Language Outcomes: Results of a Multi-State Collaboration

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Today's Topics

- Describe NECAP, a CDC-supported national outcomes database project
- Summarize characteristics of sample obtained to date
- Present language outcome data

NECAP Project Overview

- Collect language outcome data on deaf and hard-of-hearing children birth to 4 across the United States
  - Establish individual state databases
  - Establish national database
  - Explore feasibility of interfacing with existing EHDI databases

NECAP Project Goals

- Support states in assessing outcomes
- Assist states in using results to inform intervention
- Examine feasibility of a national outcomes database
- Determine program, child, and family characteristics related to successful outcomes

Services Provided by Colorado

- Assessments scored
- Profile sheet created
- Written report of results
- Comparison of scores to hearing and deaf/hoh norms
- Database creation and maintenance
- Annual accountability report characterizing state's performance (including subgroups)

Benefits for Programs and States

- Provides statewide and program-specific accountability data

- Examines outcomes in subgroups of children

- Informs personnel preparation needs and areas for program improvement

- Provides networking opportunities with other states

Assessment Components

- Demographic form
- Release of audiologic information
- Minnesota Child Development Inventory
- MacArthur-Bates Communicative Development Inventories
- Additional assessments on request (e.g., play, listening skills, speech intelligibility, etc.)

Participating States

- Arizona
- California
- Colorado
- Idaho
- Indiana
- Texas
- Wisconsin
- Wyoming

Assessments Completed

- 259 assessments completed (not including Colorado)
- 162 children assessed 1 to 4 times each
- Colorado: 225 assessments per year

Participant Characteristics (excluding Colorado)

- Bilateral loss = 249; Unilateral loss = 10
- Auditory Neuropathy = 7
- English-speaking home = 239; Spanish-speaking home = 20
- No additional disabilities = 229; Have additional disabilities = 30
- Boys = 140; girls = 119

Degree of Hearing Loss
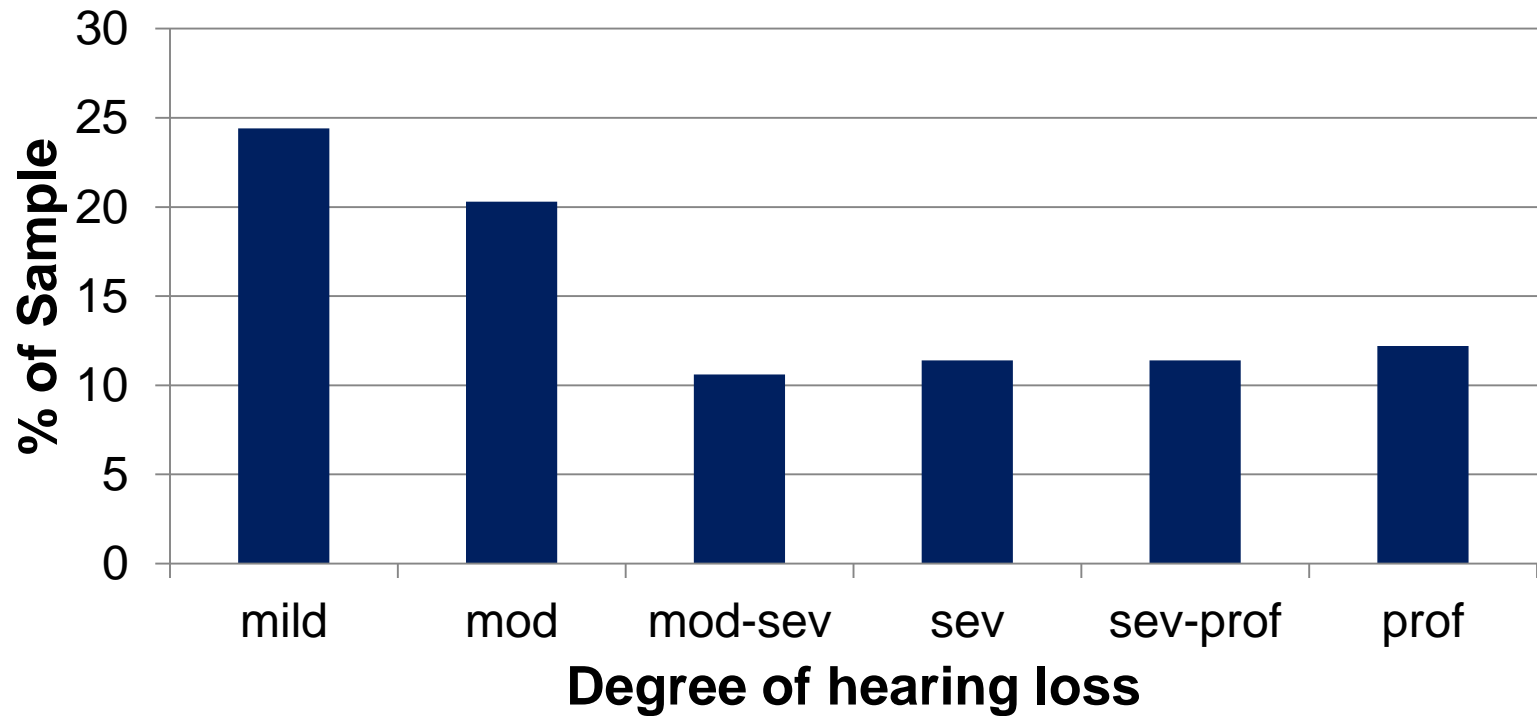
Participant Criteria for Language Outcomes Analysis

- Bilateral hearing loss
- English-speaking home
- No other disabilities that would affect speech or language development

States Represented in Current Language Outcomes Analysis

- Arizona

- Colorado

- Idaho

- New Mexico (previous participant)

- Texas

- Utah (previous participant)

- Wisconsin

- Wyoming

Note: CA and IN just initiated NECAP; no data yet

Language Outcomes Analysis: Participant Characteristics

- Chronological age
  - Range = 6 to 40 months
  - Mean = 21 months
- Boys = 130; Girls = 140

- Number of assessments = 270

Assessment 1: Minnesota Child Development Inventory (1992)

- 8 areas of development assessed
  - Language, Motor, Social, Self Help, Pre-Literacy
- Parent report
  - Parents respond "yes" or "no" to a variety of statements about their child
  - Example: "Has a vocabulary of 20 or more words"
- Scales adapted to reflect abilities in both spoken and sign language

Assessment 2: MacArthur-Bates Communicative Dev. Inventories

- Assesses spoken and sign vocabulary
  - Expressive and receptive for younger children
  - Expressive vocabulary for older children
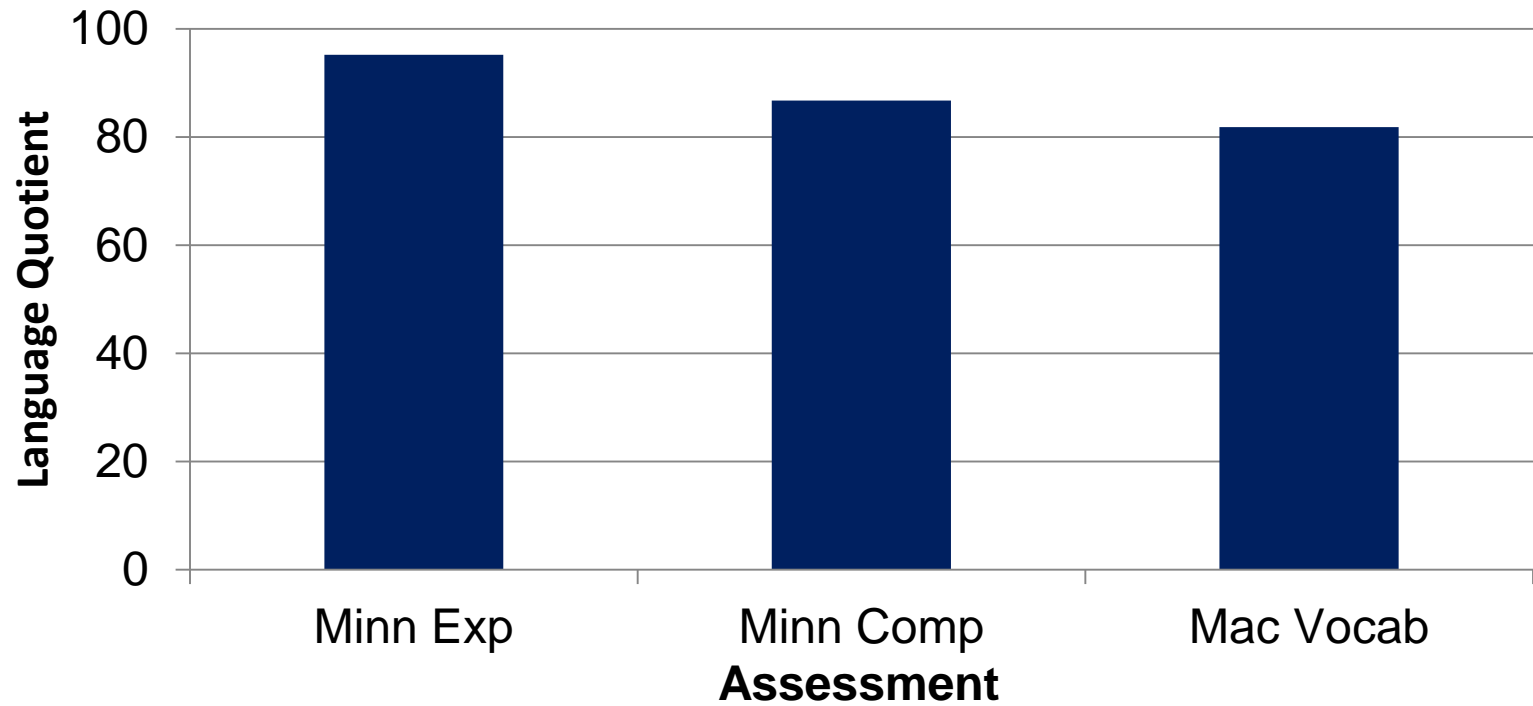- Parent-report instrument

Determining Language Quotient

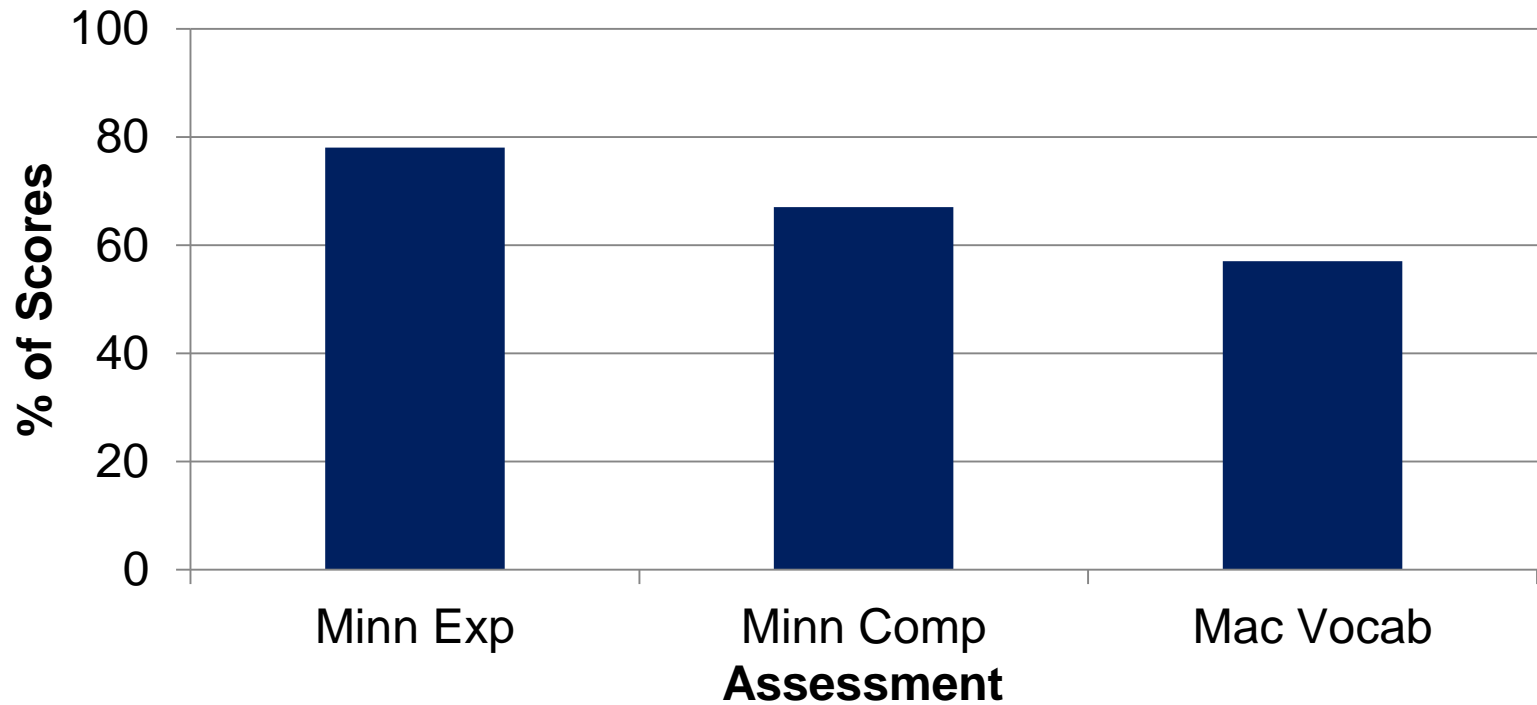Language Age/Chronological Age x 100
- ➤ If LQ = 100, Language Age = CA
- ➤ If LQ < 100, Language Age < CA
- ➤ If LQ > 100, Language Age > CA

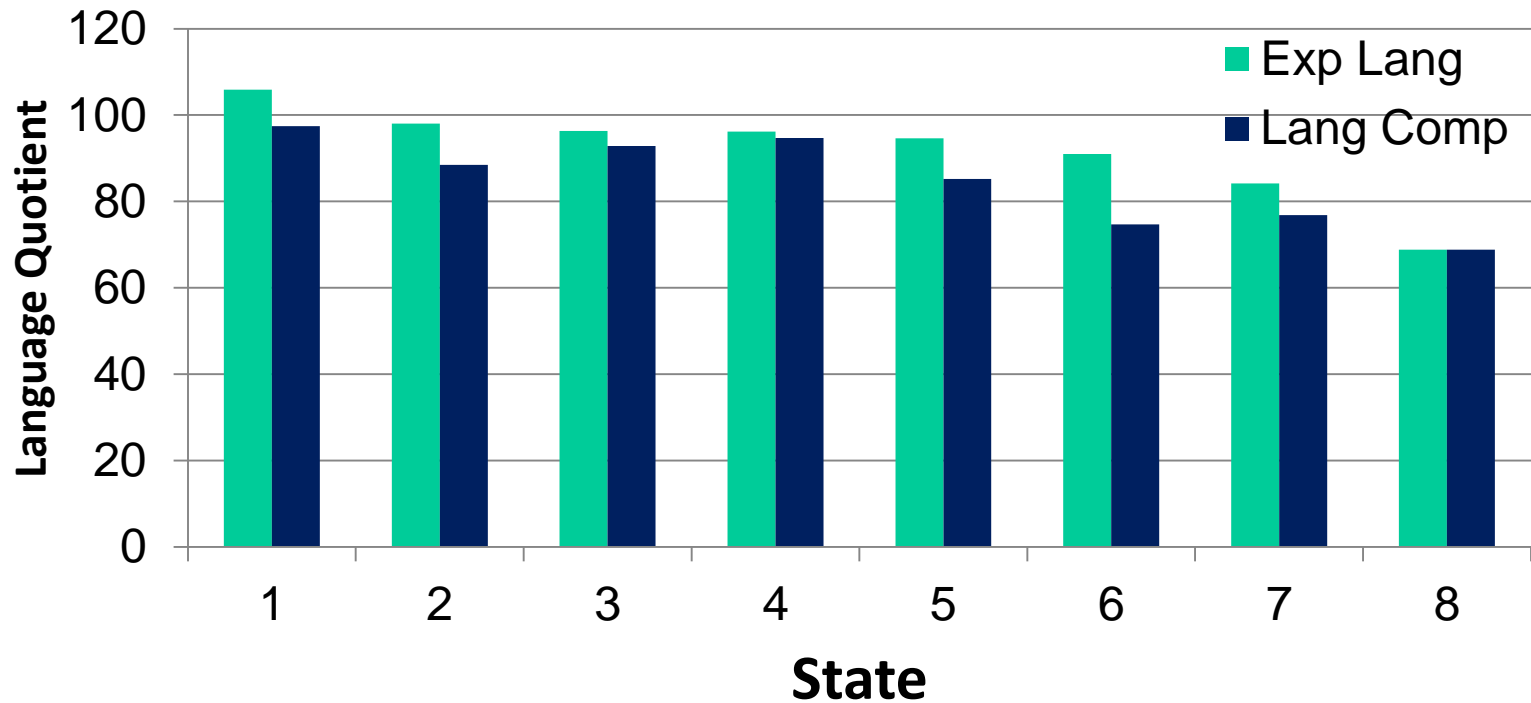LQs of 80+ are within the normal range compared to hearing children
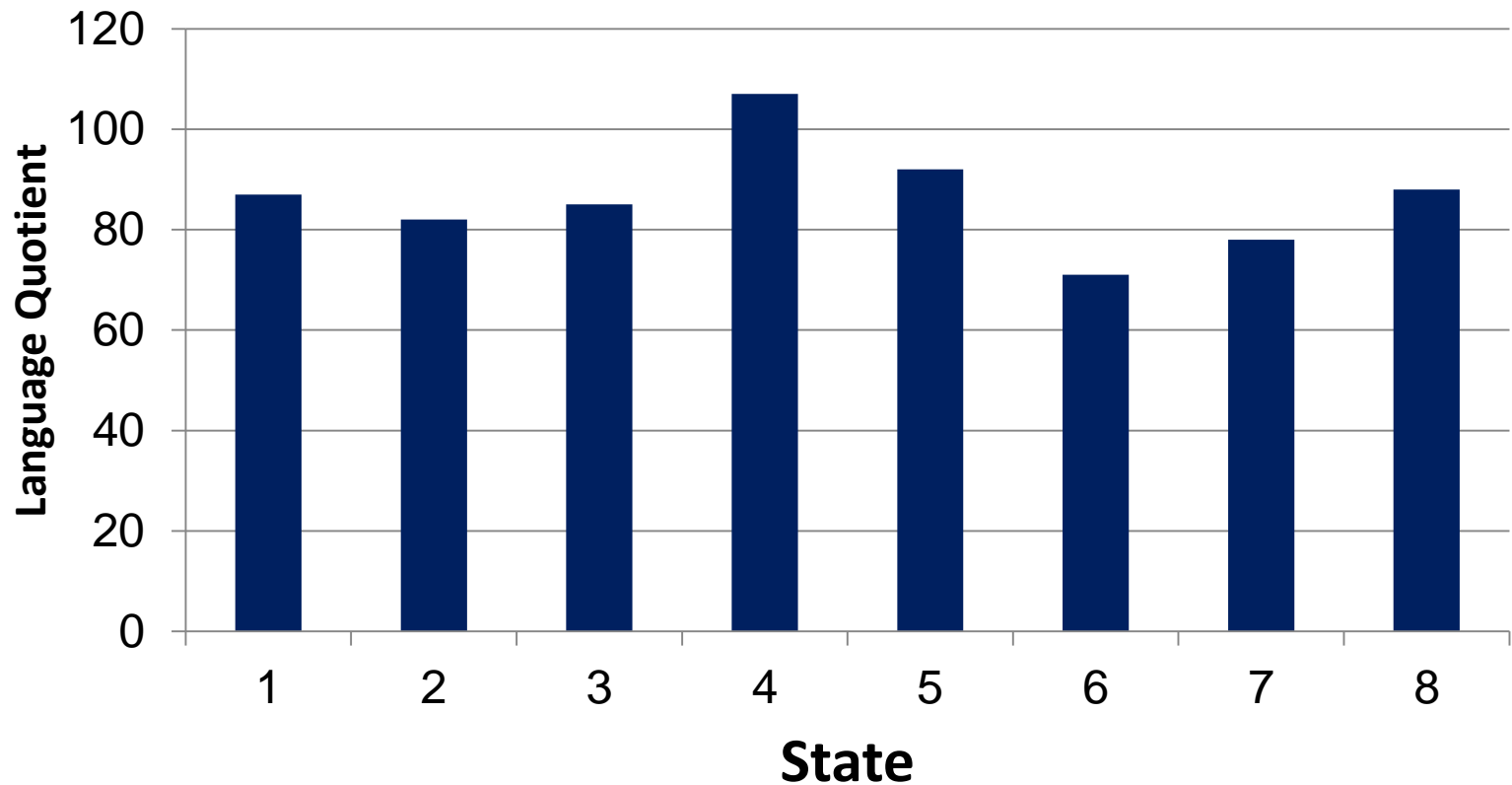
Median Language Quotients

Percent of Scores in the Average Range (LQ = 80+)

Minnesota CDI:
Median Language Quotients

MacArthur-Bates: Median Vocabulary Production Quotients

Conclusions

- Almost 80% of children scored within the average range on the Minnesota Expressive Language subtest

- On average, children in all states scored more poorly on cognitive-linguistic items (Minn Lang Comp) compared to more superficial language items (Minn Exp Lang)

Conclusions

- Acquiring an age-appropriate lexicon is a challenge for many children with 43% demonstrating significant delays

- Differences in language outcomes are apparent between some states

- As more assessments are collected, factors predictive of better language outcomes will be identified