



Addressing Rural Disparities: Lessons
from EHDI Programs and Broader
Healthcare Contexts

EHDI Conference
March 17, 2026

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EXPLANATION & PLAN

- National situation
- Colorado
- Exploring solutions from:
 - EHDI programs
 - Broader healthcare

NATIONAL TREND:

1-3-6 TIMELINE DELAYS IN RURAL AREAS

- **Provider-related concerns**
 - Access to pediatric audiologists
 - PCP EHDI knowledge
 - Coordination of care
- **Distance decay**
 - Time, money, work concerns
 - Availability of transport options
 - Baby's nap on the way!
- **Determinants of EHDI engagement**
 - Cultural & personal factors
 - Education about urgency

A landscape photograph of a field with a path leading to a barn, overlaid with a semi-transparent box containing text. The background shows rolling hills, a path, and a barn under a cloudy sky.

Related Issues in Colorado

- “Winter effect”
- “Travel divide”
- Provider “deserts”
- Impact of L&D closures

SOLUTIONS IN COLORADO

- Colorado Home Inclusion Program (CHIP)
 - home-based EI by region
- CO H&V rural programming
- Midwife contacts, equipment, access
- Pilot state audiologist based in rural area
- Mobile pediatric audiologists
- Pediatrician's webinars about cCMV
- LEND
- Virtual Site Visits
- Moving to virtual or hybrid gatherings



**WHAT SOME EHDl PROGRAMS ARE
TRYING NOW:**

RESULTS SO FAR

- Patient navigators (KY)
- Tele-audiology (SD & NC)
- Training of educational audiologists (IA)
- Localization (VA)



SOLUTIONS FROM BROADER HEALTHCARE

- Hub-and-spoke stroke model
- Automatic reminders
- Digital health
- Micro-credentialing
- Community health workers
 - Adult audiology services (AL)
 - Promotoras (AZ/Mexico)

POSSIBLE NEXT STEPS?



- Project TRIP
- Retail healthcare
- Ski-town subsidies
- Community health workers in aural rehabilitation
- Retention of rural healthcare personnel

References

- Bush, M. L., Hatfield, M., Schuh, M., Balasuriya, B., Mahairas, A., Jacobs, J., Studts, C., Westgate, P., Schoenberg, N., Shinn, J., & Creel, L. (2022). Communities Helping the Hearing of Infants by Reaching Parents (CHHIRP) through patient navigation: A hybrid implementation effectiveness stepped wedge trial protocol. *BMJ Open*, *12*, e054548. <https://doi.org/10.1136/bmjopen-2021-054548>
- Bush, M. L., Kaufman, M. R., & McNulty, B. N. (2017). Disparities in access to pediatric hearing healthcare. *Current Opinion in Otolaryngology & Head and Neck Surgery*, *25*(5), 359–364. <https://doi.org/10.1097/MOO.0000000000000388>
- Bush, M. L., Taylor, Z. R., Noblitt, B., Shackelford, T., Gal, T. J., Shinn, J. B., Creel, L. M., Lester, C., Westgate, P. M., Jacobs, J. A., & Studts, C. R. (2017). Promotion of early pediatric hearing detection through patient navigation: A randomized controlled clinical trial. *Laryngoscope*, *127*(Suppl. 7), S1–S13. <https://doi.org/10.1002/lary.26822>
- Carroll, C., Planey, A., & Kozhimannil, K. B. (2022). Reimagining and reinvesting in rural hospital markets. *Health Services Research*, *57*(5), 1001–1005. <https://doi.org/10.1111/1475-6773.14047>
- Center for Family Involvement. (2023). *Collaborating with LatinX families to disseminate EHDI resources: Innovative and promising practices spotlight*. Virginia Commonwealth University.
- Coco, L., Carvajal, S., Navarro, C., Piper, R., & Marrone, N. (2023). Community health workers as patient-site facilitators in adult hearing aid services via synchronous teleaudiology: Feasibility results from the Conexiones randomized controlled trial. *Ear and Hearing*, *44*(1), 28–42. <https://doi.org/10.1097/AUD.0000000000001281>
- Deeds, S., Schuttner, L., Wheat, C., Gunnink, E., Geyer, J., Beste, L., Chen, A., Dominitz, J. A., Nelson, K., & Reddy, A. (2023). Automated reminders enhance mailed fecal immunochemical test completion among veterans: A randomized controlled trial. *Journal of General Internal Medicine*. Advance online publication. <https://doi.org/10.1007/s11606-023-08409-8>
- Elpers, J., Lester, C., Shinn, J. B., & Bush, M. L. (2016). Rural family perspectives and experiences with early infant hearing detection and intervention: A qualitative study. *Journal of Community Health*, *41*(2), 226–233. <https://doi.org/10.1007/s10900-015-0086-1>
- Frydenlund, S. (2024). “Cowboy up”: Gender, labor, and workforce housing in Colorado ski country. *Environment and Planning A: Economy and Space*, *56*(3), 751–765. <https://doi.org/10.1177/0308518X231217889>
- Hay-McCutcheon, M. J., Hubbard, A., Brothers, E. B., Straub, K., Allen, R. S., Hardy, C., & Tye-Murray, N. (2024). Development and implementation of an aural rehabilitation program using community health workers in rural Alabama. *Perspectives of the ASHA Special Interest Groups*, *9*(5), 1367-137–
https://pubs.asha.org/doi/10.1044/2024_PERSP-24-00083

References (continued – p.2)

- Hay-McCutcheon, M. J., Hubbard, A., Brothers, E. B., Thrasher, L., Hardy, C., Yang, X., & Allen, R. S. (2025). A feasibility study evaluating a community health worker training program to support adults with hearing loss in rural Alabama communities. *Journal of Speech, Language, and Hearing Research*, 68(4), 2104–2126. https://doi.org/10.1044/2025_JSLHR-24-00716
- Khoza-Shangase, K. (2025). Capitalizing on digital health care for speech-language pathology and audiology professions to be contextually relevant, responsive, and responsible in South Africa: A narrative review. *Journal of Speech, Language, and Hearing Research*, 68, 5086–5100. https://doi.org/10.1044/2025_JSLHR-24-00895
- Kolluri, S., Stead, T. S., Mangal, R. K., Coffee, R. L. Jr., Littell, J., & Ganti, L. (2022). Telehealth in response to the rural health disparity. *Cureus*, 14(8), Article e28025. <https://pmc.ncbi.nlm.nih.gov/articles/PMC9392842/>
- Reinschmidt, K. M., Hunter, J. B., Fernández, M. L., Lacy-Martínez, C. R., Guernsey de Zapien, J., & Meister, J. (2006). Understanding the success of promotoras in increasing chronic disease screening. *Journal of Health Care for the Poor and Underserved*, 17(2), 256–264, <https://pubmed.ncbi.nlm.nih.gov/16702713/>
- Richlin, B. C., Blaiser, K. M., & Bush, M. (2024). Living in the void between hearing health care encounters: Evaluation of the barriers families face. *Perspectives of the ASHA Special Interest Groups*, 9(2), 372–385, https://pubs.asha.org/doi/10.1044/2023_PERSP-23-00038
- Russell, D., Mathew, S., Fitts, M., Liddle, Z., Murakami-Gold, L., Campbell, N., Ramjan, M., Zhao, Y., Hines, S., Humphreys, J. S., & Wakerman, J. (2021). Interventions for health workforce retention in rural and remote areas: A systematic review. *Human Resources for Health*, 19, Article 103. <https://doi.org/10.1186/s12960-021-00643-7>
- Sapp, C., Stirn, J., O'Hollearn, T., & Walker, E. A. (2021). Expanding the role of educational audiologists after a failed newborn hearing screening: A quality improvement study. *American Journal of Audiology*, 30(3), 631–641. https://doi.org/10.1044/2021_AJA-21-00003
- Schwartz, A. J., Richman, A. R., Scott, M., Liu, H., White, W., & Doherty, C. (2022). Increasing access to care for the underserved: Voices of riders, drivers, & staff of a rural transportation program. *International Journal of Environmental Research and Public Health*, 19(20), 13539. <https://doi.org/10.3390/ijerph192013539>
- Srinivasan, T., Robler, S. K., Turner, E., Platt, A., Arthur, D., Bettger, J. P., Lane, H., Schuh Gebert, M., Deshpande, S., Schoenberg, N., Bush, M. L., & Emmett, S. D. (2025). Improving access to specialty care for rural children using enhanced hearing screening and specialty telehealth follow-up in rural Kentucky schools: Protocol for a hybrid effectiveness-implementation stepped wedge, cluster-randomized controlled trial (Appalachian STAR Trial). *JMIR Research Protocols*, 14, e77630. <https://doi.org/10.2196/77630>
- Stuart, A. (2016). Infant diagnostic evaluation via teleaudiology following newborn screening in eastern North Carolina. *Journal of Early Hearing Detection and Intervention*, 1(2), 63– 71. doi.org/10.15142/T3FS3F

References (continued – p.3)

- Switzer, J. A., Demaerschalk, B. M., Xie, J., Fan, L., Villa, K. F., & Wu, E. Q. (2012). Cost-effectiveness of hub-and-spoke telestroke networks for the management of acute ischemic stroke from the hospitals' perspectives. *Circulation: Cardiovascular Quality and Outcomes*, 5(1), 18–26. <https://doi.org/10.1161/CIRCOUTCOMES.112.967125>
- Syed, S. T., Gerber, B. S., & Sharp, L. K. (2013). Traveling towards disease: Transportation barriers to health care access. *Journal of Community Health*, 38(5), 976–993. <https://doi.org/10.1007/s10900-013-9681-1>
- Williams, H. M., Riley, E. M., & Messersmith, J. J. (2020). South Dakota Early Hearing Detection and Intervention program: Using teleaudiology to conduct infant diagnostic assessments. *Journal of Early Hearing Detection and Intervention*, 5(1), 47–53. <https://doi.org/10.26077/xvak-k565>
- Woods, L., Martin, P., Khor, J., Guthrie, L., & Sullivan, C. (2024). The right care in the right place: A scoping review of digital health education and training for rural healthcare workers. *BMC Health Services Research*, 24, 1011. <https://doi.org/10.1186/s12913-024-11313-4>



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