Evaluation of the Idaho Center of Excellence Healthcare Partnership (ICE):

Final Report

Marian Negoita
Anne Paprocki
Ivette Gutierrez

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SPR SOCIAL POLICY RESEARCH ASSOCIATES

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EXECUTIVE SUMMARY

I.   Trade Adjustment Assistance Community College Career Training (TAACCCT) Program/Intervention Description and Activities

A. TAACCCT project and purpose

The purpose of the Idaho Center of Excellence Healthcare Partnership (ICE), launched in late 2014, was to transform educational delivery methods and train more than 1,000 individuals for in-demand healthcare jobs in three distinct pathways: diagnostic services, health informatics, and therapeutic services. ICE included three community colleges in Idaho: North Idaho College (NIC), Lewis-Clark State College (LCSC), and Idaho State University College of Technology (ISU).

B. Description of the intervention

ICE built on the strengths of each college to develop stackable and latticed credentials to address employers' needs for healthcare workers with increased technical skills. The colleges planned to use the grant to develop technology-based and online learning strategies to reach students living in rural regions. Each new or enhanced program was to be shared with all colleges through a host-provider delivery model and other means formalized by memoranda of understanding (MOU). The original proposal put forward plans to create at least five new degree programs, enhance at least two certificate programs, and create three prior-learning-assessment (PLA) bridge opportunities.

1. Components of the intervention

The ICE intervention focused on five strategic goals:

- **Enhance student services** and facilitate the development of standard practices to award credit for prior learning through evidence-based design.

- **Create career pathways** in diagnostic services, health informatics, and therapeutic services through the development and enhancement of associate in science degree programs, associate in applied science degree programs, and certificate programs that align with industry standards and credentials.

- **Maximize students' access to training** by creating new, online, and technology-enabled courses and host-provider model curricula, building on existing technologies as appropriate.

- **Link emerging pathways within and across colleges** through new MOUs that facilitate access and accelerate paths toward credential attainment.

- **Enhance sector strategies** by engaging employers and introducing or expanding clinical sites.

2. *Population served*

ICE focused on improving access to healthcare training for nontraditional students—such as low-skilled adults, dislocated workers, and unemployed and underemployed individuals—and students from rural regions.

3. *Summarize the evidence-based or promising model the funded program/intervention used for its design, citing appropriate literature (if relevant)*

In its grant application, ICE cited evidence showing that several of its components—student engagement through active and collaborative learning and online and hybrid instruction—were associated with improved academic outcomes. In addition, several other components, including sector-based initiatives and employer engagement, were cited as having the potential to improve labor market outcomes of participants.

II. Evaluation Design Summary

A. *The goals of the evaluation*

Overall, the evaluation aimed to understand how the TAACCCT grant and its systems-level investments shaped job training for healthcare occupations. SPR's evaluation of ICE included an implementation study, an outcomes study, and an impact study.

B. *Implementation study design*
1. *Research questions*

- How did contextual factors influence the initiative's unfolding?

- What partnerships were developed and how was the project managed?

- How was each of ICE's major components developed and launched?

2. *The conceptual framework for the implementation study*

SPR developed a logic model that outlined ICE's core partners; its service model, consisting of five strategic goals; and the initiative's anticipated outcomes and impacts. The logic model provided a comprehensive overview of the initiative as it was planned and served as a blueprint for the evaluation.

3. *How the conceptual framework was used to guide the implementation analysis*

SPR utilized the logic model to guide the implementation study. Consistent with the logic model, SPR chose grant partnerships, consortium communication and collaboration structures, and the service model consisting of the five strategic goals as the main research topics for the implementation study. These key components were tracked for each of the implementing colleges to identify common themes.

4. *Implementation data and methods*

The implementation study drew on multiple research methods, including document review, semi-structured interviews, and participant observation. SPR conducted one round of

telephone interviews (fall 2015) and two rounds of site visits (spring 2016 and fall 2017) to collect data for the implementation study.

5. Measuring capacity building

The following indicators of capacity building were identified: enhanced technology and curricula; expanded access to training through hybrid instruction and the host-provider model; better alignment between training programs and industry needs and standards; ability to attract students to ICE programs; development of stackable and latticed credential programs that are well aligned with industry needs; creation and sustainment of partnerships with employers, workforce development agencies, and regional economic development stakeholders; and likelihood of sustaining grant components beyond the grant-funded period.

C. Discuss outcomes/impact study design

1. Research Questions

- What were the outputs and outcomes of the initiative at the individual, college, and systems levels?

- Were there measurable differences in educational and labor market outcomes for TAACCCT participants and comparison group members?

2. Methodology

1. Overall methodology

For the outcomes study, descriptive analysis included tabulation of outcomes.

For the impact study, a difference-in-differences methodology was utilized to estimate the impact of TAACCCT program enhancements on academic outcomes (completion, obtaining a passing grade for a prerequisite course).

2. Data

The data sources utilized for the outcomes and impact studies consisted of administrative data collected by ICE, college records, and interviews with employers.

3. Outcomes and impacts measured

The following outcomes and impacts were measured: participants' retention in academic program or prerequisite course, completion of academic program or prerequisite course, number of credits accumulated (for credit-bearing programs).

III. Implementation Findings

1. How the grant was used to build institutional capacity

- ISU and LCSC reached an agreement with NIC to enroll students in NIC's pharmacy program, with NIC serving as the provider institution. ISU also acted as a host institution in NIC's articulation agreement with ISU for the medical coding/health informatics intermediate certificate.

- For credit-bearing programs, grant funds were used to hire program directors, an innovative position that combined academic duties (including curriculum development and instructional responsibilities) with program management. Each program director

reported to the chair of the academic division and was embedded in that division as a regular academic staff member.

- In addition to the staff members who provided oversight and leadership, each consortium college hired student success navigators, who provided advising support and assistance to ICE participants in achieving their academic and professional goals. NIC also housed several other grant staff members who served the entire consortium: an employment transition coordinator; a data analyst/financial technician; a senior administrative assistant; and, in the early phases of the grant, a curriculum development and faculty support specialist.

- Grant-funded staff members from NIC's e-Learning department, including a curriculum development specialist and a faculty support specialist, played a significant role in preparing new (and enhanced) curricula for online provision.

- ICE colleges used a variety of recruitment strategies both on and off campus to attract different populations to the new and enhanced programs, including conducting outreach within ICE colleges; distributing program flyers and other promotional materials to potential students; engaging local workforce partners; conducting outreach at local high schools; advertising in local media; and employing online recruitment methods, such as a Facebook ad campaign.

    2. Key steps taken by the institutions to create and run training programs

- ICE pursued what is called a hybrid (or blended learning) strategy, whereby labs, clinical work, and simulations took place in person, and nearly all the instructional material was presented online. The initiative was designed in this way to better meet the needs of nontraditional students.

- To create curricular content for hybrid instruction across the initiative, ICE used a quality control rubric developed by Quality Matters (https://www.qualitymatters.org). The Quality Matters curriculum review process was an important part of developing hybrid and online material under the grant.

- Within each school, curriculum development was generally the responsibility of individual instructors, who often held dual roles as program directors and coordinators. Grant-funded staff members from NIC's e-Learning department played a significant role in preparing new (and enhanced) curricula for online provision, as did department heads and other executive-level staff. Program directors also created new instructional material, including videos to introduce online content, recorded and closed-captioned lectures, and activities and quizzes adapted for online use.

- While the original proposal identified five degree programs, two certificate programs, and three PLA bridge opportunities to be created or enhanced under the grant, employer demand for more programs caused the management team to add to these plans. As of fall 2017, ICE had created or enhanced five degree programs, 14 certificate programs, with two certificates offering PLA bridge opportunities.

3. *Highlight any important partnerships*

- The ICE consortium received guidance from the ICE Leadership Team, a group of 12 individuals who held high-level roles in hospitals, government agencies and task forces, educational institutions, and health-related organizations.

4. *Intervention fidelity*

Our evaluation suggests that ICE successfully implemented all the elements from its scope of work, except one (PLAs), which was not realized due to factors outside the consortium's direct control. Other than the goal of adopting PLAs, ICE met or exceeded its goals for enhancing student services; creating and enhancing academic programs; creating new, online technology-enabled courses and host-provider model curricula; and engaging employers.

IV.   Participant Impacts & Outcomes

1. *Key outcomes and impacts estimated*

- ICE colleges greatly exceeded the quantitative enrollment goals they set out to accomplish during the grant period.

- Most participants who enrolled in noncredit programs completed their programs. By comparison, slightly more than half of the participants who enrolled in certificate programs and less than 10 percent of those enrolled in degree programs did so.

- Enhancing prerequisite courses at one ICE college appeared to lead to a small, but statistically significant, increase in average completion rates compared to pre-enhancement programs, as measured using a comparison group of students who enrolled in similar prerequisite courses that were not enhanced (i.e., the instructional method continued to be a traditional face-to-face approach).

- Offering noncredit programs in a blended format led to a negative, but statistically insignificant, impact on average completion outcomes compared to pre-enhancement programs offered in a traditional format.

2. *Include any additional outcome and impact findings, expanding on or refining what was discussed in your evaluation plan*

- Enhancing prerequisite courses led to a small, positive impact on the likelihood of obtaining a passing grade in a course, but it was not statistically significant.

3. *Note any important limitations to interpreting the findings (e.g., internal and external validity)*

- ICE attempted to obtain earnings data on program participants from the state's unemployment insurance agency. Despite assiduous attempts, the state agency was unable to provide the data. Therefore, ICE's labor market outcomes and impacts could not be estimated.

- Many credit-bearing programs that were created as a result of the grant-funded initiative were still at the incipient stage, and therefore estimations of individual-level impact for these programs was premature.

- More complete impact analyses might benefit from improved data collection systems. Because of data unavailability, the impact of ICE on several important outcomes—such as labor market outcomes, credits earned, and enrollment in additional programs post-ICE—could not be conducted for either all or some of the participating colleges. ICE colleges should continue to improve the quality of their data by enhancing the quality of systems that track students enrolled in noncredit and credit programs and by negotiating data-sharing agreements with the state unemployment insurance agency and local workforce and welfare agencies to access employment and earnings data on college students.

V. Conclusions

A. Key lessons

- Because of its sensitivity to the voice of employers, ICE was able to develop several programs in addition to the ones included in its original scope of work, even though this decision resulted in a substantial amount of additional work.

- Hybrid programs were a promising strategy for expanding access to postsecondary education. After courses were enhanced along the hybrid learning model, instructors reported that they could provide more one-on-one attention to students in the labs because students had accomplished the less hands-on part of the program by completing the lectures independently, using the online instruction.

- Using a standardized quality control rubric to develop online content ensured consistency in the enhancement of programs as they were converted to a hybrid format and ensured effective use of online instructional tools. Instructors said that implementing the Quality Matters rubric enhanced the clarity of the course content and led to new ways of presenting instructional material, including videos to introduce online content, recorded and closed-captioned lectures, and activities and quizzes adapted for online use.

- The host-provider model is a promising practice for a sparsely populated state like Idaho, because it increases the number of programs available to each community college.

- Colleges found hiring program directors and instructors for new academic programs challenging, partly because college-level hiring policies—such as the requirement to interview a minimum number of candidates—slowed down hiring. Therefore, college-level hiring policies could be revised to promote more expediency in hiring.

- Most non-academic positions were expected to "sunset" with the grant. However, it is promising that at least one of the participating colleges (NIC) was considering creating a position akin to ICE's student success navigator in the future. If that position is indeed created, ICE will have accomplished a "demonstration effect," i.e., communicating to the college the value of having this staffing position available to students.

- Multiple respondents indicated that communication about data reporting was complicated, especially because the colleges had different data systems and because

some staff members who were initially responsible for collecting data subsequently left their grant positions. This challenge suggests that career pathway initiatives such as TAACCCT may be implemented more smoothly if community colleges received more support and technical assistance with data collection, data management, and data quality procedures.

B. Main implications for future workforce and education research

- Better tracking of service dosage and employment outcomes will be necessary in future research to more comprehensively understand the impacts of support services on the outcomes of nontraditional students. In addition, better tracking of students as they progress through career pathways (e.g., from noncredit to credit over a longer time frame) would enable more sophisticated analyses of participant-level outcomes of career pathways initiatives.

- Career pathways development is a complex endeavor that requires considerable time to complete, especially for the development and approval of new credit curricula. Follow-up research is necessary to fully understand the impacts of TAACCCT-funded initiatives. Because the evaluation of ICE was capped at four years after the beginning of its implementation, it was not possible to fully capture outcomes and impacts of the initiative within the grant time frame. Future initiatives such as TAACCCT should enable evaluators to continue tracking outcomes for several years after project completion to be able to estimate longer-term outcomes of participants.

I   BACKGROUND OF THE INITIATIVE

The Idaho Center of Excellence Healthcare Partnership (ICE) was a three-college consortium composed of North Idaho College (NIC), Lewis-Clark State College (LCSC), and Idaho State University College of Technology (ISU). It aimed to transform educational delivery methods and train more than 1,000 individuals for in-demand healthcare jobs in three distinct pathways: diagnostic services, health informatics, and therapeutic services. ICE received funding for this initiative in the form of a Round 4 Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant from the U.S. Department of Labor (DOL).

ICE selected Social Policy Research Associates (SPR) to conduct the required third-party evaluation of this grant-funded initiative. The evaluation focused on several major aspects of the ICE initiative: the administrative and partnership structures established to guide the initiative, the development and launch of the initiative's major components, and the initiative's outputs, outcomes, and impacts.

DOL required that all Round 4 TAACCCT grantees submit a final report to "describe the TAACCCT innovations and evaluation methodologies, summarize findings across the implementation and outcomes/impact studies, and highlight implications" (DOL, 2018). This report fulfills that requirement while providing consortium members a picture of overall implementation progress, an outline of key initiative successes and challenges, and descriptions of the promising practices that emerged. In addition, findings from this final report will be used with those obtained from other TAACCCT programs as part of a national TAACCCT evaluation.

To provide context for interpreting the findings described in subsequent chapters of the report, this introductory chapter describes the healthcare field in Idaho and the occupational outlook for healthcare in the consortium regions. It also provides background information on the formation of the consortium and offers an overview of the ICE work plan.

The State of The Healthcare Field in Idaho

ICE's focus on training workers in the healthcare field and granting them healthcare degrees and certificates—and thus alleviating skills gaps in this area—is consistent with recent trends in healthcare employment in Idaho. Healthcare employment in Idaho has been growing steadily over the last two decades, despite several major economic downturns in the U.S. economy that depressed overall state employment growth. Idaho's healthcare employment grew by 46 percent in the decade before 2014 when ICE was launched, the second-highest rate of healthcare employment expansion in the nation (Townsend, 2013, p. 1). Moreover, Idaho's strong growth in new job opportunities in healthcare is expected to continue: by 2024, the healthcare and social assistance sector is projected to grow by 22 percent. The sector is growing the third fastest among all industries in Idaho but is adding the most jobs in absolute

terms (Idaho Department of Labor, 2018). This trend is associated at least in part with strong in-migration dominated by people of retirement age.

While overall expansion of the healthcare sector is an important driver of expanding job opportunities within it, so too is the aging healthcare workforce. In the early 2010s, healthcare workers aged 55 and over made up more than a fifth of total healthcare employment, significantly more than the 10 percent recorded two decades earlier (Townsend, 2013). The need to replace workers as they retire greatly contributes to new employment opportunities in healthcare—and will continue to do so (Idaho WIOA Combined State Plan, 2016). A dean from a college participating in ICE dubbed this dynamic the "baby boomer effect," noting that while workers from the baby boomer generation wind down their careers, the younger individuals who could replace them often lack the required skills.

Jobs in the Idaho healthcare sector also typically pay well. An analysis of data collected by the Idaho Department of Labor (IDOL) found that average earnings for healthcare workers were nearly 10 percent higher than the average earnings of all workers (Townsend, 2013, p. 7). Because of the sector's strong growth rate and robust salaries, many healthcare occupations rank highly on IDOL's Hot Jobs list, which rates occupations based on their growth rate and pay, among other factors. Of the 100 highly ranked occupations in 2013, a quarter originated in healthcare, more than any other sector. Moreover, of the top 15 occupations, nine were healthcare based. The position of registered nurse has been recently rated as the number one occupation for several years in a row (Townsend, 2013, p. 18).

Employment growth in the healthcare sector also generates growth in the overall Idaho economy. The multiplier effect is an economic indicator that measures the extent to which a new job in a particular sector generates employment growth in other sectors. As reported by IDOL in 2010, healthcare jobs in various regions of the state have multiplier effects that range from 1.59 to 2.19, meaning that every 10 new healthcare jobs lead to between 16 and 22 new jobs in other sectors (Hyer et al., 2010, p. 30).

In regional terms, southwest Idaho has the highest share of the state's healthcare employment, with almost half of total sector employment concentrated in this region. However, in north-central Idaho (where NIC is located), employment in the healthcare sector accounts for the highest proportion of total regional employment. Despite these regional variations, healthcare employment growth has been strong in all regions (Townsend, 2013, p. 9).

Of particular relevance for the evaluation, many of the occupations for which ICE trained its participants were healthcare occupations with bright prospects. For example, ICE offered new and enhanced programs for pharmacy technicians, medical and occupational therapy assistants, and dental hygienists.[1] All these occupational groups were expected to grow substantially in the decade after 2014, when ICE was launched. Employment for physical, respiratory, and occupational therapists was projected to grow between 40 percent and 45 percent, for dental hygienists by nearly 35 percent, and for medical and dental assistants by 25 percent (Townsend, 2013).

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[1]   The dental hygienist program is not expected to begin until fall 2019.

The rapid growth in healthcare employment has prompted the state to initiate workforce training strategies to support this burgeoning sector. The Idaho Health Professions Education Council (IHPEC) was created by gubernatorial executive order in February 2009. The Council has representatives from a wide range of stakeholders, including healthcare organizations and Idaho colleges and universities. Among other responsibilities, the Council conducts healthcare workforce analyses, creates statewide objectives for employment in healthcare occupations, and provides policy recommendations for achieving those objectives (IHPEC, 2013). Of particular note, some of IHPEC's recommendations have encouraged the formation of partnerships between colleges. For example, in 2013, the Council recommended that all schools and colleges of nursing in Idaho (ISU, Boise State University [BSU], and LCSC) form a partnership and apply for funding to create three regional Area Health Education Centers (AHEC). In addition, the state's most recent combined Workforce Innovation and Opportunity Act (WIOA) plan identified healthcare as one of its target sectors (Idaho WIOA Combined State Plan, 2016).

The state is also playing an increasingly strong role through the expansion of its regulatory oversight of healthcare-sector professional education. Historically, Idaho relied on on-the-job training. According to a dean from a participating college, "employers were solving their own problems"—that is, employers established their own occupational standards for health professions. An increasing trend toward state regulation of health occupations has begun to change this situation. For instance, according to a respondent from LCSC, the state legislature was expected to establish a required state certification exam for certified nursing assistants. In addition, the state now requires pharmacy technicians to obtain certification from one of two national certification boards: the National Healthcareer Association or the Pharmacy Technician Certification Board.[2]

The Idaho Center of Excellence Healthcare Partnership

Characteristics of the state and the participating colleges facilitated the creation of ICE. Idaho has only four public two-year colleges—a relatively small number compared to other states— and two four-year universities that house colleges of technology, which operate certificate and two-year degree programs. The small number of postsecondary institutions allows a high degree of mutual knowledge and familiarity among them, which in turn facilitates the formation of partnerships. As a dean from one of the ICE colleges explained, in Idaho "everybody knows everybody." In addition, Idaho has a relatively centralized higher education policy—the Idaho State Board of Education administers the entire state system of colleges and public universities. The high degree of centralization is also conducive to the development of mutual knowledge and partnerships. A vice president from one of the participating colleges said that the state has created an "underlying expectation for educational institutions within the state to work collaboratively." She explained further that the Idaho State Board of Education has a policy of avoiding duplicated effort in the development of programs across colleges. Instead, the Board typically prefers that individual colleges develop new programs and then

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[2]   Idaho State Board of Pharmacy: Pharmacy Technicians.
        https://bop.idaho.gov/licensing/pharm_technicians.html.

share the programs' content with other colleges, using educational technology. ICE's host-provider model,[3] an important component of the initiative, drew heavily on this state-sanctioned approach. In this model, a "provider" college delivers the online instruction, and a "host" college enrolls students at its campus and has an instructor facilitate labs and clinical work there.

Idaho's mountainous topography and dispersed population also informed ICE's existence and approach. Because much of the student population lives considerable distances from the colleges, colleges have increasingly offered distance-learning options, which allow students from rural areas to enroll in programs. These distance-learning options have included programs that use the host-provider model, subsequently used by several ICE grant-funded programs. For example, before ICE, LCSC offered "collaboration programs," in which the college hosted on its campus programs provided by other colleges, such as the dental hygiene program offered through Lane Community College and the physical therapist assistant program offered by NIC. Increased access to education through distance delivery models was outlined as a priority for Idaho's postsecondary education system (Idaho WIOA Combined State Plan, 2016).

The ICE consortium colleges had distinct interests and objectives when they joined the partnership. The consortium's lead college, NIC, sought a TAACCCT Round 4 grant to further expand its workforce education programming (the college had received funding in previous TAACCCT rounds). Initially, there was internal discussion about whether to build a proposal focused on manufacturing, information technology, or healthcare. Ultimately, the administration decided that healthcare training was more urgently needed in the community. NIC's vice president of instruction stated that the first TAACCCT-funded project (through Round 1) had been instrumental in launching its physical therapist assistant program. Because of the continuing strong demand for healthcare jobs, the college envisioned that a Round 4 TAACCCT grant would continue the work started in previous rounds while building stronger relationships with other colleges and fulfilling employers' need for well-trained job candidates. Administrators of the medical assistant and pharmacy technician programs at NIC wanted to expand enrollment, and the community acutely needed a dental hygiene program. Therefore, a healthcare-focused partnership appeared to be the best solution.

The other two colleges (ISU and LCSC) used the opportunity offered by TAACCCT Round 4 to develop programs they had been previously planning. For example, prior to applying for the ICE grant, ISU's College of Technology had applied for funding for its Veteran to Nurse Program. Because of this previous funding proposal, the ISU team was able to prepare a proposal for the program shortly after receiving an invitation to participate in the ICE partnership. Similarly, LCSC saw the grant as an opportunity to create a more robust pharmacy technician program, a goal toward which the college had been moving.

NIC's dean of health professions and nursing and the vice president for instruction, who has a healthcare background (she was the previous dean of health professions and nursing), championed the grant at the school. The NIC leadership team subsequently contacted deans at all other Idaho community colleges and issued invitations to participate in the initiative as

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[3]   Details about the host-provider model are offered in Chapter III.

partners. Because of the high level of familiarity among staff members at various colleges, partnership development was done through phone and email networking rather than through a formal request for proposal.

A fourth planned consortium partner—Eastern Idaho Technical College (EITC)—decided not to participate in the grant-funded initiative soon after it was awarded. While the reasons for this withdrawal are not entirely clear, it appears that EITC was not comfortable with the level of commitment (staff time, curriculum development effort, financial outlays, etc.) that its participation would have required. EITC's withdrawal meant that the three remaining colleges had to re-apportion their contributions to the overall scope of work, which required revising project timelines and deliverables.

Due in part to EITC's exit, the scope of the ICE grant evolved over time. Initially, the management team devoted much of its attention to figuring out how the remaining three colleges could achieve the grant's targeted enrollment numbers and develop the promised programs. As a first step, the grant management team persuaded ISU to increase its involvement (expanding its role from developing only a veteran-to-nurse bridge (called Vet2Nurse) to taking on responsibility for an occupational therapy assistant program. By the end of the grant, LCSC also offered enhanced programs, although it originally planned to introduce new programs only. Second, ICE partnered with Idaho Emergency Medical Services (ID-EMS), a bureau of the Idaho Department of Health and Welfare, to offer the hybrid EMS certificate that was initially planned to be developed by EITC.

In addition to adjusting to the exit of EITC, the ICE management team expanded the scope of its project to meet newly identified student and employer needs. First, the management team increased student support by adding dedicated student success navigator positions to the ISU and LCSC programs. These had not been included in the initial grant plan. Second, the grant managers added three new programs—medical coding, mental health assistant, and certified nursing assistant programs—to the ICE scope of work after employers identified a need for additional credentialed workers in these occupations. Third, the grant-funded initiative increased its focus on upgrading infrastructure and purchasing additional equipment in support of ICE programs.

Throughout the grant period, the ICE management team was very responsive to the evolving needs of regional employers in different healthcare occupations. While this likely strengthened ICE overall, it has also led to some delays in launching all the promised programs.

Overview of The Initiative

ICE aimed to transform training in the healthcare field using five main strategies:

- **Enhance student services** and facilitate the development of standard practices to award credit for prior learning through evidence-based design.

- **Create career pathways** in diagnostic services, health informatics, and therapeutic services through the development and enhancement of associate in science (AS) degree programs, associate in applied science (AAS) degree programs, and certificate programs that align with industry standards and credentials.

- **Maximize students' access** to training by creating new, online, and technology-enabled courses and host-provider model curricula, building on existing technologies as appropriate.

- **Link emerging pathways within and across colleges** through new memoranda of understanding (MOU) that facilitate access and accelerate paths toward credential attainment.

- **Enhance sector strategies** by engaging employers and introducing or expanding clinical sites.

Source: ICE Work Plan

The original proposal put forward plans to create at least five new degree programs, enhance at least two certificate programs, and create three prior-learning-assessment[4] (PLA) bridge opportunities. After consultations with employers and workforce development leaders, ICE subsequently added more programs. ICE eventually developed six new programs and 13 enhanced programs shared across colleges and a separate entity (ID-EMS), as shown in Figure I-1.[5]

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[4] Prior learning assessment is done to award academic credit for non-academic job or life experiences, such as serving in the military.

[5] Please refer to Chapter III for details on the programs. Note that the count includes duplicates since programs could be considered new at one college and enhanced at another.

Figure I-1: Number of Programs Developed and Enhanced Under the Grant, by College

	NIC	ISU	LCSC	Idaho Emergency Medical Services
Number of new programs	2[6]	3	0	1
Number of enhanced programs[7]	7	1	5	0

ICE built on the strengths of each college to develop "stackable" and "latticed" credentials to address employers' needs for workers with increased technical skills. The colleges planned to use the grant to develop technology-based and online learning strategies to reach students living in rural regions. Each new or enhanced program was to be shared with all colleges through the host-provider delivery model and other means. Several hospital systems—including the Idaho Hospital Association, Kootenai Health, Heritage Health, and Northwest Hospital Alliance—were recruited to serve as ICE's industry representatives. These hospitals were to play a key advisory role and provide feedback on curriculum and program design.

The logic model presented in Figure I-2 outlines ICE's core partners, the service model, and the initiative's anticipated outcomes and impacts. A blueprint for the initiative and an important touchstone for the evaluation, the logic model provides a comprehensive overview of the initiative as it was planned.

The oval in the upper left of the logic model acknowledges contextual factors—such as regional trends in health services, labor market conditions (including employers' difficulty in finding job-ready workers), and strengths or gaps in the ability of each of the colleges to implement the core grant strategies—that could influence implementation and outcomes. Adding to the context—and not shown in the model—were the important strengths that all consortium members brought to the ICE initiative. Each college had experience with hybrid and online programs and distance-delivered instruction; had participated in Round 1 and 2 TAACCCT programs; had partnered with employers, the Idaho Simulation Network,[8] and the public workforce system; and had support from the Idaho State Board of Education and the Idaho Career & Technical Education division.

The left side of the logic model shows the partners that were most likely to be central players in the initiative's success. These partners included the member colleges, the public workforce development system, industry partners, and employers. The model also shows the primary

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6   As of the writing of this report, two additional new programs—surgical technician and dental hygiene—were under development through the grant but were not expected to be offered until after the grant period ended in fall 2018.

7   This count excludes prerequisite courses that were enhanced through the grant. Details are offered in Chapter III.

8   Details are offered in Chapter III.

vehicles for partner communication and collaboration, including the ICE project management team.

The middle panel of the exhibit shows the five key components of the initiative that were to be realized by the ICE work plan. These strategies focused on using evidence-based design to enhance student services, creating career pathways for students by developing or enhancing healthcare programs aligned with industry standards, building online and technology-enabled courses to facilitate student access, sharing curricula across colleges to facilitate and speed student access, and promoting health sector strategies by engaging employers and introducing or expanding clinical and externship sites.

The far right of the logic model shows potential outcomes at the college, student, employer, and systems levels. At the college level, potential outcomes included enhanced delivery technologies and curricula, expanded credential programs, better alignment of training programs and industry needs and standards, and increased supports and resources for students. At the student level, potential outcomes included completion of relevant credentials, expedited pathways to certificates and degrees, and improved job prospects upon program completion. At the employer level, the primary potential outcome was access to greater numbers of productive employees, which was expected to yield benefits in the form of decreased time needed to fill vacant positions with qualified workers and improved work performance. At the systems level, potential outcomes included the development of stackable and latticed credential programs that were better aligned with industry needs.

Figure I-2: ICE Logic Model

Contextual Factors
- Regional trends in health services
- Employer needs/labor market
- Colleges' prior experience with career pathways
- Gaps in access

Partners
- Consortium colleges
- Public workforce system
- Industry partners
- Idaho Emergency Medical Services

Communication and Collaboration
- ICE leadership team
- Industry advisory committee

Service Model

Strategy 1: Evidence-Based Design
- Enhance student services
- Develop standard practices for awarding credit in prior learning

Strategy 2: Develop Career Pathways
- Develop and enhance AS, AAS, and certificate programs
- Align programs to industry standards and credentials

Strategy 3: Use Online Technology
- Develop hybrid and online courses
- Utilize the host-provider curriculum delivery model
- Train faculty in use of online technology

Strategy 4: Strategic Alignment
- Engage partners
- Develop MOUs to share curricula across colleges
- Develop communications strategy

Strategy 5: Sector Strategies
- Engage employers
- Introduce or expand clinical and externship sites

Outcomes/Impacts

College Outcomes
- Enhanced on-campus technology to meet employer demand
- Expanded ability to offer employer-recognized credentials
- New and enhanced curricula
- Increased enrollment in training programs
- Enhanced supports and resources for students (intake, career placement, supportive services)
- Increased data-driven decision-making

Student Outcomes and Impacts
- Academic achievement and workplace competencies
- Training completion/credentials
- Shortened time to credential completion
- Entered employment
- Employment retention
- Post-program earnings

Employer Outcomes
- More productive and better-trained employees
- Hiring needs met

Systems Outcomes
- Enhanced collaboration and communication among consortium members (transferability of credit, enhanced sharing of best practices), employers, and education/workforce partners
- Development of stackable and latticed credential programs, better aligned with industry needs, that outlive the TAACCCT grant itself

Overview of the Evaluation

SPR's evaluation of ICE included an implementation study, an outcomes study, and an impact study. The purpose of the evaluation was to address the following overarching research questions:

(1) How did the TAACCCT grant and its systems-level investments in healthcare career pathways shape job training for in-demand jobs in Idaho?
(2) How did the initiative contribute to the participant-level, college-level, and consortium-level outcomes that were observed?

More specific research questions for each study are summarized in Figure I-3 below:

Figure I-3: Main Research Questions for Each Study Component

Evaluation Component	Research Questions
Implementation Study	• How did contextual factors influence the initiative's unfolding? • What partnerships were developed and how was the project managed? • How was each of ICE's major components developed and launched?
Outcomes Study	• What were the outputs and outcomes of the initiative at the individual, college, and systems levels? • Were outcomes different for different groups of participants?
Impact Study	• Were there measurable differences in educational and labor market outcomes for TAACCCT participants and comparison group members?

The implementation study drew on multiple research methods, including document review, semi-structured interviews, and participant observation. SPR conducted one round of telephone interviews (fall 2015) and two rounds of site visits (spring 2016 and fall 2017) to collect data for several of these methods. Each site visit lasted approximately one day and a half and included semi-structured interviews with key respondents that focused on the implementation topics articulated in the research questions. SPR researchers interviewed program directors, deans from the academic divisions that administered the grant, student success navigators, faculty members, intake and data entry staff members, workforce development representatives, and college career services staff members. At NIC, SPR researchers also interviewed key consortium-level staff members, such as the project director, employment transition coordinator, and data analyst.

In addition to collecting data from the site visits, the SPR team also collected data from several other sources. For example, SPR team members participated in bimonthly project management

conference calls for the ICE consortium. The SPR team also reviewed relevant literature and grant-related documents.

For the outcomes study, SPR drew from the data systems of participating colleges to measure the main outputs and outcomes of the initiative, such as the number of students who enrolled, the number who completed a grant-funded program of study, the number who earned a degree or a certificate (by type), and the number who were retained in their program.

Due to the challenges of implementing a random assignment–based experimental design, SPR opted for a quasi-experimental approach to estimate program impacts. This design compared the outcomes of program participants with those of comparison groups of individuals who received no services from the intervention being studied. To build comparison groups, SPR identified similar students from each participating college, utilizing college record systems as described in detail in Chapter V.

Overview of This Report

Chapter II describes the organization of the initiative at both the consortium level, and the regional and college levels, with attention given to staffing, communication and collaboration structures, and partnerships. Chapter III contains a detailed description of programs and services developed under the ICE initiative. The chapter describes curriculum development, program approval processes, course delivery methods, and instructional techniques. Chapter IV describes student services, including recruitment and enrollment processes, and student support. Chapter V provides the findings from the outcomes and impact studies. Chapter VI reviews the main accomplishments and challenges of the initiative and provides recommendations for future initiatives of its kind.

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II   STRUCTURE, OPERATIONS, AND PARTNERSHIPS

This chapter describes the organizational structure of the ICE consortium and its role in the overall functioning of the initiative. Included are descriptions of the makeup of the consortium, management of the initiative and grant finances, communication and coordination across the consortium members, and challenges and successes in consortium management. The chapter also describes operations and partnerships at the college level, including college-level leadership, grant-funded staffing, partnerships, and challenges and successes associated with college-level operations.
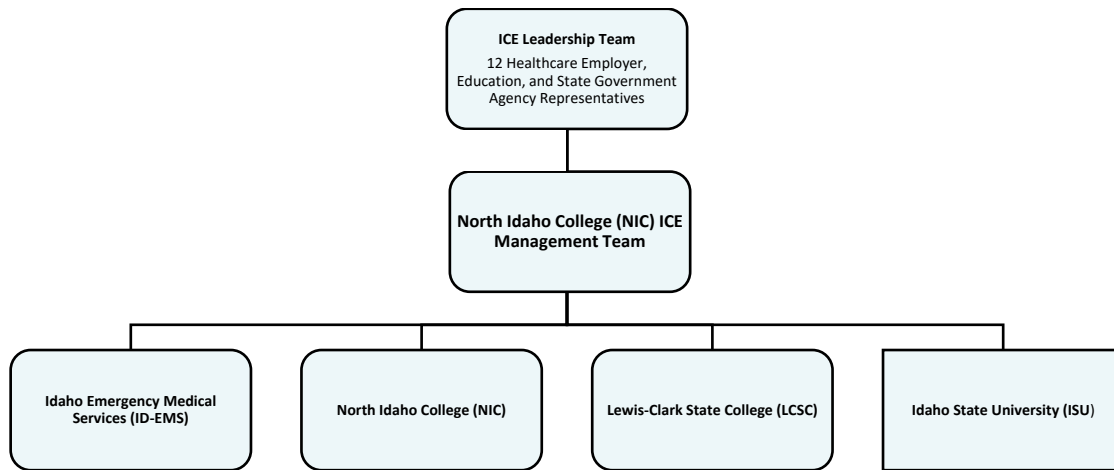
The Consortium Level

Although the core of the ICE initiative—providing training for in-demand healthcare occupations—was delivered at the individual colleges, three crucial functions were carried out at the consortium level: the related activities of leadership, program management, and oversight; overall grant and financial management; and facilitation of communication and collaboration among consortium members.

Consortium-level Management Structure

At the consortium level, six different entities—the ICE Leadership Team, a management team based at NIC, the three participating colleges, and ID-EMS—interacted to manage and implement various aspects of the ICE initiative. As illustrated in Figure II-1, the ICE Leadership Team provided broad grant oversight and gave general direction to the ICE management team. The management team translated this direction into actionable policy and program goals, and the three colleges and ID-EMS implemented these goals through curriculum development, instruction, and the provision of student support.

Figure II-1: Consortium-level Management Structure

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                    ┌──────────────────────────────┐
                    │      ICE Leadership Team      │
                    │ 12 Healthcare Employer,       │
                    │ Education, and State Government│
                    │ Agency Representatives        │
                    └──────────────┬───────────────┘
                                   │
                    ┌──────────────┴───────────────┐
                    │ North Idaho College (NIC) ICE │
                    │       Management Team         │
                    └──────────────┬───────────────┘
        ┌──────────────┬───────────┴───────┬──────────────────┐
 ┌──────────────┐ ┌──────────────┐ ┌──────────────────┐ ┌──────────────────┐
 │Idaho Emergency│ │North Idaho   │ │Lewis-Clark State │ │Idaho State       │
 │Medical        │ │College (NIC) │ │College (LCSC)    │ │University (ISU)  │
 │Services(ID-EMS)│ │              │ │                  │ │                  │
 └──────────────┘ └──────────────┘ └──────────────────┘ └──────────────────┘
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NIC Management Team and the Consortium-wide Staff

In its role as lead grantee, NIC served as grant administrator, fiscal agent for grant funds, and provider of support to the participating colleges on many aspects of the grant, including curriculum development, PLA policy development, and student support services. To support these different functions, NIC initially developed a grant management team made up of a grant project director, the NIC chair of Health Professions Division, the dean of health professions and nursing, and a fiscal representative. However, the original project director left the grant to take another position in July 2017. She was eventually replaced by a contractor; the NIC dean of health professions and nursing filled the grant project director role for several months before this occurred.

In addition to the management team, NIC also housed several other grant staff members who served the entire consortium: an employment transition coordinator; a data analyst/financial technician; a senior administrative assistant; and, for early phases of the grant, a curriculum development and faculty support specialist. Initially, the grant also supported a PLA specialist; however, this role was eliminated when it became clear that the state board of education was not yet in a position to implement major PLA policy changes (additional details are provided in Chapter IV). These grant positions supported all the consortium colleges, even though the staff were physically based at NIC. These staff members communicated with grant staff members at the other colleges through the methods described in the "Communication and Collaboration Structures" section.

ICE Leadership Team

The ICE consortium received guidance from the ICE Leadership Team, a group of 12 individuals who held high-level roles in hospitals, government agencies and task forces, educational institutions, and health-related organizations. This leadership team was a strength of the consortium—its members were engaged from the beginning of the grant and recommended which training programs should be offered based on their knowledge of the sector. During regular meetings, the deans from each college, the ICE project director, and the employment transition coordinator joined the 12 leadership team members to solicit their advice. While all

members remained committed to serving on the leadership team through the end of the grant period, interviewed grant staff members reported that in the final year, leadership team member engagement lessened slightly as the ICE management team became more focused on closing out the initiative (as opposed to developing new programs).

The Colleges

As described in Chapter I, NIC, ISU, and LCSC were the three colleges that made up the ICE consortium. Grant activities at each college were supported by a combination of college-level staff members and the consortium-wide staff members housed at NIC. Throughout the grant, each college developed new and/or enhanced programs in healthcare for three distinct pathways: diagnostic services, health informatics, and therapeutic services. As the lead college, NIC took on the largest share of curriculum development responsibilities. Programs were also shared among the colleges, to enable students to access the largest possible number of program options. The programs offered by each college and the colleges' roles in curriculum development are described in Chapter III.

ID-EMS

The ICE consortium partnered with ID-EMS, a bureau of the Idaho Department of Health and Welfare, to offer a hybrid (including both online and in-person components) EMS certificate. When the leadership team identified a lack of emergency medical responders in rural areas of the state, it connected the ICE management team to this bureau, knowing that it might be able to develop programming that could respond to this need. Instructional material was provided online, with in-person skills assessments conducted by a local facilitator in various rural locations across the state. Through the program, which began enrollment in fall 2016, rural students gained access to EMS curriculum that was previously out of reach.[9]

Grant and Financial Management

Situated in ICE's lead college, the NIC management team was responsible for tracking both programmatic and fiscal aspects of the grant's progress. This responsibility included modifying the project's statement of work and obtaining approval from DOL when necessary. The project director coordinated this work with the oversight of the dean of health professions and nursing.

Communication and Collaboration Structures

Grant staff members from both NIC and the other colleges emphasized that because Idaho's postsecondary education community was close-knit, consortium deans and chairs were familiar with each other before the grant award. For several years, these deans and chairs had talked at statewide meetings, and faculty and health department chairs had interacted at annual statewide college meetings and other opportunities as well. The ICE grant represented an opportunity to build on these existing relationships between college leaders, while also developing new relationships among faculty and support staff members.

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[9]   Developing this relationship with ID-EMS was especially important for fulfilling grant goals, because EITC, which dropped out of ICE early on, was originally going to develop a noncredit EMS certificate.

Despite the strength of existing networks among key ICE actors, structures facilitating communication and collaboration were also important for the functioning of the initiative. Grant staff members at NIC created several means for members of the management team and grant staff members at different colleges to learn from each other and update each other on their progress. Most of this communication and collaboration occurred early in the grant, when dedicated time for planning was most needed, and it was reduced near the end, as program design was completed and some staff members left the project for other opportunities.

ICE Project Team Meetings

Prior to her departure in the summer of 2017, the first ICE project director instituted a bimonthly ICE project virtual team meeting among those staff members across the consortium who played roles administering the overall ICE grant. Participants included the ICE project director, the ICE data analyst/financial technician, consortium deans, division chairs, and student success navigators. The meeting was sometimes a traditional telephone conference call and sometimes a video conference call. During the meetings, each college updated the others on its progress toward grant goals. These calls continued even after the project director's departure, facilitated for a time by NIC's dean of health professions and nursing and later by the new project director.

Leadership Team Meetings

As described above, the NIC management team and the ICE consortium were guided by the ICE Leadership Team. The leadership team met quarterly to inform high-level consortium staff, including the deans from each college, about the state's healthcare field and their recommendations for the grant. Due to the value of their information and ideas, the NIC leadership staff said that they hoped the leadership team would continue to provide advice to the three colleges even after the grant ended.

Biweekly College Calls

To complement the consortium-wide ICE project team meetings, the ICE project director also held biweekly calls with a representative from each individual college to discuss the college's progress and collect any specific concerns. The colleges were generally satisfied with the assistance they received during those calls and noted that they were a good complement to the consortium-wide meetings. After the first project director left the grant, these calls became less frequent. This was in part because NIC's dean of health professions and nursing had less time to facilitate them, but the frequency also decreased as the grant became more established.

Pathways Meetings

Until the departure of the first project director, weekly or bimonthly pathways meetings were held for each individual program being developed under the grant. The meetings involved the project director as well as those implementing the specific programs. Progress on curriculum development and other program concerns was discussed. These meetings were no longer held on a set schedule after the first project director left the position. However, program staff noted that since most programs were operating by then, frequent check-ins on curriculum development and other startup concerns were no longer needed.

Student Support Calls

Until the first project director left the grant in the summer of 2017, she hosted weekly conference calls with the employment transition coordinator and student success navigators. During the calls, student success navigators worked together to address concerns related to recruitment and student services. However, after the first project director left, these calls stopped taking place. This was in part because only one college sustained a dedicated ICE student success navigator by that point in the grant period. The calls also stopped because many of the initial discussions that were needed to establish recruitment and student support protocols had been completed. In addition, the student success navigators created an online student success center (http://icehp.org/student-success-center), which included some of the referrals and other forms of support the student success navigators had previously provided.

SharePoint Site

NIC maintained a Microsoft SharePoint website where materials of interest, such as deliverable timelines and policy documents, were posted. Curriculum development and recruitment outreach were both tracked on the site. Several respondents indicated during the first site visit that the SharePoint site had been helpful for exchanging information; one noted that it contained a "wealth of information." For example, grant staff members could access intake forms, meeting notes, the participant handbook, project work plans, and even the ICE logo through the site.

In-person Meetings

Despite the distances between the three colleges, ICE staff members met in person by taking advantage of already scheduled statewide community college meetings. In addition, NIC's dean of health professions and nursing traveled periodically to both ISU and LCSC to meet individually with grant teams from each college. While several respondents said they wished it was easier to meet in person more frequently, they also expressed appreciation for the ability to use video conferencing technology to improve communication when they were apart.

DOL

The management team coordinated frequently with DOL and its federal project officer (FPO). Communication with DOL included providing updates about progress, as well as asking questions and receiving technical assistance. The management team reported being very satisfied with the training and technical assistance they received from DOL, which included webinars and TAACCCT conferences. NIC's dean of health professions and nursing also explained that DOL assigned a new FPO in 2017. While members of the management team sometimes wished their prior FPO had responded to their questions more quickly and provided more clarity up front about what was needed for revisions to their statement of work, they had only positive things to say about their second FPO. NIC staff described her as extremely responsive and helpful, especially when thinking through how to modify the grant budget to address underspending and program delays. She also helped them clarify timeline and accreditation issues. NIC staff also appreciated the in-person visit the FPO made after she took on the role.

Successes and Challenges in Consortium Management

- The ICE consortium developed several promising management practices. For example, to deal with the distance between colleges, ICE leadership made use of online and remote technologies, such as SharePoint and video conferencing. They also hosted frequent phone meetings for staff with specific roles on the grant to discuss their unique needs. From the beginning, the grant management team demonstrated flexibility and creativity. When the colleges were underspending due to delayed program start dates and staff departures, the management team worked with with DOL to pursue other grant-related opportunities, such as renovation of grant program facilities. Despite the distance and the large number of programs being developed, the partners were "open-minded and supportive," according to a grant staff member. Another staff member said that NIC would be the first college she would call should another collaborative opportunity arise.
- The ICE consortium also faced several difficult situations. Because the first project director played a key role in managing the grant—including tracking progress and facilitating communication between colleges—her departure was especially challenging. During the latter part of the grant, staff turnover became a major challenge. Turnover of key grant staff at the other colleges, such as student success navigators, also made relationship-building and information-sharing more difficult.
- Staff involved with the grant across the consortium also indicated that communication about data reporting was complicated, especially because the colleges had different data systems and some staff who were initially responsible for collecting data subsequently left their grant position.

Regional and College Levels

Each college was responsible for determining its operational structure, filling grant-funded positions, and developing local partnerships.

College-level Leadership

Each college implemented its own management structure, and this structure was adjusted as needed over the course of the grant period. At the highest level, most colleges involved incumbent deans and other executive-level officials, who gave their time to the grant in-kind. Leadership staff at NIC believed this was a successful strategy, since such staff were already

NIC	LCSC	ISU
•Initially, the most prominent leadership staff on the grant team were the dean of health professions and nursing, the grant project director, and individual program directors. The grant project director (who was also responsible for coordinating the project across the consortium) performed administrative coordination of the grant at the college, while program directors for each program being developed or enhanced under the grant were responsible for coordinating their individual programs. •The program director roles were academic positions that included curriculum development and instructional responsibilities, in addition to program management. Each program director reported to the chair of the Health Professions Division and was embedded in that division as a regular academic staff member.	•LCSC's overall grant leadership structure remained consistent across the grant. However, with the exit of the dean of career and technical education in the summer of 2017, his replacement was less familiar with, or involved in, the grant activities. •Because LCSC's initial grant plans focused on noncredit programming, the grant leadership was housed in the Workforce Division. The allied health coordinator served as the grant's director and reported to the director of workforce training. Together, they focused on day-to-day implementation of the grant, while the original dean of career and technical education was also involved with executive decisions that had implications for the grant and grant participants. After the dean's departure, the director of workforce training took on much of this role as well.	•At ISU, the grant leadership structure underwent a modification toward the end of the grant that reflected a broader configuration change within the college. While the dean of the College of Technology, the chair of the Health Occupations Department, and the director of rehabilitative programs continued to shoulder overall grant management responsibilities— such as reporting to NIC and budget management— there was also the development of what staff called "middle managers," who served as individual program directors. Related grant staff (such as the instructors and curriculum developers for those individual programs) reported directly to their program directors. ISU leadership staff said that this structure worked well, as the individual program directors provided each program with its own sense of identity.

recognized by their colleagues and had significant institutional knowledge. Since their positions would remain beyond the grant, it also meant that these leaders were stable and could focus on grant program sustainability.

College-level Staffing

In addition to the staff members who provided oversight and leadership, each consortium college hired several staff members specifically to carry out ICE objectives. The number of such staff members fluctuated somewhat over the course of the grant, as individuals left for other opportunities. Such fluctuation was more common toward the end of the grant, when support staff knew that the end of their contract was approaching. In addition, some individual program director and instructor positions initially funded by the grant were sustained with state or college dollars by the end of the grant period, because these positions were expected to

continue even after ICE concluded. More details about the roles connected to the grant at each college are provided below.

Program directors for individual programs. ISU and NIC had program directors or coordinators who oversaw individual grant-funded programs. Program directors or coordinators were directly responsible for fulfilling the grant's curricular goals and maintaining compliance with college and accreditation standards. Depending on the size of the program, some of these individuals were also involved with instruction (and may even have been the only program instructor) and curriculum development. ISU added this role near the end of the grant to provide an extra level of management between instructors and higher-level administrators, while NIC employed this role from the beginning of the grant. LCSC relied on the allied health coordinator and director of workforce programs to provide broad oversight for the grant and its programs, though it also employed a paramedic program director. Program directors for new programs were often funded by the grant as they began developing them, but once the programs were complete, most program directors were or will be funded by the state. Because of this funding, nearly all these positions were expected to be sustained.

Student success navigators. The grant's original scope of work called for student success navigators to provide advising support and assistance to ICE participants in achieving their academic and professional goals. While all three colleges maintained ICE-specific student success navigators at some time in the grant, those from NIC and ISU left for other positions in 2017. By the fall of that year, only LCSC maintained a grant-supported student success navigator (and this individual was .75 FTE). Because the ICE student success navigator position was not designed to be funded beyond the grant, respondents noted the difficulty of maintaining someone in this role. To compensate for the departure of NIC's student success navigator, the consortium's employment transition coordinator took on more of a student support role for ICE participants. Respondents at NIC and ISU also explained that their colleges had non-grant-funded staff members (a non-grant-funded student success navigator at NIC and a student services advisor for the College of Technology at ISU) who provided support to ICE participants. In addition, because the earlier student success navigators had worked collaboratively to create an online student success center (http://icehp.org/student-success-center), participants had access to this virtual source.

Instructors and faculty members. In addition to the program directors mentioned above, many of whom also played instructor roles, some of the larger programs funded additional instructors or lab assistants. Often, these instructors received a stipend from the grant to help with curriculum development but have since been funded by the college or the state, through a line item from the state budget set aside for technical colleges.

Administrative support staff. To support management and the functioning of grant programs, all three colleges relied on administrative support staff provided either through the grant or in-kind.

Figure II-2 below presents how staffing evolved during the grant period for each consortium college. As the chart shows, all three schools had some initial difficulty in hiring program directors, instructors, and student success navigators. This situation was particularly salient in

the case of ISU. In addition, two of the colleges (NIC and ISU) were without student success navigators during the last six months of the grant period.

Figure II-2: College-level Staffing
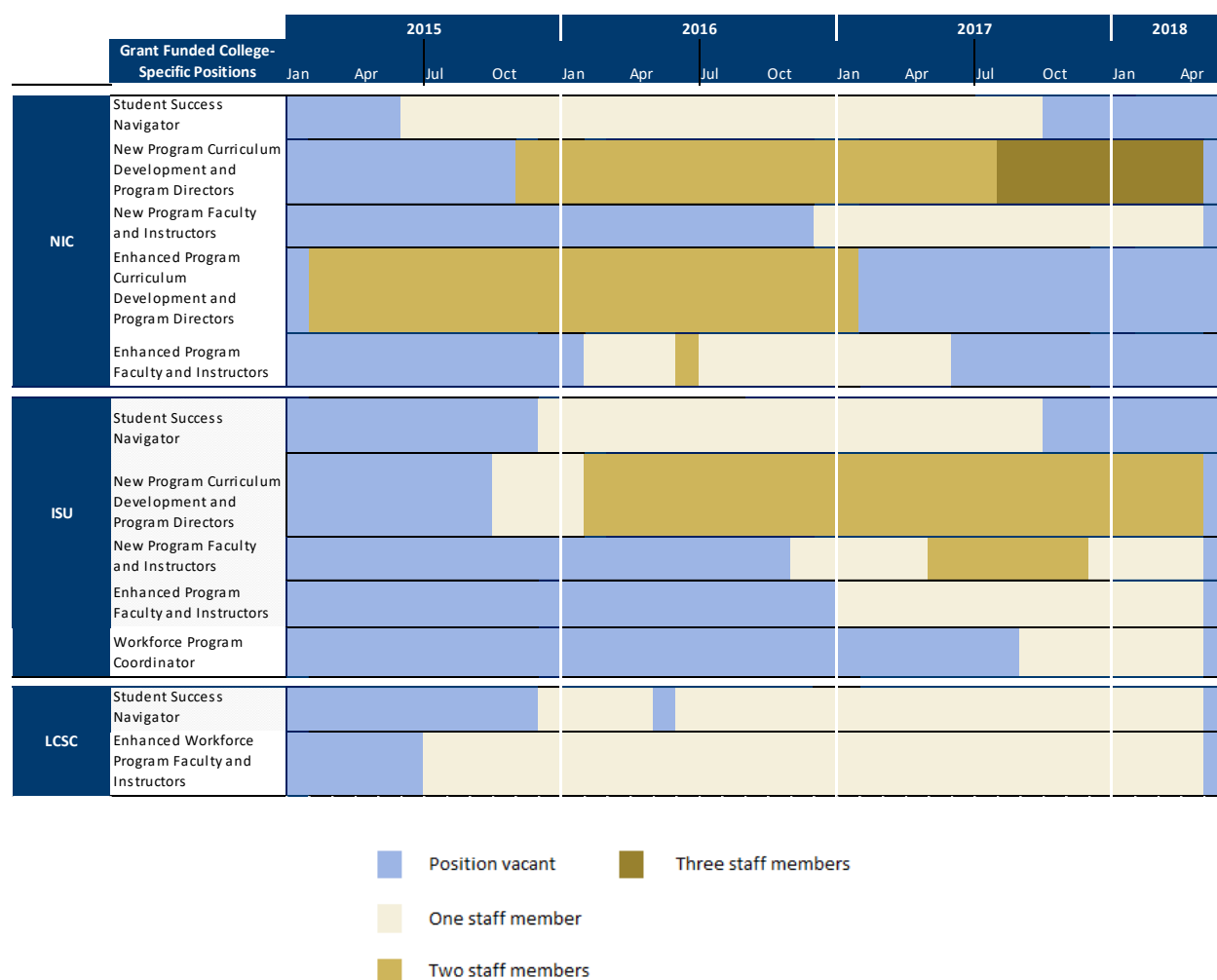
Notes on Figure II-2: The figure above includes only college-level staff that were grant-funded. Consortium-level staff are described in the text in the consortium-level section of this chapter. In addition, there were other, non-grant-funded staff who helped with grant programs, such as workforce development program coordinators at NIC. They are not included here.

Staffing Successes

The consortium colleges had several successes with their staffing structures and hiring plans.

- Grant leadership at each college did an impressive job of ensuring the sustainability of new academic program directors and instructors. All the new academic program staff positions were expected to be maintained beyond the grant using state technical college funds. This ensures a strong legacy for the grant and leverages the time and effort that was put into program development.

- While all three colleges experienced turnover of key grant positions, ICE's leadership was flexible and creative in responding to this challenge.

Staffing Challenges

Overall, respondents from all three colleges felt that they had been able to carry out the grant activities with the staff available to them. However, they also faced some challenges that may have delayed program development or limited the amount of support provided to students.

- Colleges found hiring program directors and instructors for new academic programs challenging, especially because competing positions in the healthcare industry often paid higher wages than the grant was able to offer. Respondents from two colleges also identified college hiring policies as additional challenges; these policies often required a specific number of candidates to be interviewed or a mandatory timeframe for each step of the application process, which could slow down hiring.

- Turnover was a challenge at all three colleges, especially among non-academic staff, such as those in student support roles. This type of turnover is not uncommon with similarly structured grant projects, since employees know their positions are time-limited. While some turnover affected only individual colleges (e.g., student support services), the departure of the grant project director had a major impact across the consortium.

- Respondents at both ISU and NIC suggested that they could have used additional support, such as staff members hired specifically to guide them through the curriculum approval process or a division chair who was more engaged with the grant and budgeting.

Consortium-level and College-level Partnerships

All three ICE colleges developed connections with a series of regional partners, most notably hospitals, clinics, and other healthcare providers. The public workforce development system was also involved, to a lesser extent. In addition, NIC worked with the Idaho Simulation Network to develop a simulation center that now provides NIC ICE participants and the broader community with access to the latest technology for learning and practicing a variety of medical procedures in a simulated setting.

Employer Engagement

At the consortium level, employer engagement was driven by the ICE Leadership Team (described earlier in this chapter). Over the course of the grant, these employers provided a great deal of input about which programs they thought ICE should offer to best meet hiring demands. The consortium-wide employment transition coordinator, who was tasked with developing employer relationships across the state, also reached out to employers. She toured multiple healthcare employer facilities, for example, and spoke to human resources directors about ICE. She also attended career fairs to promote programs and their graduates.

In addition to this consortium-wide employer engagement, each college worked with employers in its local area. All ICE colleges already had strong employer advisory boards for their existing health programs, including those being enhanced under the grant. Respondents reported that they used some of these existing relationships to solicit industry feedback on curriculum and program design, request support for recruitment activities, and gain an employer perspective for ICE.

Grant staff members at each college also reached out to employers to support new programs developed under the grant. As a result, advisory committees were established for each of the new programs. At NIC, the new grant program advisory committees tended to meet more frequently than established ones. As an example of committee member involvement, a lab manager from Kootenai Health—on the medical lab technician advisory committee—read the program's lab manual to make sure it was aligned with employer needs. Employers not on advisory committees were also engaged by the grant in various capacities, including as providers of work-based learning opportunities and clinical placements and as hosts of trainings at their facilities. However, because of how much the healthcare industry grew over the course of the grant, some employers that initially agreed to allow ICE instructors to use their facilities—for example, for the surgical technician program that is in development—were no longer able to do so because they needed the space for their own operations.

Workforce Development System

The colleges had varied levels of involvement with their local workforce development systems. ISU reported relatively little involvement, while the workforce training director at LCSC participated in economic development committee meetings focused on providing funding for local projects, such as regional hospitals. The consortium-wide employment transition coordinator, based at NIC, met frequently with IDOL representatives about the healthcare industry in the state. She obtained healthcare labor market information from IDOL's economist and used an IDOL job seeker handbook to help connect ICE participants to work. While grant staff reported occasionally referring participants to local IDOL centers to see if they might qualify for WIOA funding for training, none thought that IDOL centers referred many of their customers to enroll in grant-funded programs.

Idaho Simulation Network

Throughout the grant period, NIC worked with the Idaho Simulation Network, a nonprofit organization—staffed by volunteers from the health and education communities—that helps colleges and health organizations implement simulations to train healthcare workers. The simulations the network promotes use technology, equipment, and clinical information that mimic actual healthcare environments so that students can practice their skills in a controlled environment. For example, simulations might involve realistic manikins (see photo below) that instructors can program to have specific health conditions that a student would have to assess and treat.

After the grant's leadership team expressed a need for a high-fidelity simulation center in the North Idaho area, the management team engaged the Idaho Simulation Network to create such a center at NIC. While NIC already had a lower-fidelity simulation center, grant staff members

Photo: Realistic Manikins at NIC, October 2017

reported that there was a need for an updated center both for training programs at the college and for local healthcare organizations that wanted to provide trainings for incumbent workers. NIC subsequently modified the ICE statement of work so that the new center could be funded by the grant.

By fall 2017, the simulation center was open and had already been used by a local Vet2Nurse student (who was taking the program through ISU) and the medical assistant and medical lab technician programs. The high-fidelity simulation includes two manikins; monitors that display and simulate the type of data tracked in hospitals; and a room where instructors or other students can observe what is happening via camera feed. A NIC college administrator noted that the center is considered state of the art, especially for a community college, and is not something the college would have been able to fund without the grant. There are plans to involve other programs and the community in the center going forward.

Successes and Challenges in College Program Operations

- Sustaining college-level partnerships with employers has been one of the grant's notable successes. Employer input was not simply collected but given strong consideration and often implemented. Toward the grant's end, employers from across the state hosted participants in clinical placements and began to hire those who had completed training. Interviewed employers indicated that ICE program graduates were strong and valued employees. NIC's partnership with the Idaho Simulation Network also led to a useful resource not only for the initiative, but also for the entire healthcare sector in North Idaho. Finally, the sustainability of many of the positions for program directors and instructors of the new ICE programs across the consortium means that the state's residents continue to benefit from new training even after the end of grant.
- As described above, various staffing challenges affected ICE implementation. The workforce development system was more difficult to engage than expected, particularly for ISU and LCSC. More workforce system involvement might have helped ICE reach potential participants, especially from the target groups that were harder to engage.

III   ICE PROGRAM DEVELOPMENT

Having described ICE's structure, operations, and partnerships at the consortium and regional levels, we now turn to a detailed description of the consortium's programs and services. Specifically, this chapter describes the curriculum goals put forward in the grant proposal, the factors affecting what programs were offered under the grant, the characteristics of the new and enhanced programs, the curriculum development innovations used by the initiative, the processes under which the new and enhanced programs were approved, and the present status of the programs.

This chapter refers to both new and enhanced programs developed under the grant. New programs are those not previously offered by a college. Enhanced programs are those that were previously available at the college but were modified using grant funds, usually by having curricula converted to an online format or by improving clinical learning environments. Because the colleges shared curricula across the consortium, it was possible for a program to be considered enhanced at one school (where the program was previously offered) and new at another (where it was not).

Program and Curriculum Goals for ICE

The ICE proposal had three overarching goals for the programs enhanced or developed under the grant. **First, programs had to be part of a health career pathway consisting of a series of stacked credentials.** All students had to complete a common core of prerequisites to prepare them for entry into an ICE program, and all programs would lead to a nationally recognized certificate, AS, or AAS degree. These degrees and certificates could then be articulated to higher degrees, such as a Bachelor of Science (BS) or even a doctorate, should a student wish to continue with additional training after completing an ICE program.

Second, curriculum development would be shared across colleges, so each college could provide as many programs as possible to its students without necessarily having to invest in curriculum development for all of them. To share curriculum, the consortium would use the host-provider model. Under this model, a "provider" college prepares curriculum and offers instructional content, often online. A "host" college allows local students to enroll in the program at the host college and access the provider content. The host college also coordinates the program's labs and clinical components for all students enrolled in its program.

Third, ICE intended for programs to use distance-learning strategies, such as making programs available in a hybrid format, so that the grant-funded programs could reach as many students as possible. This goal was especially important given that the colleges serve rural areas of the state, where students might have trouble commuting to the nearest campus.

ICE Curriculum Development Innovations

Across the consortium, and for both the enhanced and new programs, the bulk of the ICE intervention consisted of several strategies that were intended to increase the accessibility of curricula and to ensure that the content met students' learning needs. This section provides details about the grant's distance-learning and curriculum-sharing approaches, including the Quality Matters process and the host-provider model. The section is followed by a more detailed review of the programs developed or enhanced at the three colleges.

Distance-Learning Strategies

The ICE partnership followed a larger trend in postsecondary education of expanding online education. With the expansion of broadband internet availability, postsecondary institutions have greatly expanded their online education offerings, aiming to provide more accessibility and convenience for students (Jaggars et al., 2013). Healthcare is one of the disciplines in which the trend is most visible. An estimated 16 percent of online-only enrollments are in healthcare courses, and it is estimated that online enrollments will grow the most in this field (Bell & Federman, 2013). ICE pursued what is called a hybrid strategy, whereby labs, clinical work, and simulations took place in person, and nearly all the instructional material was presented online. The initiative was designed in this way to better meet the needs of nontraditional students. Even though students still had to attend labs in person, labs were usually held only once or twice a week, rather than every day. Our respondents indicated that for rural students or those who had other responsibilities—such as jobs or families—such a schedule was often much more feasible than more traditional, face-to-face classroom lectures. This is a perspective that many colleges share; in a survey of 2,500 academic officers, Bell & Federman (2013) found that 65 percent described online learning as "a critical component of a long-term strategy." In addition to online coursework, some ICE programs also offered clinical externships nearer the student's home, as opposed to at the college. For example, ID-EMS (with NIC as an academic partner) designed and introduced an EMS certificate that was offered online, with clinical trainings facilitated in "critical access areas" in many rural parts of the state.

Quality Matters Standards

To create curricular content for hybrid instruction across the initiative, ICE used a quality control rubric developed by Quality Matters (https://www.qualitymatters.org). The Quality

Matters curriculum review process was an important part of developing hybrid and online material under the grant. After the Quality Matters reviews, most enhanced programs underwent changes, while many of the new programs focused instead on the laborious tasks of curriculum development and accreditation processes. Indeed, new programs varied in their timelines for implementing a Quality Matters review of online materials. For example, one program that had yet to be launched had already undergone the review, while another was waiting to undergo the review after the first iteration of the program and accreditation was completed.

Grant-funded Programs and Enhancements

The original ICE proposal to DOL specified that the consortium would prepare students for high-demand jobs in healthcare by developing and enhancing certificate and degree programs in diagnostic services, health informatics, and therapeutic services. While the original proposal identified five degree programs, two certificate programs, and three PLA bridge opportunities to be created or enhanced under the grant, employer demand for more programs caused the management team to add to these plans. As of fall 2017, ICE had created or enhanced five degree programs, 14 certificate programs, with two certificates offering PLA bridge opportunities.[10] Additionally, 18 prerequisite courses were enhanced, and two new degree programs were planned for launch in 2018 and 2019.

New Programs

Because of employer demand, the number of new programs that the ICE consortium developed was higher than initially planned. As of fall 2017, six new programs had been launched. Two new AAS degree programs at NIC—surgical technology and dental hygiene—had not been launched at the time of the final report. The new programs being launched (or planned to launch) under ICE were extremely varied and required different levels of effort to develop, as shown below in Figure III-1.

> **Quality Matters Curriculum Review**
>
> Quality Matters is a nonprofit organization that created a rubric for educational organizations to ensure a minimum level of quality for online curriculum. The current edition, developed in 2014, includes eight "General Standards" and 43 "Specific Review Standards" that can be applied to hybrid and online material. The goal is to have all course material align with the eight general standards, which specify a particular presentation format.
>
> https://www.qualitymatters.org/
>
> The eight general standards of this rubric cover:
> 1. Course Overview and Introduction
> 2. Learning Objectives (Competencies)
> 3. Assessment and Measurement
> 4. Instructional Materials
> 5. Learning Activities and Learner Interaction
> 6. Course Technology
> 7. Learner Support
> 8. Accessibility and Usability

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10   Programs could be counted as enhanced at one host college, while new at another college. As a result, these figures are duplicated here and below.

Figure III-1: New ICE Programs

College	Certificate/Program	Status
North Idaho College	Vet2Nurse Certificate of Completion/Bridge (developed by ISU)	Launched spring 2016
	Military Medic 2 Paramedic Certificate of Completion/Bridge	Launch canceled
	Military Medic 2 Medical Assistant Certificate of Completion/Bridge	Launch canceled
	Medical Lab Technology AAS	Launched spring 2017
	Surgical Technology AAS	Launch planned for fall 2018
	Dental Hygiene AAS	Launch planned for fall 2019
	Pre-Pharm AS	Launch canceled
	EMS Post-Secondary Non-Degree Certification (being developed in partnership with ID-EMS)	Launched fall 2016
Idaho State University	Vet2Nurse Certificate of Completion/Bridge	Launched fall 2016
	Occupational Therapy Assistant AAS	Launched spring 2017
	Pharmacy Tech Intermediate Certificate (developed by NIC as an enhanced program, new to ISU)	Launched fall 2016

Programs Enhanced Under ICE

In addition to developing entirely new programs, ICE funded the enhancement of several existing health programs across the consortium. As illustrated in Figure III-2, NIC enhanced 13 healthcare programs, with options including a certified nursing assistant certificate program (offered through its workforce training center) and AAS degrees designed to articulate to four-year-college degrees. ISU enhanced one program (a medical coding and health informatics intermediate [HIT] certificate), and LCSC enhanced five programs, including a pharmacy technician noncredit workforce program that was developed by NIC.

The new and enhanced AAS degrees offered under ICE usually require completion of specific prerequisite courses to ensure that entering students have the academic background needed to succeed in each course of study. For the most part, prerequisite courses such as human anatomy, biology, general chemistry, English composition, and algebra were already developed and have been available at the colleges for years. Some ICE grant funding was used to put these courses through the Quality Matters process. Thus, these prerequisites are considered enhanced courses under the grant and also appear in Figure III-2. Each college enhanced at least one prerequisite course.

As with the new programs, there were more enhanced programs than initially planned. A significant cause of this growth was a set of requests from employers on the ICE Leadership Team for additional programs that could meet the workforce needs of local healthcare employers. These requests led to the mid-stream addition of plans for enhancements of the mental health assistant and medical coding programs. Employer feedback was elicited at a regional level by the employment transition coordinator, and existing employer advisory boards at the colleges also provided feedback. In addition, the number of enhanced programs expanded because the colleges desired to use funds to reach more students at their institutions.

Photos 1 and 2: NIC Simulation Center

In general, enhancements involved moving content online so that the programs would be more accessible to rural students, updating and improving content that was already online to meet current standards for hybrid and distance learning, and improving the clinical learning environment (e.g., simulation labs used to build students' clinical skills). For example, NIC purchased new equipment for its pre-med AS program. LCSC made improvements to its simulation center, and ISU purchased a medication-dispensing station commonly found in the medical and pharmaceutical fields. Roughly a third of all programs, certificates, and prerequisite courses made improvements to the clinical learning environment.

To make the programs more accessible to rural students who may live at a distance, all enhanced programs were offered in a hybrid format, with instructional content generally available online and labs and clinical work completed on campus. Prior to the enhancement, most programs were available only in a less accessible, in-person format.

Figure III-2: Programs Enhanced Through ICE

College	Certificate/Program	Status	Enhancement
North Idaho College	Pre-Med AS	Launched spring 2015	Launched hybrid instruction; converted curriculum using Quality Matters process. Improvements to the clinical learning environment.
	Pharmacy Tech Intermediate Certificate	Launched fall 2015	Launched hybrid instruction; converted curriculum using Quality Matters process.
	Medical Assistant Intermediate Certificate and AAS	Launched fall 2015	Launched hybrid instruction; converted curriculum using Quality Matters process. Improvements to the clinical learning environment.
	Certified Nursing Assistant Certificate (credit and noncredit)	Launched summer 2016	Launched hybrid instruction; converted curriculum using Quality Matters process. Improvements to the clinical learning environment.
	Mental Health Assistant Postsecondary Non-Degree Certification (offered by Workforce Training)	Launched spring 2016	Launched hybrid instruction; converted curriculum using Quality Matters process.
	Prerequisite courses: MCTE 102 (Computational Skills for Allied Health) COMM 101 (Introduction to Speech Communications) SOC 101 (Introduction to Sociology) SOC 102 (Social Problems) ENG 101 (English composition) PSYCH 101 (Introduction to psychology) COMM 233 (Interpersonal Communications) MATH 015 (Basic Mathematics) MATH 108 (Intermediate Algebra) MATH 123 (Contemporary Mathematics) MATH 143 (College algebra)	Launched spring 2016	Converted curriculum using Quality Matters process.

College	Certificate/Program	Status	Enhancement
	ALTH 105 (Infection Prevention)		
	ALTH 130 (Over the Counter & Herbal Medications)		
	ALTH 130 (Nursing Assistant)		
	BIOL 175 (Human Biology)		
Idaho State University	Medical Coding/Health Informatics Intermediate Certificate	Launched fall 2016	Launched hybrid instruction; converted curriculum using Quality Matters process.
	Prerequisite courses: HO 0111 Introduction to Anatomy HO 0208 Introduction to Pathology HO 0107 Medical Law and Ethics HO 0209 Principles of Drugs and Their Use	Launched fall 2015	Converted curriculum using Quality Matters process.
Lewis-Clark State College	Pharmacy Tech Noncredit Workforce Program (developed by NIC)	Launched fall 2015	Launched hybrid instruction; converted curriculum using Quality Matters process. Improvements to the clinical learning environment.
	Assistance with Medications Noncredit Workforce Program	Launched fall 2017	Launched hybrid instruction; converted curriculum using Quality Matters process.
	Certified Nursing Assistant Noncredit Workforce Program	Launched fall 2017	Launched hybrid instruction; converted curriculum using Quality Matters process. Improvements to the clinical learning environment.
	Phlebotomy Noncredit Workforce Program	Launched fall 2017	Launched hybrid instruction; converted curriculum using Quality Matters process. Improvements to the clinical learning environment.
	Anatomy & Physiology for EMS (prerequisite course)	Launched fall 2017	Converted curriculum using Quality Matters process.
	Medical Assisting AAS	Launched fall 2017	Launched hybrid instruction; converted curriculum using Quality Matters process. Improvements to the clinical learning environment.

Program Development Under ICE

Below, we provide details about the curriculum development process for new and enhanced programs.

Curriculum Development Process for New Programs

Two of the three colleges, NIC and ISU, developed curriculum for new programs. Additionally, ID-EMS partnered with NIC to develop curriculum for the EMS certification. Within each school, curriculum development was generally the responsibility of individual instructors, who often held dual roles as program directors and coordinators. Grant-funded staff members from NIC's e-Learning department played a significant role in preparing new (and enhanced) curricula for online provision, as did department heads and other executive-level staff. While curriculum development was primarily carried out at the instructor level, considerable influence from outside agencies, such as state regulating bodies or accreditation agencies, also affected curriculum development.

Each discipline's accrediting or state governing bodies greatly influenced the curriculum design process for new programs. These agencies set educational standards, or statutory and regulatory requirements, for occupations and/or academic programs. To ensure that programs met standards and criteria set forth by these bodies, new programs underwent internal evaluations, as well as other assessments to align curriculum. In many cases, this process involved ensuring curricula were fully in compliance with standards through a mapping process, in which curriculum developers evaluated what topics courses should cover to meet the educational requirements of their professions or regulating agencies. These standards provided a roadmap of subjects and topics for curriculum developers.

While most credit programs underwent the process outlined above, a few noncredit programs were not obligated to do so. In these cases, program directors aligned their courses and programs to other academic standards, such as those of a relevant associate's degree, to help guide curriculum development and course planning. In addition, new programs submitted their curriculum to college councils or committees for review. These councils provided course development guidelines and institutional approval of new programs, and they assessed whether adequate resources, such as library resources or technical support, were available.

Curriculum Development Process for Enhanced Programs

The program directors or instructors tasked with enhancing curriculum for their programs converted the instructional content, exercises, and other materials from existing courses so that they were accessible online. The directors and instructors also improved the presentation of material so that the courses adhered to current findings about how students learn best online. For example, ISU's medical coding certificate adapted its curriculum from the college's existing health information technology (IT) associate degree. The curriculum underwent a review by the instructor's advisory committee, which made recommendations based on industry standards and practices. In another example, NIC aligned its certified nursing assistant curriculum to a new textbook being recommended for use statewide.

A major component of the curriculum enhancement process involved aligning previously developed course materials with general standards that specify a particular presentation format created by Quality Matters. These standards were designed to ensure a minimum level of quality for online and hybrid material. As one respondent explained, many community colleges across the United States started offering online curricula when the format first became popular, but they did so without much thought about whether the format met students' learning needs. In using the Quality Matters standards, program directors working on enhanced curriculum had the opportunity to reconsider the material and its presentation and optimize courses for online learning. Grant-funded staff members from NIC's e-Learning department, including a curriculum development specialist and a faculty support specialist, were available to help program directors navigate the Quality Matters process.

Program directors explained that even without the creation of new courses or course modules, enhancement involved a significant number of changes to the curriculum. First, program directors often had to reshape the curriculum. The Quality Matters standards emphasize the importance of clearly defined learning objectives. Program directors had to create these for each of their units. One program director reported that while she always had learning objectives in mind, she had never had to spell them out for students. She noted that doing so enhanced the clarity of the course content. Similarly, another instructor relayed that he uploaded a rubric and course maps to the online course management system, the application that allows instructors to create online courses, because of the Quality Matters process. Two program directors added that clarity of content can be especially important for students engaged in online learning, since the instructor cannot read visual cues related to students' level of understanding and students cannot ask for clarification in real time. One instructor noted that the process helped students evaluate the structure of the course site; students gave positive feedback, which the instructor remarked as "an unexpected bonus from the process."

Second, with the help of NIC e-Learning staff, program directors also created new instructional material, including videos to introduce online content, recorded and closed-captioned lectures, and activities and quizzes adapted for online use. One program director said that she decided to create short introductory videos for each chapter of the textbook that tell students what to focus on in their reading, rather than recording full lectures. She said that thinking through how students would access the content online forced her to reconceptualize how she taught the material.

Enhancing courses for online use also changed how instructors interacted with students. When two program directors said they missed having the opportunity to interact with students in real time, the e-Learning department created interactive online message boards for the programs. Students and instructors go to these boards at designated times to ask and answer questions. In another instance, one program director said that she tried to minimize her own appearance in the enhanced online content—deciding, for example, not to show her face in online videos or photographs—so that when the content is used at other colleges, it will be easier for those responsible for the in-person labs to feel like the primary instructors.

Approval Processes for New and Enhanced Programs

In addition to developing new and enhanced curricula and strategies for providing them, ICE program directors, chairs, and deans had to shepherd the programs through approval processes. These processes varied based on whether a program was new or enhanced. All the new programs went through several layers of approval, and this slowed down the overall process of getting a program ready to launch. First, the curricula had to be approved by the college curriculum council at the college. Then, they had to be approved by the Idaho State Board of Education and Idaho CTE division accrediting body. Finally, as is the case for most health programs, a national accreditation board specific to the program also had to approve the curricula for them to be considered accredited.

At NIC, the college curriculum council approved all prerequisites for courses as well as changes in grading procedures, credits, content, or numbers, as opposed to delving into the content or course/program outcomes of the curricula themselves. The curriculum council at ISU required a statement that identified what impact the proposed curriculum would have on the college. While the first ICE project director described the overall process as straightforward, and said she expected all the new curricula to be approved by all the certifying bodies, she also said that keeping track of the various deadlines and paperwork for each program was challenging, as there was no central repository that collected information about approval requirements and status for all new programs.

In comparison to approval for new programs, the process for enhanced programs was shorter and dependent on whether the change was considered "substantial" (a term for which each college and accrediting body has a definition). For instance, programs had to receive approval from ISU's curriculum council if the change was substantial enough to warrant an adjustment to the university's course catalog. Changes in delivery mode (from traditional instruction to online) required only internal approval at LCSC.

In another case, NIC's enhanced programs were revised using the Quality Matters review process, but the curricular changes did not have to be approved by the college curriculum council. However, an approval was required by the college's accrediting body, due to the change in instructional content to an online modality. The state required only an update, as the enhancements were not considered substantial enough to warrant another review. The simpler approval process for enhanced programs contributed to the consortium's ability to implement these programs quicker than they implemented the entirely new ones.

Status of Program Development

Overall, the consortium was successful at implementing enhanced programs. By the end of the grant period, the colleges were already offering or planned to offer all the original and subsequently added enhanced programs, except for the Military Medic 2 Medical Assistant and Paramedic bridge programs, and the pre-pharm associate degree, all at NIC, which have been postponed indefinitely. The former would have used PLA to bridge veterans to a medical assistant or paramedic certificate. However, delays at the state level clarifying Idaho's PLA policy have made it impossible to implement this program for the time being. Nevertheless, NIC

allows students to enroll in ISU's Vet2Nurse bridge program. NIC students enrolled in the Vet2Nurse program at ISU complete all the instructional material online, and complete their labs and clinical skills check at NIC.

As a whole, the new grant-funded programs were slower to start than anticipated. This was not unexpected, especially given that several of the programs—such as the occupational therapy assistant degree—were not in the original scope of work. As described previously, challenges with hiring, the wait for DOL approval of the new scope of work statement including the new programs, and delays in the disbursement of funds from NIC to ISU caused delays in curriculum development and approval.[11] An administrator from ISU noted that he was disappointed with the speed of grant implementation, especially the delay in receiving funds from NIC. He noted that ISU had to rely on in-kind contributions from the college and state while it waited for NIC to release funds, which NIC did not do until DOL approval of the revised statement of work was confirmed.

For the most part, the programs that were included in the project's original scope of work were farthest along, and all schools had either launched or enhanced the majority of the proposed programs. As of summer 2018, only two programs had yet to be launched—namely, the associate degrees in surgical technology and dental hygiene.

Articulation and Career Pathways

Agreements between all three colleges allowed students to enroll in programs at ISU, LCSC, and NIC. ISU and LCSC have an agreement with NIC to enroll students in their pharmacy program, with NIC serving as the host institution. ISU also acted as a host institution in NIC's articulation agreement with ISU for the medical coding/HIT certificate. NIC also enrolled veterans from its campus into ISU's Vet2Nurse bridge program. There were no formal transfer agreements to four-year programs or universities as part of the ICE partnership. However, because ISU is a four-year institution with a workforce training and continuing education arm, students in associate degree programs there could articulate into a bachelor's program in health science or applied technology, programs also housed in the College of Technology.

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[11] This was documented in our interim evaluation report (Negoita, Paprocki, & Thakhrar, 2016).

While few formal routes to bachelor's and master's degrees existed in ICE, there are many well-paying, stable careers to choose from for ICE graduates, many of which have natural career pathways, such as nursing. Students at the three colleges can continue their education in a related career path after obtaining a short-term certificate, one- to two-year certificate, or associate degree. For example (see graphic to the right), a student may complete a medical assistant certificate at NIC, then an associate degree. The student could then transfer to a bachelor's degree in nursing at a four-year college, like ISU. At any point, the student could exit and obtain employment with their completed education and license. However, they can decide to further their education and obtain a master's degree in nursing, which would allow them to specialize; act more independently, as in the case of nurse practitioners; or gain a degree in healthcare leadership and administration, which would open doors to work in hospital leadership.
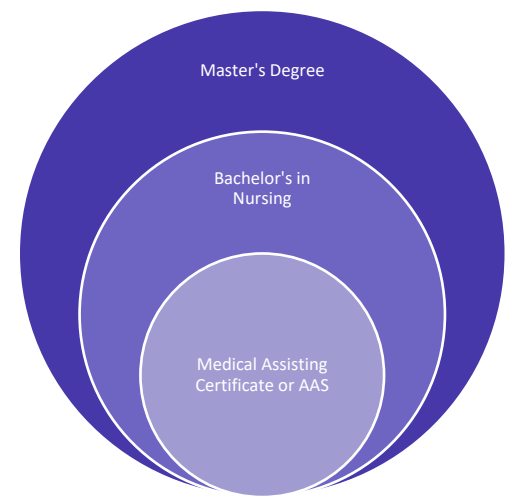
Many programs in the healthcare field provide inherent career pathways; because of the high level of regulation within the field, educational requirements are well outlined. Additionally, educational levels build upon each other; as they receive more training, students can expect to earn higher credentials that will lead to advancement. Students can also expect to enter and exit the pathway at multiple stages and still maintain a strong connection to the labor market. Finally, the Bureau of Labor Statistics finds that occupations in healthcare are expected to grow faster and have a higher median annual wage than that of all occupations (Bureau of Labor Statistics, 2018). All of these factors contribute to the "built-in" career pathways that ICE programs enjoy. The field provides opportune moments for students to advance in their careers, and it allows the colleges to focus on developing in-demand programs.

Successes in Developing New Programs and Enhancing Existing Ones

There were several key successes related to implementing enhanced and new programs under ICE. Overall, an important achievement was the sheer number of new and enhanced programs that were developed. The consortium focused on new programs specifically identified by employers as being of value to the state. NIC grant management team members were flexible regarding the grant's program plans and were willing to adapt them to accommodate the needs of these employers. Because the colleges have set up a host-provider model, students at the three colleges also can access more programs than would be possible without the grant. For example, with the curriculum developed at NIC under the grant, LCSC pharmacy technician students now have access to three major certifications that were not available to them previously. The pharmacy technician program at LCSC is also more rigorous and attracted the attention of a local employer.

Across the colleges, interviewed staff highlighted three features of the initiative that they thought were of help to Idaho's rural students: the hybrid nature of the grant-funded programs,

the host-provider model, and the partnership with ID-EMS for the EMS certificate program. All three enable students to access programs even when they cannot be physically present at one of the campuses every day. Unlike earlier versions of the colleges' online curricula, all grant-funded enhanced or new content offered online was standardized using Quality Matters standards. Grant staff members believed this would ensure a more student-centered online experience.

Success of Hybrid Format Programs

Grant staff members identified several benefits to the hybrid format of ICE courses. Two program directors of enhanced programs explained that before their instructional material was put online, they often ran out of class time and had to use some lab time to complete lectures, which meant that students had less time to do the critical lab work. After enhancement, the directors could focus on offering one-on-one attention in the labs, because students accomplished the less hands-on part of the program on their own time.

Staff members from the e-Learning department at NIC also believed that the online material was designed so that students have an optimal learning experience. For example, one e-Learning staff member pointed out that many students are better able to absorb the material when it is presented in the form of shorter, more interactive online videos and activities that focus on individual points and periodically assess student understanding. Research shows that compared to traditional teaching methods, blended learning in healthcare—in which information is presented online and through traditional methods, such as clinical rotations—has a sizable, consistent positive effect on knowledge acquisition (Liu et al., 2016). One possible explanation is that blended learning allows students to review online materials at their own pace, and unlike students in online-only programs, blended-learning students are less likely to feel isolated or reduce their interest in the course.

For the most part, interviewed program directors who had experienced the Quality Matters process had positive impressions of the experience. They noted that while at first, they were somewhat worried about fitting content into a standardized model, they learned to appreciate how the Quality Matters standards made the material easier to understand and absorb. According to one program director, students experiencing courses conforming to the Quality Matters standards have asked her why all courses do not use this format. Another program director said that when instructional material is going to be shared across colleges, some degree of standardization is preferable. At NIC, programs not directly involved with ICE were undergoing the Quality Matters process by the end of the grant period, likely due to the success it has had in ICE programs.

Success of the Host-provider Model

Another success of the initiative was the consortium's ability to share curricula and programs across colleges. Rather than simply giving other colleges access to the curriculum, the ICE colleges have chosen to use a host-provider model. In this model, the "provider" college supplies the online instruction, and the "host" college enrolls students at its campus and has an instructor facilitate labs and clinical work there. This model was part of the original grant plan.

The model may benefit the state overall, since only one college need invest the resources in developing material and students are not constrained by what their nearest college can develop on its own. Implementing the host-provider model through ICE has allowed Idaho to more quickly ramp up the number of available health programs for in-demand careers across the state. Three programs used the host-provider model: NIC hosted the pharmacy program, and ISU hosted the medical coding/HIT certificate and permitted NIC veterans to enroll in the Vet2Nurse program.

Challenges in Developing New Programs and Enhancing Existing Ones

ICE colleges encountered several key challenges in designing and implementing new and enhancing existing programs. First, because the scope of work expanded over the course of the grant period, it was difficult for the colleges to develop the more recently added programs as quickly as those they expected to develop from the beginning.

Second, NIC waited to receive final DOL approval of the modified scope of work before disbursing some grant funds to the other colleges, which made it difficult for them to hire key staff members and begin work.

Third, developing and enhancing so many programs at once was challenging because there were multiple and sometimes lengthy approval processes involved. In most cases, the new curricula had to be vetted and approved by multiple entities and individuals, including curriculum committees, accreditation boards, and the state, which led to some delays in launching courses. For example, the lengthy accreditation process for the occupational therapy assistant program delayed the opening of the program to spring 2017. Also, because the Vet2Nurse program was not approved fast enough to be included in the ISU course catalog for spring 2015, veterans—the target student group—were not able to use veterans' benefits to pay for the program during that term. In addition, new programs expect to make changes to curriculum and courses as they are refined, and those changes need to be reflected in the catalog for accreditation approval. However, adjusting course catalogues mid-stream was described as "not an easy task." The processes for establishing a new program, making course corrections, and receiving accreditation and university approval were not always well-aligned.

Challenges with Hybrid-format Programs

Our respondents reported some drawbacks to the hybrid learning format. Some program directors said that they had less of a personal connection with students, even though they still interacted with them in the labs. Indeed, several studies find that online programs that feature moderate to high levels of interaction (between students and instructors and among students) had higher achievement outcomes than those that featured less interaction (Bell & Federman, 2013).

One ICE program director noted that he anticipated increasing the lab time in the next academic year, as he wanted to make the program more "face-to-face." Two program directors of enhanced programs said that when they taught in person, they could read students' body language to figure out what they were confused about, and then adapt their lectures

accordingly. Because this is not possible with online teaching, the e-Learning staff created collaborative message boards so that the program directors and instructors could interact with students in real time to answer their questions.

By fall 2017, program directors seemed less concerned about interaction and communication in online classes. This worry had subsided because online curriculum was streamlined through the Quality Matters review process, leading to more focused in-person lab experiences.

Challenges to Curriculum Development

Challenges with curriculum development were often compounded by hiring issues. In the spring of 2016, NIC was still searching for a program director for its dental hygiene AAS program (one was hired by the fall of 2018), and the program coordinator for the occupational therapy AAS program was not hired under the grant until February 2016. In the first case, NIC grant staff members found it difficult to find a job candidate who had the relevant skills and experience and was also willing to accept the relatively low salary NIC could offer in comparison to other employers. In the second case, ISU waited until the occupational therapy AAS program was officially approved as part of the grant's scope of work before it hired the program coordinator under the grant (though she had been under contract before). The accreditation process for the occupational therapy assistant program could not begin until this occurred. While there were different reasons for these hiring delays, the result in both cases was that curriculum development and program approval stalled.

Program directors said that some curriculum developers or instructors were resistant to a model that forces them to use a defined template, such as the one required by Quality Matters. Some instructors, said one program director, felt "fear that they will lose autonomy or their fingerprint on the class." However, she felt that while the process did necessitate a set structure, this structure was only a scaffolding that still allowed for individual instructor preferences. In general, ICE program directors reported that concern about Quality Matters appeared to come mainly from faculty not involved with the initiative. One ICE program director did find the process "confusing," as recommendations did not have clear action steps for his program. However, he did implement some Quality Matters recommended changes to his online course site, including uploading a rubric and course map. Moreover, instead of going through the entire process, some programs, mainly those at LCSC, chose to work from a Quality Matters template.

Challenges to the Host-provider Model

While respondents generally had positive opinions about the host-provider model, especially regarding its impact on student training options, the inter-college collaboration that it required could be challenging. Grant staff members from LCSC indicated that it was difficult to use NIC's for-credit pharmacy technician curriculum for the LCSC program, which is noncredit and housed in its workforce division. The students at LCSC had different expectations about the program than did the students at NIC, where the curriculum was developed. Because workforce programs are often shorter and do not have the same prerequisites, the material was perhaps more complex than some of the LCSC students were expecting. In addition, students were

sometimes confused about who to ask for help, since the program director was at NIC but their lab instructor was at LCSC.

Despite these challenges, however, a respondent from LCSC appreciated the way the host-provider model enabled NIC and LCSC to split the workload involved in developing the pharmacy technician program. She also acknowledged that it gave LCSC students the opportunity to take pharmacy technician courses at a more rigorous level than would otherwise have been available at the college. For example, the program provided training on two skills—working with IVs and compounding—that are not usually taught by pharmacy technician programs or on the job. Notably, a local hospital requested their pharmacy technicians also be trained on IVs and compounding at LCSC, training the hospital would have otherwise done out of state.

Another challenge with enhancing and developing programs involved communication between staff members associated with credit programs and those associated with noncredit programs. The pharmacy technician program, which was initially enhanced at NIC from a preexisting for-credit program, was also being offered at LCSC as an enhanced noncredit program in that college's workforce division. The involved staff from NIC were not used to developing curriculum for use in a workforce training setting, and the students and instructors at LCSC had different expectations about the curriculum's level of difficulty. However, respondents from both colleges felt that their ability to communicate strengthened over time and that having the pharmacy technician curriculum available at LCSC would benefit students.

IV   STUDENT SUPPORT SERVICES

In addition to developing and enhancing healthcare training programs, ICE employed another important set of activities to recruit and enroll students into programs and provide them with advising and support services. This chapter describes these non-academic components of the initiative. It discusses how the grant team dealt with challenges in this area and how the team provided support specifically designed for students with greater needs, including veterans, those who lived in rural areas far from the colleges, and nontraditional students.

Recruitment and Enrollment

This section describes the methods used to recruit students to ICE programs and the process students had to follow to enroll as grant participants.

Recruitment Strategies

ICE colleges used a variety of recruitment strategies, both on- and off-campus, to attract different populations to the new and enhanced programs.

Key strategies are described in more detail below.

- **Conducting outreach within ICE colleges**. At all three colleges, grant staff reported that they integrated the promotion of ICE programs into existing college-wide marketing and recruitment efforts and benefited from assistance from college marketing and outreach staff. On-campus recruitment events included career fairs and college open houses, at which ICE staff distributed material and answered questions about ICE. Grant staff members at NIC and ISU also worked closely with the colleges' advising and recruitment departments so that those departments could promote ICE programs to prospective students. In addition, NIC grant staff members visited students in prerequisite courses for ICE programs (including courses that had been enhanced with grant funding and others that were not enhanced) to let students know about grant-funded programs.

- **Distributing program flyers and other promotional materials to potential students.** All three colleges used flyers and other marketing materials to reach potential ICE students. Staff members who were tasked with recruitment efforts reported distributing these materials via email and mail, and in person to a variety of organizations, libraries, businesses, and social service agencies. Staff from LCSC noted that the college described ICE workforce programs in its workforce program catalog, which was mailed biannually to all households in the community.

- **Reaching out to community-based organizations and local employers.** Respondents reported that college staff also made presentations to community-based organizations and local businesses to promote ICE programs. For example, LCSC's grant team hosted a breakfast meeting with local pharmacy professionals so that they could inform their staff about the pharmacy technician program developed by the college. This event resulted in the enrollment of several new students and the development of a good referral relationship with a local pharmacy. At LCSC, staff also promoted the program to local library staff, while ISU grant staff participated in a local community service council.

> **Outreach to Veterans**
>
> ICE prioritized serving veterans. The Vet2Nurse bridge program at ISU was designed specifically to meet the needs of veterans. Grant staff worked to engage interested veterans by hosting information sessions at ISU's Veterans Student Services Center. The grant-funded ISU student success navigator also met with Idaho Division of Veterans Services staff members in Boise to advocate for the receipt of student financial aid for the ICE program. Despite these efforts, ICE staff found that it was somewhat difficult to recruit students interested in the Vet2Nurse bridge program. They surmised that the narrow focus of the program on veterans with a specific interest in heath careers had limited the pool of potential applicants.

- **Engaging local workforce partners.** All three consortium colleges promoted ICE programs to their local American Job Centers (AJCs) early in the grant period, either by distributing promotional materials or conducting information sessions, or both. Such meetings were designed to increase AJC staff awareness of the ICE-funded programs. However, college respondents did not think their local AJCs had been a significant source of referrals to the ICE programs. Nevertheless, they sometimes referred students to the AJC, so students could find out if they qualified for funding to pay for ICE training.

- **Conducting outreach at local high schools.** Because recent high school graduates were a good fit for many of the ICE programs, all three colleges reported conducting outreach directly to students at local high schools. For example, ISU hosted a technology expo for high school students on its campus, at which participants could learn about ICE, among other programs. NIC made presentations about grant-funded programs at local high schools. LCSC sent an ICE brochure to 10 high schools in its community.

- **Advertising in local media.** Throughout the grant period, grant staff members from LCSC and NIC placed ads with local newspapers, radio stations, and television stations to reach potential students.

- **Employing online recruitment methods.** The ICE website (http://www.icehp.org) provided detailed information about each program and allowed viewers to request information or apply online. The colleges also embedded promotional YouTube videos about each program on the website. In September 2017, NIC launched a Facebook ad campaign. The grant team spent approximately $1,000 on Facebook ads that targeted individuals aged 25-50 living in areas of Idaho near the consortium colleges. The ads provided information about the grant, specific program options, and expected salary levels for the programs post-graduation. Individuals who clicked on an ad for more

information filled out a form with their contact information. The consortium's employment transition coordinator then forwarded this information to the advisor or program director at the appropriate college for follow-up. According to respondents, the Facebook campaign led to over 700 page views of the website during the week after launch. Overall, respondents from ISU and NIC believed that social media outreach, including the Facebook ad campaign, had been one of their most successful recruitment methods and, in particular, had succeeded in reaching rural or nontraditional students who might not have been able to attend an on-campus recruiting event.

In the early stages of the grant, the student success navigators at all three colleges carried out most of the recruitment activities. However, responsibility for recruiting students shifted later, after the student success navigators left the ISU and NIC programs in the second half of 2017 and the LCSC student success navigator began spending much of her time on grant-related reporting. By fall 2017, all three colleges had split outreach and recruitment responsibilities between grant program faculty, and program directors and non-grant-funded staff, such as general student support services staff, academic advisors, and college marketing departments. At NIC, the consortium-level ICE employment transition coordinator also assisted with recruiting students.

In summary, the recruitment efforts for the ICE project were substantial. However, several respondents opined that given the popularity of training for health occupations in the state, students would likely have expressed interest and enrolled in ICE programs even with minimal formal recruitment activities.

Enrollment and Assessment

Once they were recruited, prospective students began an enrollment process that involved applying to the college and then to their individual program of interest. Much of this could be done online. As part of the intake process, some applicants were asked to complete assessments or meet with grant staff members. The assessments and other steps in this process are described below.

Meeting with Staff

Many prospective students met with the student success navigator or another student support staff member either right before or right after enrolling in an ICE program. These one-on-one meetings were used to help students pick the program that best met their needs, to discuss financial aid options, and to talk about registering for classes and other enrollment steps. For example, at ISU, the student services advisor for the College of Technology met with students after their acceptance into ISU but prior to their acceptance into a specific ICE program. During hourlong one-on-one meetings, the student services advisor would review those course prerequisites for the program in which the student was interested and would help the student figure out his or her schedule and what books would be needed. She also met with participants for follow-up advising.

Often, the grant-funded student success navigator would also connect the student to the college admissions office to complete the college enrollment process. However, due to the

departure of the ISU and NIC student success navigators in the second half of 2017, and the high workload of the LCSC student success navigator, these meetings were less frequent toward the grant's end. Students were more likely to get help online or be referred to a non-grant staff person, such as an academic advisor or program director, if they needed extra help enrolling in ICE programs.

Self-Evaluation

NIC grant staff reported that they required students to complete a self-assessment once they had enrolled in ICE. This assessment was designed to identify potential individual academic and employment challenges; it also provided information about a student's goals and plans. Through the self-assessment, staff members could identify the appropriate level of support needed by an individual student. At NIC, this assessment was originally created by the student success navigator and was available online. The consortium-wide employment transition coordinator explained that once the self-assessment was complete, students were automatically sent a personalized email along with the assessment results, with individualized links to the supports they might need. For example, a student who indicated struggling with education in the past would get a link to campus tutoring in the personalized email.

Prerequisites

Because some ICE programs required certain entry qualifications or skills, completing prerequisite courses was required for some students. For example, LCSC required that students complete a pharmacy technician prep course before enrolling in the program. Such a course would cover the math and biology needed for success in the program. The academic AAS programs also required academic core courses. Students who enrolled in enhanced prerequisite courses were considered "course level" grant participants even before they enrolled in the associated ICE program. In contrast, many programs in the colleges' workforce divisions did not require any course prerequisites.

Prior Learning Assessments

During the development of the ICE grant proposal, the Idaho State Board of Education was in the process of revamping its PLA policies, which would allow students to obtain credit toward completion of a program based on their previous experience. The grant team had hoped that the ICE grant would provide opportunities for the colleges to be involved in PLA-related discussions occurring at the state level. However, the State Board of Education ended up taking much longer than expected to refine PLA policies and was thus not ready to engage with the colleges on PLA-related issues during the grant. Due to this delay, the ICE colleges did not make meaningful contributions toward revamping PLAs for the general student population, even though PLA was one of the projected components of the initiative (see Chapter I).

Despite the overall lack of participation by the ICE colleges in developing statewide PLA policies, ISU did adopt a policy that ensured veterans could receive PLAs for their direct military experiences. Prior to ICE, the college had no policy to provide credit for direct military experience; now, this is one of several ways veterans can demonstrate that they should be awarded credit for skills learned during their experience in the military.

In summary, although ICE had some success helping veterans obtain credits based on their military service, overall, implementing improvements to the colleges' PLA procedures was more difficult than expected. Respondents from NIC noted that this might have been because the accrediting bodies of various health occupations were relatively inflexible regarding PLAs.

Promising Practices and Challenges in Recruitment and Enrollment

NIC grant leadership was pleased with the overall success that the consortium achieved in enrolling students into the initiative. The team did not identify any specific difficulties with recruiting. The recruitment strategies described above were at least partially responsible for the strong enrollment numbers. Promising recruitment and enrollment strategies included the focus on online recruitment methods, which was especially valuable in reaching rural students or those whose other commitments made it difficult to attend more traditional, in-person informational outreach events. Our respondents reported success using paid Facebook ads and developing promotional online videos about each program. In addition to promoting the grant through online media, program directors and other grant staff added a personal touch by reaching out one-on-one to individuals who had expressed interest virtually.

Across the colleges, interviewed staff identified several additional factors that supported successful recruitment and enrollment of ICE participants. These included the popularity of health programs generally and the promising outlook for finding related jobs. In some cases, these additional factors also helped the programs reach overall college enrollment goals. For example, LCSC staff pointed out that because the grant-funded certified nurse aide (CNA) program was a requirement for enrollment in the college's popular nursing program, its status as a prerequisite helped increase the CNA enrollment numbers. Partnerships between the ICE programs and other organizations also played a positive role in recruitment for the grant-funded paramedic program at LCSC. Respondents pointed out that the paramedic program had a particularly strong partnership with the local fire department, which paid for its employees to take the course.

Recruitment and enrollment challenges were more apparent for certain programs, notably those that were new, longer, or perceived as more rigorous. Overall, staff identified the following as challenges that made it harder to enroll or retain students:

- **Program of greater length and intensity.** Recruitment staff at the colleges reported that the length of the programs and the time commitment required from students might have deterred some students from enrolling or might have caused them to drop out after enrolling. While program length and intensity were not barriers for all students, these factors might have been problems for nontraditional students, who were likely to have family or work responsibilities outside school. For example, respondents at LCSC reported challenges with enrollment and attrition rates in the pharmacy technician program, which they partially attributed to the fact that it was initially designed as a for-credit program at NIC and was thought to be more rigorous (for example, in hours of assignments per week) than typical workforce programs.

- **Programs that tried to target specific populations.** The grant team originally hoped to prioritize certain groups of individuals—including veterans and those who were dislocated workers, unemployed, or underemployed—for enrollment. However, respondents noted that recruiting such students was often challenging due to the need to reach out to different partner organizations than those usually used. ISU respondents also mentioned that it was hard to find veterans with a specific interest in healthcare occupations.

Student Support Services

As described in Chapter II, all consortium colleges initially had a grant-funded student success navigator who provided support services and job search assistance exclusively to ICE program participants. However, there was a significant amount of staff turnover and no rehiring of new staff in this position at all colleges. As of fall 2017, only LCSC maintained its .75 FTE ICE student success navigator. Although various individuals (grant funded or not) continued to provide student services when student success navigator positions were vacated, overall, the intensity and quality of student support services declined when the navigators departed.

Support staff members reported using a variety of methods to deliver student support services, including in-person meetings, email correspondence, and phone conversations. In most cases, student success navigators reported having initiated communication with students, rather than the other way around. The frequency of contact with students greatly depended on their level of need. As the number of ICE participants grew and student support staff levels were reduced, the grant teams relied more on links to existing college-wide or community services and support available on the student support website (http://www.icehp.org/student-success-center). As the number of participants approached 1,000—with only a few grant-funded support staff to share the support services caseload—much of the program's coaching transitioned from face-to-face meetings to brief online conversations and the sharing of links to other existing resources.

Financial Aid Assistance

Access to financial aid is often an important factor determining completion and retention rates at community colleges (Scott-Clayton, 2015). Support staff members at all three colleges said that they had assisted students with securing financial support for college and life needs and had referred students to primary resources such as the college's financial aid office. One student support staff member reported during the first implementation site visit that financial aid and help with tuition was the number one supportive service need for ICE participants. When providing these types of services directly, support staff members helped students identify potential sources of funding and complete financial aid applications. However, the reduction in dedicated ICE student support staff over the course of the grant meant that later, students relied more on online information about financial aid or had to visit their college's financial aid office themselves.

Availability of financial aid for ICE participants greatly depended on whether the program was credit or noncredit. In general, a student taking a noncredit course or program could not receive financial aid. Because LCSC offered more noncredit courses and programs than did ISU and NIC, it was harder for its grant participants to access student financial aid. However, regardless of their programs' credit or noncredit status, students were also able to seek other sources of funding, such as WIOA. At ISU, veteran participants were referred to the Veteran Student Services Center to discuss possible veteran-specific sources of financial aid, such as Veterans Affairs and GI benefits.

Academic Support and Tutoring

The colleges reported providing academic support and tutoring services to students through a variety of mechanisms, leaning more on online resources as the grant progressed and fewer student success navigators remained. The online student support center included dedicated pages for both academic support
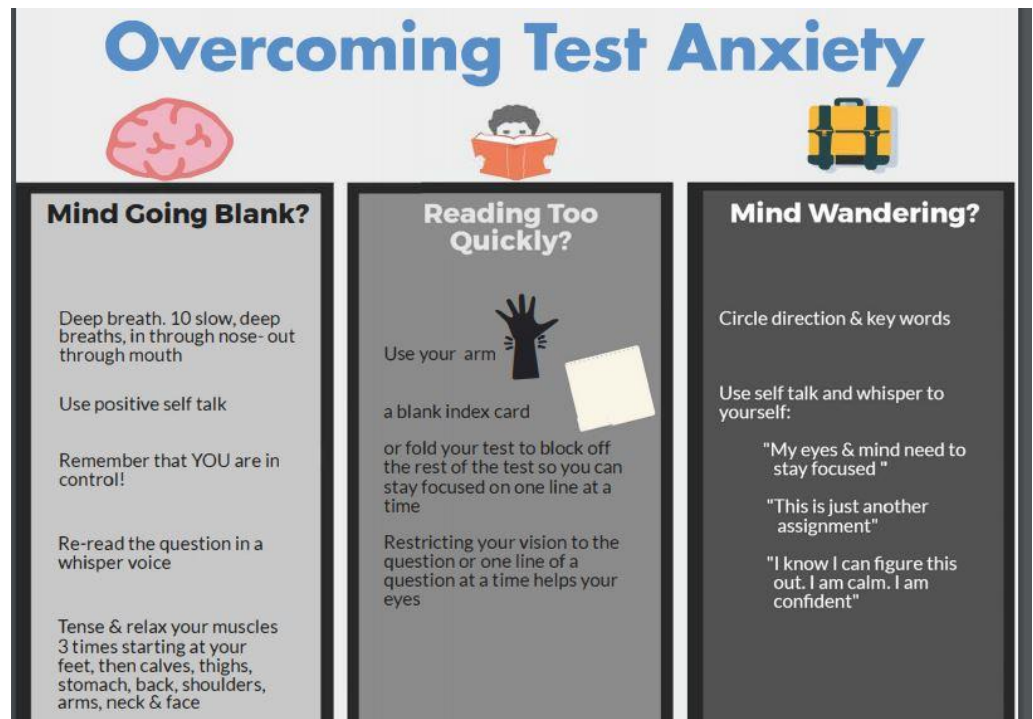
(http://www.icehp.org/student-success-center/academic-support) and tutoring (http://www.icehp.org/student-success-center/tutoring). The academic support page featured links for and videos on a variety of topics, including learning styles, time management, test taking, SMART goal setting, procrastination, and stress. For example, there was a video interview about how to cope with exam stress and a colorful infographic with tips participants could use to overcome test anxiety (see example infographic above). Many of these resources were designed for ICE by the student success navigators or the employment transition coordinator.

The respondents noted that, in addition to accessing online resources, participants received one-on-one assistance from student success navigators (especially at the beginning of the grant period) and from academic advisors and other college staff (as the navigator positions were vacated). ISU also had an early alert system that reported when a student was missing classes or having other issues, so the academic advisor could reach out in a timely fashion. While not funded by the grant, this system, according to grant staff, was also helpful for instructors of online classes funded under the grant, since they could log in and see how active students had

been on the course pages. Instructors or advisors could then offer extra support to students who appeared to be struggling.

Tutoring continued to be offered in person, often by non-grant-funded staff and volunteers. LCSC created an academically oriented, noncredit preparatory course specifically for ICE pharmacy technician participants, so they could develop a strong foundation of math and science skills. In addition, the college reported that it engaged a retired pharmacist as a volunteer to provide free tutoring support to students enrolled in the pharmacy technician program. Students enrolled at all three college could also access their colleges' general tutoring services. For example, at NIC, students could receive two free hours of tutoring per subject, per week.

Referrals to On-campus and Community Supportive Services

To complement the services provided directly by grant-funded staff, ICE referred students to appropriate campus and community resources. For example, ISU connected veteran students with the college's Veterans Student Services Center to obtain more information regarding benefits available to them under the GI Bill. LCSC reported that students were referred to the college's Teaching-Learning Center when learning difficulties were identified. An entire ICE resources page (http://www.icehp.org/student-success-center/resources) with referral recommendations was also available through the online student support center. From the beginning of the grant, ICE leadership staff from NIC explained that they intended to make referrals to existing resources a key component of the program rather than reinventing what already existed.

Clinical and Job Placement Assistance

ICE job placement assistance was often addressed within the healthcare programs of the initiative, because many healthcare programs have mandated components—such as clinical work, practicums, and internships—that facilitate job placement. Most programs included a Work-Based Learning (WBL) opportunity as a required part of their curricula. The program directors and instructional staff at all three colleges leveraged their existing partnerships with local employers to connect students to these experiences. Support staff members and employer partners reported that students who did well in their clinical placements were likely to be hired by their host site. These opportunities gave students a chance to demonstrate their skills on the job. In one example, a grant team member from LCSC reported that pharmacies did not always understand the level of training that their students gained in the pharmacy technician program, but students were able to demonstrate this expertise during their practicum. In general, clinical placements provided employers the opportunity to recruit students who were qualified job candidates.

In addition to the job placement support built into each program, in early 2016, NIC hired an employment transition coordinator, who was available to manage job placement services at all consortium colleges. Specifically, the employment transition coordinator helped students with writing and tailoring their résumés, conducted mock interviews, and provided information about job openings. In addition, she emailed students information about occupations in the

greatest demand, job search tips, and job announcements. The employment transition coordinator also engaged local employers by attending job fairs and other employer events as well as meeting individually with human resources directors from local hospitals, clinics, and healthcare facilities throughout the geographic area served by ICE. Lastly, the employment transition coordinator assisted program directors in finding clinical sites for hard-to-place students. Besides connecting students to employers, the employment transition coordinator also provided one-on-one job-related assistance to students as needed, though she was able to spend more time on this task early in her tenure, when there were fewer ICE participants overall.

When they were still working as grant-funded college employees, student success navigators also provided job search and job placement support. For example, the original student success navigator at LCSC assisted the program director in making visits to local pharmacies and successfully securing clinical sites for students enrolled in its pharmacy technician program.

Like other forms of student support, job placement assistance was increasingly conducted online as the grant progressed (see example in the graphic to the right). Because the consortium-wide

employment transition coordinator had approximately 1,000 students in her caseload and took over some of the responsibilities of the departed NIC student success navigator, sharing job search resources virtually enabled her to be more effective. For example, she began writing a blog to benefit all students with employment-related tips (http://icehp.org/blog).

Overall, grant staff and instructors from all three colleges felt that because ICE programs were in very high demand, most students had little trouble obtaining employment upon graduation. For example, a program director at ISU described her students as "highly sought after," and one from NIC said that most of her students were "snatched up" within about two weeks, many by the host agency from their clinical placement.

Follow-up Activities

Even during the second round of implementation site visits in fall 2017, some follow-up procedures were still being worked out, as many participants remained active in their training programs. However, the general plan at that time was for the consortium-wide employment transition coordinator (and after March 2018, when the employment transition coordinator position ended, the data analyst) to track former participants from across the consortium. Through a mailed program survey (often required by a program's accreditation process) or direct email, the grant team attempted to determine participants' employment status the

quarter after they completed a program and the quarter after that. A total of three attempts per quarter would be made to reach each student.

In fall 2017, the employment transition coordinator estimated that the survey had an approximately 60 percent response rate and noted that ICE's contact could feel "intrusive" to those who were unemployed (a group that might, therefore, be expected to have a lower response rate than their employed peers). At the time of the follow-up contact, some students reported that they enrolled in additional education. For example, many CNA students from ISU went on to the college's nursing program.

In additional follow-up, ICE graduates could take advantage of their colleges' general student support and employment services. For example, at ISU, the career center was open to all students and alumni and provided assistance with résumés, the development of soft skills, and interviewing skills.

Challenges and Promising Practices in Providing Student Support

The grant's decisions to create a robust online student support website and to leverage existing college student support resources are both promising practices. For example, ICE participants were encouraged to access help from existing college tutoring centers and academic advisors, so the consortium did not waste funding to develop resources that already existed. Job placement services were also built into most ICE programs through clinical work and program directors' connections with local employers. In addition, the extensive online student support center offered a wide range of information that was accessible even when students were not on campus, which was especially helpful for those who lived in rural areas far from the colleges and those who had alternative schedules. Together, the leveraging of resources and provision of online links allowed many forms of support developed under ICE to be sustained even though grant support staff positions ended with the grant (or prior to the end of the grant).

Lack of overall staff capacity was the major challenge in providing student support through ICE, though it also led grant staff to produce the creative solutions described above. Turnover in the student success navigator position was high, and the number of participants in ICE grew as staff capacity was reduced. Because of this, staff members who remained on the grant, such as the employment transition coordinator and LCSC student success navigator, had greatly increased workloads. This significantly decreased the time they had to provide students with one-on-one support and increased the need to draw on other existing college and community networks.

V   ICE'S OUTCOMES AND IMPACTS

Following the project's logic model, described in Chapter I, this chapter describes and analyzes ICE's outputs, outcomes, and impacts at the individual student level. As the initiative's logic model shows, ICE was expected to produce outcomes at several levels (individual, college, employer, and system levels). Chapter III showed how ICE expanded the consortium colleges' capacity to provide training for in-demand occupations by creating or enhancing prerequisite courses and noncredit and for-credit programs. Chapter V features information from interviews with employers involved in ICE activities, from which SPR gleaned some insights about how the initiative affected them. For the most part, however, this chapter focuses on outcomes and impacts at the individual student level.

We begin by examining ICE's progress in attaining its enrollment targets, and we continue by describing the sociodemographic profile of students enrolled in the initiative. Next, we describe the academic outcomes experienced by ICE participants, including completion and retention in the program. Because data on participants' employment and earnings were not available for any of the ICE colleges, these outcomes cannot be reported.[12] Lastly, we present the findings from an impact study that compared the academic outcomes of two groups of ICE participants with the outcomes of equivalent groups of nonparticipants to estimate the impact of the initiative.

ICE's Progress in Meeting Enrollment Goals

The consortium colleges greatly exceeded the overall grant enrollment goal, serving 2,596 students by the end of March 2018, as shown in Figure V-1 below. Enrollment goals were surpassed in all programs except the two programs NIC had yet to launch (surgical tech and dental hygiene). Overall, ICE enrolled two and half times more participants than initially planned. This impressive outcome, as documented in previous chapters, was the result of expanding the consortium's scope of work in response to employer demand.

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[12] With SPR's assistance, the ICE colleges attempted to obtain earnings data on program participants from IDOL. Despite assiduous attempts, IDOL did not provide these data. Although data on employment and earnings were collected through a survey conducted by ICE staff members, and were appropriate for DOL reporting (see additional details in Chapter IV), these data were not adequate for the purposes of an outcomes and impact study.

Figure V-1: Actual Enrollment and Enrollment Goals, by College

	ISU	LCSC	NIC	Overall
Total Enrollment Goal (unique participants)	383	15	649	1,047
Total Actual Enrollment (unique participants)	423	271	1,902	2,596
Total Overall Enrollment as a Percentage of the Goal	110%	1,807%	293%	248%

Source: College administrative data, 2018.

The highest enrollment numbers came from prerequisite and pre-med courses and the CNA program, which was shorter and ran much more frequently than other programs. New programs experienced much smaller enrollment numbers, which overall tended to fall under 30 (and sometimes well below that). Because NIC had the most programs and offered prerequisites, pre-med courses, and two CNA programs (both a credit and workforce version), it had by far the highest enrollment numbers, followed by ISU and LCSC. However, all three colleges exceeded their enrollment goals by significant margins.

Participant Demographic Profile

SPR used a dataset obtained from ICE to describe a few sociodemographic characteristics of participants (Figure V-2 below). Overall, slightly over three quarters of the participants with valid records were women. This proportion is consistent with Idaho's employment structure, whereby women comprised 79 percent of those employed in the healthcare industry (Townsend, 2013). In addition, more than two-thirds of ICE participants were between 18 and 29 years of age, and almost all ICE participants were white. These sociodemographic distributions were similar across all programs.

From the perspective of age, however, there are significant differences among types of participants. ICE participants who enrolled in prerequisite courses were younger than average (almost three quarters were between 18 and 29 years at enrollment compared to only 60 percent for noncredit programs), whereas participants in noncredit programs were older (almost a quarter of them were 40 and older). The ages of participants in for-credit programs fell somewhere in between. This finding is not surprising because most students who enroll in community colleges are required to take prerequisite courses before they can enroll in any other courses. Since ICE enhanced a wide range of courses in disciplines as varied as sociology, psychology, communication, and mathematics—in which most first-year students are expected to enroll—it is expected that they would be of a relatively younger age. Conversely, noncredit programs are brief programs whose main goal is to prepare participants for employment. It is expected then that a higher proportion of the participants would be older, nontraditional students looking for employment.

Figure V-2: Sociodemographic Characteristics of ICE Participants, by College*

	Credit (n=409)	Noncredit (n=1,082)	Prerequisite (n=1,105)	Total (n=2,596)
Gender (valid %)				
Female	79	77	75	77
Male	21	23	25	23
Data missing	*(0%)*	*(16%)*	*(2%)*	*(7%)*
Age (valid %)**				
18-29	67	60	72	67
30-39	18	18	17	17
40-49	9	11	8	9
50 and older	7	12	3	7
Data missing	*(1%)*	*(16%)*	*(2%)*	*(8%)*
Race (valid %)**				
American Indian or Alaska Native	1	2	3	2
Asian	2	3	1	2
Black or African American	2	1	1	1
Native Hawaiian / Pacific Islander	1	0	0	1
White	91	91	94	92
More Than One Race	2	3	1	2
Data Missing	*(18%)*	*(38%)*	*(43%)*	*(37%)*

Source: College administrative data, 2018.

Notes: * SPR received data on Pell eligibility status, disability status, and veteran status. Due to the high incidence of missing data (more than 50%), these data fields were not used in reporting. The high incidence of missing data resulted from the policy of the three colleges to allow participants to self-identify their status.

** The difference is statistically significant at the 95% level using a chi-square test of association.

Participant Outcomes

SPR used data provided by ICE to calculate the academic outcomes of ICE participants (Figure V-3 below). At the consortium level, among the total number of students enrolled, a little under half had completed their program or course, one-third were still enrolled, and about one-fifth had exited without completing (i.e., dropped out). The overall retention rate, calculated as the added percentage of active participants and that of completers, was approximately 80 percent.

These overall percentages, however, mask important differences across credential programs. Degree programs had the highest percentage of students still enrolled, and noncredit programs

had the lowest. This is expected since degree programs take much longer to complete than do noncredit programs.[13]

Completion rates varied between nine percent for degree programs and close to 70 percent for noncredit programs. Again, because of the lack of data from ISU, the completion rate for enrollments in prerequisite courses is artificially low, at 39 percent; data from NIC alone show a much higher completion rate, exceeding 80 percent (not shown in the table).

Figure V-3: Academic Outcomes of ICE Participants[14]

	Total Enrollments	Still Active in Program (%)	Completed Program (%)	Retention Rate (percent active + percent completed)	Exited before Completion (%)
Type of credential					
Prerequisite	1,293	675 (52%)	499 (39%)	91%	119 (9%)
Noncredit	1,082	29 (3%)	743 (69%)	72%	310 (28%)
Certificate	117	23 (20%)	66 (56%)	76%	28 (24%)
Degree	293	210 (72%)	26 (9%)	81%	57 (19%)
Consortium	**2,785**	**937 (34%)**	**1,334 (48%)**	**82%**	**514 (18%)**

Source: College administrative data, 2018.

Although data were not available to compute reliable employment and earnings outcomes for participants, employers interviewed as part of the study (both during the first and second implementation visits) had positive perceptions about ICE, especially because it was seen as fulfilling their demand for well-trained employees. Employers were not always aware of the grant or the name "ICE" itself, but they felt that specific ICE programs, such as the pharmacy technology and medical assistant programs at NIC, produced strong employees. For example, the owner of several pharmacies in the NIC area said that compared to other pharmacy technicians he had hired, NIC graduates came in with a stronger vocabulary and a better understanding of the field. He said that they required less training overall. None of the interviewed employers realized that these programs were converted to a hybrid format, but they felt positively about that development when told so. While they did not necessarily think

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[13] The high percentage of students still enrolled in prerequisite courses may appear surprisingly high; however, it is a result of a coding decision. "Still enrolled" is a residual category that counts students for whom neither a completion date nor a dropout date is provided. According to email communication from ICE, outcome data for students enrolled in prerequisite courses at ISU were not available at the time of data transmittal to SPR. As a result, the proportion of "still enrolled" for this category is artificially high (it is under five percent for NIC students).

[14] These reported outcomes may differ from the final outcomes officially reported by ICE to DOL based on subsequent reanalysis of the data and the availability of more recent data.

the online learning would affect their decision to hire or the work their employees do, they noted that online access would likely expand the number of individuals able to enroll in the programs, thus helping with their hiring demand.

ICE's Impacts

DOL stressed the importance of a rigorous impact evaluation, using experimental or quasi-experimental methodologies, to estimate TAACCCT-funded program impacts on participant outcomes. In an impact study, outcomes of participants are compared with the outcomes of an equivalent group of nonparticipants to estimate the effect of the initiative. In a purely experimental evaluation, individuals who are declared eligible for the program are randomly assigned to either receive or not receive program services (resulting in the selection of a treatment and a control group). If applied correctly, this procedure ensures that the treatment and the control groups are virtually indistinguishable in all measurable aspects but one (participating in the program); the difference between the average outcomes in the two groups represents the program's impact (the average gains experienced by participants compared to the status quo in which the program was not available). In a quasi-experimental evaluation, study participants are not randomly assigned to a comparison group; instead, a comparison group is selected purposefully from available data sources.

We made the decision not to conduct a random assignment impact study of ICE for several reasons. First, the requirement to deny services to people who might benefit from them (which is key to forming a control group) went against the principle—indeed the requirement for many colleges—of universal enrollment, widely regarded as one of the core missions of community colleges. In addition, since ICE did not cover the cost of tuition for participants, it would have been difficult to deny students their program of choice. Therefore, a decision was made to design a quasi-experimental impact evaluation rather than a random assignment-based evaluation.

Impact Study Design

Given the differences between the types of ICE participation mentioned above, estimating impacts for ICE participation as a whole seemed misplaced. Prerequisite courses are among the building blocks of credit-bearing programs, and as such, they cannot be directly compared to whole programs. In addition, many prerequisite courses enhanced with grant funds were focused on building basic writing and math skills. Thus, they were not specifically connected to ICE's focus (healthcare) and could have been attended by students pursuing very different majors and interests. Further, noncredit programs are short programs specifically designed for older, nontraditional students. Consequently, we opted to estimate impact separately by type of participation.

Because high-quality employment and earnings data were not available for study participants, the only type of outcome that could be observed was academic outcomes (such as completion of the program or course, grades obtained in a course, or credits accumulated in a program). Academic outcomes are very important, however, because completion rates in community

colleges have been historically low (Juszkiewicz, 2015). Therefore, focusing the impact study on these outcomes provides useful answers to an important public policy problem.

The driving research question for the impact study was whether the infusion of ICE funds led to meaningful program improvements that benefited students compared to what existed before. This research question was selected because it appears to be the most relevant policy question associated with the initiative, especially in the context of advancing hybrid models of instruction. Formulating the research question this way led SPR to draw a sharp distinction between new and enhanced programs of study. If a program was pre-existing and was enhanced by ICE, it appeared feasible and useful to ask what impact the enhancements had by comparing the outcomes of ICE students to prior cohorts of students (those served before the enhancements were introduced). Assessing new programs was more challenging because it is more difficult to estimate the counterfactual (what would have happened if students did not enroll in the ICE program). In addition, the number of ICE participants enrolled in new programs developed by NIC and ISU was too small to allow the detection of impacts. Therefore, our impact design for ICE focused on evaluating the impact of enhanced courses and programs.

For the estimation of TAACCCT program enhancements on student academic outcomes, we employed a difference-in-differences (DID) methodology that compared differences in average outcomes over time for enhanced courses and programs to differences over time for comparison courses and programs. This design potentially controls for factors affecting program outcomes that were not associated with ICE enhancements and increases the chance that average differences in outcomes before and after ICE enhancements were due to the enhancements and not to other phenomena (e.g., an economic upturn that may cause people to search for jobs rather than enroll in college).

The Impact of Participating in an Enhanced Prerequisite Course

As stated in previous chapters of this report, all consortium colleges developed or enhanced prerequisite courses. Our intention was to assess the impact of participating in these courses for participants at both schools. However, because comparison datasets from other schools arrived too late to allow processing and analysis, we limited the impact study to only participants from NIC.

NIC used ICE funds to enhance 15 prerequisite courses, as listed in Chapter III. Of these, 11 courses were enhanced by conversion to a hybrid format, and the rest benefited from other interventions, such as the purchase of instructional equipment. Because we wanted to focus on the impact of blended learning (the most substantial enhancement associated with ICE), we removed students enrolled in such courses from the program group. In addition, the ICE enhancement did not take place for all the sections within a course. Some sections within a course were enhanced; some were not. Only students who enrolled in enhanced sections were retained in the program group.

After a careful evaluation of course offerings at NIC and several discussions with the grant team and representatives of NIC's institutional research office, we identified several prerequisite courses that were similar to the enhanced ICE courses in terms of field or discipline and level of difficulty. We then requested data extracts containing students who enrolled in these courses

beginning in the fall quarter of 2014 (one year and a half before ICE enhancements took effect) and afterward. Only courses for which data existed both before and after ICE enhancement were kept in the sample. Finally, we requested pre-intervention data for courses that were later enhanced using ICE funds. The final sample contained 426 students in enhanced courses after enhancement, 7,161 students in comparison courses after enhancement, 13,345 students in treatment courses before enhancement, and 7,330 students in comparison courses before enhancement.

We examined two outcomes of participating in prerequisite courses: completing a course and obtaining a passing grade. Following definitions established by previous research (Hart et al., 2016), completing a course was defined as receiving a grade (A-F) or a pass or no pass designation, and receiving a passing grade was defined as receiving an A, B, or C grade or pass designation in the course.

Impacts can be calculated simply by averaging completion rates for the treatment and comparison groups before and after the ICE enhancement went into effect and calculating the DID between the means. However, one important step was necessary because in our sample, the proportion of participants who enrolled in various courses differed markedly for pre-intervention and post-intervention periods (for example, COMM 101, an ICE enhanced course, comprised 13 percent of the sample in the pre-intervention period but 26 percent of the sample in the post-intervention period). If different programs have different completion rates, then the compositional change of the groups over time could distort the DID comparison. To deal with this potential problem, we computed weights that equalized the distribution of programs in the two periods (pre and post). This way, we ensured that changes in completion rates over time were not influenced by the proportions of programs in the sample. Figure V-4 below shows completion rates and the proportion of students with passing grades after weighting for both pre- and post-enhancement periods.

The data show that both groups had higher average outcomes in the post-enhancement period than in the pre-enhancement period. Differences were small, amounting to a few percentage points. The calculated impact without controlling for baseline variables is (92.0-88.5) – (89.0-87.8) = 2.3 percentage points for completion and (71.6-68.5) – (69.9-69.0) = 2.2 percentage points for obtaining a passing grade. In other words, it appears that ICE enhancements had a positive, albeit small, impact on both completion and the proportion of students who obtained passing grades.

Figure V-4: Prerequisite Course Outcomes

Completion

Passing Grade
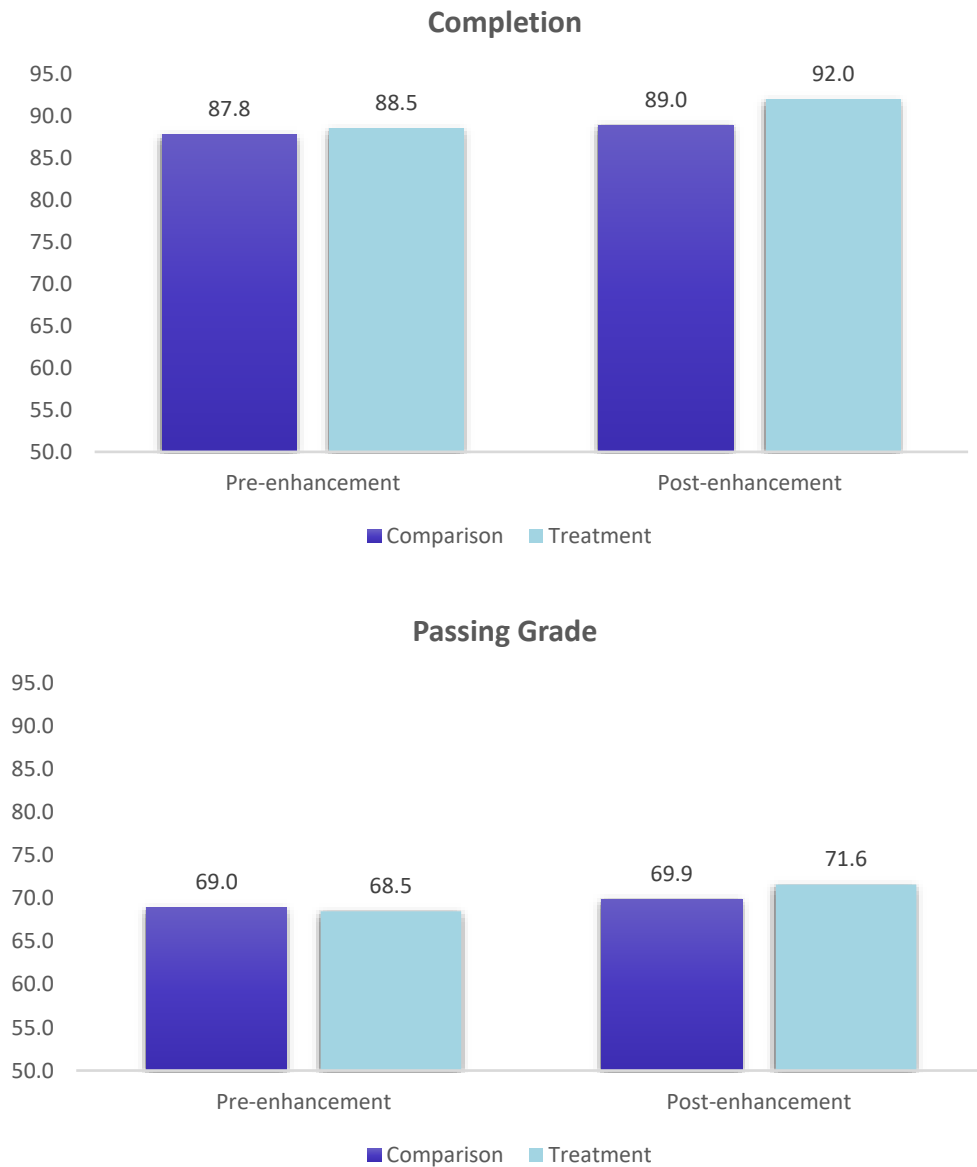
Source: College administrative data, 2018.

However, impacts could be affected by individual characteristics that could be correlated with the outcome. To deal with possible confounding factors, we estimated a logistic regression model that controlled for age, gender, and the quarter of enrollment:

$$(1)\ Y = \alpha + \beta 1 AGE + \beta 2\ GENDER + \beta 3 TERM + \beta 4 ICE + \beta 5 POST + \beta 6 DID$$

where Y is a dummy variable denoting the outcome (1 if the student achieved the outcome— completed the program or obtained a passing grade—0 if otherwise), ICE is a dummy for whether the student enrolled in ICE or comparison courses, POST is a dummy variable for

whether data is for a cohort that enrolled in the spring quarter 2016 or thereafter (0 if prior to that date), and DID is an interaction term between these latter two variables. The coefficient β_6 is the coefficient of interest that estimates whether the outcomes for program cohorts who exited after ICE courses were enhanced were greater than they would have been otherwise. The regression model was weighted using the program weights described above. The results are displayed in Figure V-5 below:

Figure V-5: Regression-Adjusted Impact of ICE Enhanced Courses

	Completion	Passing Grade
Impact	3.5*	2.2
Covariates included	Yes	Yes
Constant included	Yes	Yes
Term fixed effects included	Yes	Yes
Pseudo R squared	0.014	0.008
Observations	31,052	31,052

Source: College administrative data, 2018.

Note: * p < 0.10; numbers represent changes in predicted probability of the outcome associated with participating in ICE-enhanced courses.

After controlling for potential confounders, the regression-adjusted impact on completion was slightly higher than the unadjusted impact calculated before and the same for the rate of obtaining a passing grade. While the impact on completion was statistically significant at the 90 percent confidence level, the impact on the rate of obtaining a passing grade was statistically insignificant. Therefore, the available evidence indicates that converting prerequisite courses to a hybrid format resulted in a small, significant increase in completion rates and a small, insignificant increase in the rate of obtaining a passing grade. Overall, this result is encouraging and suggests that converting prerequisite courses to a hybrid format did not negatively affect student outcomes compared to the previous standard face-to-face format, as some other studies found (Joyce et al., 2014; Hart et al., 2016). ICE's main goal was to transform educational delivery to increase student access, not necessarily to increase course outcomes. However, the fact that the adoption of a hybrid format did not seem to negatively affect course outcomes (at least for the relatively limited number of students who took the hybrid version of the courses after spring 2016) is an encouraging finding.

### The Impact of Participating in an Enhanced Noncredit Program

Two consortium colleges (NIC and LCSC) enhanced noncredit programs. Our intention was to assess the impact of participating in these programs for students at both colleges. The only noncredit program enhanced by NIC was the CNA program. As shown in Chapter III, LCSC enhanced several noncredit programs; however, the only program with a sufficiently large number of enrollments to merit inclusion in the quasi-experimental study was also a CNA program. Consistent with the strategy pursued for prerequisite courses, after consultations with each college, we chose comparison programs that were similar to the ICE-enhanced

programs in terms of field and specialization, duration, and student makeup. Only programs for which data existed both before and after ICE enhancement were kept in the sample. The final sample contained 586 students in enhanced programs after enhancement, 87 students in comparison programs after enhancement, 1,078 students in treatment programs before enhancement, and 176 students in comparison programs before enhancement. The relatively low count of students in comparison programs is a potential challenge to the reliability of our findings, because it decreases their statistical power.

Given the nature of the programs being evaluated, and in the absence of labor market outcomes that would have been the main outcome of interest for this type of program, only one outcome—completion—could be evaluated. Completing a program was defined as having a completion date in the data extract received from colleges.

Similar to the analysis of courses, we created weights that equalized the distribution of programs in the pre- and post-enhancement periods. After weighting, the average completion rates were as depicted below. Again, these impact estimates are considered unadjusted because we are not statistically controlling for potential confounders. Still, the estimates serve as a useful visual guide to help follow the logic of the DID design.

Figure V-6: Noncredit Program Outcomes
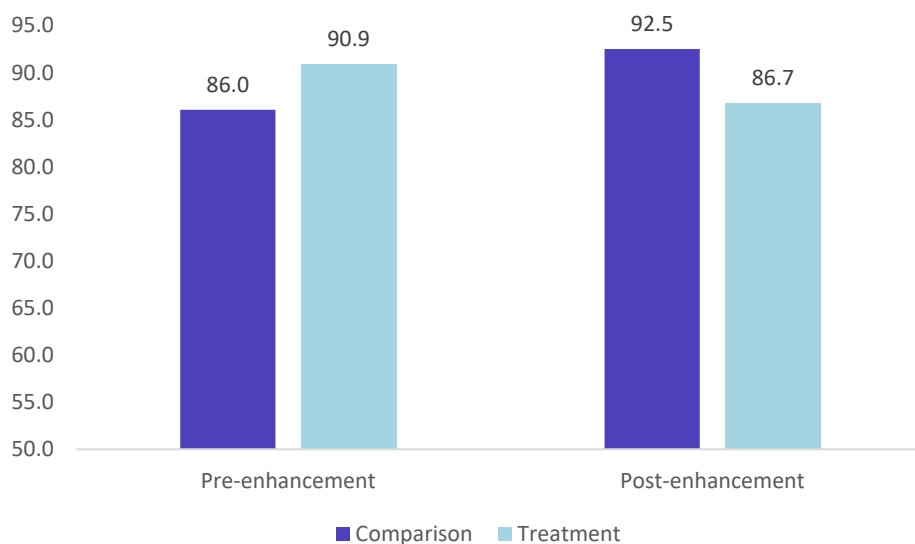
Source: College administrative data, 2018.

The results from Figure V-6 suggest that the impact of ICE enhancements on noncredit program completion was negative, as the average completion rate for the treatment programs decreased after enhancement, while it increased for the unenhanced comparison programs. However, controlling for potential confounders through statistical modeling shows a smaller and also statistically insignificant impact:

Figure V-7: Regression-Adjusted Impact of ICE Enhanced Noncredit Programs

	Completion
Impact	-4.1
Covariates included	Yes
Constant included	Yes
Year fixed effects included	Yes
Pseudo R squared	0.043
Observations	1,922

Note: * p < 0.10; numbers represent changes in predicted probability of the outcome associated with participating in an ICE-enhanced program.

Source: College administrative data, 2018.

Therefore, although there is evidence that enhancing noncredit programs at NIC and LCSC led to a decrease in average completion rates, the evidence is not strong enough (in the absence of statistical significance) to warrant a conclusion. Therefore, we cannot reject the hypothesis that enhancing noncredit programs was not associated with a change in completion rates. From the perspective of the initiative, this is a positive result, because the goal of ICE was to promote increased student access through creating hybrid programs without negatively affecting student performance. Based on the available evidence, it appears that indeed this was the case.

Summary of Findings

- **ICE improved participating colleges' capacity to provide training** for on-demand jobs in healthcare. ICE activities led to significant increases in the capacity of colleges to serve students, including the broadening of online and hybrid instruction options, the purchasing of new instructional equipment, and the creation and deepening of connections with employers.

- **ICE colleges greatly exceeded the quantitative enrollment goals** they set out to accomplish during the grant period.

- **The consortium registered 2,596 participants.** Almost half of these enrollments were in prerequisite courses, more than a third were in noncredit programs, and less than one-fifth were in certificate and degree programs.

- **Most participants who enrolled in noncredit programs completed their programs.** By comparison, slightly more than half of the participants who enrolled in certificate programs and less than 10 percent of those enrolled in degree programs did so.

- **Enhancing prerequisite courses at one ICE college appeared to lead to a small, but significant, increase in average completion rates** compared to pre-enhancement programs, as measured using a comparison group of students who enrolled in similar prerequisite courses that were not enhanced (i.e., the instructional method continued

to be a traditional face-to-face approach). There was also a small, positive impact on the likelihood of obtaining a passing grade in a course, but that was not statistically significant.

- **Offering noncredit programs in blended format led to a small, but statistically insignificant** reduction in average completion rates compared to pre-enhancement programs offered in a traditional format.

- **Many credit-bearing programs that were created as a result of the grant-funded initiative were still at the incipient stage**, and therefore estimations of individual-level impact for these programs was premature.

- **More complete impact analyses might benefit from improved data collection systems**. Because of data unavailability, the impact of ICE on several important outcomes—such as labor market outcomes, credits earned, and enrollment in additional programs post-ICE—could not be conducted for either all or some of the participating colleges. ICE colleges should continue to improve the quality of their data by enhancing the quality of systems that track students enrolled in noncredit and credit programs and by negotiating data-sharing agreements with state Unemployment Insurance agencies and local workforce and welfare agencies to access employment and earnings data on college students.

VI CONCLUSION

In this chapter, we reflect on the colleges' implementation experiences and program outcomes to examine factors that promoted the success of the initiative, compare the implementation of ICE to the original grant proposal, highlight strategies that were particularly promising in implementing some components of the initiative, review the main challenges faced by the initiative, discuss future potential strategies for higher performance, and highlight features of the initiative that are likely to be sustained.

Facilitating Factors and Promising Practices

Several features of the state and the participating colleges contributed to the successful implementation and operation of ICE. Idaho has only four public two-year colleges—a relatively small number compared to other states—and two four-year universities that house colleges of technology, all of which operate certificate and two-year degree programs. **The small number of postsecondary institutions** has led to the development of a high degree of mutual knowledge and familiarity among the colleges, which in turn facilitate the formation of partnerships among state postsecondary schools. In addition, Idaho has a relatively **centralized higher education policy**—the Idaho State Board of Education administers the entire state system of colleges and public universities. The high degree of centralization is also conducive to developing a knowledge exchange and partnerships such as ICE. The Idaho State Board of Education has a policy of avoiding duplication of effort in the development of new programs across colleges, encouraging colleges that develop new programs to share the programs' content with other colleges.

Idaho's experience using **distance-education technology** also supported the initiative's successful implementation. ICE's focus on distance education was initiated in response to Idaho's mountainous topography and dispersed population. Because much of the student population lives at considerable distances from the colleges, colleges have increasingly offered distance-learning options that allow students from rural areas to enroll in programs. Several of the ICE grant-funded programs that used the host-provider model also utilized distance-learning in a hybrid format for the delivery of course instruction.

The ICE consortium benefited from the strong contribution made by the ICE Leadership Team, a group of 12 individuals who held high-level roles in hospitals, government agencies and task forces, educational institutions, and health-related organizations, and represented the voice of employers. The leadership team was a strength of the consortium. Its members were engaged from the beginning of the grant period, and it was widely accepted among the grant team that because of their detailed knowledge of the health sector, the new training programs they

recommended should be offered by the colleges. Because of its **sensitivity to the voice of employers**, ICE was able to develop several programs in addition to the ones included in its original scope of work, even though this decision meant a substantial amount of additional work.

Across the consortium, for both the enhanced and new programs, the bulk of the ICE intervention benefited from a **hybrid learning strategy** to better meet the needs of nontraditional students. According this strategy, labs, clinical work, and simulations took place in person, and nearly all the instructional material for the grant's courses was presented online. After they enhanced courses to incorporate the hybrid learning strategy, instructors reported that they could provide more one-on-one attention in the labs because students had accomplished the less hands-on part of the program by completing the lectures independently, using the online instruction.

To create high-quality curricula for hybrid instruction across the initiative, ICE found it helpful to use a **quality control rubric** developed by Quality Matters (https://www.qualitymatters.org/). Using this rubric ensured consistency in the enhancement of programs as they were converted to a hybrid format and ensured effective use of online instructional tools. Instructors interviewed for our study said that implementing the Quality Matters rubric enhanced the clarity of the course content and led to new ways of presenting instructional material, including videos to introduce online content, recorded and closed-captioned lectures, and activities and quizzes adapted for online use. The impact study presented in Chapter V found that converting prerequisite courses to a hybrid model was associated with a small increase in completion rates for these courses.

ICE continued and expanded the use of an innovative arrangement known as **the host-provider model,** whereby agreements between the three colleges allowed students to enroll in some programs provided by an institution other than their own. For example, ISU and LCSC had an agreement with NIC to enroll students in NIC's pharmacy program, in which NIC would serve as the provider institution and ISU and LCSC as hosts. This is a promising practice for a sparsely populated state like Idaho, because it increases the number of programs available to each community college.

ICE used several innovative outreach practices. First, ICE **created a website (**http://www.icehp.org**) that provided detailed information about each program** and allowed viewers to request information or apply online. The colleges also embedded promotional YouTube videos about each program on the website's informational pages. Second, in September 2017, NIC **launched a Facebook ad campaign** that targeted individuals aged 25-50 living in areas of Idaho near the consortium colleges. According to our respondents, the Facebook campaign led to over 700 page views during the week after launch. Overall, respondents believed that social media outreach, including the Facebook ad campaign, was one of their most successful recruitment methods and, in particular, had succeeded in reaching rural or nontraditional students who might not have been able to attend an on-campus recruiting event.

NIC grant staff reported that they required students to complete **an online self-assessment** once they had enrolled in ICE. This assessment was designed to help student support staff

identify potential individual academic and employment challenges and identify the appropriate level of support. It also provided information about a student's goals and plans. The self-assessment form was created by a NIC student success navigator and was available online on ICE's web page. Once the self-assessment was complete, students were automatically sent a personalized email with links to the supports they might need based on their assessment responses.

The colleges reported providing a significant portion of their **academic support and tutoring services via resources available online**. The online student support center included dedicated pages for both academic support (http://www.icehp.org/student-success-center/academic-support) and tutoring (http://www.icehp.org/student-success-center/tutoring). The academic support page shared links and videos on a variety of topics, including learning styles, time management, test taking, SMART goal setting, procrastination, and stress. Many of these resources were designed for ICE by the student success navigators or the employment transition coordinator.

Challenges

Despite the significant successes mentioned above, ICE was also confronted with some challenges. We list them below, together with strategies that future similar initiatives might undertake to prevent these challenges.

Colleges found **hiring program directors and instructors** for new academic programs challenging, especially because competing positions in the healthcare industry often paid higher wages than the colleges were able to offer. Respondents from two colleges also identified college hiring policies as additional challenges that slowed down hiring; these policies often required a specific number of candidates to be interviewed or a mandatory time frame for each step of the application process. Although little can be done about the wage differentials between the healthcare industry and healthcare education, college-level hiring policies can be revised to promote expediency.

During the latter part of the grant period, **staff turnover** became a major challenge. Because the first project director played a key role in managing the grant—including tracking progress and facilitating communication between colleges—her departure was especially challenging. Turnover of key grant staff at the other colleges, such as student success navigators, also made relationship-building and information-sharing more difficult. Much of this challenge, of course, arose from the fact that, like any other grant-funded initiative, ICE had an "expiration date," which forced grant staff members to look for jobs before the grant period was over to ensure continuity of employment. There is little that can be done about this, unless—as in the case of for-credit program directors—positions are envisioned from the beginning as becoming permanent after the grant ends (this appears to have minimized turnover among the program directors).

Most **non-academic positions**—such those of the administrative assistants, employment transition coordinator, data analyst, and remaining student success navigator—**were expected to "sunset" with the grant.** ISU leadership staff noted that while they would like to keep their

administrative assistant, they would have had to find creative ways to fund that position. Roles for the NIC and ISU's student success navigators and the consortium project director would also have been eliminated at the end of the grant, but these individuals had already moved on to other positions. However, it is promising that at least one of the participating colleges (NIC) was considering creating a position akin to ICE's student support navigator in the future. If that position is indeed created, ICE will have accomplished its "demonstration effect," i.e., communicating to the college the value of having this staffing position available to students.

In addition, multiple respondents indicated that **communication about data reporting was complicated**, especially because the colleges had different data systems and because some staff members who were initially responsible for collecting data subsequently left their grant position. This challenge suggests that career pathway initiatives such as TAACCCT may be implemented more smoothly if community colleges received more support and technical assistance with data collection, data management, and data quality procedures.

Generally, **all the new programs took longer to develop than anticipated**. All the new programs went through several layers of approval, and this slowed down the overall process of getting a program ready for launch. Curricula had to be approved by each college's curriculum council, then by the State Board of Education/Idaho CTE division accrediting body, and then by a national accreditation board specific to that type of program. Keeping track of the various deadlines and paperwork for each program was challenging, as there was no central repository in which information about approval requirements and status for all new programs could be collected. Nevertheless, colleges with a high level of commitment to program success can overcome time delays. For example, although two programs could not be launched within the grant period, NIC was firmly committed to launching them once the approval and accreditation processes successfully concluded. This commitment bodes well for the fate of these programs.

The grant team originally hoped to **prioritize certain groups of individuals**—including veterans and individuals who were dislocated workers, unemployed, or underemployed—for enrollment. However, colleges reported that it was difficult to recruit such students, due to the need to reach out to different referral organizations than those typically used by colleges. ISU respondents also mentioned that it was hard to find veterans with a specific interest in healthcare occupations. This challenge suggests that prioritizing special populations may require additional attention when writing the grant proposal. If many additional resources and institutional linkages would be needed to successfully target special groups, the decision to target those groups must be carefully considered.

As described in Chapter II, all consortium colleges initially had a grant-funded student success navigator who provided support services and job search assistance exclusively to ICE program participants. However, because of the high staff turnover mentioned above, and difficulty rehiring, overall, **the intensity and quality of student support services declined** when the original navigators departed.

Alignment with Original Grant Plan

ICE aimed to transform training in the healthcare field in Idaho by furthering five main strategic goals. In this section, we compare what was achieved with the original goals of the initiative.

Enhance student services. The ICE program succeeded in enhancing student services. Generally, as shown in Chapter IV, student services available to ICE participants were enhanced, compared to services available to regular students who were enrolled at the three schools but not enrolled in the initiative. Whether through face-to-face or online interactions, ICE student navigators and the employment transition coordinator helped students pick the programs that best met their needs, assisted students with securing financial support for academic and life needs, provided academic support and tutoring services, and provided career and job search support. However, because of significant staff turnover, and a great increase over time in the number of participants enrolled, the intensity of these services decreased in the second half of the grant period. In addition, most of the student support positions were not sustained after the grant. Therefore, the enhancement of these services may only be limited to the grant period (although at least one college had plans for creating a position similar to that of an ICE student success navigator).

Facilitate the development of standard practices for awarding credit for prior learning through evidence-based design.[15] Progress on this strategy was limited during the grant period for reasons that were largely outside ICE's purview. During the development of the ICE grant proposal, the Idaho State Board of Education was in the process of revamping its PLA policies that would allow students to obtain credit toward completion of programs based on their previous experience. (The hope was that the ICE grant would provide opportunities for the colleges to be involved in PLA-related discussions that occurred at the state level.) However, the State Board of Education took much longer than expected to refine its PLA policies and was thus not ready to engage with the colleges on PLA-related issues during the TAACCCT grant.

Create career pathways in diagnostic services, health informatics, and therapeutic services through the development and enhancement of programs that align with industry standards and credentials. Overall, ICE accomplished this goal. Despite adding a substantial number of new and enhanced programs to its scope of work after the grant application was approved (without additional funding), ICE managed to launch almost all of them (except for two new programs whose launch dates were scheduled after the end of the grant period). This is a remarkable achievement and shows ICE's commitment to building healthcare programming throughout the state. As explained in Chapter III, the programs developed and enhanced by ICE often created new entry points to career pathways by articulating the new programs with existing programs (at their colleges or elsewhere) with which their programs were aligned. All programs created and enhanced by ICE were aligned with industry standards.

Maximize students' access to training by creating new, online technology-enabled courses and host-provider model curricula, **building on existing technologies as appropriate**. ICE

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[15] In the original grant application, this goal was listed as part of the first strategy (combined with "Enhance student services"). We treat it separately here because it is conceptually different.

excelled in this regard. Chapter III shows that the conversion of existing programs to a hybrid format was extensive, and it involved both significant restructuring of content (through adherence to Quality Matters standards and the creation of new instructional formats, such as video tutorials) and purchasing of new, modern technology for instruction. In addition, agreements between all three ICE colleges allowed their students to enroll in some programs provided by an institution other than their own (the host-provider model).

Link emerging pathways within and across colleges through new MOUs that facilitate access and accelerate paths toward credential attainment. This goal was accomplished as well. The host-provider model is a palpable way in which ICE colleges promoted the expansion of opportunities available to Idahoans (see paragraph above).

Enhance sector strategies by engaging employers. The ICE initiative realized this strategic goal. Chapter II documents how the ICE Leadership Team, which comprised many employer representatives, was influential in the decision to expand ICE's scope of work to include creating and enhancing additional programs.

Overall, then, we estimate that ICE accomplished most of what it set out to accomplish. The strategic goal that was not accomplished (PLA) did not manifest because of forces outside of ICE's influence.

Sustainability of the Initiative

ICE's ability to **sustain for-credit academic staff beyond the grant period** was a real strength of the initiative. As the project neared its end, both ISU and NIC anticipated that they would be able to maintain all their new ICE program directors using a technical college set-aside in Idaho's state budget. Grant staff and leadership at all three colleges said that **all credit-based programs developed or enhanced under ICE would be maintained** and funded beyond the grant through a combination of state funding and student fees. As the programs were chosen specifically to fill gaps in available state programming, sustaining them was a priority. Because LCSC added mostly workforce (noncredit) programs, the likelihood that it would maintain its instructors was less certain. While the college planned to continue to support long-standing faculty, LCSC's workforce division (like most other college workforce divisions) only hires instructors for a class once student demand has been determined and enrollment secured. Therefore, it remained to be seen whether the college would be able to commit to sustaining the instructors for its new programs.

Although the colleges felt that the student success navigators had added value to their programs, most of the colleges did not have sufficient funding to sustain student support staff positions beyond the grant period. Only NIC found resources, in its Health Professions Division budget, to **fund a role similar to the ICE student success navigator** to serve all students in that division.

One NIC leadership member felt that because of the grant, the State Board of Education had begun to emphasize the **sharing of curriculum and programs across colleges** to an even greater extent. For example, this respondent reported that when trying to get another program

approved by the Board recently, Board members wondered why the curriculum was not intended to be shared with other colleges, as they had seen with ICE.

Finally, toward the end of the grant, **more relationships were being built between the workforce divisions and the academic sides of the colleges** (for example, NIC hoped to articulate some workforce curriculum with ICE academic programs to make it easier for students to transition from noncredit to credit programs).

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