February 9, 2021

Dear Members of the Advisory Committee on Data for Evidence Building:

Thank you for giving Mathematica and other members of the data community an opportunity to provide input into the work of the Advisory Committee on Data for Evidence Building. I am pleased to represent my Mathematica colleagues. For more than 50 years, Mathematica has been at the forefront of uncovering data and evidence in support of informed decision making, as well as effective and efficient policies and programs across all levels of government.

In response to Questions 1, 2, 3, 4, and 9, as published in *Federal Register* no. 2021-01092, my colleagues and I respectfully submit the following comments. We share these insights in the hope that they help to inform your work and facilitate important discussions among committee members, federal agencies, and the broader data community.

1. What are the main challenges faced by national, state, or local governments that are trying to build a basis for evidence-based policy? Briefly describe the bottlenecks and pain-points they face in the evidence-based decision-making process.

Federal, state, and local governments face a complicated and complex set of challenges in building a foundation for evidence-based policy that they can easily put into operation. Data sharing—whether within states, between states, or between states and the federal government—is a critical challenge. For example, it is difficult (or even impossible) to look across Medicaid, Supplemental Nutrition Assistance Program (SNAP), unemployment, and education data, which all may impact the same individual or family. In fact, many organizations lack basic outcomes data that indicate whether their interventions or programs "work," or influence intended outcomes. There is a critical need for better interoperability of data across programs and agencies at the national, state, and local levels. For this reason, establishing a National Secure Data Service (as discussed in Question 4) could have a long-lasting impact, if developed properly.

Additionally, capacity constraints within states can often impede progress. Compliance with federal data collection requirements, for example, is often hindered by limited resources and staff capacity constraints. Furthermore, variation in terminology and in the definitions of data classifications, and federal requirements governing the storage and location of relevant data, only compound the issue. In states, service providers, who tend to be on the frontlines of data collection, have limited ability to process, analyze, and report data. In addition, there is often no single, centralized data repository or owner to track access, quality, and outcomes, and no easy way to merge data with a unique identifier (ID). Those seeking to link data streams for monitoring and decision-making face challenges allocating costs and funding large data repositories. This is especially true when those data streams come from various data stewards. For example, when data from human services agencies are integrated with Medicaid data, it is difficult to determine the proportion of the cost (of obtaining, cleaning, linking, and storing the data) that each agency should

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bear. States with chief data officers are making progress in these areas, but face their own challenges, in terms of clearly defining their roles and responsibilities.

Knowing when and how to scale, replicate, and adapt evidence-based policies, programs, and practices in different local contexts is a persistent need in the field. Mathematica recently developed a series of guides to help practitioners assess their readiness to scale, including the Scaling Checklist: Assessing your Level of Evidence and Readiness (SCALER) framework and tool that state and local policymakers and administrators can use to successfully scale a policy, program, or practice, focusing on the target population, implementation supports, enabling context, and implementation infrastructure.

Other examples of innovative tools developed to address these challenges include:

- The Administration for Children and Families (ACF) at the U.S. Department of Health and Human Services (HHS) has deepened a culture of, and infrastructure for, building and using evidence. In 2016, for example, ACF established a Division of Data and Improvement (DDI) that leads the operating division's work on strategic planning, performance measurement, data security and privacy, and application of data to continuous improvement. DDI's work extends to supporting states and localities as they organize their data systems and data routines in support of program improvement.
- The Centers for Medicare and Medicaid Services (CMS) has adopted several user-friendly dashboards and other tools that quickly and intuitively surface trends and insights and that can be modified to track program impacts in real-time. For example, the DQ (data quality) Atlas is a new tool for policymakers, analysts, and researchers who want to use administrative data to conduct insightful, methodologically sound analyses of Medicaid and the Children's Health Insurance Program (CHIP). *DQ Atlas* bridges the challenging divide between the development of uniform national data systems for state-run programs and rigorous, sound research.
- The Institute of Education Sciences at the U.S. Department of Education has ten Regional Educational Laboratories across the county which seeks to put research into action by working in partnership with educators and policymakers to develop and use research that improves academic outcomes for students. The Regional Educational Laboratory Mid-Atlantic Region (REL Mid-Atlantic) provides collaborative tools for educators including webinars, infographics, videos, practice guides and other resources that translate complex data and evidence into tools for broader audiences. Although the REL Mid-Atlantic is well-known in many education communities, state leaders are slower to adopt and use this resource. REL Mid-Atlantic offers a model that does not exist for other research and policy domains, such as healthcare, human services, and others.

2. What are examples of high-impact data uses for evidence-based policy making that successfully effected change, reduced costs, or improved the welfare of citizens?

Administrative data from the Centers for Medicare & Medicaid Services (CMS) and the Social Security Administration are examples of high-impact data that can reduce costs. Medicaid and CHIP data play a key role in answering policy questions that affect program enrollees, states, the federal government, providers, and others. With high quality health care administrative and claims data, it is possible to model the impacts of various health care interventions on cost and quality outcomes at

the patient level. Community Care of North Carolina, for example, uses an Impactability Score to target managed-care interventions based on the likelihood that an intervention will improve the value of care delivered. This article in *Population Health Management* provides additional insights into North Carolina's use of administrative data to predict achievable savings.

Other examples of high-impact data uses for evidence-driven policymaking include: (1) ongoing support for states and municipalities that use cloud-based wastewater data repositories to detect and monitor community use of drugs (opioids and methamphetamines) and outbreaks (COVID-19, tuberculosis, measles, and polio); (2) using agent-based models to help state and local education agencies and postsecondary institutions simulate COVID-19 infection rates under various school reopening scenarios; and (3) employing predictive risk modeling to help state child protective services systematically screen and triage hotline referrals for investigation.

3. Which frameworks, policies, practices, or methods show promise in overcoming challenges experienced by governments in their evidence building?

Initiatives like the Foundations for Evidence-Based Policymaking Act (Evidence Act), President Biden's recent executive order Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking, and even the creation of this Advisory Committee indicate that decision makers around the world are embracing policies and programs supported by data and evidence. These actions have paved the way for a broader federal data strategy, requiring federal agencies to submit plans for coordinating evidence-building activities across the government. Recent guidance from the U.S. Office of Management and Budget on evaluation practices in federal agencies have also helped guide the development of opportunities for promoting evidence to support policymaking. As agencies implement the key provisions of the Evidence Act, states are using tools, reports, dashboards, and other resources to help facilitate the use of evidence. Examples include:

- To reduce the devastating impacts of the COVID-19 pandemic, we're using agent-based modeling to run thousands of simulations of infection spread across more than 100 school situations, varying by school level, school size, operating strategy, approach to quarantines and closures, and local COVID-19 infection rate. These models simulate how various instructional approaches during the COVID-19 pandemic could affect students, teachers, and ongoing learning.
- Contact tracing has generated an unprecedented amount of data to help states better understand how the coronavirus has impacted communities. Mathematica has worked with states and localities as they refine their approaches to contact tracing for COVID-19. We worked with the National Academy for State Health Policy to create an interactive, online repository of COVID-19 contact-tracing programs in every state that captures information on hiring and training strategies, funding, and technological innovations.
- For the Medicaid and CHIP Business Information and Solutions (MACBIS) initiative, CMS is building an infrastructure for robust data analytics that integrates federal and state data sources to form decisions about Medicaid and CHIP policy and programs. This partnership has resulted in a variety of tools for advanced data quality detection and dissemination. These tools provide technical assistance to states with their Transformed Medicaid Statistical Information System file submissions and include dashboards, exploratory analytics, and custom reporting capabilities for self-service decision making.

- The [Evidence 2 Insights (e2i) Coach](#) is a free, publicly available platform state and local governments can use to build evidence of effectiveness of their policies, programs, and practices. The e2i Coach guides individuals or teams through the step-by-step process of independently designing and conducting low-cost rapid cycle evaluations.
- Predictive Risk Modeling, for example in the child welfare area, can help caseworkers make decisions that help to allocate resources and services based on predictive risk models. Data quality tools ensure that the data being used for decision making is ready for meaningful use.
- In Oakland, California, social network analysis is being used to build an interactive dashboard that visualizes clients' [access to violence prevention programs and services](#) provided by community-based agencies. These tools are actively being used to better understand citywide variations in service delivery.

4. The Commission on Evidence-Based Policymaking recommended the creation of a National Secure Data Service. Do you agree with this recommendation and if so, what should be the essential features of a National Secure Data Service?

Mathematica enthusiastically supports the creation of a National Secure Data Service. This service would reduce redundancies in data collection, improve data standards and interoperability, and make available important data for research that can inform policy and program decisions. This system could be structured to address key data linkages and spur public and private partnerships that necessary to (1) conduct rapid research and development (R&D) of secure data access and confidential technology and methods and (2) give agencies incentive to adopt these methods by continuously and rigorously educating personnel to keep pace with R&D and manage the risks that rapid change presents.

9. What are the key problems and use cases where collaborative work between federal, state, and local authorities' data analysis can inform decisions? What are key decision support tools? How would greater communication about data and tools benefit expanded evidence building?

Mathematica has observed several instances where collaborative work between federal, state, and local authorities can inform decisions. For example, when tracking the longitudinal outcomes related to early childhood and education (ECE) experiences, there often isn't a way to tie ECE attendance to a child and follow them through elementary school. We can envision a scenario where it would be helpful to get a child's ECE history and access Quality, Rating, and Improvement System (QRIS) data about the programs that child attended when the child registers for kindergarten. But that process would require unique child IDs, program IDs, and a way to connect them all. Overall, this type of collaboration would require cultural change management that makes everyone part of a broad-based effort to rely more heavily on data and continuous quality improvement. It also requires a shared understanding of permissible interagency data sharing agreements under FERPA and HIPAA.

Furthermore, state funding for community services is declining steeply, as state tax revenues shrink because of unemployment and business closures related to COVID-19. Resources needed for essential health, mental health, and community services are being redirected to cope with infections, and, in some states, to address natural disasters related to climate change. Access to essential health
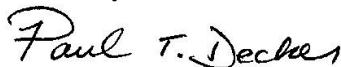
and safety net services, access to healthy food, financial stability, and stable neighborhoods are social determinants of health. The Centers for Disease Control and Prevention describes these factors as "conditions in the places where people live, learn, work, and play that affect a wide range of health risks and outcomes." When social determinants of health are disrupted, future rates of chronic illness, injury, disability, and mortality increase. One way to address this complex issue is to co-create state and federal policy simulation models that enable us to forecast and compare the potential impact of various policy strategies on future rates of disability, illness, and death. Such simulations are successfully identifying insights to help assess and manage COVID-19 impacts on communities.

Mathematica is eager to support state, federal, and local efforts to strengthen capacity for evidence-building. Programs need high-quality data to accurately forecast and manage costs, track access to services, monitor performance, and deter fraud. But many state and local agencies lack the infrastructure, processes, and human resources needed to collect, manage, and validate data effectively. They require services and supports that (1) boost investments in staff resources, (2) increase reliance on building Learning Agendas, (3) provide states with robust technical assistance, (4) establish clear lines of communications between states and the federal government.

Now is the time for us to act on the provisions called for in the Evidence Act, and we have the tools to do it. Together with my Mathematica colleagues, we thank the committee for the opportunity to share our insights as we all work to solve complex programmatic and policy challenges.

Sincerely,

Paul T. Decker
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President & Chief Executive Officer,
Mathematica