



CREATING MORE "POCKETS OF GOOD":

Fostering Innovation In Post-Pandemic Healthcare Education

AN INNOVATION PLAYBOOK

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Volta Learning Group works with visionary higher education, business and workforce leaders that believe they should help workers and learners prepare for the future of work. We provide a new approach to learning that integrates workforce relevance and academic rigor. With on-the-ground success in using labor market intelligence to inform digital project-based learning and assessment strategies, competency-based education, and stackable microcredentials, VLG helps these leaders navigate new and evolving realities.



Established in 1961, NECC is an accredited, public two-year college that offers associate degrees and certificates of program completion. In addition, we offer over 100 noncredit courses for professional development, training to improve English language and other adult basic education skills, and life-long learning opportunities for all ages.

Introduction

This year has been unprecedented, consumed by social unrest over racial disparity, a seemingly uncontrollable pandemic and the ensuing economic downturn, more than 40 million Americans jobless and educational institutions uncertain how or if to open. Taken alone, each of these events would have enormous implications for the healthcare industry sector, which was already struggling to fill the ranks of its frontline workforce; together, they represent an extraordinarily complex challenge for healthcare providers and healthcare educators alike.

"People are working at the top of their license and beyond anything they've experienced before."

-Hospital Administrator

Even before the pandemic the healthcare labor market in Massachusetts presented a paradox: good-paying jobs were going unfilled, while programs to prepare people for those jobs were often either under-enrolled or lacked capacity to meet demand. The pandemic has exacerbated these shortages, with hospitals and long-term care facilities desperately looking to fill the ranks of direct care and medical tech workers, among others. At the same time, the pandemic has forced colleges to shift their programs from in-person to "remote," delaying required clinical placements and/or fieldwork, and thus reducing the numbers of newly qualified professionals entering the workforce. Also, pandemic-induced closures have greatly reduced access and availability to licensure testing. In addition, with recent furloughs and layoffs, short-staffed hospitals have little bandwidth to help train students.

While the budgetary impacts of the changed economy and unpredictability of the virus make the path forward unclear, there are opportunities for innovative responses in healthcare education and training.

About the Project

"The sudden switch to remote learning for healthcare students was hard but they're adapting surprisingly well. Use of simulations can go a long way but doesn't substitute for being with real people."

-Community College Dean

This project was funded by the Massachusetts Department of Higher Education through its Higher Education Innovation Fund¹, under the sponsorship of Northern Essex Community College (NECC).

Volta Learning Group (VLG) was engaged to research, develop, and provide recommendations about how healthcare education and training in the Commonwealth might better serve the needs of its citizens through improving alignment with workforce needs and increasing diversity and equity. The project focused specifically on community colleges and frontline, allied health occupations.

VLG sought input from leaders across sectors, conducted research, and facilitated a series of webinar roundtables with leading educators, practitioners and policymakers. This Playbook presents the most innovative learning models and solutions that were highlighted during this process.

VLG began the research process before the onset of Covid-19 by interviewing members of an Advisory Group consisting of Deans and leaders in Community College healthcare departments across Massachusetts. These interviews continued through Spring 2020, even as the pandemic was building in the Commonwealth.

In parallel to the Advisory Group work, VLG carried out other research including a labor market analysis.

As the pandemic progressed and colleges, among other segments of society, entered lockdown, it exposed the urgent need to explore new solutions for preparing and deploying healthcare workers. In April and May of 2020, VLG facilitated a three-

¹ The Higher Education Innovation Fund provides grants to Massachusetts colleges, consortia and systemwide initiatives to advance "cross-system collaboration, innovative thinking, and evidence-based practices at the campus and system levels."

part webinar series on Innovations in Healthcare Education and Training hosted by Northern Essex Community College (NECC) and sponsored by the Massachusetts Department of Higher Education. Panelists and speakers included leaders from Massachusetts community college Health Science and Allied Health programs, major healthcare providers, researchers and policymakers.

Innovations in Healthcare Education and Training Roundtable Series

“There were surprising ‘pockets of good’: unexpected successes for healthcare students despite the sudden transition to remote learning. Some of the lessons we learned about the use of telehealth and virtual learning will definitely persist after the crisis.”

–Community College Dean

The Innovations in Healthcare Education and Training Roundtable series emerged as a result of multiple interviews and discussions with community college health care deans, healthcare workforce experts and government representatives. More than eighty community college and healthcare practitioners from throughout Massachusetts and across the nation participated in the three-part webinar series.

The first webinar, *The Healthcare Workforce in Crisis*, described changes in healthcare practice since the onset of the pandemic and featured Joanne Pokaski, Senior Director of Workforce Development and Community Relations at Beth Israel Deaconess Medical Center (BIDMC), Margaret Jaillet, DPT, Dean of Health Professions, Public Service Programs and Social Science at Mount Wachusett Community College, and Mary Farrell, Dean of Health Professions at Northern Essex Community College. The panelists spoke about the healthcare workers’ singular focus on treating their Covid-19 patients, and the need to work at “the top of their license” to do so. The panelists described the limitations imposed by the sudden shift to



The Association of Schools Advancing Health Professions (ASAHP) defines allied health professionals as those who deliver “health or related services pertaining to the identification, evaluation, and prevention of diseases and disorders; dietary and nutrition services; and rehabilitation and health systems management, among others.” Community colleges often prepare learners for frontline and entry-level allied health professions such as Medical Assistant, EMT, Community Health Worker, Radiologic Technologist, Certified Nursing Assistant and others.

remote learning, the use of — and inadequacies of — relying entirely on simulations, and the “pockets of good” that emerged despite the challenging constraints of the situation. They also discussed the positive impacts of telehealth and virtual learning and suggested that these modalities are likely to become a permanent feature of the healthcare education landscape.

The second webinar, *Planning for the Future: Critical Healthcare Issues*, featured MJ Ryan, Senior Director, Workforce Development and Economic Opportunity at Mass General Brigham, David Cedrone, Associate Commissioner of Workforce Development, Massachusetts Department of Higher Education and Dianne Palter Gill, Dean of Corporate and Professional Education at North Shore Community College. The panelists wrestled with such topics as the need to develop transferable skills in order to create a flexible, adaptable workforce; how to address the challenge of clinical placements after the crisis; and whether or not students will want healthcare careers after Covid-19.

In the final webinar, *After the Pandemic: Designing New Programs and Credentials*, Dr. Sean Gallagher, Founder and Executive Director of Northeastern University’s Center for the Future of Higher Education discussed the changing

Workforce Programs at BIDMC

Joanne Pokaski of Beth Israel Deaconess Medical Center (BIDMC) described the workforce development “buckets” they devised to answer three big workforce questions: How can they create a pipeline of workers for difficult to fill positions? How can they support current employees to advance their education and careers? And, how do they make sure that people from the local community are connecting in and growing with BIDMC? In response, BIDMC is recruiting internal candidates and local community members for training/credentialing programs with the promise of a job upon successful program completion. Joanne and her team facilitate career advancement by hiring an onsite career and academic advisor and offering free college prep courses as well as covering the cost of tuition and books once employees are enrolled in a college program. With respect to community recruitment, they partner with community based organizations to help identify local candidates.

economic context. Dr. Cathrael Kazin, Managing Partner of Volta Learning Group, explained how microcredentials and competency-based models can drive equity and opportunity, and Karen Shack, Senior Program Manager of Workforce Planning and Talent Strategy at the Commonwealth Corporation, discussed CommCorp’s competency-based pilots and the organization’s interests in sponsoring them.

Challenges

“We must have much more agility in our workforce. That means preparing people with a set of core competencies that are more transferable among and between specialties. That way, if we have a sudden need for a particular type of expertise, we have a large base of workers to draw from who can add specialized skills on top of their foundational competencies.”

–Government Workforce Leader

Our research findings pinpointed two major challenges of health care education in Massachusetts that, in our experience, also exist in parallel across the U.S. First, there is a serious misalignment between the education and training pipeline and the actual workforce needs of the state, particularly in frontline and allied health fields. This misalignment has created serious shortages in key fields that will worsen in years to come. Second, and highly related, there is a lack of racial diversity in the healthcare workforce, particularly in the higher-paid, more technical occupations. These problems have multiple causes and structural roots but our work on this project highlighted five causes in particular.

1. Limited Awareness of Healthcare Career Options

One contribution to the shortages is a widespread misunderstanding and lack of awareness concerning the range of both clinical and nonclinical healthcare careers. According to both education and workforce practitioners, prospective students tend to see healthcare career opportunities as limited

to doctors and nurses and consequently lack information about potential career options, salaries, career paths, and preparation needed to pursue other healthcare careers. A related factor is that many of the in-demand positions, such as CNA or Home Health Aide, are often lower paid roles with a substantial level of responsibility, a high workload and substantial physical demands. However, they can serve as the first rung on a career ladder.

Unaware of the upward mobility potential these positions offer, potential workers often choose similarly paid retail positions that are less stressful but lack opportunities for advancement. Another result is that students who are interested in healthcare often pursue nursing because it is the only profession they know about — even when demand for nursing program slots far outstrips availability and the students might be better suited for other options. These circumstances result in a dearth of potential students applying for a

broader range of allied healthcare programs, which in turn leads to under enrollment in programs that prepare in-demand healthcare workers, thus perpetuating shortages.

2. Shortage of Clinical Placements

Another contribution to the workforce challenge is the lack of available clinical training slots, a situation worsened with the onset of COVID-19. Most healthcare jobs, including nurses, CNAs, physical therapists, and phlebotomists require training with patients to earn a license or certification. Each of these placements requires supervision, which is added to the regular duties of the individual supervisor. Ironically, shortages beget more shortages, as limited staff already stretched to the breaking point simply do not have the bandwidth to train students.

While there is no replacement for face-to-face time with patients, there may be opportunities to address some of the hands-on practice through simulations or virtual reality, reducing the numbers of hours required for a clinical placement. The MA Board of Registration in Nursing (BORN) has approved more online hours to replace some clinical hours as a response to COVID-19 for the Spring 2020 nursing students. Moving forward, whatever portion of clinical hours that do take place in person must be done in accordance with COVID-19 protocols leading to a higher per student cost.

3. Career Pathways Stymied by Lack of Flexibility

Before Covid-19, few community colleges saw online learning as central to their program delivery strategies. The reasons for this ranged from cost and unavailability of sophisticated technology; faculty preference and lack of experience teaching online; the belief that the content of some healthcare courses is not easily taught online; scheduling constraints; a lack of advising and academic supports for online students; and accreditation and regulatory barriers.

Healthcare employers face the dual challenges

Designing New Credentials After the Pandemic

*Dr. Sean Gallagher of Northeastern University's Center for the Future of Higher Education and Talent shared findings from a national employer survey and the implications for post-pandemic credential development. He indicated that **64% of employers nationwide agree that the need for continuous lifelong learning will demand higher levels of education and more credentials.** He also spoke about the convergence of non-traditional technology start-ups with higher education to create and deliver unbundled, job market-aligned shorter credentials. He emphasized the importance of job market monitoring and employer engagement, and encouraged colleges to consider the top three employer recommendations for credential design:*

- Include real-world projects and engagements with employers and the world of work;
- Provide academic credit for experience and on-the-job learning;
- Include more industry and employer validation of curriculum.



of struggling to fill key positions, and wanting to recruit for those positions from within the ranks of their loyal entry-level workers. But too often environmental services and other entry-level staff are unable to take advantage of these opportunities because they cannot attend traditionally scheduled, face-to-face classes that would enable them to develop new skills and earn additional credentials.

There is a need for flexible scheduling and delivery of these programs so learners can participate in the programs, gain needed skills and become credentialed, allowing employers to staff high-demand positions.

4. Need for Community Engagement

A recent [Boston Indicators Report](#) of essential workers in Massachusetts indicated that the frontline healthcare workforce (doctors, nurses and other patient-facing professionals) amounts to nearly 450,000 workers. Among those, 32% are people of color and 23% are immigrants. Hospitals and healthcare facilities frequently seek greater representation within their workforce among the communities they serve. According to Joanne Pokaski, her workforce efforts at Beth Israel Deaconess Medical Center are focused on answering the question: “how do we connect with our community members and make sure people who live near the hospital are connecting to our workforce?” Similarly, when asked about steps Mass General Brigham will take toward preparing the workforce once the curve has flattened, among the list of activities were “re-engaging with our community-based and state public partners” and seeking “to attract un/underemployed community residents to training and employment pipeline programs to help with economic recovery.”

Solutions

1. Better Information about Healthcare Careers

Massachusetts is working to increase healthcare

career awareness among high school students through the development of designated Healthcare Innovation pathway programs. [These programs](#) should become feeders to the community colleges. In an effort to educate learners and job seekers about the variety of careers in healthcare, MassHire South Shore has worked with hospitals, ambulatory care and long-term care facilities to produce an educational campaign to be launched in the fall.

The campaign includes informational pieces depicting the breadth of healthcare careers, the associated pathways, entry and exit points, education required and salaries associated with each. This information will eventually be used with workforce clients seeking to enter a career in healthcare.

Mt. Wachusett Community College has devised the Health Career Opportunity Program (HCOP) as a health career exploration class. Students learn about the different healthcare careers and pathways while at the same time completing cross-cutting embedded credentials including NARCAN, medical terminology and CPR.



Pockets of Good

*Through their efforts to move classes online community colleges have innovated opportunities to provide students with a replacement for face-to-face, hands-on experiences. At Mt. Wachusett Community College, for example, a physical therapy assistant instructor gained permission from her patients to allow students to observe telehealth appointments. A medical assisting instructor created a virtual office, thereby allowing students to engage in hands-on activities they would normally perform on the job. And, nurses are engaging with **Shadow Health**, a digital clinical experience that allows nursing students to “demonstrate and perfect their clinical reasoning skills through life-like interactions.” Dr. Margaret Jaillet of Mt. Wachusett refers to these creative solutions as “pockets of good,” some of which will carry over to the new normal following the pandemic.*

These students may go on to pursue either non-credit certifications or credit-bearing programs. Past students have become medical assistants and nurses.

2. Addressing Clinical Placement Challenges through Technology

“Communication and empathic listening are even more important with tech-enabled remote care; must be included in all training. Simulation labs help but students need patient experience fast so they can start working.”

–Community College Workforce Administrator

While use of simulation labs has long been common in healthcare education, the pandemic has forced colleges, employers and industry certification and licensing boards to explore further the use of technology to support workforce training, including for some of the required clinical hours. This practice was reinforced by the National Council of State Boards of Nursing (NCSBN) [National Simulation Study](#), published in 2014, that found no difference in clinical competency between students who had a traditional amount of simulated clinical practice (10%) vs. 50% in the study.

Increased use of simulations, while not a complete, long-term answer, have provided some relief that should perhaps be made permanent. Besides traditional simulation labs, these include observations via video conference, and virtual reality training. A few examples of the latter include:

- The nursing program at Portland Community College, for example, has implemented a virtual simulation product, [ATI Real Life Clinical Reasoning Scenarios](#), approved by the Oregon State Board of Nursing.
- Virtual reality platforms across the country are being used to train healthcare professionals. Columbia University’s School of Nursing has [livestreamed](#) simulation technologies such as [Shadow Health](#), [Aquifer](#), and [Oxford Health](#).
- [PeriopSim](#) provides online simulation tools for surgical techs and others on the surgical team.

- [Mursion](#), an online virtual reality platform, uses actors to simulate patient interactions and provide training in soft skills
- Massachusetts is already exploring the possibility of creating competency-based learning programs for CNAs utilizing online simulations such as [Ready CNA](#), or another technology.
- [NextStep](#) prepares CNAs using an app-based tool which breaks down 140 skills into bite-sized modules. The primarily video-based instruction is supplemented with support to learners from former CNAs who communicate with learners via text and phone calls. Highly structured simulation experiences focused on competencies offer the opportunity to address shortages by training more healthcare professionals with a better leverage of hands-on training in hospitals, clinics, and care facilities.

Microcredentials

*Microcredentials are intended to be a corrective to standalone certificates that too often represent career dead-ends rather than pathways to greater opportunity. Because they are typically based on demonstrated competencies rather than on seat time, they can provide evidence of capabilities that have direct application in the workplace. These small credentials are built such that the learner gains skills that may be immediately applicable on the job or to start a career. At the same time, they are devised as a part of a sequence of educational pathways so that several microcredentials are stacked on top of one another to produce a larger certificate, credential, or degree. Because microcredentials are small, the commitment required for completion is limited. Learners who may be working full time and caring for family members are still able to fit these programs in during off-times from work or other obligations. Another benefit of these credentials is the opportunity to build confidence among reluctant learners. Individuals who have struggled in school or have been away from the classroom for many years are able to achieve success with these smaller credentials which may inspire them to continue along an educational pathway. **The State University of New York** has made a commitment to microcredentials which has resulted in rolling out of 68 credentials across 11 institutions. The microcredentials are stackable and include such topics as medical coding, medical office skills and basic direct care skills.*

3. Creating Career Pathways for Frontline Workers

"CNA low compensation must be balanced by career ladders both within the field and opportunity to develop new skills and certifications in other areas."

-Hospital Administrator

A number of innovations and initiatives are in discussion or under way to create intentional pathways for lower wage frontline workers.

- Massachusetts has established the Center for Prior Learning Assessment (CPLA), a consortium of community colleges, created to provide a practical and cost-effective way for adult learners to link their life experiences with academic learning and college credit. Among other activities, the CPLA has developed equivalencies for industry-recognized credentials in three pathways including allied health and created the [My Experience Counts website](#) to align PLA practices statewide.
- With funding from the U.S. DOL, MA's community colleges redesigned programs built stackable credentials in healthcare and other industries.
- With grants from Commonwealth Corporation and the National Governors Association, the Massachusetts Association of Community Colleges (MAACC) is leading a statewide effort to reach consensus among all community colleges on a policy to support addressing the substantial job vacancies/labor demand shortages for Certified Nursing Assistants at long-term care and other critical healthcare providers
- In an effort to quickly address the need for direct care personnel at nursing homes, Massachusetts skilled nursing facilities are now recognizing a new job title, "Resident Care Assistant" (RCA), a role to help nursing home residents with daily activities. These RCAs are trained to work in a COVID environment and take on tasks allowing CNAs to work at the top of their licenses. Five facilities are working to build a RCA to CNA pipeline.
- Workforce boards, colleges and employers are contemplating the creation of a Nurse Apprenticeship program. To make this work, employers and learners would need to commit to a four-year engagement. Students would be able to earn while they learn, and would be exposed to a true pathway as they study and pursue licensure.
- The pandemic has caused hospitals and other

Cross-sector Collaboration

The stakes are high for the Commonwealth and many groups are working to address these challenges. We found exemplary efforts to learn from and replicate being undertaken by and among employers, colleges, accreditors, and the MassHire workforce professionals.

The Massachusetts Healthcare Collaborative is a statewide group of employers, educators, government agencies and public/quasi-public organizations that was convened to address the "significant shortage of healthcare professionals." Sponsored by Governor Baker and co-chaired by Secretary Acosta of the Executive Office of Labor and Workforce Development and Dr. Mark Keroack, President and CEO of Baystate Health, the group includes representatives from labor, industry, associations, education and government.

The goals of the Collaborative are to:

- Convene stakeholders and generate policy for long term change;
- Communicate industry needs and facilitate apprenticeship and on-the-job training programs;
- Align curricula to employer needs, address capacity issues, and promote priority careers; and
- Verify gaps in workforce development efforts and implement/oversee targeted initiatives at local-level.

With an overall focus on the three areas of healthcare shortages identified before the pandemic—direct care, behavioral health, and nursing—the Collaborative is currently engaged in an evaluation of the CNA certification process and the identification of areas for direct care workers to take on higher-level skills.

*A similar group, **The Boston Healthcare Careers Consortium**, convenes employers, educators, labor, and workforce system partners to promote healthcare related education and training opportunities for job seekers and current employees that are efficient, effective, and align with industry needs.*

healthcare facilities to establish new protocols for a clean environment within the physical plant. These protocols include enhanced training and the use of new equipment. There is discussion underway to establish a new “Clean Tech” position which would be an upgrade to an environmental services position, and could potentially position individuals on a path toward a surgical tech position.

- Mass General Brigham is using Personal Care Assistants as nursing assistants. These incumbent workers are trained at the patient bedside with expert nurses. The training and experience they receive can help expedite their path into CNA and beyond.

4. Aligning Education with Workforce Needs Competency-Based Learning

Competency-based Learning (CBL), combined with stackable microcredentials and microlearning, can create vital access to alternative, lower-priced credential paths that have value in the workplace. Competency-based learning (CBL) is a great equalizer because it does not care where you learned something, but rather that you can do it; it values demonstration of knowledge and skills, rather than regurgitation of abstract content. It also removes time as an obstacle to completion by providing flexibility and gives students multiple opportunities to try, get feedback, and try again. CBL models are ideally suited to healthcare programs that are already focused on application of knowledge and skill development.

Because CBL requires the explicit articulation of outcomes, assessment of those outcomes, and connection to existing standards, it also helps students make connections between the skills they are developing and their application in the workplace.

One healthcare example of CBL was a partnership of then Partners HealthCare (now Mass General Brigham) and Southern New Hampshire University's College for America (CfA). Commonwealth Corporation funded the creation of an online, competency-based Healthcare Management Fundamentals Certificate program. Created in partnership with the Mass General Brigham

team, the program was developed to support the transition to patient centered medical care homes. The certificate curriculum consisted of the skills and competencies necessary for frontline workers to succeed. The project based curriculum provided opportunities for students to demonstrate and apply their knowledge. The asynchronous nature of the program allowed students to pursue the program on their own pace and schedule. The program stacked into an Associates degree in healthcare management, and many who successfully completed the program continued on to attain their degree.

Stackable Microcredentials

“[The] health care system is pretty rigid when it comes to certification...it takes something like a pandemic to even have the conversation.”

—Hospital Administrator

The allied and frontline healthcare professions require a variety of certifications and degrees, and are highly regulated by state and federal licensing requirements. Most of these credentials are siloed and do not build upon one another; credits earned in one program may not transfer easily to another.

However, our analysis shows that many frontline professions share a common skill base.

An analysis of seven pre-pandemic in-demand frontline healthcare job titles revealed over 70 cross-cutting skills out of a total universe of 350. The titles include Medical Lab Tech, Medical Assistant, Radiologic Tech, MRI Tech, LPN, CNA and Respiratory Therapist. Example cross-cutting skills include analyzing medical or health data; measuring patient physical/physiological attributes; maintaining medical records; preparing medical supplies/equipment for use; sterilizing lab or medical equipment or instruments; and calculating medical diagnostic test results.

These shared skills could form the basis of a series of foundational microcredentials that would enable a more flexible workforce and open up career paths to multiple healthcare fields. Ideally

these microcredentials would be common across the Commonwealth's 15 community colleges. This would facilitate easy portability and transferability. The idea would then be to build additional, more specific microcredentials based on the remaining 280 skills. Workers and learners could then continue to add skills and credentials as needed to move into roles where they are needed.

To make this challenging proposition feasible, partnership would be required across the community colleges, regulatory agencies, and healthcare providers. Within the community colleges, educators and administrators on both the non-credit and academic sides of the colleges would need to be involved. Industry-recognized, competency-based microcredentials would be stackable into both non-credit and credit pathways.



Futuro Health - Putting the Pieces Together

***Futuro Health** was created by Kaiser Permanente and SEIU-United Healthcare Workers West “to grow the largest network of credentialed allied health workers.” Their “education to work model” involves supporting candidates from career exploration through credentialing and placement. Futuro was built for scale. Starting in California, they are working to credential 10,000 workers by 2024 and then, moving nationally, preparing 10,000 annually. Recruitment is centralized through the union. Futuro makes use of data science and geolocators to match up students with educational providers. They leverage online, competency-based learning to augment the programs offered at partner colleges and institutions, and partner with Inside Track to offer student coaching services. Futuro is currently working with USC and Stanford University to develop simulations for teaching soft skills. Just launched this year, Futuro is currently focused on Medical Assistants and Community Health workers, but has plans to build out the career paths as they put their model in place.*

MassHire would have a role in supplying labor market information and convening the parties, and it would require state investment. Employers would need to recognize and accept the microcredentials and agree to invest training or tuition assistance dollars to support working learner enrollments.

Embedded Professional Certifications

Borrowing from other fields, the healthcare education sector could benefit from embedding shorter term credentials and certifications into longer term degree programs.

Unlike microcredentials, they are recognized in their field though are perhaps offered by employers and professional associations rather than colleges. Many colleges have, however, worked out arrangements to provide degree credit for successful completion of such certifications. Colleges also provide support services and partnerships with employers interested in employing these students.

In healthcare, we can imagine similar embedded credentials for Patient Care Technicians or CNAs in nursing programs, medical assistant certificates embedded in nursing or healthcare management degrees, or patient technician certification embedded into other technician or technologist programs.

Work-Based Learning Opportunities

Our research and webinars for the Innovations in Healthcare Education and Training project this past spring raised over and over the problem of how to provide clinical practice opportunities for healthcare students during a pandemic. Even before the pandemic, the scarcity of these opportunities caused a bottleneck in the pipeline of workers in critical healthcare fields. Could work-based learning (WBL) address both that bottleneck and be a tool for diversifying the talent pool?

Work-based learning (WBL), such as apprenticeships and paid internships, can pay bills and tuition (through employer tuition assistance programs) while providing structured pathways

to valuable credentials. In our new virtual world, these opportunities have become more difficult to manage but innovative ideas for them are emerging. Work-based learning in the form of clinical placement is common in healthcare professional preparation — though these are not paid roles as are WBL roles.

The U.S. Department of Labor (USDOL) has recently outlined a new set of standards for Industry-Recognized Apprenticeships (IRAPs). While apprenticeships have long been important training for the building trades, they are now being found in areas like finance, insurance, information technology, and now healthcare. The USDOL has approved apprenticeship programs for [Dental Assistants](#), [Emergency Medical Technicians](#), [Health Care Sanitary Technicians](#), [Nurse Aides](#), [Paramedics](#), and [Pharmacist Assistants](#).

These programs are structured to help students build competencies, accommodate full-time work schedules, and lead to a recognized credential or degree. Such programs can be specifically focused on diversity and inclusion and, from an employer's perspective, help build a diverse, promotable talent pool.

5. Driving Equity through Community Engagement

A number of efforts are underway throughout the commonwealth to increase community engagement.

Provider Efforts

Massachusetts has created a [COVID-19 jobs portal](#) to foster to alert jobseekers from local communities to available positions with area healthcare providers. BIDMC has developed “Pipeline” programs to fill positions that are difficult to recruit for by recruiting their own employees or members of the community, providing them with training and promising them a job at the end of the training. One example is the Patient Care Technician. They hire people with direct care experience (or a CNA), provide them with a three-week paid training program and place them at the end of the training.

This year BIDMC launched an Associate Degree Nurse Residency program. They hire Associate degree nurses from the local community. These nurses are trained to work in the BIDMC setting and BIDMC sponsors them to get a bachelor's degree. BIDMC also partners with local community based organizations to recruit their workforce. Once hired, these employees have access to a variety of upskilling opportunities which they can access through an onsite career and academic counselor.

Addressing the Healthcare Worker Shortage

Volta Learning Group *interviewed MJ Ryan of Mass General Brigham*. We asked her what colleges, employers and policymakers can do to address the healthcare worker shortage. Here is an excerpt from that interview.

“Colleges...will need to create robust remote/online solutions, both synchronous and asynchronous... adopt new delivery models that are competency-based, stackable and portable, and designed to address articulated labor market needs... [and] be transparent about program outcomes, including placement rates, earnings, and opportunities to advance into the next-level credential or degree.

Employers should review and update job descriptions to ensure they reflect ACTUAL requirements and define “must haves” vs. “nice to haves” [including] reconsidering when degrees are truly required...join college advisory and/or curriculum committees to ensure there is alignment of skills and competencies needed with those being taught...jointly devise internships, apprenticeships and clinical training opportunities. And they should be considering new kinds of credentials, looking at competency standards to expedite hiring and providing “just-in-time skills.”

[Workforce and education] Policymakers [should be] “updating licensing and credentialing standards...simplifying the process for apprenticeships...[and]direct financial assistance for wraparound services for under/unemployed candidates making going to school more affordable.”

Additionally, they offer free onsite courses including college prep reading, math and English and college-level biology and science courses which, as prerequisites, are often barriers to entry for students to pursue college programs in healthcare.

Community College Efforts

The Massachusetts Community Colleges work closely with employers in their regions to remain current on labor market conditions, establish clinical and internship programs, place students at their facilities and train and upgrade incumbent workers either at the worksite or at the college. For example, Bunker Hill Community College delivers its program — Proper Sterilization Techniques — onsite at an area hospital.

They are working with Mass General Brigham on a Medical Assistant Apprenticeship Program, and they have worked with BIDMC to serve as a testing site for some of their credentialing programs.

Leveraging a grant from the U.S. Department of Health and Human Services, [Mount Wachusett Community College](#) (MWCC) and area high schools have created a workforce diversity pipeline project called Project Healthcare. The goal of the project is to “increase the number of underrepresented minority and disadvantaged healthcare providers by creating a high school to college pipeline.” The 120 9th through 12th graders and college freshmen receive “counseling, coaching, field trips, guest speakers, and dual enrollment courses.”

Recommendations

As we met and talked with so many talented, passionate leaders in healthcare education during the first months of the Covid-19 crisis, we were able to see first-hand their struggles and their triumphs. Most were working on two front lines at once—helping students and colleagues cope with the pandemic in hospitals and clinics and adjusting within weeks to remote learning, a new delivery model. Yet, they were adapting and coping (sometimes having to scrounge for PPE), quickly moving courses online, and finding creative solutions for clinical experience. Seeing all of this, we dared to ask “what if” after the immediate crisis passes, the healthcare education ecosystem could truly change?

What if...

COLLEGES could build on their experiences in Spring 2020 and permanently transform program delivery to offer multiple online, asynchronous and synchronous programs across the Commonwealth to meet the needs of working learners?

COLLEGES offered competency-based, flexible programming where learners could proceed at a flexible pace, earn valuable credentials on route to degrees, and were supported by wraparound coaching and support?

LEARNERS had multiple learning and training options to meet their schedule needs with sufficient funding from federal and state sources, as well as **EMPLOYER** tuition assistance programs and work-based learning such as apprenticeships?

LEARNERS were exposed to targeted information campaigns about the range of careers in health care, starting in high school, and had access to career assessment tools, dual enrollment programming, and coaching about career pathways?

EMPLOYERS worked with colleges on community engagement programs that focused on bringing diverse, underserved learners into the workforce with clear pathways to advancement?

WORKFORCE and **POLICY** leaders worked with **COLLEGES** on a comprehensive strategic plan for filling expected shortages by creating education and training programs at the scale required, matched those programs with clinical slots across the Commonwealth, and provided necessary funds to support them?

The Road Ahead

We are excited about these possibilities and believe Massachusetts already has in place much of the infrastructure to meet its healthcare needs. The road ahead is challenging but within the possible. In broad strokes, we suggest the following next steps:

- Formalize the group of advisors contributing to this paper into an advisory group to agree on specific goals around state-wide credentials, micro- and stackable credentials, apprenticeships, and competency-based and technology enhanced solutions.
- Engage with the Department of Higher Education, Commonwealth Corporation, and MassHire to leverage existing state and regional collaborations to seek out funding to support these efforts at the state and national levels.
- Work with state regulatory agencies and accreditors to research ways of allowing greater flexibility for online and competency-based learning.
- Design pilot programs with a focus on diverse learners in order to level the playing field.
- Develop microcredentials in selected career and educational pathways for high-demand occupations.

Resources

American Institute for Innovative Apprenticeships:
Dental Assistants, Emergency Medical Technicians,
Healthcare Sanitary Technicians, Nurse Aides,
Paramedics, Pharmacist Assistants.

Boston Healthcare Careers Consortium

Evans, Sarah Rose, "Innovative Software to
Continue Nurse Training", Community College Daily,
June 1, 2020.

Gallagher, Sean, Ed.D., [Educational Credentials Come of Age](#), Northeastern University Center for the Future of Higher Education and Talent Strategy. Boston: December 2018.

Hayden, Jennifer K., Smiley, Richard A., Alexander, Maryann, Kardong-Edgren, Suzan, Jeffries, Pamela R., [The NCSBN National Simulation Study: A Longitudinal, Randomized, Controlled Study Replacing Clinical Hours with Simulation in Prelicensure Nursing Education](#), Journal of Nursing Regulation, Volume 5, Issue 2, July 2014 Supplement.

Massachusetts Higher Education Innovation Fund -
<https://www.mass.edu/strategic/innovationfund.asp>

Massachusetts COVID-19 Temporary Jobs Portal -
<https://www.mass.gov/info-details/apply-for-jobs-at-covid-19-temporary-care-sites>

Massachusetts Pathway/Program Mapping -
<http://massconnecting.org/pathwaymapping/default.asp#mapping>

[Microcredentials at SUNY](#), The State University of New York

[NextStep](#)

Robert, Angela, "[PeriopSim - COVID-19 Response](#)," PeriopSim, March 17, 2020.

Schuster, Luc and Mattos, Trevor, "[A Profile of Frontline Workers in Massachusetts](#)," Boston Indicators. Boston: April 13, 2020.

[Simulation and VR Programs: Aquifer, Mursion, Oxford Medical Simulation, ReadyCNA, Shadow Health](#)

Ton-Quinlivan, Van, "[Kaiser Permanente, SEIU-UHW Launch \\$130 Million Nonprofit Addressing California's Health Care Worker Shortage](#)," Future Health eAlert: January 2020.

Walden, Stephanie, "[VR Training for Healthcare Workers on the Front Line and in the Classroom](#)," The Garage, May 7, 2020.

["WMCC Receives \\$2.25M Federal Grant to Create Healthcare Workforce Diversity Pipeline,"](#) Mount Wachusett Community College: November 12, 2015.