



RESEARCH REPORT

# States' Use of Technology to Improve Delivery of Benefits

Findings from the Work Support Strategies Evaluation

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# Executive Summary

Delivering major public work support programs such as Medicaid, the Supplemental Nutrition Assistance Program (SNAP), and child care requires states to collect, store, and work with data on many thousands of recipients. Every state does at least some part of this work through information technology. States participating in the Work Support Strategies (WSS) initiative decided that implementing new technology or updating existing technology could help them deliver services to families more efficiently. They envisioned using technology to share information more easily across government departments, track service delivery, and reduce families' need to make multiple office visits with multiple documents in order to get the benefits to which they were entitled. This report provides findings on the experiences of six states involved in WSS in changing their technological systems to improve and integrate the delivery of work supports, including food assistance, medical assistance, and child care subsidies.

WSS is a multiyear, multistate, foundation-funded initiative to help low-income families get and keep the package of work supports for which they are eligible. Colorado, Idaho, Illinois, North Carolina, Rhode Island, and South Carolina were selected through a competitive process to participate in WSS, first in a planning and design year in 2011 and then in the implementation phase since 2012. Through grants, expert technical assistance, and peer learning, the initiative helps states reform, modernize, and align the systems delivering work support programs intended to increase families' well-being and stability, particularly SNAP, Medicaid and the Children's Health Insurance Program (CHIP), and child care assistance through the Child Care and Development Block Grant.

## Where States Started

At the start of the WSS initiative in 2011, many of the states faced significant issues they believed could be helped by new and improved technology. In several states, eligibility systems (the main computer systems for entering and tracking benefit information) had been in place for decades. Often referred to as "legacy" systems, these relied on old technology, making them slow and inefficient; they were typically cumbersome to reprogram to support new policy changes or new procedures that might

streamline eligibility determination. In some states, clients could face long wait times at program offices, multiple visits, and requirements to produce the same paper documentation multiple times for different programs. Clients also could have difficulty getting information about their benefit status from agencies, again leading to multiple calls and visits to offices. Several states struggled to pull timely and accurate data out of their existing systems or produce useful reports from raw data. In states with older systems, new technology was seen as an opportunity to improve access to data, to focus on desired outcome measures, and to create cultures of data use within state agencies.

In addition, states were facing increased caseloads due to the recession, particularly in SNAP, without commensurate increases in staffing. Using technology to automate some administrative tasks and improve efficiency was viewed as a way to give frontline workers more time to support customers, to ensure consistency in determinations across workers and offices, and to reduce errors.

Finally, the WSS states' work support programs varied in integration at the beginning of the initiative, from totally separate applications, caseworkers, or processes to integrated applications and one set of workers handling multiple programs. However, all the states saw that technology could improve program integration, leveraging common information and reducing duplication of effort.

## What Technology Changes Did States Make?

The six WSS states pursued and implemented a host of technological changes, some large and some smaller, but all important for the states involved. Here is a brief review of some changes states were able to complete (or begin) over the course of the WSS initiative:

### **Implemented New and Updated Eligibility Systems**

All WSS states either implemented new eligibility systems or updated existing eligibility systems—the main computer systems through which caseworkers determine eligibility for benefits, complete other management tasks, and maintain records. Implementing new eligibility systems was a monumental undertaking, since these are the main engines for completing agencies' work. Creating new eligibility systems or updating existing ones required substantial funds and staff resources.

## **Created Online Applications and Customer Portals**

All WSS states developed online applications and customer portals with the goal of increasing access. Online applications and customer portals are websites through which applicants can be prescreened for eligibility, apply for benefits, find information on their benefit status and use, report status changes, submit documents, and/or get assistance through online chat. While the Patient Protection and Affordable Care Act (ACA) mandated that states provide an online application option for health benefits, WSS states included multiple programs and services in these portals.

## **Implemented Lobby Management Systems**

Almost all WSS states implemented lobby management technology, which supports and manages the flow of clients and casework within benefit system offices, assigning the work or the client to caseworkers, managing client queues, and allocating resources efficiently to improve the experience for clients as well as for staff. In many cases, the systems allow separate queues for different types of transactions, which helps offices minimize wait times for those having only a quick transaction. Some state eligibility systems had these features and other states were working to integrate lobby management and eligibility systems.

## **Implemented Other Technology to Streamline and Integrate Customer and Worker Experiences**

Other technologies WSS states implemented over the course of the initiative included electronic data verification—that is, the eligibility system electronically verifies information clients have provided. This technology limits the documentation clients must provide and workers must track to help programs move toward real-time eligibility decisions, not only for health coverage (an ACA goal), but also for other programs. Another technology introduced to reduce workers' and clients' burdens was document imaging systems, which allow workers to scan clients' documentation (such as pay stubs) to reduce paper and to share information with eligibility systems or with programs needing similar documents. Some states started call centers, providing clients quicker access to benefit information. Finally, some states sought technology changes to improve their access to data for decisionmaking. Each change is discussed further in the report.

# Lessons States Learned

Several key challenges and lessons emerged in our study of the WSS states' development and implementation of new technologies. While the specific circumstances surrounding these states during this time were unique, the challenges that arose and how states faced them are instructive for other states planning technology change.

## **Discovering the Importance of Funding and Flexibility of Funding**

Technology changes, particularly large changes such as new eligibility systems, are expensive. One crucial factor for some WSS states was the ACA. ACA requirements related to eligibility and enrollment for health coverage programs necessitated new or updated technology for all states. Federal funding provided to assist states in making the technological changes required by the ACA allowed WSS states to make changes that would likely not have been possible given the limited resources available to many state agencies.

In addition, the federal government allowed flexibility in use of ACA-related funds, making it possible for WSS states to further their goals of integrated and streamlined access to multiple work supports. The federal government allowed states to use funding for ACA-related technology changes to integrate other programs, such as SNAP and child care, into systems that were being upgraded and developed, without cost to these programs. Several WSS states took advantage and developed new eligibility systems that included multiple work support programs with health coverage programs.

## **Moving Fast and Balancing Priorities**

In addition to the requirements and funding opportunities described above, state agencies needed to meet ACA requirements within a compressed time frame, during a period when the requirement rules were still being written. States had to set priorities, allocate resources, and create teams or processes through which decisions and careful implementation plans could be made. For some states, meeting these time lines resulted in changing priorities, as states shifted their plans to accommodate ACA requirements. The ACA put pressure on all states, even those already engaging in technology assessment and change when the law was passed.



## Using Technology to Serve Goals

State officials described leadership and vision as critical to ensuring that technological change was successful and served larger state goals. One of the most important lessons for technology change was that program goals should be front and center and that technology should serve these goals. This meant technology was seen as one tool (in conjunction with policy and process changes) to serve states' broader vision for streamlining and integrating programs. Without such clear goals, technology systems could drive program changes, forcing processes to be structured to fit technological design.

## Implementing Incremental versus Big Change

States took different approaches to planning technology change. Some state leaders described the advantages of an incremental approach to technology change (adding new features or programs one at a time), ensuring their efforts would “win fast or fail fast.” An incremental process allows states flexibility in development and implementation: leaders can observe what works and make corrections before moving on. Other states established working groups to make decisions about technology changes and keep them connected to broader goals.

## Working with IT Staff and Vendors

States stressed the importance of close communication between IT developers (whether internal or vendors) and the leaders and program staff who have the programmatic and operational knowledge necessary to ensure a project meets state goals. Because of the expertise and capacity required for most large-scale technology change, many states used vendors, particularly to build new eligibility systems. States described challenges in working with vendors from contracting through system maintenance, but stressed the importance of communication for the success of technology change.

## Connecting Technology with Business Process Change

Technology change was intertwined with business process changes—the procedures by which frontline managers and caseworkers handle case management. Because technology is meant to help manage workflow and determine eligibility for work support programs, changes planned for one impact the other. For WSS states, technology changes and business process redesign frequently went hand in hand.

This presented opportunities for technological changes to support desired business process changes. It also presented challenges, as when states had to be careful technology was serving business process redesign rather than driving it. Administrators cautioned that automating inefficient tasks just for the sake of using new technology did not improve business processes or serve broader goals.

## **Involving and Training Staff in Implementation**

Training staff and involving them in technology implementation was important for success. WSS states used different approaches to train staff, including addressing the needs of experienced staff who tend to have a harder time adjusting to new technology, promoting continuous training using multiple training and coaching strategies over time, and combining technology, policy, and process training. Some states highlighted that training is ineffective as a discrete and finite process. Rather, administrators emphasized training as continual, not as a one-and-done task that can be crossed off the list following initial sessions.

## **Managing Implementation Crises Strategically**

States faced some common challenges connected with implementation. For WSS states, especially those implementing new eligibility systems, problems arose with incomplete or limited functionality at rollout, delays in development leading to limited time or less-than-ideal conditions for training, and malfunctioning technology (that is, glitches or bugs). WSS states responded to implementation problems in various ways.

One way states dealt with time pressures on development was to implement large, complex systems in phases. Some states even delayed the implementation of a second phase to make sure initial issues with the first phase were addressed and to head off issues in the second phase. Another strategy states used to address transition period issues and difficulties caused by malfunctioning technology were planned “workarounds.” Workarounds are procedures staff can use to get casework done when the intended procedures do not work or are not yet available. Planning these and providing continuous training for workers prevented workers from creating their own individual workarounds, which could lead to errors.

Some states experienced backlogs because of system problems, as well as federal delays and subsequent transfer of Medicaid cases to states. Dealing with these backlogs took considerable focus

and resources. States used additional staff, prioritization of tasks, and waivers from specific procedures to address backlogs. At least one state placed state staff in county offices to help work through problems. Other states cited close communication between IT staff, vendors, state agency officials, and field staff as crucial for working through implementation problems. In addition, shaping the work culture in local offices toward technology (and other) changes was important to helping staff deal with implementation problems.

## Conclusions

Each WSS state started the project with a different level of technology and a different vision for the role of technology in improving service delivery. As part of WSS, states thought concretely about the role of technology in their benefit delivery systems and made strides in implementing their visions. Many factors influenced what technology changes were pursued and how changes were undertaken.

- Overall, the WSS states implemented many technology changes in a short time frame.
- Preliminary reports from the states and our data analysis generally indicate improvements in program integration and service delivery.

These states' experiences and the lessons learned can benefit other states seeking to improve technology. The bottom line: states found technology has great potential for streamlining and integrating work support service delivery, but should not be seen as a silver bullet for reaching these goals. Technology needs to serve program goals—not the other way around—and strong leadership and a clear vision help make this happen. In addition, making major technological changes can be costly, and funding through ACA played a key role in WSS states' ability to make changes. But while new and updated eligibility systems were major and dramatic changes, other useful technology changes were possible with lesser funds and were implemented incrementally. Finally, states faced several implementation challenges—working with large IT vendors, determining how best to involve and train staff, and dealing with initial glitches and the transition from one system to another. As WSS states worked through these implementation challenges, they spoke positively about the technological changes they had made. They felt that these were, or soon would be, making a measurable difference in customers' lives.



# Introduction

Delivering major public work support programs such as Medicaid, the Supplemental Nutrition Assistance Program (SNAP), and child care requires states to collect, store, and work with data on tens of thousands or hundreds of thousands of recipients. Every state does at least some part of this work through information technology. States use technology to support clients' applications, eligibility determination, benefit renewal, and communication, as well as program management. This report provides evaluation findings from the experiences of six states involved in the Work Support Strategies (WSS) initiative (box 1).<sup>1</sup>

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## BOX 1

### **Work Support Strategies**

Work Support Strategies (WSS) is a multiyear, multistate, foundation-funded initiative to help low-income families get and keep the package of work supports for which they are eligible. Colorado, Idaho, Illinois, North Carolina, Rhode Island, and South Carolina were selected through a competitive process to participate in WSS, first in a planning and design year in 2011 and then in the implementation phase since 2012.

Through grants, expert technical assistance, and peer learning, the initiative helps states reform, modernize, and align the systems delivering work support programs intended to increase families' well-being and stability, particularly the Supplemental Nutrition Assistance Program (SNAP), Medicaid and the Children's Health Insurance Program (CHIP), and child care assistance through the Child Care and Development Block Grant. Through WSS, states seek to streamline and integrate service delivery, use 21st century technology, and apply innovative business processes to improve administrative efficiency and reduce the burden on states and working families, all toward the overall goal of increasing participation and retention to support work and well-being.

Findings from the WSS evaluation are based on analysis of hundreds of individual and group interviews conducted during annual site visits to the six states over the four years of planning and implementation; hundreds of quarterly reports, planning documents, and other written materials submitted by the states; other documents obtained through secondary sources; state administrative data tracking key outcomes over time; and additional data from client experience surveys and client focus groups conducted by the evaluation team in selected states. For additional reports and information, see [www.urban.org/work-support-strategies](http://www.urban.org/work-support-strategies).

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WSS states upgraded existing technology and introduced new technologies to further their goals of streamlining and integrating the delivery of work supports, including food assistance, medical assistance, and child care subsidies. We examine the reasons states turned to technology to help reach these goals, the changes they accomplished, and the major lessons they learned and challenges they faced in the process.

In this brief, we use the term “technology” to mean information technology, including computer hardware, telecommunications, and software systems that help work support programs collect, store, share, and process information, as well as technology that offers clients new ways of accessing benefits. Technologies can support these functions in many ways:

***Assisting clients in accessing and interacting with programs.*** Typically clients must fill out an application and provide documents to become eligible for work supports. Technology can allow individuals to apply for benefits online (or renew if already receiving), instead of mailing applications or dropping them off at an office. Technology also includes online “screeners,” whereby potential clients can provide basic information and receive an initial indication of eligibility for individual or multiple programs. In addition are online “benefit portals,” websites that allow individuals to apply for benefits or find information. Call centers similarly allow clients to access information about their applications or benefit status without contacting a specific caseworker, preventing “phone tag” for caseworkers already overwhelmed with other tasks. Agencies also rely on information systems to help them generate (or to automatically generate) notices for clients about their cases.

***Assisting in determining eligibility.*** Computerized eligibility systems—the main systems for entering and tracking benefit information—can collect information relevant to determining eligibility (or redetermining eligibility for continuing cases) for one or more programs. Most systems include “business rules engines,” whereby program rules are programmed into the system, which then uses entered information to determine eligibility. In addition, technology can be used to electronically verify client information, such as citizenship, social security number, or income, by matching against official sources of this information. This reduces the need for clients to provide paper documentation.

***Tracking and managing workload.*** Technology can help manage the assignment or flow of work across staff. Computerized systems can facilitate assignment of work to different staff or offices and track steps in the work process (e.g., initial application intake, processing, interview, benefit approval, status changes). States have different workload management systems for different units or functions; for example, a call center may have its own computerized system for tracking and sharing work across

staff. Workload management systems operate in various ways and can be used at different points in the benefit delivery process.

***Managing and storing information.*** When clients must provide paper documentation to substantiate an application (such as proof of income, residency, or citizenship), technology can be used to scan and electronically store these documents. This helps clients by reducing the potential for lost documentation (and the need to provide it again) and by allowing the same documentation to be shared across programs. It helps program staff by eliminating the need to store these as papers and by easing the sharing of documentation across multiple workers on a case. In addition to documentation, technology can support programs' use of information for program management and improvement. Computer systems and data warehouses can aid in the storage and retrieval of program data and in the production of useful reports for managers and policy staff.

Virtually every step of the application, eligibility, and recertification processes can be touched by technology. These technologies are not necessarily visible to clients but can improve clients' experiences and reduce workers' burdens. They can also increase the accurate and timely delivery of one or more work support benefits to eligible families.

# Why Did States Pursue Changes to Technology?

The six WSS states all included technology as part of their broad strategies to help clients access the package of benefits for which they are eligible. States saw technology as a tool to help streamline and improve the efficiency of applying for and retaining work supports, benefiting clients as well as state and local health and human services agencies.<sup>2</sup> States pursued technology changes for some of the following reasons:

**To modernize outdated and inflexible eligibility systems.** In several states, eligibility systems had been in place for decades. Often referred to as “legacy” systems, these relied on old technology, making them slow and inefficient. In addition, these systems were typically cumbersome to reprogram to support new policies or new procedures that might streamline eligibility determination. In Rhode Island, the legacy system was so old the software was in a computer language rarely used anymore; tedious programming was necessary for any new reports or changes. Similarly, the system in Illinois was described by one official as akin to “cuneiform,” a dead and complex language. These states worried about their systems’ ability to handle the large caseload increases expected from Medicaid program expansion under the Patient Protection and Affordable Care Act (ACA). The Colorado Benefits Management System (CBMS), despite being significantly newer, had numerous problems, including being extremely slow. State officials cited the system as a major factor in failing to meet federal program requirements for timely benefit administration, which led to a lawsuit against the state. The system South Carolina’s Medicaid program used did not determine eligibility. Instead, officials characterized the system as “like a big data warehouse”; workers were forced to determine eligibility outside the system using Excel spreadsheets, slowing eligibility determination and increasing chances for errors. Despite these issues, most agencies did not have the funding to update or replace their eligibility systems.

**To minimize burdensome application procedures for clients.** Applications for benefits in some states could be lengthy and burdensome for low-income families. Clients could face long waits at program offices and sometimes needed to make multiple visits—even if the benefit did not require a face-to-face interview. Documentation necessary for determining eligibility sometimes had to be produced several times for different programs at different times—whereas if the documents were captured and stored electronically, this would be less likely to happen. Clients could have difficulty getting information about their benefit status from agencies, leading to multiple calls and visits to offices.



***To relieve staffing and caseload pressures.*** During the recession, all WSS states experienced increased caseloads, particularly in SNAP, but did not see commensurate increases in staffing. In Rhode Island, a large number of retirements combined with hiring freezes exacerbated this issue. States were concerned about meeting increased caseloads once ACA was implemented, especially in states with Medicaid expansions. Automation of some tasks and improved efficiency through technology was viewed as a potential way to address caseload increases and to prevent large backlogs. More sophisticated eligibility systems with embedded rules engines could ensure consistent determinations across workers and offices and reduce errors, as well as free up frontline workers to better support and have more meaningful interactions with customers.

***To integrate work support programs.*** The WSS states varied in how integrated their work support programs were. South Carolina had completely separate application processes (clients went to different offices or to different lines in an office), and separate state agencies carried out processing, eligibility determination, and renewals. Other states had joint applications, with the same workers processing and determining eligibility for multiple programs. However, at the start of the WSS project, whether a state's programs were integrated or not, all saw a role for technology to improve program integration, leveraging common information and reducing duplication of effort.

***To increase availability of data for decisionmaking.*** All states wished to use data to better manage caseloads, office performance, eligibility processes, and benefit delivery; more broadly, they wanted to manage changes in service delivery and in technology itself more effectively through the use of data. However, many existing legacy systems were not designed with data-driven decisionmaking in mind. Several states struggled to pull timely and accurate data out of their systems; many could not effectively track processes in local offices to see what was working and what was not. Others had difficulties working with the messy raw data they could extract from their systems or with obsolete or unhelpful standard reports. In states with older systems, new technology was seen as an opportunity to improve access to data and to focus explicitly on desired outcome measures while creating cultures of data use within state agencies.

***To meet the provisions of the Patient Protection and Affordable Care Act.*** One important factor that arose during the WSS initiative was the ACA, specifically its requirements that affected eligibility and enrollment for health coverage programs and necessitated new or updated technology. The ACA sought to create seamless coordination and integration across health insurance programs, which meant sharing information across Medicaid, the Children's Health Insurance Program (CHIP), and state or federal insurance marketplaces. States were also required to provide online applications for health insurance, to use centralized databases to electronically verify client information, and to implement a

new measure of income to aid integration across health programs. States needed to be ready with these changes for open enrollment in October 2013, which made for rapid time lines that impacted states' plans.

To assist states in making the technological changes necessary to meet ACA requirements, the federal government provided additional funding (box 2). Importantly, the federal government allowed this funding to be used to integrate other programs, such as SNAP and child care, into systems being upgraded and developed. Given the high cost of technological improvements and the limited resources available to many state agencies for technological change, this funding improved states' ability to implement new technology for their broader goals.

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## BOX 2

### Funding for Technology through ACA

In support of the technological requirements of the ACA, the federal government provided additional funding for states. The federal/state matching rate for administrative expenditures was increased from 50 percent to 90 percent for the design, development, and implementation of new or upgraded technology, as well as for 75 percent of operations and maintenance funding going forward. This funding change was often referred to as 90/10 funding. The change was initially temporary, through December 2015, but has since been made permanent. All states have made use of the 90/10 funding.

In addition, the federal government relaxed some cost allocation rules for system development. The ACA provided states an opportunity to improve efficiency and customer service by integrating health and other programs while upgrading or developing new systems for Medicaid. Recognizing this opportunity, the Office of Management and Budget issued a cost-allocation waiver that allowed other human services programs to benefit from the technology changes without sharing in the costs. The waiver was initially through the end of 2015, but has since been extended to the end of 2018.

**Sources:** Department of Health and Human Services. 2011. "Medicaid Program; Federal Funding for Medicaid Eligibility Determination and Enrollment Activities; Final Rule." *Federal Register* 76 (75). <https://www.gpo.gov/fdsys/pkg/FR-2011-04-19/pdf/2011-9340.pdf>; Cindy Mann, Centers for Medicare and Medicaid Services letter, October 28, 2014, <http://www.medicaid.gov/medicaid-chip-program-information/by-topics/data-and-systems/downloads/medicaid-90/10-funding-extension.pdf>; Cindy Mann, Kevin Concannon, George Sheldon, and Steve Larsen, letter announcing cost-allocation waiver, August 10, 2011, [https://www.acf.hhs.gov/sites/default/files/assets/dcl\\_11\\_13a.pdf](https://www.acf.hhs.gov/sites/default/files/assets/dcl_11_13a.pdf).

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Together, these factors spurred states to develop new technologies and upgrade existing technologies. In the next section, we discuss the specific changes pursued, as well as some challenges faced by states in these efforts.

# What Did States Do?

The six WSS states pursued a host of different technological changes. Table 1 lists changes states completed or are in the process of making. States implemented entire new eligibility systems—a major effort—or updated existing eligibility systems. They also introduced online applications and customer portals to increase benefit access. To streamline work processes and save time for customers and workers, they also implemented new lobby management systems, electronic verifications, document imaging systems, call centers, data warehouses, and other changes (box 3). Finally, some states sought technology changes to improve their access to data for decisionmaking. We discuss each of these changes below.

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## BOX 3

### Technology Terminology

- **eligibility system.** A complete system through which workers determine eligibility for benefits, manage benefits, and maintain case records. Components of this system include case management software and rules engines. Case management software is the interface through which workers pull up case files, store information, and change benefits. Business rules engines are the calculations made within the system to determine eligibility—when a worker inputs income and family size, the business rules engine calculates whether the family is eligible for benefits.
- **online portal.** A website (usually accessed through a state’s social services or health services website) where applicants can conduct one or more functions, such as completing a screener to check if they may be eligible for benefit assistance, applying for benefits directly, checking on the status of their applications or benefits, reporting status changes, submitting documents, contacting a caseworker through online chat, viewing benefit use, and printing proof of enrollment.
- **lobby management system.** Technology to support and manage the flow of clients and casework within one or more offices. As applications or other client requests enter the system by mail, by phone, in person, or online, a lobby management system can help assign the work or the client to caseworkers, manage queues, and allocate resources efficiently. Typically customers see a front-facing component that can include self-service check-in kiosks, wait time alerts, customer notification systems, or other ways for customers to take a place in a queue to see a worker. Workers see a back-facing component that displays to workers and supervisors the number of customers and the order in which they are waiting, wait times, and tasks in the queue.

TABLE 1

WSS State Technology Changes

	CO <sup>a</sup>	ID	IL	NC	RI	SC
New eligibility system/rules engine			X	X	X	X
Updated eligibility system/new rules engine	X	X				
New online application/customer portal	X	X	X		X	X
Updated online application/customer portal				X		
New lobby management software	X	X			X	X
New electronic verification interface		X	X			
New document imaging system	X		X			X
New/enhanced data warehouse		X				
New call center			X		X	X
New system for client notices		X				
New child care provider self-service portal	X		X			

Source: Work Support Strategies unpublished program data.

Note: <sup>a</sup>In Colorado, some changes varied by county. For instance, not all counties had new lobby management software.

## Eligibility Systems

All WSS states implemented new eligibility systems or made improvements to existing systems. Three states—Illinois, Rhode Island, and North Carolina—developed new integrated eligibility systems, including case management software and new business rules engines, to completely replace their eligibility systems for Medicaid and SNAP, and in some cases additional programs such as TANF or child care. These systems were either completed by the end of WSS or continued to be rolled out in phases. In addition, South Carolina developed a new eligibility system to replace its eligibility system for Medicaid. These new systems were massive undertakings and many challenges were involved in launching them, which we examine in subsequent sections.

Illinois and Rhode Island used the same vendor and pursued similar new eligibility systems. Both states rolled out initial parts of their systems in October 2013 to support compliance with ACA requirements. In Rhode Island, the new system (Rhode Island Bridges) initially rolled out only Medicaid functions, with additional programs scheduled to roll out in July 2016. In Illinois, the state’s new Integrated Eligibility System (IES) rolled out Medicaid, SNAP, and Temporary Assistance for Needy Families (TANF) programs in 2013, with new case management software and additional updates

scheduled to roll out in 2016. Both states' new systems were designed to be more flexible, allowing for future changes in technology, process, and integration with other systems. They were also designed to be more user friendly and easier for new caseworkers to learn.

Planning for North Carolina's new system, called North Carolina Families Accessing Services through Technology (NC FAST), began well before the WSS project, but rollout of system components for Medicaid and SNAP took place during the project. South Carolina's Department of Health and Human Services (DHHS), which administers the Medicaid program, introduced a new eligibility system for Medicaid and CHIP called ACCESS. The state's Department of Social Services (DSS), which administers other work support programs, had replaced its eligibility system for SNAP and other human services programs prior to the WSS project. Idaho refined its existing eligibility system, the Idaho Benefits Eligibility System, and introduced a new rules engine and notice system. Colorado retooled and updated CBMS. In each state, then, benefits systems were undergoing major changes during the WSS initiative.

States faced decisions in addition to choosing whether to partially or fully replace systems: states had to select vendors to develop products, and had to decide whether to adapt another state's system or a commercially available "off-the-shelf" product, or whether to build a custom solution. Some states thought that adapting another state's system or an off-the-shelf product would reduce development costs and shorten time lines. Yet even in those cases, substantial development work was needed to customize the system. Other states thought it better to design and develop their own system to meet their particular needs. In some cases, systems were developed or customized by internal state technology staff without the use of a vendor. Each approach has its own costs and benefits, and the choice was difficult for many states.

Illinois, with its vendor, developed IES by adapting Michigan's BRIDGES eligibility system. BRIDGES was a proven program, but Illinois still had to spend significant resources on customization for its specific requirements. For example, BRIDGES was not designed to allow different workers to perform different tasks (as opposed to one worker handling all aspects of a case). Illinois altered BRIDGES to allow for task-based intake and management. For South Carolina's health programs, DHHS acquired an off-the-shelf system and adapted it to their own state context. In contrast, South Carolina's DSS had earlier used in-house IT staff to adapt its new system from another state's system. Differing opinions about the value of off-the-shelf versus custom systems was one reason the two agencies did not buy into the same technology system during the WSS period and continue to operate distinct eligibility systems.

States needed to make additional changes to align new or updated eligibility systems with other technology. In Idaho, updating the eligibility system meant building an interface with the newly introduced online portal for SNAP redeterminations. Building a portal interface that was easy for customers to understand pointed the state toward ways its case management system could be improved for workers. As one state official said, “If it makes sense to the customer, it should make sense to the worker. The team took opportunities to make things more clear in the case management system.”

## Online Applications and Customer Portals

Introducing or improving online applications and online customer portals was one of the most common technological changes pursued by the WSS states. The ACA required states to provide a single online application for Medicaid, CHIP, and health insurance exchange coverage. Colorado, Idaho, Illinois, North Carolina, and Rhode Island also expanded, improved, or introduced online application or redetermination systems for other benefits, including SNAP, TANF, and in some cases, child care subsidies. Some states, such as Colorado, went further and introduced mobile apps for online applications as well. States also improved the applications themselves to simplify the process for clients.

Each online application looks different, but the basic functions are similar. Customers can complete a screener to check if they are eligible for benefit assistance and to apply for benefits directly. Yet states’ approaches to designing online application portals varied. In some states, including Colorado, Idaho, and Illinois, online applications were part of a larger online customer portal in which customers could track their applications and receive information on the status of their benefits. Colorado’s client portal now allows recipients of one benefit to apply for others by submitting additional or updated information rather than starting a completely new application.

For states overhauling their entire eligibility systems, such as Illinois and Rhode Island, the online application was one part of the whole and typically designed through the same contract as the larger eligibility systems. For other states, such as Colorado and Idaho, online applications were implemented within existing systems. Some states believed online access could play an important role in improving customer access. Illinois reported a steady increase in online applications and new customers through the online application each week. Between April 2013 and October 2014, online applications in the state more than doubled from 18 percent to 49 percent. In South Carolina, online applications for Medicaid ramped up quickly, moving from none in September 2013 to 20 percent in December 2013.<sup>3</sup>

Online applications and customer portals were also seen as having the potential to improve efficiency. In practice, some states struggled with ensuring that online applications achieved this goal rather than adding administrative burden for both workers and families. Some states reported that clients often enter inaccurate information in online systems; identifying and then reconciling the errors can be at least as time consuming for workers as completing an application on paper. In North Carolina, workers mentioned the difficulty of families submitting redundant applications. One said, “As far as the online application, families want their benefits and to know right now, within a day or two, if they are eligible or not, so they redo the application when they haven’t heard.” Colorado discussed using their screening tool to ensure those eligible for benefits apply while those ineligible receive that information at an early stage, to prevent the system from becoming clogged.

The challenge with online applications was to build a system that increased both access to benefits and efficiency in benefits delivery. In Rhode Island, an online application for SNAP was rolled out in January 2014 but has not been widely promoted because it is not yet integrated with the new eligibility system. Only 6 percent of Rhode Island’s SNAP applications were received online in March 2015, lower than the 8 percent reported in spring 2012.<sup>4</sup> The state plans for the online SNAP application to be integrated in July 2016; in the intervening years, caseworkers manually enter information from the online application into the legacy system. Colorado has a similar situation: child care applications submitted online will be manually entered into a different system until the processes are automated.

## Lobby Management Systems

Four states introduced what are referred to as “lobby management systems,” though this technology more broadly supports improved workflow and traffic within an office—helping manage queues and allocate resources efficiently for work received online, by mail, by phone, and in person. The particular form of technology may vary by state, but functionalities are similar. In many cases, the systems allow separate queues for different types of transactions, which helps offices ensure that wait times are minimized for less-complicated transactions.

Idaho, Rhode Island, South Carolina, and some Colorado counties introduced lobby management software, and officials in all states commented positively about its impact. A fifth state, Illinois, built lobby management functions into phase two of its ongoing IES project. Idaho customized an off-the-shelf system, with a particular focus on managing the allocation of work across offices and processing centers. Colorado, Rhode Island, and South Carolina used an off-the-shelf system (provided by business

process consultants in the latter two states), with the intention, at least in Rhode Island, to move toward building lobby management functionality into the new eligibility systems. In Idaho, one official said, “[Our lobby management system] has been phenomenal ... with the capacity, we are able to monitor what’s going on in each one of the 19 field offices and where they are with their specific wait times, how many people are waiting.” One worker in South Carolina, working with a different system, said, “It saves a lot of time. We can call the [applicant] immediately, as soon as [the caseworker] puts them into [the system].”

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States are also looking to the future to better integrate lobby management systems with eligibility systems, further reducing burden on workers and allowing workers and supervisors to more accurately track workloads. Some places, such as several of North Carolina’s counties, already use features of their new eligibility systems to carry out some of these functions.

## Eligibility Information Verification

Applicants for all work support programs are required to provide information such as income, residency, and social security numbers. Programs sometimes verify this information by requiring applicants to provide paper documentation. Electronic data verification is when workers look up information in secondary sources, such as state wage data repositories or Social Security Administration records, to verify information provided by the customer. In some cases, this process is automated, that is, the eligibility system “looks up” the information in other databases electronically.



ACA required states to use electronic verification systems to help move toward “real-time” eligibility decisions for health coverage. This significantly reduced the burden on clients to provide documentation and the burden on workers to track down information. Under ACA the federal government established a federal data hub where states could verify information on citizenship, immigration status, and income from federal tax returns. Idaho and Illinois introduced new electronic verification systems that went further to support workers verifying wages and employment status, auto-populating application fields based on secondary information systems and allowing workers to focus on reviewing rather than inputting information. In Illinois, the introduction of this system was accompanied by creative new communication and education for workers, called “verification-palooza.”

## Document Imaging Systems

Colorado, Illinois, and South Carolina used technology to reduce workers’ and clients’ burdens by introducing new document imaging systems. The goals were to reduce reliance on paper records and facilitate document sharing across workers and programs by scanning paper documents into eligibility systems. Paper documentation was a huge problem for states that had not yet gone paperless; not only did paper records clog offices, hallways, and conference rooms, but a reliance on these documents also slowed the process of determining eligibility and getting clients benefits. The move toward paperless offices aimed to reduce these burdens. Key to the efforts was integration of document imaging with eligibility and other relevant systems. This meant, in practice, that a frontline worker could scan an employment form, which would be automatically uploaded into the eligibility determination system and any other system that needed it, rather than requiring workers to electronically append the information or reenter it into the eligibility system.

Colorado, as a state with county-administered work support programs, discussed the challenges of coordinating and integrating document imaging systems at the state level with those used at the county level. Both Colorado and South Carolina reported some success in these efforts. As of 2015, Rhode Island was the only WSS state that had not yet gone paperless; implementation of its new document imaging system was postponed to the second phase of rolling out its new eligibility system. Most of North Carolina’s counties and Idaho were using document imaging systems prior to WSS. In Idaho, state officials credited their system as an important component for “getting this person in the door and out the door in the shortest possible amount of time.”

## Call Centers

Illinois and South Carolina introduced call centers to reduce office traffic and ease access to information for those uncomfortable with or unable to use the Internet. Several other states already had these systems and found them useful for managing workloads. Call centers allowed state agencies to share work across the state. In South Carolina, intake throughout the state was handled by a call center staffed by workers in one region. In Illinois, the telecommunication technology used by call centers was integrated with other technologies, including new eligibility systems, rules engines, and verification systems, to capture telephonic signatures and improve the timeliness of benefit service. The state's new call center technology allowed customers to submit applications for several programs such as Medicaid and SNAP, complete interviews and verification, and receive immediate approval if qualified for benefits.

## Technology Assisting Use of Data for Program Management and Decisionmaking

WSS states made technology changes to improve their use of data in program management and decisionmaking. These changes took different forms. Idaho created a longitudinal data mart, a data warehouse that includes individual client records from multiple programs and connects the information across time, allowing for more robust analyses. The longitudinal data mart was built on the data warehouse Idaho had before WSS. Churn rate and a client's duration of benefit receipt are just two reports the state developed using the longitudinal data mart. It is also being used to generate federally required reports for Medicaid and SNAP. The technology provides a user-friendly interface and easier way for analysts to access and analyze data. Development involved close collaboration between automation and operations leadership. Other states have incorporated eligibility systems improvements to store and extract data and to create necessary reports for program managers.

## Other Technology Changes

States pursued other technology changes to streamline access and to increase workers' efficiency. Colorado introduced an online portal for child care providers to look at reimbursements and benefits, to serve customers more efficiently. Idaho implemented a new notice system for customers into its

eligibility system. Compared to the previous system, this allowed more flexibility in the design of notices and reduced the effort needed to make revisions. As a result, the state is better able to begin revising notices more easily to increase clarity or respond to policy changes. Taken together, all these technology changes were designed to improve access to benefits and reduce workers' burdens. However, introducing such large-scale changes is not without its challenges. States reported many factors that hindered the implementation of new technologies. In the next section, we discuss key themes we learned from the WSS states.

# What Lessons Did States Learn in Development and Implementation?

Several key lessons and challenges emerged in our study of the WSS states' development and implementation of new technologies. First, while many WSS states planned technology changes before the ACA passed, ACA had an enormous influence on the changes eventually made and on the priority and timing of technology efforts. Second, leadership played an important role in planning for technology, including deciding among priorities and developing plans for implementation, which could have profound effects on successful rollout. Third, there was a close connection between implementation of new technology and the way programs move cases through the eligibility and redetermination system. Fourth, training and the involvement of staff in technology implementation was important for success. Fifth, in addition to training, states faced some common challenges connected with implementation, especially of large new eligibility systems. Finally, though technologies were designed to improve program integration in specific ways, they often had unintended consequences on program integration—sometimes toward greater integration, sometimes toward greater separation.

## Accommodating ACA Influence on Technology Change

ACA had a large influence on states' technology changes during the WSS project, not only on the particular changes needed, but also on their timing and the prioritization of other efforts. While the requirements and opportunities surrounding ACA were a unique circumstance, the challenges that arose (and how states faced these challenges) are instructive for states planning technology change in the future.

As described earlier, to meet ACA provisions, states needed to implement new technology or update existing technology. Enhanced federal matching funds provided an opportunity to make more extensive (and expensive) technology changes. The ACA permitting investments in technology for health programs to also be used for human services programs (through the cost allocation waiver) was a key factor in WSS states working toward their vision for program integration. In some cases, this was also instrumental in preserving existing program integration. All WSS states used 90/10 funding to improve technology infrastructure. States were unanimous that the same improvements in technology

could not have been made without the funding provision. As one official in Rhode Island said, “If we didn’t have it, none of this [technology] would be talked about.”

ACA posed challenges for states as well, especially in terms of its time lines. The long process of overhauling, adapting, or developing new technology, often including hiring external contractors, was compressed. Because the ACA deadline required states to enroll new applicants by October 1, 2013, states were forced to begin building systems before the federal government had made all the decisions and specified all the details states needed. One state official said, “[It is] not possible to get anything fully baked in [the] current environment where we’re trying to implement something that might [be] overturned and the Feds can’t figure out what they’ll give to us. We’re all running toward a river and we hope the bridge will be built when we get there.” New requirements, short time lines, and developing the technology while rules were being written represented a management challenge. The WSS initiative assisted by facilitating communication between states and the Center for Medicaid and Medicare Services (responsible for ACA implementation) and the Food and Nutrition Service (responsible for SNAP oversight). Officials from these agencies attended WSS conferences—not only to provide states with information but also to hear about the issues states faced in implementing new ACA rules.

With the short time line came a necessary change in priorities, as states shifted their plans to accommodate ACA requirements. This put pressure on all states, even those already engaging in technology assessment and change. Colorado, for instance, had to figure out how to keep its promise to integrate SNAP and Medicaid applications while meeting the ACA requirement to integrate Medicaid and CHIP with the new health exchange. Idaho also needed to shift priorities; the state was in the midst of longer-term implementation of a client portal for SNAP but, as they said, “We had to put the brakes on it because of ACA.”

Other states saw a shift in their planned priorities with the need to focus on ACA requirements. In Illinois, this was particularly true in regard to integrating child care with SNAP and Medicaid. The state had wanted to link the SNAP and Medicaid eligibility system with the child care eligibility system to facilitate cross-program enrollment. However, in terms of broad decisionmaking, shared technology, and changing business processes, the plan was difficult. As a state official stated, “In the short term, the time and effort needed to work on [the new integrated eligibility system for SNAP, Medicaid assistance, and TANF] is causing other projects and initiatives to be delayed or postponed indefinitely.” As another Illinois official put it, the new eligibility system implementation “sucked all the air out of the room”; officials ultimately decided to put this integration on the back burner.

Complications from ACA continued after implementation of new systems. States that did not set up their own state insurance marketplaces were inundated with applications from the Federally Facilitated Marketplace (FFM), often forcing states to deal with this backlog before addressing other pressing technology needs. Illinois, for instance, received thousands of FFM applications in the first few months after ACA went live; many were sent incorrectly or were duplicates, siphoning resources that could have been used elsewhere. Although FFM application backlogs decreased after the first few months, they did add to state officials' aggravation about ACA.

## Establishing Leadership and Vision

State officials described leadership and vision as critical for making technology change: in setting priorities, allocating resources, creating groups and forums to make decisions and careful implementation plans, and ensuring that technological change served larger state goals. One important lesson for technology change was that program goals should be front and center and that technology should serve these goals. This meant technology was seen as one tool (in conjunction with policy and process changes) to serve states' broader vision for streamlining and integrating programs. As leaders set out their visions, they planned for the role of technology within that vision. This played out in different ways across the states.

Colorado's problematic eligibility system was a driving force in the state's articulation of a new vision for serving clients. The need to address this weakness was driven by top leadership, with the governor including CBMS reform in his campaign platform. To implement change, the state held regular cross-agency meetings to modernize and rebuild CBMS. These discussions culminated in an 18-month plan and a call for funding to the state legislature. The plan included not only changes to the technology, but also additional funds for training and data reporting. In the end, this planning was successful and the legislature appropriated funds matched with 90/10 federal funds to update the system.

In Idaho, the vision for improvement started well before the WSS grant, with a plan to move toward making a benefit decision at the first contact with clients and making the best use of their workforce by allowing cases to be processed by workers statewide instead of only locally. Improvements in technology were part of a long-term plan to use automation to reach their goals. As top leadership at the Idaho Department of Health and Welfare explained, "We're [focused on] creating [a] culture [that sees the entire] process ... how do we want to do business? Get that figured out first before you even start talking about technology, because if you don't know what you want at the other end, you'll never

get there.” Idaho leadership also cautioned that technology development shouldn’t be “just about what’s the new shiny thing, it’s about what’s practical. What can help us be efficient, be effective?” To this end, the state used WSS funds to support several business analyst positions at the state level, which will remain in place through other funding sources after the WSS project ends.

Such leadership was important across the WSS states in making sure broader goals were not superseded or derailed by narrowly defined technology efforts. In the WSS grant’s planning phase, Rhode Island officials across multiple state agencies were considering the design and timing for a new eligibility system to meet ACA requirements. The Department of Human Services director was instrumental in ensuring that the balance of human services programs would be included in an accelerated time line with definite funding. Initial plans called for programs not related to health care to be incorporated in a loosely defined third phase. Yet the team was concerned that waiting might mean losing the opportunity to meet key program integration goals. “[Our director insisted] we can’t wait until 2016 to make changes [to human services] until it gets all the way around to us,” a core member of the Rhode Island team said. The team viewed the full incorporation of DHS programs into the new system build as a key achievement. In the end, although rollout of the human services programs was included in the development process, it was delayed and is now scheduled for July 2016.

The leaders of South Carolina’s DHHS and DSS agencies started out with an ambitious vision of integrating both their technology systems and their field staff under what was initially called Project Merge. Merging technologies was seen as challenging but doable by the two technology work group co-chairs, who expressed willingness to cooperate on building either integrated systems or a strong interface between separate systems. Each agency had technology they hoped the other would adopt to advance integration: DSS had a document imaging system for Medicaid clients to ease sharing of documents across programs, while DHHS would build SNAP and TANF modules into their new health program eligibility system.

However, these plans did not come to fruition, as each agency’s leadership made technology decisions to serve specific agency goals, reflecting leadership’s different perspectives. One of several issues on which the agencies did not agree was the value of buying off-the-shelf technology versus custom building technology in house. DHHS opted not to use the DSS technology but to purchase a different document imaging and management system that features an online application portal, which DHHS thought would better meet their needs. DSS decided not to use the new DHHS eligibility system in part because they thought their current system was appropriately customized to their needs, although the option to reconsider remains on the table. The challenges in merging technology were both symptomatic of and contributors to broader challenges for Project Merge, which state leadership

ultimately felt was an overambitious first step toward integration of two very separate agencies. The state has moved on to “No Wrong Door,” with the intention of providing a seamless integrated lobby that would allow clients to apply for multiple programs but would have separate back-end processing systems.

## Planning for Technology Change

States took different approaches to planning for technology change. Idaho advocated taking an incremental approach. State leaders described the advantage as ensuring their efforts would “win fast or fail fast.” The state used an agile development approach in which work was divided into smaller parts, called “sprints,” with planning, development, testing, and release occurring for one discrete change at a time before moving onto the next part of the overall work. Officials have found that this incremental process allows flexibility in development and implementation, observing what works and making corrections before moving on. Idaho officials have carried these principles over from automation development into their overall approach to implementation. An example is the development and release of their online portal Idalink in modules with discrete functionality. Initially, customers were only able to view their benefits through the online system. Once that module was functioning, the state rolled out capacity to complete SNAP redeterminations online. That experience informed the state’s implementation of the single streamlined application for health coverage assistance required by ACA. Another example was the pilot for Idaho’s new lobby software and associated business practices in a few offices before a wider launch. The team saw this approach as allowing for more “on-the-ground” modification of both the technology and the associated processes before all workers were confronted with changes.

Illinois established the Eligibility Modernization Oversight Group to make decisions about technology changes and keep them connected to broader goals. The group helped design Illinois’s new IES and decide how to integrate it with other benefit systems. State officials identified the group as a key mechanism through which decisions about IES and WSS goals were made; the group brought together officials from multiple state agencies, including the Department of Human Services and the Department of Healthcare and Family Services, to brainstorm about what the state’s priorities in social services should be going forward. One official said that the group bred trust across agencies and reduced tension that would have made progress difficult. “People [in the group] were more interested in the vision than in their career.”



States also stressed the value of having joint planning teams that included both staff with policy and operations expertise and staff with IT expertise. In some states, IT was siloed from design, creating problems in both planning and implementing new technology. Other states avoided these bottlenecks with integrated teams. North Carolina temporarily assigned state staff from the Division of Social Services (for SNAP) and the Division of Medical Assistance (for Medicaid) to the NC FAST team. SNAP and Medicaid business experts were tasked with ensuring NC FAST would reflect state and local policies and business processes.

Idaho's management team is headed by a division administrator and two deputy administrators (one for automation and data and one for operations) who work hand in hand to ensure that new technology developments address the agency's operational objectives. The management team—which includes bureau chiefs for automation, field operations, operations design, and quality monitoring and partnership, and policy leads for Medicaid, SNAP, and child care assistance—meets regularly to coordinate and align their efforts.

Many technology projects were not developed in house. The expertise and capacity required for large-scale technology improvements, particularly new eligibility systems, led most states to contract with vendors. With a few exceptions, state staff reported challenges working with vendors and frustration with the process and outcomes. In South Carolina, a DHHS official was frustrated with their vendor for deficiencies in the new eligibility system. The official remained unsatisfied with the vendor's response to requested changes and partnered with other states that had bought into the same solution to persuade the vendor of the need for specific fixes.

One common stumbling block was unfamiliarity with the contracting process for large technology projects. Some states reported this ultimately limited their options absent costly change orders. "Don't assume anything," an Illinois official said. "Just because it's logical, don't assume it. Anything you want to happen in the new system, write it down. That was very difficult for us, because a lot of us think very logically, so we think if 'A' happens 'B' automatically flows, but it doesn't, and we had to fix it." A Rhode Island administrator recommended detailing every design requirement, especially with vendors on a fixed-price contract: "If you don't spell out everything you will get change-ordered to death."

States' vendor experiences were not universally problematic. Even in a state where core members of the WSS team described deeply rooted problems with its vendor, workers also described the vendor's staff knowing policy details better than state employees from their history of working on the program.

# Connecting Technology Development Closely to Business Process Changes

All WSS states reported that technology development was intertwined with changes in business process, the procedures by which frontline supervisors and workers handle cases. States viewed changes in business process, like changes in technology, as a tool for improving service delivery and reducing workers' and clients' burdens.<sup>5</sup> Because technology is used throughout work support programs' business processes, changes planned for one affect the other. Technology can support business processes, as when lobby management software helps human services offices more efficiently manage client wait times, or can impede them, as when outdated systems slow workflow.

Redesign of business processes sometimes called for changes in technology; similarly, access to improved technology could spur changes in business processes. For the WSS states, movement on technology and business process frequently went hand in hand. This could present opportunities, as when the ability to make technological change was seen as helping introduce desired business process change. It could also present challenges, when states had to be careful technology was serving business process redesign rather than driving it. Administrators cautioned that automating inefficient tasks just for the sake of using new technology did not improve business processes.

Some states reported that they tried to use technology to spur broader business process changes. In North Carolina, the integrated eligibility system NC FAST, which combined previously separate program legacy systems, was seen as a precursor to greater cross-program integration of county workers' roles and responsibilities. North Carolina is a county-administered state, meaning counties have ultimate control over the business processes used in administering work support programs. State officials thought their vision—"families tell their stories once and receive services they need"—would be better served by a business process with individual staff processing multiple programs for a single family versus separate staff processing each program. The state saw NC FAST as an integrated eligibility system that would not only assist in this business process change, but also encourage counties to try new ways of doing business. As one official in North Carolina stated, "NC FAST [creates an] opportunity to follow through with the redesign of offices, universal worker, etc." The state was aware that technology alone was not enough to spur such fundamental change but over time realized that counties needed an even more extensive level of support than originally anticipated. This resulted from limitations in how well NC FAST actually integrated eligibility programs (e.g., workers had to enter most information about families applying for both Medicaid and SNAP once for each program), as well as feedback from counties that more support for business process change was needed.

Similarly, in Illinois the introduction of new technology in the form of an eligibility system ultimately changed the state's broader business process redesign plans. Individual local offices in Illinois were being encouraged to design their own business process improvements before the announcement of ACA. However, concerns arose that customized business processes designed by individual offices might not align with IES, and the state shifted toward standardized business practices as the new integrated eligibility system was designed. These concerns were proved accurate when IES launched on October 1, 2013. "We learned pretty quickly that all the business process instruction we had reviewed didn't apply," a state WSS leader said, "And chaos reigned." State WSS leaders realized that with a different business process in each local office, "our system [would have] had to have the flexibility to accommodate 80 different ways of doing work. And what that necessitates is very complex ways of setting up work" in the eligibility system. Illinois ultimately moved away from individual office business process redesign efforts to one cohesive plan that aligned with IES capabilities.

Sometimes states found that technology change was not the answer to a business process challenge. In North Carolina, state officials considered implementing a call center to ease clients' difficulties reaching caseworkers to learn the status of their benefit applications or redeterminations. The state thought the large number of calls for information to program offices could be more efficiently handled by a statewide call center. However, after further consideration and reflection on their vision for better serving clients, state officials realized they didn't need a call center—they needed to reduce application processing times, thereby reducing clients' need to check benefit status.

Another example is Idaho's lack of enthusiasm for the ACA requirement of implementing an online application. While this technology does ease the application for some customers, Idaho staff thought it moved the state away from their goal of "one-touch" benefit delivery, meaning customers would receive an eligibility determination after one interaction with the agency. When a customer submits an application in person, caseworkers are trained to make a decision the same day. The challenge in an online application would be that a customer submitting an application would have to wait for a caseworker to contact him or her at a later date. Having an online application was in Idaho's broader plan, but only after they had a solution for getting those online applicants an immediate eligibility decision.

The role of technology in business process change meant technology development and business process development overlapped considerably. In general, states agreed officials should determine business process change goals first, then work on how technology could help them reach those goals. Idaho deployed the QFlow lobby management system to improve clients' office visits and increase case processing efficiency. "QFlow was an absolute blessing," one official said. "Our customers love it.

Lobbies are calm because everyone is listening for their number. Our wait times have dropped just because of the increased efficiency.” In this case, the business process goals were part of the agency’s long-term planning and technology was a tool to execute the desired change; software changed the lobby environment. As one official emphasized, “We are never driven by the automation. We are always driven by the process.”

In Illinois, process-driven change meant designing technology with business processes in mind and “coordinating the overlap between the [technology and business process] projects,” as one official said. Through that management structure, the state ensured that technological developments were driven by business needs.

## Training for New Technology

Staff training is necessary for any successful implementation of new technology. WSS states used different approaches to train staff, including addressing the needs of experienced staff who tend to have a harder time adjusting to new technology, promoting continuous training using multiple training and coaching strategies over time, and combining technology, policy, and process training.

States recognized that different workers have different training needs. More experienced workers may need more training on new technology interfaces than newer workers, who may be more comfortable with modern computing systems. But even more important, states found established workers can have a hard time setting aside past practices or rules, while newer workers can more easily adopt new practices. In South Carolina, some workers with greater seniority retained the use of superfluous verification checks from their old system after implementation of the new ACCESS Medicaid eligibility system. In North Carolina, senior staff said new hires were at a natural advantage during technology transitions because they did not have to unlearn past habits. Similarly, an Illinois administrator said, “The new workers love the new system, they fly through it, [and] it takes the older workers a lot longer. ... They’re still trying to apply processes that are no longer relevant.” In that state, new staff were brought in with the expectation that they would be more technologically proficient and be able to help existing staff.

Veteran workers in some states needed enhanced training because new technology radically changed the way they carried out their jobs. Under some states’ previous eligibility systems, workers had to perform eligibility calculations outside of the system and sketch out an eligibility or benefit determination with less automation or assistance from technology. The next-generation eligibility

systems with new business rules engines represented a cultural shift whereby caseworkers needed to rely more on the technology than on their own judgment or calculations to make eligibility determinations. In North Carolina, retraining was needed for supervisors as a result of NC FAST implementation. Supervisors were once expected to be “super users”—experts in their policy area—to help case managers make accurate eligibility determinations. With NC FAST, this role was less necessary and supervisors needed to take on new roles, such as managing workflow and improving staff performance.

Other states had told South Carolina administrators to expect some local staff to leave during a major new technology implementation. Even before the new system rollout, staffing numbers declined, as senior management essentially halted new hiring to avoid training workers in an old, inefficient system. This also reflected the expectation that the new system would be more efficient and offices would not need as many workers. However, the agency ended up losing 15–20 percent of its workforce when the new system was implemented. Rolling out a new system with a shortage of staff exacerbated backlogs. With hindsight, state staff expressed regret that they entered system implementation with fewer staff. North Carolina had a similar experience, with seasoned workers retiring as they faced the challenge of learning new skills and processes. In some states worker attrition was a problem, but in others it was seen as a natural evolution of the workforce to include more workers comfortable with the new systems.

One approach to training taken by several states, including Illinois, was to specifically target workers who are informal leaders for the first training and technology testing. This paid dividends down the line, administrators said, as those staff were able to help their peers and guide others using the system. North Carolina relied on a network of “County Champions” to support implementation of NC FAST and its WSS activities. The state used County Champions to advance key ideas and best practices for both NC FAST implementation and business process changes, to obtain input on system and process design and implementation, and to serve as peer-to-peer support. North Carolina supported the Champion network through regular conference calls, meetings, and specialized training.

At least two states—Colorado and Idaho—separately highlighted that it is ineffective to consider training as discrete and finite. Rather, administrators emphasized training as continual, not a one-and-done task that can be crossed off the list following initial sessions. This approach facilitated changes to these states’ technology systems and ensured that workers’ desired skills took hold. In Colorado, the state’s challenge to correct initial problems with CBMS meant that training was required as the system evolved. The state deliberately included training in its funding request to the legislature for CBMS improvements. Idaho’s approach of continuous monitoring and improvement and incremental change,

meant that small-scale, fast changes were a fact of life for workers, and the state built training systems to support those ongoing changes. Training relied on innovative technology to provide short videos that staff could watch online, supplemented by “check-point quizzes” and webinars, a method most line-level staff said they enjoyed. Additional training methods such as release notes and an effective help desk system assisted in successful implementation of these quick, small-scale deliveries.

Because business process and policy are often changed in concert with technology, states also found that training should incorporate technology, policy, and processes together. In Illinois, a training needs assessment was part of a multipronged approach to facilitate business process and policy changes. As one administrator said:

There’s a big difference between teaching someone the technological systems, versus the policy that governs the work, overlaid with the workarounds for the technology. ... To me, that’s the ideal approach, where a person who is going to be doing everything as a generalist has the system in front of them, and then being taught the policy while simultaneously using the program.

## Using Data for Decisionmaking

When developing new technology, all states prioritized easier access to data for decisionmaking. In Illinois, North Carolina, South Carolina, and Rhode Island, enhanced flexibility for using data was a desirable feature. None of these states has yet seen dividends from this work, as the systems are still being rolled out, but all four states plan to continue emphasizing this goal.

One challenge states faced was identifying future data needs in the midst of technology development. Determining what measures and reports should be available from new systems was considerable work. In Illinois, IES design has involved a full review of all data reports produced under the legacy system to decide which to replicate and which to jettison, as well as reviews of new data capabilities not available in the legacy system. In Rhode Island, both improved data capabilities and a new data depository (where data reports are stored electronically) were introduced: “The state’s done a lot more to increase the data they are compiling. ... The data depository is significantly more user friendly.” North Carolina has encountered many hurdles in accessing data in NC FAST; workers were unfamiliar with its data capabilities and did not know how to pull data out. WSS has paid significant attention, therefore, to expanding training about data and NC FAST data capabilities. That work was still under way at the end stages of the WSS project.

Illinois, Rhode Island, and North Carolina also faced the issue of having some cases in the old system and some in the new system during the transition period, hampering the ability to produce summary

reports for the caseload as a whole. In addition, states found it difficult to analyze and interpret available data—not only because they reflect periods of great change, but also because data measures and reporting were often different in the new and older systems.

Idaho, as previously discussed, had implemented a new eligibility system for SNAP and Medicaid before the WSS project. During WSS, the state invested resources in building a longitudinal data mart to ease reporting and analysis of information from its Idaho Benefits Eligibility System. In addition, because the Idaho Child Care Program uses a different eligibility system, one objective in building the data mart was to develop performance measures for the child care assistance program similar to those for SNAP and Medicaid.

## Managing Implementation Crises Strategically

Despite the best efforts of leadership and careful planning, problems often arise during the implementation of new technology. For WSS states, especially those implementing new eligibility systems, problems arose when new technology was rolled out with incomplete or limited functionality, when delays in technology development resulted in limited time or less-than-ideal conditions for training, and when technology malfunctioned (i.e., glitches or bugs). Many WSS states ascribed problems to the compressed ACA time line and the initial 2015 deadline for receipt of enhanced 90/10 matched funding. Some states acknowledged positive effects of a tight deadline. Illinois officials mentioned that the strict time line helped ensure projects did not languish. As one official said, “That deadline is a terrific thing for moving the project forward. In states, the biggest obstacle is inertia. It is so easy to lose momentum.” But mainly, the quick time line was linked to implementation problems.

While the special circumstances surrounding ACA implementation are unlikely to be repeated, pressures to complete new technology projects on tight deadlines with limited resources are conditions other states will likely experience. The way WSS states addressed (or avoided) their implementation problems can provide helpful lessons for others. WSS states responded to implementation problems through phased implementation, plans for staff workarounds, policy changes, and close communication between IT, policy, operations, and field staff.

## Causes of the Problems

Several WSS states acknowledged that they had to make compromises in their technology plans to get systems up and running on time. In some cases, systems were released earlier than states would have preferred. Rushing to meet the ACA deadline, staff in Illinois described the initial rollout of IES with words like “disaster” and “chaos.” The system initially had defects and limitations, without all of the expected functions. North Carolina changed its initial pre-ACA plans for the NC FAST rollout, launching the Medicaid module before it was completely ready, which meant it was released before the previously launched SNAP module had been perfected. The release caused a two-week crash during which SNAP applications could not be processed, leading to a large backlog. The first phase of Rhode Island’s new eligibility system was limited to Medicaid and health insurance programs. It was successfully implemented on schedule, however, the first phase did not include a separate worker portal; instead, staff were required to use what they described as a more tedious portal that was intended for clients. South Carolina also experienced delays in the rollout of its ACCESS Medicaid eligibility system, meaning workers would be trained in anticipation of a rollout that did not occur. When the system was finally rolled out, much of its functionality was still incomplete. For several months, basic eligibility processes, such as prompt processing of Medicaid applications for pregnant women, were challenging.

In addition, delays in technology development time lines led to overlaps in system testing and staff training. Ensuing adjustments and corrections to the eligibility system naturally disrupted training situations. “The first weeks of training were plagued by instability of the training environment, allowing participants limited time to actually work in the system,” said a core member of the Illinois team. Managers in North Carolina expressed a similar frustration; workers were often trained one day, and the system would change the next. Finally, states, especially those that expanded Medicaid, faced large influxes of applications just when staff were dealing with new systems and other implementation issues. These influxes were partly from new ACA open enrollment applications, and partly from delayed transfers of applications from the federal marketplace. The federal applications, instead of being continuously transferred to the state, were dumped in a large batch. Together, these factors caused large application backlogs in several states and general frustration with new systems. They also resulted in threats of sanctions from the federal government, heightening the stakes even further.

## Phased Rollouts

One way states dealt with time pressures on development was to implement large, complex systems in phases. Before ACA, North Carolina had planned a phased rollout of different programs in NC FAST,



implementing one part of the system and training staff before moving to the next phase. Their SNAP module had been rolled out gradually to different counties.

Both Rhode Island and Illinois planned the rollout of their new eligibility systems in phases to meet ACA requirements and alleviate some pressure of completing all functionality by that deadline. In the end, both states decided to delay the second phases of their implementation plans. This allowed additional time to work out issues and to develop, test, and train on the next phase. In Rhode Island, the newly elected governor and her senior staff delayed implementation of the second phase of its Bridges system by a year, taking advantage of the opportunities to add additional features through enhanced federal funding and to address development and training. Officials in Illinois thought it important to reduce the backlog and fix system issues before rolling out the next phase. As one staff member put it, “To rush things into implementation before they are ready could be worse than letting some time pass before you go to the next step.”

One difficulty that arose from phased rollouts was the need for staff to work in two different systems during the transition period between phases. Illinois staff reported that this was confusing and complicated, with lost applications and duplication of data entry. In retrospect, officials believe more attention to monitoring and tracking incoming applications could have helped reduce these problems. In Rhode Island during the transition period, because some Medicaid cases were in the old system and some in the new system, some staff had to work in both.

One strategy to address the transition and other difficulties caused by errors in the released technology was planned “workarounds.” Workarounds are procedures staff can use to get casework done when the intended procedures do not work or are not yet available. In Rhode Island, officials designed ways for workers to get information from the online application system when it was not syncing to the rest of the computer systems. In North Carolina, local offices appointed workers whose cases were awaiting resolution to address questions from customers to the NC FAST Help Desk, so that other workers could focus on the rest of the caseload. By developing one unified workaround for problems, officials in these states hoped to prevent each office and each worker developing his or her own workaround, making it more difficult to establish consistency and proper procedures once glitches were fixed. Similarly, problems after release of Illinois’ eligibility system led staff to develop individual workarounds to keep work moving. To avoid confusion from multiple workarounds, Illinois instituted daily calls from leadership to local offices to explain “official” workarounds.

## Policy Changes to Deal with Backlogs

Dealing with a backlog of cases that was largely created by implementation challenges took considerable focus and resources. In North Carolina's county-administered system, some counties went to their county boards of supervisors for funds to hire temporary staff to cover the extra work. Policy changes also helped states ameliorate backlogs and problems associated with technology implementation challenges. North Carolina also received a waiver from the federal government that allowed them to postpone Medicaid redeterminations and conversion of existing Medicaid cases to the new ACA-mandated income-measure methodology.

Prior to implementing IES, Illinois officials alleviated SNAP backlogs by seeking a waiver giving cases reaching the renewal deadline temporary automatic redetermination. This eliminated the need to expend staff resources on these cases. While the waiver was temporary, it was renewed several times, eventually affecting 300,000 cases over six months. The state's child care subsidy team made a similar decision by extending redetermination periods from 6 to 12 months, giving workers a break while ensuring that families continued to receive benefits.

## Close Communication with Staff

In contrast to some other states, Idaho had relatively smooth experiences with implementing technology. This may be because it had already implemented a new eligibility system before ACA requirements were announced, although the system needed updates to fully meet those requirements. This may also reflect the state's approach of making incremental changes and dealing with resulting issues quickly before taking next steps. But even when making larger changes, such as implementing the new Idaho Benefits Eligibility System before WSS, the state's approach reduced problems. When rolling out major changes, Idaho deploys its management and support teams to monitor implementation closely, respond to questions, and implement fixes. After rolling out the new system, state staff asked their workers to "key the truth," that is, not to change their input to get the outcome they thought was correct. Instead, staff wanted workers to report errors to the state. If the state could not implement a fix rapidly, they planned a workaround and issued guidance to workers for using it. Administrators said they had to reinforce this expectation continuously, but it prevented workers implementing their own workarounds. Idaho also applied these principles to subsequent system changes and improvements.

Finally, states cited close communication between IT, state agency officials, and field staff as crucial for working through implementation problems. In Colorado, help desk staff taking questions from

frontline workers flagged whether problems were system glitches requiring emergency corrections or workarounds, or whether problems were staff confusion requiring additional notices or revised training materials. In this way, the state could promptly address underlying challenges. North Carolina stationed NC FAST technical staff in local offices to provide caseworkers “over-the-shoulder” support as they were learning the new system. South Carolina addressed its Medicaid backlog through a standing call every morning with involved IT, operations, and policy staff, signaling that this issue was a top priority. The agency also developed performance metrics for staff working the backlog so progress could be tracked. Illinois similarly implemented standing calls to communicate progress on problems and to keep lines of communication open.

For many states, implementation problems were overwhelming at first. States have for the most part addressed backlogs and are moving through other implementation issues, using these strategies to overcome and address problems. Challenges transitioning cases from one system to another continue to be addressed by states in the midst of phased rollouts.

## Planning Technology Changes’ Role in Program Integration

In all states, new or updated technology was designed to support the goal of improving low-income families’ access to programs for which they are eligible. While technology successfully served this purposes in many cases, in some cases technology change either worked against program integration or was abandoned or delayed.

States used technology changes in several ways to promote program integration. North Carolina replaced multiple legacy systems with a single integrated eligibility system because processing cases eligible for several benefit programs through unintegrated technology was inefficient. South Carolina had completely separate processes for Medicaid and SNAP, with different office locations (or separate lines in the same locations) and applications, as well as different staff, technologies, and leadership. State program leaders saw common technologies as a way to assist programs with information sharing and to facilitate other plans to ease integration of program access for families. Colorado, Illinois, and Idaho all started WSS with program staff and eligibility systems that worked with multiple program benefits but saw additional ways technology could assist program integration, including multibenefit online applications and online client portals and call centers to ease clients’ access to information. Other

technologies, such as document imaging systems and electronic data verifications that reduce paperwork, could also foster multiple program access.

However, not all the effects of technology (or the forces driving it) were positive for program integration. In particular, some states saw the ACA's requirements and time lines as a threat to program integration. Many WSS states already had integrated eligibility systems before WSS. Colorado, Idaho, Illinois, and Rhode Island each had one system workers used to determine eligibility for multiple health and human services programs, and North Carolina was developing its system before ACA. Enhanced federal funding was urgently needed to improve or replace these systems. Yet ACA's short time lines and requirements on integrating health programs, including state or federal insurance marketplaces, raised the possibility that states developing new eligibility systems would have to undo already established program integration.

As described above, Rhode Island's push to get a new eligibility system off the ground to comply with the ACA deadline threatened to leave human services programs behind in the legacy system without a concrete plan for integration. "While [the WSS team members] were crunching numbers and developing our plan in this room, the health insurance exchange and Medicaid policy people were meeting in another building and were so revved up with a million consultants ready to meet these deadlines, but we weren't at the table," said a core WSS team member. Department of Human Services leadership was able to change the course of the process, condensing the planned phases and giving definite funding for rolling in other human services programs.

In the WSS states, some technology integration was undertaken but had to be abandoned or delayed because of limited resources. Colorado and Idaho, where different caseworkers in the same office administer child care and Medicaid and SNAP, wished to integrate their child care system with their Medicaid, SNAP, and TANF eligibility system. Unfortunately, Colorado did not have the funding to carry this off and Idaho, despite having set aside funding, did not think they could adequately manage the transition at the same time as other changes required by the ACA. Colorado is investigating other ways to integrate child care with other benefit systems. Idaho is moving forward with integration in 2016.

Similarly, Illinois, where SNAP and Medicaid are administered in offices separate from child care, hoped to build greater integration between child care and other benefits by launching IES (for SNAP, Medicaid/CHIP, and TANF) and the Child Care Management System. Unfortunately, the Child Care Management System launch was plagued with problems and the systems do not communicate. Again, Illinois is investigating other avenues of integration.

# Conclusions

Each WSS state started the project with a different level of technology and a different vision for the role of technology in improving service delivery. WSS pushed states to have a clear vision for service delivery and program integration and helped states think concretely about the role of technology in their visions for benefit delivery systems. Many factors influenced what technology changes were pursued and how changes were undertaken. Perhaps the most important was the ACA and its resources and requirements. The ACA, with its heavy emphasis on technology and its specific mandates and time lines, came to dominate the technology conversation for many states, in both positive and negative ways. But to look at technology only through the lens of the ACA would be a mistake. In this report, we examine the multitude of challenges that were a part of technological change in WSS states, including business process changes, training, implementation problems, and program integration. We hope that examining these factors will help other states considering technological change, as well as WSS states reflecting on and building on their experiences.

Many lessons about technology change can be drawn from the WSS states' experiences. First, technology can support efforts to improve cross-program integration and customers' access to multiple programs. States built integration into their new eligibility systems, helping clients to apply for multiple benefits by jointly determining eligibility. States improving existing systems built closer ties between programs, further reduced redundancies, and added new access points, including online applications and call centers. Technology was thus a force for integrating work support programs, from both clients' and workers' perspectives.

Business process change was also an important tool WSS states used to reach their goals. For these states, technology change went hand in hand with business process changes. New technology supported new and better ways of doing business. In the WSS states, officials talked about the key lesson of not letting technology drive changes, but having it serve broader state goals. Because these two types of changes are so closely linked, strong communication and collaboration between those designing each change (or joint teams) are important.

Of course, improving technology poses many challenges. Key to overcoming these challenges, in the states we studied, was strong communication across all levels and organizations. Those building the new systems must be in close contact with those designing it, and those who will be using the system—both workers and clients—must have input or be involved in testing. Compromise is also necessary. Not every item on one's technology "wish list" can be achieved. States must prioritize their goals and be

flexible to make changes based on resources, time lines, and other factors. Finally, states seeking to improve program integration through technology must exhibit a firm commitment to this change, particularly at the leadership level. Problems in making technology change will arise; only through steady commitment, demonstrated through resources and communication of vision, can these problems be overcome.

External pressures drove technological change and the timeline for those changes—mainly ACA requirements, but also other pressures such as lawsuits and caseload increases. External pressures can be positive motivators of change; by imposing deadlines and requirements, they force states to move forward. But they also impose costs, often through these same deadlines and requirements. States looking to make technological change should clearly identify their external pressures and understand the implications for issues in implementation.

Some implementation problems may be managed through careful planning, phased or staged rollouts, and strong procedures for monitoring early implementation so that fixes can be applied quickly. All WSS states experienced growing pains in implementing new technology; those that weathered these problems the best used specific strategies to minimize problems. An important lesson is to be strategic in managing problems by anticipating and designing proactive responses. Another approach, if external pressures allow, is to make smaller incremental changes to allow each to be fully tested and vetted before moving on to additional changes. Sometimes, this means identifying opportunities for early small wins—improving one component that might have relatively low cost and low complexity. If technology fails to work initially and agencies do not have plans in place or are not able to react quickly, this not only disrupts work, but also can cause both workers and clients to lose faith in the technology change.

Strategic thinking is also necessary for communicating with workers about technology change and for planning worker training. That extensive training is needed when introducing new technology is common sense. States must also consider how training will be delivered and when. WSS states used multiple approaches, but several saw the wisdom in planning for continuous training.

Overall, the WSS states implemented many technology changes in a short time frame. Preliminary reports from the states and our data analysis generally indicate improvements in program integration and service delivery.<sup>6</sup> These states' experiences and the lessons learned can benefit other states seeking to improve technology. The bottom line is that technology should not be seen as a silver bullet for reaching goals of streamlining and integrating work support service delivery. Technology has great potential for improving access to work support programs and reducing workers' burdens, but it must be

carefully designed and implemented to have the desired effects. Once the WSS states overcame initial implementation problems, they spoke positively about the technological changes they had made. They thought that these were, or soon would be, making a measurable difference in customers' lives.

# Notes

1. For context on the six WSS states, see Hahn, Isaacs, and Rohacek (2016).
2. For additional discussion of ways states have used technology to integrate health and human services, see Shaw et al. (2015).
3. Administrative data from the Illinois Department of Human Services and the South Carolina Department of Health and Human Services.
4. Administrative data from the Rhode Island Department of Human Services.
5. The changes WSS states made to business processes are discussed in Hahn et al. (2016). Changes to policy are discussed in Isaacs, Katz, and Kassabian (2016).
6. Data on client outcomes over time, before, during, and after system implementation are reported in Isaacs, Katz, and Amin (forthcoming).



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