

Louder Than Words: Pediatric Speech Disorders Skyrocket Throughout Pandemic

Diagnosed speech delays and disturbances more than doubled in children, with infants and toddlers most affected.

KEY FINDINGS:

- The number of children ages 0-12 diagnosed with a speech delay or disturbance more than doubled during the pandemic time frame.
- The rate of new diagnoses increased progressively as the pandemic continued.
- Infants and toddlers (ages 0-2) were most affected by pandemic-related speech development challenges, with an increase of 136% in new speech disorder diagnoses.
- New diagnoses in children ages 3-5 increased by 107% and by 93% in children ages 6-12.

EXECUTIVE SUMMARY:

There is no doubt that the past three years have been especially challenging for parents. As the COVID-19 pandemic's social distancing restrictions and mask mandates took hold and then remained in place, parents mitigated moving targets of risk while wondering about the impacts of safety measures on their children. One open question was whether children's speech development would be affected by pandemic-related changes like masking, preschool closures, and reduced socialization. With little data on potential long-term impacts, experts could only [speculate and reassure](#) as alarming anecdotes went viral.

For children already receiving speech language therapy, transitions were made to remote sessions or masked in-person sessions. In schools, exceptions weren't made for these children — the CDC, whose guidelines recommend universal indoor masking for everyone age 2 and up in schools, did not and does not consider speech or language impairment a condition of exemption.

Now, three years after the first lockdown, the opportunities to understand the secondary impacts of the pandemic's public health measures are growing. Using Komodo Health's full-stack platform, built on our Healthcare Map™ of over 330M patient journeys, we tracked emerging trends in the diagnosis of speech disturbances and delays in infants, children, and teens, before and after the onset of the pandemic.

METHODOLOGY:

This analysis used Komodo's Healthcare Map, the industry's largest and most complete database of de-identified, real-world patient journeys in the United States, to understand differences in newly diagnosed speech delays and disturbances primarily in infants and children aged 0-12 years. Diagnoses of speech disturbances and delays were defined using ICD-10-CM codes for developmental disorders of speech and language. Evaluations for speech disorders were defined using HCPCS, CPT, and ICD10-PCS codes for speech-language pathology and motor speech assessment codes among others.

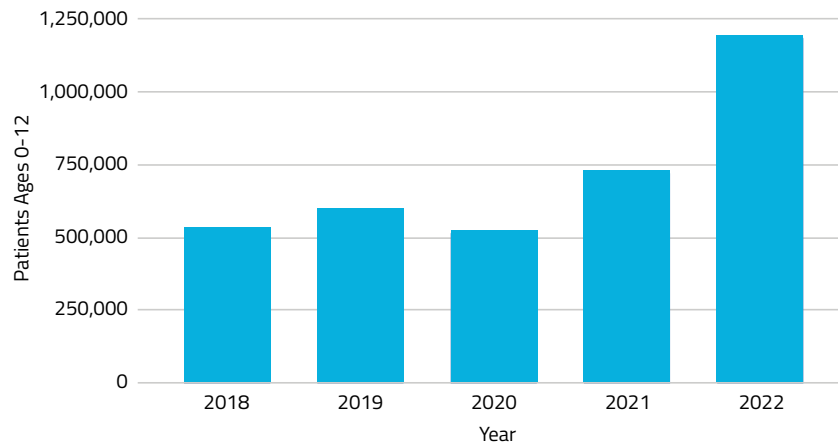
The analysis primarily compared rates of new diagnoses of speech disorders and trends in testing and evaluation in this population in the pre- and post- COVID-19-pandemic setting. The pre-pandemic era is defined as January 1, 2018 through December 31, 2019 and the post-pandemic era is defined as January 1, 2021 through December 31, 2022.

RESULTS:

The number of children ages 0 to 12 diagnosed with a speech disorder increased by 110% in 2022, compared with the pre-pandemic rate.

In the two years leading up to the pandemic, an average of 570,000 children ages 0 to 12 were diagnosed with a speech disorder annually. In 2022, that jumped to roughly 1.2 million children. Compared with the pre-pandemic average, the number of annual diagnoses grew by 29% in 2021 and by an additional 81% in 2022.

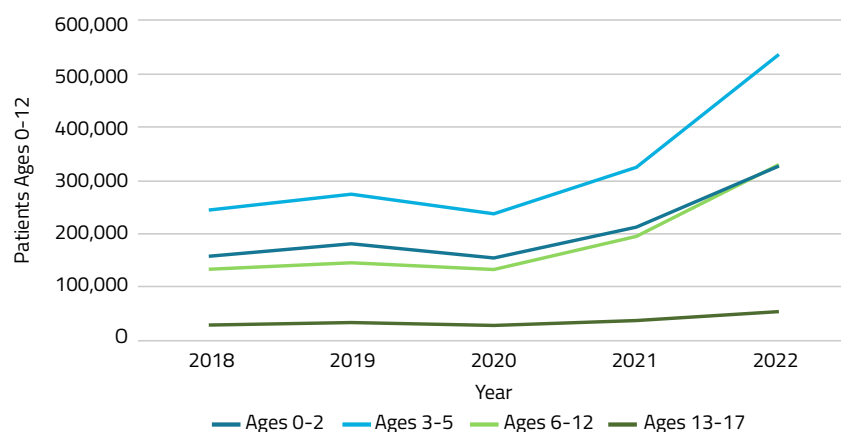
DIAGNOSIS OF SPEECH LANGUAGE DISORDERS IN CHILDREN AGES 0-12



Infants' and toddlers' speech development was most impacted by pandemic-related changes.

Increases in speech disorder diagnoses were most significant in infants and toddlers ages 0 to 2. This age group saw a 136% increase in new diagnoses in 2022, compared with the pre-pandemic rate. Children ages 3 to 5 made up the largest portion of patients with new speech disorder diagnoses both before and after the onset of the pandemic, but the rate more than doubled in this group as well, increasing by 107%. Children ages 6 to 12 likewise had an increase in newly diagnosed speech disorders by about 93% in 2022, compared with the pre-pandemic rate. Teens ages 13 to 17 appeared largely unaffected; the number of new diagnoses remained relatively stable in this age group.

DIAGNOSIS OF SPEECH LANGUAGE DISORDERS BY AGE



Diagnoses of pediatric speech disorders soared even as evaluations remained stable.

Prior to the onset of the pandemic, there were about nine newly diagnosed patients for every 100 speech assessments performed in ages 0 to 12. In 2022, that increased by about 115%, to approximately 21 newly diagnosed patients for every 100 assessments, despite a similar number of assessments pre- and post-pandemic.

DISCUSSION:

This analysis makes clear that pandemic-related factors led to a higher rate of diagnosed speech disorders in children. A temporary decline in speech disorder diagnoses was seen in 2020, reflecting the trend of lower healthcare utilization for non-emergencies during lockdown. The progressive increases through 2021 and 2022 likely reflect the delay between the pandemic's onset and the manifestation of symptoms.

Infants and toddlers experienced the greatest change in speech disorder diagnoses. The developmental milestones of children in this age group make them particularly vulnerable to speech problems associated with changes in their environment. They also faced the most time out of "normalcy" due to the delay in vaccine approval for their age group, and many infants and toddlers did not start daycare/nursery as early as is typical. Teenagers were far less affected than younger age groups, highlighting the comparative vulnerability for those living through the pandemic during formative language years.

Researchers are [just beginning](#) to scratch the surface of understanding the role of unique pandemic-related factors — from masking to reduced socialization to changes in caregiver relationships — in complex neurolinguistic development. Further analyses on sociodemographic differences in risk and treatment could help identify protective planning measures for higher-risk groups. [Race-based](#) and [language-based](#) disparities in access to care have been reported in children with speech/language care needs, for example. Delays in treatment can [make speech issues harder to treat](#), and unresolved speech/language issues have been [associated](#) with [changes](#) in behavior, peer relationships, learning, and mental health.

Understanding the broader impact of pandemic response measures will shape how we move forward in tending to consequences and how we manage public health emergencies in the future. Komodo's analytics platform helps to track and elucidate the health impacts of population-level events with its unmatched capacity to leverage insights from rich real-world data. While researchers will be clarifying the true impact of the pandemic for years to come, Komodo's up-to-date, ground-level view of healthcare encounters allows us to track situations as they evolve in real time, to best inform and empower decision-makers. In this case, our insights can support healthcare change-makers in evidencing appropriate interventions to minimize the subsequent burden of speech disorders in children. In our mission to reduce the burden of disease, we will continue to track these trends as they emerge.

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About Komodo Health

Komodo Health is a technology platform company creating the new standard for real-world data and analytics by pairing the industry's most complete view of patient encounters with enterprise software and machine learning that connects the dots between individual patient journeys and large-scale health outcomes. Across Life Sciences, payers, providers, and developers, we help our customers unearth patient-centric insights at scale — marrying clinical data with advanced algorithms and AI-powered software solutions to inform decision-making, close gaps in care, address disease burden, and help enterprises create a more cost-effective, value-driven healthcare system. For more information, visit komodohealth.com.