

COVID-19: Cross-Agency Data and Research

SLDS ISSUE BRIEF
December 2021

U.S. DEPARTMENT OF EDUCATION

A Publication of the National Center for Education Statistics at IES

This product of the Institute of Education Sciences (IES) Statewide Longitudinal Data Systems (SLDS) Grant Program was developed with the help of knowledgeable staff from state education agencies and partner organizations. The content of this publication was derived from an SLDS workshop that took place on October 19-20, 2021. The information presented does not necessarily represent the opinions of the IES SLDS Grant Program.

For more information on the IES SLDS Grant Program or for support with system development, please visit <http://nces.ed.gov/programs/SLDS>.

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The COVID-19 pandemic brought many changes to the education and workforce sectors, as well as the way in which state agencies collect data on these sectors. These changes have uncovered new questions about readiness and challenges for collection and research, as well as ways to improve inequities and provide assistance to individuals in need. To address these challenges and questions properly, agencies must collaborate with other organizations and reach across education sectors. In this brief, representatives from Utah, Hawai'i, Minnesota, and Ohio explain how the COVID-19 pandemic created new projects, research, and partnership opportunities, as well as what they have learned about COVID-19 impacts on readiness, enrollment, and more.

Utah's Early Childhood Collaborations

Developmental delays, or when children do not reach age-appropriate milestones in areas such as communication and social-emotional skills, are a key focus area for early childhood educators and researchers. Addressing these issues requires engaging parents and screening for developmental delays early and routinely so that these issues are found early.

Significant changes to routine, limited exposure to peers, and increased exposure to stress and adverse

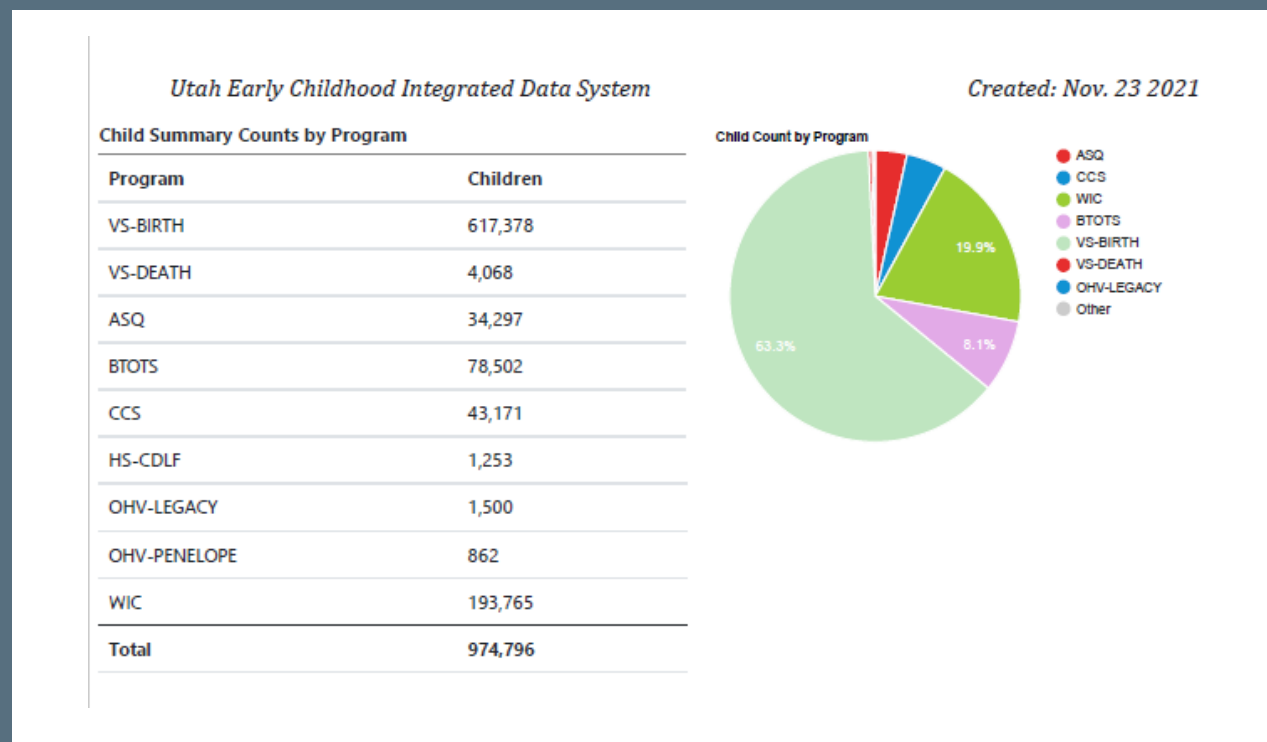
childhood experiences during the COVID-19 pandemic have had effects on early literacy, language, and math skills in young children. These disruptions make it imperative for educators to identify delays and intervene. To help with this effort, Early Childhood Utah is using data from the Ages and Stages Questionnaire (ASQ) along with its early childhood integrated data system (ECIDS).

Ages and Stages Questionnaire

Utah uses the ASQ to screen for developmental delays. The ASQ 3rd edition (ASQ-3) examines gross and fine motor skills, communication, problem-solving, and personal-social domains. The ASQ Social Emotional, 2nd edition (ASQ SE-2), is a companion tool to the ASQ-3 and designed to screen for social and emotional behaviors outside a young child's typical ups and downs. These questionnaires evolve as children age and are completed by parents in collaboration with early child care, health, and education services.

The Utah Department of Health (UDOH) has a Brookes Publishing ASQ Online Enterprise account, which allows multiple programs to submit screening data online to a single state database. Many community-based programs participate, including pediatricians,

FIGURE 1. The Children Under Six Data Summary Report shows the summary and distinct counts of children born in Utah who are under 6 years old according to a specified time frame. Users also can determine crossover counts of children participating in multiple early childhood programs in Utah. This figure features data from 2015-2020.



community health clinics, Head Start, child care, preschools, universities, Help Me Grow, local health departments, home visiting, and Individuals with Disabilities Education Act (IDEA) Part C Early Intervention. These programs contribute 10,000-15,000 screenings annually. Unsurprisingly, the COVID-19 pandemic affected these numbers; overall ASQ-3 screenings dropped from 15,382 in 2019 to 11,039 in 2020.

Although the Brookes Publishing Enterprise account aids in data management, UDOH faced challenges, such as ascertaining whether a child's identity has been duplicated within a program or whether a child has been screened by more than one program. UDOH also wanted additional reporting features, such as the ability to generate ASQ reports by zip code, arrive at distinct child counts, and ascertain program crossover for early childhood systems work, grant applications, and grant reporting.

Leveraging Utah's ECIDS

To overcome some of these challenges and enhance ASQ reporting, UDOH uses the state's ECIDS, which is

managed by Early Childhood Utah. Utah's ECIDS has integrated data from

- Vital Records Birth and Death Registry;
- Women, Infants and Children Program;
- IDEA Part C Early Intervention Baby Watch Program;
- Maternal Infant and Early Childhood Home Visiting;
- ASQ Developmental Screening;
- Child Care Subsidy; and
- Early Head Start and Head Start programs such as Centro de la Familia de Utah.

Combining these data with ASQ data has allowed Early Childhood Utah to begin developing advanced reports, in which users can filter data by year, month, child age, county, gender, and race. Users also can see distinct counts across programs. Other reports from the Utah ECIDS include the Children Under Six Summary Report, which allows users to see how many children are participating in multiple early childhood programs (**FIGURE 1**), sequencing of Early Childhood program participation, and overall ASQ screening and the number of screenings completed at certain intervals.

Next steps

Utah is working toward establishing multiple ASQ enterprise accounts and using the UDOH Child Health Advanced Record Management (CHARM) data system to integrate ASQ screening data and share it for operational, child care, intervention, and case management purposes. Authorized users may be employees of the data source organizations or health care providers, and will access the statewide data on demand through systems such as USIIS Immunize, the CHARM Web Interface Portal, or an integrated emergency medical record to determine whether a child has had an ASQ screening and see the results, as well as track progress across screenings.

One objective of this project is to share ASQ data with the state's longitudinal data system, the Utah Data Research Center, which will conduct meaningful research that informs policy decisions and improves school readiness outcomes.

Hawai'i's K12 Collaborations

The COVID-19 pandemic left a deep impact on the 2019-2020, 2020-2021, and 2021-2022 school years, and likely will leave an impact on subsequent school years. Each phase of the pandemic created new state needs and challenges, and led to creative solutions by the Hawai'i State Department of Education (HIDOE) SLDS team.

2019-2020 school year

Hawai'i schools closed due to pandemic concerns at the beginning of the fourth quarter of the 2019-2020 school year. During this period, HIDOE was concerned about the effect of the pandemic on the final quarter of the school year. Leaders wanted to know which students were impacted by school closures and which students would be the most vulnerable and need the most support. Because administrative staff were directed to telework remotely but not given access to virtual private networks, accessing this information was difficult.

HIDOE leveraged its longitudinal data system (LDS) to create dashboards and reports to support educator inquiries on student screening. Staff manually extracted data from the LDS and created security workbooks for principals to identify students who were vulnerable due to high-needs indicators and because of distance learning. Dashboards contained student grades and diploma progress. LDS staff also provided program offices with student rosters to help better coordinate services for vulnerable students.

Use Cases and Challenges

Participants in the SLDS Grant Program's "COVID-19: Cross Agency Data and Research" were asked to consider potential cross-agency use cases and their challenges. Participants across all education areas were interested in student readiness and potential staff shortages but noted that creating control groups for the various circumstances students experienced during the pandemic would be challenging.

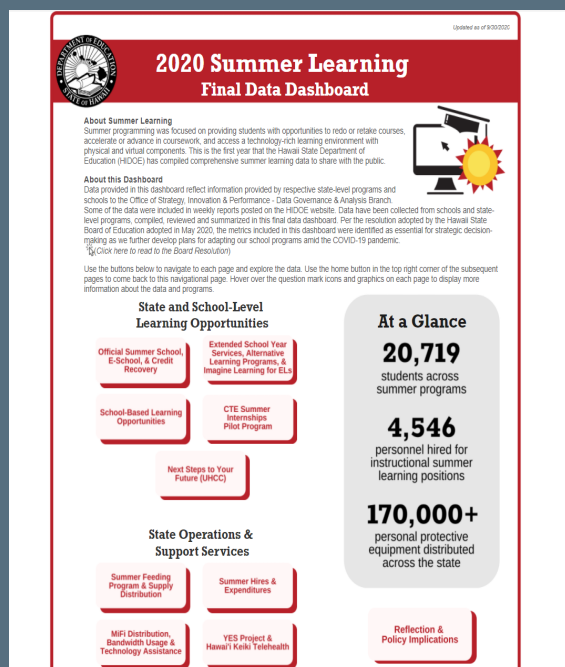
Participants also were interested in overall impacts of the pandemic, from unemployment to student grades, but noted that there may be issues linking data across sectors, as well as with legislation such as the Family Educational Rights and Privacy Act and the Health Insurance Portability and Accountability Act.

As the fourth quarter went on, HIDOE needed to determine which students would be impacted most by the loss of academic instruction, as the state had determined it would not return to in-person learning for the remainder of the school year. Summer learning also was a concern; although it was optional, it likely would be a critical support for students struggling with distance learning. HIDOE needed to know whether it was prepared to conduct summer learning remotely.

HIDOE faced additional challenges with the disruption of standardized testing and waiver of assessment data. Because the school year was ending, educators also needed to determine which 12th graders were at risk of not graduating and needed critical support in the fourth quarter and which students should be encouraged to attend summer school. To respond to these challenges, HIDOE continued its support for educator inquiry and manually pulled data to create reports displaying which students were off track to complete and graduate. Staff sent reports to secondary schools so that they could take schedule summer school or identify opportunities for credit recovery.

During the summer of 2020, students returned to instruction primarily through distance learning. Educators were concerned about reporting student progress, and the state lacked a system to collect summer enrollment data. In response, HIDOE sent weekly reports that monitored the progress of vulnerable students. HIDOE and other state agencies also received Coronavirus Aid, Relief, and Economic Security (CARES) Act funding, which required that HIDOE report all school-based summer learning

FIGURE 2. The 2020 Summer Learning Final Data Dashboard summarizes all HIDOE summer programs and services across the state, including student outcomes and participation, services provided to students and families, college and career experiences, and other operational support data.



opportunities. Staff designed and developed a manual data collection and reporting system for summer school, enrichment, and credit recovery opportunities (FIGURE 2).

2020-2021 school year

Although COVID-19 case counts were relatively low throughout the state, Hawai'i schools still operated in distance learning environments. State legislators wanted to determine whether schools could provide a safe learning environment without high risk of infection. HIDOE also sought to learn whether educators were prepared to teach remotely and if Hawai'i students had adequate access to technology and the Internet.

During this period, the Hawai'i Board of Education mandated monthly reporting on 20 key metrics, including health and safety information such as the level of available personal protective equipment and a high-level overview of student performance (such as attendance and course mark data). These data are reported publicly.

HIDOE also partnered with the Hawai'i Department of Health and Human Services to offer food assistance to the approximately 96,000 vulnerable students who qualified for Pandemic Electronic Benefit Transfer (P-EBT). HIDOE leveraged information from the LDS and student information systems to identify high-needs students and verify their status.

During the summer of 2021, HIDOE again received CARES Act funding and produced another dashboard reporting on summer learning opportunities and student progress in the state. The agency coordinated complex area representatives statewide to assist with content reporting.

2021-2022 school year

At the beginning of the 2021-2022 school year, Hawai'i's interim superintendent of public schools outlined a "3-1-1" strategy that identified three priority areas for data reporting as schools began returning to in-person learning:

- Students
 - Attendance
 - Academics
 - Social-emotional learning
- Staff well-being
- A safe return for the public school system

As part of this effort, HIDOE is examining

- whether schools are prepared to return to in-person learning;
- how a full year of distance learning has affected student academic performance;
- how students feel about returning to school;
- how schools can support staff well-being; and
- whether schools are providing a safe learning environment.

However, these reporting efforts have been complicated due to the need for updated communication and direction. Much of the documentation that exists has been written for in-person learning, and schools needed guidance on how to collect data as they slowly returned to in-person learning. HIDOE also must determine how to address clusters of data related to limited availability of distance learning options and absences due to students quarantining.

Cases of the coronavirus delta variant also increased during this time, creating new challenges for schools. Student absences increased sharply as parents chose to keep students without distance learning options at home. Many students also potentially were exposed to the virus and had to quarantine, resulting in

more absences. An insufficient supply of bus drivers statewide also created difficulties with attendance. HIDEOE's support responses included continuing to support educator inquiries within the LDS, reporting active COVID-19 cases per a state legislative mandate, collecting and monitoring staff vaccination statuses, and defining new student attendance absence codes to disaggregate excused absences due to state-directed quarantine.

Key takeaways and future plans

Going forward, HIDEOE is working on a learning acceleration plan, which will identify and address learning loss across the state. Because LDS staff spent much of the pandemic reacting to data collection mandates after plans were created, they now are ensuring that data collection is a major part of the planning process itself.

HIDEOE offers the following takeaways from its COVID-19 experiences:

- The pandemic created an opportunity to grow and innovate in areas that once were conceptual and difficult to implement, such as distance learning options, improved credit recovery to increase retention, and increased access to technology and connectivity.
- The pandemic also created the opportunity to revamp out-of-date policies in health and safety and attendance.
- Crises such as the pandemic require state agencies to pivot quickly and gather existing data to address public stakeholders' concerns.
- Reporting critical data to public stakeholders increases transparency.

Minnesota's Postsecondary Collaborations

Minnesota's SLDS program, called P20W, includes the Early Childhood Longitudinal Data System (ECLDS) and the Statewide Longitudinal Education Data System (SLEDs) and is managed by the Minnesota Office of Higher Education. P20W manages data related to persons living in Minnesota receiving services or funding related to health, basic needs, education, or work in Minnesota; incarcerated in Minnesota; and working in or licensed to work in Minnesota. It also contains data from organizations involved in health, basic needs, education, work, or incarceration in Minnesota.

Predicting enrollment

In March and April of 2020, Office of Higher Education staff were tasked with determining the

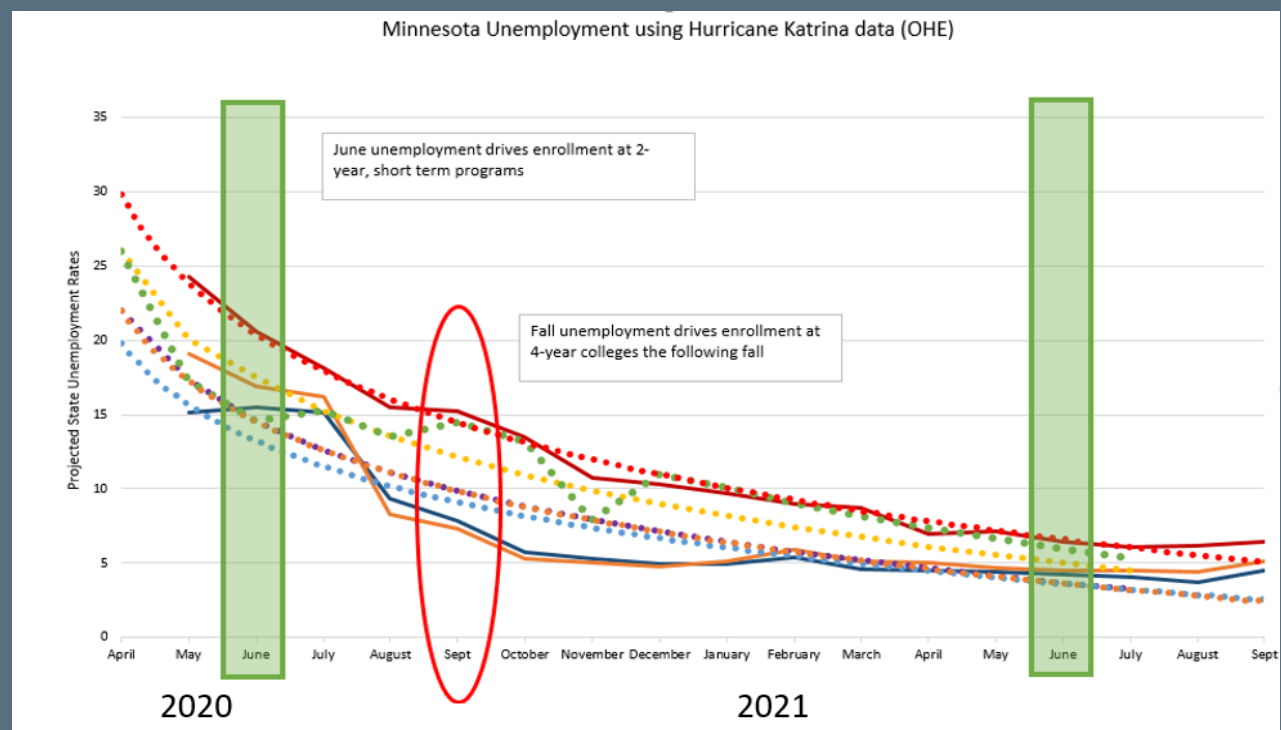
impact of state shutdowns on college enrollment. When unemployment increases, college enrollment increases, often due to individuals going back to school to learn a new trade. However, this was not happening in Minnesota at the time. Office of Higher Education staff also wanted to ascertain how long unemployment increases would be expected to last.

To accomplish this task, Office of Higher Education staff first analyzed enrollment and employment data from locations affected by Hurricane Katrina. During this period, colleges also closed with little to no notice. Staff analyzed how quickly colleges were able to reopen, whether colleges reopened in an online environment, whether businesses were able to rebound economically, and what the impact on education quality may have been. Unemployment remained inflated for 12-18 months before returning to average levels. Private colleges took longer to come back from enrollment losses than public colleges. Based on these data, Office of Higher Education staff created a series of models predicting unemployment levels as a result of COVID-19 at given points in the year (**FIGURE 3** on page 6) to predict the resulting enrollment levels for fall 2020 and spring 2021. Unemployment rates in June often predict enrollment rates in 2-year colleges, and fall unemployment rates are indicators of 4-year college enrollment.

Office of Higher Education staff also used Free Application for Federal Student Aid (FAFSA) data to determine college enrollment patterns. Many students who have strong plans to attend a 4-year college file the FAFSA between October and February, as February often is a deadline for scholarships or other grants. Students with less firm plans to attend a 4-year college often file in between March and May, as May typically is a deposit deadline for 4-year colleges. Students planning to attend a 2-year college often file the FAFSA in June or July. Typically, if unemployment rises, so do the number of FAFSA applications filed. However, while unemployment continued to increase after the onset of the pandemic, FAFSA applications did not. Because of this discrepancy, Office of Higher Education staff accurately predicted that colleges would face strong enrollment declines in the fall of 2020. Of specific concern was the lower enrollment rate among new high school graduates.

Not all students responded the same way to the COVID-19 pandemic. Students whose household incomes were greater than \$150,000 increased their rate of enrollment and FAFSA completion. However, lower income students' rate of enrollment greatly decreased. Office of Higher Education staff also analyzed college enrollments by major with these overall enrollment numbers, with particular attention to those majors aligned with the occupations

FIGURE 3. Office of Higher Education staff used data from locations affected by Hurricane Katrina to determine how COVID-19 might affect unemployment and college enrollment in Minnesota.



designated by the governor as critical during the pandemic.

Remote learning impacts

Office of Higher Education staff also were interested in understanding how students would respond to remote learning, including which demographics would struggle the most with the adjustment. Staff sent a request to colleges to determine how many students were enrolled in hybrid or exclusively online before COVID-19. Many older adult learners already were spending classroom time online. About 30-50 percent already took online courses. However, only 20 percent of 18-24-year-olds at 2-year colleges and 10 percent of 18-24-year-olds at 4-year colleges were taking online courses, meaning that younger adult students (under 24 years) could be more likely to struggle with the change to remote learning.

Information about in-person licensure and training requirements was lacking. Researchers did not have information on the number of in-person program hours required if a program leads to certification or licensure. The Office of Higher Education is combating this gap in information by assessing programs requiring in-person training for licensure, including counts and required hours of in-person training.

These data will be incorporated into future system data loads.

Other COVID-19 work

The Minnesota Office of Higher Education also was involved heavily in outreach for the federal census in 2020. Higher education staff produced data files indicating where students lived by permanent residence and college location. If an area that had a high population of students, such as a dormitory, was identified, it was flagged as a high outreach area. Minnesota P20W is working on the ability to geocode and map address data for college students collected by the Office of Higher Education.

The Office of Higher Education also sent summary enrollment data by location of student residence to the Minnesota Department of Health to help inform colleges as they created COVID-19 testing sites and vaccination locations. Staff at the two public college systems also have created COVID-19 dashboard reports for public colleges in Minnesota. Dashboards report weekly testing information among students and faculty and allowed colleges to determine whether their case numbers aligned with other colleges in the state. State-level data collected by the Minnesota Department of Health included information to allow

users to track where an outbreak may have started, such as a dormitory or other location.

The ECLDS Comprehensive Services Map, an existing project that provided geographic information on early childhood services, also proved a valuable resource. The map now shows COVID-19 testing locations, as well as food, housing, and other assistance programs.

Changes to data collection, storage, and analysis

Due to increased questions about enrollment during the COVID-19 pandemic, the Minnesota Office of Higher Education is tracking FAFSA application activity more than ever in real time. As a result, the agency has created a high school FAFSA completion dashboard that allows users to look at data from as far back as 2016. Completion rates can be filtered by demographics as well as date.

Because higher education staff realized they had gaps in licensing data, they are restructuring their licensure database to collect and store information on required in-person hours by program. The Office of Higher Education has not yet begun tracking the impact of the pandemic on food pantries and emergency assistance but is looking to start working on assessing college student use of these services in the future. The agency began a discussion with college institutional researchers about ways to assess this information, including asking students every semester at registration questions such as whether the student experienced homelessness or hunger in the 6 months prior to enrollment.

Ohio's Workforce Collaborations

The Ohio Longitudinal Data Archive (OLDA) is a collaborative project between the state of Ohio and Ohio State University that stores data from select agencies in Ohio, such as the Ohio Department of Education (ODE), the Ohio Department of Higher Education, and the Ohio Department of Job and Family Services. Data from the OLDA are available to external and internal researchers who request data. Agency-specific data are used with project-specific permissions to carry out mutually beneficial efforts that have state value. Ohio State University provides data services and performs most of the work fulfilling data requests.

OLDA has data-specific curation routines. Data are linked across tables within datasets, such as by matching course enrollments to credentials earned per course. Standardized variables, such as earnings per quarter, also are created. Certain elements are removed to prevent specificity, such as deleting the

day of birth from the full birth date. Data access is restricted to agency-approved

- projects and research questions;
- personnel and researchers;
- timelines;
- data elements; and
- purposes.

COVID-19 additions

OLDA added significant amounts of data during the COVID-19 pandemic. As questions around unemployment increased, OLDA added additional files with standardized layouts to unemployment insurance (UI) claims data. OLDA staff also have been working on acquiring data on the Pandemic Unemployment Assistance (PUA) program, which provided unemployment assistance to contract or freelance workers using 1099 tax forms. Staff also examined school district boundary files, which enabled them to analyze UI data at the school district level.

OLDA staff also analyzed Feeding America datasets, such as household visits to food pantries over time. These data were used to determine whether school districts could use unemployment data to identify districts that had significant increases in demand for food assistance, as well as what role data sources from employment programs play in connecting school district- and college-educated workers with jobs.

Unemployment case study

During the spring of 2020, OLDA staff received a request from ODE to provide data by school district that documented the number of unemployed individuals. ODE would use these data to support requests for food assistance from the U.S. Department of Agriculture at the district level. ODE was able to declare the majority of districts in Ohio eligible to receive food assistance during the spring and summer of 2020.

Using the data provided to ODE, OLDA staff developed a visualization on its UI Claims Dashboard that provides weekly unemployment updates by school with limited demographic characteristics. Data resources used to generate files included

- school district boundaries;
- UI claims by week; and
- data extracts from the UI system created by the Ohio Department of Job and Family Services.

Data are reported on a weekly basis, and the dashboard data are considered preliminary.

UI claims are not the same as unemployment numbers. Unemployment contains two types of claims. The first are initial claims, which happen the first time an individual files for unemployment and are not necessarily valid for UI. Continued claims are made by those who have lost a job recently and are eligible for UI benefits. Because UI data only contain information from continued claims and not from initial ones or from individuals who are unemployed but file 1099 tax forms, the actual number of unemployed individuals will be higher than the number of individuals receiving UI benefits. However, OLDA uses UI claims because these data are administrative data; are timely; and contain detailed information about the claimants, including demographics, industry, occupation, and geography.

In the dashboard, users can examine UI claims by date, industry, occupation, geographic location, and other demographic information, such as age, gender, and education level. Users also can track the number of initial claims versus continued claims. The dashboard contains a summary that agencies can send to their communications departments for reports and other information sharing.

Multi state dashboard

OLDA is working with the Kentucky Center for Statistics, the Indiana Department of Workforce Development, and the Tennessee Department of Labor and Workforce to create a Multi-State Postsecondary Report, which looks at employment outcomes across the four states for individuals who completed credentials between the 2013 and 2017 academic years. OLDA leveraged data from the Ohio Higher Education Information system and the Ohio Unemployment Insurance system.

One Goal strategy and other tools

OLDA is assisting in data analysis of postsecondary, military, and unemployment outcomes for the Ohio One Goal strategic plan. Under One Goal, Ohio aims to increase annual the percentage of high school graduates who, one year after graduation, are

- enrolled and succeeding in a post-high school learning experience, including an adult career technical education program, apprenticeship, and/or a 2- or 4-year college program;
- serving in a military branch;
- earning a living wage; or
- engaged in a meaningful, self-sustaining vocation.

OLDA is analyzing data for students who graduated on time from high school or completed a General Educational Development (GED) credential.

OLDA also produces the Workforce Supply Dashboard, which provides occupation-specific information in Ohio at the state and regional levels. The dashboard integrates data from the U.S. Department of Labor's Occupation Information Network (O*NET) and regional labor statistics, as well as OLDA data, to display school-specific work supply. For example, users can determine how many individuals are graduating from a vocational school with the credential to drive a bus. This information is especially critical as schools deal with workforce shortages following the pandemic.

Conclusion

Although the COVID-19 pandemic brought new challenges to data collection, it also has created new opportunities across organizations and education sectors. As organizations worked to meet the unique needs of their states and leaders, they were able to grow and innovate in ways that once may have been conceptual or difficult to understand. In some cases, the solutions developed to meet COVID-19 challenges are expected to continue even if the impact of COVID-19 recedes in future years. Utah's enhanced use of ASQ data is likely to continue to be useful to stakeholders even if COVID-19 is not a concern in the future. Additionally, COVID-19 may have already caused long-lasting impacts on core SLDS data. K12 data related to attendance, course outcomes, and behavior may not have the same predictive power for outcomes like on-time graduation and postsecondary success. COVID-19 is likely to continue to lead states to innovate new solutions and reexamine existing systems.

Additional Resources

Early Childhood Utah

<https://earlychildhoodutah.utah.gov/>

Hawai'i 2020 Summer Learning Dashboard

<https://public.tableau.com/app/profile/hidoe.dga/viz/2020SummerLearningDashboard/COVER>

Hawai'i 2020-2021 Return to Learn Report

<https://www.hawaiipublicschools.org/ConnectWithUs/MediaRoom/PressReleases/Pages/Return-to-Learn---Metrics.aspx>

Hawai'i 2020-2021 Summer Learning Final Report

<https://www.hawaiipublicschools.org/TeachingAndLearning/SpecializedPrograms/SummerSchool/Pages/2021-Summer-Learning-Dashboard.aspx>

Minnesota Early Childhood Longitudinal Data System Comprehensive Services Map

<http://eclds.mn.gov/#maps>

Minnesota Office of Higher Education
<https://www.ohe.state.mn.us/>

Ohio Longitudinal Data Archive
<https://chrr.osu.edu/projects/ohio-longitudinal-data-archive>

SLDS Webinar: COVID-19 and Equity: How the
Pandemic Has Revealed and Exacerbated Inequities
and How States Are Addressing Them
<https://slds.ed.gov/#communities/pdc/documents/20211>

Utah's Early Childhood Integrated Data System
<https://ecids.utah.gov/>