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*Instructor's Resource Manual*  
to accompany

# The Communication Disorders Casebook: Learning by Example

*Prepared by:*

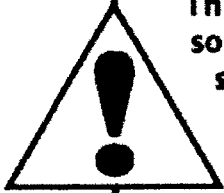
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## PREFACE

### Introducing our Instructor's Manual

#### A Case-based Approach

By design, this Instructor's Manual (IM), a companion to the text *The Communication Disorders Casebook: Learning by Example*, was written collectively by the case authors; the text was included in their initial case manuscripts and developed in conjunction with each case study. Because the case authors began their manuscripts with *Advanced and Basic Learning Objectives*, the learning objectives guided the case developments. The case authors' expert discussions of the questions posed in the *Exercises* reflect *their* expertise and deep-thinking about the cases, and the *Additional Suggested Readings* and *Suggested Activities* are those the authors might recommend or assign to students in their own classes. Each chapter in the IM follows a standard case-based template so that most cases address the same elements.

#### Empowering Diversity

We are committed to the philosophy and practice of treating clients and clinicians as individuals first, and thus we deliberately allowed the cases to differ in voice (e.g., the “emotional presence” of the client and/or family members), length, and perceived complexity. Instead of presenting the 61 cases in a homogenous format, we protected the authentic representations of clinical diversity so that our readers might acquire and critically evaluate different perspectives while recognizing that there can be more than one path to a clinical goal. Moreover, we recognize the diversity of instructors and their teaching styles, programs, and students. And so, the components of the IM can be used in various manners:

- *Exercises* might serve as:
  - written assignments
  - essay questions for assessment, whole-class or small group discussions
  - the focus of brief oral presentations
  - small group projects
  - on-line reflections
  - the basis for grand-rounds discussions
- *Basic and Advanced Learning Objectives* might be:
  - revealed to the class to assist them in formulating cognitive schemas for the case. (i.e., offered orally; printed in the syllabus and/or online web-based module)
  - re-framed for assessment or discussion, as follows:
    - *Learning objective*: to identify early indicators for a toddler presenting with ASD.
    - *Reframed objective, for discussion or essay question*: Identify the early indicators for a toddler presenting with ASD.
  - Referred to following a “problem based learning” model: students might be asked to deduce the cases' learning objectives from the case narrative, and determine what additional information they require to achieve the learning objectives.
- *Additional Suggested Readings* might be:
  - furnished as additional references for research papers
  - assigned as an annotated bibliography assignment
  - discussed in a seminar format
  - used for independent or continuing education
- *Test Questions* might be:

- assigned as study questions (e.g., in an online quiz)
- reviewed in a “test review” session
- used as a basis for an individual assessment, followed by a group assessment (in which group members collectively answer the questions)
- provided to assist students in preparing for a summative assessment (i.e., comps or Praxis exam)

### **Case Review Sequence(s)**

We envision that instructors will assign chapters in the book in various ways, as per the content of one or more courses (or a program’s entire curricula), course goals, and student level.

The book can be digested, start-to-finish, via the age-based organizational pattern: Part I: *Infant or Toddler Cases*; Part II: *Preschool Child Cases*; Part III: *School-Age Cases*; Part IV: *Adult Cases*.

Cases can also be clustered and assigned via other schemas, including:

- basic vs. advanced
- disorder
- setting
- personalization of the client (perhaps for clinical interviewing and counseling)
- multicultural considerations.

The cases might additionally provide exemplars for capstone assessments that require students to similarly write-up one of their clinical cases and orally present it to an examining faculty committee.

Because the cases contextualize and collectively address a wide overview of professional content, students may be interested in reading the cases as preparation for their certification examinations.

### **Test Bank**

The *Test Bank*, led in writing by Dr. Dorian Lee-Wilkerson, is available for download by adopting professors via [www.pearsonhighered.com](http://www.pearsonhighered.com) in the Instructor’s Resource Center.”

Since instructors may differ in how they process and interpret the information contained in the cases, we recommend an initial review of each test question and the identified answer to verify that it reflects the desired approach to the case content.

### **Acknowledgments**

We thank our families and colleagues for their exceptional support and encouragement during the development of this project.

We loudly applaud the dedicated efforts of the chapter authors who went beyond the expectations of simply “writing a case” to ensure that their expertise and critical thinking is represented in this IM.

We greatly admire the clients and their families who selflessly gave their permissions for our authors to relate their stories, so that others might benefit from the “lessons learned.”

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## Case 1: *Anne*

### Developing a Communication Assessment & Treatment Plan for a Toddler Diagnosed with Autism Spectrum Disorders: Special Considerations *Trisha L. Self and Terese Conrad*

#### Introduction

This case presents a toddler demonstrating early signs of an autism spectrum disorder (ASD). The author describes a course of diagnostic intervention followed by a period of environmental manipulation.

#### Learning Objectives

The learning objectives for the reader are to:

##### *Basic:*

- identify early indicators for a toddler presenting with ASD,
- describe behaviors presented by the client during treatment that required the interventionists to modify the therapy environment, and
- summarize changes in the client's behavior that occurred as a result of physical structure modifications.

##### *Advanced:*

- identify and describe specific early communication, social, and sensory indicators for a toddler presenting with ASD.
- distinguish between behaviors that facilitated the client's acquisition of skills and inhibited the client's ability to progress in treatment.
- summarize specific changes that occurred in the client's behavior as a result of (a) physical modifications to the environment and (b) revised treatment goals.

#### Suggested Activities

- Select a child diagnosed with ASD who has limited verbal skills. Describe a plan for determining toy and food preferences to use as motivators/reinforcers when working with the child in treatment.
- Observe a toddler in two different treatment settings (e.g., outpatient clinic, early childhood program, hospital). Compare and contrast the settings by identifying potential advantages and disadvantages for conducting therapy with a toddler diagnosed with ASD in these environments.
- Discuss a process for educating a family on how to incorporate pictures into their home so that their toddler with ASD can use them to begin communicating his or her basic wants/needs.

#### Case Analysis Questions

##### 1. What do you know about this client?

- significantly delayed receptive/expressive language
- history of chronic ear infections (PE tubes at 17 months)
- limited play skills, did not initiate her own play

- limited skills to self-regulate/self-calm (used blanket)
- poor joint attention, eye contact, and social interactions
- functionally non-verbal
- low muscle tone in both upper and lower extremities
- difficulty with transitions
- reinforced by highly motivational toys that she could operate independently
- engaged in behaviors: whining, crying, crawling under furniture, hiding her face and throwing items not intended to be thrown when requested to complete unfamiliar and/or challenging activities

**2. What more do you need to know?**

- Does the child have any other sensory deficits?
- Is the child's behavior influenced by any undiagnosed medical conditions?
- Does the child have undiagnosed food allergies?

**3. Who are the key people involved?**

- SLP (at the University-based clinic)
- Parents
- Brother

**4. Should any other course of intervention have been considered? Why?** *This response is subjective.* Learners may suggest a variety of treatment options and then the identified challenges should relate to the course of intervention they have recommended. *For example:* If the family had elected to access home-based early intervention services, this child could have received co-treatment from an SLP and an Occupational Therapist (OT) in addition to the speech-language intervention being provided through the university-based clinic. The OT could have provided the child (and her family) a sensory diet for the home, and met the sensory needs of the child during treatment. Additionally, a Behavioral Psychologist could have been consulted to help address her behaviors demonstrated during transitions, work activities, and/or during situations when she felt frustrated.

**5. What are the challenges that might arise from each new treatment option?**

- Coordinating professionals and prioritizing treatment goals
- Limiting the number of professionals in the physical treatment space to maintain low levels of stimuli in the environment (based on the child's needs)

**6. Describe the family's account of the case.** Refer to past developmental, family, and medical diagnostic histories for family's account of the case. Specific descriptions are provided within each of these sections.

**7. Describe the clinician's account of the case.** The clinician's account begins in the medical diagnostic history. Additional information is provided in the speech-language evaluation section, as well as the initial treatment plan, physical modifications, revised treatment plan, and child's response to treatment sections.

**8. Was there consensus between the family's and clinician's account of the case?** Yes.

**Additional Suggested Readings**

Gutstein, S., & Sheely, R. (2002). *Relationship development intervention with young children: Social and emotional development activities for Asperger syndrome, autism, PDD, and NLD.* Philadelphia, PA: Jessica Kingsley Publishers

- Quill, K. (2000). *Do-watch-listen-say: Social and communication intervention for children with autism*. Baltimore, MD: Paul Brookes.
- Sussman, F. (1999). *More than words*. Toronto, Canada: The Hanen Centre.

## Case 2: *Nancy*

### A Toddler with Cleft Lip and Palate: Early Therapy

*Cynthia Jacobsen*

#### **Introduction**

This case presents an infant born with a bilateral cleft lip and palate. It focuses on the progression of speech, language and hearing evaluations, and speech treatment (both pre- and post-surgical) over the first two years of life.

#### **Learning Objectives**

The learning objectives for the reader are to:

##### ***Basic:***

- describe the effects of a bilateral cleft lip and palate on resonance and speech development in a young child,
- explain the purpose of Nasendoscopy (FFVN), and
- describe goals of speech therapy and parent education in the toddler years.

##### ***Advanced:***

- describe the differences between compensatory speech errors and speech errors due to disordered phonology,
- summarize how speech evaluations led to the child's treatment plan, and
- contrast clinical information available at the 18 month and 2 year team visits and how the data affected treatment planning.

#### **Suggested Activities**

- Identify one compensatory error seen in a child with cleft palate. Suggest therapy activities to move sounds from the nose or pharynx into the mouth. Suggest activities appropriate for a child 18-30 months of age.
- Compensatory errors are errors in the place of articulation. The child uses dysfunctional placement in an attempt to close the velopharyngeal valve. Once the error is learned, the child often continues to use incorrect placement following surgery. One error is the glottal stop. The glottal stop is a voiced stop consonant with a glottal place of production. Glottal stops are often substituted for stop consonants such as /b/ and /d/. A glottal stop can completely replace a stop consonant or occur as a co-production with oral placement for stops and affricates. Therapy activity: Hold the clinician's nasal airway closed and make bilabial consonants (/m/, /b/, and /p/). Subsequently, teach the child to hold her own nose or use a nasal clip and then practice saying sounds with and without the nose closed. Contrast pairs of syllables such as "me" and "be." Once "me" and "be" are learned, contrast "me" and "dee." Show that "me" is a nose word and that "bee" and "dee" are mouth words. Use actions and pictures to demonstrate.
- Identify teaching opportunities for parents to elicit practice of targeted sounds. Describe how parents can provide 100 daily practice opportunities with incidental and direct teaching:
  - Set aside 5 to 10 minutes, 2 to 3 times a day for creative practice of key words.

- Parents make a picture book to read with the child. The book contains words with target sounds such as /p/, /b/ and /w/.
- Parents identify key objects and phrases that can be brought into incidental activities such as eating, bathing, and riding in the car. Parents model words such as “up” and “hop” and use these key words with activities that occur throughout the day
- Parents set up a special place with a mirror, to introduce objects followed by practice of target sounds. Parents may have key word cards or toy animals to elicit syllables such as moo moo (cow), bah bah (sheep), wuh wuh, (dog), neigh neigh, (horse) to make practice varied and fun. Having a set of materials in varied locations lends itself to short periods of quality practice.
- Determine the goals for speech therapy. The goals for speech therapy are correct placement for sounds without compensatory errors in the throat or nose. The child imitates speech sounds including stop consonants and learns to direct airflow out of the mouth. Early words contain a variety of consonant-vowel combinations and syllable shapes. Consonants usually heard include: /m, n, h, w, b, d and g/. The child also learns the parts of the face and tongue such as “lips, teeth, tongue, mouth and nose.”

### Case Analysis Questions

1. **What do you know about the client’s medical concerns?** Nancy had a bilateral cleft lip and palate. She also had an early history of otitis media which resolved following bilateral myringotomy and tubes.
2. **What do you know about the client’s articulation disorder?** Nancy’s two conditions contributed to her severe articulation disorder. As a result of velopharyngeal insufficiency, Nancy was not able to obtain intraoral air pressure for sounds such as /b/, /g/, /f/; thus Nancy’s speech was hypernasal and there was nasal air emission on consonants. Nancy also had a phonological disorder, affecting consonant usage across syllable positions.
3. **What do you know about the client’s velopharyngeal insufficiency?** Nancy had moderate hypernasality and nasal air emission. She could not say high pressure consonant sounds.
4. **What more do you need to know about the client?** Knowing the child’s level of cooperation or frustration due to the severity of the speech problem is helpful in designing therapy activities. The student clinician needs to know how to educate parents with everyday language ([plainlanguage.gov](http://plainlanguage.gov)).
  - **What information was available in cleft team reports?** Reports by the cleft team included team member findings as well as a team treatment plan.
  - **What information was available in speech evaluation reports?** Speech evaluations provided information on articulation, resonance and nasal air emission, language development, and behavior.
  - **What information do you want to obtain from reading materials and research?** Students may want information about parent counseling, as well as diagrams and charts for parent education. The student clinician may want to obtain additional information about therapy. Students need to understand the vocabulary used in the study by physicians, dentist, nurses and allied health professionals.

5. **Should any other course of intervention have been considered?** No other course of intervention was considered.
6. **What are the challenges that might arise from each new treatment option?** Once velopharyngeal insufficiency was resolved, the SLP needed to implement a therapy program to address the phonological speech disorder.
7. **Describe the family's account of the case.** The family was extremely satisfied. Family questions were answered, requests were respected and the child's speech problem was resolved.
8. **Describe the clinician's account of the case.** The clinician described a structured speech therapy program and a strong parent home program coordinated with the team's overall treatment plan. The SLP supported the parents when they requested nasendoscopy at age two.
9. **Was there consensus between the family's and clinician's account of the case?** Yes.

### **Additional Suggested Readings**

- Kummer, A.W. (2007). *Cleft palate and craniofacial anomalies. Effects on resonance*. (2<sup>nd</sup> ed.). Boston: Cengage.
- MedlinePlusHealth Topic: Cleft lip and palate. <http://www.nlm.nih.gov/medlineplus/cleftlipandpalate.html>
- Managing speech problems: Physical treatment of velopharyngeal dysfunction. Chapel Hill: Cleft Palate Foundation.
- Plainlanguage.gov A website with helpful methods for making communication understandable. <http://www.plainlanguage.gov/>
- The SmileTrain Cleft Information Public Library <http://medpro.smiletrain.org/library/PublicLibrary.html>
- Wide Smiles: Cleft Lip and Palate Resource (parent networking and support). <http://www.widesmiles.org/index.html>

### Case 3: *Ben*

## A Toddler with Delayed Speech and Developmental Milestones *Erin Redle and Carolyn Sotto*

### Introduction

This case presents a toddler who was seen for a speech and language evaluation because of concerns that his phonological, lexical, and motor development was slower than what was expected for his age. A variety of treatment options were considered, and a combination of direct and indirect treatment methods, including modeling, parallel talk, and expansion, was adopted.

### Learning Objectives

The learning objectives for the reader are to:

#### **Basic:**

- discuss normal phonological/speech development,
- describe fricatives, and
- describe apraxia of speech.

#### **Advanced:** The

- describe treatment options,
- describe evaluation methods, and
- discuss the importance of family involvement in therapy.

### Suggested Activities

- National Organizations: Go to the website of the American Speech-Language-Hearing Association website at <http://www.asha.org>. Click on *The Public* and then click on *Development* under Speech, Language and Swallowing. Go to: <http://www.asha.org/public/speech/development/parent-stim-activities.htm>
- Internet research: Using a search engine, type in “speech delay” or “developmental milestones.”

### Case Analysis Questions

1. **What do you know about this client?** Ben was a 22 month old male and was referred for a speech-language evaluation by the pediatric neurologist who had evaluated and diagnosed him with congenital hypotonia. The parents were concerned about his lack of communication skills at 22 months of age. Ben received monthly PT and OT services. He was referred for early intervention services but was still not being seen. His speech and language milestones were delayed.
2. **What more do you need to know?**
  - **What are all the relevant facts?** In this case, the SLP was one of the last people to assess Ben. Given Ben’s history of hypotonia and delayed motor development, an underlying organic cause of his hypotonia should be considered. However, he had been thoroughly assessed by a neurologist, including an MRI of his brain and EMG testing to ensure the neurological system was generally intact. Other relevant facts included:
    - hearing formally assessed and within normal limits

- reliable report of speech and language milestones (obtained through linking to significant life events)
  - limited history of otitis media
  - delayed motor development.
  - **Who are the key people involved?**
    - Mother, father, and brother
    - pediatric neurologist
    - SLP, OT, and PT.
3. **Should any other course of intervention have been considered?** The potential courses of intervention were discussed in the case including taking a “wait and see” approach or providing direct intervention.
  4. **Describe the clinician’s account of the case.** The clinician described the history based on parent report and also described the results of testing and observation. The clinician used the Rossetti Infant-Toddler Language Scale to assess interaction-attachment, gesture development, pragmatics, play, and language comprehension. All were within normal limits for Ben’s age. Expressive language skills assessed by the Rossetti were found to be delayed, with skills solid at 12-15 months and scattering up to 15-18 months. Ben’s phonemic repertoire included: /m, d, b, n, s, g, h/. Vowel errors were not noted. His syllable shape in words was primarily consonant-vowel (CV) with some CVCV observed. He was, however, able to string together longer sequences of consonants and vowels (e.g., CVCVCV, CVCVCVC) in “jabbering.”
  5. **Describe the family’s account of the case.** The family members described their observations and were able to better understand why there were certain speech and physical characteristics once the diagnosis was made. The mother was also concerned about Ben’s future literacy skills.
  6. **Was there consensus between the family’s and clinician’s accounts of the case?** Yes, as the parents agreed with the diagnosis and observations made by the SLP. Both the SLP and parents chose to begin direct speech-language treatment sessions.

### **Additional Suggested Readings**

- Bernthal, J., & Bankson, N., (2009). *Articulation and phonological disorders*. (6<sup>th</sup> Edition) Boston: Allyn & Bacon.
- Bleile, K. (2003). *Manual of articulation and phonological disorders*. (2<sup>nd</sup> Edition) New York: Thomson Delmar Publishing Co.
- Caruso, A. J., Strand, E. A. (1999). *Clinical management of motor speech disorders in children*. New York: Thieme.
- Girolametto, L., Pearce, P. S., & Weitzman, E. (1997). Effects of lexical intervention on the phonology of late talkers. *Journal of Speech and Hearing Research*, 40, 338-348.
- Gillon, G. T. (2004). *Phonological awareness: From research to practice*. New York: Guilford Press.
- Hodson, B. (2007). *Evaluating and enhancing children phonological systems: Research and theory to practice*. Greenville, SC: Thinking Publication.
- Robertson, S. B., & Weismer, S. E. (1999). Effects of treatment on linguistic and social skills in toddlers with delayed language development. *Journal of Speech, Language, and Hearing Research*, 42, 1234-1248.



Secord, W., Boyce, S., Fox, R., Donahue, J., Shine, R. (2007). *Eliciting sounds: Techniques and strategies for clinicians*. New York: Thomson.

## Case 4: Lily

### Case Study of an Infant with a Sensorineural Hearing Loss *Judith Widen, Sandra Keener, Teresa Kennalley, and John Ferraro*

#### Introduction

This case presents the history of an infant whose sensorineural hearing loss was detected at birth during a universal newborn hearing screening. Within the first 6 months of life, the child was referred for otologic diagnosis, fitted with amplification, and referred to early intervention.

#### Learning Objectives

The learning objectives for the reader are to:

##### **Basic:**

- explain that congenital hearing loss may be present in full term, healthy babies with no apparent risk factors for hearing loss,
- describe how hearing loss can be identified in the newborn period, and
- recognize that treatment can begin as soon as congenital hearing loss is confirmed.

##### **Advanced:**

- describe the purpose of the battery of physiologic test procedures (including auditory evoked potentials, otoacoustic emissions, and middle ear immittance measurements) needed to confirm and delineate hearing loss in infants who are younger than 6 months of age,
- compare the roles of audiologist and otologist in the diagnosis of congenital hearing loss and its etiologies, and
- recognize the importance of initiating early intervention, including language and auditory stimulation, as soon as possible after diagnosis of hearing loss.

#### Suggested Activities

- Imagine that you are the parent of this baby. How do you think you would feel about the diagnosis of sensorineural hearing loss? What questions would you have? Where might you find answers to these questions?

Suggested Resources:

- My Baby's Hearing: <http://www.babyhearing.org>
- Hands and Voices: <http://www.handsandvoices.org/index.htm>
- Imagine that you are the audiologist who must give the parents the diagnosis of profound sensorineural hearing loss. How will you provide this information in a sensitive, positive, and helpful way?

Suggested Resources:

- Preece JP (Ed). (2004). *Issues in Family-Centered Pediatric Audiology. Seminars in Hearing* 25(4). New York: Thieme.
- Websites listed in Activity 1 above.

#### Case Analysis Questions

##### 1. What do you know about this client?

- The client's age, pregnancy and birth history, and family constellation were given.
- Age was relevant because of the importance of early intervention.

- With the exception of the hearing loss, the child’s health seemed to be fine. The questions about pregnancy, delivery, and maternal infections relate to determining a cause for the hearing loss.
  - Family constellation included 2 young and inexperienced parents. They were employed, but with limited income and no health insurance.
  - According to the Center for Disease Control and Prevention (CDC), approximately 50% of hearing loss in children has a genetic cause. Seventy percent of those children with genetic hearing loss have hearing loss that is “non-syndromic,” meaning there are no other conditions linked with the hearing loss. A non-genetic cause can be found in about 25% of cases of hearing loss. Non-genetic causes of hearing loss include infections that the mother might have contracted during pregnancy, such as cytomegalovirus (CMV) or illness or trauma during delivery. Premature birth and low birth weight requiring neonatal intensive care often signal conditions or treatments that put a baby at risk for hearing loss. Approximately 25% of hearing loss cases have an unknown cause.
2. **What more do you need to know?** It would be helpful to know
- information about extended family/support network to help with shock, demands of extra appointments, and expenses
  - new information about hearing loss
  - advice from specialists and whether it conflicts with current diagnosis
3. **What are all of the relevant facts?**
- The baby had a permanent hearing loss.
  - Treatment for severe-to-profound sensorineural hearing loss included hearing aids and cochlear implants as well as education about how to stimulate language.
  - Treatment was available in the community.
  - The hearing aids should be worn during all of the baby’s waking hours.
4. **Who are the key people involved? What are their roles in this case?**
- The parents know the child best and were responsible for her care.
  - The nurses were responsible for the hearing screening in the hospital, for disseminating the information to the parents, and for making the referral for follow-up testing.
  - The pediatrician will participate in the diagnosis with the help of audiologist and otologist. He/she may order some of the tests for diagnosis and may make referrals for genetic counseling, ophthalmology, etc
  - The audiologist will determine whether a hearing loss is present, and if so, will describe the hearing loss by type (conductive, sensorineural, mixed) and amount (slight e.g., 20-25 dB HL to profound, 90-110 dB HL) as a function of frequencies on the audiogram (flat, rising, sloping configuration, etc.) for each ear. The audiologist will be responsible for selecting and fitting amplification and for referring the parents to early intervention services.
  - The otologist will determine the etiology of the hearing loss, if possible, and will provide medical and/or surgical treatment if appropriate.
  - The early interventionist will tell the family about options for language and auditory stimulation, provide instruction in those options, arrange parent-to-parent support,

and advocate for the child's and parent's needs so that development can proceed on a regular, natural timeline.

5. **Should any other course of intervention have been considered? Why?** A second opinion may be requested. There is seldom a question about the diagnosis when the hearing loss is severe or profound. However, in cases of slight or mild hearing loss there is more room for interpretation, especially when there may be a conductive component due to middle ear effusion in addition to the sensorineural hearing loss. The recommendation for the use of amplification assumes that the parents will want to maximize the child's use of residual hearing and access to spoken language. American Sign Language is an alternative option for learning language. Because the parents are hearing, they may not know about ASL and Deaf culture. Early interventionists can direct the parents to a Deaf-mentor program where they can learn more about deafness from the point of view of deaf and hard-of-hearing adults.
6. **What are the challenges that might arise from each new treatment option?** The primary challenge for these parents is that they do not know ASL. They would be learning it at the time the baby needs to be exposed to it.
7. **Describe the family's account of the case.** Not provided. See Suggested Activities above.
8. **Describe the clinician's account of the case.** The case was presented from the clinician's point of view. See Suggested Activities for further discussion/critical thinking about the clinician's role in disseminating this diagnosis.

**Instructor Notes:**

1. Communication between the hospital program, family and others involved in follow-up testing and intervention is critical to the success of Early Hearing Detection and Intervention (EHDI) programs. This is an example of poor communication at the first step in the process.
2. Not all general otolaryngologists are comfortable diagnosing hearing loss in infants, thus, the importance of a referral to an otologist with expertise in hearing loss in babies. The otologist tries to rule out syndromic hearing loss that may involve the skin (pigmentary system, e.g., Waardenburg syndrome) or kidney anomalies (renal system, e.g., branchio-oto-renal syndrome). Ophthalmologic evaluation is recommended to rule-out syndromes that might include eye disorders (e.g., Usher syndrome), but also to assure that vision is intact. Genetic evaluation is needed, especially for Connexin 26 disorders. The gene GJB2 that codes for Connexin 26 accounts for 50% of autosomal recessive congenital hearing loss. With recessive hearing loss, there will not be an apparent family history of hearing loss.  
<http://www.ncbi.nlm.nih.gov/disease/deafness.html>

**Additional Suggested Readings**

- American Speech-Language- Hearing Association. (2004). *Guidelines for the Audiologic Assessment of Children From Birth to 5 Years of Age* [Guidelines]. Available at <http://www.asha.org/docs/html/GL2004-00002.html>
- Joint Committee on Infant Hearing. (2007). *Position Statement: Principles and Guidelines for Early Hearing Detection and Intervention Programs*. *Pediatrics* 2007; 120; 898-921 [Also available at <http://www.pediatrics.org/cgi/content/full/120/4/898>]