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Early Identification of Depression in Patients with Pediatric Epilepsy

Erin Day Fecske
Children's Mercy Kansas City

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Erin Fecske, MSN, RN, CNRN, CPNP-PC

Epilepsy Nurse Practitioner

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BEST CHILDREN'S HOSPITALS U.S.News RANKED IN 10 SPECIALTIES 2018-19

MAGNET RECOGNIZED AMERICAN NURSES CREDENTIALING CENTER

Background

- Prevalence of epilepsy birth to 17 years is estimated at 10.2/1000 (95% CI 8.7-11.8) (Russ, Larson, & Halfon, 2012)
- There are a number of associated comorbidities
  - ADHD
  - Migraine
  - Depression
  - Anxiety

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Current State

- Comprehensive Epilepsy Center at Child Hospital
  - Level IV Epilepsy Center
  - 6 Epileptologists; 6 Nurse Practitioners
  - Neuropsychologist support
  - Provides inpatient and outpatient services
  - Population: birth-21 years of age with epilepsy
    - Large portion of population has intractable epilepsy

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- There is no current standardization in how children with epilepsy are assessed for depression in the Comprehensive Epilepsy Center.
- Suicide screen is completed for inpatient admissions

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Depression

- 10% of teenagers
- Estimated 3.1 million adolescents 12-17 years had at least one major depressive episode

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Depression in Epilepsy

- Depression rates, in epilepsy, are reported between 10-30%
  - Wide range likely secondary to variety of tools used and underreporting
- Those meeting DSM-IV criteria for depression or anxiety are twelve times more likely to have suicidal ideation and only 1/3 receive mental health services.

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Depression in Epilepsy

- Additional risk factors for depression include:
  - Medications
    - ↑ Valproic Acid
    - ↓ Levetiracetam
  - Socioeconomic status
  - Patient perception of disease/stigma

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Depression in Epilepsy

- Uncertain association between epilepsy severity and risk for depression
- Depression may be a risk factor for subsequent seizures

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Depression in Epilepsy

- Youth with epilepsy less likely to present with insomnia, loss of interest, and decreased appetite.
- More often present with irritability
- Gender not associated with increased risk

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Assessing for Depression

- CDI
  - Considered “gold standard”, but expensive and requires trained professionals to administer
- PHQ-9
  - Brief, reliable
- NDDI-E-Y
  - Population specific, free and brief tool

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Confidential

NDDI-E-Y

NDDI-E-Y

Please mark the answer that best describes how much you have had these feelings and thoughts within the past 2 weeks, including today.

	Always or often	Sometimes	Rarely	Never
Everything is a struggle	O	O	O	O
I have trouble finding anything that makes me happy	O	O	O	O
I feel like crying	O	O	O	O
I feel frustrated	O	O	O	O
I feel unhappy	O	O	O	O
I think about dying or killing myself	O	O	O	O
Nothing I do is ever right	O	O	O	O
I feel sorry about things	O	O	O	O
I feel sad	O	O	O	O
I feel guilty	O	O	O	O
I feel cranky or irritated	O	O	O	O
I feel alone	O	O	O	O

Has anything upsetting happened to you in the last two weeks? O Yes O No

If yes, what? _____

Stop - survey is complete. Hand iPad to nurse.

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Depression Treatment

- Cognitive behavioral therapy
- Serotonin reuptake inhibitors (SSRIs)
  - Open label trials with fluoxetine and sertraline
- Avoid tricyclic antidepressants, bupropion, clomipramine
- Potential for drug-drug interactions
  - fluoxetine inhibits cytochrome P450

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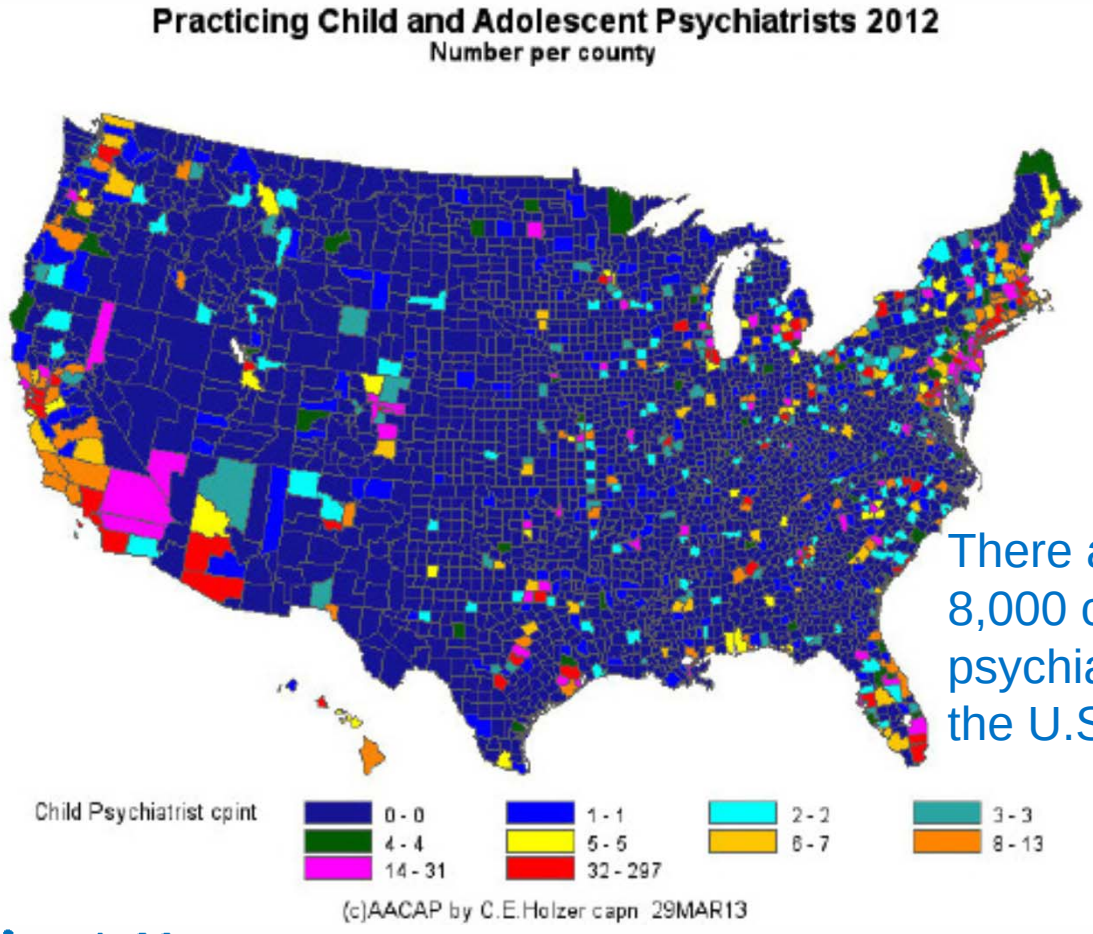

There are currently about 8,000 child and adolescent psychiatrists practicing in the U.S. (AMA, 2013).

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Innovation

- Implementation NDDI-E-Y screening for youth in the comprehensive epilepsy clinic (n=100)
  - Occurs as a part of standard intake process
  - computerized, via REDCap
- Inclusion: age 12-17 years, diagnosis of epilepsy, presenting for chronic care, English speaking/reading, normal to mild cognitive deficits (reading $\geq 5^{th}$ grade level)
- Exclusion: presenting for acute changes, nurse only visits, illiteracy, moderate-severe cognitive deficits, non-English speaking/reading

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Methods

- Education
  - Nurses, Care Assistants, Physicians, and Nurse Practitioners completed in-person education regarding the tool and REDCap survey.
- Resources
  - Standardized education templates
    - All epilepsy patients will receive standard education on depart
    - Additional templates built for those that are screened based on results (positive or negative)
  - Dot phrase provided to providers to ease documentation process
  - Bulletin board created to keep staff updated on progress

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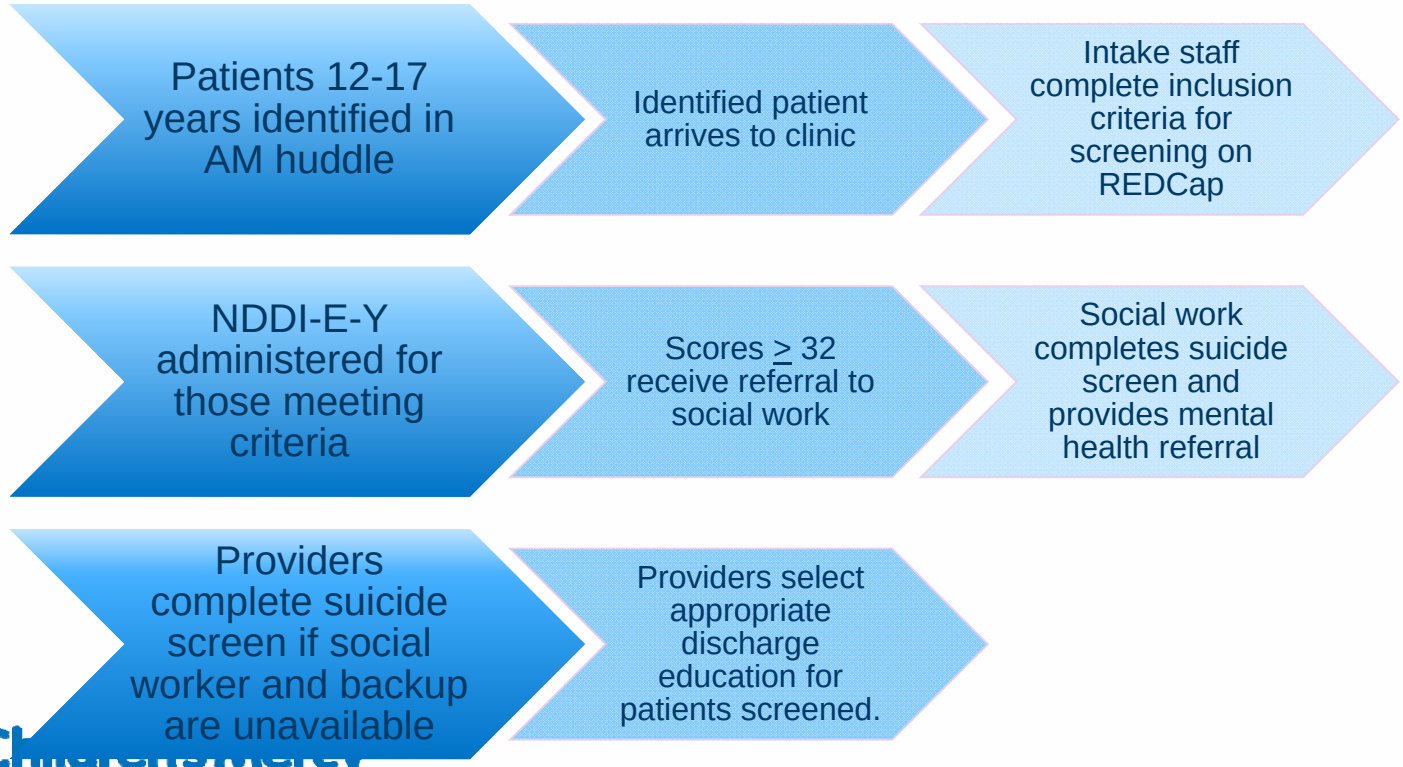
Implementation process



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Data Collection

- Pre-implementation rate of zero is assumed
- No patient identifiers collected
  - All data stored on REDCap

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Results

- N=176 patients were evaluated and n=112 met criteria for the NDDI-E-Y.
- All qualified patients (n=112) completed screening (100%)
- 100% patients received standard depression education

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Demographics

Gender	Male	59.7% (n=105)
	Female	40.3% (n-71)
Age	12-14 years	62.5% (n=110)
	15-17 years	37.5% (n=66)
Cognition	≥ 5th grade reading level	69.8% (n=124)
	< 5th grade reading level	30.2% (n=52)

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- 15% (n=17) of patients were positive, defined as ≥ 32, suggesting that these patients had a high likelihood of having a diagnosis of depression.
- All 17 patients with a positive screen were evaluated by social work and received mental health referrals.

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- 30.2% of patients (n=52) were unable to complete due to cognitive limitations.
- 2.8% (n=5), excluded due to being non-English speaking.

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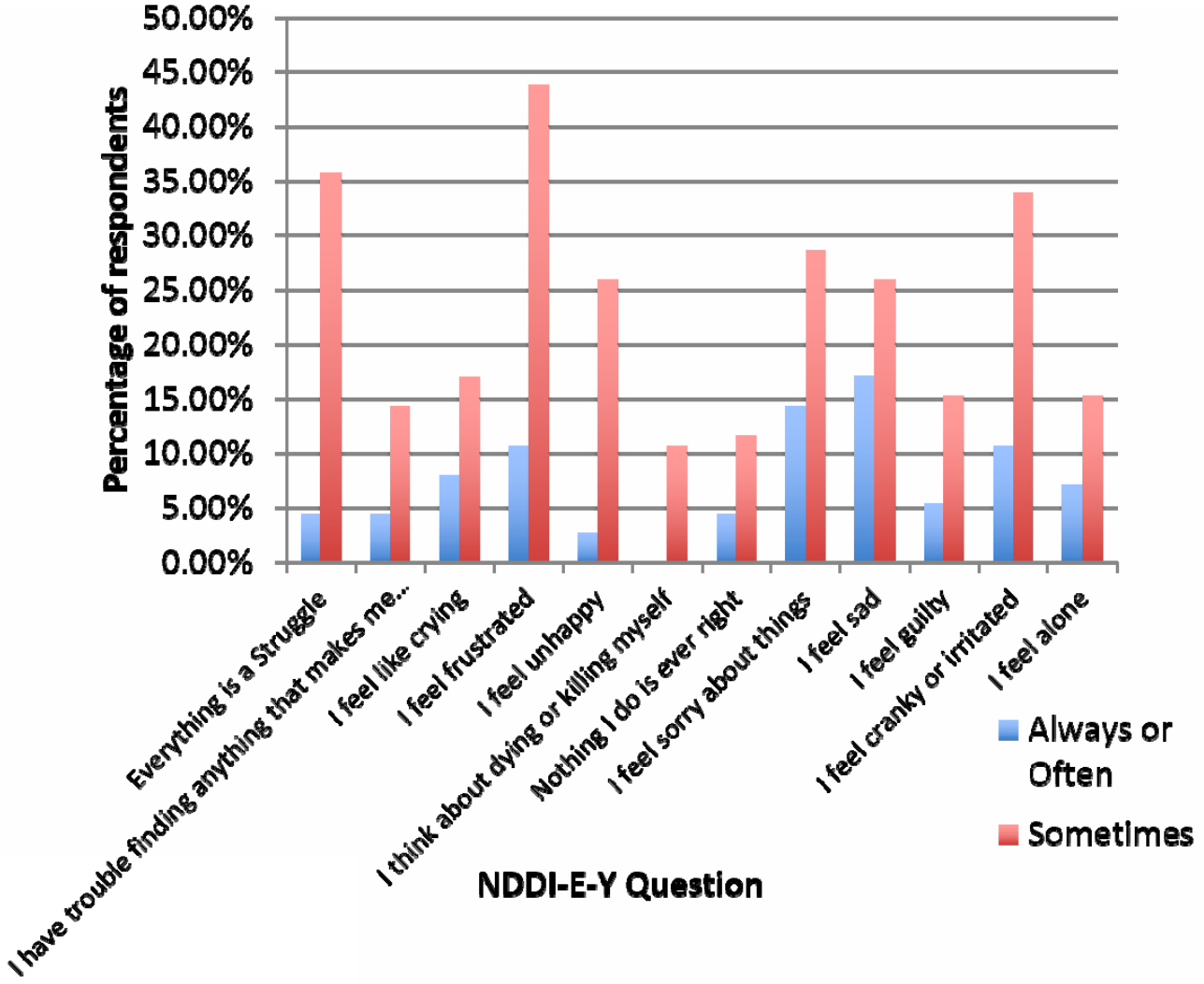
50.00%
45.00%
40.00%
35.00%
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
Percentage of respondents
Everything is a Struggle
I have trouble finding anything that makes me...
I feel like crying
I feel frustrated
I feel unhappy
I think about dying or killing myself
Nothing I do is ever right
I feel sorry about things
I feel sad
I feel guilty
I feel cranky or irritated
I feel alone
Always or Often
Sometimes
NDDI-E-Y Question

- 43.8% reported they sometimes feel frustrated
- 35.7% reported that sometimes everything is a struggle

- 10.7% reported always feeling frustrated
- 14.3% reported always feeling sorry about things

- 10.7% reported that they sometimes think about dying or killing themselves
- No patients were actively suicidal during screening

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Staff Survey

Question	Results
What do you think of the implementation process?	It's great (n=11, 84.6%)
Does the NDDI-E-Y impact clinic flow?	No (n=11, 84.6%)
Is the NDDI-E-Y beneficial?	Yes (n=12, 100%)

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Staff Comments

- “this tool even without positive screens has encouraged much needed conversation between the patient and myself” (nurse practitioner)
- “impacts intake time when they are also needing transition” (nurse)
- “I would not have known one patient was depressed if we hadn’t completed screening” (nurse practitioner)

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Conclusions

- Children and youth with epilepsy are at risk for mental health co-morbidities
- Multiple tools available
  - Recommend population specific tool
- The NDDI-E-Y can be effectively implemented in the clinic setting
- Lack of access is an ongoing concern

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Next Steps

- Improve access to mental health services
- Track follow up on referrals
- Streamline assessment with EHR

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Thank you

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