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Arizona State Office of Rural Health



THE UNIVERSITY OF ARIZONA
MEL & ENID ZUCKERMAN COLLEGE OF PUBLIC HEALTH

Center for Rural Health

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Disclosures. The presenters have no disclosures to report.

Today's Presentation

*Evaluation of the Nurtured Heart Approach
To Parenting to Improve Attention and
Hyperactivity/Impulsivity in Children*

April 21, 2021



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Presenters



Dr. Nuño is trained as an epidemiologist and social worker. She has more than 20 years of experience in project design, implementation, and evaluation in school and community settings. She teaches Personal Health and Wellness, Maternal and Child Health and Adolescent Health at the University of Arizona and is the Director of the Bachelor of Arts in Wellness and Health Promotion Practice. An important focus of Dr. Nuño's community service, teaching, and research is engaging populations typically underrepresented.



Dr. Murphy has almost three decades of education and experience in behavioral health and educational research, services, and supports. She has held positions in academic institutions, community-based and private sector organizations. Dr. Murphy's principal experience is in behavioral health: substance use, mental health including attention deficient hyperactivity disorder (ADHD), and sexual health for culturally diverse children, youth, and families in various settings. As a teen, Dr. Murphy struggled with substance use and mental health issues and participated in treatment. This experience provided the foundation for her academic and professional direction.

Evaluation of the Nurtured Heart Approach[®] to Parenting to Improve Attention and Hyperactivity/Impulsivity in children

Velia Nuño, PhD, MSW

Assistant Professor and Program Director

&

Bridget S. Murphy, DBH, M.Ed.

Research Program Administration Officer II

April 21, 2021



THE UNIVERSITY OF ARIZONA

**Mel & Enid Zuckerman
College of Public Health**

Plan for Webinar

- A story to start...
- Provide background and relevance of attention deficient hyperactivity disorder (ADHD) and parenting interventions to address ADHD in children ages 6-8.
- Discuss recommendations for treatment.
- Review NHA study methods, results, limitations and conclusions
- Articulate possibilities for incorporating NHA within scalable healthcare models.



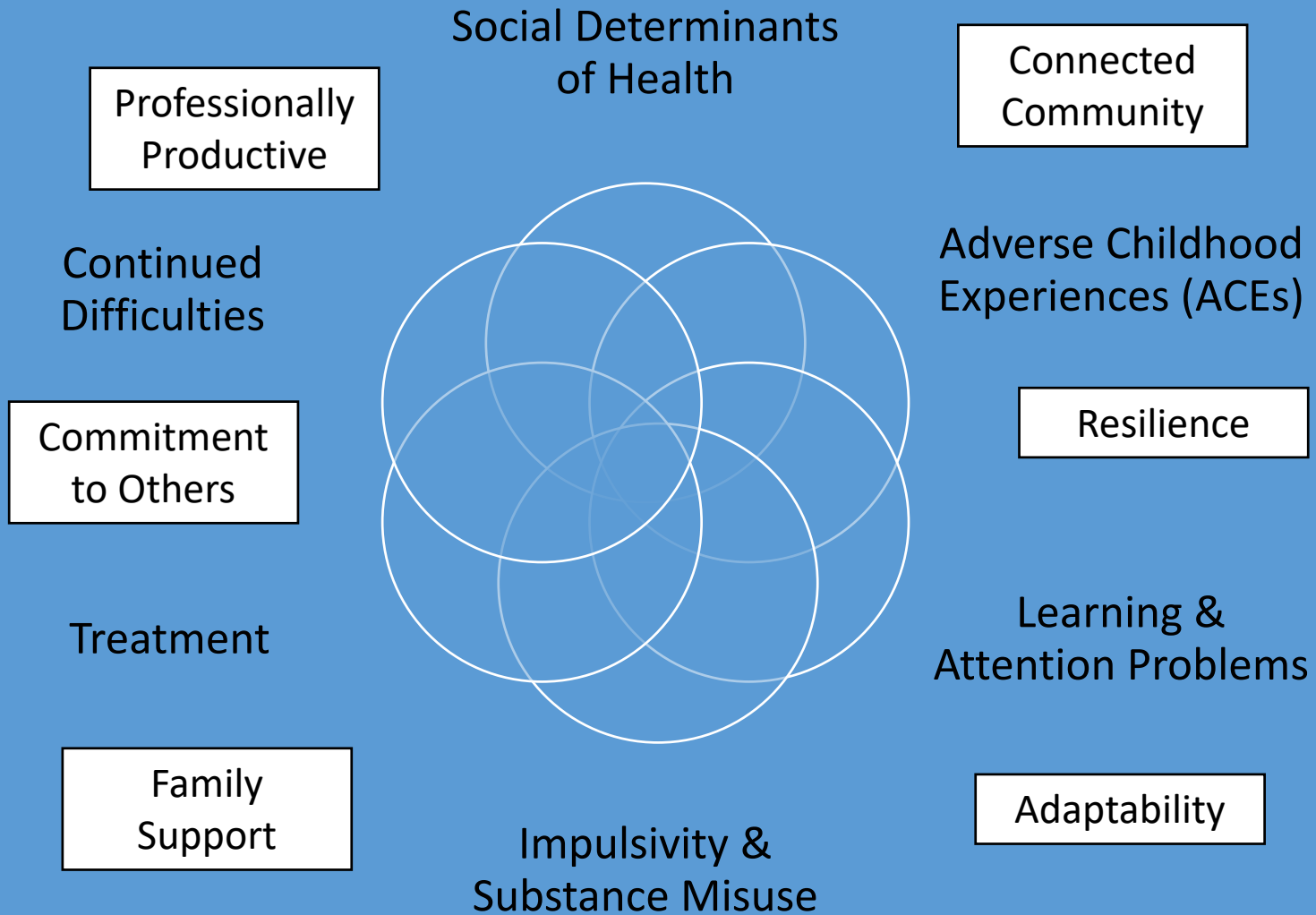
Learning Objectives (LO)

LO 1: Identify the core methodology of a parenting approach designed to reduce ADHD behaviors in children

LO 2: Compare the changes in children's attention, hyperactivity, impulsivity among parents that participated in the intervention to the delayed intervention control group

LO 3: Discuss the importance of interventions that are scalable as they relate to access to care

A story to start....



Study Approved by the University of Arizona Human Subjects Participation Program



Any potential conflict of interests have been reviewed by the University of Arizona in accordance with conflict of interest policies. No conflicts found.

Study Protocol & Findings Published

- **Protocol:**

- **Journal:** *Contemporary Clinical Trials Communications*, 2019; 13, 1-6. <https://doi.org/10.1016/j.conctc.2018.100312>
- **Title:** Testing the efficacy of the Nurtured Heart Approach to reduce ADHD symptoms in children by training parents: Protocol for a randomized controlled trial.
- **Authors:** Nuño, Wertheim, Murphy, Wahl, & Roe

- **Findings:**

- **Journal:** *Ethical Human Psychology and Psychiatry*. 2020; 22(1): 31-48. doi: 10.1891/EHPP-D-20-00013
- **Title:** The Online Nurtured Heart Approach to Parenting: A Randomized Study to Improve ADHD Behaviors in Children Ages 6–8
- **Authors:** Nuño, Wertheim, Murphy, Glasser, Wahl, & Roe

LO 1: What is Attention Deficient/Hyperactivity Disorder? (1 of 2)¹

- Most common neurodevelopmental disorder
- Diagnostic and Statistical Manual – 5 provides symptoms associated with:
 - Inattention.
 - Nine criteria (e.g., makes careless mistakes, easily distracted)
 - Cut scores based on developmental stage
 - Hyperactivity/Impulsivity.
 - Nine criteria (e.g., fidgets, trouble waiting their turn)
 - Cut scores based on developmental stage
- Four other criteria are necessary (e.g., symptoms present in two or more settings)

LO 1: What is Attention Deficient/Hyperactivity Disorder? (2 of 2)¹

- Depending on symptoms three presentation types:
 - Predominantly inattentive presentation
 - Predominantly hyperactive/impulsive presentation
 - Combined presentation



Criteria present for at least 6-months.

LO 1: Relevance of Attention Deficient Hyperactivity Disorder (ADHD) to Public Health

- 6-7% of children and adolescents diagnosed with ADHD²
- 11% rural compared to 9% urban children diagnosed with ADHD³
- Boys twice as likely to be diagnosed – possibly due to observable behaviors⁴



Daydreaming by Michelle Waspe at www.flickr.com

Study Parent Introduction - 1

“I am a mother of 2. A girl age 10 and a boy age 7. My son was diagnosed at age 5 and we have sought therapy, medications, and sleep studies. Although he is doing average in school he struggles socially and we keep thinking that we are missing something...”



American Academy of Pediatrics (AAP): Recommended Treatment⁴



Children ages 6 to 11 years

- FDA-approved medications for ADHD
- +
- Parent Training in Behavior Management (PTBM) **and/or** behavioral classroom intervention
- +
- Educational interventions and individualized instructional supports, including school environment, class placement, instructional placement, and behavioral supports, are a necessary part of any treatment plan and often include an IEP or a rehabilitation plan (504 plan).

Study Parent Introduction 2

“I am a mom to identical twin boys who turn 8 in two weeks. Both boys have ADHD. We made the decision to medicate, and it has been great for us.

Then [...] we started Dance and they go about 6 days a week. This has been awesome for us to get out their extra energy and teach them discipline in a way they love.

I am looking forward to figuring out how to make our unstructured time, the time outside of school and dance, more peaceful and happy as a family.”



Research Question



Does the Nurtured Heart Approach to parenting improve ADHD behaviors?



LO1: Methods



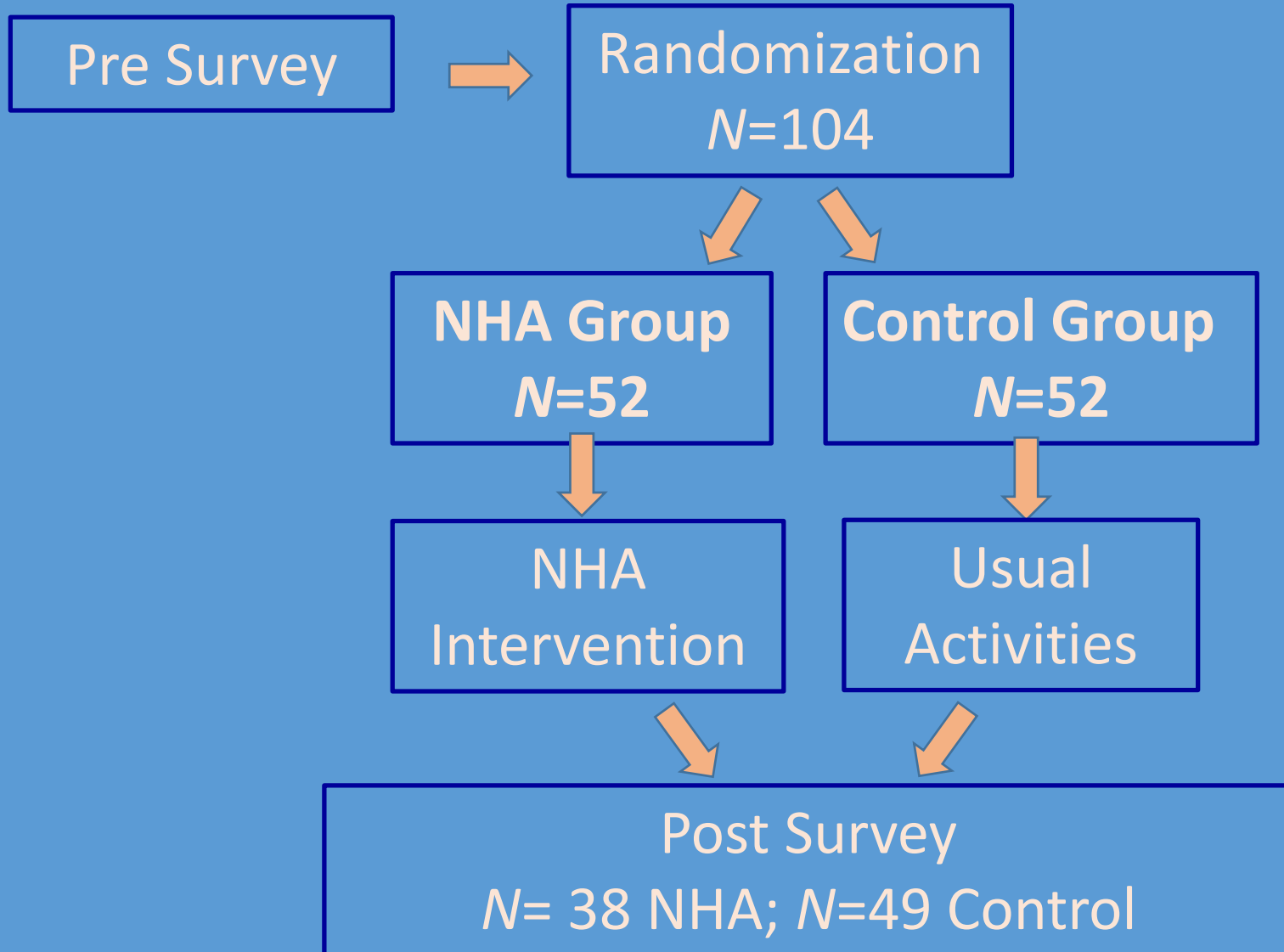
Randomized controlled trial

- 2 arm, parallel groups
- Control received intervention after

Eligibility Criteria

- Parents or guardians with a child diagnosed with ADHD or suspected of having ADHD
- Child is 6, 7 or 8 years of age
- Access to a computer and the internet

LO 1: Study Steps



LO 1: Data Collection

Instrument	Pre	Post
Demographics	Yes	No
Conners 3 – Parent Short Form	Yes	Yes
Parenting Stress Index	Yes	Yes
Parenting Sense of Competency	Yes	Yes

Conners, C. K. (2009). *Conners* (Third Edition). North Tonawanda, NY: Multi-Health Systems, Inc. (Original work published 2008.)

Abidin, R. R. (2012). *Parenting Stress Index short form* (Fourth Edition). Lutz, Florida: Psychological Assessment Resources, Inc.

Johnston, C. & Mash, E. J. (1989). A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology*, 18, 167-175.

LO2: Parent and Child Descriptions

Parent

- 96% women
- 21% self-identified as Hispanic, 85% White
- 39-40 years of age
- Parents: 12% adoptive 81% biological
- 85% married or marriage-like relationship
- Median 2 children
- 73% college degree or more
- 49% AZ, 10% CA, remainder from 24 other states and U.S. territories

Child

- 73% boys
- 28% Hispanic, 83% White
- Age: 6, 7, 8 years (~a third in each)
- School: 8% home, 21% private, 71% public
- 69% diagnosed with ADHD
 - 46% regularly took ADHD medication

Study Parent Introduction - 3

“Hi! I'm [...], mom to two boys, 7 and 4. We've been drawn to the NHA for a while but have had a hard time implementing it consistently. We're excited to have the support of this course to help bring us all to a more present and connecting way of relating in our family.”



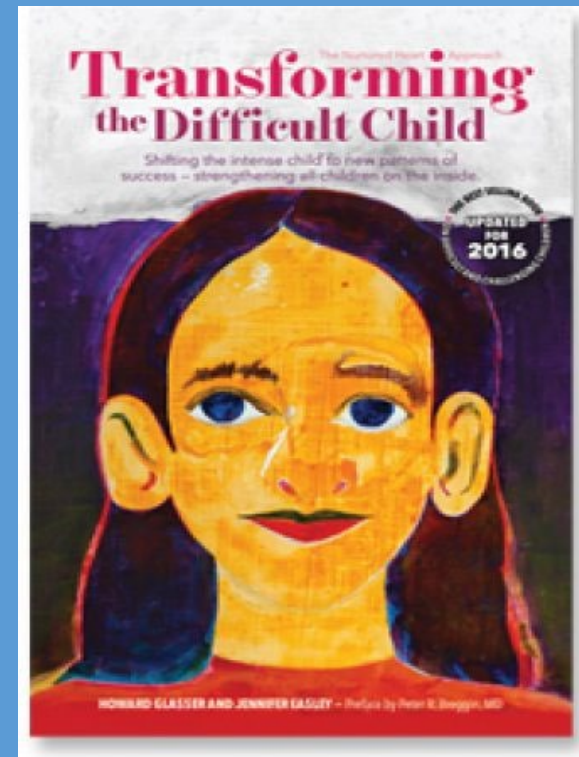
LO 2: Nurtured Heart Approach (NHA) (1 of 2)

Developed by Howard Glasser, MA

Founder of the Children's Success Foundation

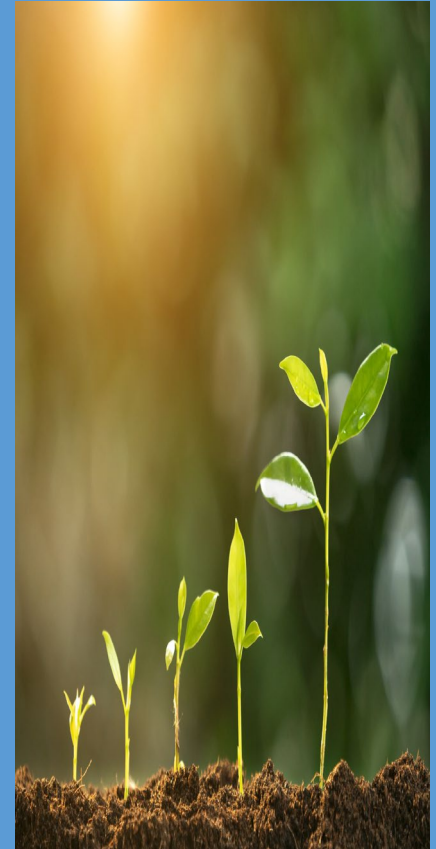
Core Methodology

- Absolutely no negativity!
- Absolutely yes to positivity!
- Absolute clarity!



LO 2: Nurtured Heart Approach (NHA) (2 of 2)

- Online 6 weeks
- Each week:
 - 1-1.5 hours - Slide presentation narrated by Howard Glasser
 - Readings from NHA workbook
 - Practice and post
 - 1.25 hour - Live forum moderated by Advanced Trainers with Howard Glasser



LO 2: Study Results

n=87 - Means improvement	Between group. Change between pre & post		Significant by statistical standards? p-value
	<u>NHA</u> Mean (SD)	<u>CONTROL</u> Mean (SD)	
Inattention	-7.0 (8.1)	0.2 (6.6)	Yes! <0.001
Hyperactivity/ Impulsivity	-7.9 (9.3)	-0.5 (7.3)	Yes! <0.001
Learning Problems	-4.5 (9.4)	-0.1 (7.2)	Yes! 0.006
Executive Functioning	-6.4 (7.5)	0.3 (7.5)	Yes! <0.001
Defiance/ Aggression	-4.5 (10.7)	-0.8 (12.2)	No 0.123
Peer Relations	-1.9 (9.5)	-2.0 (11.4)	No 0.906 ²⁸

LO 2: Relevance to Practitioners - Inattention

Pre-survey

- 74 of 87 (85%) children had **elevated** scores for **inattention**

ADHD Symptoms
≥ 65 elevated
< 65 not elevated

Post-survey

- 31% NHA group vs 2% Control group **dropped to non-elevated** scores, $p < 0.05$
- Of the 10 children (31% of NHA group), 9 were over 70 at Pre-survey. After intervention, 4 were 60-64, and the other 6 were < 60.

LO 2: Relevance to Practitioners – Hyperactivity/Impulsivity

Pre Survey

- 79 of 87 (90%) children had **elevated** scores for **Hyperactivity/Impulsivity**

ADHD Symptoms

≥ 65 elevated

< 65 not elevated

Post Survey

- 11% NHA vs 2% Control **dropped to non-elevated** scores, $p > 0.05$
- Of the 4 children (11% of NHA group), all 4 were over 70 at Pre survey. After the intervention, all 4 were 60-64.

LO 2: Sub-group analysis: Child's Sex, Age, and ADHD Medication Use



- We were not powered to detect differences.
- Results were similar across all subgroups.
- No significant interactions between NHA intervention and child sex, age, or ADHD medication were detected (all $p > 0.2$, respectively).

Study Parent Introduction 4

“[...] Our older son has been a challenge, particularly over the last 4 years since the birth of our younger son. He is bright, intense and highly persistent, and stretches our capacity to be calm, clear and patient. Even doing just the first week of the course has helped us feel more hopeful that we can get on track and feel more successful and appreciative of who he is. And feel more successful as parents.”

Study Parent Introduction 5

“[...] I am also a behavioral special education teacher for ages 3-8. What works at my job, just never works the same at home...”



LO 2: Synthesis

- Study strengths - preliminary evidence of effectiveness
 - ✓ **NHA reduced inattention**
 - ✓ **NHA reduced hyperactivity/impulsivity**
 - ✓ **NHA reduced parenting stress**
- Study limitations – findings are not generalizable to all children, parents were primarily college-educated, in committed relationships, self-report

LO 3: Scalable Interventions (1 of 3)

- Psychosocial interventions are underutilized in ADHD treatment and fragmentation in care exists.⁵
- **Life-course approach** for supporting parents and children with ADHD. This changes the model from acute care to life-course or chronic care.⁵
- Promising because researchers found positive associations of treatment utilization and functioning among children who received care for ADHD **via the Primary Care Medical Home (PCMH)** compared to children who did not.⁶



LO 3: Scalable Interventions (2 of 3)

- Scalability = Efficacious → Expand into real-world → Retains effectiveness. → Reach more people.⁷
- Collaborative Care or Integrated Behavioral Health Models.⁸
 - Intentionally organizes treatment based on needs, preferences and shares information for the purpose of improving safety and effectiveness.
 - Examples:⁹
 - Patient-centered medical home (PCMH)
 - Federally-qualified health centers (FQHC)
 - School-based health centers (SBHC)
 - Nurse-family partnership
- Hub and Spoke Models
- Project Extension for Community Healthcare Outcomes (ECHO)¹⁰

LO 3- Example: Hub and Spoke¹¹



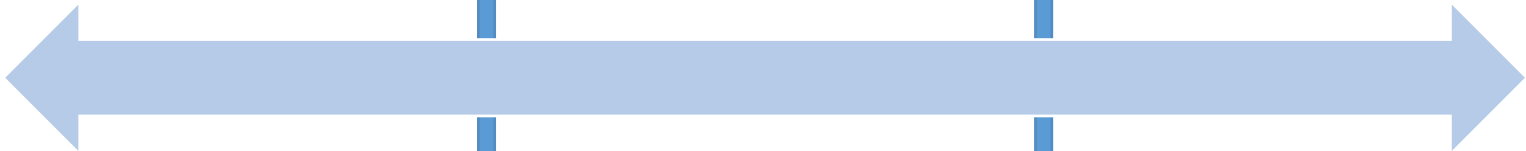
Urban
Health
System



Rural
Hospital



Rural
Health
System



LO 3: What if...

What if NHA was implemented within one of these models?



Resources

- **Arizona Department of Health Services, Children and Youth with Special Healthcare Needs.**
<https://www.azdhs.gov/prevention/womens-childrens-health/ocshcn/index.php>
- **SAMHSA's National Helpline – 1-800-662-HELP (4357)**
- **SAMHSA Find Treatment:**
<https://findtreatment.samhsa.gov/>
- **Project ECHO Chicago:** Pediatric attention deficient hyperactivity disorder <https://www.echo-chicago.org/topic/pediatric-attention-deficit-hyperactivity-disorder/>
- **University of Arizona, Nurtured Heart Approach:**
<https://publichealth.arizona.edu/research-project/nurtured-heart-approach-study>

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Reference List (1 of 3)

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<https://www.cdc.gov/ncbddd/adhd/diagnosis.html>

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Questions and Discussion

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Survey:

<https://uarizona.co1.qualtrics.com/jfe/form/SV1N3JszrwJF6tOHY>

Arizona Center for Rural Health and AZ State Office of Rural Health (SORH) Webinar Series



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