresponsiveness or difficulty speaking
- Explosive screams, including profanities, or laughter
- Abnormal body posturing, fencer
- Repetitive movements, such as rocking, bicycle pedaling

Temporal lobe seizures

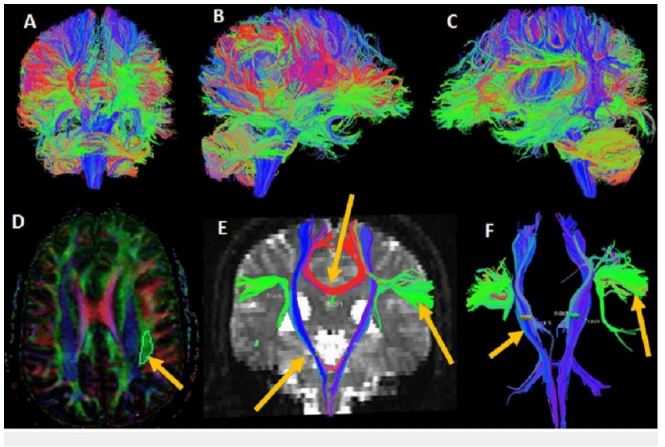
- Auras/focal aware may be classified by symptom type, as follows:
  - Sensory – auditory, gustatory, olfactory, somatosensory, vestibular
  - Autonomic – Heart rate Change (asytole, bradycardia, palpitations, tachycardia), flushing, gastrorintestinal, pallor, piloerection, respiratory
  - Cognitive/psychic – Déjà vu or jamais vu, dissociation, depersonalization or derealization, aphasia/dysphasia, memory
  - Emotional/affective - agitation, aggression, anger, anxiety, fear, paranoia, pleasure, crying (dacrystic) or laughing
- Motionless stare, dilated pupils, and behavioral arrest
- Automatism - Oral-facial, eye blinking, alimentary, manual or unilateral dystonic limb posturing, perserveration, vocalization/speech



Smith P, Practial Neurology 2012 “Epilepsy: mimics, borderland and chameleons”

https://www.researchgate.net/figure/Whole-brain-tractography-Whole-brain-tractography-shows-coronal-A-right-sagittal-B_fig4_320192514

Focal Seizure Manifestations:



Parietal lobe seizures

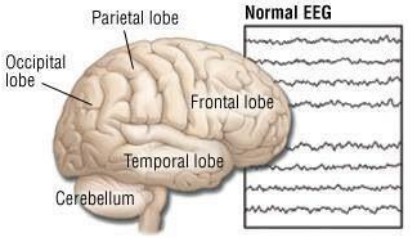
- Ictal pain
- Sensory symptoms – unilateral tingling, tightness

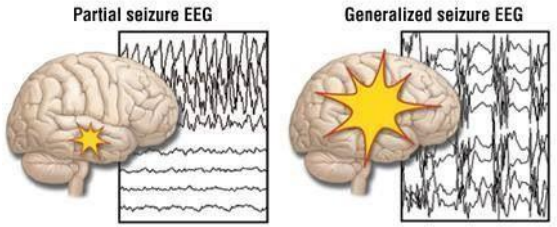
Occipital lobe seizures

- Positive visual auras – colored shapes, formed objects
- Ictal blindness, often with retained awareness

Hypothalamic seizures

- Gelastic seizures– unprovoked giggling or laughing





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Infantile Spasms

https://www.youtube.com/watch?v=kRt8muFfUQo

What are Mimics of Seizure?

Infant mimics

Benign

- Jitteriness, normal startle, hiccups
- Benign neonatal sleep myoclonus
- Reflux (Sandifer)
- Bells reflex or disconjugate eye movements
- Breath Holding Spells

Other pathology

- Complex motor automatism (bicycling, swimming)

Clancy RR, Mimics of Epileptic Seizures in Neonates and Young Infants

Sleep Myoclonus

https://www.youtube.com/watch?v=hyRhVWrZbF8

Breath Holding Spell

https://www.youtube.com/watch?v=e0640GTjScQ

What are Mimics of Seizures?

Child and adolescent mimics

Common

- ADHD (“transient altered awareness?”)
- Syncope, convulsive syncope

Movement disorder

- Tics (blinking, eye rolling, head twitching)
- Stereotypy
- Paroxysmal kinesigenic dyskinesia (PKD)

Migraines and variants

- Benign Paroxysmal Torticollis (focal seizure?)
- Benign Paroxysmal Vertigo (temporal lobe seizure?)
- Cyclic Vomiting Syndrome (Panayiotopoulos syndrome?)
- Confusional migraine, visual aura

Smith P, Practial Neurology 2012 “Epilepsy: mimics, borderland and chameleons”

Absence Seizure

https://www.youtube.com/watch?v=uS4mPF6Cwc0

Real Life Referral Vignettes:

"Syncope vs. seizure"

- Re: Black out episode, possible seizure
- Chart review:
  - 15 year old previously healthy girl,
  - stood up and collapsed after coming out of bathroom at home
  - recalled light headed dizziness and darkening of vision
  - caught by mom in hallway, unresponsive "for about a minute," and had some twitching for few seconds

>> Doubtful to be an epileptic seizure

- Don't feel further evaluation would be needed
- Counseling on lifestyle habits to prevent syncope
- Counseling on what could be concerning clinical changes in the future

What are Mimics of Seizures?

Sleep disorders

- REM parasomnias
- Narcolepsy and cataplexy

Psychiatric

- Panic/anxiety disorder, hyperventilation syndrome, dissociative
- Psychogenic non-epileptic seizures

Other mimics

- Gratification syndrome/masturbation

Other pathology

- Tonic decorticate/decerebrate posturing – ↑ ICP

Smith P, Practial Neurology 2012 “Epilepsy: mimics, borderland and chameleons”

Real Life Referral Vignettes:

"3 strikes and refer"

- Re: Multiple febrile seizures
- Chart review:
  - 3 year old developmentally normal boy
  - 3rd simple febrile seizure
  - Further testing or treatment?

Simple vs. Complex Febrile Seizures

	Simple Febrile Seizure	Complex Febrile Seizure
Criteria	• 6 month-5 years • primary generalized • <15 minutes • Only 1 within 24 hours • (normal development and exam)	• <6 month or >5 years • Focal (onset, post-ictal paresis) • Prolonged (>15 minutes), and/or • Recurrent within 24 hours • (neuro developmental abnormality)
Incidence	• 2-5% (1 in 50 to 1 in 20)	About 20% of FS
Evaluation	None (except for fever cause PRN)	Consider EEG Consider CT/MRI (focal, prolonged)
Treatment	None	Consider diazepam (PR or IN)
Prognosis	30% recurrence (50% if <1 y.o.) 10% have 3 or more Epilepsy risk 1-2%	Epilepsy risk 3% to 30% (higher risk with more complex factors)

ALL REQUIRED

ANY POSSIBLE

Clinical Practice Guideline—Febrile Seizures: Guideline for the Neurodiagnostic Evaluation of the Child With a Simple Febrile Seizure, Pediatrics 201)
Patel AD et al, Complex febrile seizures: a practical guide to evaluation and treatment, J Child Neurol 2013

Real Life Referral Vignettes:

"3 strikes and refer"

- Re: Multiple febrile seizures
- Chart review:
  - 3 year old developmentally normal boy
  - 3rd simple febrile seizure
  - Further diagnosis or treatment?

>> 10% of patients with febrile seizures may have 3 or more

  - No further evaluation or treatment
  - Most important: counsel on seizure first aid & precautions

https://pediatrics.aappublications.org/content/pediatrics/127/2/389.full.pdf

Do They Have Epilepsy?


ILAE OFFICIAL REPORT

Epilepsia

A practical clinical definition of epilepsy

*Robert S. Fisher, †Carlos Acevedo, ‡Alexis Arzimanoglou, §Alicia Bogacz, ¶J. Helen Cross, #Christian E. Elger, **Jerome Engel Jr, ††Lars Forsgren, ‡‡Jacqueline A. French, §§Mike Glynn, ¶¶Dale C. Hesdorffer, ##B.I. Lee, ***Gary W. Mathern, †††Solomon L. Moshé, ‡‡‡Emilio Perucca, §§§Ingrid E. Scheffer, ¶¶¶Torbjörn Tomson, ###Masako Watanabe, and ****Samuel Wiebe

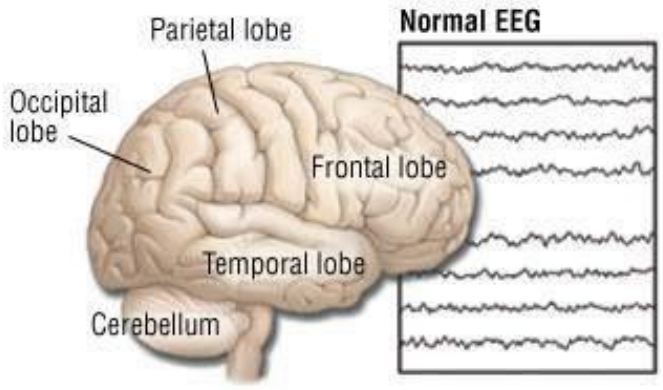
Epilepsia, 55(4):475–482, 2014

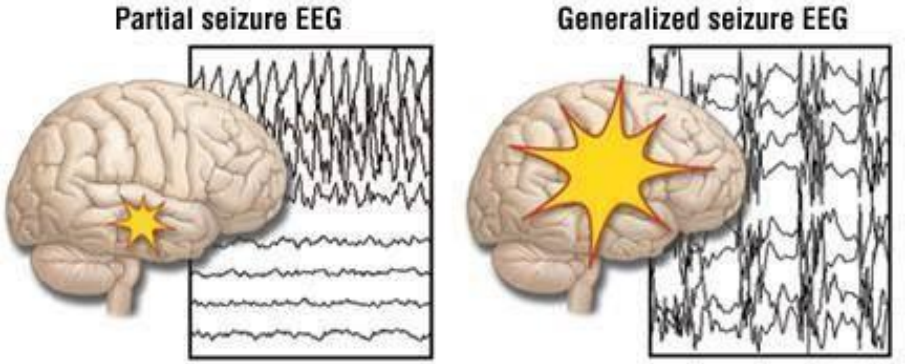
- A seizure is an event vs.
- Epilepsy is the <u>disease</u> involving <u>recurrent unprovoked seizures</u>

<u>Dx: Epilepsy if any of the following conditions:</u>

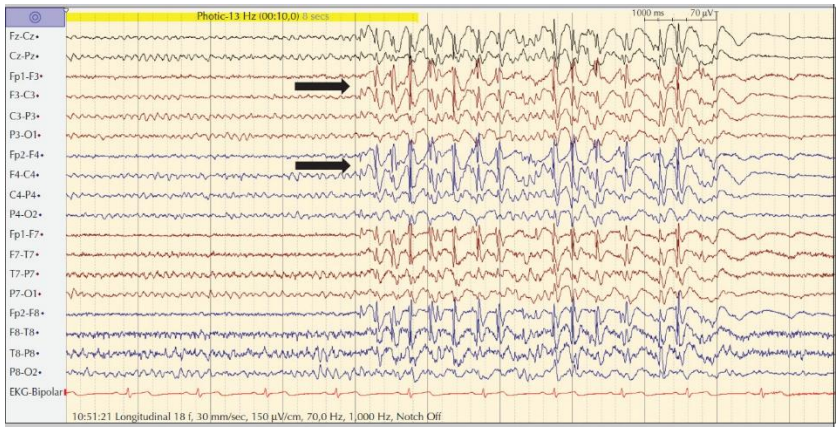
- At least two unprovoked (or reflex) seizures occurring greater than 24 hours apart
- One unprovoked (or reflex) seizure and a probability of further seizures similar to the general recurrence risk (at least 60%) after two unprovoked seizures, occurring over the next 10 years
- Diagnosis of an epilepsy syndrome

EEG – Routine and Prolonged Video EEG Monitoring





EEG – Routine and Prolonged video EEG monitoring



Epileptiform abnormalities on EEG

- Indicates ↑ risk of seizure recurrence
- Informs of type of seizure onset
- May contribute to diagnosis of epilepsy

However,

- EEGs typically don't "show seizures"
- Sensitivity limited, only about 60% of patient with epilepsy have an abnormal first EEG → normal EEG does not exclude risk of epilepsy

PCP ordering an EEG prior to initial consultation helps with efficiency of eval

Prolonged EEGs can clarify events of concern (when recorded in real time) but should be ordered with/by neurologist who will read the study

Seizures

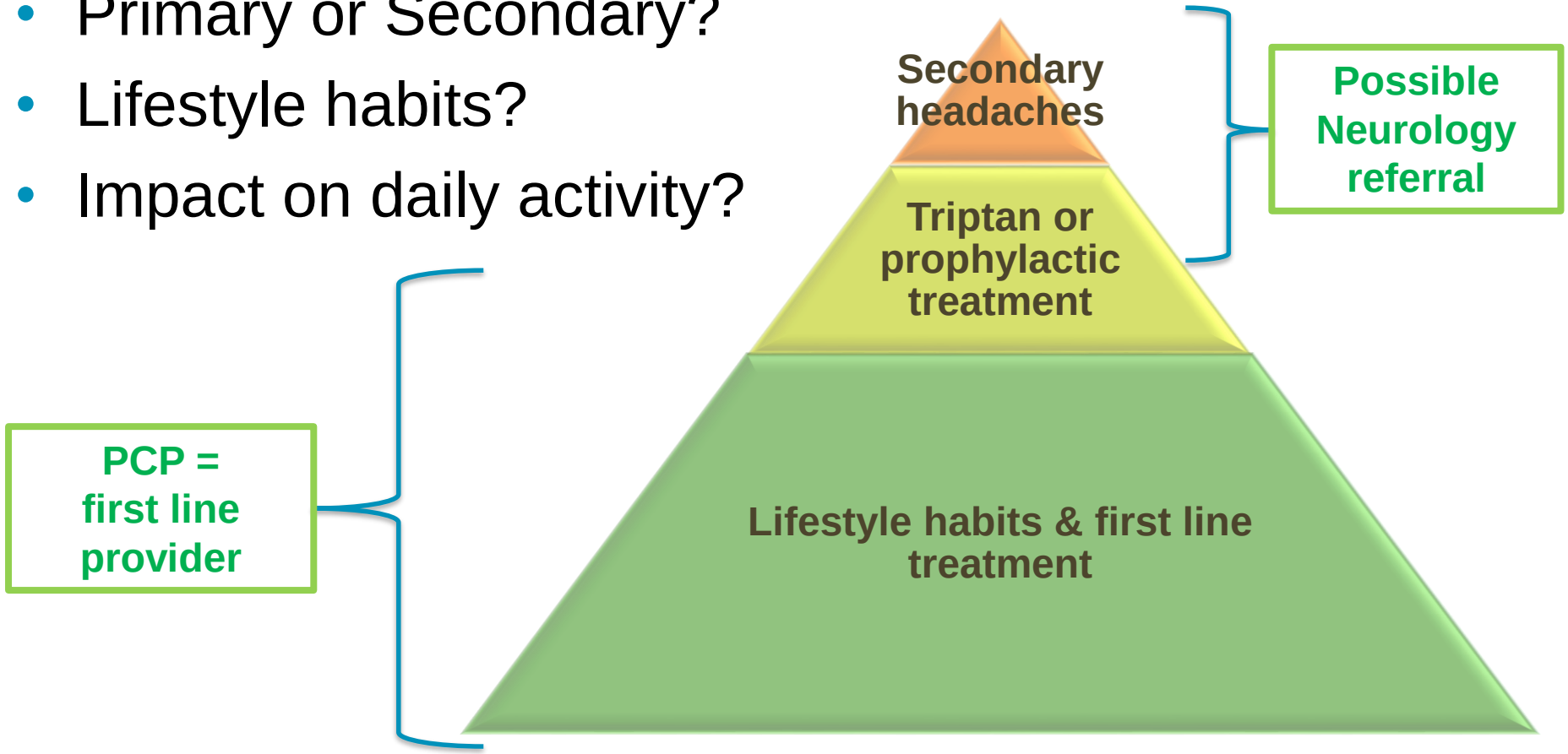
- Is it a seizure?
- Unprovoked seizure?
- Do they have epilepsy?

Reasons for Pediatric Neurology Referral

- Seizures, seizure-like episodes ~ 40%
- **Headaches ~ 30%**
- Developmental delay ~ 10-20%
- Tics ~ 5-10%
- Other ~ 5-10%

Headaches

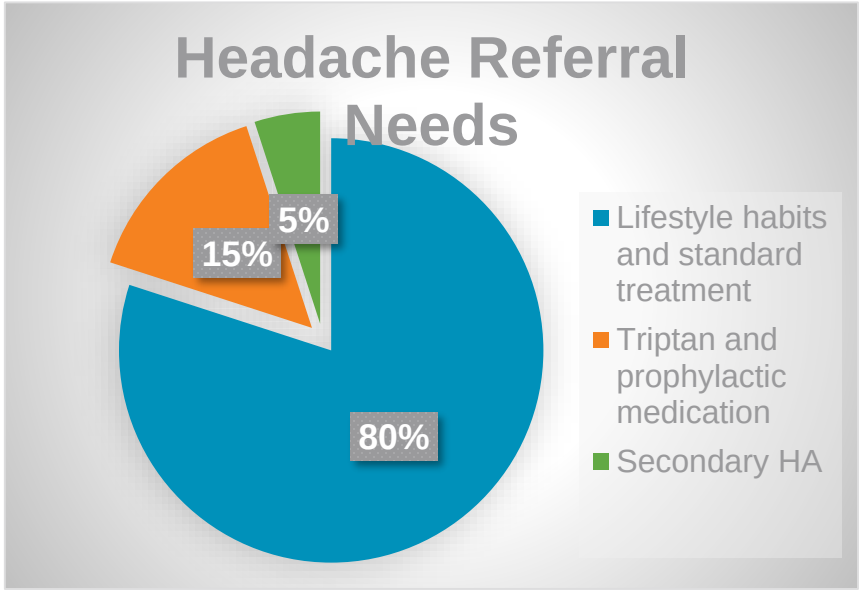
- Primary or Secondary?
- Lifestyle habits?
- Impact on daily activity?



Headaches

PEDIATRICS
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Acute Treatment of Migraine in Children and Adolescents
Pediatrics 2019;144;
DOI: 10.1542/peds.2019-2762 originally published online October 28, 2019;



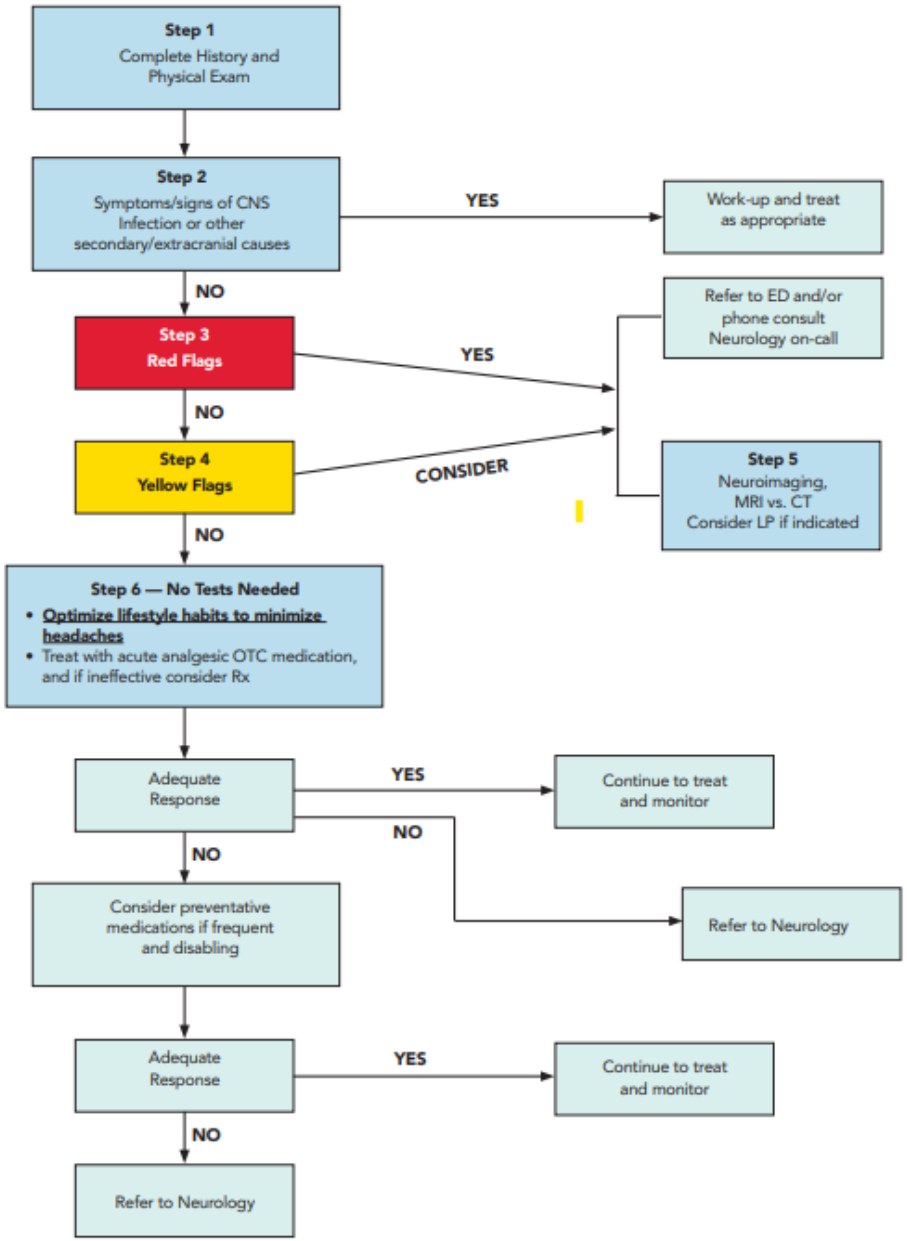
- Practice Guideline Update: Acute Treatment of Migraine in Children and Adolescents– American Academy of Neurology 2019 https://www.aan.com/Guidelines/Home/GuidelineDetail/966

- https://www.hawaiihealthpartners.org/media/2723/hhp-2020-cmrgs_final.pdf

PEDIATRIC

HEADACHE ALGORITHM

Reviewed by Keith Abe, MD



https://www.hawaiihealthpartners.org/media/2723/hhp-2020-cmrgs_final.pdf

Evaluation and Diagnosis – Step 1:

1) A thorough history helps to prevent unnecessary investigation and neuroimaging.

2) Headache Diary

3) Characteristics of headache

- Quality, Severity, Associated symptoms
- Setting, Frequency, Duration

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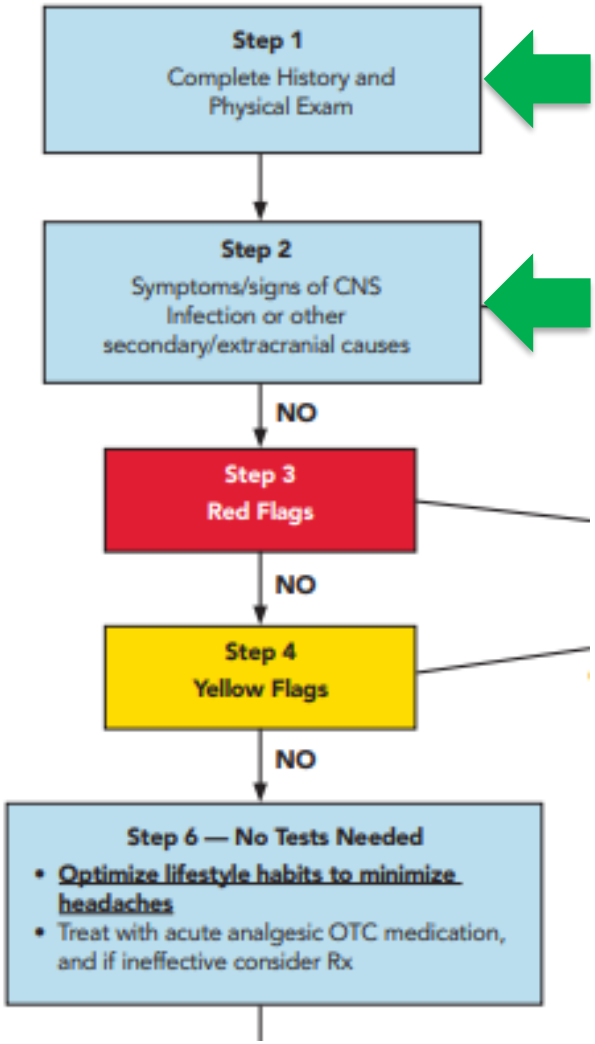


Assess for other causes & exacerbating factors of headaches – Step 2:

1) **Triggers** – stressors, sleep problems (inadequate quantity/quality), not drinking enough, heat, physical activity, menstruation, Valsalva (coughing/bowel movements), standing/lying, certain foods.

2) **Extra-cranial causes** – systemic illness, head injury, dental caries/abscess, sinusitis, mastoiditis.

3) **Concurrent medical problems** – hypertension, vision problems, seizures, TMJ.

4) **Assess headache hygiene lifestyle habits** – stressors, adequate sleep, adequate meals and hydration, caffeine intake, exercise and recreational activities, depression/mood.

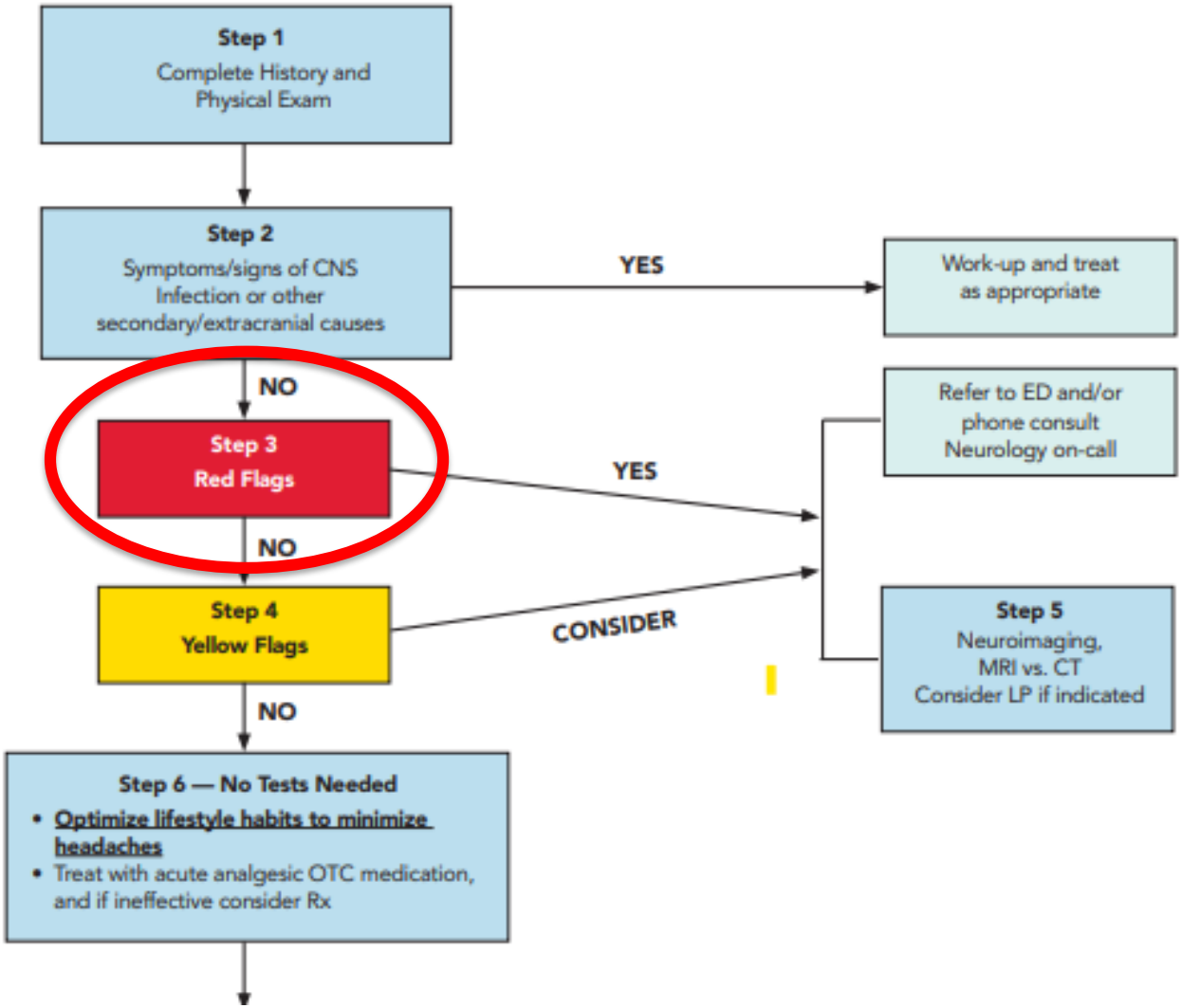
5) **Assess how the headaches have impacted daily activities** – missed school, can't play sports, enjoyment of recreational activities.

6) **Previous use of medications to treat headaches** – type of medication, dosing, timely administration.

7) **Consider common cause for conversion to chronic headaches**: excessive stress, sleep disorder, depressed mood, and acute medication overuse (> 3 days/week, > 3 weeks).

8) **Physical exam** (nuchal rigidity, signs of trauma, cranial bruit, or neurocutaneous condition?), thorough neurological exam (focal deficits?) and **funduscopic exam (papilledema?).**

9) **What helps to alleviate headaches** (sleep often is most effective for migraine resolution)?



Red Flags (if new, persistent, progressive) indicate need for urgent evaluation/testing – Step 3:

1) **Abnormal neurological exam**

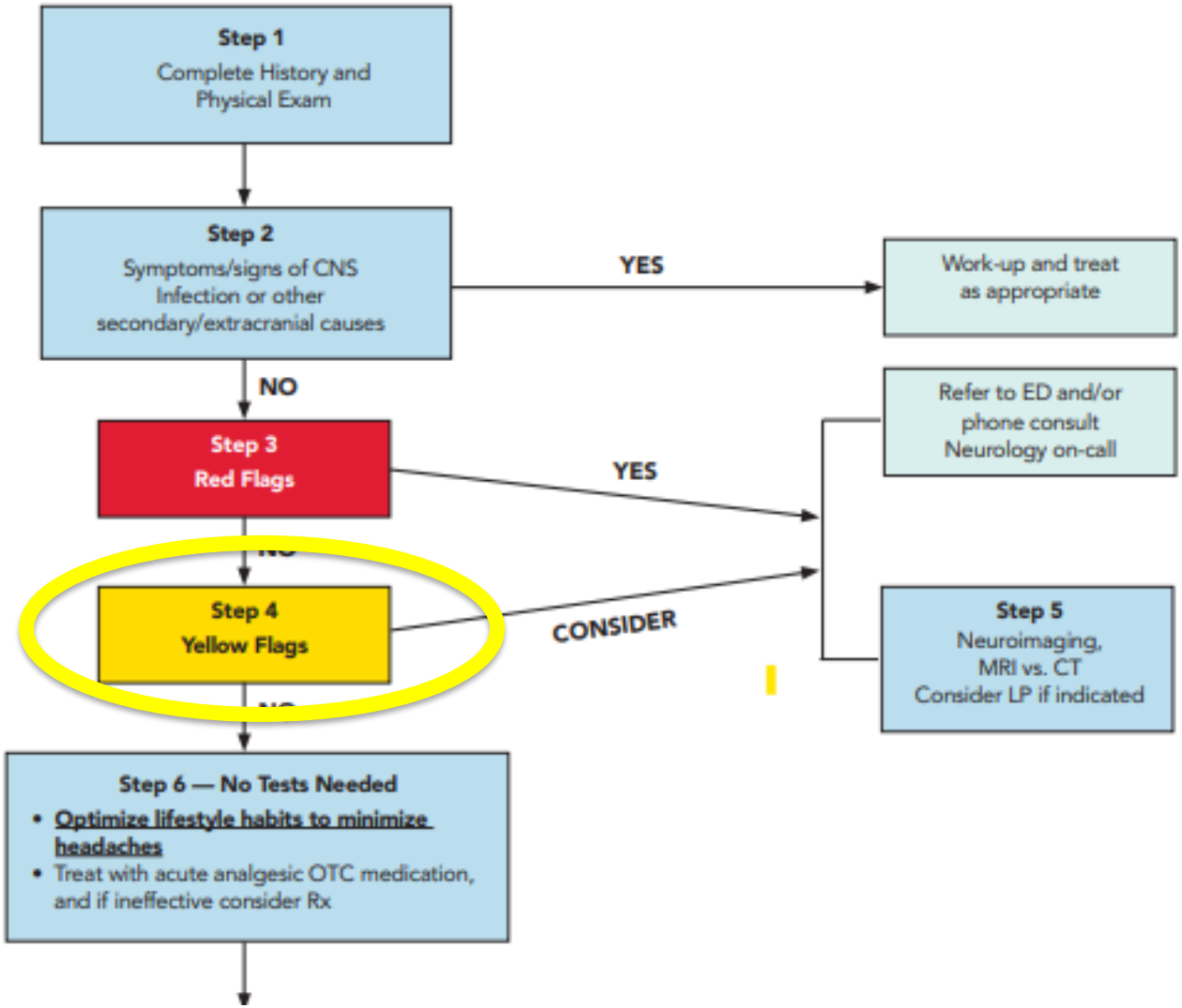
2) **Progressive and persistent** (unremitting) headache, especially if **new onset** and poorly responsive to treatment.

3) **Signs of increased ICP** – papilledema, unremitting emesis, worsened when recumbent

4) **Extremely severe abrupt headache onset** (“thunderclap”)

5) **Focal neurologic symptoms/signs** which are persistent (unresolving) and/or atypical for migraine aura.

6) **Developmental regression, personality change**.



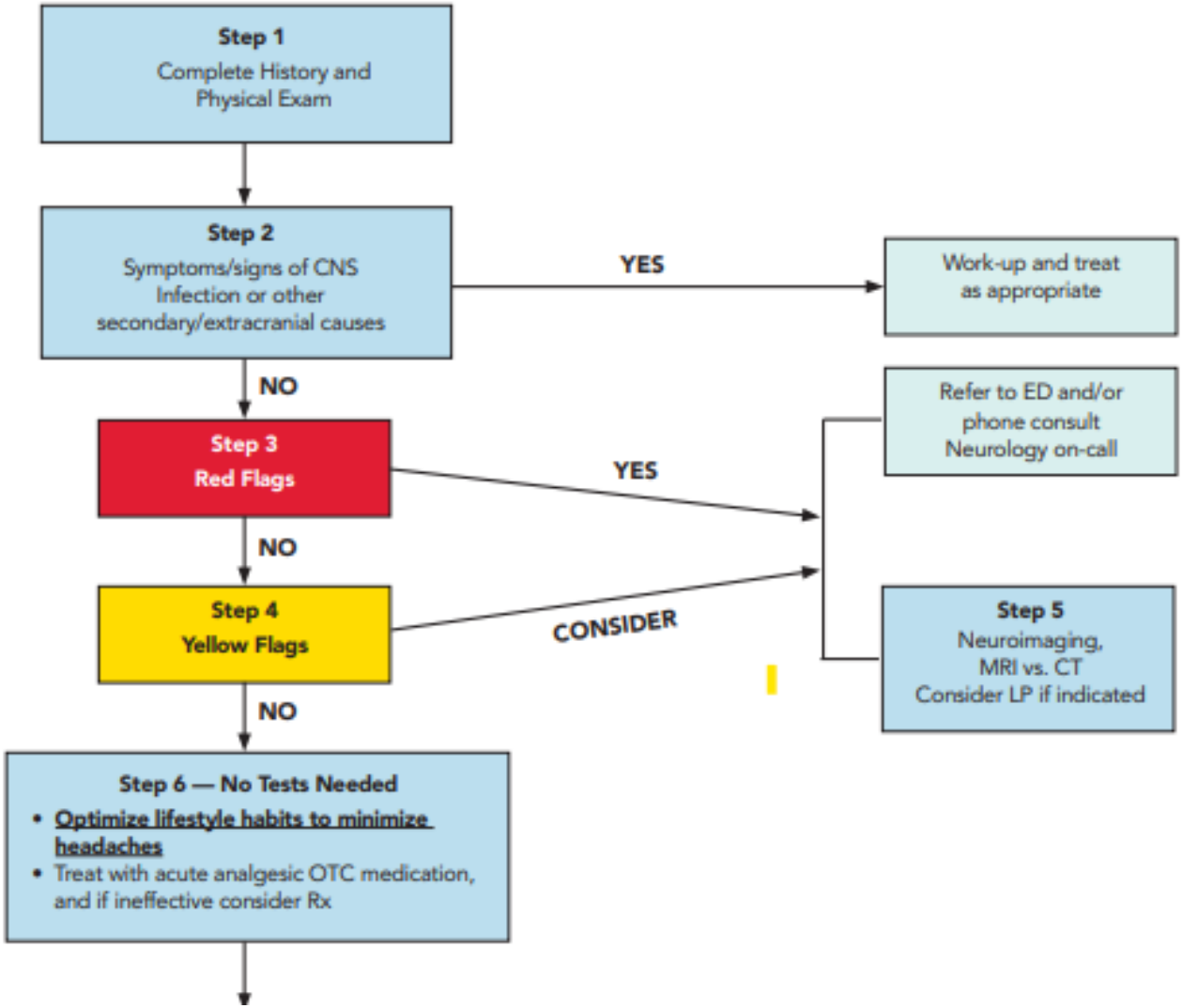
Yellow flags (consider referral or other testing) – Step 4:

1) **Occipital/cervical** predominant focus.

2) Significant associated symptoms of **neck and/or back**.

3) Known **risk factor for associated intracranial pathology** (e.g., sickle cell disease, immune deficiency, malignancy, vasculopathy, coagulopathy, intracardiac shunt, significant head trauma, neurocutaneous condition, pre-existing hydrocephalus or shunt or progressive macrocephaly).

4) **Age < 3 years.**



If:

- NO signs/symptoms of CNS infection or secondary cause
- **NO Red Flags**
- **NO Yellow Flags**

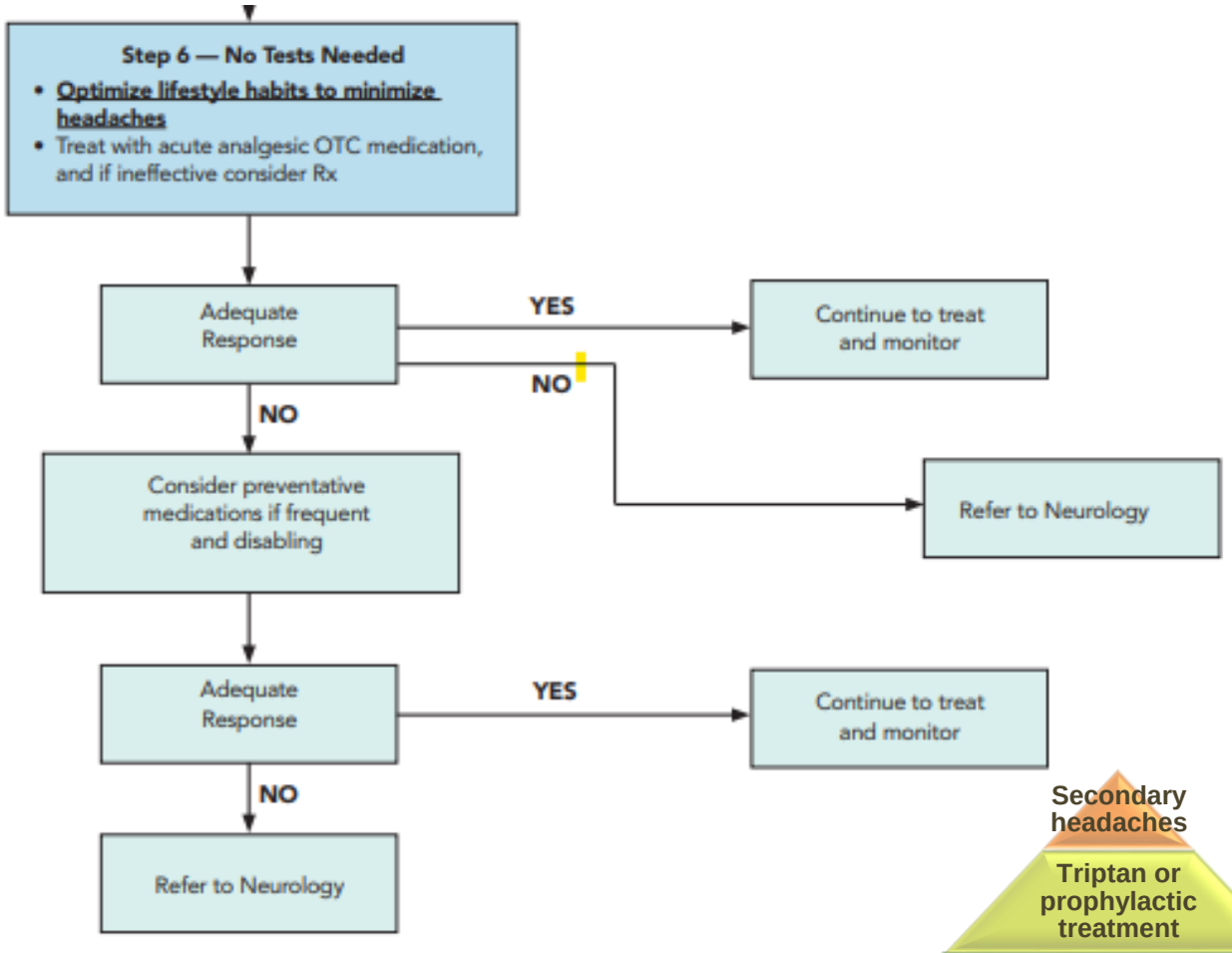
Then:

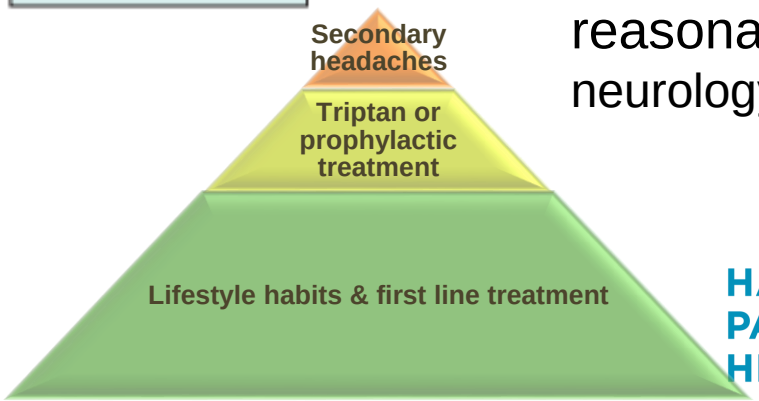
→ Lifestyle Habits

→ Headache log

→ Acute symptomatic treatment

Headaches





- If not complying with lifestyle habit modification → continue to emphasize need to optimize lifestyle habits first before escalating treatments.
- If not responding to optimized lifestyle habits and standard acute treatments → reasonable to refer to neurology

Reasons for Pediatric Neurology Referral

- Seizures, seizure-like episodes - 40%
- Headaches - 30%
- **Developmental delay ~ 10-20%**
- **Tics ~ 5-10%**
- **Other ~ 5-10%**

Developmental Delay Referral

- Progressive worsening/regression?
- Unknown cause?
- Microcephaly/macrocephaly?
- Focal deficits?

Old guidelines (AAP 2006, AAN 2003):

- https://pediatrics.aappublications.org/content/pediatrics/117/6/2304.full.pdf
- https://www.aan.com/globals/axon/assets/2603.pdf

Real Life Referral Vignettes:

“Cover all the bases”

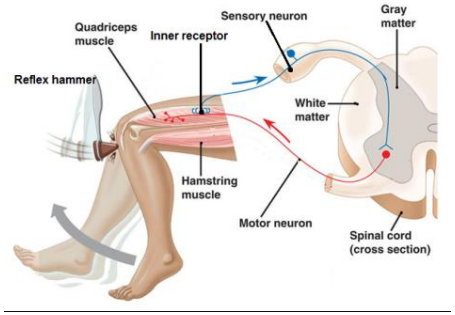
Re: Patient with known diagnosis of

- Autism spectrum disorder (ASD) and/or
- Intellectual disability (ID) or Learning disability (LD) and/or
- Behavioral problem

→ Simultaneous referral to pediatric neurology and developmental behavioral pediatrics

Overlap referrals

- Reflex referral
- Shot-gun referrals
- "Everyone has long wait times, see whoever you can see first"



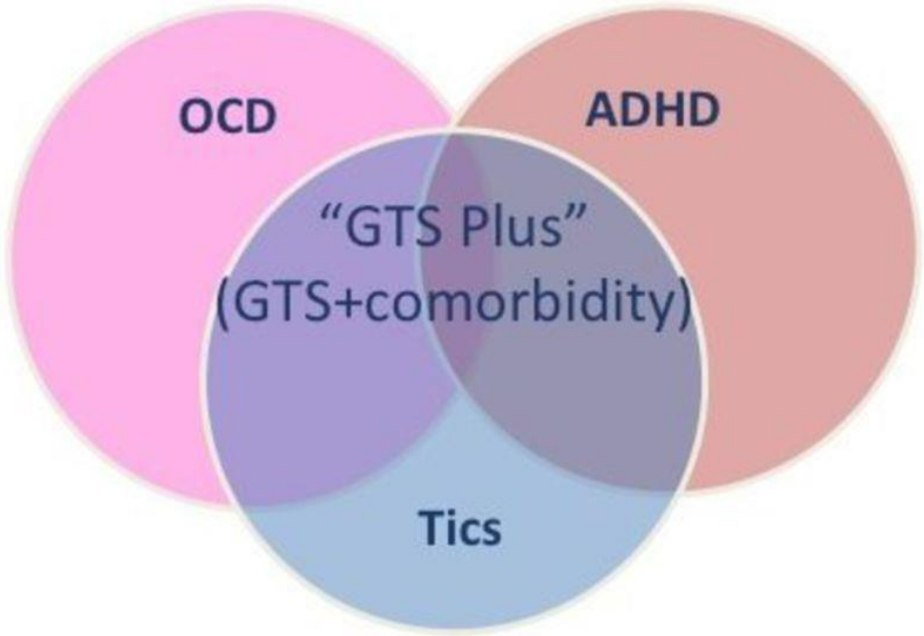
New York Post

The right patients,
seen by the right provider,
at the right time

Tics/Tourette + ADHD + OCD

Obsessive Compulsive Disorder (OCD)
Population prevalence- 1-3%

Attention Deficit Hyperactivity Disorder (ADHD)
Population prevalence- 5-7%

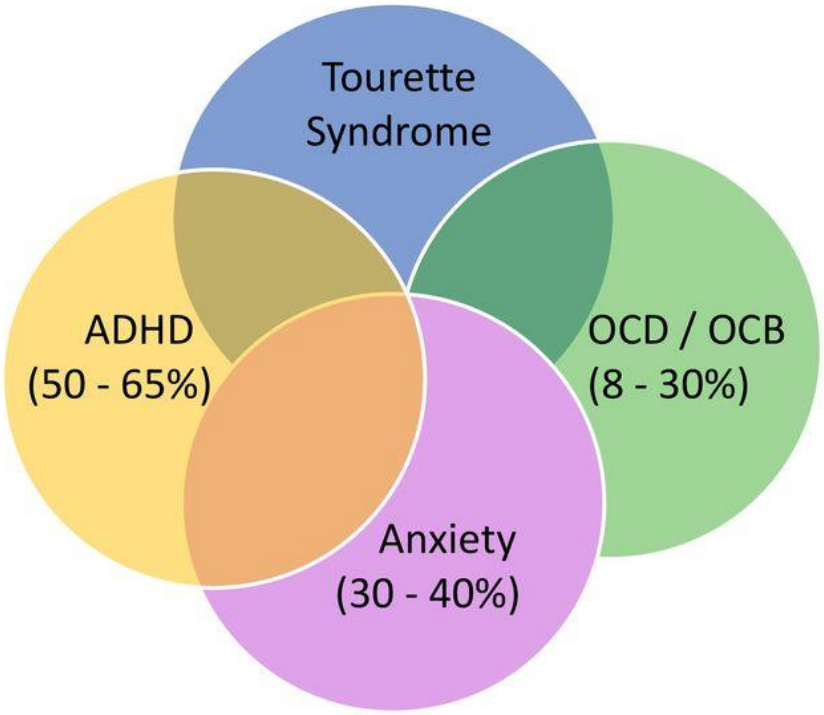


Gilles de la Tourette Syndrome (GTS)
Population prevalence- 1% in children
(of which 12% have tics alone)

Stern J, Tourette's syndrome and its borderland," Praticial Neurology 2017

Tics/Tourette Rates of Comorbidities

Tic Disorders and Common, Co-occurring Conditions



Other Common Concerns

Mood Disorders
30 - 40%

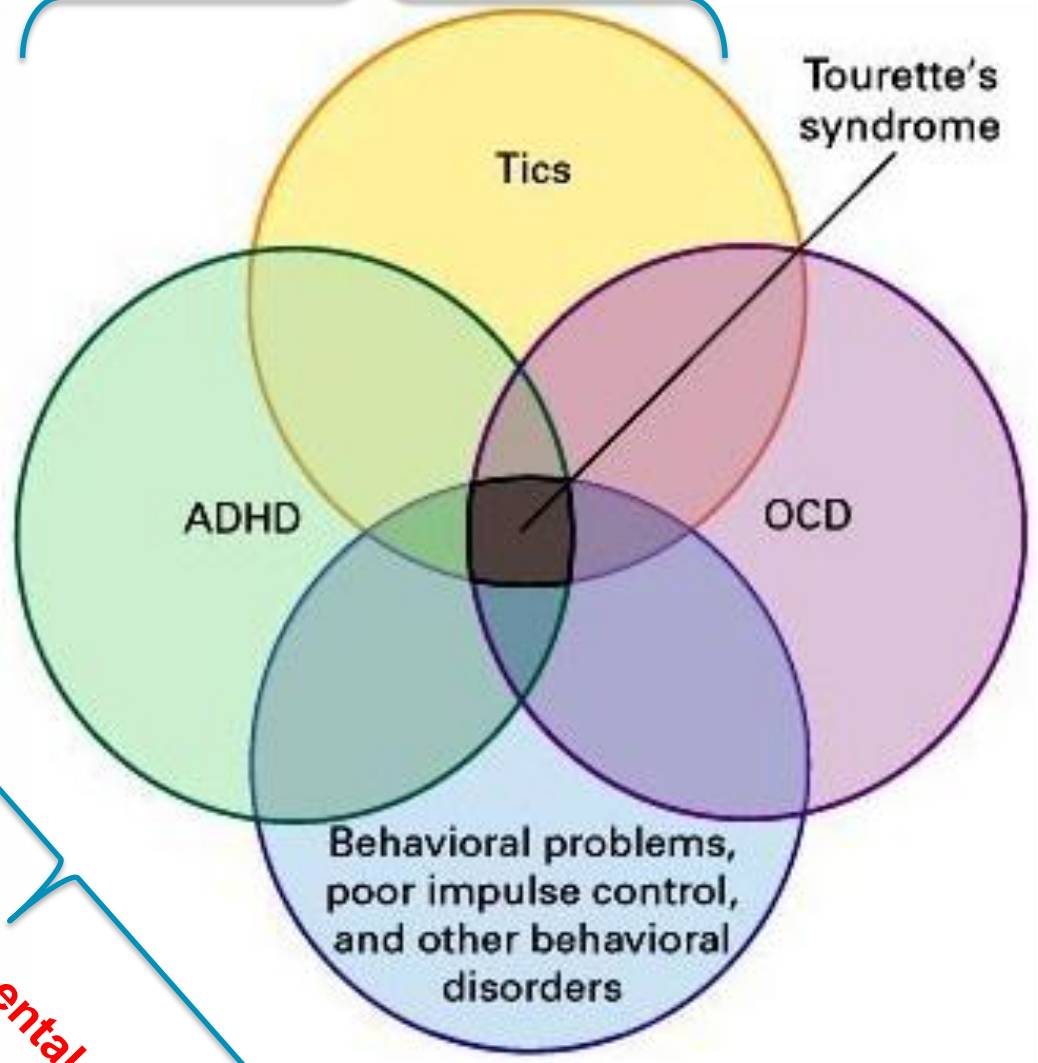
School problems
16 - 68%

Sleep Problems
20 – 50%

Autistic Spectrum Disorders
4% - 12%

Budman C,fd Adams H, Understanding Tourette; https://slideplayer.com/slide/12249268/

Neurology



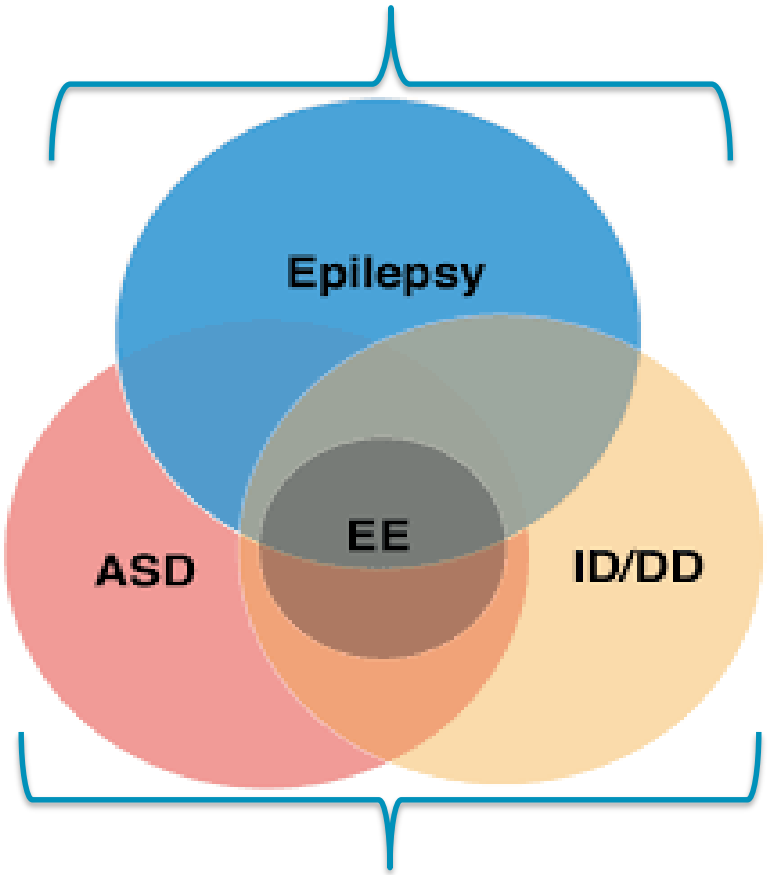
Child Psychiatry

Developmental Behavioral

Janikowski, J, "Tourette's Syndrome," NEJM 2001

DBP and/or Neurology?

Neurology



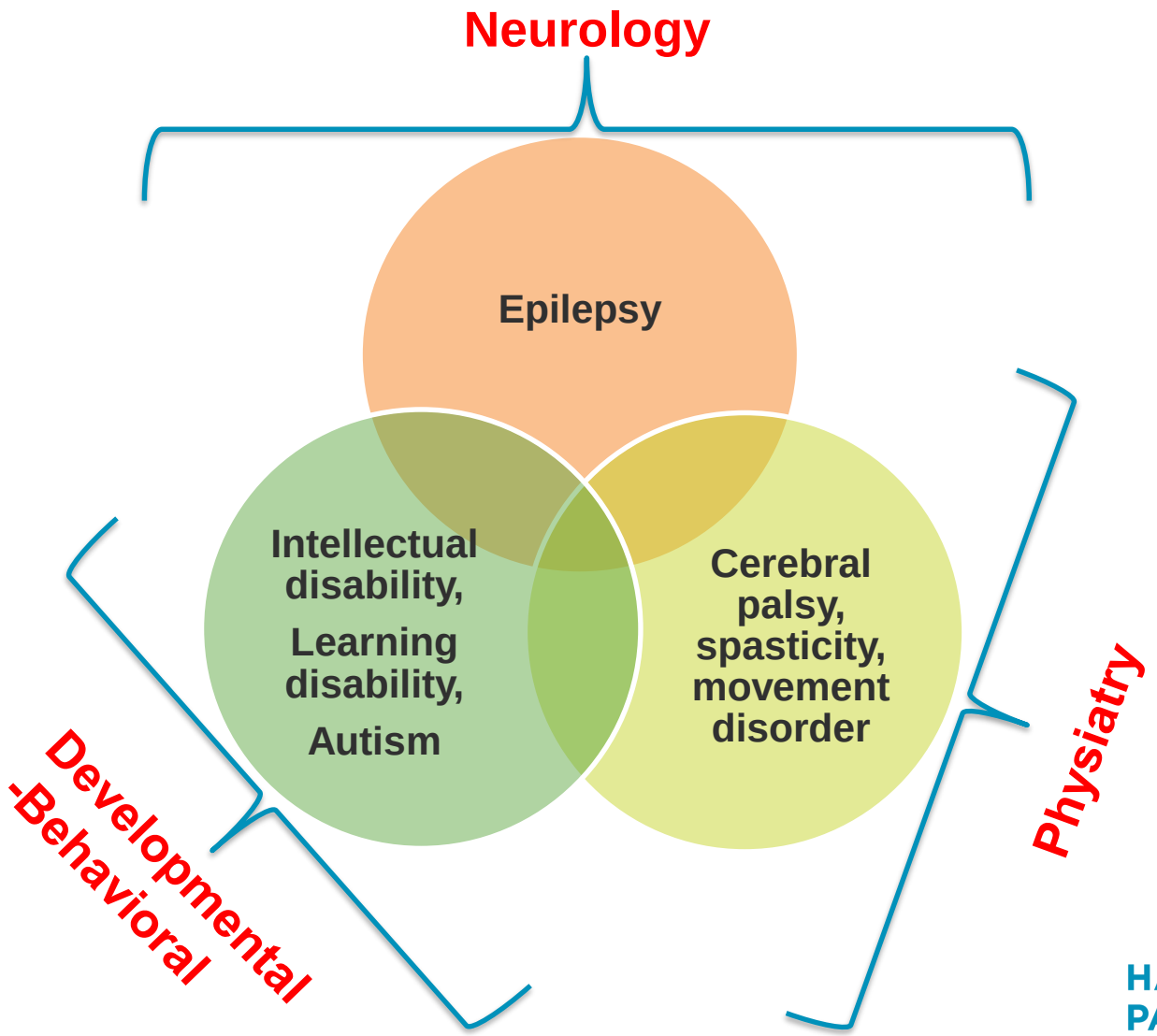
Developmental-Behavioral

Heyne, HO, et al, BioRxIV 2017

DBP and/or Neurology?

	Developmental-Behavioral	Neurology
Diagnosis		
Autism Spectrum Disorder	Yes	Yes
Learning Disability	Yes	No
Intellectual Disability	Yes	No
ADHD	Yes	Yes (esp. with tics)
Behavioral problem	Yes	No
Treatment/Management		
Autism Spectrum Disorder	Yes	Maybe (if seizures)
Learning Disability	Yes	No
Intellectual Disability	Yes	No
ADHD	Yes	Maybe (with tics or seizures)
Behavioral problem	Yes	No

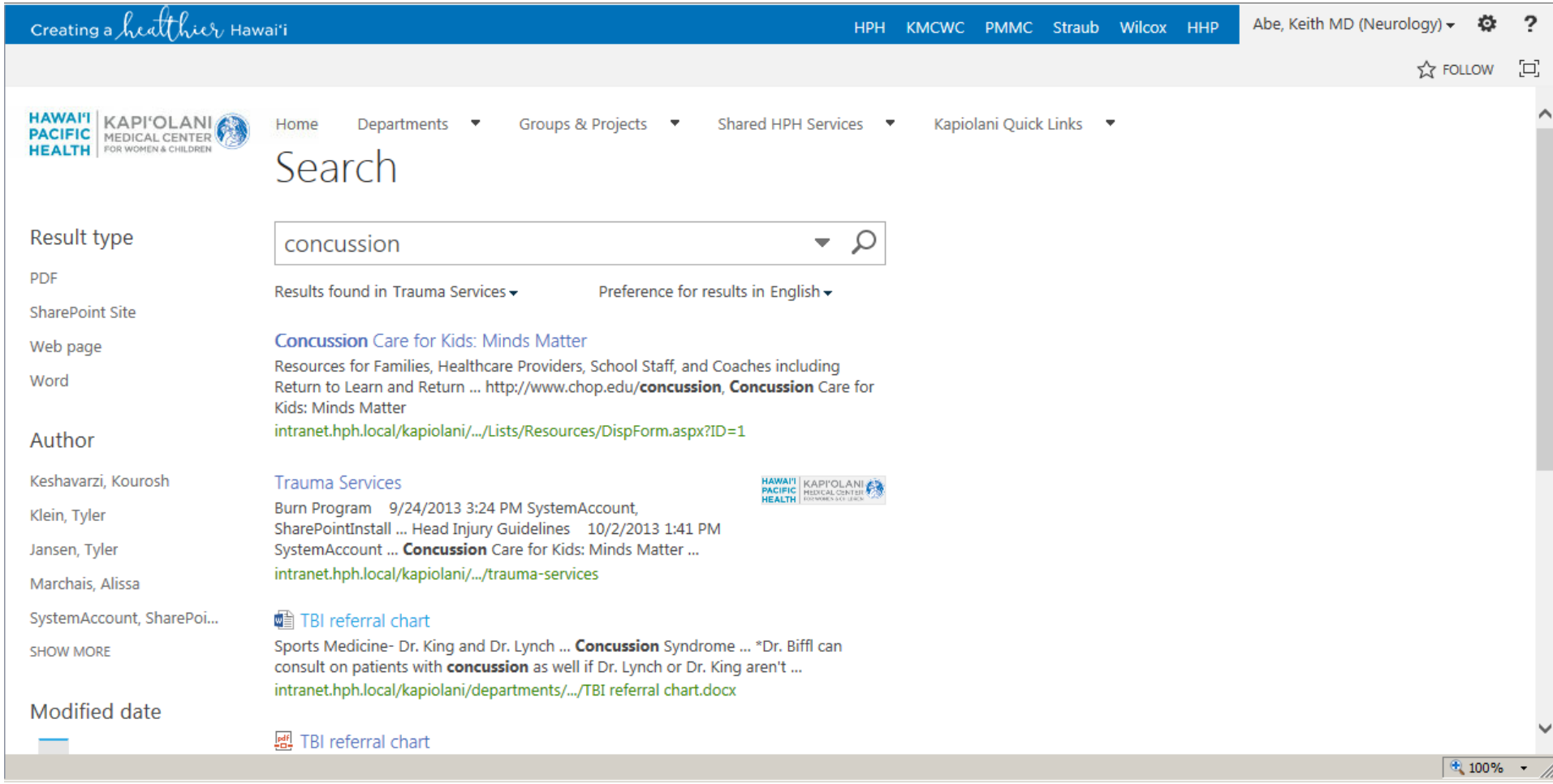
Physiatry, DBP, and/or Neurology



Where to Send Concussion?

https://www.thegazette.com/subject/sports/concussion-are-sports-hidden-injury-20160411

Where to Send Concussion?



https://www.thegazette.com/subject/sports/concussion-are-sports-hidden-injury-20160411

Concussion vs. More Severe TBI:

Sports Medicine- Dr. King and Dr. Lynch	Physiatry- Dr. Zagustin
Mild TBI • GCS 13-15 • LOC < 30 min • Physical Symptoms	Severe TBI • GCS 3-8 • LOC > 24 hours • Cerebral Contusion, Laceration, DAI
Skull Fracture • With Physical Symptoms	Moderate TBI • GCS 9-12 • LOC 30 min-24 hrs
Small Intracranial Hemorrhage (≤ 5 mm)	Moderate- Large Intracranial Hemorrhage (> 5mm)
Concussion Syndrome	Shaken Baby Syndrome

*Dr.Zagustin can consult on patients with concussion as well if Dr. Lynch or Dr. King aren't available.

Dr. Lynch, Dr. King, and Dr. Zagustin are in the same department and would be happy to be contacted for any confusion about a particular patient consult.

- https://www.chop.edu/centers-programs/concussion-program

Please Help Us to Help You

- Encourage compliance with appointments when you see your patient
- Encourage compliance with prescribed treatments when you see your patient
- Please cancel (early!) if consultation not needed

Improving Referral Efficiency

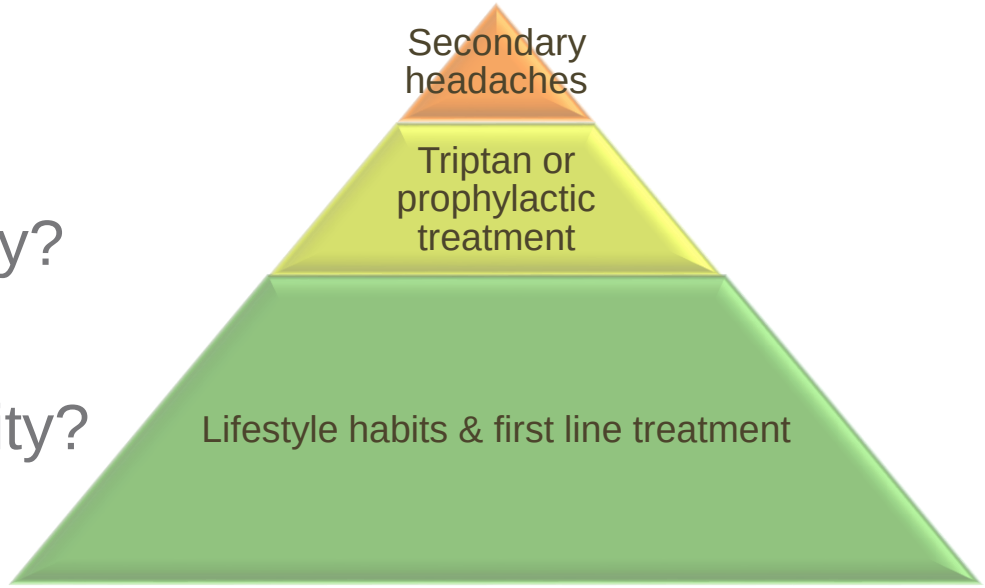
- Reason for referral?
- Pertinent notes on condition available?
- Urgent or routine?

- Any prior specialist care?
  - Prior records available?
  - Second opinion or transfer of care?

Right Reasons, at the Right Time:

- Seizures, seizure-like episodes ~ 40%
  - Was it a seizure?
  - Was it an unprovoked seizure?
  - Do they have epilepsy?

- Headaches ~ 30%
  - Primary or Secondary?
  - Lifestyle habits?
  - Impact on daily activity?



Right Patient Sees the Right Provider:

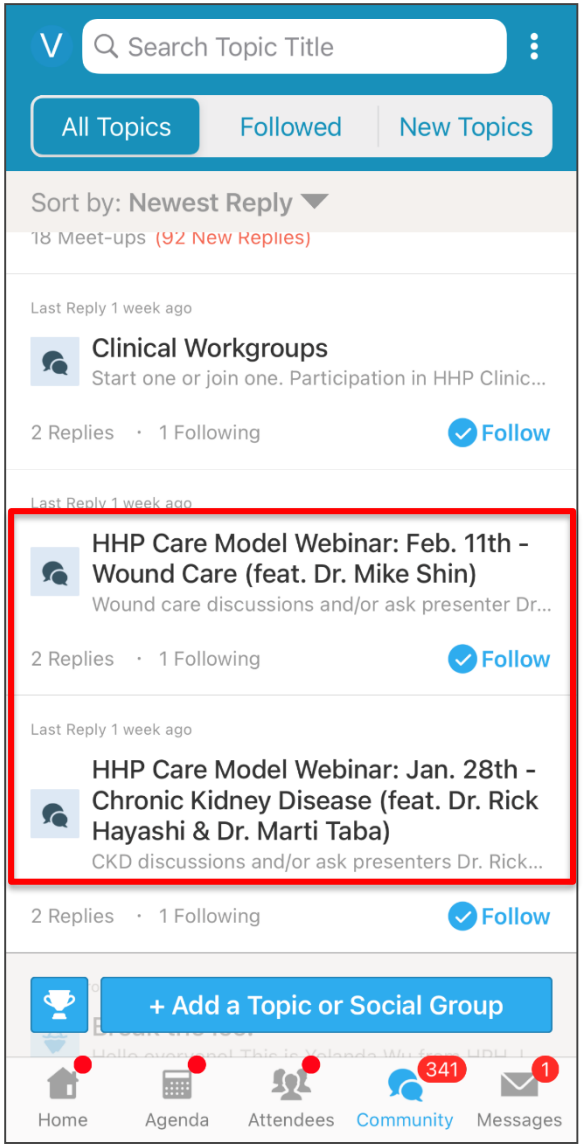
Isolated:

- ASD, ID, LD, behavioral problems →DBP
- Cerebral palsy, spasticity, dystonia →Physiatry
- Concussion/mild TBI → Concussion Clinic

Mahalo for allowing us to participate in the care of your patients!

Whova: Webinar Discussion Topics

- Discussion topic opens 1st week of the month.
- Before & after the webinar:
  - Ask presenters questions.
  - Discuss with your colleagues
- How to Access
  - Instruction emails sent earlier today.
  - Need assistance? Info@hawaiihealthpartners.org



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Q&A

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Next Webinar:

HHP Care Model and Disease Management Webinar:

Congestive Heart Failure

Dr. Carol Lai & Dr. Zachariah Rajive

Thursday, March 11, 2021

5:30pm – 6:30 pm

Thank you!

- A recording of the meeting will be available afterwards
- Unanswered question?
  - Contact us at info@hawaiihealthpartners.org