U.S. Department of Labor
Employment and Training Administration

Using Workforce Data Quality Initiative Databases to Develop and Improve Consumer Report Card Systems

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EXECUTIVE SUMMARY

Over the past 40 years, large, individual-level, administrative databases have increasingly been used to monitor the outcomes of employment/training, post-secondary education, and related social programs. The U.S. Department of Labor (DOL) has been at the forefront of these efforts, most notably in building the capacity of states to use quarterly UI (unemployment insurance) wage records for tracking individual employment and earnings following participation in a variety of DOL programs. More recently, there has been particular interest in the use of longitudinal administrative data systems to measure and report on program outcomes for education and training providers, whether or not they receive Workforce Investment Act (WIA) funding.

Consumer Report Card Systems (CRCSs) are state systems for calculating program outcomes based on labor market data (e.g., employment, retention, and earnings) for those individuals participating in education/training programs. For the public, these systems provide program outcomes and other program information on an easy-to-use website that allows users to compare programs and identify those that are best for them. In this regard, CRCSs play an important role in supporting the emphasis on consumer choice that is part of WIA. In combination with state Eligible Training Provider Lists (ETPLs), which identify programs that show sufficiently positive results that they are deemed eligible to receive federal training dollars, CRCSs offer the potential to improve the choices that prospective education/training participants make, resulting in improved employment and earnings outcomes for trainees. Further, CRCSs can provide policy makers with useful information with which to make workforce investment decisions.

DOL has been active in supporting state efforts to develop the data infrastructures needed to create or improve workforce administrative longitudinal data systems and to link employment and earnings data with education, employment service, and training data. In November 2010, DOL launched the Workforce Data Quality Initiative (WDQI) by announcing $13.7 million in grant awards to 13 states. So far, DOL has provided grants totaling over $30 million to 29 states over three rounds of competition. Initially, these grants focused on assembling various sources of workforce data and enabling the data to be linked to education databases. More recently, the grants have focused on the creation of CRCSs. To date, most of the grant funds have been used to assist states to create or improve data warehouses for linking individual-level education data to state workforce data, such as UI wage record data. These types of data linkages are the foundation of CRCSs that, in turn, can be the basis for developing up-to-date ETPLs.

To understand the connections between the WDQI grants and state efforts to develop CRCSs, DOL contracted with IMPAQ International, LLC (IMPAQ) to conduct the *Feasibility of Using WDQI and ETPL Data for Consumer Reports* project. This report is the first product of this study and has three main objectives:

- ▪ To understand the relationship between the WDQI and state efforts to develop CRCSs, including describing WDQI states' current systems for reporting outcomes for

education/training programs, how the WDQI grants have been used to create or improve existing CRCSs, and the key factors related to successful CRCS implementation

▪ To assess the degree to which states without existing CRCSs are prepared to implement them, focusing in particular on their existing data infrastructure

▪ To identify how DOL can support the implementation of CRCSs beyond the states with existing systems and improve the quality of CRCSs in states that already have them.

To address these research objectives, we analyzed information from a variety of sources, including:

▪ Internet searches of state websites

▪ One-on-one telephone interviews with state staff knowledgeable about state processes and/or systems used to track education and training participation and post-program outcomes

▪ One-on-one telephone interviews with researchers affiliated with state WDQI grants

▪ One-on-one telephone interviews with Federal Project Officers who oversee the WDQI grants

▪ Publicly available material on the WDQI grants, including DOL press releases, WDQI grant abstracts, and reports

▪ WDQI materials provided to us by DOL, including WDQI grant applications and Quarterly Progress Reports

▪ Survey data provided by the Data Quality Campaign (DQC). [1]

This information facilitated our analysis of the connections between the WDQI grants and state efforts to develop CRCSs, as well as the potential for more widespread CRCS implementation throughout the country. Though this report is a useful overview of the progress made in creating consumer reports among WDQI states, it is only a first step in understanding the capability for states to implement a CRCS. Extending this work to understand conditions in all states would provide a more comprehensive assessment.

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[1] The DQC is a non-profit interest group that advocates for the development of high-quality data systems covering education and workforce data that could be used to help formulate data-driven policy, particularly in education.

The WDQI and Consumer Report Card Systems

The WDQI began in 2009 with an Obama administration budget proposal and was initiated to complement the Department of Education (ED) Statewide Longitudinal Database System (SLDS) grant program. The WDQI has consisted of three rounds of grants to state workforce agencies to "develop or improve" statewide longitudinal administrative databases (what we term "Workforce Data Quality Initiative Databases" or "WDQI-DB").[2] The focus of the grants has evolved over time. The first round grant solicitation specified that the primary goal of WDQI was to "develop or improve State workforce longitudinal data systems," such that there would be two classes of WDQI-DBs—newly established WDQI-DBs and older, improved WDQI-DBs. The latter would consist of databases previously developed by the states. Creating or improving state CRCSs was not a high priority in the first round solicitation. However, by the third round of WDQI awards in 2013, there was stronger emphasis on creating or improving CRCSs. States that received WDQI awards generally received roughly $1 million for a three year period.

To understand the linkages between the WDQI and state efforts to develop CRCSs, we first reviewed the 29 WDQI states to understand the systems WDQI states currently have in place to provide information about their education and training programs. Our review shows that at a minimum, nearly all grantee WDQI states have searchable websites that allow users to look for education and training programs, but many of these websites either do not display program outcome data or else the data displayed online are outdated. Of the 29 WDQI states, we identify only five with existing CRCSs that show program outcomes based on current, linked administrative data—Florida, New Jersey, Minnesota, Virginia, and Washington. Two other states, Louisiana and Texas, developed CRCSs based on linked administrative data using their WDQI grants, but the systems have not yet been released to the public; both are expected to be released in early 2014.

Analyzing the systems in place in the five states with operating CRCSs shows that they are generally similar, varying mostly in the types of training providers listed. All these systems present similar outcome information on employment rates and earnings, which are derived from individual-level program participation data linked to UI wage record data. Based on conversations with key staff in these states, we identify eight crucial factors related to successful implementation of a CRCS using WDQI-DBs:

- State-level administration of the system

- Use of individual-level data to measure outcomes

- Having the necessary data infrastructure

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[2] "Workforce Data Quality Initiative Database" is the generic name we give to all workforce longitudinal databases developed or enhanced by the states that received WDQI grants. Each state has its own state-specific name for these data systems, but they have all been improved or developed with WDQI funding.

- Successfully joining education and workforce data

- Having a favorable state interpretation of the privacy requirements of the Family Educational Rights and Privacy Act (FERPA), consistent with federal regulations

- Having the analytical capacity to work with the data

- Successfully obtaining participation from both education and training providers

- Having a broad and steady institutional commitment.

The success of the seven states that either have current systems or will put systems in place soon demonstrates that effective CRCSs can be created using WDQI-DBs. Four of the five states (all but Virginia) had existing CRCSs prior to receiving a WDQI grant. With the exception of Minnesota, each of these four states used their WDQI grants to improve their CRCSs. Louisiana, Texas, and Virginia all developed CRCSs through their WDQI grants. It is important to note also that each of these states have taken a different path, indicating that states do not have to follow any single process states to successfully develop a CRCS.

Because the creation of a CRCS was not a high priority in the early rounds of the WDQI, only a few states have enhanced or created a CRCS using WDQI funding. Nevertheless, a review of selected Round 1 grantees shows that many states have used WDQI grant funding to make strides in developing the data infrastructure necessary to support future CRCSs. Some grantees have been able to link various forms of workforce data; others have gone beyond this to successfully link workforce and education data.

Although not a direct focus of the WDQI grants, a potential use for state WDQI-DBs is to support state processes for approving training programs for inclusion on state ETPLs. Among the Round 1 WDQI grantees that we discuss in this report, only Washington currently uses its WDQI-DB in this way, although Louisiana expects to do so as early as January 2015.

Our main finding is that all WDQI states with functioning CRCSs have used WDQI grants to create or improve their CRCSs. However, while it is necessary to have a WDQI-DB to have a CRCS, having a WDQI-DB is not sufficient. The states that have CRCSs are limited to those that have used their WDQI grants and other funding sources to create or improve their databases and have devoted the time, expertise, and resolve necessary to develop CRCSs. Many WDQI grantee states do not yet have CRCSs, although some of these states are making progress towards developing CRCSs with the use of their WDQI grants.

Implementing Consumer Report Card Systems Nationwide

To understand the potential for other WDQI grantee states to develop CRCSs, there are two natural next questions: 1) to what extent do states *without* existing CRCSs have the data infrastructure necessary to implement them, with or without WDQI grants and 2) how can DOL support the development of CRCSs in other states?

Existing state data infrastructure. One focus of this project is to assess whether states have the foundation upon which CRCSs can be built. Primarily, this is a question of existing data infrastructure.[3] The crucial infrastructure requirements consist of: 1) having individual-level training data that includes Social Security Numbers (SSNs); 2) having the capacity to match education/training participation data to state UI wage records; 3) having clearance and cooperation to match UI wage record data held by state departments of labor against participant data held by state departments of education; and 4) having the funding and know-how to use the data to produce a report card website.

Based on our review of the available materials on the progress of WDQI grantee states, we find that only a small number of WDQI states appear poised to create (or to be able to create) a CRCS; most are still working to create the necessary data infrastructure. Information from the DQC annual state survey suggests that a large number of states link postsecondary education data to workforce data—particularly UI wage record data. That survey, however, does not provide any additional detail about these linkages, making it difficult to judge how well the survey reflects the types of linkages needed for a CRCS. An ongoing effort by College Measures to identify and work with states to produce websites similar to CRCSs has uncovered only a small number of states that the organization believes has the capacity to produce report cards. Exhibit ES-1 summarizes what we can say about which states have developed or appear capable of developing a CRCS, based on the best information at hand. Because our review did not include all states, we cannot say for certain whether we omit any relevant states. Nevertheless, the exhibit suggests that most states are not prepared to support a CRCS in the near term.

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[3] Collecting data from all 50 states regarding exactly where they stand with respect to the development of this kind of infrastructure was beyond the scope of this report. Instead, we reviewed available information from three sources: 1) DOL-provided information on the status of WDQI grants, 2) an annual state survey conducted by the DQC, 3) interviews with officials in selected states, and 4) information from the College Measures effort. Led by Mark Schneider, College Measures is a partnership between the American Institutes for Research and Matrix Knowledge that works with states to produce websites that display higher education information (including summary labor market outcomes for graduates) based on data tabulations provided by the states.

Exhibit ES-1: The Ability to Produce CRCSs among Selected States

WDQI States with CRCSs	WDQI States with Upcoming CRCSs	States working with College Measures	States with the Potential to Implement CRCSs Quickly
Florida New Jersey Minnesota Virginia Washington	Louisiana Texas	Arkansas* Colorado Florida* Minnesota* Tennessee Virginia*	Georgia Illinois* Indiana Maryland* North Dakota* Ohio* West Virginia

Source: Interviews with state experts, review of WDQI grantee progress reports, and
    interviews with Mark Schneider of College Measures.
Note: An asterisk in columns 3 and 4 indicates a WDQI state.

How DOL Can Support the Development of CRCSs. Given the experiences of those states that have created, improved, or sought to create CRCSs using WDQI funding, we have two broad recommendations for how DOL can support more widespread implementation of these systems:

- **Recommendation #1**: Provide resource support by funding additional WDQI grants focused on the development of CRCSs and work with ED to facilitate the exchange and dissemination of information among states that have created, or are working to create, CRCSs. DOL and ED should also consider substantial efforts to encourage states to have their education and workforce agencies work more cooperatively.

- **Recommendation #2**: Provide other incentives for states to develop CRCSs by phasing out WIA initial eligibility waivers and working with ED in a coordinated effort to encourage state support of CRCSs by systematically publicizing their value to state-level policymakers.

Our recommendations assume the availability of funds to provide the states with grant funding and to foster the exchange of information among states. This funding may or may not be available, but a nationwide system of CRCSs or scorecards cannot be created without the necessary resources. Creating such a system will also depend on the will of state governments to develop CRCSs and the availability of the expertise required to develop them. Working in partnership with ED, DOL can emphasize the value of CRCSs to help foster state interest. Ultimately, the promise that CRCSs hold for helping improve the ability of individuals to select the education and training programs that are best for them is worthy of a sustained effort to support eventual CRCS implementation in all states.

1. INTRODUCTION

Over the past 40 years, use of large, individual-level, administrative databases to monitor the outcomes of employment/training and related social programs has increased. The U.S. Department of Labor (DOL) has led these efforts, most notably in using quarterly Unemployment Insurance (UI) wage records for tracking employment and earnings following participation in a variety of DOL programs. Two prior DOL efforts in the 1970s and 1990s assisted a number of states in developing what are now among the most advanced databases. The latest DOL effort has been the Workforce Data Quality Initiative (WDQI), which has supported the development of longitudinal administrative data systems. Once in place, these systems allow states to measure and report on the performance of workforce programs, including education and training programs.

In November 2010, DOL launched the WDQI, which provided funds to states to enable them to create data warehouses for linking individual-level education data to state workforce data, including UI wage records. To date, there have been three rounds of WDQI grants, which have totaled over $30 million to 29 states. One purpose for creating linked education-workforce data warehouses is that the linkages enable researchers to analyze the labor market outcomes of individuals who participate in education and training programs. Another motivation for the WDQI, however, has been the idea that state-level data warehouses joining education and workforce data can be used to measure program performance by examining the labor market outcomes of program participants (e.g., employment and earnings). Such data-driven performance reporting systems—referred to as Consumer Report Card Systems (CRCSs)—allow potential trainees to review the performance of a specific workforce program in terms of individual-level employment and earnings outcomes. Thus, these systems can provide credible information to help potential trainees make sound choices about which programs may be best for them.

To understand 1) the linkages between the WDQI grants and state efforts to develop CRCSs and 2) the potential for more widespread implementation of CRCSs across the country, DOL contracted with IMPAQ International, LLC (IMPAQ) to conduct the *Feasibility of Using WDQI and ETPL (Eligible Training Provider List) Data for Consumer Reports* project. This report is the first product of the study and has three main objectives:

- To understand the relationship between the WDQI and state efforts to develop CRCSs, including describing WDQI states' current systems for reporting outcomes for education/training programs, how the WDQI grants have been used to create or improve existing CRCSs, and the key factors related to successful CRCS implementation

- To assess the degree to which states without existing CRCSs are prepared to implement them, focusing in particular on their existing data infrastructure

- To identify how DOL can support the implementation of CRCSs beyond the states with existing systems and improve the quality of CRCSs in states that already have them.

To address these research objectives, we analyzed information from a variety of sources, including:

- Internet searches of state websites

- One-on-one telephone interviews with state staff knowledgeable about state processes and/or systems related to making available outcomes data for education and training providers

- One-on-one telephone interviews with researchers affiliated with state WDQI grants

- One-on-one telephone interviews with Federal Project Officers who oversee the WDQI grants

- Publicly available material on the WDQI grants, including DOL press releases, WDQI grant abstracts, and reports

- WDQI materials provided to us by DOL, including WDQI grant applications and Quarterly Progress Reports

- Survey data provided by the Data Quality Campaign (DQC).[4]

This information facilitated our analysis of the connections between the WDQI grants and state efforts to develop CRCSs, as well as the potential for more widespread CRCS implementation throughout the country. Though this report is a useful overview of the progress made in creating consumer reports among WDQI states, it is only a first step in understanding the capability for states to implement a CRCS. Extending this work to understand conditions in all states would provide a more comprehensive assessment.

The remainder of the report is organized as follows. Section 2 provides an orientation to the key concepts involved with CRCSs by presenting an overview of the features of these systems, which can be either very basic or more advanced. Following this general description, the remaining sections focus on the linkages between the WDQI and CRCSs.

Section 3 first describes the WDQI, how the WDQI databases have developed, and whether and how these databases have been used to develop CRCSs. It then reviews the U.S. Department of Education's (ED's) State Longitudinal Data System (SLDS) grant program, a similar, large-scale effort to create longitudinal administrative education data systems. We then characterize WDQI states in terms of the states' current systems for reporting outcome measures for education and training providers, including identifying WDQI states that currently have the most advanced CRCSs. Of the 29 states that have received WDQI grants, we identify five states with existing systems. We first give an overview of the key features of each of the five systems;

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[4] The DQC is a non-profit interest group that advocates the development of high-quality data systems covering education and workforce data that could be used to help formulate data-driven policy, particularly in education.

we then describe each system in greater detail, focusing on the specific outcome information contained in each. For the two additional states that expect to release new CRCSs soon, we describe the progress made by each of the two. We then identify the key factors related to successful implementation of a CRCS, based on the experiences of the five WDQI states with functioning systems.

Section 4 focuses on two key questions: 1) Where do states stand at present with respect to the development of the data infrastructure required for supporting a CRCS? and 2) How can DOL support the implementation of CRCSs beyond the few states with existing systems? The first part of Section 4 reviews: 1) available information on the progress made thus far by WDQI states, 2) the Data Quality Campaign annual survey of all states regarding existing linkages between workforce and education data, and 3) evidence based on the experience of College Measures in recruiting states to create similar websites focused on higher education. The second part of Section 4 presents our recommendations for how DOL can support state efforts to develop, implement, and enhance CRCSs. Section 5 summarizes the report findings and presents our conclusions.

2. CONSUMER REPORT CARD SYSTEMS

Consumer Report Card Systems (CRCSs) display information describing specific education and training programs—including, at a minimum, program field, outcomes of program participants, and how to contact providers.[5] This information is typically displayed on a website for easy access by potential trainees and others users, such as staffs of American Job Centers (AJCs). The main purpose of a CRCS is to provide sufficient and accurate information to assist individuals in making informed decisions about postsecondary education and training.[6]

Within this general similarity, CRCSs vary considerably in their specific content. In particular, they vary with regard to the following key features: 1) the types of education/training providers included in the CRCS—the mix of public colleges, vocational-technical (votech) centers, and for-profit career colleges; 2) outcome measures included; 3) the range of information about programs and providers—such as duration, cost, and entrance requirements; and 4) how the information is presented.

In this section, we describe these features for basic CRCSs and then describe enhancements found in more advanced CRCSs.[7]

2.1   Basic Consumer Report Card Systems

In this report we focus on CRCSs that are based on linking individual-level student records provided with unique identifiers—such as Social Security Numbers (SSNs)—to state UI wage record data. These data are then used to calculate measures of participants' post-program employment and earnings. Key advantages of this approach are that 1) the outcome data can be obtained at exceptionally low cost and 2) the earnings and employment information is coming from data used by employers to pay UI payroll taxes and establish eligibility for UI, making the information highly accurate.

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[5] For ease of exposition, throughout this report we use the term CRCS to refer to both the content displayed on a website and the technology systems and processes involved in collecting, organizing, analyzing, and displaying the content. The discussion in this section is focused on the content aspect of a CRCS.

[6] In this section and throughout the report, we do not discuss reporting systems primarily intended to provide information of use to individuals considering four-year degrees. These types of systems—such as the proposed "*Student Know Before You Go*" system advocated by Senator Ron Wyden of Oregon—focus on augmenting data routinely collected from accredited public and private colleges and universities as part of ED's Integrated Postsecondary Education Data System (IPEDS). These efforts include measures of post-graduation earnings, but the focus there is on balancing cost and debt against the ability to repay loans. Such systems lack detail about specific career-oriented programs and do not include as broad an array of training providers as the CRCSs that are the focus of this report.

[7] Appendix A provides a detailed description of an example CRCS—Washington's Career Bridge—showing the steps a user would take to query the system, view program and provider information, and review program performance.

All states have the capacity to link individual-level training participation data to UI wage records as part of a mandatory WIA accountability system. This system produces the measures (described in in the next subsection) typically used in CRCSs, but is mandatory only for WIA participants. However, exactly the same system can be extended to participants in any education/training program as long as the participant's SSN, or the functional equivalent, is included for each participant.[8]

Types of Education and Training Providers included in Basic CRCSs. As discussed in Section 3, the central issue in creating CRCSs is the extent to which education and training providers send linkable data to the state. Basic CRCSs include linkable information from public community colleges and four-year colleges and universities, but exclude for-profit providers and usually exclude public votech centers, as well as non-credit career oriented college programs. The focus on public two- and four-year colleges is due to several factors: 1) these institutions account for close to 90 percent of all postsecondary expenditures on employment and training (although only about one-third of the enrollment of individuals obtaining postsecondary career-oriented training); 2) these institutions often are part of statewide education systems; 3) information about enrollment, progress in completing degrees, and credential attainment is required as part of federal reporting requirements and the tracking of eligibility for federal and state student financial aid programs; and 4) ED has spent over $600 million helping states create data warehouses to obtain, organize, and produce statistics using these data alone.

Outcome Measures Included in Basic CRCSs. The outcome measures typically used in CRCSs closely parallel the measures WIA requires to assess AJC performance and to determine if the performance of training providers is sufficiently positive for inclusion in state Eligible Training Provider Lists (ETPLs). The required outcome measures under WIA fall into two groups. The first group consists of those easily derived from linking data on program completers to wage record data:

- Employment at placement rate
- Wages at placement
- Retention in employment at six months
- Wages at six months.

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[8] Not including SSNs in individual-level employment and training databases is a critical stumbling block to obtaining outcome measures. A major focus of federal efforts to facilitate creation of state level data warehouses is making those data linkable. Creating linkable data was considered so important that this was a requirement of Race-to-the-Top grants, which resulted in many states changing their rules that often required adapting new legislation. Unfortunately, for creating report cards, it was necessary to create a common individual-level identifier, but not make the identifier translatable to the individual's SSN. Thus, large states such as Pennsylvania cannot use wage record matching to produce outcome measures because the education and training data (except WIA and other AJC data) lack a common identifier unique to an individual.

Basic CRCSs only report some combination of earnings and employment, covering different follow-up time periods.

The second group of outcome measures consists of those not easily derived from linking completer data to wage record data:

- Rates of licensure or certification, attainment of academic credentials, and industry recognized skills

- Program completion rate.

How Users Access Basic CRCSs. In addition to outcome information on individual programs, CRCSs also provide various details about the program and provider. A basic CRCS only identifies field of training, name of provider, and a way to obtain more information from the provider. To access this information a website is created with a search engine that permits individuals to query the underlying database. Usually, the search engine has dropdown screens that enable users to:

- Define the geographic area of the search

- Define the general occupational training field of interest (e.g., healthcare)

- Select the specific field of interest (e.g., registered nurse)

- Enter a keyword to search for in the program title or provider name fields.

The system then displays a list of the training programs that meet the search criteria, with each program appearing as a clickable link that takes the user to a profile page. A basic profile page displays at the very least: 1) sufficient details about the program and provider to be of use in pursuing additional information and 2) the most recent outcome measures.

A basic CRCS would be quite useful for individuals who have already narrowed their interests to one well-defined field (such as Registered Nurse) and who are reasonably familiar with the characteristics of jobs in the field; the prerequisites for entering a program in that field; how well their attributes match those prerequisites; the degree of competition for training slots; and the cost, duration, and intensity of the coursework. Under such conditions, users can compare the outcome measures across programs and select those programs that appear to offer the greatest chances of completion and quickest entrée into a well-paying job. Users can then go to the website of prospects to get more detailed information.

2.2 Enhancements to Basic CRCSs

As there is a significant difference between a state having a CRCS or not, one goal is to have every state develop, at the very least, a basic CRCS. At the same time, enhancing the basic CRCS can help give users even better information. Enhancements include: 1) expanding the information about specific programs; 2) expanding outcome measures; 3) expanding the types

of training providers included; and 4) making it easier to search the database and determine which programs are best for a given potential trainee.

Expanding the Information about Specific Programs*.* One of the simplest and most valuable enhancements of basic CRCSs is to include more information about specific programs such as:

- Program duration and cost

- Program prerequisites (e.g., level of education, completion of specific courses)

- Number of slots and number of applicants

- Characteristics of typical completers and entrants

- Availability of classes outside normal school hours and ease of traveling to classes.

Having this information makes it far easier for individuals to quickly decide if they are likely to get into a given training program, complete the program, and afford the program's out-of-pocket and forgone income costs. It also could help them quickly recognize that there are large cost differentials between public and for-profit providers, but that competition might make getting a public slot difficult.

This information is readily available, usually on provider websites. Thus, it could be obtained by requesting providers to furnish the information using a standardized format, or by having state staff look up the information and enter it in a standardized format.

Expanding the Outcome Measures*.* It also is desirable to include additional outcome measures that are related to the WIA measures but are not directly derivable from wage record linkages: completion rates, credential award rates by type of credential, and education/training continuation rates. Of these measures, continuation rates might be the most important, because they explain why employment and earnings are low in the short-run for programs where large numbers of completers choose to obtain additional education/training. Completion rates also are important because most trainees will want to avoid programs where completion is unlikely. Completion rates are available for programs that have formal admission processes (such as almost all for-profit programs), but for only a few public programs (such as for Registered Nursing programs).

Information on continuation and completion can be derived from individual level data in state data warehouses. For example, many states have the capacity to supplement wage record information by also linking information about postsecondary credential attainment from public institutions and continued enrollment in public institutions. (It also is possible to add information about characteristics of individuals receiving credentials, such as their age and level of education at entrance.) However, obtaining information on completion rates for for-profit training providers generally would require asking them to submit this information.

One additional outcome measure would be well worth having: the rate training-related jobs are entered and held. This measure sometimes is available for WIA-funded trainees, but only

because WIA staff contacts trainees to determine if they have completed programs, need additional help to find jobs, and the characteristics of jobs obtained. Expanding staff phone calls to a larger group of trainees would be prohibitively expensive, but some information can be obtained by knowing the industry of employment, which is included in wage record data. While this information is imperfect, it still might be useful to know, for example, how many Registered Nurses (RNs) are employed in hospitals and doctors' offices.

Expanding the Types of Education/Training Providers Included. Expanding education and training providers beyond "academic" programs at public two- and four- year colleges probably is the single most useful step that can be taken to improve training choices, but it is also the hardest to accomplish. As discussed later in this report, very few states have linkable individual-level data from for-profit career colleges, which enroll about one-third of all career-oriented trainees. However, having this information would distinguish for-profits that help most enrollees substantially increase their earnings from those that those that do not. Providing accurate information is particularly important because for-profits often advertise their programs more aggressively than other types of providers. Because for-profit training can be much more expensive than comparable public training, trainees enrolling at for-profits may incur large debts that will be difficult to repay without securing a sufficiently high-paying job. The few states that have these data generally have required for-profits to provide this information as a condition for being licensed.

It is more feasible to include public community college and votech center training. This is because there are major advantages for a state to have centralized records of programs that offer transferable credits across postsecondary institutions to make it easier 1) for institutions and students to track the meeting of requirements for credentials and 2) for institutions to comply with state and federal reporting requirements.

Enhancing Methods to Identify the Best Training Options. As noted earlier, basic CRCSs are useful for individuals who have already selected a specific occupational field (such as RN), are confident that they will enjoy the work, have the preparation needed to make getting through a program likely, and simply need comparative information to select a particular provider of the chosen training field. But for individuals who are not sure which occupational field would be best for them, a query system may be difficult to use and often will not have sufficient information to help narrow the search to a single field or small group of related fields.

To help these individuals, it would be especially valuable for the system to include a more guided search of the database to identify the best options. Such systems could require users to specify the characteristics of the training they are looking for as well as their own personal characteristics (such as interests, skills, and aptitudes). In this type of system, the user (alone or with the assistance of a mentor) would input responses to questions like those shown in Exhibit 1, which the system would then use to generate a list of the best fitting programs. The user could then modify the search criteria, such as narrow the fields of interest, to further refine the choice set.

Exhibit 1. Key Questions in Advanced CRCSs

Program Questions
1. My target for annual earnings is $X or more
2. I would consider a program taking at most Y months to complete
3. I am interested in the following general fields: IT, protective services, healthcare, etc.
4. I can attend classes at the following times: during normal business hours, on weekends, in the evening
5. I can afford to spend at most $Z for the training
6. I need a program that I can reach by car in no more than A minutes, or by public transportation in no more than B minutes

Trainee Characteristics Questions
1. My high school GPA was X
2. My current level of schooling is Y
3. I have completed Z1 math and science courses in high school and Z2 courses in college
4. I consider the following to be reasonably strong:
a. My math background
b. My academic background in communications
c. My manual dexterity skills

The central requirement here is estimation of an equation that reveals how post-training earnings vary as a function of occupational field, duration of training, enrollee personal characteristics, and labor market characteristics. The information supplied by the trainee could then be "plugged" into the equation to determine which fields meet the earnings target. Those programs that are inconsistent with other information generated by the user's profile (such as cost, time-to-complete, when and where training is held) could then also be dropped from the options displayed.

Other improvements. Enhancements to even very advanced CRCSs could include providing information about how the cost of training could be covered by federal and state student financial aid programs, as well as links to relevant aid websites. Other useful information could also be added about the academic and other skills needed to have a high probability of completing the program, along with links to tests that would help trainees determine their own vocational aptitudes and academic skills. Finally, information could be added to the CRCS about how to get additional assistance in selecting a training program by going to an AJC or community college career counseling center, with links to those centers' websites.

2.3 Summary

In this section, we describe what a consumer report card system (CRCS) is, some of the features a basic CRCS should have, and ways a basic CRCS can be enhanced. A basic CRCS would, at a minimum, provide a website where users could search for education and training programs offered at community colleges, view some information about the program, find out where to get additional information, and review employment and earnings outcome measures for recent completers.

More advanced CRCSs would include more training programs by incorporating additional types of providers (e.g., for-profits), as well as more information about individual programs. Further, advanced CRCSs would augment single-state UI wage record data with other outcomes data (e.g., UI wage record data from other states, data covering federal employment, and similar sources). Basic CRCSs can also be enhanced by refining the calculation of the outcome measures to cover a longer post-training outcome period, account for outside factors, or both. Lastly, compared to a basic system, a more advanced CRCS would provide users with more details about each program and could include search functions that take user input on skills and interests to populate search results.

To understand the connections between the WDQI grants and state efforts to develop CRCSs, Section 3 turns to characterizing the reporting systems currently used by WDQI states, identifying which WDQI states have CRCSs today, and understanding how those systems were developed.

3. THE WDQI AND CONSUMER REPORT CARD SYSTEMS

To assess the actual and potential use of what we term "Workforce Data Quality Initiative Databases" (WDQI-DBs) for implementing CRCSs, it is useful to characterize existing systems used in WDQI states to report outcomes information for education and training programs. In WDQI states with effective CRCSs already in place, the next step is to understand these systems—how they developed, how they function, what data are included, and what outcome measures are generated—to identify the key factors associated with the development of successful CRCSs.

We begin this section with an overview of the ED SLDS grants—a similar, earlier program focused on developing education data systems, followed by a discussion of the WDQI. Next, we characterize WDQI states in terms of whether and how they currently report outcomes information for education and training programs. For the subset of WDQI states with CRCSs that do in fact link individual-level education data to state workforce data, we review the content of those CRCSs, with a focus on the outcomes information they include. For two states that do not yet have CRCSs but expect to have them in the near future, we describe the current status of their projects. Returning to the states with existing CRCSs, we review the lessons learned that our research for this report suggests are important for the development of a successful CRCS. Following this discussion, we describe some of the ways that WDQI states have used their grants either to improve an existing WDQI-DB (or CRCS) or to lay the foundation for producing a CRCS in the future. Finally, though not a direct focus of the WDQI grants, we briefly examine one other potential use of WDQI-DBs—to support state processes for certifying training programs for inclusion on ETPLs. We end this section by summarizing what we have learned.

3.1   Overview of the ED SLDS Grants and the WDQI

SLDS Grants. Begun during the George W. Bush administration, the SLDS grant program is a system of federal grants to states administered by ED, which has been used to build state longitudinal administrative data systems for education, covering grades preK-12 and postsecondary education. This is no small task, due to the potential variation within states in the data being collected by individual school districts and other educational institutions. The first SLDS grants were awarded to 14 states in 2005. Currently, 47 states, the District of Columbia, Puerto Rico, and the Virgin Islands have all received at least one SLDS grant, with the program awarding a total of $613 million in funding.[9] Starting in 2009, just before the WDQI was begun, state education agencies were urged to make their preK-20 educational data linkable to UI wage record and other workforce data. Because of the long history of SLDS

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[9] See http://nces.ed.gov/programs/slds/about_SLDS.asp.

grants, the amount of funding committed to the program, and the large number of states that have participated in it, many states have highly advanced SLDS databases.

The WDQI. The WDQI began in 2009 with an Obama administration budget proposal for the coming fiscal year. The WDQI program was initiated to complement the ED SLDS grant program, and has consisted of three rounds of grants to state workforce agencies to "develop or improve" statewide WDQI-DBs. According to the solicitation for grant applications (SGA) for the first round of the WDQI, each state WDQI-DB was to consist of at least four types of workforce data: 1) UI wage records, 2) employment and training services, 3) unemployment insurance benefits, and 4) federal employment data from the Federal Employment Data Exchange System (FEDES). "Employment and training services" data were defined as WIA, Wagner-Peyser Act employment service, Trade Adjustment Assistance, and Registered Apprenticeship programs data (Federal Register 2010).

The 2010 WDQI grant solicitation was ambiguous about the development of CRCSs. On the one hand, WDQI databases were not expected to be linked to the SLDS education databases but only to have the potential to do so. While the first objective of the WDQI was to "develop or improve State workforce longitudinal data systems," the second objective was to "(e)nable workforce data to be matched with education data" (emphasis added) rather than to effect the actual data linkages, since it was recognized that matching required the active cooperation of the state education agencies. On the other hand, the SGA was specific that the ultimate goal was to create CRCSs. The fifth objective for the Round 1 grants was to "(p)rovide user-friendly information to consumers to help them select the education and training programs that best suit their needs." The SGA went on to cite Washington State's Career Bridge system as an example of a CRCS (Federal Register 2010).

The first WDQI SGA also featured a number of states that already had developed their own workforce longitudinal administrative data systems—Maryland, Illinois, Washington, and Florida. All these states belonged to the Administrative Data Research and Evaluation (ADARE) consortium.[10] It was recognized that the ADARE states were data systems leaders for the new WDQI states to look to in constructing the same types of data systems. In fact, eight of the nine ADARE states (all except Georgia), have applied for and received WDQI grants. In general, the data systems used for state participation in the ADARE consortium also became the core of their WDQI systems.

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[10] The ADARE consortium was established by DOL in 1998. Initially it consisted of five states that had previously constructed their own longitudinal workforce databases—Florida, Maryland, Missouri, Texas, and Washington. (Georgia, Illinois, Ohio, and California were added later.) The purpose of the ADARE initiative was to conduct research and evaluation projects of interest to the member states and to DOL. In the process, the member states continued to improve their data systems. Additional states joined the consortium during the period of DOL funding.

CRCSs did not become a central goal of the WDQI system until the Round 3 grants, which were awarded in 2013. The SGA for Round 3 specifically required WDQI-DBs to "connect with education data contained in SLDS databases" and "be capable of generating workforce training provider performance information and outcomes in a standardized, easy to understand format (e.g., scorecards)." States that had received Round 2 WDQI grants were not eligible for Round 3 awards. Though the solicitation did not require creation of a CRCS per se, one Round 1 grantee—Virginia—was given a second WDQI grant in part to develop and improve its CRCS. In Virginia's grant application, the fifth and sixth objectives listed were to 1) produce and disseminate workforce training provider performance information, and 2) create user-friendly portals to publicize data. As is apparent from the language of the WDQI SGAs, the focus of the WDQI has changed over time. Initially, potential integration of workforce and education data was sufficient; integration is expected of the most recent grantees.

As shown in Exhibit 2, funding for fiscal year 2010 resulted in Round 1 grant awards to 13 states totaling $12.2 million. The two additional rounds of grants brought the number of WDQI states to 29 and the total grant amount to slightly over $30 million. Most of the grantee states received approximately $1 million over a three-year period.

Exhibit 2. WDQI Funding to States, by Round

State	Round 1	Round 2	Round 3
Arkansas	–	$930,000	–
Florida	$1,000,000	–	–
Hawaii	–	$1,000,000	–
Idaho	–	$1,000,000	–
Illinois	–	$1,000,000	–
Iowa	$1,000,000	–	–
Kansas	–	–	$1,160,000
Louisiana	$1,000,000	–	–
Maine	$1,000,000	–	–
Maryland	$1,000,000	–	–
Massachusetts	$1,000,000	–	–
Michigan	–	$1,000,000	–
Minnesota	$1,000,000	–	–
Missouri	$890,000	–	–
Nebraska	–	$1,000,000	–
New Jersey	–	$1,000,000	–
North Carolina	–	–	$1,160,000
North Dakota	$1,000,000	–	–
Ohio	$1,000,000	–	$1,050,000
Oklahoma	–	$1,000,000	–
Oregon	–	–	$1,160,000

State	Round 1	Round 2	Round 3
Pennsylvania	–	$1,000,000	–
Rhode Island	–	$1,000,000	–
South Carolina	$290,000	–	–
South Dakota	–	$950,000	–
Texas	$1,000,000	–	–
Virginia	$1,000,000	–	$1,160,000
Washington	–	$1,000,000	–
Wyoming	–	–	$720,000
Total	**$12,180,000**	**$11,880,000**	**$6,410,000**

Source: DOL press releases for WDQI Round 1, 2, and 3 awards.

It is important to note that, because the grants are for a three-year period of performance, the awards to Round 1 grantees (made in 2010) terminated in October 2013, meaning that these states will no longer have WDQI funding available to continue the work the Round 1 grants have supported.

3.2   Systems for Reporting Outcomes in WDQI States

The first step in understanding the linkages between the WDQI and state efforts to develop CRCSs is to understand the systems WDQI states currently have in place and how the WDQI has been used to develop or enhance these systems. To begin this process, we performed an internet search to determine, for each state, whether it has a website jobseekers can use to search for education and training programs, regardless of the characteristics of the website. Most states met this criterion—almost all have a state web page for this type of search. These systems generally allow users to identify training programs by location, general field, and specific field. Some also provide additional information, such as how to get more specific information from/about the training provider, and characteristics of the training program (cost, duration, enrollment levels, etc.). However, many current state web-based search tools lack critically important participant outcome measures, such as employment rates and post-program earnings. Since availability of these outcome measures is one distinguishing feature of a CRCS, we paid particular attention to identifying those states whose web systems report such outcome metrics.

Once we had identified those WDQI states whose websites reported outcome measures, we sought to identify how the outcome measures were generated. Because our focus is on CRCSs based on linked education and workforce data, in instances where we identified a state website displaying outcome data, we contacted the state to ask how the information displayed online was generated. This allowed us to identify those states with CRCSs showing outcomes derived from matched education and workforce data. As it turned out, many of the states with websites displaying outcomes information presented data that were either dated, not calculated from linked administrative data, or both. For example, although Nebraska's TrainingLink website

provides outcome data for education and training programs, a conversation with officials there revealed that, at present, the outcomes displayed on the website are based on data that have not been updated for some time due to funding challenges (Findlay, 2013). For three of the WDQI states with websites displaying outcomes—Maine, Michigan, and Pennsylvania—we were not able to confirm the source of the data displayed online.

Exhibit 3 summarizes our findings with regard to the outcome reporting systems currently in use by WDQI grantees. As noted, virtually all the states at least have searchable websites that allow users to look for education and training programs. The only two for which we were unable to identify such websites were Iowa and Idaho. But, as shown in the second column of Exhibit 3, 13 WDQI states with searchable websites—most of which are either Round 2 or Round 3 WDQI grantees—do not yet provide program outcomes data on their site. Of the remaining 11 WDQI states, four report outcomes online using either old or unconfirmed data.

Exhibit 3. Outcome Reporting Systems in WDQI States

WDQI Awarded	No Searchable Website	Searchable Website, but No Outcomes Data	Searchable Website with Outcomes Data, but Not Current, Linked Data	Functioning CRCS Based on Current, Linked Administrative Data
Round 1	Iowa	North Dakota, Ohio, South Carolina	Massachusetts, Maryland, Missouri	Florida, Louisiana*, Minnesota, Texas*, Virginia
Round 2	Idaho	Arkansas, Hawaii, Illinois, Oklahoma, Rhode Island, South Dakota	Nebraska	Washington, New Jersey
Round 3	None	Ohio, Kansas, North Carolina, Oregon, Wyoming	None	Virginia

Source: Review of state websites and telephone conversations with representatives in states that report performance information.

Notes: Maine (a Round 1 grantee), Michigan (a Round 2 grantee), and Pennsylvania (also a Round 2 grantee) are not included in the table because we were unable to confirm the source of the performance information provided on the states' websites at the time of this report. An asterisk indicates states with CRCSs that have been fully developed and are expected to be released to the public in early 2014, but which were not available for review at the time of this report.

Five states—Florida, Minnesota, New Jersey, Virginia, and Washington—currently have CRCSs that report on outcomes using up-to-date administrative data linking participant data to employment and earnings data from state UI wage records. Two other states, Louisiana and Texas, have developed CRCSs based on linked administrative data via their WDQI grants and using WDQI funds, but the systems have not yet been released to the public; both are expected to be released in early 2014. Below, we review each of the five existing systems, focusing in particular on the outcomes information they present, and whether and how the WDQI was used to develop or enhance the CRCS.

3.3 Existing CRCSs in WDQI States

As identified above, five WDQI states have existing CRCSs: Florida, Minnesota, New Jersey, Virginia, and Washington. Among these states, the structure of the state website and how it is used is generally similar, with each system displaying outcome data for individual programs. Exhibit 4 summarizes the contents of the CRCSs in four of these states, including information about the programs and about the outcome measures reported.[11]

Exhibit 4. Characteristics of Selected Existing CRCSs

	Florida	New Jersey	Minnesota	Washington
Basic Program Information				
Institution Name	✓	✓	✓	✓
Program Location		✓	✓	✓
Link to Website		✓	✓	✓
Enhanced Program Information				
Program Duration (credits and/or time required)		✓	✓	✓
Intensity (e.g., hours per week)		✓		✓
Costs		✓	✓	✓
Financial Aid			✓	
Enrollment (number of students)				
Completion Rate		✓	✓	
Selectivity (proportion of applicants accepted)				
Prerequisites		✓	✓	✓
Types of Providers Included				
Community Colleges	✓	✓	✓	✓
Technical Colleges	✓	✓	✓	✓
Vocational-Technical Centers	✓	✓		
For-Profits		✓		
Four-Year Colleges/Universities	✓	✓	✓	✓
Program Outcome Measures (Based on Linked Student Records and State Wage Records)				
Employment	✓	✓	✓	✓
Earnings	✓	✓	✓	✓
Retention		✓	✓	
Completion Rate		✓	✓	
Program Outcome Measures (Based on Student Records Only)				
Rates of Licensure or Certification, Receipt of Academic and Industry Recognized Credentials				

Source: Review of CRCS websites.

Note: The Minnesota CRCS covers four-year universities in the state with the exception of the University of Minnesota.

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[11] At the time of this report, we had insufficient information on the Virginia CRCS to populate Exhibit 4.

As shown in the exhibit, the primary difference is in the types of training providers covered. While all states cover community colleges and four-year colleges, only Florida and New Jersey cover votech centers, and only New Jersey covers for-profit training providers.

Below, we provide brief summaries of key features of the CRCSs in each of the five states, focusing primarily on the outcome information each one presents to users.

Florida. Florida's CRCS is called Smart College Choices.[12] Some form of this site has been in existence for over a decade, though the current version was adopted in 2010. The site provides basic information about education and training programs at Florida's 28 community colleges and 11 public universities. The state is currently preparing to expand that system to include additional institutions and provide more detail about existing options. The main screen on the site allows users to search by a range of variables, including program title, program type (e.g., Associate in Applied Science, Career Certificate, Apprenticeship, Advanced Technical Certificate), college, or school district. Exhibit 5 shows an example of the outcome information displayed on the website for a program titled Automotive Collision Repair and Refinishing.

The website shows the following outcomes by institution: 1) number of completers, 2) number (and percent) continuing their education, 3) number (and percent) employed, and 4) estimated average annual full-time wage of completers. Employment and earnings information is based on Florida state UI wage records for the 4th quarter of the most recent calendar year covered (2011 in the example shown).[13] The estimated annual wage is calculated as four times the 4th quarter wages for those employed. The asterisks in selected columns indicate that the outcome information is not reported because fewer than five individuals are represented in the table cell.

One important institutional feature of Florida's system is that it is based on data warehoused by the Florida Education & Training Placement Information Program (FETPIP), an organization overseen by the Florida Department of Education, but includes both workforce data collected by the state's department of labor as well as education data. One of FETPIP's key roles is to compile, maintain, and disseminate information about individuals served by the state's educational system. FETPIP receives student record data from nearly all types of education providers. It also is developing a new system under its WDQI grant, which will use the state's longitudinal data system (SLDS) to rate the performance of public non-credit and for-profit training providers to better inform the choices of trainees and to establish ETPLs. In addition to displaying the information on the Smart College Choices site, the data system managed by

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[12] The website is available online at: http://smart-college-choices.com/.
[13] Though the outcomes presented on the website at present are based on a single calendar quarter of UI wage record data, a group is currently studying the feasibility of expanding the period examined as well as presenting outcomes separately for participants with different characteristics.

FETPIP is used to produce comprehensive annual reports on outcomes for various educational and workforce programs.[14]

Exhibit 5. Florida Outcome Information Display

New Jersey. New Jersey's CRCS is called New Jersey Training Opportunities.[15] The website is administered by the Heldrich Center at Rutgers University under a long-term contract with the state. The main infrastructure supporting the website has been developed and maintained since the late 1990s but continues to be improved with WDQI funding. The main page of the site allows users to search for programs by occupation type, major area of training, location, keyword, and many other criteria. For individual programs displayed in the search results, the user can click on a link to view a program profile. Exhibit 6 gives an example of the outcome information displayed for a typical training program.

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[14] The 2010-2011 annual outcomes report is available at: http://www.fldoe.org/fetpip/pdf/1011pdf/pubs1011text.pdf.

[15] The website is available at: http://www.njtopps.net/

Exhibit 6. New Jersey Outcome Information Display

As shown in the exhibit, program outcome measures include employment and earnings information separately for: 1) the program of interest, 2) all related programs, and 3) all programs offered by the same training provider. A drop-down menu above the outcome results allows users to display outcome information for participants that are calculated six months, one year, or two years after training.

All outcome measures on the New Jersey CRCS are calculated using the WDQI-DB, consisting of state education and state UI wage record data, including both New Jersey wage records as well as records from other states through the Wage Record Interchange System (WRIS). The Heldrich Center performs all necessary matching of student records and wage records and is responsible for keeping the website current. Outcome data are gathered and calculated on a quarterly basis. Data on program participants are provided to the Heldrich Center by the state's Commission on Higher Education and Department of Education, which covers public colleges and universities along with adult vocational schools. Although coverage is not complete for private training providers, the state has had success encouraging more such providers to report

data on their participants after issuing a letter to all providers on the state ETPL indicating that they would remove providers from the list if they did not report their participant data.

Minnesota. Minnesota's CRCS is called iSEEK.[16] It is managed by an organization called iSEEK Solutions, a partnership of multiple state education and workforce stakeholders, including the state Departments of Education and Employment and Economic Development (DEED). The Minnesota Department of Education and DEED are represented on the iSEEK Executive Board. The partnership was formed in 1999 and exists to provide the state with reliable information about careers, education, and jobs in the state. Its Executive Board works with the workforce development system and also education stakeholders to support both policy making and strategic initiatives.

The iSEEK website allows users to search for education and training programs using search features similar to those in the New Jersey CRCS. Namely, users can search for programs: 1) at particular institutions, 2) in a given geographical area, 3) using a program keyword, or 4) on the state's ETPL, in addition to other options. Once a user identifies a program of interest, s/he can navigate to a program profile page that displays relevant information—such as institutional information, program costs, information about financial aid, and characteristics of the student population. A link on the profile page takes the user to the outcome information page, as shown in Exhibit 7. The website covers programs at institutions that are members of the Minnesota State Colleges and Universities (MnSCU), the state system of higher education covering all two- and four-year colleges and universities (excluding the University of Minnesota); the University of Minnesota; all private academic institutions; and private career schools that have been accredited by the state's Office of Higher Education (OHE).

The top two outcome measures, employment and wages, are derived from matching student records to state wage record data. The matching is done by the Research and Planning unit of MnSCU. The information displayed on iSEEK is not derived from Minnesota's WDQI-DB, which is maintained by DEED. Rather, MnSCU receives participant data from schools in its system, facilitates a match to state UI wage record data, and populates the results on the iSEEK website. This process takes place once per year. Though general program information is typically available for all programs on the website, the employment and wage outcomes are populated only for institutions that are members of MnSCU. The bottom three outcome measures (which are missing for this example) are derived separately from a follow-up survey conducted annually by MnSCU.

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[16] The iSEEK website includes a variety of tools, of which the education and training program search function is one. The main search page is available at: http://www.iseek.org/education/educationSearch#

Exhibit 7. Minnesota Outcome Information Display

Notes of Caution: Employment and wage performance measures may be affected by factors beyond the purview of each school and its training programs. Since regional labor market conditions, economic cycles, and individual characteristics of each graduate also impact these results, **your experiences may differ from those of past graduates.**

Currently, employment and wage data are only available for graduates employed in Minnesota who are covered by Unemployment Insurance (UI). **Training programs with graduates working outside Minnesota or in jobs not covered by UI may have employment rates comparatively lower than programs with fewer such graduates.**

	Initial Participation ?	Retention at Six Months ?	Retention at Two Years ?
Employment Rate: ?	60.0% (30 / 50)	96.0% (24 / 25)	82.6% (19 / 23)
Hourly Graduate Wages: ?	$10.52/hour (24)	$11.64/hour (24)	$12.47/hour (17)
Program Graduates from Academic Years:	2008-2010	2008-2010	2007-2009
Graduate Follow Up Results: ?			
Training Related Employment Rate: ?	Not available.		
Continuing Education: ?	?% (14 / 0)		
Total Graduates : ?			

Virginia. The development and availability of the Virginia CRCS—called the Virginia Longitudinal Data System (VLDS)—is mandated by law. In 2012, the state legislature enacted HB 639, which requires the State Council on Higher Education in Virginia (SCHEV) to annually publish on its website data regarding employment outcomes of graduates from Virginia public and private colleges, non-profit colleges, and universities. At a minimum, the legislation requires the data to report at the program level (six-digit CIP and degree level) on the percentage of graduates known to be employed within Virginia, the average salary, and the average higher education-related debt for graduates on whom the data are based—at intervals 18 months and five years after the data of graduation. Data were to be published by August 1, 2013 and each year after by SCHEV. While the Virginia Community College System has published similar data on a limited basis, the report required by this law is the first to include private institutions.

Starting in the fall 2012—almost a year before the date required by the legislative mandate—VLDS data were reported at the program level (six-digit CIP and degree level) on the percentage of graduates known to be employed within Virginia and average salary 18 months after graduation.[17] The VLDS also published the average higher education-related debt for graduates on whom the data are based. For example, the Post-Completion Wages table provides program outcome information, presented as five-year rolling averages. Exhibit 8 shows an example of the outcome information display for a Health Information/Medical Records Technology/Technician Associate's Degree program at Northern Virginia Community College.

Exhibit 8. Virginia Outcome Information Display

Data on the five consecutive years of graduates ending in 2009-10.
Note: All wage and enrollment data are limited to those graduates working and attending school in Virginia, see notes below.

	Years Post Completion	Total Graduates	Grads. w/FT Wages (%)	Enrolled at Higher Level (%) in VA	Part-Time Wages (%)	No Information (%)	25th Percentile	Median	Average	75th Percentile
Health Information/Medical Records Technology/Technician, Associate's Degree (Occupational/Technical Credit)										
Northern Virginia Community College	18 months post-completion	39	59%	0%	15%	26%	$27,879	$39,278	$41,399	$45,444
All graduates at this degree level, Associate's Degree (Occupational/Technical Credit)										
Northern Virginia Community College	18 months post-completion	4,143	56%	8%	8%	27%	$31,310	$42,898	$46,561	$56,539
Health Information/Medical Records Technology/Technician, Associate's Degree (Occupational/Technical Credit)										
Grand Total, All reporting Institutions	18 months post-completion	123	65%	2%	7%	25%	$22,032	$28,435	$32,638	$39,590
All graduates at this degree level, Associate's Degree (Occupational/Technical Credit)										
Grand Total, All reporting Institutions	18 months post-completion	26,892	60%	8%	11%	21%	$24,697	$36,372	$38,551	$48,539

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Similar information is available on the website by institution and program for public and non-profit post-secondary institutions by degree type. The number of programs reporting wages depends on the nature and size of the institutions. Thus, for 2009-2010 Liberty University reported four programs, Northern Virginia Community College 20 programs, and the University of Virginia 44 programs (SCHEV 2012).

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[17] Publicly available data from the Virginia Longitudinal Data System can be found at http://research.scheve.edu.

The VLDS is limited in its scope. It only makes use of intrastate data, not including interstate or federal wages. It does not include students still in school after graduation. It also does not cover self-employed workers, since they do not report their earnings to the UI program. The VLDS covers state colleges, community colleges, and private non-profit schools. The VLDS does not include for-profit institutions.

The VLDS is still under development. Using funding from their third round WDQI grant, the basic current portal is being improved to provide different levels of access for publicly available data and reports, as well as access to non-public data for authorized users. VLDS is developing comprehensive cross-agency data sharing policies and practices and standards for data exchange, as well as security measures to maintain privacy. Data audit systems are also being developed to improve data quality, validity, and reliability. Beginning in 2013, VLDS began working to add federal civilian and military wages from FEDES.

Washington. Washington's CRCS, called Career Bridge, is administered by the Workforce Training and Education Coordinating Board (WTECB). The WTECB is both a state education agency and the state's Workforce Investment Board (WIB).[18] As described in Appendix A, the Career Bridge website allows users to search for training programs using a variety of criteria, and provides users with program profiles that display both program information and outcome data. Exhibit 9 shows the outcome information displayed for a course in Basic Instrumentation at Yakima Valley Community College.

The outcome measures included on the site are similar to those produced by the previous four states' CRCSs—including number of program graduates, completion rate, employment rate, and earnings information. All outcomes are calculated once per year by the WTECB, which receives UI wage records from the state Employment and Security Department and student records from the State Board for Community and Technical Colleges, which oversees the state's community and technical colleges. All other training providers, regardless of their funding source, are required to submit student records to the WTECB for inclusion in the CRCS. The Washington WDQI-DB and its CRCS are longitudinal. This characteristic is critical for many uses of the data; one of those uses is for the state ETPL, which measures outcomes, not for the most recent year alone, but cumulatively for all years for which data are available.

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[18] The Career Bridge website is available here: http://www.careerbridge.wa.gov/

Exhibit 9: Washington Outcome Information Display

3.4 Upcoming CRCSs in WDQI States

As noted in Exhibit 4, in addition to the five WDQI states we identify as having functioning CRCSs based on linked administrative workforce and education data, two states that received Round 1 WDQI grants have successfully created CRCSs via the WDQI, with their systems expected to be released in early 2014. Below, we describe what we learned regarding the systems in these two states—Louisiana and Texas—based on our conversations with relevant staff in each state.

Louisiana. Through its WDQI grant, Louisiana has developed a WDQI-DB, called the Workforce Longitudinal Data System (WLDS), which is housed at the Louisiana Workforce Commission (LWC).[19] Currently, the WLDS gathers workforce, education, and other data from multiple

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[19] The information described in this section comes from Chintawar (2014).

sources. These include workforce data from workforce programs managed by LWC, including WIA; Wagner-Peyser; programs under the umbrella of Louisiana Rehabilitation Services; and UI claims, benefits, and wage records. The database links these workforce data sources to education data, including K-12 records from the state Department of Education; postsecondary data from the Louisiana Board of Regents (which covers the state's 34 public colleges, universities, and technical schools); and the Louisiana Community and Technical College System (which covers short- to medium-term education and training programs, which are not required to submit data to the Board of Regents). Further, the education data in the system also include information from some of the state's proprietary schools—36 provide data at present. Louisiana is currently in talks with the state association of proprietary schools to include more such institutions. The education data in the WLDS come from the state's SLDS database, which is linked to the WLDS. To complement the workforce and education data, the WLDS incorporates multiple additional sources of data, including data from the National Directory of New Hires (NDNH), data from FEDES, and data on assistance received from the state's cash assistance program. Louisiana is also working to incorporate data from the Supplemental Nutrition Assistance Program (SNAP) and has a pending inquiry concerning whether the state can also include data from the Wage Record Interchange System 2 (WRIS2).

The WLDS has an automated process that pulls data from these myriad sources. Once the data have been collected, they go through a process in which LWC staff review the data received to ensure they are ready to be uploaded into the system. The database contains historical records from all sources from 1998 to the present.

By February 2014, Louisiana anticipates launching a new website dedicated to hosting the output from the WLDS along with various user interfaces that have been developed for state agencies. The website will feature easy-to-use dashboards that have been tailored to the specific needs of different state agencies. The ability of the system to provide up-to-date information on program performance at a high level has been important in engaging state policymakers and encouraging their support for the system. Recently, LWC gave a presentation of the system to the governor, which was very well received.

Louisiana's WLDS is also designed to protect the sensitive nature of the WLDS data. The individual-level data that comprise the database are never accessible via the web interface. Rather, there is an automated process in place by which the website periodically connects to the WLDS (e.g., quarterly or annually) to receive updated aggregate tables that are in turn posted to the website. The website also hosts a web-based documentation system to help users understand the information available through the site.

The state plans to make use of the WLDS in a variety of ways after its WDQI grant expires in February. First, many of the reports created by the system will be used internally by decision-makers in state workforce and education agencies to better understand how their programs are operating, as well as to understand conditions in the state's labor market. The dashboards that have been created were largely designed for this purpose. Second, the LWC is working to develop processes whereby outside researchers can apply for permission to use the data for research. Third, the state plans to use the WLDS as part of its ETPL certification process in the

near future.[20] Lastly, outcome measures (e.g., employment rates and earnings) for education and training programs are expected to be fed into Louisiana's existing website, which allows jobseekers to search for education and training programs—thereby enhancing that website to closely resemble the New Jersey, Minnesota, and Washington websites we described, essentially creating a CRCS.[21] Exhibit 10 shows the current outcome information display for an Automotive Technology program at the Capital Area Technical College (Baton Rouge), which currently presents data that are out of date. Because the information technology infrastructure is already in place, Louisiana anticipates that it will be straightforward to update the existing site to instead show outcome measures based on data from its WDQI-DB.

Exhibit 10: Louisiana Outcome Information Display

Overall, the development of Louisiana's WLDS via the WDQI provides a clear example of a state that was able to achieve essentially all the aims of the WDQI grant program. As a direct result of

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[20] The state's ETPL is released in January of each year. It is anticipated that WLDS outcomes data will be used to judge whether providers satisfy state criteria for inclusion on the January 2015 ETPL.

[21] The current website, HiRE (https://www.louisianaworks.net/hire/training.asp), displays outcome information for training programs, but the data displayed on the site is out of date (Chintawar 2013).

the WDQI grant, Louisiana has now established a longitudinal database that combines workforce and education data; will allow for future research; supports the measurement and reporting of program performance, both for policymakers and for the public; and will be used as part of the state's process for approving training providers.

Texas. Texas' upcoming CRCS is called the Texas Consumer Resource for Education and Workforce Statistics (CREWS) program. It is expected to go public in February 2014 with a recently completed CRCS funded, in part, by their 2010 WDQI grant from DOL. Texas received $1 million as a Round 1 WDQI state. Approximately one-quarter of that money went to the Texas Workforce Commission (TWC) and the other three-quarters to the Ray Marshall Center (RMC) at the University of Texas. The TWC share of the WDQI grant along with some the Texas SLDS grant moneys have been used to create the Texas CREWS.

Texas CREWS was developed through a partnership between the TWC and the Texas higher education agency as a web application tool designed to give consumers and their families an attractive and accessible source of information for making important choices about education and training programs. Texas CREWS does not include K-12 data. There is no publicly available information yet on the scope and nature of Texas CREWS, but it is expected to include data from community and technical colleges and state and non-profit four-year colleges and universities.

The Commissioners at the TWC and the Higher Education Coordinating Board are currently reviewing the demonstration site and have requested a few changes. TWC expects to announce the tool's public availability in February 2014.

3.5   Lessons Learned from the Development of Existing CRCSs

Understanding the development of existing CRCSs can shed important light on the factors that appear most important for supporting the successful development of CRCSs. In Appendix B, we present detailed descriptions for six of these states (Florida, Minnesota, New Jersey, Texas, Virginia, and Washington), providing information regarding the development of the systems and how they are managed.[22] Here we list the key factors that our inquiries and research into existing CRCSs suggests are most important to their successful implementation, grouped into two main categories: 1) system organization, and 2) public institutional support:

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[22] Appendix B also provides such a description for a state without an existing functional CRCS (Ohio), but which has developed a system that could support a CRCS.

System Organization

- State-level administration of the system

- Use of individual-level data to measure outcomes

- Having the necessary data infrastructure

- Successfully joining education and workforce data

- Having the analytical capacity to work with the data.

Public Institutional Support

- Having a favorable state interpretation of the requirements of the Family Educational Rights and Privacy Act (FERPA), consistent with federal regulations

- Successfully obtaining participation from education and training providers

- Having a broad and steady institutional commitment.

We describe each of these eight key factors in turn.

3.5.1 System Organization

State-level administration. Establishing and updating the data required for populating a CRCS based on objective data is a very large task. Developing a statewide system has proved challenging, and many states have not made the effort to develop such a system. Unless a statewide entity is given responsibility for the task, however, a system based on current outcome data is not likely to be developed, maintained, or consistently applied.

Two of the states that can be considered to have model CRCSs—Florida and Washington—operate statewide systems based on access to statewide individual-level data. Both make use of an annual submission of data to a state agency, which computes outcome measures that bring together the student level records and state workforce administrative data.

Use of individual-level data. As described in Section 2, there are two basic options for the outcome data needed to populate a CRCS. One is to use individual-level data from *linked educational and workforce data systems* to calculate outcome measures related to the labor market success of program graduates. The other option is for providers themselves to supply *self-reported* outcome data. As noted, use of self-reported data is often problematic and may not be able to adequately support a fully useful CRCS. We found that all the WDQI states we identified as having model CRCSs have relied on individual-level data to produce their outcome measures. In roughly similar processes, training providers submit data files to the state workforce agency (or a related entity) for matching to state UI wage record data. These files uniquely identify the students who participated in training programs and record when each student completed a program, thus facilitating the use of UI wage records to compute subsequent employment and earnings outcomes. The end result is that the state agency

determines the outcome results for training programs based on more reliable data than are likely to be gathered and reported by the providers themselves.

Data Infrastructure. A statewide CRCS based on individual-level data cannot be accomplished without a sophisticated data infrastructure. Exhibit 11 provides a diagram of the data infrastructure that makes up a generic CRCS. The top of the exhibit shows that one essential component is obtaining individual-level data from training providers. Such data must include a linkable person-specific identifier and details about the timing of the training and how participants exited (e.g., completed, dropped out); it may also include other information such as institution name, program name, and any credentials awarded.

The next set of boxes below the top in Exhibit 11 show each of the training provider types that could be included in a comprehensive CRCS. As we showed in Exhibit 4, the CRCSs in four of the model states cover many of these provider types. States mostly have focused on collecting individual-level postsecondary academic files covering for-credit programs, however, because 1) public community and four-year colleges are required to provide detailed data on enrollment, completion, and credential awards as part of ED's Integrated Postsecondary Education Data System (IPEDS) and 2) ED, through its SLDS grants, has contributed roughly $613 million to facilitating the forwarding of these data and analogous preK-12 data in a common format to states and to establishing education data warehouses. It is important to note that the data cannot simply exist on their own for different types of training providers; to be useful they must be linkable to other data files. This is important because, in most states, collection of SSNs—the most common way of identifying individuals in UI wage record data—is not necessarily required.

The next infrastructure requirement for using the individual-level education and training data is a process for matching individual-level education and training data to UI wage record data. Exhibit 11 shows the steps involved on the assumption that the CRCS uses UI wage records both from the state where the training is located and from WRIS. Once the outcome measures have been calculated for individual programs, the results are integrated into the CRCS database for populating the website, along with provider information from other sources, such as contact information and other program details.

Exhibit 11: Example of CRCS Data Infrastructure
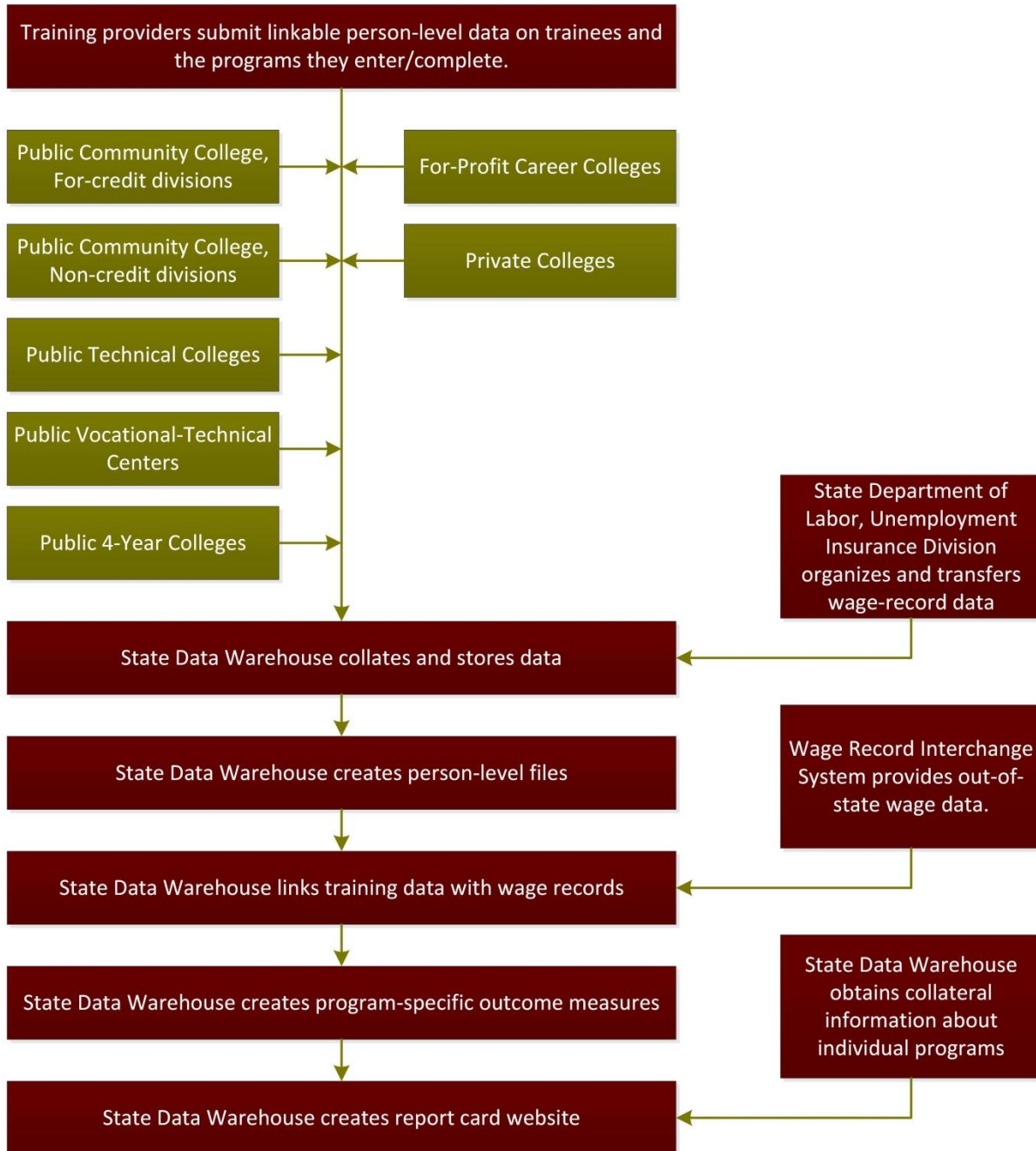
Exhibit 11 suggests the magnitude of the effort required to fully develop the data infrastructure necessary to support a successful CRCS. The states with existing CRCSs include (but are not restricted to) the small number of states with well-established state longitudinal administrative data systems. Some of these—Florida, Texas, and Washington—have been under development for up to four decades, beginning with efforts under the federal UI program in the 1970s and 1980s, continuing largely independently in states where such advances were supported

internally, continuing through the mid-1990s with DOL's support of the ADARE program. They are now part of the improved WDQI-DB system and have used their WDQI grants to expand their systems by, for example, adding K-12 data, adding interstate wage record data, and making the public interface of the existing CRCSs more user-friendly. Only a handful of states—including both Florida and Washington—have been consistently engaged in this work over such a long period.

Today a small number of states fund data infrastructure themselves by methods including: 1) an appropriation and earmarked tax (Washington), 2) state appropriation (New Jersey), and 3) state education department funding (Florida). These states have also received WDQI grants and have improved their WDQI-DB systems with WDQI funding. However, federal funding of both ADARE and Round 1 of the WDQI state grants has terminated, which leaves only modest federal funding for the Round 2 and Round 3 states through the WDQI program.

Joining Workforce and Education Data. Despite the relative scarcity of the kind of comprehensive data infrastructure necessary for CRCSs, many state workforce agencies—through their WDQI grants—now have workforce longitudinal administrative data systems in place or are in the process of creating these systems. For example, through its WDQI grant, North Dakota has created a system that includes UI wage records, Workforce Investment Act (WIA), Trade Adjustment Act (TAA), Employment Service (ES), UI claims and payments, and data on various services provided by the Job Service North Dakota (JSND) to both jobseekers and employers (Fisher, 2014). Further, North Dakota's database features a Master Person Index that links to the state's SLDS education database, though the two are housed separately. However, not all states with such data systems have been able to join their workforce data with their education data, even though they all have access to 1) a wide variety of workforce data, including UI wage, UI benefits, ES and WIA records; and 2) data from a number of smaller programs, including Unemployment Compensation for Ex-Service members (UCX), TAA, Disaster Unemployment Assistance (DUA), and older worker programs. For example, as described in Section 3.5, Minnesota has been able to successfully create a WDQI-DB featuring multiple sources of workforce data, but is still in the early stages of linking it to education data.

Workforce data have been merged with other data systems, although sporadically for disparate purposes, and through arrangements between state agencies that may be either short- or long-term. In some cases, workforce data have been linked together only for a single research project. Some state workforce data systems also have been joined to data from other programs—including education, Temporary Assistance for Needy Families (TANF), SNAP, public housing, and criminal justice programs.[23] Educational data have been particularly difficult to obtain, however, no matter what the arrangement.

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[23] See for example King and Mueser (2005) for a DOL-funded study based on linking TANF and UI data for the states of Florida, Georgia, Illinois, Maryland, Missouri, Maryland and Texas. Also, an ongoing study of the

It is particularly important to note that CRCSs cannot be fully developed unless the education and workforce agencies in each state agree to bring their data together in a manner that ensures confidentiality and is of mutual benefit to both agencies. The experiences of the five states with the most advanced CRCSs (Florida, New Jersey, Minnesota, Virginia, and Washington) demonstrate that it helps to have both the education and the workforce agencies actively involved in the database development and use. However, the connection between education and workforce data does not have to happen in any particular way. The successful states have chosen their own paths. For example, New Jersey makes this connection within the workforce agency, with the assistance of a long-term contract with Rutgers University. Florida has placed both the education and training data in a state education agency that funds FETPIP, which was established by Florida state legislation. Importantly, FETPIP is governed jointly by the three agencies that provide the program with data—the state education, vocational education, and workforce agencies. Washington established a similar joint coordinating board, which is also the state workforce investment board, as recognized by WIA and by state legislation. Even in Minnesota, which has a shorter history in this arena than the other three states, the CRCS is managed by an organization comprising representatives from the major workforce *and* education agencies in the state.

Analytical Capacity. Working with the various data files involved in producing a CRCS, including assembling them and calculating program outcome measures, requires a significant amount of institutional capacity. Two of the states with model CRCSs—Florida and Washington—have such capacity internally in state organizations that manage their systems. As these states demonstrate, such an arrangement is ideal, because it allows the work involved in maintaining the CRCS to be under the purview of a single entity. In both states, that entity houses the data, conducts the analyses, and makes the results available online.

However, not all states have such analytical capacity within state agencies. Many states with workforce longitudinal administrative data systems have instead relied on state research universities to develop and operate their infrastructure. For example, Louisiana State University (LSU) was a partner to LWC on Louisiana's WDQI grant. A computer science professor at LSU developed the architecture for the WLDS, and it is anticipated that the school will help sustain the database after expiration of the WDQI grant, and will help foster making the WLDS available to outside researchers (Chintawar, 2014). States have also used state universities and other research institutions to analyze their data. For example, data reside at state universities in Georgia, Illinois, New Jersey, Ohio, Maryland, and Missouri. As a result, the analytical capacity to develop and analyze CRCSs varies, but in effective programs it often resides in state universities.

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relationship between SNAP and UI has been funded by the Economic Research Service of the U.S. Department of Agriculture and includes data from California, Florida, Georgia, Illinois, Maryland, Michigan, and Texas.

3.5.2   Public Institutional Support

FERPA Interpretation. One challenge related to linking workforce and education data is that some state education agencies have been reluctant to share their data with state workforce agencies and other entities. This reluctance has been largely due to narrow state interpretations of the confidentiality provisions of FERPA and its implementing regulations, which have generally hindered the sharing of education data for state research and evaluation purposes for many years. State governments that interpreted FERPA narrowly, fearing they might otherwise violate the Act, were unwilling to share educational data with researchers and analysts outside their state's education department. Thus, their restrictive FERPA interpretations prevented program analysis, program evaluation, and research using education data. This still remains the case even though some states have permitted their education and wage record data to be used to monitor program performance and other research related projects—with no adverse reaction from ED with respect to the state's interpretation of FERPA, or even inquiries into the legality of wage record matching to education and training data.[24]

ED released revised FERPA regulations effective January 3, 2012. These revised regulations clarify that FERPA does not prevent the re-disclosure of personally identifiable information (PII) when educational authorities and researchers conduct research and evaluation studies for, and on behalf of, schools and school districts. These regulations should have ended the confidentiality obstacle to developing CRCSs, but progress in this regard has been slow, in part because of subsequent legal challenges.

The states that have model CRCSs have overcome potential FERPA-related obstacles in their own unique ways, including: 1) obtaining legal advice recognizing that the promulgation of amended FERPA regulations was intended to facilitate the use of individual-level data for research purposes (e.g., Florida, New Jersey, Washington), 2) maintaining the workforce data within the education state's agency (e.g., Florida), and 3) creating a special agency that holds both the education and workforce data (e.g., Washington).[25]

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[24] See, for example, a study of Cecil County high school graduates that examined employment outcomes using UI wage data from Maryland and surrounding states as well as FEDES data on government employment (Stevens 1993). See also, reports on the Student Futures Project, a privately funded project to increase the direct high school to post-secondary school enrollment in central Texas that follows students into employment (Student Futures Project 2013).

[25] A state's restrictive FERPA interpretation can even be a roadblock for states with sophisticated data systems. For example, the University of Texas developed longitudinal administrative data systems for the state three decades ago. It has access to workforce data and data from many other agencies including welfare, social service, and criminal justice agencies, and it has done research and evaluation for many of these agencies. The University, however, has not been able to get statewide access to education data due to FERPA concerns, even though it has gained access to the data for individual research projects.

One way to overcome state fears about FERPA is to provide education about FERPA and how other states have been able to share education data while maintaining confidentiality. The WDQI technical assistance contractor has provided information to WDQI states in this regard. States can also learn from one another. For example, using WDQI funds, the Ray Marshall Center at the University of Texas invited experts from other states with advanced WDQI-DBs to a June 2013 conference to describe how they overcame issues related to FERPA.

Training/Education Provider Participation. As illustrated in the data infrastructure diagram in Exhibit 11, an effective CRCS should provide reliable information on programs delivered by a wide range of training providers. However, CRCS participation by training/education providers has not been universal, with participation more frequent for state-funded providers than for private providers. Even among state-funded providers, participation is rarely universal. Since the workforce system funds a very small percentage of all training and education programs in the U.S.—only between 200,000 and 300,000 training slots per year—many training providers do not have a strong incentive (or requirement) to participate voluntarily. Nonetheless, states such as New Jersey and Texas have used state legislation or state financial incentives to expand training provider participation, while most other states depend more on exhortation.

To improve the training and education coverage of their WDQI-DBs, a few states have taken effective action to increase participation of their training providers. For example, the Texas state legislature has tied a portion of the funding of state technical colleges to their ability to demonstrate high levels of program completion and employment in occupations related to training. As a result, these Texas colleges are now eager to participate in the state's CRCS (Smith 2013). In New Jersey, state legislation requires the participation of all institutions that receive federal or state funding, which appears to have encouraged higher participation by private institutions than has occurred in other states (Mabe 2013). Other states have been less successful in gaining wide training provider participation, especially among private for-profit providers. Florida, for example, has used its authority to license for-profit providers as leverage for gathering similar data, but has not yet integrated them into the state's WDQI-DB.

Strong state support can yield substantial gains in training provider participation. In New Jersey, for example, participation has increased substantially since 1998, when the state CRCS was initiated. By 2010 the system (which acts as the state's ETPL) included more than 600 education and training providers that offered more than 3,000 training programs. By mid-2013, the system included about 1,000 education and training providers and 5,000 training programs.

Institutional Commitment. The experiences of the states with well-developed CRCSs emphasize the scale of effort required to implement a successful system. Each of these states has been working for many decades to establish the sort of linked data infrastructure that can support a CRCS. Although some of the existing efforts were begun prior to these states receiving WDQI grants, the grants have been used to support these efforts and improve the state systems. Such a sustained push toward establishing and continuing to improve this kind of data infrastructure has required a broad commitment of key stakeholders in each state—including aligning

education and workforce stakeholders toward a common objective, as well as fostering the support of the executive and legislative branches of the state.

WDQI has helped to build commitment to developing CRCSs. The WDQI agreements all have required that state education agencies agree to work with their workforce agencies to build WDQI-DBs. Sometimes state legislation helps to build commitment. For example, state legislation in Virginia mandated development of a CRCS by 2013, and WDQI funding helped to meet that deadline. Ohio's state legislation ensured that both state education and workforce agencies would work together and share their data with the WDQI organization at Ohio State University. In return, Ohio State University conducts analyses for both the education and workforce agencies.

An important element in fostering this kind of broad support for the development of CRCSs is the existence of a program champion (or group) to demonstrate its value to others, who works to build relationships among key stakeholders and remains committed for a sufficient length of time to bring such a program to fruition. In the states with advanced CRCSs, the existence of this kind of commitment has played an integral role in the systems' development.

3.6   How States Have Used WDQI Funding

Developing CRCSs with WDQI-DBs takes time. To date, we have found only a few states (e.g., Louisiana, Texas, and Virginia) that have been able to create CRCSs within the three-year (or less) WDQI grant period. And, as previously noted, we have found only five WDQI states—Florida, Minnesota, New Jersey, Virginia, and Washington—that have fully operational CRCSs. Three of these five states developed their WDQI-DBs before the WDQI grant program began. Florida and Washington have been working on their CRCSs since the 1970s and 1980s, and New Jersey since 1999. The states that began their WDQI-DBs as part of Round 1 of the WDQI have been working for only three years or less to develop the sort of linked administrative database that can support a CRCS or to create an actual CRCS.[26] The states have progressed to varying degrees in this regard. In this section, we describe some of the ways that states have used their WDQI grants either to develop CRCSs or else to make strides in developing the data infrastructure required to support a CRCS in the future.[27]

A small number of Round 1 states have successfully created (or will soon create) CRCSs. Virginia quickly developed a CRCS between 2010 and 2012 and is now working to improve it. Louisiana

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[26] The Round 1 WDQI grants were signed in September 2010 and expired in October 2013.

[27] We focus on Round 1 WDQI grantees because they have had the most time to make progress toward these objectives, though we did not gather information from all Round 1 grantees. Future work could provide a more comprehensive view by describing the progress made to date both by additional Round 1 grantees and by Round 2 grantees.

has developed a WDQI-DB that will be released in February 2014 and will soon thereafter support a CRCS. Texas has completed its CRCS, but is making small adjustments before releasing it to the public in February 2014.

WDQI funds have been used for a variety of purposes other than directly creating CRCSs. For example, part of the Texas WDQI funds has gone to the Ray Marshall Center at the University of Texas at Austin and has been used to improve workforce databases, conduct research, and assist in developing a CRCS. One use of the funds was to conduct a June 2013 FERPA conference to provide state officials with information about the new FERPA regulations. Representatives from Maryland, Ohio, and Washington presented details about how FERPA-protected data are shared and used in their states. The conference helped overcome the reluctance of Texas to merge education and workforce data—a factor that has been critical to establishing a Texas CRCS.

Even the states with existing CRCSs have been working to improve both their WDQI-DBs and their CRCSs. Florida, Minnesota, New Jersey, and Washington have received WDQI grants and are using them to improve their WDQI-DB systems and CRCSs. For example, New Jersey has provided the WDQI funds to the Heldrich Center at Rutgers University to develop and display more metrics on their CRCS as well as to work to get more training providers to share their data. The Heldrich Center is also conducting research, including using their WDQI-DB to conduct an evaluation of workforce training programs and develop a stronger workforce profiling model to more accurately select unemployed workers in need of reemployment services.

Minnesota did not use its WDQI grant (which was awarded to DEED, not iSEEK) to directly enhance the iSEEK CRCS, which was developed prior to when Minnesota was awarded a WDQI grant. Rather, through the WDQI, DEED was able to develop a WDQI-DB that encompasses a variety of workforce data, including WIA, ES, Vocational Rehabilitation, and UI wage record data. DEED has begun working with OHE to do some preliminary matching of WDQI-DB data to postsecondary enrollment data, but this work is at an early stage.

The State of Ohio demonstrates the overlap between "old" and "new" WDQI-DB systems. Professor Josh Hawley of Ohio State University has been instrumental in developing the WDQI-DB system. The Oracle database that was developed during the ADARE period has been expanded and scaled-up since it became the WDQI-DB. Professor Hawley worked on the state longitudinal administrative data system when it was developed as part of the ADARE system. Today, he is director of the WDQI, since Ohio has turned the effort over to the university. The WDQI funds are being used for projects of interest to the state education and workforce agencies that participate in the WDQI process. Researchers are given access to the data for research of interest to the State of Ohio under strict confidentiality conditions. The second DOL WDQI grant to Ohio is being used to place greater emphasis on developing applications that include and resemble CRCSs. For example, a dashboard has been developed for the Ohio Department of Education that is an "early warning system" for students moving from the 8th to 9th grades to predict which students are likely to have trouble when they enter high school

(Hawley 2013). The Ohio CRCS, however, is being created outside Ohio State University, under the direction of the Ohio Governor's Office of Workforce Transformation.

Florida has used a portion of its WDQI funding to execute two projects.[28] The first project involved creating a model that compared the demand for skilled workers to the supply coming from an array of Florida training institutions. This highly innovative project was designed to help Florida's postsecondary college system invest in education and training that would spur economic growth by providing well-trained workers in high demand occupations, while also increasing the earnings of program completers. Data for the demand portion of the model came in part from examination of employment trends derived from UI wage records and in part from occupational demand models produced by the Bureau of Labor Statistics. Data for the supply portion came from use of person-level data on trends in the field-of-study of program completers at Florida's public and private postsecondary institutions. The second project examined the feasibility of using person-level data on completers of specific occupational training programs conducted by specific training providers linked to UI wage-record data to determine which programs were sufficiently effective in raising participants' earnings to be included in Florida's eligible training-provider list.

Overall, Florida's WDQI grant provided the financial resources required to organize and analyze data already maintained in its data warehouse that would not otherwise have been possible. In particular, it made it possible, for the first time, to go beyond production of the mandatory WIA performance measures to provide information that could lead clients to making better choices, while demonstrating that the systems currently in place are highly effective in raising the earnings of these clients. It also demonstrated the value of expanding Florida's existing CRCS to broaden the information base to: 1) include for-profit training providers; and 2) provide information about the returns for individuals with different characteristics, especially gender and prior earnings. It also demonstrated the value of linking information about supply and demand to provide guidance to public and private training providers about how they can use their resources to most effectively meet the needs of local employers for well-trained workers as well as have the greatest effect on trainees' earnings.

Maryland has used its WDQI funding to develop the Maryland Longitudinal Data System, which was established based on Chapter 190 of Maryland state law. The system joins education data with UI wage records. It is a collaboration between the University of Maryland, the education and higher education agencies, and the state Department of Labor, Licensing, and Regulation. A CRCS is being developed separate from the older Maryland workforce longitudinal administrative (ADARE) data system at the University of Baltimore, which includes training,

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[28] Florida had originally planned a third project, to focus on projecting the supply and demand of "green jobs," but this project was not carried out because the state had lost more than half of its construction industry jobs and interest in postsecondary training for green jobs dissipated.

employment service, and UI benefits and wage record data. As a result the CRCS will include educational institutions, but may exclude WIA training programs (Stevens, 2014).

Through its WDQI grant, North Dakota was able to: 1) successfully create a WDQI-DB that has the capacity to support a CRCS and 2) use that database to produce research.[29] The state database links data from UI wage records, claims, and payments; workforce programs including WIA, TAA, and ES; and several data files that contain information on services provided by JSND. These include a file with information regarding training services arranged for employers by JSND and a file covering support services provided to jobseekers. Importantly, the North Dakota database includes a unique identifier for individuals that can be linked to the state's SLDS database. Using the database, the state produced five reports: 1) a study of the change in wages experienced by participants in workforce training programs, 2) a study of the change in employment experienced by the same group, 3) an analysis of employment among high school dropouts, 4) a report on labor supply and demand, and 5) an analysis of how workforce training programs facilitate employment for UI claimants. For the third of these reports, the state WDQI-DB was linked to data from the state's SLDS database—the two are maintained separately but both by the North Dakota Information Technology Department, which serves all state agencies. Though North Dakota's WDQI-DB is well-developed and could support a CRCS, JSND has only had very preliminary discussions with the state SLDS team regarding using the database in that fashion.

3.7   The WDQI and State Eligible Training Provider Lists

Though not a central focus of the WDQI grants or necessarily directly related to CRCSs, another use for the WDQI-DBs developed by states is to support state processes for certifying training providers and programs for inclusion on ETPLs. The WIA system provides most training services through training vouchers (called Individual Training Accounts). Training participants can use these vouchers to pay for training programs they select. To ensure that training participants can make good choices, they are provided consumer information about training programs from CRCSs, but the state workforce agency is also given responsibility for culling training programs and permitting WIA funding only for programs that meet minimum outcome results. Just as WDQI-DBs can be used to report performance information to potential training participants to help them make more informed decisions, the same data can be used to calculate the outcome measures used to determine whether a program meets the criteria for inclusion on the state's ETPL. The advantage of using WDQI-DB data is that this would ensure that decisions about which programs end up on the ETPL are based on current, accurate outcome data derived from administrative records. Further, ETPLs based on WDQI-DB data can be easily updated each year to remove providers producing unacceptable outcomes.

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[29] The discussion of North Dakota is derived from Fisher (2014).

Among the WDQI states we discuss in this report, only one (Washington) currently uses its WDQI-DB to support its ETPL, though Louisiana anticipates beginning to do so as early as January 2015. Below, we briefly describe Washington's ETPL process, including how the state's WDQI-DB is used.

Washington has particularly robust requirements that providers must meet to be included on the ETPL. The Governor of Washington has established procedures for training program eligibility for both WIA and state training programs (WTECB 2011). Beginning with the program year starting July 1, 2012, to be eligible to receive funding under WIA and state training programs training providers and training programs must meet statewide performance standards, as determined by their submission of student level data matched by the Washington Training and Education Coordinating Board (WTECB) with UI wage records and other administrative data (i.e., via the state's WDQI-DB).

For WIA Adult and Dislocated Worker programs, cumulative annual performance data from the CRCS for each training program has to average at least:

- 30 percent completion rate
- 65 percent employment rate
- $4,633 for calendar quarter earnings.

For programs that do not meet these statewide criteria, the programs may still be able to remain on the state ETPL based on regression adjusted performance measures, where the adjustments are made based on the demographic and economic characteristics of the program participants and the county in which the training was provided. Programs that do not meet either of these criteria are removed from the Washington ETPL. Washington, thus, has an ETPL that has absolute criteria for inclusion in the ETPL, which the state supplements using a value added approach that adjusts for factors out of the control of training providers.

3.8   Summary

In this section, we discuss the WDQI process and how WDQI grantee states have worked to establish CRCSs. We identified WDQI states with functioning CRCSs that report outcome information based on student records linked to state UI wage record data. Of the 29 WDQI grantees, five—Florida, New Jersey, Minnesota, Virginia, and Washington—have such systems in place. Both Louisiana and Texas have developed systems that will be publicly released in February 2014.

Most of the states with older CRCSs—Florida, New Jersey, and Washington—developed what were essentially WDQI-DBs before the WDQI grant program began. Only Minnesota's CRCS is not based on a WDQI-DB. Virginia has similar CRCSs, and both Texas and Louisiana will produce a CRCS soon. All these states have used WDQI funding to either develop or enhance their CRCSs.

The CRCSs of these states are generally similar. Most allow users to search for education and training programs using a variety of relevant criteria (such as keyword, institution, program location, and program title). Three of the four older systems (Florida's being the exception) allow users to navigate to a profile page for a program of interest. This page gives the user information about a specific provider, details regarding program cost and duration, and the type of credential or degree awarded. The most crucial element featured in each system is a set of outcome measures covering program completion and subsequent employment and earnings. Derived from state UI wage record data, these outcome measures provide individuals seeking education and/or training with valuable information about the job market experiences of recent program participants—information that can help these individuals make decisions about which programs may best meet their career goals.

A review of how effectively CRCSs have been developed in advanced states shows the importance of eight key factors related to the way the system is organized and the support it receives from the state: 1) state-level administration, 2) use of individual-level data to measure outcomes, 3) having the necessary data infrastructure, 4) successfully joining education and workforce data, 5) having the analytical capacity to work with the data, 6) having a favorable state interpretation of FERPA's privacy requirements, consistent with federal regulations, 7) successfully obtaining participation from education and training providers, and 8) having a broad and steady institutional commitment. Thus far, only a small number of states have been able to address all these key factors effectively, with WDQI funding helping to enhance or create CRCSs in these states. However, even among those states with CRCSs in place, the coverage of the systems tends to be incomplete, particularly because of the lack of participation by private training providers.

Because of the complexity of creating a CRCS, relatively few states have fully enhanced or created a CRCS. Nevertheless, a review of selected Round 1 grantees shows that many states have used WDQI grant funding to make strides in developing the data infrastructure necessary to support future CRCSs. Some grantees have been able to link some forms of workforce data; others have gone beyond to successfully link workforce and education data.

Although not a direct focus of the WDQI grants, a potential use for state WDQI-DBs is to support state processes for certifying training programs for inclusion on ETPLs. Among the Round 1 WDQI grantees we discuss in this report, only Washington currently uses its WDQI-DB in this way; Louisiana expects to do so as early as January 2015.

Building from what the experiences of advanced CRCS states tell us about how such systems can be developed, Section 4 addresses where states (including non-WDQI states) stand at present with respect to their ability to implement a CRCS and what DOL can do to support CRCS implementation beyond the states with systems in place now.

4. IMPLEMENTING CONSUMER REPORT CARD SYSTEMS NATIONWIDE

Our focus so far has been on understanding the core elements of a CRCS, characterizing the systems currently being used by WDQI states to report outcomes, reviewing the model CRCSs that we identified in WDQI states, and summarizing the key factors associated with successful implementation of a CRCS based on the experiences of those states. In this section we address two natural next questions: 1) to what extent do states *without* existing CRCSs have the data infrastructure necessary to implement them, and 2) how can DOL support the development of CRCSs in other states?

4.1   Existing State Data Infrastructure

As discussed in Section 3, one of the most important prerequisites for producing a CRCS is a sufficient data infrastructure—one that involves receiving individual-level data from varying types of education and training providers, matching those data to UI wage record data and possibly other data sources on labor market outcomes, calculating outcome measures, merging the output to details about programs and providers, and ultimately displaying the information in an easy-to-use format on the web. The crucial infrastructure requirements consist of: 1) having individual-level training data that include SSNs; 2) having the capacity to match education/training participation data to state UI wage records; 3) having clearance and cooperation to match UI wage record data held by state departments of labor against participant data held by state departments of education; and 4) having the funding and know-how to use the data to produce a report card website.

Collecting data from all 50 states regarding exactly where they stand at this time with respect to the development of this kind of infrastructure was beyond the scope of this project. Instead, we reviewed available information from three sources: 1) information on the status of WDQI grants; 2) information from the non-profit DQC's annual state survey, and 3) information from the College Measures effort, which focuses on helping states develop systems similar to CRCSs.[30]

Because WDQI funding was intended explicitly to support the development of this kind of infrastructure, these states should presumably be the furthest along in their infrastructure development. Thus, knowing where WDQI grantees stand today can tell us how close (or far

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[30] For the past eight years, the DQC has administered an annual state survey, asking a series of questions about the management and use of education and workforce data in their states. To administer the survey, the DQC invites state governor's offices to participate. These offices can designate an official to respond on their behalf (such as an official in the state Department of Education). For further information, see the DQC Data for Action website at: http://www.dataqualitycampaign.org/your-states-progress/about-data-for-action/. College Measures has worked with several states to produce websites that display outcomes information for graduates of higher education programs, based on linking education records to UI wage records.

away) general CRCS implementation appears to be. The DQC survey offers some evidence on the data infrastructure in place across all 50 states. Finally, the experience of the College Measures effort can shed additional light on the extent to which the potential exists for states to quickly develop CRCSs.

WDQI States. To understand the current status of the data infrastructure in WDQI states, we gathered and reviewed information from:

- The original grant applications submitted by states

- The most recent Quarterly Progress Reports submitted by grantees

- Telephone conversations with Federal Project Officers overseeing the grants

- Telephone conversations with selected WDQI grantees.

These materials provide sufficient information to summarize the progress of WDQI grantees at a high level. As noted, to produce a more comprehensive, detailed picture would require a more extensive data collection effort.

Based on our review, Exhibit 12 summarizes the progress of WDQI grantees toward their grant objectives as related to the infrastructure development required to produce a CRCS. The shading of the cells in the table indicates the progress made by grantees toward achieving their objectives. Green cells indicate grant objectives that were part of a state's WDQI application and have been completed. Yellow cells indicate objectives that were part of a state's application but were reported to be still in process. Pink cells indicate objectives that were not part of a state's application. For example, the first cell shows that Florida's WDQI grant included developing memoranda of understanding (MOUs) between the state's education and workforce agencies, and that this objective has been completed.

Exhibit 12: Status of WDQI Grants

State	Grant Objectives						
	Develop MOUs between Education and Workforce Agencies	Prepare Labor Data for Linkage	Prepare Education Data for Linkage	Link Education Data to UI Wage Record Data	Link Education and Workforce Data to Other Data Sources	Conduct Research Studies	Develop or Enhance a CRCS
Round 1 Grantees							
Florida	🟩	🟩	🟩	🟩	🟩	🟩	🟩
Iowa	🟩	🟨	🟨	🟨	🟨	🟨	🟥
Louisiana	🟩	🟩	🟩	🟩	🟩	🟨	🟩
Maine	🟩	🟩	🟩	🟨	🟨	🟥	🟥
Maryland	🟩	🟩	🟩	🟨	🟨	🟨	🟥
Massachusetts	🟩	🟨	🟩	🟨	🟨	🟨	🟥
Minnesota	🟩	🟩	🟨	🟨	🟨	🟨	🟥

State	Grant Objectives						
	Develop MOUs between Education and Workforce Agencies	Prepare Labor Data for Linkage	Prepare Education Data for Linkage	Link Education Data to UI Wage Record Data	Link Education and Workforce Data to Other Data Sources	Conduct Research Studies	Develop or Enhance a CRCS
Missouri	Green	Green	Green	Yellow	Yellow	Yellow	Red
North Dakota	Green	Green	Green	Green	Yellow	Green	Red
Ohio	Green	Green	Yellow	Yellow	Yellow	Yellow	Red
South Carolina	Green	Yellow	Yellow	Yellow	Yellow	Red	Red
Virginia	Green	Green	Green	Green	Yellow	Yellow	Green
Texas	Green	Green	Green	Green	Green	Green	Red
Round 2 Grantees							
Arkansas	Green	Green	Green	Yellow	Yellow	Yellow	Red
Hawaii	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Yellow
Idaho	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Michigan	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
Nebraska	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
New Jersey	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Oklahoma	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
Pennsylvania	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Red
Rhode Island	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
South Dakota	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
Washington	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Red
Round 3 Grantees							
Kansas	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Red
North Carolina	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
Ohio	Red	Red	Yellow	Yellow	Yellow	Yellow	Red
Oregon	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Red
Virginia	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Wyoming	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red

Source: Review of WDQI materials and interviews with state experts.

Note: Illinois (a round 2 grantee) does not appear in the table because we were unable to review the state's grant application.

Exhibit 12 shows that the WDQI grants were mostly similar across the three rounds of grant awards. States generally expected to use the funds to support infrastructure development; some states also proposed using the data for research projects; only a small number of states planned to use the grant for a CRCS, which was not a major objective identified in the SGA for the first two rounds of WDQI funding.

At present, only a few WDQI states have sufficiently well-developed data warehouses with the types of linked education and workforce administrative data that would permit the rapid development of functioning CRCSs. Only Round 1 grantees, for which WDQI grant funding ended on October 31, 2013, have successfully negotiated agreements between their state education and workforce agencies to support linking education and workforce data. Most Round 1 grantees have also made progress preparing the workforce data needed, but few have

had such success on the education side. Round 2 and 3 states are further behind, not yet having fully achieved any of the broad objectives of their grants.

Exhibit 12 makes it apparent that only a small number of WDQI states without existing CRCSs are even close to having the infrastructure that would allow them to quickly move forward to implement one. In addition to North Dakota (as described in Section 3.6), Arkansas, Maine, and Maryland appear to have made significant progress toward establishing data warehouses that could support CRCSs in the near term. But the majority of WDQI states still face many obstacles and to date have not made sufficient progress in creating the data infrastructure necessary to make quick implementation of even a basic CRCS a feasible goal. As further evidence in this regard, a conversation with the WDQI technical assistance contractor confirmed that among WDQI states, outside the WDQI states that already have CRCSs in place, few WDQI states seem to be poised to implement a CRCS quickly (Leufgen and Mack, 2014).

DQC Survey Data. Because of current policy interest in expanding CRCSs nationwide, it is important to investigate the data infrastructure in place, not just in WDQI states but nationwide. Although the WDQI states are likely to be the most advanced in their data infrastructure, efforts in other states have also focused on developing the sort of education and workforce data linkages envisioned under WDQI. The DQC annual survey provides a convenient and useful source of information, though the data are self-reported by states and not independently verified. One of the survey questions asks states to indicate whether postsecondary student records are matched to seven distinct types of workforce data:

- UI wage records
- UI benefits claims
- WIA adult or dislocated worker programs
- WIA youth program
- Adult basic and secondary education
- Wagner-Peyser Act employment services
- TANF.

To characterize the extent to which all states have existing systems in place for linking education data and workforce data—a critical requirement for supporting a CRCS—we obtained the most recent DQC survey data (covering 2012) for this question. Exhibit 13 summarizes relevant characteristics of the data infrastructure in the states, as identified by the DQC, by showing whether states reported to the DQC that they matched postsecondary student records with specific types of workforce data. Although the DQC data do not provide much detail (e.g., on which agency or organization in the state has responsibility for the matching and on which types of postsecondary institutions are covered), it nevertheless provides a way to gauge the extent to which non-WDQI states have established the sort of linked education and workforce data necessary for the development of functioning CRCSs.

For most of the workforce data sources covered, between 25 and 30 states report linking to postsecondary student records. Importantly, 40 of 50 states indicated that they currently link postsecondary education data to UI wage record data. The DQC survey data do not indicate which types of postsecondary institutions are covered, or the purposes for which each state is currently linking those data to wage records. It is nonetheless an encouraging sign that 40 states report at least some connection between postsecondary education data and UI wage record data; such connections are important for establishing CRCSs.

Exhibit 13: Postsecondary and Workforce Data Linkages among States

State	Are the following workforce data sources linked to postsecondary student records?						
	UI Wage Records	UI Benefits Claims	WIA Adult and Dislocated Worker Programs	WIA Youth Program	Adult Basic and Secondary Education	Wagner-Peyser Employment Services	TANF
Alabama	✓	✓	✓	✓	NR	✓	✓
Alaska	✓	✓	✓	✓	✓		
Arizona							
Arkansas	✓	✓	✓	✓	✓	✓	✓
California	✓	✓	✓	✓	✓	✓	✓
Colorado	✓		✓	✓			
Connecticut	✓						
DC				✓	✓	✓	✓
Delaware							
Florida	✓	✓	✓	✓	✓	✓	✓
Georgia	✓		✓		✓		
Hawaii	✓	NR	✓	✓	✓	✓	✓
Idaho	✓	✓	✓	✓	✓	✓	✓
Illinois	✓		✓		✓		
Indiana	✓	✓			✓		
Iowa	✓	✓					
Kansas	✓	✓			✓		
Kentucky	✓	✓	✓	✓	✓	✓	✓
Louisiana	NR	NR	NR	NR	NR	NR	NR
Maine	✓	✓	✓	✓	✓	✓	✓
Maryland		✓	✓				
Massachusetts	✓	✓	✓	✓	✓	✓	✓
Michigan					✓		
Minnesota	✓			✓			
Mississippi	✓	✓	✓	✓	✓	✓	✓
Missouri	✓	✓	✓	✓	✓	✓	✓
Montana	✓						
Nebraska	✓						
Nevada	✓	NR	NR	NR	NR	NR	NR
New Hampshire	✓	✓	✓	NR	✓	✓	✓
New Jersey	✓						

State	Are the following workforce data sources linked to postsecondary student records?						
	UI Wage Records	UI Benefits Claims	WIA Adult and Dislocated Worker Programs	WIA Youth Program	Adult Basic and Secondary Education	Wagner-Peyser Employment Services	TANF
New Mexico							
New York							
North Carolina	✓	✓	✓	✓	✓	✓	✓
North Dakota	✓	✓	✓	✓	✓	✓	✓
Ohio	✓				✓		
Oklahoma	✓	NR	NR	NR	NR	NR	NR
Oregon	✓	✓	✓	✓	✓	✓	✓
Pennsylvania							
Puerto Rico							
Rhode Island	✓	✓	✓	✓	✓	✓	✓
South Carolina	✓	✓	✓	✓	✓	✓	✓
South Dakota	✓						
Tennessee	✓	✓	✓	✓	✓	✓	
Texas	✓	✓	✓	✓	✓	✓	✓
Utah	✓		✓	✓	✓		
Vermont							
Virginia	✓	✓	✓	✓	✓	✓	✓
Washington	✓	✓	✓	✓	✓	✓	✓
West Virginia	✓	✓	✓	✓	✓	✓	✓
Wisconsin	✓			✓			
Wyoming							
Total	40	26	28	27	30	23	22

Source: Data Quality Campaign 2012 Data for Action survey.
Note: NR indicates that the state failed to respond to the relevant survey question.

College Measures. The work of College Measures under its Economic Success Metrics (ESM) program provides one additional piece of evidence on how prepared states are for implementing CRCSs.[31] Under this program, College Measures has been working with states that have the kind of linkable education and training data required for creating CRCSs to use those data 1) to produce outcome measures related to employment and earnings for programs offered by higher education institutions in the state, and then 2) to display the information online. In general, College Measures gives the states specifications for aggregate tabulations to be provided to College Measures. The states then deliver the aggregated files to College Measures, which calculates and publishes outcome measures on a state-specific page of the College Measures website.

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[31] The ESM website is available at: http://www.collegemeasures.org/esm/

Importantly, in the process of seeking out states with which to work, College Measures independently reviewed the capacity of states to produce the necessary input tabulations based on linked student records and UI wage records. In their judgment, only 12 states have such capacity. Five of these states have begun working with College Measures: Arkansas, Colorado, Tennessee, Texas, and Virginia. More recently, Florida and Minnesota have agreed to join this group. Only five additional states have the required data infrastructure in place—Georgia, Illinois, Indiana, Ohio, and West Virginia (Schneider 2013). To the extent that College Measures' review of state capacity accurately reflects the potential for states to implement CRCSs in the very near future, the fact that so few states met the standards set for their ESM project suggests that, in most states, considerable work remains to be done to lay the foundation upon which CRCSs can be built.

Exhibit 14 summarizes what we can say about which states have developed or appear capable of developing a CRCS, based on the best information at hand at the time of this report. Because we did not review conditions in all states (to do so was outside the scope of this study), the exhibit may omit other states with the capacity to produce a CRCS. A more in-depth assessment of every state would provide a more comprehensive assessment. Nevertheless, the exhibit makes clear that unless there is a significant number of other states with well-developed data infrastructure in place, only a limited number of states appear capable of producing a CRCS soon.

Exhibit 14: The Ability to Produce CRCSs among Selected States

WDQI States with CRCSs	WDQI States with Upcoming CRCSs	States working with College Measures	States with the Potential to Implement CRCSs Quickly
Florida New Jersey Minnesota Virginia Washington	Louisiana Texas	Arkansas* Colorado Florida* Minnesota* Tennessee Virginia*	Georgia Illinois* Indiana Maryland* North Dakota* Ohio* West Virginia

Source: Interviews with state experts, review of WDQI grantee progress reports, and interviews with Mark Schneider of College Measures.
Note: An asterisk in columns 3 and 4 indicates a WDQI state.

In sum, states must overcome myriad obstacles to develop the kind of well-established CRCSs that are maintained by the few states with the most robust systems. Surmounting these and other challenges to the widespread establishment of functioning CRCSs around the county will be a difficult endeavor—requiring time, resources, and sufficient dedication on the part of both federal policy makers and their counterparts in the states, as discussed in the next section.

4.2   How DOL Can Support the Development of CRCSs

Our review of existing CRCSs has highlighted the effort required to create an effective system. A review of the data infrastructure currently available in WDQI states suggests that few of them are at the point of being able to implement a CRCS quickly. The DQC state survey of all states (i.e., both WDQI grantees and non-WDQI states), suggests a more optimistic scenario—that a significant number have in place at least some of the types of data linkages needed to produce a successful CRCS. But outreach efforts by College Measures suggest that far fewer states than the DQC data suggest have the capacity to implement a CRCS in the near future.

Given the interest in establishing CRCSs throughout the country, one of the main questions for this project is: What can DOL do to support the development of CRCSs? Our work leads us to two recommendations:

- **Recommendation #1**: Provide resource support, including both funding and guidance.

- **Recommendation #2**: Provide additional incentives that would encourage states to make CRCS implementation a state priority.

We discuss each recommendation in turn.

Provide Resource Support. The first way DOL can provide resource support to states is via the WDQI. Despite the fact that most WDQI states are still working to establish the data infrastructure that can support a CRCS, the program represents one of the most effective ways DOL can work with states to establish and enhance CRCSs. First, among Round 2 and Round 3 grantees, DOL can encourage states to develop CRCSs as they make progress developing their data infrastructure. Similarly, as with both Ohio and Virginia, states with existing grants could be provided with additional grants with the specific goal of creating and/or improving their CRCS.

In addition to working with current grantees, DOL can provide more WDQI grants to states that, again, include specific goals related to the development and implementation of CRCSs. Unfortunately, states that have already received WDQI grants are likely to be those that recognized early the value of implementing such systems. If so, attracting additional states—which are likely to have less inherent interest in committing to such an endeavor—may require more generous funding as a way to entice their participation.

A second way that DOL can provide resource support is to make available to states attempting to create CRCSs the knowledge already generated by similar efforts in other states. The states that are currently the most advanced have benefited from many years of experience working to develop their systems. The many states that lack such history would benefit enormously from understanding how leading states have overcome the obstacles they have faced. To support state efforts to develop CRCSs, DOL could help coordinate peer-to-peer exchanges with key information provided by states like Florida, Louisiana, New Jersey, Minnesota, Texas, Virginia, and Washington. Such states could share their approaches to developing their CRCSs in

workshops, in one-on-one consulting sessions, or through other methods. In particular, states could encourage their departments of education to work with state workforce agencies by sharing best practices for avoiding issues related to FERPA compliance. Such support could be extremely valuable in overcoming what, historically, has been a major obstacle to creating a successful CRCS.

In addition to facilitating peer-to-peer exchanges, DOL could also work in coordination with ED to provide continuing guidance on linking education and workforce data. Joint efforts by DOL and ED could encourage and facilitate similar joint efforts at the state level by providing guidance, technical assistance, and encouragement to create effective WDQI-DBs and CRCSs.

Provide Other Incentives. In addition to providing resources in the form of additional WDQI grants and facilitating information sharing and collaboration among states seeking to develop CRCSs, DOL can work to create other incentives that would help make the development of CRCSs a state priority.

One way to provide a strong incentive for states to pursue CRCSs is by enforcing WIA Section 122. This section requires states to implement a process for certifying that the recent performance of training providers included on the state's ETPL is adequate for the provider's continued inclusion on the ETPL. The requirement to make this determination, called "subsequent eligibility," is not currently binding on the majority of states, because most have requested and been granted waivers from DOL with respect to the provision of WIA concerning the initial determination of adequate performance (i.e., "initial eligibility"). Exhibit 15 shows the states with and without these waivers.

Exhibit 15. States with and without Initial Eligibility Waivers

States with Waivers	States without Waivers
Alaska, Alabama, Arkansas, Arizona, California, Colorado, Connecticut, District of Columbia, Hawaii, Iowa, Idaho, Kansas, Kentucky, Louisiana, Maryland, Maine, Michigan, Minnesota, Montana, North Carolina, North Dakota, Nebraska, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Puerto Rico, Rhode Island, South Carolina, Texas, Utah, Virginia, Vermont, Wisconsin, West Virginia, Wyoming	Delaware, Florida, Georgia, Illinois, Indiana, Massachusetts, Mississippi, Missouri, Nevada, Pennsylvania, South Dakota, Tennessee, Virgin Islands, Washington

Source: http://www.waivers.doleta.gov/waiversearchadvanced.cfm; accessed October 21, 2013.

The end result of granting these waivers is that many states are not required to annually review outcome data for providers—they can rely on whatever data were used to place the provider initially on the ETPL. Effective CRCSs can be integrated into state ETPL processes, creating a single system that serves not only to inform potential trainees on the relative merits of different training programs but also performs the data gathering and analysis functions necessary to certify provider performance for the ETPL. This would make establishing a CRCS

more attractive to states that must perform the annual reviews required to determine subsequent eligibility, since the same kind of outcome measure data are used both for the eligibility determination and in a CRCS. Although only two of the non-waiver states—Florida and Washington—have advanced CRCSs; in both cases it plays an important role in maintaining the state's ETPL.[32]

To help foster the creation of CRCSs, DOL can gradually phase out WIA initial eligibility waivers over a short time window (i.e., three to five years). Doing so would provide additional motivation for states to work toward having CRCSs in place that can support the state's ETPL process. Though worthwhile as a step in the right direction, phasing out the WIA initial eligibility waivers is not a panacea, however. Even if all states had robust processes in place to make annual provider eligibility determinations, not all types of providers are likely to participate. For-profit providers, for example, may elect simply to be excluded from the state's ETPL rather than submit data on participants in their programs. Nevertheless, phasing out waivers is one tool DOL can use to provide an incentive for states to develop CRCSs.

Another way DOL can give states an incentive to pursue CRCSs is to work to encourage state-level support of this work. In the states with existing systems, state institutional support was crucial to success—including collaboration between state workforce and education agencies, legislative support, and executive support. DOL can encourage state workforce administrators to reach out to and work with their education counterparts on implementing these systems. DOL could collaborate with ED to organize a similar effort on the part of ED. Further, DOL could work with ED to carry out a coordinated effort to publicize the internal value of CRCSs to state policy makers, including state governors' offices. Highlighting the potential benefits of a CRCS to state officials can help foster the sort of state support that has played a key role in establishing the relatively few CRCSs in place today.

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[32] Interestingly, New Jersey continues to retain a waiver, even though the state has had a CRCS that is integrated with the state ETPL since 1998. New Jersey, however, intends to fully implement a subsequent eligibility process in 2014 and it would then not request a waiver for Program Year 2014 (Fichtner, 2013).

5. SUMMARY AND CONCLUSIONS

Begun in 2010, the WDQI has consisted of three rounds of grants to state workforce agencies to "develop or improve" statewide longitudinal administrative databases, which we have termed WDQI-DBs. Functionally, the creation of these databases is not a new idea; rather, it is a new application of an old idea, where the new application is to link employment and training data with education data from the SLDS initiative. Even before the WDQI, a small number of states had administrative longitudinal databases that were functionally similar to WDQI-DBs. States developed these WDQI-DBs for their own purposes, mostly to improve workforce program management, to support education and other state programs, and to evaluate state programs.

The current policy interest is to develop CRCSs, but developing these systems with WDQI-DBs takes time. As a result, we have identified only a few states that, to date, have been able to create CRCSs within the three-year (or less) life of the WDQI grants. We have found five states—Florida, Minnesota, New Jersey, Virginia and Washington—that have fully operational CRCSs. Two other states, Louisiana and Texas, will release new systems in February 2014. The Louisiana system will support a CRCS in the near future; Texas's system is a CRCS. Three of the states with functioning systems—Florida, New Jersey, and Washington—developed what were essentially WDQI-DBs before the WDQI grant program began, but have been enhancing their WDQI-DBs and CRCSs with WDQI funding. Florida and Washington have been working on their CRCSs since the 1970s and 1980s, and New Jersey since 1999. Virginia, Texas, and Louisiana have developed their CRCSs during the WDQI funding period and have used WDQI funds for this purpose.

Our overall finding is that a relatively small number of WDQI grantees currently have CRCSs. This is not surprising due to what is required to create these systems. The states with developed CRCSs are states that have improved WDQI-DBs and have invested the time and expertise and shown the resolve it takes to develop CRCSs. Nevertheless, beyond enhancing or creating CRCSs, which was not initially a major focus of the WDQI, states have used WDQI grants to make strides in developing the data infrastructure necessary to support future CRCSs. Among the selected Round 1 WDQI states, some grantees have been able to link various forms of workforce data; others have gone beyond to successfully link workforce and education data.

Although not a direct focus of the WDQI grants, a potential use for state WDQI-DBs is to support state processes for certifying training programs for inclusion on ETPLs. Among the Round 1 WDQI grantees we discuss in this report, only Washington currently uses its WDQI-DB in this way; Louisiana expects to do so as early as January 2015.

CRCSs should be an essential part of WIA's training provisions. A major innovation of WIA was the creation of training vouchers allowing consumer choice in the selection of a course of training and/or the provider of that training. This approach, however, implies that consumers have accurate information about training courses, training providers, and the labor markets in which they will be searching for a job after completing their training—a condition that is unlikely to exist without information provided by state education and workforce agencies.

Prospective trainees will have access to something more nearly approaching the goal of perfect information when making their choices if they examine effective CRCSs containing up-to-date, reliable information on the labor market outcomes of others who have completed the same (or similar) programs. These systems can act as "scorecards" potential trainees can use to exercise their consumer choice in the training market. As additional guidance, potential trainees can choose from an ETPL that lists only effective training programs. Further, potential trainees can examine labor market information about the demand for workers who complete the training programs in which the potential trainees intend to enroll.

Given the role CRCSs can play in helping consumers select the best education and training programs for them, there has been increased policy interest in developing such systems nationwide. Based on our review of states participating in the WDQI, we found that many states have websites that allow users to search for education and training programs, but only five states have effective CRCSs in place at this time—meaning that potential trainees in most states must choose programs based on whatever other information is available to them. Analyzing the development of the five existing systems, we identified eight key factors that were important in producing effective systems:

- State-level administration of the system

- Use of individual-level data to measure outcomes

- Having the necessary data infrastructure

- Successfully joining education and workforce data

- Having the analytical capacity to work with the data

- Having a favorable state interpretation of the privacy requirements of FERPA, consistent with federal regulations

- Successfully obtaining participation from education and training providers

- Having a broad and steady institutional commitment.

The five WDQI states with operational CRCSs—Florida, New Jersey, Minnesota, Virginia and Washington—have demonstrated that effective CRCSs can be created and improved with WDQI funding. Louisiana and Texas, which will release new systems soon, also demonstrate the potential for states to create CRCSs under the WDQI. And even in these states, the systems can be further improved. It is important to note that these states have developed their systems in their own ways, indicating that there are different paths states can take to success in developing their CRCSs. Other states can learn a great deal from these more advanced states.

Beyond understanding existing CRCSs and how they were developed, another focus of this report was to analyze where states are today with respect to having the foundation upon which CRCSs can be built. Primarily, this is a question of whether states have the necessary existing data infrastructure. Based on a review of the available materials on the progress of WDQI states, it appears that only a limited number of WDQI states currently have the infrastructure

necessary to make quick CRCS implementation a feasible goal; most are still working to create that data infrastructure. It is unclear whether non-WDQI states have sufficient data infrastructures. Information from the DQC annual state survey suggests that a large number of states link postsecondary education data to workforce data—particularly UI wage record data—but these data are self-reported and the DQC does not provide any additional detail about these linkages. An ongoing effort by College Measures (supplemented by our review of the states) to identify and work with states to produce websites similar to CRCSs, in contrast, concluded that only around 10 states without existing systems have the necessary data infrastructure in place, which suggests that most states are not prepared to support a CRCS in the near term.

Given what the experiences of advanced states tell us about the key factors related to the development of CRCSs, we have two broad recommendations for how DOL can support more widespread implementation of these systems:

- **Recommendation #1**: Provide resource support by funding additional WDQI grants focused on the development of CRCSs and work with ED to facilitate the exchange and dissemination of information among states that have created, or are working to create, CRCSs. DOL and ED should also consider substantial efforts to encourage states to have their education and workforce agencies work more cooperatively.

- **Recommendation #2**: Provide other incentives for states to develop CRCSs by phasing out WIA initial eligibility waivers and working with ED in a coordinated effort to encourage state support of CRCSs by systematically publicizing their value to state-level policymakers.

Our recommendations assume the availability of funds to provide the states with grant funding and to foster the exchange of information among states. This funding may or may not be available, but a nationwide system of CRCSs or scorecards cannot be created without the necessary resources. Creating such a system will also depend on the will of state agencies to develop these systems and the availability of the expertise to develop them. Working in partnership with ED, DOL can emphasize the value of CRCSs to help foster state interests. Ultimately, the promise that CRCSs hold for helping to improve the ability of individuals to select the education and training programs that are best for them is worthy of a sustained effort to support their eventual implementation in all states.

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The State of Washington has produced one of the more advanced CRCSs currently in use. This appendix describes how individuals in Washington who wish to learn more about the education and training options available to them can use the system—called Washington Career Bridge—to find out what programs are available (both those approved to receive ITA funding and other programs), details regarding program providers, and information about the outcomes of program participants. This description illustrates in general how a CRCS works, and the types of information it presents to individuals.

A.1   Searching for Programs

The Career Bridge website is located at http://www.careerbridge.wa.gov/. The site is maintained by the state's Workforce Training & Education Coordinating Board, the state agency that manages the state's workforce development system. Exhibit A.1 shows the main Career Bridge home page.

Exhibit A.1. Career Bridge Home Page

To search for training programs, users can click on the "Start Your Search" button on the right side of the screen, below the "Find Education" heading. Doing this takes the user to a basic keyword search screen, with options to display results for either only programs on the state's ETPL, or only those offered online, or some combination of the two. A link under the keyword field takes users to a screen that allows them to conduct a more refined search. Under the advanced search option, shown in Exhibit A.2, the user can supplement his/her keyword search by restricting the results to particular zip codes, counties, job titles, schools, or types of schools. The advanced search also allows a user to filter the results to include only those programs for which performance information is available.

Exhibit A.2. Advanced Search Screen
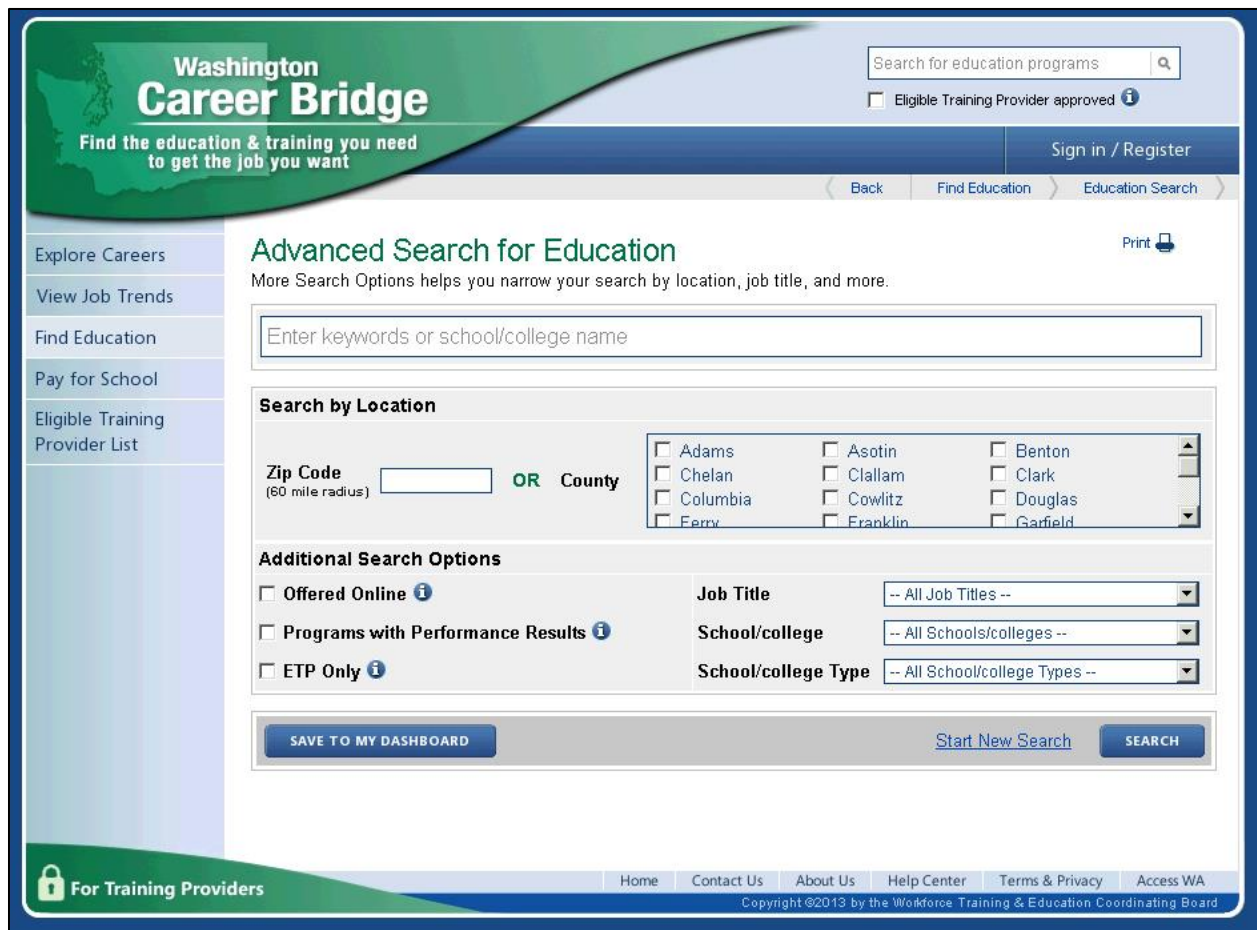
Once a user defines his/her search criteria and clicks on the "search" button on the bottom right-hand side of the screen, search results are displayed on the website just below the search criteria. As shown in Exhibit A.3, the table of search results provides the name of all programs meeting the search criteria, along with the organization providing the training, the location, the program length, and whether the program is on the state's ETPL. The headings at the top of the search results allow users to sort results by any one of the column headings.

Exhibit A.3. Search Results Display
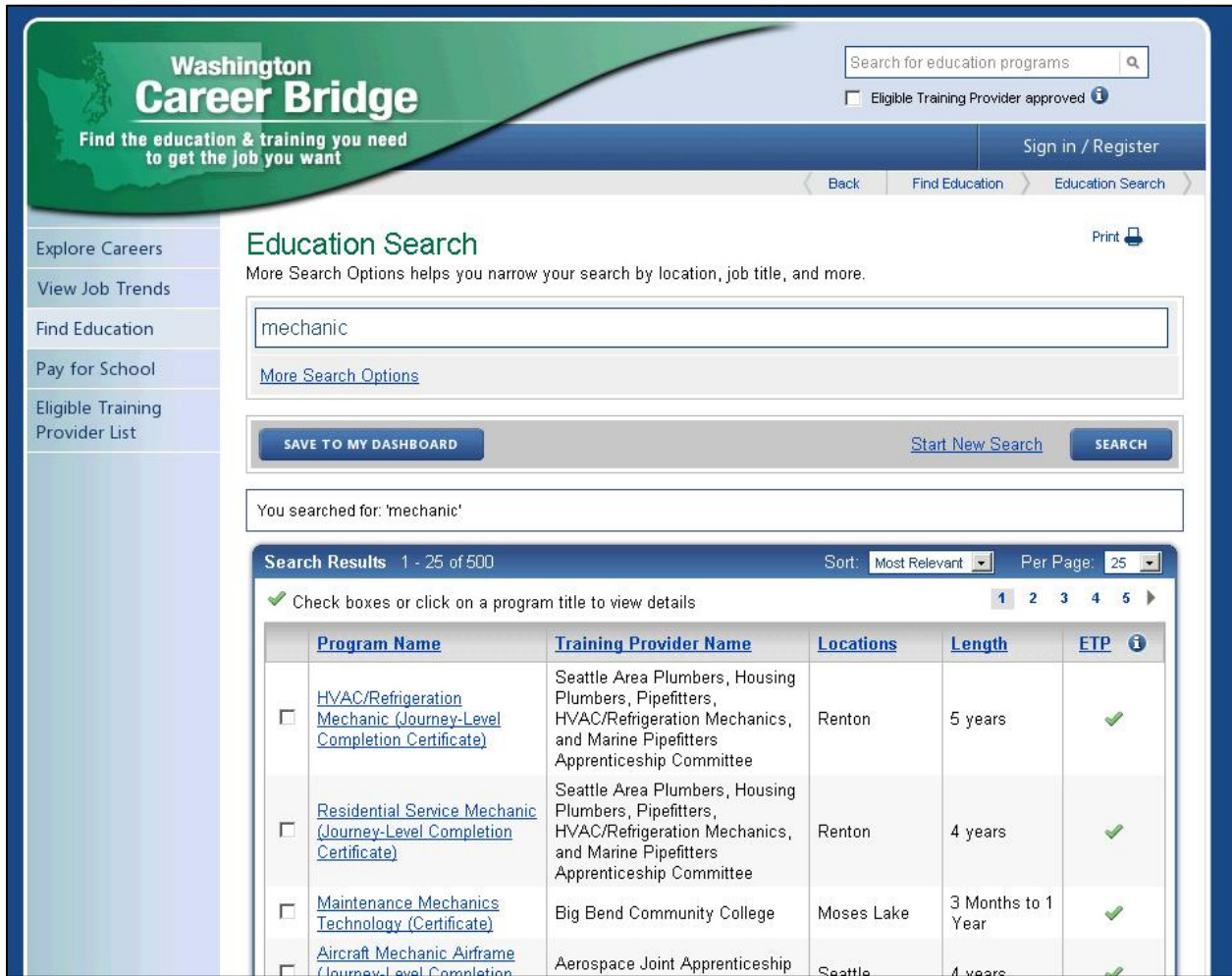
When a user identifies a program s/he is interested in, the user can click on the program name, which takes the user to a program profile page. This page includes a series of tabs above the information display, covering: 1) program details, 2) training provider details, 3) performance results, and 4) student characteristics.

A.2   Program Details

Exhibit A.4 shows a portion of the information provided on the program details tab for a single training program—in the current case, a certificate program in Basic Instrumentation provided at Yakima Valley Community College. This section of the site gives users important details about the program, including whether it is on the state's ETPL, a link to the program website, cost information, how long the training lasts, and how it is delivered. The website shows other details as well (not shown in the exhibit), including:

- Where the program is offered (including links to both a map of the provider location and the public transportation system servicing the location)

- Whether the training is offered on evenings or weekends

- Whether the program is offered online

- Whether a certification or license is required to work in the field

- Whether the course leads to a certification or license

- Whether the program provides preparation for a certification/license test

- Whether the program is approved for veterans

Exhibit A.4. Program Details Display

A.3   Training Provider Details

The second tab of the program profile presents more detailed information about the training provider, as shown in Exhibit A.5. This page gives users contact information for the provider, including a link to the provider's website. Further, in this example—because the provider is a community college—the display also gives users the contact information for the school admissions office, financial aid office, an office focused on worker retraining, and an office for veterans. For each of these offices, the page gives a name, phone number, e-mail address, and link.

Exhibit A.5. Training Provider Details Display

Other training provider details that are populated include:

- Information on distance learning options

- Licensing or regulating agency for the provider

- Provider's source of accreditation

- Whether the institution can participate in federal student aid programs

- Whether the provider offers services for disabled students (including a link to the website, if such services are offered)

- Whether the provider offers career counseling (including a link)

- Whether the provider offers child care on site (including a link)

- Whether the provider offers job placement assistance

- Whether the provider is served by public transportation (including a link)

A.4   Performance Results

The third tab on the program details page takes the user to a display that summarizes program performance. This part of the program profile shows the user a set of measures related to the employment and earnings outcomes of recent program participants. Exhibit A.6 shows how performance results are displayed.

Exhibit A.6. Performance Results Display

The top of the display presents several outcome measures—including program completion rate, employment rate, and median earnings. In this example, a note above the display alerts the user that the results shown in the performance table are derived by grouping participants in this particular program with individuals participating in similar programs at the same institution. When clicked, the information icon next to the note tells the user that "similar" programs are defined as all programs at the institution that have the same Classification of Instructional Program (CIP) code. The information icons elsewhere on the page allow the user to learn how some of the performance outcomes are calculated. For example, the information note for the employment rate indicates that it reflects employment in jobs covered by the Unemployment Insurance (UI) system and jobs in the federal government (excluding the U.S. Postal Service), with "employment" defined as having a job in the third quarter after the quarter in which the program was completed. Though not shown in the exhibit, another table on the performance results page summarizes the industries in which program participants were employed.

A.5   Student Characteristics

The last tab on the program profile display takes the user to a screen that describes the characteristics of students who have participated in the program. As shown in Exhibit A.7, this page summarizes key demographic and background information on students who recently enrolled in the program. As with the performance results display, a note at the top of the page alerts the user that the characteristics shown in the table reflect students who participated in this particular program of study along with students in similar programs. The top of the information display shows the user enrollment information, including the completion rate. The remainder of the table (not shown in full in the exhibit) shows both the number and percent of enrollees broken down by:

- Gender

- Race (American Indian or Alaska Native; Asian or Pacific Islander; Black/African American; Hispanic; Pacific Islander; White; Multi-racial; Other)

- Age (Under 20; 20 to 29; 30 to 39; 40 to 49; 50 and Over)

- Prior education (No High School Diploma/GED; High School Diploma/GED, but No College Experience; Some College Experience, but No Degree; Certificate or AA; BA or Higher)

Exhibit A.7. Student Characteristics Display

APPENDIX B: DETAILS OF KEY STATE CRCS EFFORTS

In this appendix, we provide more detailed descriptions of the scorecard efforts of key states. We include the five states with CRCSs—Florida, Minnesota, New Jersey, Virginia, and Washington. We also include three other states—Louisiana, Ohio, and Texas—that represent 1) a state that has developed a WDQI-DB and is working on developing it ETPL and CRCS making use of that data (Louisiana), 2) a state that has recently been awarded a WDQI grant focused in part on implementing a CRCS and has already taken steps to develop a CRCS (Ohio), and 3) a state that has developed, via its WDQI grant, a CRCS that will be released in early 2014. Our descriptions focus on eight key characteristics that our research suggests are important for the development of existing CRCSs, which we group into two categories:

System Organization

- State-level administration of the system

- Use of individual-level data to measure outcomes

- Having the necessary data infrastructure

- Successfully joining education and workforce data

- Having the analytical capacity to work with the data

Public Institutional Support

- Having a favorable state interpretation of the requirements of the Family Educational Rights and Privacy Act (FERPA), consistent with federal regulations

- Successfully obtaining participation from education and training providers

- Having a broad and steady institutional commitment

For some of these states, we also provide additional pertinent information regarding what the state has done or is doing with respect to its WDQI-DB or CRCS.

B.1   Florida

Florida develops its CRCS statewide using workforce and education individual-level data. The work is conducted by the Florida Education and Training Placement Information Program (FETPIP), an organization established by Florida statute, which is overseen by the Florida Department of Education but governed by state education and workforce agencies. Florida began developing its longitudinal administrative data infrastructure (both education and workforce data) in the 1970s and has continued to expand the system. Florida has avoided FERPA interpretation problems by housing both the workforce and education data as part of FETPIP. Coverage of the system is almost universal, including school districts, state colleges and universities, and selected private institutions.

State-level Administration. The Florida CRCS is developed statewide from workforce and education individual-level data. It covers the K-20 education system and workforce data, including UI wage records. Data are developed for individual Local Workforce Investment Boards (LWIBs). The LWIBs set their own eligibility criteria; thus, each LWIB has its own ETPL based in part on data from the CRCS.

Use of Individual-level Data. The assessment and analysis of participation and outcomes of all education and training programs are conducted exclusively through use of individual-level data from the Florida education and workforce systems. Federal data sources (for example, wage data for federal civilian employees and military service members) are also used.

Data Infrastructure. Florida has a long history of development and use of longitudinal administrative data. It first began using administrative data for research and analysis in 1975. State legislation in 1984 authorized the collection and use of education, vocational education, and workforce data, funded by the Florida Department of Education and governed jointly by the three departments dealing with these programs. This program was expanded in 1988 with new legislation creating the FETPIP, which has expanded its data coverage and its services to education and training organizations.

FETPIP's primary role is to compile, maintain, and disseminate information about Florida school graduates, exiters, or completers with respect to their educational histories, plus placement and employment and other measures of success of these former participants in state education and training programs.

Funding is primarily by state general revenue funds, with supplemental funding (including from federal grants).

FETPIP uses a common collection process for almost all public education and training programs.

Joining Education and Workforce Data. Because workforce and education data are brought together and jointly governed by education and workforce programs, Florida has not experienced problems in creating a WDQI-DB. The data have been available for Florida government use for over two decades.

Analytical Capacity. The Florida government has strong internal analytical capacity. Much of the data analysis connected to the CRCS is conducted by the state. For example, to be put on a local ETPL, a training provider must provide a program that trains for an occupation that is on the Targeted Occupations List (TOL)—termed "demand occupations"—and must be licensed in Florida to be on the ETPL. Florida has a Workforce Estimating Conference (WEC) that meets twice per year, as required in state legislation. Conference principals consist of economists from the legislature and the governor's office. They set the criteria for demand occupations, which are based on growth, openings, and wages.

Florida also makes use of outside researchers. Dr. Scott Parke of the Florida College System and Randy Hanna, the Chancellor, have developed a website for consumers (parents, students, interested parties, etc.) to be able to see recent first year outcomes by institution and program. It was developed as a precursor to the legislation passed in 2012—HB 713—which has the state's Department of Economic Opportunity (DEO) hosting Department of Education post-graduation outcomes (see further below) starting this December (DEO is contracting with Mark Schneider of College Measures).

FERPA Interpretation. Florida does not have any problems with FERPA, since the data are housed in a state education agency and the confidentiality of the data is protected. The Florida Department of Education does not share education data with personally identifiable information (PII). The CRCS is developed by FETPIP, which is part of the education department.

Training Provider Participation. Public education institutions submit their student records to the state Department of Education. Private training providers must submit their student records to the Commission for Independent Education, which regulates these education and training providers. Thus, the state WIA program does not have to request student records. Rather, these data go to educational agencies that transfer them to the FETPIP. Nearly all public education programs participate, including all school districts, state colleges and universities, and "selected" private vocational schools, colleges, and universities.

Institutional Commitment. Florida has a long history of support by both workforce and education stakeholders, particularly with regard to support for robust data systems. Florida began developing its longitudinal administrative data infrastructure (both education and workforce data) in the 1970s and has continued to expand the system since. FETPIP was established in 1984 and the CRCS has been supported by funding from state revenues.

B.2   Louisiana

Louisiana has made substantial progress developing its data warehouse through the state's WDQI grant. The database, called the Workforce Longitudinal Data System (WLDS) is housed at the Louisiana Workforce Commission (LWC). Currently, Louisiana's WDQI-DB gathers data from multiple workforce, education, and other sources. These include workforce data from workforce programs managed by LWC, including WIA; Wagner-Peyser; programs under the umbrella of Louisiana Rehabilitation Services; and UI claims, benefits, and wage records. The database links these workforce data sources to education data, including K-12 records from the state Department of Education; postsecondary data from the Louisiana Board of Regents (which covers the state's 34 public colleges, universities, and technical schools); and the Louisiana Community and Technical College System (which covers short- to medium-term education and training programs which are not required to submit data to the Board of Regents). Further, the education data in the system also include information from some of the state's proprietary schools—36 provide data at present. Louisiana is currently in talks with the state association of proprietary schools to include more such institutions. To complement the workforce and education data, the Louisiana WDQI-DB incorporates multiple additional sources

of data, including data from the NDNH, FEDES data, and data on assistance received from the state's cash assistance program. Louisiana is also working to incorporate data from SNAP and has a pending inquiry concerning whether the state can also include data from WRIS2.

By February 2014, Louisiana anticipates launching a new website dedicated to hosting the output from the WLDS along with various user interfaces that have been developed for state agencies. The website will feature easy-to-use dashboards tailored to the specific needs of different state agencies. The ability of the system to provide up-to-date information on program performance at a high level has been important in engaging state policymakers and encouraging their support for the system. Recently, LWC gave a presentation of the system to the governor, which was very well received.

State-level Administration. The WLDS is administered by LWC, the state workforce agency.

Use of Individual-level Data. Louisiana's WDQI-DB is based on individual-level data from both workforce and education records. LWC expects that its WDQI-DB will soon be used to feed outcome measures into its current education and training program search website, HiRE.

Data Infrastructure. The WLDS is housed at LWC. The WLDS has an automated process that regularly pulls data from the various workforce and education data sources that feed into the database. Once the data have been collected, they go through a review process in which staff at LWC review the data received to ensure they are ready to be uploaded into the system. The database contains historical records from all sources from 1998 to the present. The system is also designed to protect the sensitive nature of the WLDS data. The individual-level data in the database are never accessible via the web interface. Rather, there is an automated process in place by which the website periodically connects to the WLDS (e.g., quarterly or annually) to receive updated aggregate tables that are in turn posted to the website. The website also hosts a web-based documentation system to help users understand the information available through the site.

Joining Education and Workforce Data. The WLDS joins workforce data, covering a variety of different programs, to education data, including both K-12 and postsecondary data. The education data are derived from the state SLDS database, though not all the information available in the SLDS is captured in the WLDS.

Analytical Capacity. LWC has some internal capacity to analyze the data in the WLDS, but its development and continued maintenance and improvement has benefited from analytical support from Louisiana State University (LSU). LSU was an academic partner for the WDQI grant; a computer science professor helped design the original WLDS architecture (Chintawar, 2014). The school is working with LWC to develop processes for making the WLDS available to researchers, who would access the data from a secure location on LSU's campus.

FERPA Interpretation. Louisiana has not experienced difficulties related to the state's FERPA interpretation. LWC has had a longstanding partnership with the state's office of higher education, the Louisiana Board of Regents (Ebey, 2013), going back to the late 1990s. State

legislation passed the year before WIA called for creation of a single repository for education data, intended to be housed on the internet.

Training Provider Participation. The WLDS covers all major types of training providers, including the state's 34 public colleges, universities, and technical schools; short- to medium-term education and training programs offered by the Louisiana Community and Technical College System; and programs offered at some (36) of the state's proprietary schools. The state is currently in talks with the state association of proprietary schools to include more such institutions.

Institutional Commitment. LWC has been working on ways to use administrative data to gauge program performance since the late 1990s (Chintawar, 2013). Over time, the state faced challenges—including initial limitations on the types of data that were able to be collected, and turnover in its Labor Market Information division—which led to the loss of institutional knowledge. However, the state's commitment to these efforts has continued through the WDQI program. The WLDS features multiple reports and dashboards that have been created for decision-makers in state workforce and education agencies to help them better understand how their programs are operating and conditions in the state's labor market. This has helped generate broad-based support for the WLDS among state agencies. Furthermore, LWC is currently working to secure commitments to support the maintenance and improvement of the WLDS after the state's WDQI grant has concluded. LSU is working to secure regular funding to help support the WLDS and the state is also hopeful that the various agencies that will benefit from access to the WLDS and its customized reports will be able collectively to secure sufficient funding to support the WLDS in the future. Louisiana's WDQI grant lead estimates the total annual resources needed to support the system to be approximately $50,000 (Chintawar, 2014).

Future Uses of the WLDS. The state plans to make use of the WLDS in a variety of ways after its WDQI grant expires in February, beyond the program management tools that the new website will feature. As noted above, the LWC is working to develop processes whereby outside researchers can apply for permission to use the data for research. Additionally, the state plans to use the WLDS as part of its ETPL certification process in the near future. The state's ETPL is released in January of each year. It is anticipated that WLDS outcomes data will be used to judge whether providers satisfy state criteria for inclusion on the January 2015 ETPL. Lastly, outcome measures (e.g., employment rates and earnings) for education and training programs are expected to be fed into Louisiana's HiRE website, which allows jobseekers to search for education and training programs. The outcome data currently reported on the site are out of date and not derived from Louisiana's WDQI-DB.

B.3　Minnesota

Minnesota's CRCS is called iSEEK. It is managed by an organization called iSEEK Solutions, a joint powers organization that is a partnership of multiple state education and workforce stakeholders. iSEEK Solutions was formed in 1999 and exists to provide the state with reliable information and resources about careers, education, and jobs in the state. At the time, one of the primary goals of the organization was to assemble information on all academic programs and courses in the state and make the information freely available online to Minnesotans (Jacobsen, 2014). The iSEEK website allows users to search for education and training programs using various search criteria. The website displays relevant information for each program—such as institutional information, program costs, information about financial aid, and characteristics of the student population. For programs offered at MnSCU member institutions, the website also displays employment and earnings outcome measures for program participants. The outcome information is calculated by matching participant data from MnSCU schools to state UI wage record data once per year.

State-level Administration. The iSEEK website is managed by iSEEK Solutions, a partnership of multiple state education and workforce stakeholders. Its executive board includes representatives from six state agencies: the Minnesota Department of Education, DEED, OHE, MnSCU, MN.IT Services, and the University of Minnesota. Affiliate members include representatives from the state Department of Human Services and Department of Labor and Industry, the Governor's Workforce Development Council, and the Minnesota Private College Council. The CRCS is managed by iSEEK and covers the entire state.

Use of Individual-level Data. The outcomes information displayed on the iSEEK website is calculated from individual student records that are matched to state UI wage record data.

Data Infrastructure. iSEEK does not house any of the data used to populate the iSEEK website. Instead, it regularly receives data from various organizations, which are then used to update the website.

Joining Education and Workforce Data. Student records from institutions that are members of MnSCU are matched to the state's UI wage record data by research staff at MnSCU. Outcome measures based on the linked data are provided to iSEEK staff to upload to the CRCS website on an annual basis.

Analytical Capacity. iSEEK Solutions has no in-house capacity to analyze the data. MnSCU has a research unit that is responsible for uploading data to the iSEEK website.

FERPA Interpretation. Because iSEEK does not maintain either education or workforce data, there have been no challenges regarding the use of student record data.

Training Provider Participation. The iSEEK website generally includes all programs offered by institutions that are members of MnSCU as well as programs at the University of Minnesota and all private institutions in the state. Further, private career schools that have been accredited by

OHE are also included. However, outcome measures related to the labor market experiences of program participants are available only for MnSCU member institutions.

Institutional Commitment. iSEEK Solutions was formed in the late 1990s in an effort to compile information on all academic programs and courses offered in the state and to make that information available online to Minnesotans. It comprises representatives from all the major workforce and education stakeholders in the state, which have collaborated through iSEEK to provide the state's citizens with comprehensive career, education, and job information. Because it includes representatives from essentially all major workforce and education stakeholders in the state, iSEEK Solutions has enjoyed strong support in the state since its inception.

B.4   New Jersey

New Jersey has had a CRCS since 1998. The program is administered by the Heldrich Center at Rutgers University, which gathers data and computes measures quarterly and is funded by the state. Heldrich is an agent of the education agencies, and does not share individual-level data (but only outcomes), thereby conforming to FERPA. State legislation was passed in 2005 that supports the CRCS by requiring provider submission of individual-level data by any provider that receives state or Federal support. The system is used widely by individuals and one-stop career counselors but has not been marketed much elsewhere (e.g., to school career counselors). The system measures the following outcomes: employment rates, retention rates, average quarterly wages, and estimated annual wages. The system looks at outcomes six months, one year, and two years after completion (Fichtner November 8, 2013 WDQC webinar).

State-level Administration. The CRCS is managed statewide for the State Employment and Training Commission (the state WIB) by the state's Department of Labor and Workforce Development (NJDLWD). Local WIBs provide input into the development and implementation of the system but have no formal role in its implementation. The data are held and analyzed by the Heldrich Center under a contract with the state. The Heldrich Center calculates outcome measures on a quarterly basis and provides them to the NJDLWD.

Use of Individual-level Data. New Jersey only makes use of individual-level data to develop the CRCS, using an online application system that enables training providers to submit required data directly to the state. The data are reviewed. If approved, the submitted information is immediately uploaded to the state's system.

New Jersey uses only UI wage records for calculating outcomes. State UI wage records are supplemented with wage records from other states using the WRIS. Thus, wage records cover nearly all workers in wage and salary employment throughout the United States and exclude only the self-employed. The Heldrich Center estimates that 95 percent of training participants are included in the UI wage record data (Mabe 2013).

Education data come from student records from public colleges and universities and from adult vocational schools from the Commission on Higher Education and the Department of Education. These data are supplemented with WIA administrative data.

Data Infrastructure. The New Jersey data infrastructure has been developed and maintained since the late 1990s. The data resides at the Heldrich Center, which employs analysts and information technology specialists to maintain, enhance, and utilize the system. The Heldrich Center has a year-to-year contract with the NJDLWD, but these contracts have been renewed every year since 1998. The data sharing agreement between the Heldrich Center and the NJDLWD specifies that the data must be destroyed if the contractual arrangement is ever terminated.

Joining Education and Workforce Data. State education and workforce agencies provide data to the Heldrich Center, which updates the integrated database on a quarterly basis. Education data is for the post-secondary education system. It does not include K-12 data.

Analytical Capacity. The NJDLWD has limited analytical capacity. The Department and state education officials have worked closely with the Heldrich Center and have had contractual relationships with it. The Center has had good relations with state government, regardless of the party in power. The current Deputy Commissioner for the Department is the former research director for the Heldrich Center.

Generally, the Heldrich Center does a great deal of analysis for the state, because it has senior researchers who have remained with the Heldrich Center for long periods of time, providing continuity for data development and analysis. The state CRCS is in place; the infrastructure and analytical capability are being improved with WDQI funding; and more analysis is being conducted, which will further improve the system.

The Heldrich Center does most of the analytical work, as noted, and provides analysis the NJDLWD. Heldrich developed and piloted the website , for example, although NJDLWD operates it. Heldrich is developing improvements with WDQI funding. This funding is improving the state's ETPL, but the original funding was from the state—out of federal workforce grants (Van Horn 2013).

FERPA Interpretation. The Heldrich Center is an agent of the New Jersey education agencies (as well as the NJDLWD), and does not share data (even with the NJDLWD), only outcomes, thus conforming to FERPA. In addition, the New Jersey Attorney General issued an interpretation of FERPA that found re-disclosing the education data with PII to the Heldrich Center to be allowable.

Training Provider Participation. In 2005, New Jersey enacted legislation requiring all training providers receiving state or federal workforce funds to provide data to the state, which are then included in the New Jersey CRCS and used to develop the New Jersey ETPL. By extending the system beyond WIA and requesting the data under the authority of the New Jersey

Department of Education, the state has increased the incentive of training providers to participate.

Data in the CRCS comes from five sources: 1) training providers, 2) public colleges and universities, 3) adult and vocational high schools, 4) adult basic education programs, and 5) workforce programs. Altogether, the New Jersey system covers 56 workforce programs and all students participating in those programs. A proposed New Jersey law requiring all private career schools to provide their participation and outcome data to the state for inclusion in the CRCS would increase coverage to 150 additional schools (Ficthner November 8, 2013 WDQC webinar).

Since 1998, New Jersey has implemented a CRCS that has included—as of 2010— more than 600 education and training providers that offer more than 3,000 training programs.

As of 2010, New Jersey was able to disseminate outcome information for approximately one-third of all training programs. This small percentage was due to the lack of reporting of student records by some providers and by inclusion on the list of some relatively new programs. The state plans to move aggressively to remove providers that did not report their student records from the list. The state is also planning to set performance standards for providers and programs (Fichtner and Van Horn 2010).

As of mid-2013, the system included approximately 1,000 education and training providers and 5,000 training programs. While the system still has problems getting private training providers to report their data, a big increase in compliance occurred after the NJDLWD sent letters to all providers on the ETPL in September 2012, threatening to remove them from the ETPL if they did not report.

New Jersey state legislation requires private career schools to submit student level information for use in the scorecard, but regulations have not yet been issued that include this requirement as a condition for state licensing. These regulations should be issued by early 2014, which should substantially increase private career school submission of data (Fichtner interview, November 14, 2013).

Institutional Commitment. New Jersey has had a CRCS since 1998. The system is maintained by the Heldrich Center under a contract with the state. Participation of training providers has been supported through state legislation which requires providers to submit individual-level data by if it receives state or federal support. Although FERPA has not been an obstacle because of the involvement of the Heldrich Center, the state Attorney General has issued a notice supporting the transfer of data to the Center.

B.5   Ohio

Ohio currently does not have a CRCS, but is developing a number of new tools that include a type of training scorecard. Ohio has received two WDQI grants, each for $1 million: one in 2010 to further develop its longitudinal administrative database and a second grant in early 2010, which places greater emphasis on developing applications that resemble a CRCS. Most of the funding from the WDQI grants goes to Ohio State University (OSU). Professor Josh Hawley is Director of the Ohio WDQI. The WDQI grants were sponsored by OSU and by the three state agencies covering education, higher education, and labor, respectively. Data are updated regularly. Most administrative data are received quarterly, but workforce managers can update program data as new data become available. Products will become publicly available on the web soon, under the domain name of OhioAnalytics.gov. The site is currently under construction.

OSU has had a workforce longitudinal administrative database for many years. It was a member of the ADARE consortium, during which time it developed an Oracle database, which has been expanded, scaled-up, and refined in recent years but remains similar to its early incarnation.

While Ohio has not yet developed a training CRCS, it has developed a number of other relevant products. OSU has developed a dashboard for the Ohio Department of Education, for example, which consists on an "early warning system" for students moving from the 8th to 9th grade, using historical data to predict which students are likely to have trouble when they enter high school.

A product developed for community colleges examines the labor market outcomes for students completing two-year programs and workforce training. It presents labor market outcomes for students one and four years after program completion. OSU has also begun planning to develop products dealing with the WIA program and on-the-job training

State-level Administration. Current products are developed statewide by OSU. A CRCS focused on training programs will also be statewide when it is developed.

Use of Individual-level Data. All WDQI products are being developed using individual-level data, which the training CRCS will also use.

Data Infrastructure. The data infrastructure was developed at OSU. Using WDQI funding, Ohio has expanded the scope of the data system and also set up a more formal structure for receiving, organizing, and analyzing the data.

Joining Education and Workforce Data. OSU receives data from education and workforce agencies and has no impediments to joining the two.

FERPA Interpretation. The education, higher education, and workforce agencies have worked together to create and use the education data in conjunction with workforce data. The data

reside in a state university under the auspices of a state educational institution. No concerns about FERPA have been apparent.

Analytical Capacity. The state government has depended on OSU for analytical capacity. OSU has carefully engaged state agencies to determine what products they want from the data, and OSU works closely with state agency staff to produce results that are useful to the agency in question.

Training provider participation. OSU receives data regularly from state educational institutions. Little data come from private institutions, but OSU expects to get such data from the National Clearinghouse for the private schools that belong to it.

Efforts to Create a CRCS. An Ohio "dashboard" is being developed by the WDQI organization at OSU for the Governor's Office of Workforce Transformation with the cooperation of the education and workforce agencies. WDQI grant funds are being used for this effort. The Office of Workforce Transformation expects to use the dashboard for program management purposes but will also make it available to potential trainees and students. It is expected to be implemented in mid-2014 as part of OhioMeansJobs.com. It will cover four-year colleges and universities, adult and vocational education institutions, technical training centers that serve high school students, and WIA participants. Its coverage is likely to be limited initially to participants in the WIA, Perkins, and Ohio state scholarship programs. Both the Governor's Office of Workforce Transformation and OSU are interested in expanding the dashboard to a general purpose scorecard, and Ohio State believes it can quickly make this upgrade before the end of 2014 (Ewald 2014, Hawley 2014, Intihar 2014, Toledo Business Journal 2013).

B.6 Texas

We have classified Texas as lacking a CRCS because it does not produce outcome measures using linked administrative records. Nevertheless, Texas does have a website that allows users to search for education and training programs, and which does display information on outcomes. The Texas system is produced without access to student-level records from the Texas education department because of continuing concerns about FERPA. As a result, neither the Texas Workforce Commission (TWC) nor the University of Texas Ray Marshall Center (RMC), which does extensive analytic work for the state, has access to state education data with PII. Instead, the Texas system is based on self-reporting by education and training providers, unlike the states of Florida, New Jersey, and Washington.

State-level Administration. Training providers must apply to the state to be placed on Texas' ETPL. They submit data online regarding their outcomes on a self-reported basis, with the review and approval process done by the LWIBs. The approved providers are placed on the statewide ETPL, and their data are available online to potential training participants. Texas only conducts WIA initial approval of training providers, however, because of a waiver releasing them from having to conduct any subsequent approval under WIA. There is no updating of data on the program search website. The original data are used, even as they age.

The Texas ETPL is a statewide system, which is available on the TWC website at http://www.twc.state.tx.us/boards/wia/tpcs/etpc.html.

Use of Individual-level Data. Although the TWC has access to individual-level data from the workforce system, such data are not available for education from student records, because of the state's interpretation of FERPA. Instead, the system makes use of self-reporting from training providers, as noted. Because there is only an initial approval process, the data from training providers, which are aggregate data, are only collected once.

In accordance with WIA, the WIA program collects participant level data on all WIA participants, including trainees. Those data are used by the state WIA program and submitted to DOL as part of its WIASRD reporting system. But these individual-level data are not used for public reporting purposes and are not shared with the staff managing the state's ETPL.

Data infrastructure. The partnership between the TWC and the RMC began in 1986 with an evaluation of several welfare-to-work pilots for the governor's office. Other contracts were obtained with a number of Texas agencies. The contracts expanded to ongoing data sharing agreements with the TWC and other state agencies, which have continued for over two decades.

The RMC has had access to workforce data for many years and helped Texas become one of the early states to develop workforce longitudinal administrative data. Many Texas agencies other than the TWC share data with the RMC and allow it to retain the data for more than a single research project. These agencies include: TANF, Medicaid, SNAP, foster care and child care, and workers compensation. Data are generally housed in state agencies and made available to the RMC on an as-needed basis. Workforce data—including UI wage records—reside with state agencies but are made available quickly to the RMC for each project.

Joining Education and Workforce Data. TWC does not have access to education individual-level data because of lingering FERPA interpretation problems, as noted. TWC's labor market information (LMI) organization has access to workforce and education data, but it does not have student-level data. The TWC had access to these data for a number of years until the state's FERPA interpretation about a decade ago prohibited sharing of data with PII—a prohibition that is still in effect.

The RMC can gain access to all workforce data. But it does not have access to education data except through agreements with local school districts in conjunction with the Central Texas Student Futures project—a privately funded initiative to increase the direct to post-secondary education transition in the greater Austin region. Even these data combine training and education data and are de-identified.

Analytical capacity. Both the TWC and the RMC have strong analytical capacity. The TWC compiles the Texas ETPL using aggregate data provided by training providers. RMC conducts

extensive analysis for the TWC and other state agencies. It also has access to data from school districts in the greater Austin area to track whether secondary school graduates go directly to post-secondary education in response to the Central Texas Student Futures project.

FERPA interpretation. Texas has been unable to overcome restrictive interpretations of FERPA that have prevented re-disclosure of education data with PII despite new FERPA regulations. The RMC held a conference about FERPA in June 2013 to provide information about the new FERPA regulations and to have representatives from Maryland, Ohio, and Washington present details about how FERPA-protected data are shared and used in their states. This conference was designed to provide information so that Texas could also develop an interpretation of FERPA that would allow the shared use of state education data.

Training Provider Participation. Texas' state provider information website includes data for individual training providers, but these data relate to the period before the training provider applied to be placed on the ETPL. The TWC reports no problem having these data reported.

For purposes other than maintaining the ETPL, training and education providers report outcome data, the availability of which depends on the submission of this information by Texas community colleges. Since reporting is not mandatory, most *community* colleges do not report. However, the Texas state legislature ties funding of Texas technical colleges in part to outcomes on completion, graduation, and employment, which has led to Texas state *technical* colleges being eager to report their program results. It has also has meant that the technical colleges want to participate in RMC surveys of employers that focus on identifying whether trainees take jobs in occupations for which they are trained.

Workforce Data Quality Initiative. Most of Texas' WDQI grant funds go to conducting research to improve workforce programs and as input to improved outcome measurement. Grant funds go 75 percent to the RMC and 25 percent to the TWC, mostly for improvements to the Texas Dashboard. Dr. Christopher King is the RMC's Principal Investigator for the WDQI. RMC analyses include research briefs, estimates of returns to college credentials, and analysis of course and program completion. RMC is also supplementing WDQI data with its survey of employers, which collects additional information regarding job titles with occupation and classification of instructional program (CIP) codes—these allow a determination of whether training is related to subsequent employment. This information is needed by the Texas technical college system in order to get its funding from the state legislature. Among recent RMC products done for the WDQI are three briefs detailing the progress of Texas' WDQI activities.

Building the Texas CRCS. Texas is expected to go public in February 2014 with a recently completed CRCS funded, in part, by their 2010 WDQI grant from DOL. Texas received $1 million as a first round WDQI state. Approximately one-quarter of that money went to the TWC and the other three-quarters went to the RMC. The TWC share of the WDQI grant along with some the Texas SLDS grant moneys have been used to create the Texas CREWS, which stands for the Texas Consumer Resource for Education and Workforce Statistics.

Texas CREWS was developed through a partnership between the TWC and the Texas higher education agency as a web application tool designed to give consumers and their families an attractive and accessible source of information for making important choices about education and training programs. Texas CREWS does not include data on K-12. There is no detailed information yet on the scope and nature of Texas CREWS, but it is expected to include community and technical colleges and state and non-profit four-year colleges and universities. The Commissioners at the TWC and the Higher Education Coordinating Board are currently reviewing the demonstration site and have requested a few changes. TWC hopes to announce the tool's public availability in February 2014.

In Texas, the WDQI grant has improved the relationship between the Texas higher education agency and TWC. To carry out the WDQI grant, these agencies have had to come to agreement about joining their data and using it to create Texas CREWS and for other purposes. Texas also has created Texas Education Research Centers, and RMC is one of those centers. RMC has been conducting research that bring workforce and education data together. It has also been supporting the effort to create a Texas CRCS, although primary responsibility for Texas CREWS has resided within the TWC (Smith 2014).

B.7   Virginia

Virginia has a Virginia Longitudinal Data System (VLDS) that includes a new CRCS placed on the internet in late 2012.[33]   The VLDS is a work in progress. It began as a legislative mandate in 2005, to be carried out by Virginia's P-16 Council. The Council produced a 2006 report to the Governor and General Assembly that included specific recommendations to further development of the VLDS. These recommendations formed a road map to create the foundations for VLDS.

Funding for the VLDS was initially from state resources. State grant funds from ED in 2009 in the amount of $17.3 million from the SLDS was critical, especially to develop infrastructure to conduct analyses of the effectiveness of Virginia's educational system. DOL WDQI grants in 2010 and 2013 have also been important, and contributed to improvement of the VLDS and development of the CRCS.

The VLDS was only ready to be launched and made public in the fall 2012, making use of state, SLDS, and WDQI funding. VLDS data includes post-graduate employment data and was published on the State Council on Higher Education in Virginia (SCHEV) website, including the

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[33] Input for this section was provided in part from an interview with Wendy Kang (2013) of the State Council on Higher Education of Virginia (SCHEV) and from the website http://research.schev.edu, including from SCHEV (2012).

percentage of graduates with employment 18 months after graduation. The data can be found at: http://research.schev.edu.

The development and availability of CRCSs is mandated by law. In 2012, the state legislature enacted HB 639, which requires SCHEV to annually publish on its website data regarding employment outcomes of graduates from Virginia public and private colleges, non-profit colleges, and universities. At a minimum, the legislation requires the data to report at the program level (six-digit CIP and degree level) on the percentage of graduates known to be employed within Virginia, average salary, and average higher education-related debt for graduates on whom the data are based—at intervals 18 months and five years after the date of graduation. Data were to be published by August 1, 2013, and each year after by SCHEV. While the Virginia Community College System has published similar data on a limited basis, the report required by this law is thought to be the first to include private institutions.

The VLDS was not Virginia's first effort to develop longitudinal administrative data systems. SCHEV first established a longitudinal data system in 1992. The Virginia Department of Education began developing an SLDS in the 2000s. VLDS has replaced these efforts.

Starting in the fall 2012—almost a year before the date required by the legislative mandate—VLDS data were reported at the program level (six-digit CIP and degree level) on the percentage of graduates known to be employed within Virginia and average salary 18 months after graduation. VLDS also published the average higher education-related debt for graduates on whom the data are based. For example, the Post-Completion Wages table presents five-year rolling average data for the years 2004-2005 through 2009-2010 by institution and program, for public and non-profit post-secondary institutions, by degree type (e.g., Associate's Degree). The number of programs reporting wages depends on the nature and size of the institutions. Thus, for 2009-2010 Liberty University report four programs, Northern Virginia Community College 20 programs, and University of Virginia 44 programs (SCHEV 2012).

The VLDS is limited in its scope. It only makes use of intrastate data, not including interstate or federal wages. It does not include students still in school after graduation. It also does not cover self-employed workers, since they do not report their earnings to the UI program. The VLDS covers state colleges, community colleges, and private non-profit schools. The VLDS does not include for-profit institutions.

The Virginia state government has been very pleased with VLDS. In September 2013, Governor McDonnell announced the winners of the 2013 Governor's Technology Awards. VLDS was the winner of the award for the Cross-Boundary on IT Initiatives.

There seems to be unhappiness among state educators with linking and publishing employment and wage outcomes of institutions and programs. A SCHEV paper (2012) on VLDS states "Virginia higher education is not, and has never been, solely about producing well-fitted cogs for the workplace…. The following examples were selected for their clarity in expressing the

values of undergraduate education that go beyond pursuit of higher wages and material aspects of their lives…."

The VLDS is still under development. The basic current portal is expected to develop into a portal with different levels of access for public available data and reports, as well as access to non-public data for authorized users. VLDS is developing comprehensive cross-agency data sharing policies and practices and standards for data exchange, as well as security measures to maintain privacy. Data audit systems are also being developed to improve data quality, validity, and reliability. Beginning in 2013, VLDS began working to add federal civilian and military wages from FEDES.

State-level Administration: The VLDS is jointly administered by SCHEV, the VDOEd, and the Virginia Employment Commission. The administration is centralized in Richmond. The VLDS is a statewide system.

Use of Individual-level Data: The VLDS uses individual-level data. The VLDS team has worked hard to create an environment in which education and workforce agencies and institutions are willing to share individual-level data.

Data Infrastructure: Virginia has used its SLDS grants from ED and their 2010 WDQI grant from DOL to build their data infrastructure. It was only in 2012 that the VLDS went public, for the first time getting their system ready for posting on the Internet with WDQI funding.

Joining Education and Workforce Data: Virginia has overcome concerns about joining education and workforce data by having the VLDS administered by Virginia education staff members, setting confidentiality and privacy terms that protect the data to the satisfaction of the state and the federal and state educational agencies.

In 2009, SCHEV and Virginia Department of Education staff worked with the Office of the Attorney General to develop a model data-sharing agreement that overcame privacy concerns. The agreement made the state more open to joining education and workforce data while addressing confidentiality concerns. The key to being able to join the education and workforce data was a mutual contract to create a high school to college dataset using de-identified data to protect students' identities. The datasets have then been made available to SCHEV and VDOE.

The authority to perform the merger of education and workforce data was first provided in an annual appropriation bill for the program year June 30, 2009 through June 30, 2010. It was made permanent by substantive legislation (HB7) enacted in 2010.

Analytical Capacity: The de-identified datasets are provided to an independent third-party under contract with SCHEV and VDOE datasets. The datasets are then returned to the two education agencies where they can be used for longitudinal analysis. Analysis has primarily been conducted by education agency staff.

FERPA Interpretation: FERPA and Virginia's Government Data Collection and Dissemination Practices Act concerns were overcome by having the Virginia Attorney, the State Council on Higher Education for Virginia, and the Virginia Department of Education work together beginning in 2006 to identify barriers to appropriate sharing of education data, with adequate safeguards under state and federal law. The Attorney General and the state agencies were able to interpret state and federal law to allow data sharing. In addition, privacy concerns were addressed by incorporating appropriate safeguards into state legislation, regulations, and restricted-use protocols.

Training Provider Participation: The VLDS covers state colleges, community colleges, and private non-profit schools. These schools have willingly participated in development of the VLDS. The VLDS does not include for-profit institutions because they do not participate in the Tuition Assistance Grant or other forms of state-funded student assistance, and therefore, are not required to submit student-level data to SCHEV.

Institutional Commitment: The VLDS team has worked with SCHEV and the Virginia Department of Education to involve key leaders in higher education throughout the state to support the P-16 data system starting in 2006. Over time, support has grown among state and non-profit post-secondary institutions. There is no support, however, from for-profit institutions. Because for-profit schools do not receive state-funded student assistance, they are not required to submit student-level data to SCHEV.

B.8 Washington

For ten years, Washington has had a statewide CRCS (called Career Bridge), based solely on workforce and education individual-level data. Responsibility for the system rests with the Workforce Training and Education Coordinating Board (WTECB).

Career Bridge is broadly used, with 193,000 unique views in the past year. Forty-six percent of users are students, 30 percent are unemployed workers, and 13 percent are workers searching for new careers. Coverage is broad, including private vocational, two-year, certificate, and four-year schools. Data are posted on 1,600 training programs; data on another 1,600 programs are suppressed because the programs are either new or too small for their data to be representative. Career Bridge provides a wide variety of information. Outcome data include: graduation rates, program completion, number employed, employment rate, median hourly earnings, median annual earnings, and industry of employment. Program information includes: cost of program, award type, ETPL eligibility, and availability of veterans benefits. Career Bridge also links to career guidance, labor market information, and financial aid information. In addition to Career Bridge, Washington provides a publication referring students and career guidance counselors to the website. An annual publication, "Washington Training Results," provides extensive information, including demographic information (Brian Wilson, Deputy Director WTECB, November 8, 2013 WDQC webinar).

State-level Administration. Washington has a statewide CRCS run by the state WIB, the WTECB, which has extensive procedures for determining training program eligibility. (See the Washington Training and Education Coordinating Board. 2011. "Governor's Procedure for Determining Training Program Eligibility." Olympia, WA. http://www.wtb.wa.gov/etp.pdf) The CRCS is the responsibility of the state. The local WIBs have agreed to have the state manage and implement the system, which also manages the state's ETPL.

The state calculates outcomes for providers throughout the state once per year. The state has set minimum performance levels for completion rates and earnings, and uses these levels to determine subsequent eligibility.

Use of Individual-level Data. All of the outcome measures reported on Career Bridge are calculated based on individual-level data. The WTECB receives UI wage records from the Washington's Employment Security Department. Community and technical colleges submit student records to the State Board for Community and Technical Colleges. All other providers, regardless of their funding sources, must submit student records to the WTECB. The WTECB then combines the student and UI wage records and calculates employment and earnings outcomes for providers.

Data Infrastructure. Washington has a long history of developing its data infrastructure. The state was one of the 16 Continuous Wage and Benefit History (CWBH) states. The CWBH program, funded by the Unemployment Insurance Service of the U.S. Department of Labor (US-DOL). The program began in the late 1970s and funded states to create their own longitudinal

administrative database using a sample of workers covered by the UI program and bringing together their UI benefit and wage record data.

When the program was defunded in 1982, Washington was the only CWBH state to continue funding its longitudinal database with state funding. The database was expanded to include Employment Service data as well as data from other programs. In the 1980s, the Washington state legislature created a UI offset tax—reducing the state UI tax on December 31st and substituting an equal state tax on January 1st—to continue to fund the state longitudinal database and other data programs. Washington has continued to expand and make use of its longitudinal administrative database over time. The state also worked with DOL to conduct research and evaluation projects of interest to the state and the federal government, as a participant in the Administrative Data Research and Evaluation project.

The state CRCS data reside at WETCB in a distributed database from which workforce and education data are brought together quarterly to estimate the outcomes for participating training providers.

Joining Education and Workforce Data. Both Washington workforce and education data are housed in the governor's office in the WTECB, which predates the WIA program, beginning in 1991. Although it is the state WIB for WIA purposes, its responsibilities transcend the WIA program. In 1998 WIA legislation grandfathered the WTECB even though its governance, membership, and range of responsibilities vary from those of other state WIBs.

The WTECB is a government-appointed body representing a partnership of nine voting members from business, labor, and government. The executive director is selected from a list of three nominations by the labor and business representatives. Two of the government members are associated with education in the state, while the third member is Dale Peineke, the Commissioner of the Washington Employment Security Department. The Board's responsibilities are to 1) advise the governor and the legislature on workforce development policy, 2) ensure the state's workforce services and programs work together, and 3) evaluate the performance of Washington's key workforce programs. Workforce programs are defined broadly to include community colleges and career technical colleges.

FERPA Interpretation. Washington has sidestepped the problems of sharing data with PII by creating a hybrid organization that reports to the governor and encompasses both workforce and education programs. WTECB is considered to be both a workforce and an education agency. It is also the state Perkins agency.

Training Provider Participation. The CRCS has broad participation by training providers. As of 2010, Washington had more than 400 training providers and more than 5,000 training programs on its list.

Institutional Commitment. Washington's efforts to create and improve its administrative data systems extend back at least to the 1970s. The state's commitment to this work is reflected in

the fact that the state has found ways to provide funding for continued maintenance and improvement of its system. Today, funding for Career Bridge and similar data products comes primarily from the governor's WIA discretionary account, but also includes state general revenue and Perkins leadership funds. Maintaining the site costs $275,000 to $350,000 per year. The program makes use of 1.7 full-time equivalent staff years. The costs increase when the program is being revamped (Wilson November 8, 2013).