

Intervention Mapping as a Public Health Approach to Address Lost to Intervention

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INTERVENTION MAPPING FOR EHD

Intervention Mapping is a protocol that walks through program development to support community-centered, research-driven, and theory-based interventions¹

- Poised to capitalize on the strong tradition of and legislative push for parent, advocate, and professional input on program development in EHD.
- Used in a range of topics including preventative medicine, cardiovascular health, and cancer.
- Meet the need to translate research about the benefits of early intervention into information that is useable by stakeholders.

When looking at EHD, there is a critical need to support children who are identified as they and their families move towards early intervention services^{1,2}

- By viewing families refusing services as a health problem, we can break that problem down and begin to understand why that happens.
- Figure 1 shows one way of understanding this health problem by using a logic model to work out why our problem is important and what courses our problem.

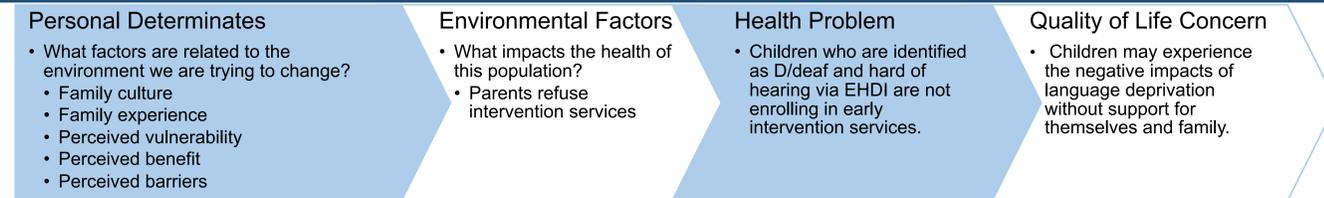


Figure 1. Logic Model of the Problem³

INTERVENTION MAPPING STEPS¹

1

Define the problem

Step one of intervention mapping calls for the development of a working group of experts to come together in order to understand more about lost to intervention in EHD.

- Our working group, Torri Ann Woodruff's dissertation committee includes experts in early intervention, audiology, parent education, and qualitative evaluations.
 - Drs. Kathleen Cienkowski, Beth S. Russell, Sarah Woulfin, Mary Beth Bruder, and Bernard Grela
- These experts were provided with a version of Figure 1 to familiarize them with the problem of lost to intervention and highlight the fact that in 2017, Early Hearing Detection and Intervention programs in the United States identified 6,537 children with hearing levels outside of the typical range and 34.5% do not enroll in early intervention services.

2

Determine Program Outcomes and Objectives

Step two starts with selecting the smallest possible steps that will help families access early intervention services.

- These steps come together and are easy to observe behaviors that move towards accessing early intervention. Some examples of these steps are consenting to a referral to early intervention, answering phone calls from early intervention offices, scheduling early intervention evaluations, and receiving results of evaluations.
- By looking at each one of these steps and the determinates from figure 1, we break down the specific things we need to do to overcome the barriers that are known and make the small steps achievable.

3

Determine the Methods of Behavior Change in the Program

In step three, the mechanics of how the intervention will be implemented are developed.

- Step three distinguishes the intervention from the current scripts used in lost to identification interventions given the interactive component with parents and the focus on theory-driven topics.
 - This interaction addresses parental disengagement directly by developing an environment where engagement in the educational module is expected and creates an opportunity to practice engagement skills, consistent with the foundational practices of early intervention, and the family behaviors required to enroll in intervention services.
- This is where we decide if we will be doing information sharing, role playing, or any other types of activities to reach our goals from step 2.

4

Physically Produce the Program

Step four is the point where the intervention program is developed

- This program includes a one on one session with a trained student implementer working through a website (Figure 4) covering early intervention enrollment for children who are D/deaf or hard of hearing and their families.

5

Develop a Plan to Translate the Program into Practice

Step five is the development of an implementation plan for the adaptors, implementers, and maintainers of the program.

- The goal is to ensure that once ready, the intervention will be agreeable to those who will use it. This has been done via integrated feedback in step 1 and the inclusion of two outside reviewers, a parent of a child under the age of 3 years and an adult who identifies as Deaf.
- The program is now in a place where it is ready to test with families to see if it is something that not only changes family decisions about getting early intervention, but also if it is something families would be willing to do.
- It is expected that once shared broadly, different groups and stakeholders will make changes to this program in an effort best meet specific needs.

6

Evaluate the Program

Step six is the point of evaluation covering fidelity, feasibility, and impact.

- Figure 2 highlights the components of this program evaluation as will be reported in Torri Ann Woodruff's dissertation.
- While underrepresented in the literature, there are indications of positive behavior change or patient outcomes in intervention mapping led program.

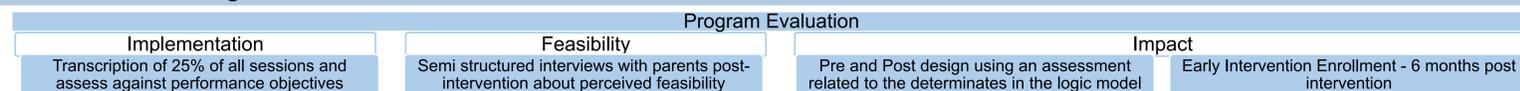


Figure 2. Evaluation plan

Purpose

This poster and use of intervention mapping in EHD highlights the need to address lost to intervention, the role of stakeholder involvement, and the value of treating EHD as a public health service that can benefit from public health theory.

Swaddling Ear To Ear



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Sharing our intervention mapping protocol with the variety of stakeholders at EHD also provides an opportunity for all of us to learn about this program and prepare to radically change how children access early intervention.

THE PROGRAM – SWADDLING EAR TO EAR⁴

This program was developed as a part of and will be evaluated by Torri Ann Woodruff's dissertation titled "Swaddling Ear to Ear." If you are interested in a version of this program, please reach out!

Connecting to CT Early Intervention/Birth to Three

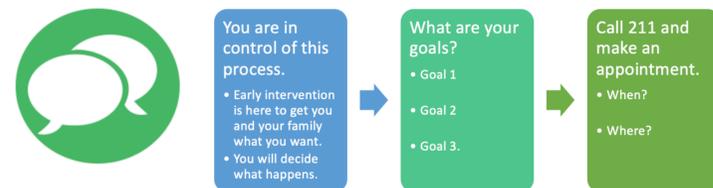
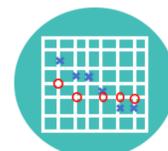


Figure 3. Example goal setting webpage

Hearing Test

Results



Welcome to the community of families with children who are D/deaf and hard of hearing!

You will meet lots of people on your journey

- Audiologist - hearing
- Pediatricians - health
- Hearing screeners - first test

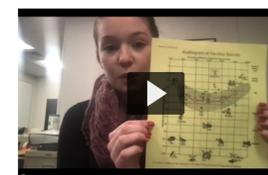
Audiograms try and show us about listening

- Only sounds below the lines are heard.
- The audiogram shows us what is heard, but learning language is about understanding
- You will have more than one audiogram

Your family understanding and being comfortable is the most important

- Ask questions, no one expects you to remember it all or understand first try
- Handouts can be a good way to help understand

The next thing I want to chat about is your hearing test and the form they filled out for you. This is called an audiogram and is how your baby's hearing is shown. I know that the audiologist explained this to you, but no one can remember everything with so much happening at once.



This is a lot to remember! Audiologists go to school for 8 years to be able to do this!

Looking at the audiogram as a map of your baby's hearing can be helpful. Take a step back from the Xs and Os and think about what this is trying to tell you about what your baby hears.

What does speech sound like for your baby?

What does that mean for when they are learning to communicate?

Please scan this QR code to access the website!



Acknowledgements

This study was conducted during COVID-19. As we all felt the pressures of living in quarantine conditions and seeing the challenges that face our world, I extend thanks to Melissa Karp for sharing her clinical knowledge and my dissertation committee for all the guidance.

REFERENCES

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- ² Centers for Disease Control and Prevention. (2019). 2017 Summary of Reasons for No Documented Early Intervention (EI) Services Among Infants Identified with Permanent Hearing Loss. Retrieved from https://www.cdc.gov/nccd/ehd/ehdloss/2017_data/11-no-early-intervention-reasons.html
- ³ Woodruff, T. A. & Cienkowski, K. M. (in review). Modeling Lost to Intervention in EHD: A modified eDelphi Study
- ⁴ Woodruff, T. A. & Cienkowski, K. M. (in development). Addressing Lost to Intervention: A Public Health Approach to Early Hearing Detection and Intervention.

Figure 4. Examples of hearing evaluation webpage