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**Disclosure to Participants**

- Notice of Requirements For Successful Completion
  - Please refer to learning goals and objectives
  - Learners must attend the full activity and complete the evaluation in order to claim continuing education credit/hours
- Conflict of Interest (COI) and Financial Relationship Disclosures:
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**Learning Objectives**

- Recognize disparities in T1D care and burden of patient care falling on primary care providers.
- Understand how Project ECHO® model is being applied to T1D to help reduce disparities in care.
- Contemplate adapting use of the Project ECHO® for T1D.

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**Dissemination of Quality Care for  
Type 1 Diabetes (T1D): The Project  
ECHO® Experience**

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## Overview: Health disparities in T1D and barriers to care

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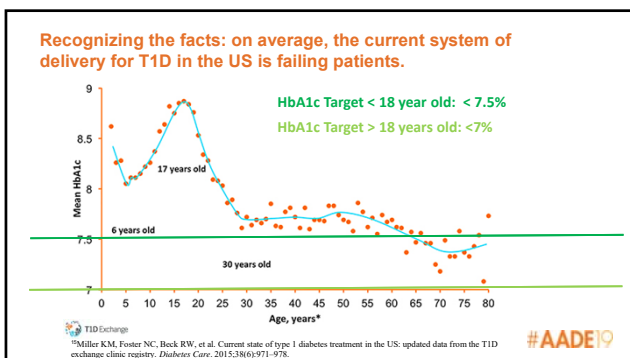
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### Health disparities in T1D

**Socioeconomic Status (SES) Differences in Childhood**

- Higher HbA1c<sup>1-5</sup>
- Higher rates of hospitalization for serious diabetes-related complications<sup>4,6</sup>
- Lower competency in diabetes knowledge<sup>7</sup>

**SES Differences Across the Lifespan**

- Higher rates of morbidity<sup>8</sup>
- Excess mortality associated with diabetes-related complications<sup>8-10</sup>

**Race and Ethnicity**

- Non-Hispanic blacks have highest risk for T1D-related death from complications<sup>11</sup>
- Higher HbA1c and less aggressive insulin regimens are noted for non-Hispanic blacks independent of SES<sup>12-14</sup>

References listed on final slide

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### Understanding barriers for adults with T1D: Focus Groups

**Demographic Characteristics of Florida Focus Groups**  
n=41, Six Groups

Age	39 [±16.9; range 18-81]		
<b>Race/Ethnicity</b>		<b>Pump</b>	<b>CGM</b>
Non-Hispanic White	26 (63%)	84%	60%
Non-Hispanic Black	10 (24%)	0%	27%
Hispanic or Latino	3 (7%)	11%	13%
Multiracial	2 (5%)	5%	0%
<b>SES: Household Income</b>		<b>Pump</b>	<b>CGM</b>
<\$25,000	15 (37%)	15%	27%
\$25,000 to <\$35,000	3 (7%)	5%	0%
\$35,000 to <\$50,000	5 (12%)	10%	20%
\$50,000 to <\$75,000	8 (20%)	26%	13%
\$75,000 to <\$200,000	5 (12%)	16%	20%
Missing Data	5 (12%)	----	----

Barriers to care:

- (1) Cost of insulin and supplies
- (2) Long wait times when needing to schedule adult endocrinology visits
- (3) Lack of attention to T1D care in adult endo visits
- (4) Distance
- (5) Many defer to PCP for care
- (6) Lack of any support groups for T1D or networks therein
- (7) Are unable to get pumps due to A1c%

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### Surveys with PCPs in Florida and California: Protocols for T1D care delivery

- For pediatrics: 61% refer to endocrinology, 48% test for HbA1c
- For adults: only 34% refer to endocrinology, 77% test HbA1c
- 70% report filling an insulin prescription for a T1D patient in the last year
- Many barriers in getting patients referrals to endocrinology are noted
- Low levels of confidence in T1D care were shown – especially related to pumps and CGMs
- Despite low confidence levels, PCPs are managing T1D

**PCP Surveys, n=123 [Florida and California]**  
Demographics

	n	Mean ± SD [Min, Max] or n (%)
<b>Practice Type</b>	123	
Solo		24 (20%)
Multi-Specialty Group		42 (35%)
Single-Specialty Group		27 (23%)
Hospital		13 (11%)
Other		13 (11%)
<b>Multiple Locations</b>	121	53 (44%)
<b>Weekly Patient Volume</b>	117	391 [± 604, range 8 to 5,000]
<b>Insurance Payer Type</b>	118	
Private		31%
Public (Medicaid, CMS, CHIP)		33%
Public, Over 65		25%
Self-Pay		6%
No Insurance		7%
Other		7%

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### What have we learned? Barriers to receiving endocrinology care in T1D

**Income & Work**  
For low-income children with T1D, financial barriers for parents like time lost from work may be an obstacle.

**Adult Care**  
For adults with T1D, there is a critical and growing shortage of adult endocrinologists.

**Rural Obstacles**  
For children and adults with T1D in rural areas, distance may be an obstacle.

**Beyond Distance**  
For adults & children with T1D in close proximity to endocrinologists, barriers other than distance persist.

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### Project ECHO® model applied to T1D

**Goal:** Increase the capacity of primary care providers and clinics to empower and safely and effectively manage underserved patients with T1D who do not receive routine specialty care.

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### Project ECHO® Extension for Community Healthcare Outcomes

**Project ECHO Mission:** Democratize medical knowledge and get best practice care to underserved people all over the world.

- Founded in 2004 by Dr. Sanjeev Arora to address Hepatitis C in New Mexico
- The heart of the ECHO model™ is its hub-and-spoke knowledge-sharing networks
- Led by expert teams who use multi-point videoconferencing to conduct virtual clinics with community providers
- Primary care providers (doctors, nurses, and other clinicians) learn to provide excellent specialty care to patients in their own communities
- Model has been adopted and applied in over 20 different specialties in over 50 institutions globally



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### ECHO Hubs and Superhubs: Global



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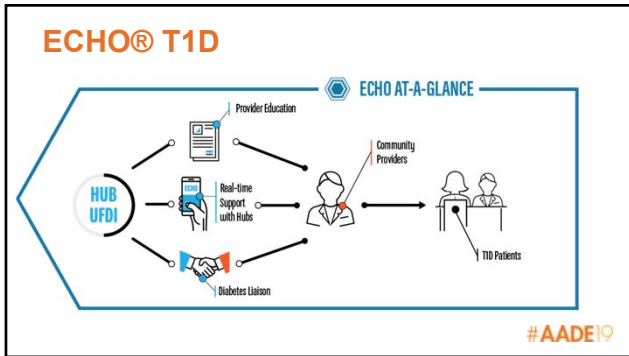
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### Diabetes Liaison = Health Coach

- Peer coaches hired and trained by UF & Stanford to provide support to adult T1D patients at spoke locations
- Organize social gatherings, serve as a resource and care navigator
- **They do not give direct medical advice**
- Adults with T1D who are interested opt in to the program via a social contract

Four individual portraits of the Diabetes Liaison/Health Coaches are shown in hexagonal frames. The hashtag "#AADE19" is in the bottom right corner.

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### Health Coaches

- California Health Coaches are seeing 18 patients
- CA and FL coaches hosting social gathering events that are being well attended

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### How can ECHO® T1D help address disparities?



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### Summary of how ECHO® T1D can help offset T1D health disparities

- Improve care received by underserved population with T1D
- Increase knowledge and confidence of Primary Care Providers' care for patients with T1D
- Create social support network with Health Coaches

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### California Spoke Sites

11 Established Spoke Sites in CA with 37 clinic sites serving over 1,000 patients with T1D who do not receive routine specialty diabetes care

- 9 Federally Qualified Health Centers (FQHCs): *Partnership Health Plan is the largest managed care organization (MCO) for the majority of the sites*
- 2 Non-FQHCs
- As of January 6th – 89 people from these sites are participating in ECHO® T1D (at least 79 of whom are clinicians)



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### Florida Spoke Sites

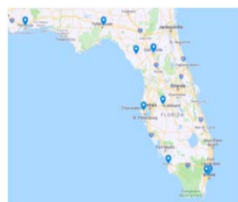
12 Established Spoke Sites in FL serving over 1,000 patients with T1D who do not receive routine specialty diabetes care

**FQHCs:** *HCN is largest MCO for Spoke sites*

- Miami Beach Community Health Centers – 3 Clinics
- Community Health Centers of Pinellas – 10 Clinics
- Jessie Trice Community Health Centers – 11 Clinics 40 schools
- Citrus Health Network – 8 Clinics
- Healthcare Network of Southwest Florida – 22 Clinics

**Non-FQHCs:**

- UF Student Health Care Center – 1 Clinic
- UF Eastside Clinic – 1 Clinic
- Old Town – UF Health Family Medicine – 1 Clinic
- The Studer Family Children's Hospital at Sacred Heart – 10 Clinics
- Tallahassee Memorial Hospital Transition Center – 1 Clinic
- Help a Diabetic Child Foundation – 1 Location
- Talbot House Ministries Good Samaritans Clinic – 1 Clinic



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### Educational Needs

- Determined based on baseline surveys of participating PCPs
  - Confidence in T1D management
  - Knowledge of:
    - Insulin and Medications
    - Blood Glucose Monitoring and Continuous Glucose Monitoring (CGM)
    - Complications
- Monitored through assessment of online CME evaluations for CA
  - Percentages of learners who will make changes in their practice and the types of changes anticipated
  - Mean scores regarding increases in stated ability to better manage the care of patients with T1D
  - Assessment of topics of interest for future sessions

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### Baseline Knowledge – CA & FL

Question	% Correct Response California n = 56	% Correct Response Florida n = 41
Q8. Monitoring continuous glucose data	14.0%	9.7%
Q12. Target blood pressure	26.1%	31.3%
Q5. Insulin dose titration - insulin/carbohydrate ratios	36.4%	10.0%
Q2. Starting insulin	39.1%	40.6%
Q11. Medical necessity for continuous glucose monitoring	39.5%	62.5%
Q13. Target LDL cholesterol level	45.7%	68.8%
Q3. Insulin timing and administration	52.1%	59.4%
Q6. Insulin dose titration - insulin sensitivity factor	54.8%	33.3%
Q4. Metformin use in T1D	59.6%	58.1%
Q10. Goal hypoglycemia rate	60.5%	83.9%
Q7. Post meal glucose targets	72.9%	40.0%
Q9. Interpreting continuous glucose monitoring data	74.4%	48.4%
Q1. Insulin duration	85.7%	64.7%

• 13 Question Pre-test  
• % Correct response ranged from:  
– CA: 14.0% - 85.7%  
– FL: 9.7% - 83.9%

Yellow <50% Correct  
Orange >75% Correct

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### Review of findings from Project ECHO T1D in California and Florida

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### CA Evaluation Results to Date

	Average	November Averages	December Averages	January Averages	February Averages
Met Stated Objectives*	4.41	4.20	4.33	4.57	4.53
Balanced, Objective Evidence-based Content*	4.47	4.39	4.43	4.55	4.52
Presented Source, Type or Level of Evidence*	4.15	3.97	4.05	4.29	4.29
No Commercial Bias Present	100%	98%	100%	100%	100%
Effectiveness of Presenters*	4.36	4.06	4.44	4.45	4.54
The case presentation and subsequent discussion increased my ability to better manage the care of my patients with T1D*	4.23	3.91	4.24	4.35	4.43
Provided practical suggestions I can apply in my practice*	4.23	3.90	4.32	4.33	4.38
Based on the information from this TeleECHO clinic I will make changes in my medical practice.	85%	80%	88%	85%	87%

\*Based on a 5 pt scale where 1 = Strongly Disagree or Not Effective and 5 = Strongly Agree or Very Effective

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**Examples of Changes in Practice**

- **Continuous Glucose Monitoring (CGM)**
  - Get my patients on CGM proactively
  - Prioritize at risk patients for CGM
  - Engage HMOs to facilitate use of CGM
- **Psychological issues around T1D**
  - Assess for diabulemia
  - Initiate conversations around shame, fear, guilt of diabetes
  - Not be afraid to ask people if they are entering fake BG's if their clinical picture doesn't make sense
- **Insulin**
  - Change how I transition between basal and NPH
  - Use simplified insulin regimen strategies when difficulty carb counting
  - Apply the conversion of long acting insulin to shorter insulin use
- **Diet**
  - Have patients take pictures of their food to help educate them on carb counting
  - Utilize the small, medium, large meal approach for those who really struggle with carbs
- **Hypoglycemia**
  - Encourage renewal of glucagon RX's and encourage families to be trained
  - Discuss with patients about how to objectively treat hypoglycemic episodes

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**Focus Groups June 2019**

- Spoke Site Focus Groups June 2019
  - Re-evaluate practice changes
  - Identify future objectives

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**Considerations for expansion and scaling of Project ECHO T1D**

- Getting buy-in from Payers/Physician Groups/etc. to help make a sustainable model

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## Questions?

Thank you



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