Data Design Initiative Progress Update – Spring 2020

Overview	May 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.[1]

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 (NHSA), the network of Head Start program providers, is working to fix this. In January 2016, NHSA and three other organizations 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, NHSA 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 and to improve on multiple dimensions of Head Start performance. DDI is incredibly action-oriented: many of the projects conceived of in December 2017 are actively underway.

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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[1] See: https://www.nhsa.org/head-start-advantage

Project Status

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)
  To build the capacity of all Head Start staff members, from those with no previous data knowledge to those proficient with complex visualization tools, NHSA launched the Head Start Data Analytics Playbook in November 2019. The Playbook is populated with examples illustrating how data helps different users to ask better questions and make data-informed decisions. The Playbook explains for other Head Start programs how each analytic play was generated, describing how to tap information from often commonly used information systems and how to generate similar reports. Since the Playbook's launch, NHSA has promoted it through training sessions at national conferences and a monthly field message highlighting a single use case. NHSA intends to regularly collect new use cases and feedback and is seeking funding to continually develop, improve, and promote use of the tool.

- **"Developing Data Capacity" Toolkit** (go.nhsa.org/DDC)
  The "Developing Data Capacity" toolkit was developed to help Head Start programs hire or contract for data and analytic skills. It includes resources like sample job descriptions and an assessment of organizational capacity. NHSA welcomes suggestions and contributions for developing the toolkit and maximizing dissemination throughout the field.

- **Data Training and Data Analytics Network**
  In an effort to provide increased capacity for data analytics in Head Start, several data training projects were proposed. These include:
  (a) a networked community of data analysts that help each other identify and work on common problems, solutions, and opportunities;
  (b) curated "hit lists" of videos, readings, on-line courses, and other resources that teach data analysis skills;
  (c) data visualization fellowships using tools such as Tableau or Power BI;
  (d) a data training curriculum delivered via webinar;
  Some DDI partners have developed training sessions for Head Start practitioners on topics such as data dashboards and using data as a Head Start program leader. These partners have begun testing and improving their sessions by presenting at NHSA conferences. DDI will continue to support these partners in presenting and developing data-analytic sessions and modules and work to figure out how best to encourage their uptake.

- **Outcomes-Oriented Management Training**
  NHSA has developed and currently offers a one-day training on data use and continuous quality improvement, which it conducts in conjunction with another DDI partner. 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 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 help Head Start operators learn to use goals, data, and other evidence to improve on multiple dimensions. NHSA provided formal 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 (www.nhsa.org/federal-register-comments). NHSA intends to follow the progress of this study to see what can be learned and how it can contribute to constructive feedback and continual improvement.

Data Projects: Data in Head Start serves many purposes, from determining community needs and service gaps to setting priorities, 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)
  Good assessments 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. A recent effort has begun to create a rubric for evaluating assessment tools against the principles outlined in the Better, Simpler Assessments Challenge. This effort also includes determining the manner in which assessments will be evaluated and how the information will be shared.

- **Technology-aided Assessment, Screening, and Curricular Tools**
  DDI is evaluating the existence, quality, and appropriateness of technology-aided tools that reduce demand on staff time while providing better 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 the developers and other practitioners. DDI continues to move forward on establishing 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. DDI is also working to identify "vital signs" of program 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

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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 data. In the spring of 2019, one student group created two data dashboards from Head Start's Program Information Report. One explores variations in teacher turnover across the country (go.nhsa.org/TeacherDashboard) and the other looks at the types of children enrolled (go.nhsa.org/EnrollmentDashboard). Both were well-received by practitioners in the field and policymakers in the federal administration. In the fall of 2019, a second group of CMU students created an Excel tool that allows an individual program to look at the relationship between data on classroom quality and child assessment. DDI intends to share this tool with the field through the Data Analytics Playbook. NHSA will continue to submit project ideas to work with students from CMU and will explore opportunities to work with and learn from child-level data while observing IRB protocol and privacy concerns. NHSA is also interested in exploring similar partnerships with other schools.

- **Safely Interconnected Data and Compliance Systems**
  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. NHSA has identified several programs already sharing data with their K-12 systems, and 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 information systems even within a single Head Start site, much less 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 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:

- **The Junction: Yelp and Amazon.com-like Functionality for Head Start** (thejunction.nhsa.org)
  The Junction is an online consumer review platform that will help Head Start programs make more informed purchasing decisions, while also placing healthy pressure on those providing products and services to improve continually. 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. DDI has done a soft launch of the platform, and promotion and site development are ongoing. NHSA is also currently seeking funding to develop the platform from a minimum viable product to a high-quality, continually improving product.

- **"Helping Children Thrive" Pilot** (go.nhsa.org/HCT)
  NHSA, in partnership with BrightHive, won the Early Childhood Innovation Prize in 2018 for a project to tackle critical data infrastructure needs. In phase one, NHSA and BrightHive worked with four Head Start programs to write up preliminary, detailed use cases. While efforts to secure additional funding to develop open-source, interoperable data modules based on these use cases has been unsuccessful, DDI is using the use cases to inform other work.

- **Information System Needs, Principles, & Data Standards** (www.nhsa.org/files/principles.pdf)
  In an effort to develop a set of principles and data standards to govern the data systems used in Head Start, NHSA has identified several other organizations and experts who are working in this area, including BrightHive and the Ed-Fi Alliance. NHSA will continue working with and identifying 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. NHSA has begun assembling a repository of sample agreements and resources others can adopt and adapt. NHSA has identified similar efforts underway at Georgetown University, Child Trends, and Actionable Intelligence for Social Policy (AISP) that are resources for Head Start programs and, possibly, future implementation partners.

- **Data Storage and Sharing Options**
  NHSA 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. NHSA 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" to start. DDI is exploring opportunities to work with and learn from others already sharing data and testing block chain methods.

Knowledge and Learning Enhancement Projects: From in-classroom programming to research studies, significant resources have been devoted to Head Start and early childhood education. 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. NHSA is working to find ways to build new knowledge worth sharing and to share it effectively.

- **Knowledge and Tool Sharing**
  NHSA is constantly trying to improve the various methods it uses to communicate with the field. NHSA has recently hired a Senior Director of Effective Practice, who will help the Head Start community, NHSA members, and DDI identify and communicate to Head Start staff research findings, tools, and best practices relevant to Head Start.

- **Connecting Research to Practice**
  An important component of knowledge sharing is ensuring that existing research is accessible to and understandable for those who would benefit from the findings. NHSA has taken several steps towards strengthening the connection between research and practice both to improve the utilization of existing research findings and to involve practitioners more in informing the research agenda. Steps taken so far include:

    (a) encouraging the Administration of Children and Families to voluntarily develop a learning agenda in accordance with the federal Foundations of Evidence law;

    (b) a discussion with the Office of Planning, Research, and Evaluation about the possibility of building a stronger researcher-practitioner network and making curated research more findable, useful, and understandable for practitioners; and

    (c) conducting literature reviews on critical topics and disseminating them to practitioners.

Policy Project: 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**
  The requirements and incentive systems governments use when mandating data collection and sharing need to be designed in ways that encourage use of data to discover how to do better and to avoid making organizations and people working in them afraid of data because they fear punishment. 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. NHSA's Government Affairs Team regularly provides comments advocating for changes to the Designated Renewal System, the main incentive structure in place currently for Head Start practitioners. (www.nhsa.org/federal-register-comments).

- **Learning and Motivating with Monitoring Information**
  DDI is beginning to explore and discuss ways that monitoring data might be 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 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.