

## Data Design Initiative Progress Update #5 - Fall 2020

Overview

December 2020

Every year, about 1600 Head Start programs around the country serve nearly 1 million vulnerable children and their families. Through classroom teaching, home visits, health supports, family engagement activities, and more, Head Start benefits its enrollees with higher educational attainment, greater labor market success, and other benefits to health and well-being.<sup>1</sup>

### **The Challenge:**

Head Start programs could be even more successful, however, with better use of data, analytics, and well-designed trials. Every Head Start program collects reams of data, including data about program characteristics, children served, families of those children, teacher characteristics and practices, and children's developmental progress. Sadly, the way those data have historically been structured, collected, analyzed, and shared has yielded limited insights that help Head Start program managers, teachers, parents, policymakers, and others help Head Start children and their families.

### **The Opportunity:**

The National Head Start Association (NHS A), the network of Head Start program providers, is working to fix this. In January 2016, NHS A and three other organizations<sup>2</sup> released the "Moneyball for Head Start" report, offering a vision for how Head Start programs could use data, evidence, and evaluation to improve outcomes at all levels of the Head Start program, continuously. Fortunately, the federal government embraced these recommendations when it updated the Head Start Program Performance Standards in September 2016.

To bring the Moneyball report and new standards to life in the most constructive way, NHS A launched the Data Design Initiative (DDI.) Since the first meeting in December 2017, DDI regularly convenes Head Start program leaders, data experts, policymakers, advocates, and vendors to devise projects and iterate on those projects in concrete ways to make Head Start data more useful to improve on multiple dimensions of Head Start performance. DDI is not about producing reports; it is action oriented. This report provides an update on projects initially conceived in December 2017 now actively underway as well as new projects that have evolved since that early effort.

To learn more about the genesis of the DDI projects, read about the initiative's goal-setting and barrier identification process at: <https://www.nhsa.org/our-work/initiative/data-design-initiative>.

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<sup>1</sup> See: <https://www.nhsa.org/head-start-advantage>

<sup>2</sup> Bellwether Education Partners, Results for America, and the Volcker Alliance

## Project Status

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The original Data Design Huddle in December 2017 produced more than a dozen possible projects to improve the way Head Start generates, organizes, shares, and analyzes data. Since then, the participants in DDI have continued to meet regularly and make progress on these projects. These projects have been flexibly assigned to five categories. Updates on their progress and next steps are described below.

**People Projects:** Practitioners working with Head Start children and families need data management, analytic, and evaluation skills. DDI 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.

- **Head Start Data Analytics Playbook** ([go.nhsa.org/DataPlaybook](https://go.nhsa.org/DataPlaybook))

The Data Analytics Playbook shares examples of analyses that most Head Start programs - whether a program with little previous data knowledge or one that is already analytically proficient - will find useful. The Playbook is populated with examples illustrating data analytics that have helped Head Start programs make better data-informed decisions. In addition to providing examples, each “play” in the Playbook also provides how-to explanations and sometimes tools to help more Head Start programs conduct the kinds of analyses needed for continuous improvement and strategic planning. NHSA is currently using multiple means to increase awareness of and contributions to the Playbook, including training sessions at national conferences, newsletters to the Head Start field, and video introductions to Playbook content. NHSA welcomes feedback from users about ways to get the word out about the Playbook and ways to make the Playbook more useful. NHSA currently seeks funding to continue to develop, improve, and promote use of the Playbook.

- **Data Training**

NHSA has been working with DDI partners to develop data trainings for Head Start practitioners. Most recently, NHSA launched The Academy, a home for professional learning where Head Start staff can earn career-related credentials. As part of that effort, NHSA partnered with Acorn Evaluation and launched the Data Literacy Credential in October 2020 to expand data capacity of Head Start staff nationwide (<http://go.nhsa.org/dataliteracy>). The DDI also hopes to pursue several other projects soon, including a networked community of data analysts that help each other identify and work on common problems, solutions, and opportunities; curated “hit lists” of videos, readings, on-line courses, and other resources that teach data analysis skills; and data visualization fellowships using tools such as Tableau or Power BI.

- **“Developing Data Capacity” Toolkit** ([go.nhsa.org/DDC](https://go.nhsa.org/DDC))

The “Developing Data Capacity” toolkit was created to help Head Start programs who need to hire or contract for data and analytic skills. It includes resources such as sample job descriptions and guidance for seeking out prospective consultants. NHSA welcomes suggestions and contributions for developing the toolkit further and for maximizing dissemination throughout the field. As part of its dissemination efforts, NHSA ran an interactive training session on using the toolkit at the NHSA Manager and Director Academy in July 2020.

- **Outcomes-Oriented Management Training**

NHSA has developed and currently offers a one-day training on continuous quality improvement, which it conducts in partnership with Acorn Evaluation. NHSA will continue to conduct these trainings and is looking to offer them at the state level, taking advantage of already existing communities of practice that could strengthen the impact. Trainings developed by NHSA and by others on outcomes-oriented management training will be included for evaluation on The Junction (see more below).

- **T/TA Systems and National Centers**

NHSA is exploring whether and how the T/TA system and national centers can better help Head Start operators learn to use goals, data, and other evidence to improve on multiple dimensions. NHSA previously provided formal feedback to the Administration for Children and Families about its planned customer survey of current Head Start providers regarding current needs and previous experiences with the T/TA system ([www.nhsa.org/federal-register-comments](http://www.nhsa.org/federal-register-comments)). NHSA intends to follow the progress of ACF's efforts to assess T/TA to see what can be learned and how NHSA can contribute to constructive feedback and continual improvement of OHS T/TA offerings.

**Data Projects:** Data in Head Start has the potential to serve many purposes, from determining community needs and service gaps to informing priority-setting, mentoring and coaching teachers, 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. DDI is working on multiple projects to identify more useful indicators and better, simpler ways to generate and collect data.

- **Better, Simpler Assessments** ([www.nhsa.org/files/better\\_simpler.pdf](http://www.nhsa.org/files/better_simpler.pdf))

Good assessments are essential to effective early learning programs. Widespread concerns exist about the amount of time required for training and conducting screenings and formative assessments, as well as the fidelity of implementation, accuracy of results, validity, and usefulness of some assessment tools. A working group within the DDI has created a draft rubric for evaluating formative assessment tools against the principles outlined in the [Better, Simpler Assessments Challenge](#). Next steps for the working group include seeking feedback on the draft rubric, creating a form and a process for evaluating the assessments, and launching and promoting use of the rubric by and to the full field (most likely via The Junction.) The DDI also plans to work on a parallel tool for infant/toddler assessment tools in 2021. The goal of the Better Simpler Assessments effort is to inform decisions of individual Head Start programs and to encourage continuous improvement among the assessment vendors. As discussed further below, complementary work is being done to identify more useful longer-term outcome and other indicators and to collect and share consumer feedback on assessment tools.

- **Technology-aided Assessment, Screening, and Curricular Tools**

As part of its effort to find better, simpler assessments, DDI is evaluating the existence, quality, and appropriateness of technology-aided tools that reduce demand on staff time while providing more useful real-time insights on how to assist children's development. NHSA

continues to look for additional technology-aided tools and seeks practitioners interested in testing the tools and sharing their experience with developers and other practitioners. NHSA has participated in ongoing work led by other organizations on the use of technology and artificial intelligence with children and plans to share insights and perhaps establish guidelines around when and for whom technology-aided tools are and are not appropriate

- **Useful Outcomes and Other Indicators for Improvement, Benchmarking, and Evaluation**

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. Possible paths forward for this include: (1) increased data sharing in order to track longer-term outcomes safely and constructively; (2) creation of a shared data repository; and (3) increased use of blockchain data registry tools.

- **Vital signs**

DDI is also working to identify "vital signs" of program operational health. DDI is exploring the feasibility of creating shared tools and examples that will help practitioners track progress on these vital signs and get early warnings when action is needed. After identifying and sharing examples of vital sign reports and warning systems directors find useful, DDI will explore if and how sharing some of this information in de-identified ways could be helpful.

- **Harvesting Greater Insights on Head Start Using Child-level Data**

NHSA has connected with Carnegie Mellon University's Heinz College to work with groups of graduate students to conduct capstone projects using Head Start and other publicly available data. Projects to date include: using data from Head Start's Program Information Report to build dashboards looking at nationwide patterns in teacher turnover and enrollment; and developing an Excel tool that allows an individual program to look at the relationship between data on classroom quality (CLASS) and child assessment. For the most recent semester, the student group created a tool that uses the Census API to support programs in conducting their annual community needs assessments. Next steps include identifying how to host, continue to develop, and share this tool with the Head Start field. NHSA continues to submit project ideas to work with students from CMU and is interested in exploring similar partnerships with other schools.

- **Safely Interconnected Longitudinal Outcome and Real-time Compliance Data**

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 to find better early childhood practices. 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. The DDI continues to learn about and explore potential partnerships with other organizations in this area.

**Information Systems Improvement Projects:** Data relevant to Head Start work is currently collected in a variety of siloed information systems. This is the case even within a single Head Start site, but also across sites and across the country. Being able to analyze data within and across systems and programs in real time and across multiple years is essential to identifying promising practices, testing if those

practices can be replicated in other places, studying long term impacts, and more. Data sharing must be feasible in timely, understandable, accurate, and affordable ways. The Data Design Initiative is working on several projects to understand and advance agreement on data system design features to facilitate information sharing and learning over time so that Head Start programs can better serve Head Start children and their families:

- **Information System Needs, Principles, & Data Standards** ([www.nhsa.org/files/principles.pdf](http://www.nhsa.org/files/principles.pdf))  
Building on use cases developed in partnership with BrightHive and four Head Start programs—an effort that was supported by the 2018 Early Childhood Innovation Prize ([go.nhsa.org/HCT](http://go.nhsa.org/HCT))—NHS A continues to develop a set of principles and data standards to govern the data systems used in Head Start. NHS A has since identified several other organizations and experts working in this area, including the Ed-Fi Alliance, and will continue to work with and identify other organizations in this space to collaborate on principles and data standards for Head Start programs and the products they use.
- **Data-Sharing Agreement Repository**  
Data-sharing holds enormous potential for revealing common needs and effective practices. The goal of this project is to reduce the amount of time Head Start programs need to spend on developing data-sharing agreements. The DDI is partnering with an outside expert to build a tool that will help programs easily develop strong and safe data-sharing agreements. NHS A has also identified other efforts underway at the University of Pennsylvania’s Actionable Intelligence for Social Policy (AISP) project and elsewhere that may be resources for Head Start programs and, possibly, future implementation partners.
- **Data Storage and Sharing Options**  
NHS A is exploring 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. NHS A is currently learning more about what the different options are and the pros and cons of each, including recently exploring the idea of creating a “data lake” and working with the federally funded research and development center, MITRE, on its blockchain for grants project. DDI is exploring opportunities to work with and learn from others already sharing data and testing block chain methods.

**Knowledge and Learning Enhancement Projects:** Over the years, significant resources have been devoted to building knowledge about effective programs and practices and to sharing that knowledge with the early childhood field. As programs strengthen their data and analytic capacity and participate in measured trials, useful insights worth sharing across program operators will become increasingly available. Unfortunately, the system for sharing information, best practices, and research findings in ways that practitioners can easily use, understand, access, and apply has not historically been strong. NHS A is working to find ways to build new knowledge worth sharing and to share it effectively.

- **The Junction: Yelp and Amazon.com-like Functionality for Head Start** ([thejunction.nhsa.org](http://thejunction.nhsa.org))  
The Junction is an online consumer review platform to help Head Start programs make more informed purchasing decisions, while also placing healthy pressure on those providing products

and services to continually improve. Drawing on the lessons of Yelp, Amazon.com, and Consumer Reports, users submit reviews of the products and services they use, read reviews from peers around the country, report technical glitches, request new features, and troubleshoot. NHSA is currently seeking funding to evolve the platform from a minimum viable product to a high-quality, continually improving product.

- **Knowledge Sharing and Connecting Research to Practice**

An important component of knowledge sharing is ensuring that existing research is accessible to and understandable by those who would benefit from the findings. NHSA is connecting with a variety of partners both in the federal government and at other organizations to push for a stronger connection between research and practice to improve the utilization of existing research findings and to involve practitioners more in informing the research agenda and participating in evidence-building projects.

**Policy Projects:** Measurement and other forms of monitoring should encourage and support continuous quality improvement of all grantees, both higher and lower performing ones. Monitoring information should be used to flag areas in need of attention, find more effective and cost-effective practices, and motivate everyone to improve. It should not be used in ways that create fear of data, especially fear that the data will be used for punishment, or that tempt people to game the system to win rewards or avoid penalties. NHSA is identifying ways to incentivize and support continuous quality improvement with minimal dysfunctional side effects.

- **Accountability Expectations and Incentive Structures**

DDI wants to understand the kinds of accountability and incentive arrangements that successfully motivate continuous improvement, identifying those that have and have not worked well in the past and sharing that information with grant policymakers. In response to suggestions from NHSA and many others, the Office of Head Start recently changed the Designation Renewal system—the main incentive structure in place for Head Start practitioners—to better reflect current knowledge about program quality and to support ongoing quality improvement efforts. NHSA will continue to push for future improvements in the monitoring system and in ways monitoring, CLASS, and other data are used to motivate.

- **Learning and Motivating with Monitoring Information**

DDI is beginning to explore and discuss ways that monitoring data might be better organized and shared to be more useful and motivating. The Office of Head Start and the company that conducts monitoring reviews have piles of data that the field could learn from, but the information is difficult to find and access, when it can be accessed at all. DDI is looking into ways that the results of monitoring reviews could be used to identify and share information more quickly and prominently on everything from exemplary practice to patterns of common problems and areas of recent progress.