

Data Design Initiative Progress Update – Spring 2019

Overview

May 2019

In January 2016, NHSA and three other organizations¹ released the [Moneyball for Head Start](#) report, outlining a vision for a continuous improvement approach using data, evidence, and evaluation to improve outcomes at all levels of the Head Start program. Among other recommendations, the report called for major changes in the way we collect, use, and share data and evidence. Since the release of the report, the federal government has updated the Head Start Program Performance Standards (HSPPS), which now embrace many of the principles recommended in the Moneyball report.

In December 2017, NHSA convened a two-day Data Design Huddle in Austin, TX, to examine the current state of Head Start data and data systems, identify barriers impeding their use for continuous improvement, and brainstorm specific projects to bring about needed short and long-term change. The Data Design Huddle proposed more than a dozen possible actions to improve the way Head Start generates, organizes, shares, and analyzes data. These were assigned, flexibly, to five categories:

- **People Projects:** Improving the capacity of Head Start staff and others to use data to find ways to improve on multiple dimensions to better serve Head Start children and their families
- **Data Improvement Projects:** Improving the meaningfulness, quality, and ease of using data and other information
- **Information System Improvement Projects:** Improving technology and the systems for collecting, communicating, interpreting, and applying insights available from data
- **Knowledge and Learning Enhancement Projects:** Finding, sharing, and building knowledge about effective practices and programs
- **Policy Projects:** Finding and implementing effective ways to encourage and support continuous improvement

The participants in the Data Design Huddle continue to meet regularly and make progress on these projects. This document provides an update on the current status of this work, now referred to as the Data Design Initiative (DDI). For more background, see notes from the first Data Design Huddle and other information, including our Fall 2018 progress update, at: <https://www.nhsa.org/our-work/initiative/data-design-initiative>.

NHSA seeks partners to advance this mission and vision. We welcome suggestions, feedback, and involvement from those who see opportunities to refine this strategy and want to contribute to bringing this vision to life. We also seek leaders from the greater Head Start community interested in moving specific projects forward. To get involved, please email: vjones@nhsa.org. To subscribe to our mailing list for regular updates, please indicate your interest at: <https://www.tfaforms.com/4721772>.

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Objectives

Head Start seeks to help children currently living in poverty to succeed in school and thrive in life. Toward that end, Head Start grantees collect, analyze, and share data and other evidence to help teachers, programs, and families learn from their own and others' experience and collaborate to discover increasingly effective and cost-effective practices.

Head Start programs generate a significant amount of data. Much of it, unfortunately, is not readily accessible, understandable, and easy-to-use. This is, in part, because many of the data systems in use were developed before recent, transformative innovation in data analytics, visualization, and sharing. New technologies make it more feasible and affordable than ever to gather, analyze, and communicate data in ways that make data more useful. The most recently issued performance standards from the Office of Head Start in the U.S. Department of Health and Human Services also encourage increased use of data, analysis, and evaluation to achieve continuous quality improvement.

The Data Design Initiative projects described below seek to tap new technologies and bolster Head Start's capacity for using data and other evidence to improve on multiple dimensions now and in the future.

Project Status

People Projects: Practitioners working with Head Start children and families need data management, analytic, and evaluation skills. The Data Design Initiative is working on several projects to strengthen the capacity of those working in and with Head Start programs to handle and interpret data and apply data-enabled insights.

- "Developing Data Capacity" Toolkit

Progress: This toolkit was developed to help Head Start programs hire or contract for data and analytic skills. It includes resources like boilerplate job descriptions and an assessment of organizational capacity. Since the first version was released in the fall, an online webpage has been published and can be found at: www.nhsa.org/our-work/initiative/developing-data-capacity.

Next Steps: NHSA continues to disseminate the toolkit and build awareness within the Head Start field. It also collects feedback to inform continued improvement of the toolkit and development of additional resources.

- Data Analytics Playbook

Progress: The Playbook is a new project, launched to build understanding of the value of using and analyzing data across the Head Start field and the capacity to do so. The Playbook will be an online compendium of examples of analytics and visualizations used in Head Start. The examples will illustrate how Head Start programs can analyze, visualize, and use data to inform decisions and actions. The examples will also guide users on how to replicate the examples with their own data and use the results. The DDI is actively collecting and writing up the first analytic examples.

Next steps: After the first set of examples are developed, the DDI will work to find effective ways to present, explain, and share the examples successfully with the Head Start field. DDI is also seeking funding for this critical project. More details can be found at: www.nhsa.org/files/data_analytics_playbook_proposal.pdf.

- Data Training and Data Analytics Network

Progress: In an effort to provide increased capacity for data analytics in Head Start, there are several data training projects currently being proposed. These include: (a) data visualization fellowships using tools such as Tableau or Power BI; (b) a data training curriculum delivered via webinar; (c) curated "hit lists" of videos, readings, on-line courses, and other resources that teach data analysis skills; and (d) a networked



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community of data analysts that help each other identify and work on common problems, solutions, and opportunities.

Next Steps: A DDI partner is currently developing dashboards using PowerBI and creating a training session on how to create and use these dashboards. This training will be tested and improved over the coming months with various audiences before broader dissemination and the creation of additional modules.

- Outcomes-Oriented Management Training

Progress: NHSA has developed and currently offers a one-day training on data use and continuous quality improvement.

Next Steps: NHSA will continue to conduct these trainings, adapting the content based on ongoing feedback. In addition, DDI will identify other high-quality outcomes-focused training programs and include these as a category for evaluation on The Junction platform (see more on The Junction below.)

- T/TA Systems and National Centers

Progress: NHSA is exploring whether and how the T/TA system and national centers can help Head Start operators learn to use goals, data, and other evidence to improve on multiple dimensions.

Next Steps: NHSA is reaching out to understand the work of the T/TA system and national centers better. In addition, it has provided feedback to the Administration for Children and Families about its planned survey of current Head Start providers regarding current needs and previous experiences with the T/TA system. NHSA will reach out to ACF to explore providing more frequent user feedback to continually improve the relevance and quality of the T/TA and national center products and services.

Data Projects: Data in Head Start serves many purposes, from determining community needs and service gaps to setting priorities, mentoring and coaching teachers and other staff, and selecting effective curricula and other interventions for children. Those who work in and fund Head Start need meaningful, timely, accessible, accurate, and safely sharable data in order to serve children and families. The Data Design Initiative is working on multiple projects to identify more useful indicators and better, simpler ways to generate and collect data.

- Better, Simpler Assessments

Progress: Good assessment and screening tools are essential to effective early learning programs. Widespread concerns exist about the amount of time required for training and conducting screenings and assessments, as well as the fidelity of implementation, accuracy of results, and validity of some assessment tools. NHSA has drafted a one-page challenge (www.nhsa.org/files/better_simpler.pdf) laying out the desired characteristics for better, simpler assessments and recently shared this with vendors in the Head Start field, encouraging them to take the necessary actions to bring this vision to life.

Next Steps: DDI will continue to encourage existing and new vendors to make their products better, simpler, and more meaningful to use, without compromising quality or increasing cost.

- Technology-aided Assessment, Screening, and Curricular Tools

Progress: DDI continues to explore the existence and quality of technology-aided tools that reduce demand on teacher time while providing better insights on how to assist children's learning and development. Several tools have already been identified, demonstrating proof of concept.

Next Steps: NHSA continues to look for technology-assisted screening and assessment tools and seeks Head Start operators interested in trying the tools it has identified and sharing their experience with the developers and other Head Start operators. DDI also intends to develop guidance around when and for whom technology-aided tools are and are not appropriate, along with guidelines for their use. In addition, DDI will begin to look for opportunities to share information about the most promising emerging technology-aided products and services with a broader audience.



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- Useful Outcomes and Other Indicators for Improvement, Benchmarking, and Evaluation
Progress: This project entails identifying outcomes and other indicators that Head Start programs can use to learn (from their own and from others' experiences) how to increase program impact. DDI has begun working to see if Huddlers can reach consensus about which vital signs every Head Start program should track, and possibly share in de-identified ways, to improve child outcomes and program cost-effectiveness. It is expected that the Data Analytics Playbook and the "Helping Children Thrive" Multi-Site Pilots will also advance progress in this area.
Next Steps: DDI continues to work on identifying useful, as well as appropriate and inappropriate outcome and other indicators.
- Harvesting Greater Insights from Administrative Data
Progress: For several months in the spring of 2019, a group of graduate students from Carnegie Mellon University's Heinz College has been conducting a capstone project creating data visualizations from Head Start's Program Information Report (PIR). With feedback from Data Design Huddlers, the student group is exploring and experimenting to find better ways to analyze and visualize PIR data to improve understanding of the value and characteristics of Head Start programs. In addition to providing their analyses, the students will provide instructions about how to perform such analyses.
Next Steps: NHSA intends to apply for additional opportunities to work with students from CMU and other similar programs to experiment with visualizing Head Start program data in more informative ways.
- Safely Interconnected Data and Compliance Systems
Progress: NHSA is exploring opportunities for safely connecting Head Start data systems with K-12 and other data systems to improve the ability to track children's long-term success. In the future, this project will also look for opportunities to connect with state and local early childhood compliance systems to lessen the reporting and monitoring burden on programs and licensing agencies. This work will significantly benefit from the establishment of Principles/Data Standards and a Data-Sharing Agreement Repository (described below) to govern these efforts safely. In addition, the "Helping Children Thrive" pilot project described below includes a Head Start program based in, and thus sharing data with, the local K-12 system, which may be instructive for others.
Next Steps: NHSA is exploring partnerships with others working on these issues, including the Georgetown University Massive Data Institute, which has been thinking about data sharing agreements, and EdFi.org on data standards.

Information Systems Improvement Projects: Data relevant to the Head Start work is currently collected in a variety of siloed systems even within a single Head Start site, much less across sites and across the country. Being able to analyze data across systems in real time and across multiple years is essential to identifying promising practices, testing for replicability, studying long term impacts, and more. Data sharing must be feasible in timely, understandable, accurate, and affordable ways. The Data Design Initiative is currently working on 5 projects to understand and advance agreement on data system design features to facilitate sharing and learning over time:

- "Helping Children Thrive" Multi-Site Pilots
Progress: NHSA, in partnership with BrightHive, won the Early Childhood Innovation Prize for a project to begin to tackle critical data infrastructure needs. The first phase of this project, the development of "use" cases, is complete. The four preliminary use cases identify the kinds of data and analyses needed, when and where the data and analyses are needed, who needs the information, and how to protect privacy. The use cases can be found at: www.nhsa.org/files/helping_children_thrive_use_cases.pdf
Next Steps: NHSA and BrightHive seek additional funding to cover the development of the open-source, interoperable data modules that will allow Head Start to pull together data from multiple sources.



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- The Junction: Yelp and Amazon.com-like Functionality for Head Start
Progress: In January 2019, DDI released a Request for Information for building an online consumer review platform that brings Yelp and Amazon.com-like functionality to Head Start programs to inform their purchasing decisions. This will help Head Start programs make smarter purchasing decisions, spotlight common complaints and tech-glitches to encourage faster fixes, and facilitate exchange of troubleshooting and value-enhancing tips. NHTSA requested information to help it identify possible platform vendors and gather suggestions on governance, financing mechanisms, and other suggestions.
Next steps. Comments were received in March 2019 and NHTSA has identified a vendor to create the platform, which is now known as The Junction. NHTSA is currently seeking funding to support the development and start-up of the platform.
- Information System Needs, Principles, and Data Standards
Progress: In an effort to develop a set of principles and data standards to govern the data systems used in Head Start, NHTSA has identified several other organizations and experts who are working in this area, including organizations such as BrightHive and the Ed-Fi Alliance. A current draft of the proposed principles is available online at: www.nhsa.org/files/principles.pdf.
Next Steps: NHTSA will continue working with and identifying other organizations working in this space to collaborate on principles and data standards for Head Start programs and the products they use.
- Data-Sharing Agreement Repository
Progress: Data sharing holds enormous potential for revealing common needs and effective practices to address them. The goal of this project is to reduce the amount of time Head Start programs need to spend on developing data-sharing agreements. NHTSA has begun assembling a repository of sample agreements and resources others can adopt and adapt. NHTSA also hopes to identify lessons learned about what works well in different situations, what does not, and why. NHTSA has identified similar efforts underway at Georgetown University, Child Trends, and Actionable Intelligence for Social Policy (AISP) that can be resources and, possibly, implementation partners.
Next Steps: NHTSA is exploring ways to build on, learn from, and partner with existing efforts.
- Data Storage and Sharing Options
Progress: NHTSA will eventually explore ways that Head Start programs can safely and efficiently share protected, useful child-level data in a timely manner, whether through data warehousing, blockchain technology, or other means for data federation. NHTSA is currently learning more about what the different options are and the pros and cons of each.
Next Steps: This work will eventually build off of the lessons learned from other currently active projects. In addition, DDI will explore opportunities to work with and learn from others already sharing data.

Knowledge and Learning Enhancement Projects: Significant resources have been devoted to research about Head Start and early childhood programs. As programs strengthen their data generation and analytic capacity, useful insights worth sharing across program operators will become increasingly available. Unfortunately, the system for sharing vetted results from the field and for translating research to Head Start practitioners in ways they can easily use, understand, access, and apply is not strong. The Data Design Initiative has identified two projects to strengthen the ability to share knowledge across the Head Start field.

- Knowledge and Tool Sharing
Progress: NHTSA is constantly trying to improve the various methods it uses to communicate with the field. NHTSA has recently adopted and launched an online user platform to allow members to better communicate with NHTSA and with each other.
Next Steps: DDI will test using this tool for more efficient and effective sharing of research findings and data analytic tools.



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- Research Repository: Connecting Research to Practice

Progress: NHSA is working to identify how to best make academic research accessible and approachable to the relevant audiences in the Head Start field.

Next Steps: The federal government's new law, the Foundations of Evidence bill, requires every federal department to publish annual learning agendas. This law may provide an opportunity for progress on a research repository for Head Start. NHSA is also considering conducting literature reviews on various critical topics and testing various methods for writing and disseminating those reviews to make them most useful.

Policy Projects: Measurement and other forms of monitoring should incentivize and support continuous quality improvement of all grantees, both higher and lower performing ones. They should be used to flag areas needing attention and motivate everyone to use data and other relevant evidence to find ways to improve. They should not be used in ways that create fear of data because of fear that data will be used for punishment. NHSA is identifying ways to incentivize and support continuous quality improvement, with minimal dysfunctional side effects.

- Improve Incentive Structures

Progress: NHSA has begun to identify functional and dysfunctional incentive structures in Head Start, as well as key attributes of effective motivational systems in other fields.

Next Steps: NHSA will continue to build on this work to inspire a change in the culture of Head Start that successfully encourages data-informed decision-making and quality improvement efforts, while taking care to dismantle and otherwise avoid perverse incentives.