

# The Ripple Effect from a Team Approach in Ohio EHDI

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Infant Hearing Program Consultant-Newborn Hearing Screening Contact

# The Ripple Effect



ONE SMALL CHANGE  
CAN HAVE AN ENORMOUS IMPACT

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# Learning Objectives

- ✓ Recognize strategies used to create collaborative and community partnerships
- ✓ Identify how the Learning Collaborative has benefited the community and has had a ripple effect on one part of the state
- ✓ Describe how using a teaming and integrated services approach creates innovative changes for the early years leading to school age and beyond for children who are deaf and hard of hearing

# Quality Improvement using Public Health and Health care

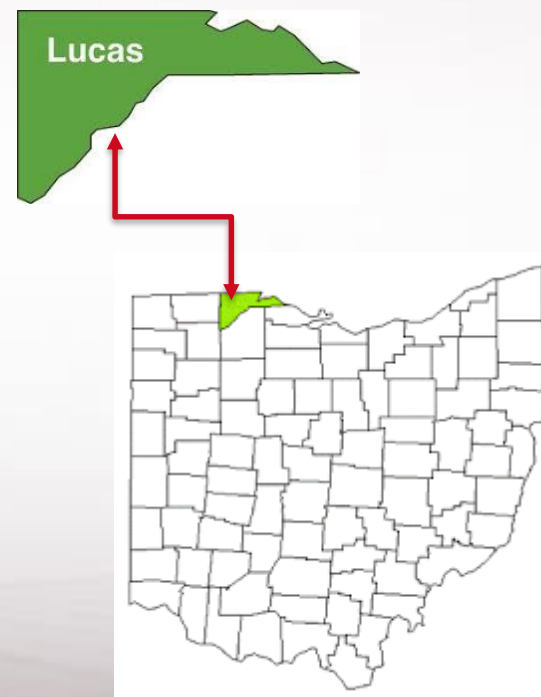
- Learning Collaborative approach
- Bridge between public health and community based health care
- Population health management
- National objectives → Statewide → Local

# Lucas County Demographics

## 6 Birthing Hospitals

- Ohio Equity Institute (OEI county)
  - Improve birth outcomes, reduce racial disparities in infant deaths
- Maternal Age
- Maternal Education
- Maternal Ethnicity
- Maternal Race

\* 2017, 2015 and 2016 Referral rates, LTFU data for NW Region 1 (CDC Summary)

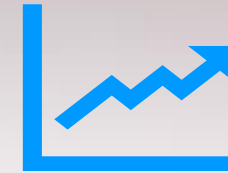




### Lucas County 2015 CDC Demographics

	Total Live Births	Total Babies w/ Passed Screenings	Total Babies w/ Referred Screenings	Referred w/ Diagnostic Follow-Up	Referred w/ No Diagnostic Follow-Up*
Totals	5,528	5,341	126	69	46
<b>Maternal Age</b>					
< 15 years	0.11%	0.11%	-	-	-
15-19 years	7.63%	7.55%	10.32%	10.14%	10.87%
20-24 years	27.30%	27.35%	27.78%	17.39%	43.48%
25-34 years	54.40%	54.41%	52.38%	60.87%	39.13%
35-50 years	10.51%	10.52%	9.52%	11.59%	6.52%
<b>Maternal Education</b>					
Less than High School	15.65%	15.43%	26.98%	27.54%	30.43%
High School	25.58%	25.52%	29.37%	26.09%	30.43%
Some College or AA/AS Degree	35.42%	35.48%	28.57%	24.64%	32.61%
College Graduate	22.94%	23.16%	14.29%	21.74%	4.35%
<b>Maternal Ethnicity</b>					
Hispanic or Latino	9.04%	9.02%	12.70%	15.94%	10.87%
No Hispanic or Latino	90.72%	90.75%	86.51%	84.06%	86.96%
<b>Maternal Race</b>					
White (Not Hispanic)	60.82%	60.91%	55.56%	50.72%	60.87%
White (Hispanic)	6.24%	6.31%	6.35%	7.25%	6.52%
White (Ethnicity Unknown)	0.07%	0.06%	0.79%	-	2.17%
Black (Not Hispanic)	27.82%	27.75%	28.57%	30.43%	26.09%
Black (Hispanic)	1.01%	0.97%	1.59%	2.90%	-
Black (Ethnicity Unknown)	0.09%	0.09%	-	-	-
Asian	1.83%	1.83%	2.38%	2.90%	-
Native Hawaiian	-	-	-	-	-
American Indian or Alaskan Native	0.18%	0.19%	-	-	-

# Methodology



- ✓ Data from Lucas county, pre collaborative and ongoing
- ✓ - Pre collaborative data, 2014/2015/2016(screening, referral, LTF); demographics
- ✓ Ranking order- HRSA
- ✓ Team assessment (adapted from NICHQ-EHDI WG)- 8 drivers, each member completed
- ✓ Data assessment mid way through collaborative (2016, 2017, 2018)
- ✓ Data analysis- (5) year post collaborative work

Collaboration is the foundation of making substantive improvements in children's health. Every initiative, even ones that focus on a small community, seeks to create solutions for complex challenges with deep-seated roots. (<https://www.nichq.org/insight/3-keys-engaging-extended-partners>)



Can a small change have an enormous or dramatic effect?

All EHDI peeps know how we want dramatic change and we want it now, right? Well, we have learned it doesn't necessarily go our way when we want that change. And we want it so terribly!

Centering around a small 1 county collaborative is how we got started.



# Lucas County Learning Collaborative(LCLC)

- A grassroots, quality improvement initiative
- Local resources for parents, families and professionals in order to streamline the system and coordinate services
  - Started in November 2017
  - Monthly meetings on site and/or virtual
  - Variety of stakeholders

# Members

- Core members- live in Lucas County
- Support members
- Variety of disciplines and professions, including parents
- Supportive/ancillary members include other members/professionals or parents
- Participation in the LCLC includes onsite meetings, online/virtual meetings, assisting with local activities and other projects designed by the workgroup

# Member Names/Roles

Alison Johnson- Audiologist  
Alli Neidart, Au.D.- Ed. Audiologist  
Ann Hunt, RN- Nurse and UNHS Coordinator  
Courtney Schnitker- EI Service Coordinator  
Eileen A. Quinn, M.D. – Developmental Pediatrician  
Jennifer Sullivan- Parent of a deaf child  
Jennifer Warfel- CMH Public Health Nurse  
Julie Yeater, Au.D. - Audiologist  
Kehinde O. Obeto, M.D.- Family Practice Physician  
Kristin Stanton- EI Service Coordinator  
Leigh Carr- SLP  
Shannon George – Parent of a deaf child  
Shannon Seger-Director of Deaf Services Center, Deaf/HOH person  
Nathan Dedino- Part C Coordinator  
Reena Kothari- UNHS Consultant, ODH, Audiologist  
Allyson Van Horn- EHDI Coordinator

\*\* Cathy Kooser, MSW, LISW- Guest speaker for parent meeting:  
*The Hidden Impact of Hearing Loss program*



Special Thanks to Guest ENT Lecturer:  
Prashant S. Malhotra, MD, FAAP  
Assistant Professor  
Pediatric Otolaryngology-Head and Neck Surgery  
Hearing and Cochlear Implant Program  
Nationwide Children's Hospital  
The Ohio State University Wexner Medical Center

# Complex Equation

Living and growing well with hearing loss or deafness...

Changing behaviors...

Parents dealing with the diagnosis of hearing loss or deafness...

Changing attitudes, beliefs and behaviors...

How to engage- parent and professional education...

To better the system?

# Health Belief Model (HBM) Hochbaum

Perception about Hearing Loss/Deafness:

Barriers, Benefits, Susceptibility, Severity, Action, Self-Efficacy

(Glanz, Marcus Lewis and Rimer, 1997)

Based on how people feel, think, confidence.

Efficacy- change over time (Sherry Smith and West 2006)

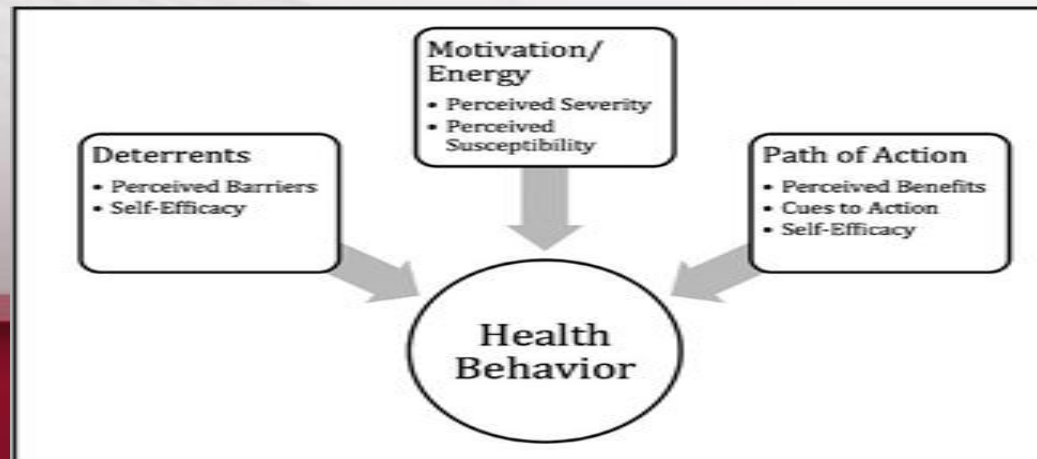


Image credit: <https://goo.gl/images/7PkfCb>

# Strong vs Weak Self Efficacy

Lucas County Learning Collaborative

Engaging parents, professionals, physicians, and changing beliefs, sharing resources for success for children with hearing loss or deafness, access to community level resources, partner with other agencies and professionals to enhance communication, whole child development.

Predictor of success

Success breeds success



Social and verbal persuasion can strengthen self efficacy:

Greater efforts

Sustainability

Reduction in emotional stress/concerns reducing emotional thoughts

(Bandura, 1994)

# What does this have to do with a learning collaborative?

## Reduces

Barriers

Outdated beliefs

(Emotional) stress

Avoidance

Long term consequences of hearing loss or deafness

## Increases

Community level involvement

Coordination of services

Accessibility

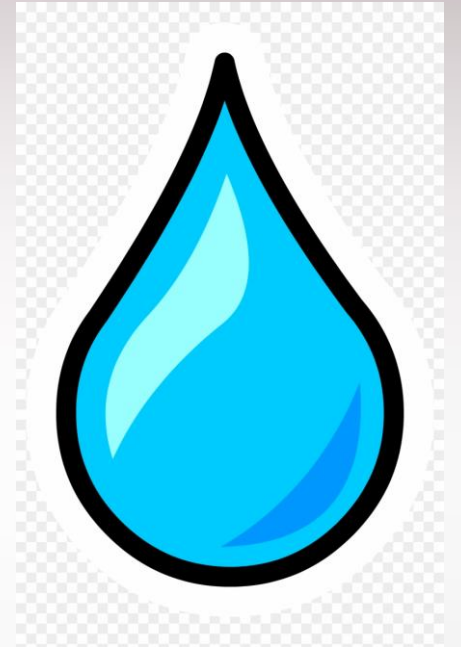
Creating a foundation

Success for children at each level of growth and development

# What does a drop look like?

Creating a think tank of interested parties covering the age span from birth to young adult, who are talking openly about education for parents, professionals, resources, strengthening the current system.

Four drops (and counting) that create a ripple effect...



# Medical Home Initiatives

## Pediatric Residents Lecture and Grand Rounds Presentation

State EHDI update  
Pediatric audiologic evaluation  
Developmental Pediatrician  
Pediatric ENT



## Medical Home Toolkit

Medical Home Checklist  
Video of lecture  
CDC Milestones  
Bright Futures  
Ohio Resources  
Lucas County Resources



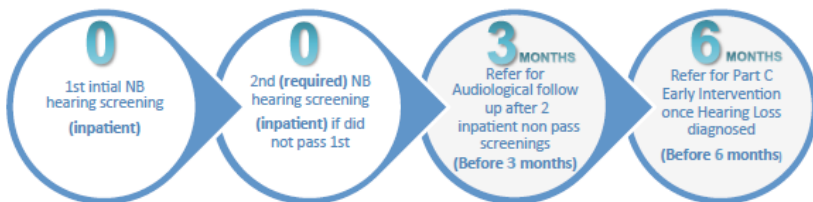
Department of Health

# 0\*-3-6 NEWBORN HEARING SCREENING CHECKLIST

\*(Ohio EHDI Program)

Patient Name: \_\_\_\_\_ Patient DOB: \_\_\_\_\_ Date of Visit: \_\_\_\_\_  
mm/dd/yyyy mm/dd/yyyy

## Ohio EHDI Snapshot 0-Screening at birth, 3-Evaluation, 6-Early Intervention



### 0 INITIAL SCREENING *\*(completed before hospital discharge, up to 2 screenings)*

<p>Has the child had a newborn hearing screening?</p> <ul style="list-style-type: none"> <li>• Newborn hearing screening is the standard of care.</li> <li>• All babies born in a hospital are screened at birth.</li> </ul>	<input type="checkbox"/> Yes ↓ <input type="checkbox"/> Not Sure → <input type="checkbox"/> No →	<input type="checkbox"/> Contact Infant Hearing at (ODH) <b>614-387-0135</b>  <input type="checkbox"/> Schedule initial screening if baby was missed or born at home  <input type="checkbox"/> Use <i>Pediatric Audiology Services Directory</i> - for outpatient screening for home births or misses
<p>Did you obtain the test results from the screening hospital or state EHDI program?</p>	<input type="checkbox"/> Yes ↓ <input type="checkbox"/> No →	<input type="checkbox"/> Contact the hospital or state EHDI program for results for the newborn hearing screening  <input type="checkbox"/> Screening Results (ODH) <b>614-387-0135</b>
<p>Are the results recorded in the patient's chart?</p>	<input type="checkbox"/> Yes ↓ <input type="checkbox"/> No →	<input type="checkbox"/> Record test results in patient chart
<p>Did the child pass the newborn hearing screening?</p>	<input type="checkbox"/> Yes ↓ <input type="checkbox"/> No →	<input type="checkbox"/> Schedule follow up appointment  <ul style="list-style-type: none"> <li>• Use <i>Pediatric Audiology Services Directory- for Diagnostic Evaluation Providers</i></li> </ul>
<p>If the screening was completed in your office, were the results reported to the state EHDI program?</p>	<input type="checkbox"/> Yes ↓ <input type="checkbox"/> No →	<input type="checkbox"/> Confirm results have been reported to state EHDI program (ODH) <b>614-387-0135</b>

\*ADAPTED FROM THE EHDI AAP CHECKLIST [https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/PEHDIC/Documents/Checklist\\_2010.pdf](https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/PEHDIC/Documents/Checklist_2010.pdf)

# Parent Engagement

## Meetings:

- Open forum meetings for parents and professionals
- Meeting to understand social and emotional aspects of childhood hearing loss-social worker and ENT
- Play groups offered by EI SC
- Parent Panel- parents from each age group (0-3, elementary to MS, HS and early adulthood-college) share experiences, resources, challenges and success stories

## Resources:

- Resource folders provided at 2 diagnostic sites at the audiological evaluation follow up appointment
- Parent guide document for parents to know the next steps and have documentation at each level (0-3-6)
- Future parent guide document for preschool and above
- Parent articles(2) in Toledo Parent Magazine
  - LCLC and Time to Talk, When Wait and See is not the Best Approach



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COVER STORIES COMMUNITY COLUMNS CITY CALENDAR CONTESTS

## TIME TO TALK: WHEN “WAIT AND SEE” ISN’T THE BEST APPROACH

BY KATE INGERSOLL, JUNE 26, 2018.



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ENTER YOUR WINTER SNAPS!

WIN BIG! ENTER OUR MONTHLY GIVEAWAY

<https://toledoparent.com/columns/time-to-talk-when-wait-and-see-isnt-the-best-approach/>



**Cathy Kooser MSW, LISW**  
Program Director

Licensed Independent Social Worker, University of Cincinnati

Cathy joined our practice in 2003. Using her own journey with hearing loss and research, she developed and teaches an educational program entitled The Hidden Impact of Hearing Loss. This program is unique to Hillcrest Hearing & Balance Center. Please refer to "The Hidden Impact" tab on the Home Page of our website for more information.

Cathy is licensed by the Ohio Counselor, Social Worker, Marriage and Family Therapist Board. She is a member of the American Academy of Audiologists; the National Rehabilitation Association; Academy of Rehabilitative Audiologists; International Hearing Society; Hearing Loss Association of America.

Cathy is in the Dayton office and serves patients and staff from all of our locations.

<http://www.hillcresthearing.com/hiddenimpact.php>

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COVER STORIES COMMUNITY COLUMNS CITY CALENDAR CONTESTS

## TIME TO TALK: LUCAS COUNTY LEARNING COLLABORATIVE

BY TOLEDO PARENT STAFF, JUNE 26, 2018.



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ENTER YOUR WINTER SNAPS!

WIN BIG! ENTER OUR MONTHLY GIVEAWAY

Let's find your home sweet home

Are you worried your child might be behind in speech milestones? A local collaborative was created to ensure families get the help they need.

The Lucas County Learning Collaborative (LCLC) is a grassroots, quality improvement initiative started in fall 2017, facilitated by the Ohio Department of Health's Infant Hearing Pro...

<https://toledoparent.com/columns/time-to-talk-lucas-county-learning-collaborative/>

## Parent Guide for Newborn Hearing Screening, Audiology Follow Up, and Early Intervention

<b>Hospital at Birth (0 Months)</b>	<p style="text-align: center;"><b>Hospital Inpatient Newborn Hearing Screening Results (OAE/ABR)</b></p> <p style="text-align: center;">Date of screening(s) (mmddyyyy): _____</p> <p style="text-align: center;"><small>OAE = Otoacoustic Emissions    ABR = Auditory Brainstem Response</small></p> <p>HS #1: <input type="checkbox"/> OAE    <input type="checkbox"/> ABR                      HS #2: <input type="checkbox"/> OAE    <input type="checkbox"/> ABR</p> <p>Right ear: <input type="checkbox"/> Pass    <input type="checkbox"/> Non-Pass                      Right ear: <input type="checkbox"/> Pass    <input type="checkbox"/> Non-Pass</p> <p>Left ear: <input type="checkbox"/> Pass    <input type="checkbox"/> Non-Pass                      Left ear: <input type="checkbox"/> Pass    <input type="checkbox"/> Non-Pass</p>
<b>Home Births</b>	<p style="text-align: center;"><b>Home Births- First Hearing Screening</b> (highly recommended, billed under insurance)</p> <p>Date of screening (mmddyyyy): _____    Date of screening (mmddyyyy): _____</p> <p>HB #1: <input type="checkbox"/> OAE    <input type="checkbox"/> ABR                      HB #2: <input type="checkbox"/> OAE    <input type="checkbox"/> ABR</p> <p>Right ear: <input type="checkbox"/> Pass    <input type="checkbox"/> Non-Pass                      Right ear: <input type="checkbox"/> Pass    <input type="checkbox"/> Non-Pass</p> <p>Left ear: <input type="checkbox"/> Pass    <input type="checkbox"/> Non-Pass                      Left ear: <input type="checkbox"/> Pass    <input type="checkbox"/> Non-Pass</p>
<b>Diagnostic Follow Up By (3 Months)</b>	<p style="text-align: center;"><b>Diagnostic Audiology Evaluation Section</b></p> <p>Date of Testing (mmddyyyy): _____    Date of Testing (mmddyyyy): _____</p> <p><b>Right ear: Degree of Hearing Loss</b>                      <b>Left ear: Degree of Hearing Loss</b></p> <p>_____    <input type="checkbox"/> Mild                      _____    <input type="checkbox"/> Mild</p> <p><input type="checkbox"/> Normal Hearing    <input type="checkbox"/> Moderate                      <input type="checkbox"/> Normal Hearing    <input type="checkbox"/> Moderate</p> <p><input type="checkbox"/> Hearing Loss    <input type="checkbox"/> Moderate to Severe                      <input type="checkbox"/> Hearing Loss    <input type="checkbox"/> Moderate to Severe</p> <p><input type="checkbox"/> Conductive    <input type="checkbox"/> Severe                      <input type="checkbox"/> Conductive    <input type="checkbox"/> Severe</p> <p><input type="checkbox"/> Fluctuating    <input type="checkbox"/> Profound                      <input type="checkbox"/> Fluctuating    <input type="checkbox"/> Profound</p> <p>Conductive    <input type="checkbox"/> Profound                      Conductive    <input type="checkbox"/> Profound</p> <p><input type="checkbox"/> Sensorineural                      <input type="checkbox"/> Sensorineural</p> <p><input type="checkbox"/> Mixed                      <input type="checkbox"/> Mixed</p> <p>Additional Follow up needed date: (mmddyyyy): _____</p> <p>Communication type(s) I/we are exploring for my child (See Communication options chart): _____</p>

<b>Team Contact/Service Providers Names and Contact Information</b>
ENT Name: _____
Pediatric Audiologist Name: _____
Early Intervention Service(EIS) Coordinator Name: _____
Early Intervention Service- Hearing Contact Name: _____
Speech Pathologist Name: _____
Children with Medical Handicaps (CMH/BCMH) Public Health Nurse Name: _____
Other Notes: _____

### Early Hearing Detection and Intervention (EHDI)

- Screening at Birth – 0 Months • Diagnostic Testing – 3 Months • Early Intervention – 6 Months

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# Monthly Collaborative Meetings

On site meetings  
Conference calls  
Workgroup calls



Variety of  
professionals and  
parents coming  
together to provide  
feedback, improve  
the system- Think  
tank approach





## OPEN HOUSE



### Lucas County Learning Collaborative Parent to Parent Support Meeting for children with hearing loss or deafness.

Join us at our parent to parent support meeting for parents of children with hearing loss or deafness. Learn about community resources and meet allied professionals working to build relationships with parents and grow support for families in Northwest Ohio.



Tuesday April 17th 5:30-7:00pm

Wednesday April 18th 10:30AM -12:30pm

Way Public Library

101 E Indiana Ave,  
Perrysburg, OH 43551

Interpreting services available

RSVP to Alison Johnson  
E-mail: [alison.johnson@promedica.org](mailto:alison.johnson@promedica.org)

## OPEN HOUSE

### Lucas County Learning Collaborative: Parent to Parent Support Meeting for children with hearing loss or deafness

Join us at our Fall Open house parent to parent support meeting. Families, children and professionals welcome.

### Your Child's Hearing Loss – The Impact on All!

Presented by: **Cathy Kooser, MSW, LISW**

The Hidden Impact of Hearing Loss Program Director  
Hillcrest Hearing & Balance Center

A Division of Southwest Ohio ENT Specialists  
And

Guest ENT speaker: **Dr. Prashant Malhotra, M.D. from  
Nationwide Children's Hospital**

Wednesday, September 12th 5:00 to 7:00pm

Heatherdowns Branch Library– Toledo Public Library Rooms A/B

5:00 to 5:15 pm: Meet and Greet, Welcome

5:15 pm to 6:30 pm: Cathy Kooser presentation

6:30 to 7:00pm– Dr. Prashant Malhotra, ENT presentation



RSVP to Reena Kothari

E-mail:

[reena.kothari@odh.ohio.gov](mailto:reena.kothari@odh.ohio.gov)

Phone: 614-387-0135



# EI Engagement



- ✓ Collaboration among various professionals to outline the process for sharing with parent(s) of children with hearing loss or deafness.
- ✓ Using a protocol or guide will allow the EI professionals to make certain parent(s) have the correct referrals, access to resources, know the next steps
- ✓ Reduces ambiguity for parents and professionals
- ✓ Standard process
- ✓ PDSA cycles

What is the effect of the drop, the ripple, the impact?



# 3 Year Data Lucas County\*

**Table 1. Lucas County Screening Results**

Year (Total Births)	Passes	Refers	Missed	Total Screened
<b>2016</b> (N=7,879)	96.1% (n=7,573)	2.7% (n=212)	1.2% (n=94)	98.8% (n=7,785)
<b>2017</b> (N=7,733)	96.0% (n=7,424)	2.9% (n=225)	1.1% (n=84)	98.9% (n=7,649)
<b>2018*</b> (N=7,631)	94.4% (n=7,206)	4.0% (n=307)	1.6% (n=118)	98.5% (n=7,513)

**Table 2. Lucas County Diagnostic Results after Screening Referral**

Year (Referrals)	Loss	No Loss	Transient	LTFU	Total Follow-Ups
<b>2016</b> (n=212)	5.2% (n=11)	55.7% (n=118)	1.4%	25.9% (n=55)	62.3% (n=132)
<b>2017</b> (n=225)	6.7% (n=15)	58.2% (n=131)	2.2%	22.2% (n=50)	67.1% (n=151)
<b>2018*</b> (n=307)	2.0%	43.0% (n=132)	0.7%	1.3%	45.6% (n=140)

**Table 3. Lucas County EI Enrollment Results after Screening Referral & Permanent Loss Found**

Year (Losses)	Enrolled	LTFU
<b>2016</b>	54.6%	9.1%
<b>2017</b>	26.7%	33.3%
<b>2018*</b>	50.0%	16.7%

\* 2018 data- ongoing analysis; not final CDC

**Members:**

- 2 Audiologists
- 1 Primary Care Physician
- 1 Developmental Pediatrician
- 1 SLP
- 2 Parents
- 1 UNHS Coordinator- RN
- 1 UNHS consultant
- 3 EI Professionals
- 1 Director of Deaf Services 1 -- Center and HOH/Deaf
- 1 Public Health RN
- 1 Ed. Audiologist
- 1 EHDI Coordinator

**Meetings:**

- 14 Meetings (On site and Virtual)
- 3 Ped. Resident Lectures
- Parent Open forum mtgs(2)
- Parent meeting with Social Worker and ENT

**Upcoming:**

- Parent to Parent Panel
- Grand Rounds Lecture

**Lucas County Learning Collaborative**

(11/2017 to present)

**Implemented Strategies**

- Parent Resource packet for 2 Diagnostic sites (CDC milestones tracker, other HL and communication info)
- Direct referral to HMG-EI from Diagnostic sites
- Hands & Voices Loss and Found Video for 6 Birthing hospitals, internal loop, clinics, waiting rooms, prenatal education (Approved H&V National office)

**Activities:**

- Hospital scheduling for non pass
- Scripted message for screeners
- Scripted message for audiologists for EI referral
- Parent Engagement
- Medical Home Engagement

# Next steps for LCLC

- Social Media- Facebook page public and invited members
- Increase access at checkpoints, UNHS, FU, ID, PS entry, School age, etc
- Transition Collaborative to community level stakeholders
- Reduplicate successful strategies to other parts of Ohio

**Lucas County Learning Collaborative**

**JOIN US**

**Parent to Parent Support Meeting for children with hearing loss or deafness.**

This parent meeting will feature a parent panel for various child age groups who will share the journey of their child's hearing loss and/or deafness, as well as share tips, resources and other valuable information.

Light refreshments provided. Children welcome.



**Wednesday, April 10<sup>th</sup> 6pm to 8pm**

Reynolds Corners Library  
4833 Dorr St  
Toledo, OH 43615



RSVP to Alison Johnson  
E-mail: [alison.johnson@promedica.org](mailto:alison.johnson@promedica.org)

If you can't make waves at first, make a drop that ripples.

## rip·ple ef·fect

English Language Learners Definition of *ripple effect*

: a situation in which one event causes a series of other events to happen

: a spreading, pervasive, and usually unintentional effect or influence



# Contact

Reena K. Kothari, Au.D., F-AAA

Infant Hearing Program Consultant- Newborn Hearing Screening  
Facilitator/Lead for Lucas County Learning Collaborative

[reena.kothari@odh.ohio.gov](mailto:reena.kothari@odh.ohio.gov)

Direct: 614-387-0135



# Ohio EHDI Presentations

## ***'Universal Newborn Hearing Screening (UNHS) Warehouse Project for Hospitals to View Hearing Screening Records'***

Presenter: Mallory Minter-Mohr, ODH Staff

Date: Monday, March 4, 2019

Time: 2:15 PM-2:40 PM

Room: Narita A/B

## ***'Developing a Statewide Protocol for Diagnostic Testing'***

Presenter: Sheryl Silver, ODH Staff

Date: Tuesday, March 5, 2019

Time: 4:20 PM-4:45 PM

Room: Heathrow A/B