
Seven Case Studies from the Accelerating Interprofessional Community-based Education and Practice Initiative

Conducted by Harder+Company for the National Center for
Interprofessional Practice and Education

June 2019

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These case studies are part of a national, two-year IPE implementation study conducted between November 2016 and December 2018. Harder + Company conducted the interviews and per interview protocol, no individual is identified in the case study allowing for an open conversation regarding each interviewee's assessment of the team's work.

The National Center for Interprofessional Practice and Education and Harder + Company Community Research acknowledges each Nexus Team and organizational leaders for their commitment in documenting their Nexus stories. Accelerating Initiative sites are listed in the order they appear in this document.

1. University of Nebraska Medical Center, Omaha, Nebraska
Community Partners: Ambassador Health, Omaha, Skilled Nursing and Rehabilitation; Azria Health Midtown
Program Title: Comprehensive Geriatric Assessment Practice and Interprofessional Education
Case Study Title: Nexus Success in Nebraska: Invested Leaders and True Partnerships
2. Washburn University, Topeka, Kansas
Community Partner: Topeka Housing Authority
Program Title: Classroom to Community: Implementing Patient-Centered Care in Public Housing Program
Case Study Title: Improving Health Access for Public Housing Residents: Washburn's Nexus Team
3. University of Utah, Salt Lake City, Utah
Community Partner: Housing Authority of the County of Salt Lake (now Housing Connect)
Program Title: Interprofessional Collaborative Systems-based Practice: Addressing the Drivers of Health and Health Care Utilization for Chronically Homeless Individuals in a Housing First Model
Case Study Title: Putting Interprofessional Education into Practice: The University of Utah Serves the Community through Hotspotting
4. University of Pittsburgh, Pittsburgh, Pennsylvania
Community Partner: UPMC Staying at Home program; Associates in Family Health Care
Program Title: Interprofessional Education Exchange Program (iPEEP)
Case Study Title: Promoting Independent Living and Quality of Life for Older Adults: University of Pittsburgh's Nexus Team
5. Arizona State University, Tempe, Arizona
Community Partner: Crossroads, Inc.
Program Title: Interprofessional by Design: Meeting at the Crossroads to Accelerate Leadership Competency and Readiness for Transition to Interprofessional Practice
Case Study Title: Expanding a Successful Interprofessional Approach with a Strong Community Partner: Arizona's Nexus Team
6. Creighton University, Omaha, Nebraska
Community Partner: Catholic Health Initiatives (now CHI Health); Creighton University Medical Center
Program Title: Cultivating Collaboration: Building a Successful Collaborative Care Model in an Academic Health Partnership
Case Study Title: Matching High-Utilization Patients with Personal Care Teams: Creighton University's Interprofessional Nexus
7. University of Hawaii at Manoa, Honolulu, Hawai'i
Community Partner: Hawaii Department of Education Keiki Program; Sanford Dole Middle School
Program Title: Hawai'i Interprofessional Education and Collaborative (HIPEC) Alliance
Case Study Title: Providing Health Care in a School Setting: University of Hawaii's Nexus Team

Current Realities. Health care is changing, and health professions education needs to change with it. Even with nursing education starting to move more into the community, clinical nursing education still takes place primarily in acute care settings with nursing preceptors. Although other health professional students may be learning in the same site, often in acute care settings, they rarely interact, let alone learn how to work together as a team. Over the past decade, clinical care has rapidly evolved to become more team-based across professions and increasingly practiced in the community. To provide high quality, safe, coordinated, person-centered care in the 21st century, all health professionals must be better prepared to lead and work in interprofessional teams in community settings.

The Accelerating Initiative. In 2016, four foundations - the Robert Wood Johnson Foundation, the Josiah Macy Jr. Foundation, the Gordon and Betty Moore Foundation, and The John A. Hartford Foundation – partnered to change today’s realities by stimulating new thinking about how teams of students and health professionals can actively learn and work together with people to improve health and wellbeing in the community. Their vision matched the experience of the National Center for Interprofessional Practice and Education (National Center) in implementing academic-practice partnerships, called the “Nexus”, “redesigning both healthcare education and healthcare delivery simultaneously to be better integrated and more interprofessional while demonstrating outcomes”. Together, they created the *Accelerating Interprofessional Community-Based Education and Practice Initiative* (Accelerating Initiative) to advance graduate-prepared nurses to lead academic-practice teams to demonstrate they make a difference in the health and wellbeing of the people and communities they serve. The Accelerating Initiative was achieved through a national call for proposals in 2016 with 16 graduate nursing schools selected to redesign how interprofessional teams, including students and residents, can add value in their communities by impacting the lives of their citizens. All 16 sites worked with a community partner serving vulnerable populations. The National Center’s approach to implementing the Accelerating Initiative was to provide extensive technical assistance to the developing Nexus teams which is detailed in the Harder + Company Community Research final report.

The Nexus, “redesigning both healthcare education and healthcare delivery simultaneously to be better integrated and more interprofessional while demonstrating outcomes”.

Case Study Site Selection and Process.

As part of an external evaluation conducted by Harder + Company, seven out of 16 sites were chosen based on geographic distribution, program* focus, significant early progress in forming a Nexus Team and implementing a Nexus program, and evidence of acceleration in showing outcomes. The seven case studies are the result of separate, semi-structured interviews with each principal investigator and 8-10 key members of each Nexus team. Interviews were conducted between February and December of 2018, are reported in chronological order by interview date, and include updated outcomes reported by the grantees in June 2019.

Thematic analysis is included in Harder + Company’s final report.

Case Study Sites with Primary Focus

University of Nebraska Medical Center (Geriatric)
Washburn University (Geriatric)
University of Utah (Mental Health/Substance Abuse)
University of Pittsburgh (Geriatric)
Arizona State University (Mental Health/Substance Abuse)
Creighton University (Primary Care/New Models)
University of Hawaii at Manoa (Primary Care/New Models)

Acknowledgement: The National Center acknowledges the 7 Nexus Teams and their commitment in documenting their Nexus stories.

* The National Center purposely uses the term program to describe the work of these teams instead of the ‘one and done’ project which puts people in the mindset that once the grant goes away, so does their project.

Nexus Success in Nebraska: Invested Leaders and True Partnerships

A Case Study for the Accelerating
Interprofessional Community-
based Education and Practice
Initiative

June 2018

About This Nexus Program

The University of Nebraska Medical Center College of Nursing designed its Nexus program to address the health risks that patients face when they transition from a hospital to a skilled nursing facility. This patient population, largely comprised of older adults, receives acute care in the hospital, followed by nursing care in a skilled nursing facility (SNF) with the aim of recovering enough to return home safely. But with typically minimal communication between the hospital and the SNF, and patients arriving with an often wide array of medications prescribed by multiple providers, re-hospitalizations are frequent. Without comprehensive patient assessment and management of the medications, improper doses and interactions between medications can lead to serious adverse health effects.

The Nexus program aims to develop a team-based approach across providers and professions to improve patient safety. Specifically, the program trains Adult Gerontology Nurse Practitioner students and Doctor of Pharmacy students together in classroom and clinical settings. The students learn about each other’s roles and engage in team practice along with staff at SNFs. Student and staff participants actively take part in interprofessional assessments to keep clients safe and see firsthand the value of knowledge and responsibilities that each team member contributes. Program leaders summarized the primary goals of the Nexus program as the following:

- 1. To improve student understandings of the risks to SNF clients and how interprofessional, patient-centered practice can lower those risks.
- 2. To improve health outcomes for SNF clients, reducing medication-related adverse events and re-hospitalizations.

One partner described the program as addressing an important, longstanding need. “It’s my passion that we can make the skilled nursing units safe, reduce readmissions, medication errors, and the associated costs,” she stated. “It’s been overlooked far too long.” Another noted that over time, healthcare providers have experienced increasing pressure to be efficient, leading to less time spent with each patient. As a result, she said, “when we talk about patient-centered care and patient safety, being intentional is more necessary” today than it ever has been.

Implementation Experiences

The ongoing implementation of the University of Nebraska’s Nexus program provides insights into factors that have contributed to its success to date.

An existing culture of teamwork and comfort with interprofessional approaches helps the Nexus team thrive.

Partners on the Nexus team emphasized an existing culture of interprofessional education at the University of Nebraska Medical Center that facilitated administrators’ enthusiastic buy-in on the program and contributed to the success of the collaboration. One program leader described an increasing receptiveness to interprofessional approaches as a broader cultural shift at the university. “Our campus, our organization, is so focused on interprofessional education,” she explained. “I’m not all by myself making a culture change... There’s a lot going on at our campus.” Indeed, the Nexus program fit seamlessly into the University of Nebraska’s interprofessional interests. An administrator described it as ideal, saying, “This grant fit in

Academic Partners

- University of Nebraska Medical Center College of Nursing
- University of Nebraska Medical Center College of Pharmacy

Community Partners

- Two skilled nursing facilities

“It’s my passion that we can make the skilled nursing units safe, reduce readmissions, medication errors, and the associated costs. It’s been overlooked far too long.”

perfectly with the university's mission and vision. Long term care provided a perfect opportunity for interprofessional learning and practice... It's set an example that will serve us well in the future. This is the model that I've been searching for."

The culture of collaboration showed in the Nexus program's implementation. A team member from the College of Nursing noted a strong relationship with the College of Pharmacy. "We're working collaboratively [on developing curriculum]," she said. "Their support has been invaluable." Moreover, the bridge between academic gerontology and an older adult population in the community was a natural fit. "Geriatrics has always been a team sport," remarked a community partner. An academic partner echoed, "Geriatrics is a team business. We just feel that's the only way you can really be safe."

Each partner's leaders are invested in the program.

For the University of Nebraska Medical Center and the skilled nursing facilities, participating in a Nexus program is a serious investment. Academic partners had to identify funding sources; enable faculty to devote time to the planning, management, and implementation; and ensure student participation in classroom and community practice components. Community-based SNFs had to provide matching funds and allow staff to take substantial time to engage with students on site and implement new team-based work practices.

Investments like these require strong leadership buy-in, something this Nexus program fully secured. "The biggest success," one team member commented, "is the amount of support we've received across the board. The community partners are very eager. Their support of having students there and working with their staff has been marvelous. College deans and even the chancellor of the university are very positive and want us to do more integrative and interprofessional education across the colleges. Everybody's been very helpful in getting this off the ground." An academic leader, also noting widespread support among university administrators, specified that the program was compelling because it was "helping to amplify our commitment to interprofessional education and moving it into the clinical environment... Our university is dedicated to this."

The community partners, too, proved strongly committed. When university faculty first reached out to a SNF as a potential community partner, they were unsure how difficult it would be to come up with the required fiscal match. But as one shared, "The most amazing thing happened: they actually volunteered to provide the match. It told us we were really onto something" that resonated with the SNF. Other team members added that executive support at the nursing facilities has continued. "They walk the talk. [They] gave the money," noted one. "And more than that, they've also allowed the staff time to sit and work with the learners and help educate the learners. [It's] a pretty amazing level of support." At the skilled nursing facilities, remarked another, "There's just tremendous passion and energy and a commitment to finding ways to improve on what we're doing."

All Nexus participants both give and gain.

Everyone who plays a contributing role in this Nexus program benefits. The University of Nebraska Medical Center moves closer to its vision of interprofessional education that translates to interprofessional clinical practice. The skilled nursing facilities develop new collaborative practices that can improve both staff and client experience. Students reap valuable preparation

"The biggest success is the amount of support we've received across the board... Everybody's been very helpful in getting this off the ground."

to apply interprofessional approaches that visibly improve effectiveness. As one team member put it, “Being open to what the facilities need, what the students need, and what the patients need, and looking for the opportunities where everybody can win through the same intervention—that’s a pretty strong win.” Exhibit 1 summarizes some of the contributions by and benefits to different types of participants on the program.

Exhibit 1. Selected Responsibilities of and Benefits to Nexus Participants

Participants	Responsibilities	Benefits
Faculty from Colleges of Nursing & Pharmacy	<ul style="list-style-type: none">• Collaborate on curriculum development• Arrange for students to participate in didactic and clinical training• Coordinate with community partners	<ul style="list-style-type: none">• Strengthened interprofessional culture at university• Students better prepared as effective practitioners• Positive influence on SNF clients’ health outcomes
Skilled Nursing Facility (SNF) staff	<ul style="list-style-type: none">• Coordinate with academic partners• Train and work with visiting students• Participate in daily team huddles	<ul style="list-style-type: none">• Improved collaborative experience on the job• Positive influence on SNF clients’ health outcomes
Nurse Practitioner and Doctor of Pharmacy students	<ul style="list-style-type: none">• Prepare for and actively participate in classroom and clinical training	<ul style="list-style-type: none">• Improved understanding of roles and expertise on an interprofessional team• Improved understanding of clinical realities at skilled nursing facilities• Experience contributing to interprofessional problem-solving.• Positive influence on SNF clients’ health outcomes

A strong ethos of equal partnership sets the stage for participants to actively take on responsibilities. A community partner described how leaders on the team demonstrate interprofessional decision-making, striking a contrast with more hierarchical decision-making that clinicians experience in hospital settings:

[The students] haven't seen a pharmacist and a nurse practitioner get in depth talking about this med versus that med and clinical correlations. It was wonderful for them to see [those] interactions. In the hospital it's pretty much one way: [decision-making] all trickles down. Not out here in the community. In the community it's a level playing field. Everybody has to do their part to make things better for the patients.

Through examples like this, students come to see that they have valuable expertise to contribute and so do the other professionals.

The mindset of mutual contribution informs the interprofessional student interactions and practice experiences. One partner attributed collaborative success in part to leaders setting clear expectations for students. “[The principal investigator] expects the learners to do their homework ahead of time, come with a good attitude, and participate,” she said. “In my experience teaching residents without those expectations,... they’re passive. That’s not Nexus. [This] program is very interactive: you participate and patients do well.” Another partner, relating “a good Nexus moment,” commented that students’ equal voices gives them a sense of accountability. “Everyone had their say. There was no one left out and they were writing the care plan together,” she recalled. “One of the students said to me, ‘Well, ...we’re signing

“These skilled nursing facilities have tremendous turnover, but that’s the very real world... Anything we do has to be implementable in the context of some pretty significant turmoil because the turmoil doesn’t go away.”

our names on this, aren't we?" The partner explained that in typical settings, a care plan would be signed only by the senior provider. In this instance, recognition of the full team's contributions served to imbue members with a stronger sense of responsibility. Overall, the experiences and opportunities have led to what a team member termed "strong student interest" in the program.

Turnover among faculty and SNF staff is a challenging reality.

Changes in who is involved in implementing a Nexus program is inevitable over time; a program's resilience in the face of personnel turnover is crucial to its longevity. Skilled nursing facilities are known to have high staff turnover, and program members saw this as an important reality to work with. "These skilled nursing facilities have tremendous turnover, but that's the very real world," remarked one. "We're recognizing that anything we do has to be implementable in the context of some pretty significant turmoil because the turmoil doesn't go away."

One way that the program has handled changes among the faculty and collaborative partners has been to build in a strong training component to bring newcomers up to speed. "We retrain and in some cases start over," explained a partner, continuing,

We've adapted well, but overall that is a big need for any partnership... We've done such a great job of training people that in many cases, people in outside agencies have hired them away from us! It's a success but also a negative because we'd like a stable core team. The nursing facilities have a tremendous turnover. To develop and create that transparent team where we're able to do each other's role is hard with an unstable team. We're still doing it, but that's one of our biggest hurdles.

Notably, one of the community partner organizations has anecdotally noticed a decrease in staff turnover during the last few months, a change they attribute to the rewarding nature of the program's team-based approach. A staff member there explained that "a big albatross in long term care [is] turnover rates greater than fifty percent for certified nurse assistants. It's an industry problem." But, she continued, she observes through the Nexus program "how team building decreases staff turnover. [The collaboration] has this nice ripple effect... that was not one of the intentions, but I see it. I'd like to [collect] some statistics."

On the academic side, the need remains for the University of Nebraska to strategize about supporting a more stable team for the future. One team member pointed out that the staff time needed to manage and implement a program of this complexity requires a substantial investment, something she hopes administrators and potential funders recognize. "The hardest part is managing a relatively big program with a relatively small budget," she commented. "There are a number of us who have donated our time to this study, and have done so happily, but can't do so long term. [It's a matter of] balancing that passion about what we're doing and the understanding of how much value is here with the reality that you don't get tenure or promotion when you're donating your time."

"This is pretty outstanding stuff, not sending people back to the ER or hospital."

Emerging Results

With the University of Nebraska's program less than two years into its implementation, outcomes among students and older adults have not been fully measured. But preliminary observations by Nexus team members show promising signs of change.

Exhibit 2. Emerging Results from the Nebraska Nexus Program

Type of Result	Preliminary Change	Description
Student changes	<ul style="list-style-type: none">Improved interprofessional understanding	<ul style="list-style-type: none">Seeing healthy, in-depth collaboration between a pharmacist and nurse practitioner "was an eye-opener" for students, according to a community partner.
SNF change	<ul style="list-style-type: none">Integrated team approach	<ul style="list-style-type: none">At one facility so far, daily "huddles," in which staff come together for patient-centered team problem solving, have become a durable routine that is fully integrated into the job.
Health change	<ul style="list-style-type: none">Fewer hospital readmissions	<ul style="list-style-type: none">A community partner noted a substantial decrease in readmission rates during the program, remarking, "This is pretty outstanding stuff, not sending people back to the ER or hospital."

Sustainability

The aim of the Accelerating Interprofessional Community-based Education and Practice Initiative is not only to spark innovative programs, but to generate a shift in practice and culture toward interprofessional approaches. Two main findings from the University of Nebraska Medical Center College of Nursing and its partners speak to its challenges and strengths regarding sustainability.

Success currently relies heavily on the principal investigator's leadership.

The principal investigator's vision, experience, connections, and leadership style are widely seen as key drivers of this program. Echoing others, one team member quipped, "We need to clone [her]!" While she has been a tremendous asset, however, the program's future will be more stable over the long term if it does not depend so heavily on a single person, but broadens in terms of a sense of ownership and leading roles. "There's a big need for more training, building the program, and increasing the personnel that can do this," cautioned one. Another concurred, noting that in addition to overall leadership, the current program requires substantial involvement by faculty leaders and SNF core staff. Any expansion of the effort would need additional dedicated and capable experts to manage the intervention. "We need more experts in gerontology to support this model," she said. "And the same with the pharmacy practitioners."

Early long-term thinking has evolved into more concrete interest in sustainability among partners.

Sustainability has not been an afterthought, but part of the initial planning and ongoing discussions. A key administrator framed the program as helping to meet the Medical Center's "goal of moving our interprofessional activities to a more sophisticated and more sustainable long range approach while we're doing something important in the community," suggesting strong interest in supporting the effort beyond the National Center's award. And while University

of Nebraska leaders have long voiced their support of the effort, a site visit by the National Center for Interprofessional Education and Practice further cemented the idea of sustaining the program. “They woke up all the bigwigs on my campus,” described one team member. “[The National Center] said, ‘We want to see this continue to be sustained in your program and to expand, into all of the other colleges.’... That made a huge difference here.”

Across the board, team members agreed that leadership at both the university and at the community partners have become more specific in talking about how they will sustain the interprofessional program. One of the SNFs is happy enough with how the program is going so far that they are discussing the possibility of paying for the principal investigator’s time to keep it going. Other partners spoke of recent meetings to discuss financial resources needed, faculty time allocation, and contracts for ongoing work with community partners. Confirming the understandings of many team members, a university administrator shared being “completely comfortable” that the program will continue. Speaking of it as integral to the future of the Medical Center, she commented that the program builds a model that “puts substance into our vision that interprofessional education and practice are crucial.”

What Nebraska Teaches Us

Specific lessons from the University of Nebraska Medical Center’s Nexus program can positively influence similar interprofessional efforts elsewhere.

Treat partners as equals

As this program shows, an interprofessional approach can earn broad buy-in when it values the expertise of every partner and participant. Here, all players work toward a common goal of improved health and safety of SNF clients, and each feels accountable for making a meaningful contribution to that goal because they bring needed knowledge and experience to the team. The model provides a fresh solution in a healthcare environment that is gradually moving away from what one partner termed the “physician patriarchy” where “it’s all about a doctor [and] a ‘team’ would be you doing something for him on his planet.” In the transitional care setting, in which many staff and providers from both a hospital and nursing facility influence a client’s treatment, a Nexus team approach is of paramount importance, giving all members of a multi-disciplinary team a voice and responsibility to ensure client safety.

Secure commitments from leadership

Interprofessional collaboration can promise improved outcomes, but it requires time and resources. To ensure that all partners can fully take part in a smooth process, leadership from each partner organization must be willing to invest. One team member described that for this Nexus program, leaders had to share an understanding that team problem solving was the right path, not the easiest path. “It takes time to do the right thing and talk to people,” she stated. “It’s easier to send them to the ER, but the patient suffers.” Further, if leadership buy-in varies across partners, the team approach will be undermined as implementation steps are missed or essential perspectives are absent from the multi-disciplinary whole. In this program, leaders from academic departments and community organizations agreed to share financial burden and allow staff to shift time from usual duties to interprofessional trainings and teamwork. Across the board, they saw that without supporting implementation, they wouldn’t see the results they desired.

Identify clear lines of responsibility

A risk of partnering on a collaborative effort is that some responsibilities may fall through the cracks if each partner assumes or hopes that someone else will take it on. This Nexus program has succeeded in keeping all partners clear on their roles and responsibilities. Not only do the different professionals bring their unique expertise—the nurse practitioner students' in gerontology, the pharmacy students' in medication, and the SNF staff members' in client and staff needs in the SNF setting—but they share an understanding of who will fill roles of management, teaching and training, participation, and financing, among other duties. Highlighting the importance of clear roles, a SNF partner commented, "The learners know what their role is when they come in. The nursing staff here... know what their role is. Having the accountability and everyone having their job role helps. When you have unspecified roles it's a lot of, 'Well who's going to do this? Who's going to take ownership for this?'"

Identifying the responsibilities that an interprofessional initiative requires and explicitly naming the partner organization or individuals who will handle them can go a long way toward avoiding chaos. Without common understanding of roles and responsibilities from the outset, the collaboration will suffer from delays and missed opportunities or will waste resources on duplicate effort. Everyone's time is valuable, and through its skillful management and communication, the University of Nebraska Medical Center's Nexus program sets a prime example of respecting that resource.

The lessons above apply broadly to other collaborative initiatives, but the specific model of this program—using interprofessional training and practice to address client safety at skilled nursing facilities—is also something that team members strongly believe in. Several expressed a desire for the model itself to be replicated widely. As a community partner put it, "It'd be really nice if this is the standard across the nation someday."

"It'd be really nice if this is the standard across the nation someday."

The following represents updated preliminary outcomes from the University of Nebraska Medical Center Comprehensive Geriatric Assessment Practice and Interprofessional Education (CGAP-IPE) Nexus program as of June 2019. Further statistical analysis is in process.

Health and Systems Outcomes

The Nebraska CGAP Nexus team shows alignment between the health professions programs and the community-based clinical partner by working to:

- Successfully discontinue inappropriate medications on Beers Criteria List medication for older adults
- Implementing dose reductions or increases
- Appropriately adding needed medications correlated with lab results
- No adverse events occurred in the first 30 days on residents seen by the interprofessional teams.

All pertinent SNF staff participated in the interprofessional assessment and interventions at the clinical site.

Students are fully integrated into the patient care team. There were 20% of total number of PharmD students and 100% of Adult Gerontology Specialty APRN students participating.

Educating Current and Future Workforce

Adult Gerontology Advance Practice nurses helped develop eLearning Modules used for students and skilled nursing facility staff. Modules are available to other students as well.

Education System Outcomes

- IPEC competencies are embedded into Adult Gerontology and PharmD coursework.
- The ICCAS survey for all student's post-comprehensive geriatric assessment and e-Learning Module indicated improvement in overall collaboration, communication, accountability, understanding of each other roles, and dealing with conflict.

Authorship:

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University of Nebraska Medical Center, Omaha, Nebraska

Program Title: Comprehensive Geriatric Assessment Practice and Interprofessional Education

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**NATIONAL CENTER for
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PRACTICE and EDUCATION**

Improving Health Access for Public Housing Residents: Washburn University's Nexus Team

A Case Study for the Accelerating
Interprofessional Community-
based Education and Practice
Program

July 2018

About This Nexus Program

The School of Nursing at Washburn University in Topeka, Kansas, applied the Nexus approach in addressing limited access to health care among public housing residents in the city. Topeka and surrounding Shawnee County experience high rates of poverty and are federally designated as a Health Professional Shortage Area in primary care. The program's leaders set out to examine these factors as fundamental contributors to poor health outcomes in low income communities and begin to tackle them. They assembled an unusual set of interdisciplinary partners to, as one put it, "create a venue for exploring the social determinants of health in our Topeka community, particularly [for] those communities that were more vulnerable or medically indigent or had greater need than some of the others."

The Classroom to Community (C2C) Accelerating Initiative at Washburn University is a partnership among Washburn's School of Nursing, School of Business, and Department of Communications, as well as Topeka Housing Authority (Exhibit 1). C2C's primary goals are to:

1. Develop a common curriculum for social determinants of health that can be used in a wide range of academic disciplines, and
3. Improve access to health care and health outcomes among Pine Ridge public housing residents by opening an on-site community clinic.

Exhibit 1. Partners in the Washburn University Nexus Program

Partner		Role
Academic	Washburn University School of Nursing	<ul style="list-style-type: none"> • Faculty provide clinical expertise; co-develop IPE curriculum. • Doctoral students engage in interprofessional learning and practice, including providing care to patients at Pine Ridge housing community.
	Washburn University School of Business	<ul style="list-style-type: none"> • Faculty provide financial management expertise; co-develop IPE curriculum. • Business students engage in interprofessional learning and practice, including developing a business plan and budgets for a clinic at Pine Ridge.
	Washburn University Department of Communications	<ul style="list-style-type: none"> • Faculty provide communications expertise; co-develop IPE curriculum. • Students engage in interprofessional learning and practice, including supporting communications best practices a clinic at Pine Ridge.
	Washburn University Office of Sponsored Programs	<ul style="list-style-type: none"> • Director strengthens connection and collaboration between departments and pursues additional grant funding for program.
Community	Topeka Housing Authority	<ul style="list-style-type: none"> • Provides facility to house primary care clinic. • Provides financial support for the health clinic's operating expenses and infrastructure needs, including building renovations to house additional health services.

Specifically, Washburn's graduate nursing program engaged its academic partners in developing and implementing an interprofessional curriculum including classroom and simulation activities. Student teams also worked with

Topeka Housing Authority (THA) and the Pine Ridge community, THA's largest public housing community serving approximately 500 people. Because few medical services exist in East Topeka where Pine Ridge is located and public transit options are limited, Pine Ridge residents have historically lacked easy access to health care. Students were tasked with assessing community needs, planning the building of a health clinic, and developing a sustainable business and marketing plan. An academic partner voiced the desire to help "students have a greater appreciation that while the [nursing] work is very important,... we [also] need to focus on that financial aspect and the communication aspect and the literacy aspect. If we really want our offerings to make a difference, it needs to be a team approach."

"If we really want our offerings to make a difference, it needs to be a team approach."

The partnership has resulted in the establishment of a primary care clinic in the Pine Ridge Manor community (opened November 2017). The new Pine Ridge Family Health Center is the only primary care clinic nationwide to be owned and operated by a public housing authority and situated within a public housing community. Nurse practitioners serve as the key primary care providers and the clinic has been designated as a dedicated site to educate Doctor of Nursing Practice (DNP) and Bachelor of Science in Nursing (BSN) students.

Implementation Experiences

Washburn University's C2C initiative yields insights relevant to Nexus programs broadly.

Washburn's long history of community collaboration gave the program a solid foundation.

Washburn University infrastructure supports both interprofessional education and community-campus partnerships. Because it is partially supported by city tax revenue, the university maintains strong ties to the community. As one partner explained it, "Washburn is a municipal university. By virtue of that, we have a very strong community connection. Our community supports us financially, but we also are very engaged with the community." The School of Nursing has historically been a leader in community collaborations. As C2C initiative leaders wrote in their Nexus proposal, the School of Nursing's efforts have led to current collaborations with approximately 65 community organizations to provide student clinical experiences. Regarding interprofessional education, the university's IPE Council includes 16 faculty across 13 departments.

In this collaborative context, establishing a strong working relationship with the Topeka Housing Authority was straightforward. "The facilitation and collaboration within the practice team [School of Nursing and THA] was very natural and easy," remarked one partner. "I'm attributing that to the nature of health professionals and the established rapport that was present having worked with each other a number of years prior to this program."

Finding common ground was essential in achieving smooth cross-disciplinary collaboration.

Although Washburn University had a well-established IPE Council, connections between the School of Nursing, School of Business, and Department of Communications were new with this program, and the academic partners had

to work to reach a common understanding before developing a successful interprofessional curriculum. As one team member, speaking from the perspective of the School of Nursing, described it,

Traditionally we don't sit down with business and communication professionals and have discussions about 'What is a curricular goal?' and 'How can this concept be applied to your students?' The progress in the curriculum team was a little tedious in that we had to develop a rapport with each other first. A lot of us were strangers to each other. We had to... take a step back and try to appreciate the expertise that they bring and what is pertinent to their particular areas of study... There were some pretty frustrating moments where we thought we were at an impasse. But having the ability to step back and look at the overarching goals that we all have, we were able to push through that... It's actually very easy now at our meetings. We all discuss things very openly, very freely. We've come a really long way in our relationship-building within the curricular team.

Others echoed and emphasized the ultimate rewards of developing cross-disciplinary relationships. One commented, "Before this, I had no idea [that] courses in the School of Business addressed some of the same social determinants, and how much focus in the Department of Communications was on health literacy and financial literacy... It's been a phenomenal experience to understand what the learning is in the different schools for the students, and the expertise."

Willing and open leadership styles strengthened the collaboration.

Key leaders at Washburn and THA were active listeners who valued other perspectives and were willing to take risks. These characteristics served to inspire creative problem solving and an open recognition of the strengths of different team members. The housing authority, in particular, was well-known for its openness to new ideas. As a THA leader put it, "We always start at yes. When people come to us with what seems to be kind of a wacky idea, we always try to start from the same point of, "Well, sure we can do that"—as long as we know that there's need and it's something that's going to help those families." An academic partner confirmed, "[THA is] an incredible partner... I can't think of one idea, program, grant opportunity, anything that I have presented—[their] immediate response is to always find a way to yes."

On Washburn's part, C2C initiative leadership embraced an open leadership style that allowed many stakeholders to take ownership of the work. "The Nexus is a network of people who are interested [and] that network of people is ever-evolving," explained one. She continued,

We need to have the right person at the right table at the right time. That person's role may move in and out pretty freely depending on what's happening and what work needs to be done... Every one of us was a leader in some way with some topic, and we all had to be willing to move out of that leadership role freely... Many times we would have to stop and say, 'Now wait a minute. Who's the best person to lead this conversation?'

"Many times we would have to stop and say, 'Now wait a minute. Who's the best person to lead this conversation?'"

Gathering community input required care, but was a key driver in successfully assessing needs.

Washburn University partners knew that their students would benefit from the practical experience of a community collaboration, but were also determined to make sure the program would be a win for the community. They set out to involve public housing residents in planning how to improve health access, yet were also sensitive to placing a burden on community members. "Poverty is just damn hard," acknowledged an academic partner. "We want residents to be as involved as they want to be. Sometimes, when you're trying to feed your kids, and get the bus, and you're sick, and you're going to lose your job if you take a day off, nobody has time to be thinking about what color are we going to paint the walls in the clinic. Poverty is still a real limiting factor. Until we fix poverty, we're always going to struggle with how involved the people we serve can be."

Nevertheless, to ensure that the program would truly benefit the community in residents' eyes, Washburn team members took care in gathering information from community members in the form of a door-to-door survey. First, as one described, "We had focus groups [in which] community members helped us to develop the questions [for the survey]. We had them pilot them and discuss what they implied, if they were offensive, and... how the questions [should be] phrased. There were some questions we ended up not putting in because we didn't want to be making anyone feel like they were at risk of losing their housing."

The survey not only informed the planning, but built rapport between students and Pine Ridge residents. According to a community partner, "Having the nursing students out in the neighborhood, and having them go door to door and conducting surveys, and meeting with our residents, our residents were extremely honest. And not that they're not normally honest, but I've been surprised at the level of detail and some of the information that they would share with somebody that they really didn't have a connection with... It came across very clearly to them that this person in front of me is really trying to find a way to help me."

Emerging Results

At less than one year since opening the primary care clinic at Pine Ridge, it is too soon to see patient health outcomes. Assessment is in the works: Patient data is being collected on changes in emergency department usage since the clinic opened; a clinic advisory council will guide strategic planning for measuring patient outcomes; and a C2C Advisory Council and clinic staff actively review utilization data. Although complete outcomes will take time to emerge, early results have emerged regarding students, clinic development, and health access (Exhibit 2).

Shared Values

Agreeing on the importance of health strengthened the partnership between Washburn's School of Nursing and the Topeka Housing Authority. A community partner illustrated this, saying:

"[At] Topeka Housing Authority, they understand how health, housing, and safety go together. If you're not safe and you don't have housing, your health suffers in many ways, whether it's your physical or mental health. Those are important and they do go together. That's part of the reason that they're so supportive [of the initiative]."

"Until we fix poverty, we're always going to struggle with how involved the people we serve can be."

Exhibit 3. Classroom 2 Community Nexus program: Emerging results

Type of Result	Preliminary Change	Description
Student gains	<ul style="list-style-type: none">Exposure to interprofessional concepts and improved cultural awareness	<ul style="list-style-type: none">Thanks to IPE curriculum modules being used by all academic partners, students are learning interprofessional concepts “like trauma-informed care, and how that applies to business models, communication models, and nurse practitioner models,” described one partner. Another reported observing “a cultural shift. Most of our students come from middle-class white Midwest culture, and we’re having different kinds of conversations than we’ve had in the past. That’s super exciting to see.”
Clinic development	<ul style="list-style-type: none">Primary care functions in place with additional health services coming	<ul style="list-style-type: none">Essential funding streams are active, with the clinic now accepting Medicare, Medicaid, and some private insurance. Electronic health records are fully functional. Some dental services are being provided, with expanded dental, mental health, and optometry services planned.
Gains in health access	<ul style="list-style-type: none">Needed services available	<ul style="list-style-type: none">Between November 2017 and May 2018, the clinic had 191 visits from 107 unique clients.Clinic staff ask patients at intake if they would have gone to the emergency room if the clinic were not available. Reports one partner, “More times that not they say ‘Yes, I would have gone to the emergency room, or I wouldn’t have gone anywhere.’ That’s a really critical piece to begin to demonstrate the success of this clinic.”

Sustainability

The future of Washburn University’s C2C Nexus program has multiple components to consider: continued implementation and growth of the Pine Ridge primary care clinic; ongoing interprofessional education and use of the curriculum developed by the program; and further interprofessional practice opportunities in the community. The Nexus team has opportunities and challenges related to sustaining each component.

Strongly committed partners are securing the Pine Ridge clinic’s future.

Under THA’s ownership, the new health clinic at Pine Ridge public housing community has a bright future. Echoing several others, one partner remarked not only on sustainability of the primary care functions, but on the clinic’s anticipated expansions into other health services. “The sustainability of Pine Ridge is well underway,” she confirmed. “They’re not stopping at just a health clinic, they’re already moving on to a dental clinic, an optometry clinic, a wellness clinic, and a mental health clinic.” Acknowledging that unpredictable government funding sometimes poses challenges, a THA leader added, “Our board of commissioners and the housing authority as a whole are 100 percent committed to ensuring the success of the Pine Ridge Family Health Center.” An academic partner agreed, suggesting THA would strive to overcome any barriers that arose. “We’re very fortunate that we have such strong dedication and commitment from the Topeka Housing Authority,” she commented. “If for some reason... our current business model was perhaps not successful like we

“Anything we can do in our community is part of our legacy for the school. So we will always be committed.”

program it to be, I know that they would be innovative and creative in finding alternative ways to assist with billing and funding and making sure that residents have access that they need... They really see the value in the services offered."

Washburn University's School of Nursing is intent on providing ongoing support as well. A university partner reported that Washburn is applying for additional funding, particularly to support the clinic's expansions into additional health services. Indeed, Washburn team members have a sense of obligation to their long-time THA partners. "That community's never going to trust us again if we can't maintain sustainability," remarked one. "For us, anything we can do in our community is part of our current and lifetime legacy for the school. So we will always be committed, always," another emphasized.

Logistically, the clinic has strengths helpful to achieving sustainability, but establishing longer-term fiscal stability will be important. An academic partner noted that because THA owns the facility, "we don't have any overhead expenses... so it's a different model than would be typical of primary care [and goes] a long way toward making it sustainable." Nevertheless, increasing patient flow will be key, since as a community partner explained, "We have slow days with patient numbers." But some feel the crucial work has been done, and one suggested the program's success should serve as an example. "My hope is that we're able to... create [a] toolkit," she remarked, "so if there are other public housing authorities who are interested in that same sort of program and model, they would have a template for how it can be done."

Interest is growing in spreading integration of the interprofessional curriculum modules.

Washburn's School of Nursing initiated the idea for the Nexus program and the resulting interprofessional curriculum. With the Pine Ridge clinic itself requiring less student involvement now that it is up and running, the School of Nursing hopes to spread the curriculum's use more broadly through the university. "We are already reaching out to faculty and staff," said one, continuing, "There is a culture change that's happening within academic units. We have worked in silos most of our lives, but now we're starting to reach across the table and shake hands... One of the fun parts is to see a light come on for some people when we start talking about how their involvement would really add to this particular program, and how it has the potential to lead elsewhere." Citing the curriculum's quality and cross-disciplinary flexibility as compelling, another team member described other graduate faculty as having a "very positive response" to it.

Scaling meaningful interprofessional practice opportunities requires creativity and dedicated work.

Washburn University's graduate nursing program will continue to partner with the Pine Ridge Family Health Center as a site for practicum training, but with the clinic now in operation, opportunities for students to engage in the practice are likely more limited than during the planning phases. As a result, one partner described seeking out other cross-disciplinary opportunities that connect Washburn to Pine Ridge. "We already have plans in the works to expand to include social work," she said. "There's been some talk of involving the kinesiology students to help run an exercise program for residents."

"We have worked in silos most of our lives, but now we're starting to reach across the table and shake hands."

In addition, the School of Nursing is pursuing other community connections that build on the Nexus work and the interprofessional curriculum. As one described, “We are now consulting with the School of Law to see how we can partner with the curriculum and take it out into other initiatives in the community.” Another added, “We’re looking at partnering with the two local hospital systems, who are also looking at population health... The wellness of our community and addressing population issues has a huge impact on the hospitals.” The School has grown accustomed to thinking broadly and pursuing active outreach to develop practice opportunities in the community, in part because of not being affiliated with a medical school. “We’re not connected to an academic medical institution,” a team member explained, “So our implementation of our program is going to be going out in the community and making partnerships which are going to go well beyond what’s happening at THA and Pine Ridge,... even while we’re continuing to build on that foundational knowledge.”

What Washburn Teaches Us

Takeaways and partners’ advice from Washburn University’s C2C initiative are instructive for other interprofessional efforts.

Nexus programs rely on open leadership and committed team members.

Leadership qualities of openness, active listening and empowerment are critical for implementation of a successful Nexus program. By assembling a strong team and lifting individual members, leaders can develop program momentum and inspire effectiveness across the team. One C2C initiative partner advised, “Be very aware of the individual team members’ strengths and weaknesses and life experiences, because all of those things really help make a very cohesive team.” Another added, “The greatest predictor to success is the people. People who have a real passion for what they are attempting to do will do it... Look at the [small] size of our university and see what we’ve achieved: We got a clinic up and going [and] a curriculum developed and on the ground.” A third concurred that pulling together skilled and dedicated people set the program up for success, saying, “This whole experience has been pretty miraculous. It’s been the culmination of a wide variety of people willing and able to say yes... [That] really created a supportive foundation to allow innovative change to happen.”

Community input is essential to the success of an initiative intended to benefit that community.

C2C initiative partners emphasized that community voices must drive programs meant to serve the community. As one asserted, “You really need to know your community...what are your community needs? Keep them first and foremost in your thought processes.” Another agreed, remarking on the central role of community participation in building an effective and lasting partnership. “[A] piece that is hugely significant,” she commented, “is that we have had Pine Ridge neighborhood residents who have participated from the very beginning. That is critical to the success of this program, and critical to the future of the Washburn and Topeka Housing Authority partnership.”

C2C Curriculum Key Concepts

The Washburn University Nexus team identified these as shared concepts within a curriculum initially designed for nursing, business, and communications students, yet broad and flexible enough to be relevant to additional disciplines as well.

- TeamSTEPPS
- Quadruple Aim
- Quality Improvement Processes
- Leadership of Self
- Social Justice
- Sustainability
- Motivational Interviewing
- Communicating Crisis Information
- Business Ethics
- Trauma Informed Care

“You really need to know your community...what are your community needs? Keep them first and foremost in your thought process.”

Diverse academic disciplines can successfully engage in interprofessional education.

The C2C initiative is pushing boundaries by forging interprofessional connections across disciplines as diverse as nursing, business, and communications. A curriculum team representing all three disciplines successfully carved out common threads to link cross-disciplinary course material. Key concepts emphasized in the curriculum bring together the strengths of each discipline into the service of a practical, community-connected cause of planning and implementing a health clinic to serve public housing residents. At the same time, the concepts are broad and flexible enough to be applied to other disciplines and other community programs as the initiative expands and as Washburn University pursues other community practice opportunities for its students (sidebar).

To be sure, developing a curriculum that fit the needs and cultures of varied disciplines required time and commitment, but the investment paid off. As a partner speaking from the perspective of Washburn's School of Nursing summarized, "Originally with the curriculum team, it was a little bit of a challenge because... the [other] programs that are involved are not health-related. That has been both a challenge and a great opportunity... Those non-health related programs have a significant impact on social determinants of health. That's been our focus and over time it's evolved into a really cohesive group. We work really well together; we recognize what our strengths and weaknesses are... It continues to be a great program, great relationship."

Washburn University School of Nursing brought together a diverse set of academic and community partners to embed social determinants of health in an interdisciplinary curriculum and create tangible benefits for the community. With the investment and commitment of a long-standing partner and public service agency, the Topeka Housing Authority, the Nexus team succeeded in addressing a substantial health access problem for public housing residents by planning and establishing a primary care clinic with a sustainable business model and growth opportunities. The program provides a template for public housing communities elsewhere and inspiring guidance for university programs seeking to make a positive impact outside their walls.

The following represents updated preliminary outcomes from the Washburn University School of Nursing Classroom to Community (C2C) Nexus program as of June 2019. Further statistical analysis is in process.

The Pine Ridge Family Health Center (PRFHC) mission, "Together we serve to balance inequality, ensure sustainability and co-create ownership in health" reflects collaboration among all stakeholders including community residents.

Health and Systems Outcomes

The clinic opened November 2017 and to date:

- 444 unique patients served; of those patients, 1131 clinic visits
- Emergency Department visits have been reduced by 255 visits as reported by patients
- Patients are highly satisfied with the availability of services and care and health education provided
- A registered nurse was hired to provide chronic disease management and health care coordination services (via referral and/or telehealth)
- Third party billing has been implemented. Payment for services are designed to address the economic status of diverse populations who are considered medically underserved
- The convenient location and willingness to provide treatment regardless of the ability to pay have resulted in measurable evidence of improved access to care for this vulnerable population.

Students are adding value to the clinical site resulting in systems changes

- DNP student programs resulted in the establishment of a satellite primary care clinic in a Topeka Housing Authority property housing elderly and disabled residents and another created an after-school program to address childhood obesity;
- School of Business students completed programs focused on the business and financial aspects of the clinic.
- Department of Communication Studies students completed programs focused on health literacy at the clinic.

Engaging Pine Ridge Residents in teaching Social Determinants of Health and Health Equity

- Faculty from the Department of Social Work joined the C2C team to develop a poverty simulation. The Pine Ridge Poverty Simulation activity moved students through a series of social service "programs" to obtain services and then the students and residents of Pine Ridge Manor came together in guided small group conversation.
- Pre-and post-activity surveys indicated students had a heightened understanding of the realities of poverty, were conscious of their personal bias, and expressed a commitment to supporting vulnerable populations.

Authorship:

Case studies were authored by Harder + Company Community Research Team. Each case study was reviewed by the National Center Accelerating Initiative team including an additional external evaluator based on document review and site visits. Each Nexus Team reviewed their case for accuracy of content and context.

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Washburn University, Topeka, Kansas

Program Title: Classroom to Community: Implementing Patient-Centered Care in Public Housing Program

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Putting Interprofessional Education into Practice: The University of Utah Serves the Community through Hotspotting

A Case Study for the Accelerating
Interprofessional Community-
based Education and Practice
Program

July 2018

About This Nexus Program

The University of Utah College of Nursing led the development of a Nexus approach to address challenges of homeless individuals relying on emergency room services instead of primary care. The program's interprofessional leaders recognized that emergency services were a costly alternative to primary care, both financially and in terms of health outcomes. They also saw that making positive change for individuals with complicated medical and social needs would require careful consideration of social determinants of health.

The University of Utah Accelerating Initiative employs hotspotting interventions to work with high-need community members. The program trains student teams on a patient-centered approach to investigate and address root causes of high healthcare utilization. Specifically, using an established hotspotting curriculum,¹ interprofessional student teams receive in-depth training on systems-based practice, trauma-informed care, social and structural correlates of health, team building, communication, and advocacy. With formal instruction, faculty advising, and routine case reviews, the teams use data to identify and work with community supportive housing residents who are very high users of health care services. "In the economic sense there are people who are high utilizers of healthcare," explained an academic leader, describing a motivation for the initiative. "If we can effectively identify them... and decrease the costs for those individuals while improving their healthcare, it's good for the community as a whole."

The initiative brings together a wide range of partners. Across two University of Utah campuses in Salt Lake City, partners include the Colleges of Nursing and Pharmacy, the School of Medicine, and the College of Social Work. With support from the university's interprofessional education program, the program draws student participants from 16 undergraduate and health professional programs to serve on interprofessional hotspotting teams. The primary community partner is the Housing Authority of the County of Salt Lake which offers wraparound services in the areas of social services, substance abuse, education, and employment. The program's goals are to:

1. Give students across the health sciences and social work the opportunity to work on interprofessional collaborative teams with high need community members, and
2. Improve health outcomes for the highest need housing authority clients by helping to rebuild trust in the healthcare system and facilitating care.

The interprofessional hotspotting approach provides an appropriate response to a compelling need that arose in the community. A housing provider in Salt Lake City providing services to people who were previously homeless experienced a rise in resident deaths (related to a variety of causes including physical health and mental health challenges such as substance abuse). Clear communication allowed the academic partners to understand what the community partner needed to serve its residents. Onsite case management provides essential support for vulnerable residents working to maintain their

What is Hotspotting?

Hotspotting is the term used to describe local team-based interventions designed to improve health and health care utilization for both individuals and communities with highly complex needs.

"I saw a lovely synergy of a population in need and a model that might actually do some good for both students and the population in need."

¹The Camden Coalition Hotspotting Curriculum, <https://www.camdenhealth.org/student-hotspotting/>

housing placement and increase self-sufficiency, but the housing authority has historically had difficulty addressing residents' high rates of physical, mental health, and substance abuse challenges. As a program leader summarized the initiative, "There were different levels of turmoil that were really impacting the housing provider. Having taught the hotspotting model... I saw a lovely synergy of a population in need and a model that might actually do some good for both students and the population in need."

Implementation Experiences

The experiences of the University of Utah's Nexus team reveal factors that contributed to its success and strategies it used to tackle challenges.

A strong culture of interprofessional education and a hotspotting funding opportunity created a solid basis for a community-facing Nexus program

The University of Utah has an established program in interprofessional education that paved the way for an initiative that took interprofessional approaches a step further—into community-based practice. As an academic partner described it, "Our interprofessional education program has been around for awhile [and has] really built a strong foundation in getting a lot of professions together. Most of the offerings were simulations, so this [practice initiative] really moved us [forward]. We had a lot of invested faculty and the university as a whole was recognizing that this interprofessional program had value."

Aided by a university climate open to interprofessional approaches, important factors came together to boost the initiative. Coinciding with the Nexus grant, led by the College of Nursing, was a hotspotting grant from Camden Coalition to support the university's use of the hotspotting model. The hotspotting grant, led by a physician who was also the university's IP director, added resources to the interprofessional effort and helped build momentum for the initiative. The lead faculty on both grants realized the collaboration potential and identified additional cross-disciplinary partners who championed community-based work. One partner summed up, "You need a champion, you need some grants, you need support to build your case and we've been fortunate to have some of that support."

Drawing faculty and student participants from across the university revealed the strengths of an interprofessional approach

The initiative is steered by a group of faculty and staff to plan the program with the community partner, implement the interprofessional education and training of student participants, and closely advise students' community work. Student hotspotting teams, meanwhile, work directly with clients at the apartment complex and other settings. The interdisciplinary aspect of both faculty and student teams has yielded clear benefits. Regarding the faculty group, one partner commented, "Watching all of us from a faculty and staff standpoint come together from our different professions and backgrounds, you really see the value that people bring with their professional experiences. Even just their personalities, their strengths that they bring to the table. It's a big deal. We really started to build something by utilizing those talents and strengths."

The student teams, too, are stronger because their members bring different perspectives. As a faculty member described it,

Examples of Interdisciplinary Expertise on University of Utah's Nexus Team

- Interprofessional approaches
- Geriatrics and medicine
- Community-based public health
- Leadership development
- Social determinants of health

As we constituted these last eight teams, we've had undergrads in geography, we've had undergrads in health society and policy, we've had graduate students in nutrition and physical therapy. We have learned so much about how many different lenses it takes to understand something and the contributions that having that broader perspective on what's happening and how to intervene can result in an outcome that is above and beyond what we've considered before. For me, the biggest takeaway is really having a better appreciation for how broadly we define the team.

Another faculty partner added that interprofessional teams help students see each other as equals. "What hotspotting does is creates a level playing field when people take off their discipline-specific hats and focus on the social determinants, which are really not specific to any one discipline except maybe social work," he remarked. "It may create a little more humility that yes, medicine is important, but it's not the only thing that's important for promoting health."

"Yes, medicine is important, but it's not the only thing that's important for promoting health."

Addressing logistical challenges required time and persistence

University of Utah's Nexus initiative involves student hotspotting teams from diverse disciplines working together to address challenges facing community members with complex health and social needs. The initiative has drawn its student teams from 16 academic programs to date. But the approach entails logistical hurdles that have required dedicated problem-solving. Exhibit 1 summarizes key logistical challenges and how the Nexus team has addressed them.

Exhibit 1. Logistical Challenges and Solutions of Hotspotting Teams

Logistical Challenge	Solution
Student recruitment <ul style="list-style-type: none"> Initially, most participants had to volunteer their time, receiving no academic credit. Each team needs multiple students, each from a different discipline. 	Enable students to earn credit and designate staff to coordinate recruitment. <ul style="list-style-type: none"> Increasingly, students from many disciplines are able to receive credit for participating in the initiative. An IP program manager, one partner reported, "took care of all the paperwork and really looked at how we create those teams so that we have the right mix on each team."
Team scheduling and coordination <ul style="list-style-type: none"> Scheduling team meetings and activities is made difficult by each professional school operating on a different academic calendar and each student having different obligations on and off campus,. 	Meet when possible and be flexible about who needs to be at each client interaction. <ul style="list-style-type: none"> A participant noted, "We would usually meet with the client in teams of two or three and then we would report back to the rest of [the team]." A partner added, "Finding times when students can meet as a group at times feels nearly impossible, although we've almost always figured out a way to make it work."
Legal requirements for providing services and accessing data <ul style="list-style-type: none"> According to an initiative leader, "Working with this population, with health systems data, and with students who don't have licenses and aren't going to have direct faculty supervision, there were a lot of legal hoops we had to run through." 	Start gradually to work out details. <ul style="list-style-type: none"> The initiative began with a single pilot team to figure out the legal aspects and work with the hospital system on data access and the IRB to make sure appropriate patient protections were in place.

Academic and community partners worked through differences to find common understanding

Academic and community partners were interested in working together, but first had to bridge gaps in understanding and communication style. At first, university partners were focused on the concepts and big picture of the initiative that seemed disconnected from attention to daily realities and workflow that are central at the apartment complex. As a community partner put it, “We just work completely differently, [for example, the academic team] laboring over every word in the mission statement versus [the community partner] working with an actively suicidal client. It's just very different... The everyday work that we do is miles apart, but we have the same goals.”

Although partners ultimately built strong rapport, initial communications efforts suggested a power imbalance that undervalued the community-grounded expertise. As a community partner asserted, “It's difficult for a group of eight professors to have one or two community health workers come in and then not shutdown the academic jargon and let them give valuable input... It's just not balanced.” Another pointed out that both academic and community partners benefitted from hearing each others’ perspectives, noting, “It was important for both teams to see how the other side works and the students were a bridge in that. A lot of those professors haven't done grassroots work in a long time. We have to protect our client population and it was good for the university team to be reminded of that constantly and to see the work on the ground level.”

University of Utah partners came to recognize that building a relationship would take time, but was of utmost importance. One noted, “You've got folks who don't know a whole lot about hotspotting that you've got to turn into allies and that process takes some time.” Another expanded on how establishing a strong partnership with the apartment complex paid off because student teams relied on that relationship to connect with clients. “When you are meeting with people in their homes... without good relationships, that seems very forced, very awkward. When we partnered with the apartment complex, there were case managers there who knew the participants and could bridge those relationships. That made the patient recruitment take off because we were building off trusted relationships already. That trust that they had with them piggy-backed into our student team. It made the process go better.”

Openness and persistence have led to a solid relationship. One community partner remarked, “The collaboration, as far as teams that I've worked with, I would rate this among the best.” Another offered, “They're just enjoyable, nice, good people. We had a good working relationship with them.” An academic partner agreed, saying, “I've seen the change over time. Initially we had guarded interest and some skepticism about where this could be of value, and we've overcome that.”

Emerging Results

The University of Utah's Nexus program has aimed, to date, for a deep rather than broad impact, working closely with selected apartment complex residents and other community members who have complex health and social needs. As of February 2018, 42 students had participated on 9 teams, each working with a single client. Although it is too soon to see definitive outcomes, the Nexus team reported early changes among students and clients, and they are

University of Utah's plans to document impact

To evaluate their progress and impact, the Nexus team will conduct the following assessments:

- **Student surveys** will assess learning of practice concepts and collaborative competencies.
- **Client surveys** will collect self-reports of health and well-being, as well as abilities and experiences with health maintenance and services.
- **Cost/benefit analysis** will help determine if the program is lowering cost of client care and examine return on investment.

engaged in more rigorous documentation of impact (sidebar). One program leader cautioned that expectations should be tempered by an understanding of the difficulty in creating lasting change in this population. As she put it, "People who have this level of complexity in their health and in their social environment rarely have a positive improvement that is sustained over long periods of time."

Students are learning the value of interprofessional practice.

Interdisciplinary teamwork is helping participating students understand other professions and form professional identities that are more collaborative. For instance, an undergraduate team participant explained,

It was impactful to see the social work student in our meetings with the patient, [including] what kind of questions she asked and the kind of things she was worried about. It taught me what social work can do... And the nurse practitioner and physician assistant students knew so much about the medical conditions and the prescriptions and everything. It was crucial to our team. It definitely gave me a solid respect for these professions. I just had a vague idea about what they did beforehand.

A faculty member remarked on the potential effect of turning students onto interprofessional practice. "What we are seeing is a mindset shift to real world in our professional experience. We need to be engaged in real scenarios. We have to be interdependent and work together," he said. "What I hope to see is our learners are going to drive practice change... meaningful change within our institution and in the way that healthcare is delivered."

Students are gaining critical understanding of underlying factors affecting health and access to services.

University of Utah's hotspotting approach combines interprofessional practice with a grounding in the social determinants of health. The initiative shows students what one academic partner called "the importance of being in the community to address a community need." She went on, "This is the best approach for interprofessional education because we're actually taking students out into the community, into the real world. Social work students are typically out there in their practicum internships, but our medical students and our nurse practitioner students are [typically] seeing patients in a clinic setting. So they're not getting a feel for... the social determinants of health." Another concurred, adding, "Our students are learning the reality of [what] complex medical and special needs really mean for how, when, and if you access healthcare... They're learning how you build trusting relationships with individuals who have previously had and may continue to experience profound trauma. These are, for many students, experiences that they couldn't comprehend until they worked with these individuals and developed a relationship with them."

Clients are building trust in healthcare and learning self-care skills

The hotspotting teams provide information to clients about self-care and accessing the healthcare system. They assist with basic needs like acquiring supplies and managing medications. They help schedule healthcare appointments and accompany clients on appointments to serve as their

How a Nexus experience can shape students' careers

One partner shared an anecdote about how being part of a hotspotting team informed one student's career choices.

"[A participating student] basically said that this changed her career path. She was intent on being an MD PhD physician scientist and she changed her career path to MD MPH, so more of a community-based focus. It's going to be fairly transformational for some of these students... It's got potential to alter the trajectory of their careers in a very positive way."

advocates and help develop trusting relationships with providers. “They’re having an encounter with people that they identify as part of the healthcare system that is positive, that is longitudinal, that has an opportunity to build trust,” described one academic partner. A student participant observed that even what seems like “a small victory... could be a huge life-changing thing for the patient.” A community partner shared positive feedback:

All four of our clients really liked the experience and they felt that they benefited from it. They were chosen because they were having difficulty with their complex needs. Providing all of those processes and appointments and orders... with all the different problems that a resident would have was super beneficial. The healthcare system is difficult for anybody, [but] especially for somebody who has a lot of barriers, it's even more difficult... We've seen a positive impact.

Examples of specific client benefits of hotspotting

- Establish/Re-establish care with trusted primary care provider
- Medication management (set up and ongoing plan)
- Blood sugar monitoring (set up and ongoing plan)
- Replacement of a broken nebulizer for free under warranty
- Information about dietary management of diabetes
- In-person assistance with reading labels at the grocery store
- Assistance with acquiring a bed necessary to relieve opioid-controlled back pain
- Affordable arrangement of monthly medication refills via mail for medications previously left unfilled due to cost.

Sustainability

On a limited scale, the University of Utah’s interprofessional hotspotting initiative has demonstrated early successes and interest among all parties in continuing the effort. In fact, many hope the program will expand to become an opportunity for many more students and high-need community members. To do so, the Nexus team is looking to the university to support a substantial cost of faculty and staff time and compensation.

Early positive results are creating momentum

Academic and community partners see positive effects on students and clients as reason to sustain and grow the initiative. A university partner spoke to the university’s commitment to support the hotspotting effort, saying, “We’ve made the commitments to continue with hotspotting. Initially we’re grant funded, but we will institutionally carry that forward because we recognize the great value to our students.” Others mentioned support from college deans and other leadership, but noted that in part due to turnover among leadership, they are still working to make sure the verbal support turns into funding. “All the deans are aware of this and are supportive,” remarked one partner. “But I think there’s being supportive and there’s actually putting up financial support... They’re seeing the fact that we’re getting a critical mass and we’re also getting some visibility.” He added that the School of Medicine has voiced that they feel the initiative is important enough that every medical student should be involved.

The housing authority partner is also supportive of continuation. A leader at the apartment complex commented, “We’d be excited for any expansion... I feel confident in our collaboration with the university. We have each voiced that we want this to continue. We’re both invested.” Further, the academic team mentioned early work to cultivate a partnership with United Health Care, the professional home of Dr. Jeffrey Brenner, who founded the hotspotting model. The potential partnership would strongly support sustainability.

“The healthcare system is difficult for anybody, [but] especially for somebody who has a lot of barriers.”

The hotspotting model needs faculty time and financial resources to grow

The University of Utah hotspotting model assigns two faculty advisors to each student team. With eight teams currently, the time demands on faculty are already high, though the Nexus team hopes to scale the program to involve more students and work with more high-need clients. As one academic partner put it, "The labor intensity is tough... but we want to have a bigger impact."

Financial compensation will be essential to attracting and retaining enough faculty involvement to grow the initiative. The program so far relies on a team of faculty willing to donate unpaid time to the program. "Pretty much everybody involved in leading this is volunteering at least half of their time," noted one. "We're getting a little compensation for this work, but it doesn't come close to matching the effort we're putting in." Another agreed, remarking that to sustain the initiative, the university will have to be willing to support "a high cost, low volume program... If we are going to give this type of experience to our students, there has to be that support," he continued. "There is going to need to be an increase of dollars and time... We feel well supported up to this point on grant money. I hope the institution can see that value and support the program."

Embedding the model in curricula will streamline the initiative

To address the challenge (discussed above) of recruiting students as volunteers to join hotspotting teams, the University of Utah's Nexus team is actively working to turn student opportunities into credit-bearing courses. The College of Nursing has embedded hotspotting in the graduate and undergraduate curriculum, through practicum and community clinical hours. The College of Pharmacy has approved an elective credit for hotspotting and the School of Medicine is nearing approval of the same. A faculty member commented, "Creating a new elective for hotspotting [in pharmacy and medicine] is a really important milestone because it is less of a volunteer activity and more hardwired so students can more easily participate." Another added that receiving credit gives "students accountability to stay in and stay involved."

Meanwhile, the College of Social Work has made hotspotting part of a required practicum. The College of Nursing plans to follow a similar path, due to what a nursing faculty member called "the intensity of our curricula" with no room for electives. "What's going to be crucial in sustaining this for our profession is ensuring that we get it embedded in courses that are already required," she explained. "So we're trying to get it through that method."

Critically, integrating the hotspotting initiative into curricula will streamline recruitment and student training, making growth more possible. As an initiative leader put it, "Once we have credit-bearing options for every discipline, that is going to increase our ability to scale up. Now that we know how to do it and we have our curriculum design and our processes design, that's going to reduce the resource intensity."

"Once we have credit-bearing options for every discipline, that is going to increase our ability to scale up."

What University of Utah Teaches Us

The University of Utah's interprofessional hotspotting experience yields insights that can inform similar collaborations, especially those that bridge academic and community partners.

Communication tools and clear expectations can help community and academic partners see eye to eye

When partner organizations operate in different spheres, they must devote time and attention to establishing effective communications, trust, and shared understanding. A community partner in this initiative suggested that to clarify a program's purpose at the start, the lead grantee could prepare a one-page written summary of the roles of those involved and the program's goals for students, community members, and systems change. If a university partner relies only on a verbal overview, another cautioned, "It really gets lost in the academic talk." Further, advised the first, the academic team could provide visual tools for a community partner to share with staff, for example, "graphics or a video [showing] what hotspotting is... That's what you give case workers before they start working with [the student teams]." Such tools could also be offered to health providers when a hotspotting team accompanies a client to an appointment.

In addition, when student teams are implementing an initiative, they must attend early on to setting up effective communication practices both within their team and with community partners. In response to initial challenges in this regard, a hotspotting team member advised that initiative leaders "encourage teams to figure out communication and scheduling for their individual team as early as possible... How we're going to communicate in a way that will be effective for us, what do our schedules look like, and can we have a consistent meeting time. Even those small steps could make progress happen sooner." Community partners also must understand processes and expectations from the outset so they can be fully aware of when student teams will show up to work with a case manager and client.

Lasting partnerships are win-win

For a successful partnership between academic and community players, the implementation model must embrace dual goals. The University of Utah's collaboration with a housing authority partner works in part because it pursues both student learning objectives and community benefit. As one partner put it, "We are doing this because we think that there is extraordinary learning value for our students but that is only one priority. Another priority is providing value to the individuals we're working with and the organization we're partnering with and that the value is balanced." According to another faculty member, the community organization applauds having a more equal partnership than they have experienced in the past. "One of the case managers said, 'The university is asking to send their students to us all the time. This is the first time where we felt like our residents were actually getting something back,'" she reported, adding, "That's pretty powerful." Ensuring wins on both sides provides impetus to sustain an initiative.

The hotspotting approach effectively combines interprofessional practice and value to the community

The hotspotting model provides a useful Nexus opportunity. By nature, it incorporates interprofessional practices, bringing together a team with diverse disciplinary backgrounds to meaningfully address a complicated community problem. The targets of hotspotting—people who are among the highest users of health care—benefit from an approach that supports social and informational needs along with more traditional medical care. Its recognition of the multi-faceted contributors to health and well-being reflects the reality of an interdisciplinary world, and thus serves as a useful training ground for professionals and students. As one University of Utah partner remarked, “It's wonderful for our students to be engaged with other disciplines and with patients having particular challenges, many of which are outside of what you'd immediately [think of] as health, because they are social determinants: their housing, their other issues.”

A caveat to using hotspotting as practical training for students is the requirement of time-intensive faculty involvement in planning and advisory capacities. The University of Utah Nexus team has worked to put sustainable steps in place, including streamlining student recruitment, embedding the initiative in academic curricula, strengthening community partnerships, and garnering leadership support and future funding. Their experiences show, however, that scaling up a hotspotting approach to involve many student teams is a challenge that requires creativity and broad commitment.

The University of Utah has brought together the hotspotting model and interprofessional education to build a team-based supportive intervention that is a win-win for student learning and improved client health outcomes. Although its scope is still limited, partners are hopeful that the initiative will promote expanded interprofessional approaches to patient-centered care and community-focused practices—eliciting change in systems and mindset. As an academic partner remarked, through this initiative, students will see that “we need to provide healthcare in a different way than we have been. It's a huge learning outcome for them.”

“[This initiative shows that] we need to provide healthcare in a different way than we have been.”

The following represents updated preliminary outcomes from the University of Utah: Utah Health and Homes Collaborative (UHHHC) Nexus Program as of June 2019. Further statistical analysis is in process.

Health Systems Outcomes

- Developed a partnership with the University of Utah Health Plans and Community Physicians Group (CPG) to improve the process of identifying patients who may benefit from the Hotspotting model and allowing for improved communication between Hotspotting teams and primary care teams.
- The ability to access Health Plans data, as well as the UHealth Value Driven Outcomes data provided important information for evaluating program outcomes and making necessary adjustments. Additionally, outcomes include:
 - An increase in the diversity of patients and populations served (e.g., the launch of Spanish-speaking Hotspotting team and a patient-caregiver focused team)
 - A broadening of our partnership with the Housing Authority of the County of Salt Lake (now named, Housing Connect) to include residents in other housing programs

Educational Systems Outcomes

- Growing role in training other universities to successfully launch and run Hotspotting teams, via our Hub designation
- Growth in the number and breadth of student participants and faculty advisors
- The Hotspotting Program is now embedded in curricula across health sciences programs through course requirement and as stand-alone electives
- National presentations, with the other three Hotspotting Hubs, helping to support a new movement around complex care

Authorship:

Case studies were authored by Harder + Company Community Research Team. Each case study was reviewed by the National Center Accelerating Initiative team including an additional external evaluator based on document review and site visits. Each Nexus Team reviewed their case for accuracy of content and context.

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University of Utah

Program Title: Interprofessional Collaborative Systems-based Practice: Addressing the Drivers of Health and Health Care Utilization for Chronically Homeless Individuals in a Housing First Model

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Promoting Independent Living and Quality of Life for Older Adults: University of Pittsburgh's Nexus Team

A Case Study for the Accelerating
Interprofessional Community-
based Education and Practice
Program

October 2018

About This Nexus Program

The University of Pittsburgh's School of Nursing leveraged strong community partnerships to develop a new Nexus for geriatrics care and workforce development. The *InterProfessional Education Exchange Program (IPEEP)*, led by the University of Pittsburgh (Pitt) School of Nursing, engages faculty and graduate students from Pharmacy, Health and Rehabilitation Sciences, and Social Work to accelerate students' skills and preparation for providing team-based geriatric care. Education emphasizes social determinants of health for older adults in urban and rural areas. Leaders of a rural primary care practice and two urban geriatric home care programs joined the University as equal partners in this effort. As professionals steeped in the geriatrics field, the University faculty and community-based practitioners not only taught and precepted students, but invited them into a tightly-knit professional network of geriatrics practitioners in the Pittsburgh area.

The program's primary goals are to:

- Accelerate students' application of vital skills for interprofessional care with emphases on social determinants of health, disability prevention and quality of life among community-dwelling older adults; and
- Grow and sustain an ever-growing interprofessional geriatrics consultation and collaboration network as students graduate and enter into professional practice.

"When I first started this initiative, I didn't know what a nexus team was. So I learned that, and I can really see how the academic and the clinical world can intersect through this team. I never made that connection before."

Exhibit 1. Partners in the University of Pittsburgh Nexus Program

	Partner	Role
Academic	University of Pittsburgh School of Nursing	<ul style="list-style-type: none"> • Faculty lead program/grant coordination; provide clinical expertise; and co-develop IPE curriculum. • Advanced nursing students engage in interprofessional learning at the University and provide team care to older adults in community settings.
	University of Pittsburgh Schools of Pharmacy, Health and Rehabilitation Sciences, and Social Work	<ul style="list-style-type: none"> • Faculty engage in program/grant coordination; provide profession-specific expertise; and co-develop IPE curriculum. • Pharmacy, Occupational Therapy, and Social Work students engage in interprofessional learning at the University and provide team care to older adults in community settings.
	University of Pittsburgh HPI Center for Interprofessional Practice and Education	<ul style="list-style-type: none"> • The Center provides leadership, research support, and cross-campus collaboration for interprofessional initiatives at the University.
Community	Staying-at-Home and Living-at-Home	<ul style="list-style-type: none"> • Provides a geriatrics-focused clinical site, mentorship, precepting, and networking for interprofessional student teams in the Pittsburgh metro area. • Engage in program/grant coordination; provide expertise; and co-develop IPE clinical curriculum as members of the grant team.
	Associates in Family Healthcare	<ul style="list-style-type: none"> • Provides a geriatrics-focused clinical site, mentorship, precepting, and networking for interprofessional student teams in a rural, underserved area. • Engage in program/grant coordination; provide expertise; and co-develop IPE clinical experiences as members of the grant team.

The iPEEP program is situated in the University of Pittsburgh's School of Nursing, led by faculty with expertise in geriatrics. Pittsburgh's nursing program initially engaged three academic partners—Pharmacy, Social Work, and Occupational Therapy—with faculty who also had expertise in and an affinity for innovative work with ageing populations. The academic partners worked together to develop a self-study learning module on social determinants of health for students. They also identified geriatrics curriculum and experiences in each of the schools that could be adapted and offered to students in other programs.

The first community partner to come on board was UPMC, specifically its Living-at-Home and Staying-at-Home programs for people 70 and older. The program services 22 Pittsburgh neighborhoods, keeping clients safe, healthy, and independent in their own homes for as long as safely possible. (*note that Staying-at-Home has recently closed, but the collaboration lives on with Living-at-Home). The second partner, Associates in Family Healthcare, offered a distinct experience for students, working with older adults in a nurse-led clinic. The rural Pennsylvania setting provided a contrast to the urban and suburban clinical placements typically offered to Pitt students. With both community partners, students visited with older adult clients in interprofessional teams. The curricular preparation in social determinants of health framed these visits to not only focus on physical health, but well-being, safety, and access to systems of support.

The iPEEP team members report that this was (and continues to be) a true partnership, with academic and community members having equal power in the initiative. Regular meetings bound the team together, and they became a tightly-knit, collaborative program team. Because all partners shared expertise, passion, and professional networks in geriatrics, there were built-in shared values to drive their work.

Implementation Experiences

Pittsburgh's existing relationships with community agencies jump-started their partnership and program

Upon receiving the Accelerating grant, Pittsburgh's program team looked to existing programs and partnerships in the community for piloting iPEEP. Several members of the academic team had worked previously with Living-at-Home and Staying-at-Home. Social work and occupational therapy students were already rotating through these programs, so the staff and leadership were accustomed to students. Adding nursing and pharmacy required some creative thinking in terms of scheduling and precepting, but the community was very open to the students' participation. The community partner reported:

I have worked on several programs through the years... and it's been a great collaboration, between us and the School of Nursing. And when they approached me with this, since we already have an interprofessional approach here, it seemed like such a perfect fit, and to have other students be able to come to our site was very exciting to me.

The partnership with Associates in Family Healthcare also built on a prior relationship between its leadership and the program principal investigator. The nurse-led clinic was equally receptive to students, valuing their contribution in

Gerontology as an Ideal Specialty for IPE Initiatives

The Pitt iPEEP team is made up of expert geriatrics care providers in the University and community, many of whom had worked together in the past. It is a small professional community with shared values, making collaborative practice a natural fit.

"It took a really committed group of people to make this happen. Every person, in one way or another, has a love of gerontology or geriatrics. I think that we quickly became a team, and the team could talk about challenges and come up with solutions together. It was driven by people's passion and commitment and belief, and that's what we need to improve healthcare."

The program was an ideal space to introduce students to this tight network of geriatrics care providers, giving them invaluable connections in the field for future practice.

"From the start, having partners where you know you're going to have success. You don't want to start at the bottom of a steep hill."

working with clients. One University team member reported that these relationships are so strong that they will continue whether or not grant funding is available. A strong foundation for both partnerships is the mutual respect the individuals have for each other—team members from academia view community practitioners as experts and colleagues in the geriatrics space.

Starting with willing and engaged partners within the University can accelerate implementation while paving the way for broader engagement

Because they had experience with interprofessional educational initiatives, program leaders knew they didn't want to start from scratch. As one leader from the School of Nursing notes,

We wanted it to be very feasible that students could go out together in teams and we knew there would be some difficulties with actually implementing that. So we selected schools where, for example, OT and social work were already doing some partnering at one of our community sites, so we were able to build on that.

By starting with schools where relationships were existing and strong, the team saved time in gaining buy-in and cooperation at the program's launch. The program kept academic leadership and other professions informed, however, as implementation continued. Now there are other schools approaching IPEEP wanting to be involved.

A strong, centralized infrastructure for interprofessional education and practice at the University provides invaluable support for new initiatives

Program leaders report that Health Policy Institute's Center for Interprofessional Practice and Education was involved very early on in the grant and program. Their leadership played a vital role fostering the relationship with the National Center and using their presence in interprofessional education locally and nationally to promote the program. The Center had experience shepherding similar programs through the University system and could offer strong research support, IRB advice, and collegial connections. This history and culture of IPE also meant that this program was not breaking new ground when seeking support from their Deans and other University leadership.

Clinical experiences are opportunities for students to access vital professional networks

Both academic and community partners in this initiative spoke about a personal and professional dedication to preparing the future geriatrics workforce. For these like-minded educators, student clinical experience is not just about gaining knowledge and skills, but developing professional connections. As one community partner has said,

I'm a proponent of building a geriatric workforce, and I'm trying to do that in my own small corner of Pittsburgh. To have them build that network, the geriatric field is so small, they will already know each other when they graduate. If they get

"Where is that pivotal point for influencing the next generation of providers so that we ultimately change our practice habits to become more collaborative and team-based?"

jobs in Pittsburgh and stay in Pittsburgh, they're already going to know the other occupational therapists, the nurses who specialize in geriatrics, the pharmacists who were trained in geriatrics. And then this geriatric network starts to build after graduation. And I think that this grant is helping with that foundation.

While it is a high-demand specialty with strong expertise at the University, the number of current practitioners and students entering the field is low. iPEEP team members describe the local geriatrics community as tightly-knit and collegial. Everyone knows or is connected to everyone else, and collaboration is common. Participation in iPEEP invites students into this network, giving them access to mentors, fellow students, and potential future colleagues. Building relationships with current and future geriatricians can not only provide connections for students entering the geriatrics workforce, but inspire others to consider specializing in older adults.

Emerging Results

At the end of the grant period, data show an increase in student knowledge across professions. Faculty and preceptors have observed students' application of their knowledge of social determinants of health in the clinical setting through the type, quality, and quantity of questions asked during history-taking and through the client-centered plans of care they develop. The number of professions and academic partners continues to grow, suggesting potential for a broader reach in the University and incorporation into required the curriculum (Exhibit 2).

Exhibit 4. iPEEP program: Emerging results

Type of Result	Preliminary Change	Description
Student gains	<ul style="list-style-type: none"> Exposure to team-based care with a geriatrics population, focused on social determinants of health 	<ul style="list-style-type: none"> Additions to the IPE curriculum, along with clinical experiences, are exposing students to working with older adults in the community. The program can demonstrate shifts in attitudes and behaviors related to IPE, geriatrics, and student satisfaction with the IPE experience. Anecdotally, faculty and preceptors have heard student comments that show a greater awareness of impact of social determinants on health (e.g., "I never thought about asking her about where she gets her groceries or if she even can get to the grocery store").
Client safety and quality of care	<ul style="list-style-type: none"> Focused attention by an interprofessional student team on common risk factors and quality issues 	<ul style="list-style-type: none"> The program has begun data collection on client outcomes, falls incidence, emergency room visits, and hospitalizations among community-dwelling older adults visited by the interprofessional student teams. Community program staff report social and emotional benefits for older adult clients through the intergenerational interaction with students.
Expanding interprofessional collaboration	<ul style="list-style-type: none"> The number of professions participating from the University continues to grow 	<ul style="list-style-type: none"> Early on, the iPEEP program grew from a collaboration among Nursing, Pharmacy, Social Work and Occupational Therapy as vital partners. The Psychiatric Nurse Practitioner and Audiology programs have recently approached iPEEP to collaborate and involve their students.

A community partner notes that, although it is difficult to report improved health outcomes at this early stage, there is a positive impact on the clients.

We get good feedback from the clients, the clients love to have students come. Some of the comments we've gotten from the clients have been, "I'm so honored that you're allowing me to help teach these students." They feel like they're giving back by allowing these students to come in and learn. And so, to me, that's invaluable.

The geriatrics care providers involved in the program believe (and research supports) the benefits of intergenerational interactions for older adults. One community partner remarks that observing college-aged students just talking with her clients (regardless of their field of study) is "pretty phenomenal." This anecdotal evidence alone has been enough to convince other schools at the University to get involved.

Sustainability

The iPEEP academic and community partners report that future of this collaboration is secure. Several aspects of the program suggest that sustainability is, indeed, likely for Pittsburgh's iPEEP. The following are instructive lessons in setting up an initiative for long-term impact.

Faculty expectations for IPE support sustainability.

University faculty involved with the program stress that incorporating IPE experiences into teaching is an expectation whether or not workload release time is granted. This is the culture at Pitt, and one they seem to embrace. They also see the benefits to their students and remain committed to giving them the opportunity to learn and practice together. One faculty member remarked that even if the program lost all money and faculty support, he would continue to place his students with the community partners and incorporate the content into his teaching, just because "it's the right thing to do for students."

Another faculty member says that she also stresses the connection between faculty scholarship expectations and the program. Using iPEEP for conference presentations and publications has been "a really good kind of currency for a faculty member." Academic members of the team have recognized how to make a program like this beneficial to them in their careers, a worthwhile investment of extra time and effort.

Leadership from both academic and community partners supports the program.

The community partners report that the leaders in their respective organizations have been very supportive of this initiative. Resistance to the program was never an issue from the community side; in fact, the agencies take pride in their role as educators and University partners. For example, the UMPC division overseeing Living-at-Home and Staying-at-Home recently published a report highlighting the program, "because they're so impressed with what we've done." When the Staying-at-Home program closed recently, the program was worried about losing this vital site. Program leadership was

Clients say, "I'm so honored that you're allowing me to help teach these students."

Commitment to the Future

Community and academic partners agree that they are fully committed to continuing interprofessional geriatrics clinicals through the University of Pittsburgh.

As the team wrote in its final report:

"Our greatest strength that will facilitate sustainability is our team. We work together and get along so very well and are all committed to continuing this program...."

We are all committed to continuing to work together to advance IPE at our institution. Thankfully, our program is sustainable with faculty and community partner effort, willingness, and time. Our team will succeed."

able to secure Living-at-Home and an ongoing clinical experience, however, demonstrating a commitment to the initiatives' future.

On the academic side, iPEEP is fortunate to have highly committed faculty members with positional power in their respective schools on the team. From the beginning, the Deans, particularly in Nursing and Pharmacy, were supportive of the initiative. The initiative has received positive press in several University-wide publications, garnering support and attention from leadership in other schools as well. Team members indicate they have leadership buy-in to continue the program, regardless of grant funding. The School of Social Work's leadership support is expected to increase, as a newly installed Dean has made geriatrics one of her four strategic priorities.

Scaling up the interprofessional geriatrics curriculum started small, but interest is now large.

The University of Pittsburgh started the iPEEP program with Nursing, Pharmacy, Social Work, Occupational Therapy and the two community partners. The program leaders viewed starting with willing partners in relatively "on-the-ground" professions as a way to start small, but with a big vision for including others in the future.

The Psychiatric Nurse Practitioner and Audiology programs have recently approached iPEEP to collaborate and involve their students. Talks have begun with the School of Medicine as well. With each new academic partner, there are new challenges in scheduling, precepting, and meeting standards. The growing interest shows promise, however, for expanding interprofessional curriculum across the health sciences. The program has also made inroads for requiring interprofessional geriatrics content, rather than having it be optional for students.

What iPEEP at Pittsburgh Teaches Us

Takeaways and partners' advice from the University of Pittsburgh offer key lessons for other interprofessional efforts.

Nexus programs rely on strong leadership and committed team members.

Over and over again, iPEEP team members point to individuals' commitment and passion for the initiative as drivers for success. For example, one Nexus Team leader led the program and kept up the team's momentum through grant-related delays, and ensured all partners remained engaged. Another Nexus Team leader also provided leadership from experience with previous interprofessional programs. Each team member brought both a commitment to the program and a passion for educating students to be skilled geriatrics practitioners. They speak of their work together as both important and enjoyable, and their collective commitment to both students and clients is evident.

Demonstrating early success with a few willing partners can quickly lead to expanded collaboration.

People who have worked together before started this together. The schools and professions at the table at the inception of this program knew one another

(if not personally, by reputation) and shared a sub-specialty in geriatrics. A team member points out that they also started with professions that are typically more prone to collaboration and are close to the “front-line” in the care of older adults. Given these realities, the iPEEP team could tackle the logistical hurdles of interprofessional education with willing and enthusiastic partners. Now that the program is well established, other schools and professions are coming to the table asking to be involved. Had the group been more expansive in the beginning, the program may not have been able to accelerate as fast as it did. They now have a proven model and experience behind them, and are poised for smart expansion.

Community partnerships thrive when they are full and valued members of the team.

As another faculty member said, “Both community partners were members of the team—they had an equal vote, an equal say. So that makes collaboration really easy, because the buy-in from moment one was there.” This comment summarizes a theme discussed by every member of this program. Community partners were not seen or treated as an add-on, or as members with less expertise than their academic counterparts. Their role on the team was as experts critical to the success of the initiative and essential to the students’ education. When community partners are trusted colleagues with long-standing, existing relationships, programs like this can avoid the power differential often felt in University-Community partnerships.

The University of Pittsburgh School of Nursing leveraged existing academic and community partnerships bring nursing students in to interprofessional geriatrics clinical experiences. Embedding social determinants of health in an interprofessional curriculum taught all students involved the importance of these factors to the care of older adults. The Nexus team succeeded by starting with willing and ready academic partners and engaging community partners as experts and equals on the team. The program demonstrates how university and community programs with shared values and professional commitments can forge lasting partnerships to benefit students, clients, and ultimately the geriatrics workforce.

“Both community partners were members of the team—they had an equal vote, an equal voice, an equal say. So that makes collaboration really easy, because the buy-in from moment one was there.”

The following represents updated preliminary outcomes from the University of Pittsburgh School of Nursing iPEEP Nexus Partnership program as of June 2019. Further statistical analysis is in process.

The Nexus Team

- Spontaneous leaders have emerged at various times to lead various aspects of the program. All members of the academic and community practice Nexus team are actively engaged and provide input to guide process implementation and evaluation, and are respected among team members.
- Reframing the loss of one of our community partners (Staying at Home) as an opportunity to refocus our program in a way that can lead to opportunities to impact patient and community outcomes in the future and the triple aim. We are looking at the bigger picture.

Education Opportunities

- Developed a self-study learning module on social determinants of health (SDoH) that includes a pre- and post-assessment of SDoH knowledge. Our data show an increase in student knowledge across disciplines.
- New leadership in some of the participating disciplines is opening up opportunities to begin to incorporate our program into the curricula across the disciplines and to move this initiative beyond a voluntary component of the curriculum to a required component of clinical education.

Authorship:

Case studies were authored by Harder + Company Community Research Team. Each case study was reviewed by the National Center Accelerating Initiative team including an additional external evaluator based on document review and site visits. Each Nexus Team reviewed their case for accuracy of content and context.

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The National Center for Interprofessional Practice and Education and Harder + Company Community Research acknowledges the Pittsburgh Nexus Team and organizational leaders for their commitment in documenting their Nexus story.

University of Pittsburgh, Pittsburgh, Pennsylvania

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Expanding a Successful Interprofessional Approach with a Strong Community Partner: Arizona's Nexus Team

A Case Study for the Accelerating
Interprofessional Community-
based Education and Practice
Program

November 2018

About This Nexus Program

Arizona State University's College of Nursing and Health Innovation recognized an opportunity to expand interprofessional education and practice through the Nexus approach. They took the lead in applying the approach to a strong existing community partnership aimed at providing health services to individuals in residential treatment for addiction. In Arizona, as elsewhere, the steep rise in opioid drug use has put a strain on community services. Often, individuals in substance abuse treatment face complex challenges regarding physical health, mental and behavioral health, and social barriers such as homelessness that make recovery difficult and relapse common.

The nurse-led initiative brought together a diverse set of academic disciplines from both Arizona State University (ASU) and Northern Arizona University (NAU), including nursing, psychology, social work, occupational therapy, and arts and design. They partnered with Crossroads, a community nonprofit that provides residential and outpatient substance abuse treatment at six locations in Phoenix and nearby Mesa. The academic partners had a history of working with each other through the Nexus Innovation Network site Student Health Outreach for Wellness (SHOW), a student-led interprofessional care and learning model focused on health access. In addition, the ASU College of Nursing and Health Innovation had developed a relationship with Crossroads as its nurses provided free health assessments for Crossroads residents.

The new initiative has leveraged the already strong model of SHOW to expand interprofessional services into two Crossroads sites. Team members have articulated goals that benefit everyone involved (Exhibit 1).

Exhibit 1. Program Goals and Intended Benefits

Program Goals	Intended Benefits
Provide on-site services at Crossroads including: <ul style="list-style-type: none">Care management by a team with psychiatric and family nurse practitioners, social work, physical therapy, substance abuse counseling, and pharmacy;	<ul style="list-style-type: none">Crossroads residents receive whole-person care that allows them to focus on their substance abuse treatment.
<ul style="list-style-type: none">Health promotion;	<ul style="list-style-type: none">The Crossroads organization is able to provide more comprehensive services and address patient needs at low cost.
<ul style="list-style-type: none">Planned groups led by Social Work, Occupational Therapy, and Physical Therapy focusing on family skills (SW), job related skills (OT), and exercise and pain reduction management (PT)	<ul style="list-style-type: none">Students gain experience with a vulnerable population (substance abuse patients) that is growing across the US.
<ul style="list-style-type: none">Assistance with health and transitional care access and medication management upon release from residential treatment.	<ul style="list-style-type: none">Students build collaborative, interprofessional, and leadership skills in a practice setting.
<ul style="list-style-type: none">Create collaborative leadership opportunities for faculty preceptors to facilitate student learning, including drawing on tools and techniques adapted from design and the arts.	<ul style="list-style-type: none">Faculty are better equipped to prepare students to advance and participate in an interprofessional workforce.

A Crossroads staff member described the advantage of the partnership from the community perspective, saying that when Crossroads became a full treatment center several years ago, “We started seeing very complex cases... Folks that were here to get sober were not able to complete the program because they had medical things come up.” To address the broader health care needs of residents, Crossroads staff recognized that “one way to do that was to have relationship with universities to help with some of the most expensive services.”

Implementation Experiences

The following selected experiences of Arizona’s Nexus team provide important perspectives on academic-community collaboration and student-centered interprofessional practice.

Shared goals and values served as glue to keep a diverse team working together.

The Crossroads approach to substance abuse treatment, which relied on peer support, differed from the academic and clinical approaches of its Nexus partners. Yet the team successfully bridged differences by working toward common goals and valuing everyone at the table equally. A Crossroads employee identified the shared goals, saying, “Everybody wanted the residents to come first, and their health to be looked at and addressed so that they could recover.” Another added, “When we became mindful [that] this is not about your position or mine, it’s about the residents and what’s going to help this person stay sober and complete their treatment, things would fall quickly into place.”

A community partner noted that the “natural tension” between academic and direct service cultures had resolved into a sense of mutual gain. “Not only can we see the benefit of having a professional and academic world come into our organization,” he commented, “but the academic and educated world see the benefit of what we bring to the table and that community involvement.” An academic partner agreed, remarking that the team had developed trust: “A lot of the Crossroads staff come through recovery and become employees. Many of them don’t have formal education yet. I felt initially that maybe they didn’t expect to be accepted by the people in academia. And now they’re very comfortable asking us questions, challenging us. In the beginning, it was more everybody hold their cards close to their chest. And now the cards are all out on the table.”

The complexity of patients’ cases was ideally suited to an interprofessional approach.

Many Crossroads residents faced myriad challenges beyond substance abuse that posed barriers to recovery. In other words, a clinician explained, “If their mental health or the medical health isn’t taken care of or stable, it’s really, really, hard to focus on substance abuse.” The Nexus team’s interprofessional approach was a strong match for these needs. For example, the inclusion of physical therapy on the care management team helped address the physical pain that patients with opioid addiction often suffer. As an academic partner put it, “Particularly with residents dealing with opioid abuse, the physical therapy students quickly became focal points and leaders for those teams because so many of the residents needed help with their pain management.” A

“We’re able to bring this vast resource into our organization in a cost-effective way.”

Crossroads staff member noted the success of the approach, remarking, “When you get all of that cooperation between so many people, it was amazing to see how much better quality and accessibility these individuals had to the care that they needed.” With the interprofessional support, she continued, patients were able to put other issues “to rest so that they could concentrate on... their recovery. It was just amazing to watch that teamwork.”

Moreover, the academic-community partnership made such care possible at low cost. A Crossroads employee suggested that “to bring in all these professionals—social worker, family practitioner, psych practitioner, physical therapist, occupational therapist—would skyrocket the cost of our beds... So this model was really successful from all points of view: from the staff point of view, from the quality point of view, and from the community point of view.” Another concurred, “We’re able to bring this vast resource into our organization in a cost-effective way.”

Firsthand experience with a vulnerable population gave students a new perspective.

Students in classroom situations and even in practicum settings often have no exposure to vulnerable populations such as people experiencing homelessness or substance abuse, and thus develop little understanding of what it would mean to work with such patients or clients. But as a community partner emphasized, training a workforce with this experience helps to address a severe need across the country. “In the area of substance abuse, we’re almost like a teaching hospital,” he said. “I’m very excited about the fact that we’re able to have so many students who are going to be medical professionals get trained in working with people with substance abuse problems. It’s very probable they would never have gotten [this training] just through schooling. We’re helping train a whole new generation of health professionals on a problem that is obviously, very horrifyingly, a large problem in our nation.”

Indeed, engagement with Crossroads residents influenced students. An academic partner recounted, “I had one student say, ‘I was terrified to come here. I never wanted to work with this population and now I can’t imagine myself doing anything else.’” She went on, “Having a new batch of students, our future leaders, say, ‘This is the population I want to work with’—That’s huge.”

Integrating a design and arts perspective into clinical practice required persistence and open minds.

This Nexus team included faculty from the Herberger Institute for Design and the Arts in order to help shape its preceptor curriculum and mindfulness training. One academic partner shared the rationale behind this decision, noting, “They’ve got some great ideas about curriculum design and leadership and contemplative practice.” Yet this aspect of the collaboration proved somewhat difficult to carry out due to differences in expertise and point of view. A faculty member pointed out that an arts and design focus on the creative process is distinct from an outcomes-oriented clinical perspective, noting, “What we’re creating here... is a process, not necessarily a product.”

Finding common understanding took time and effort of all involved. A team member described how clinical and arts faculty worked toward mutual

“I had one student say, ‘I was terrified to come here. I never wanted to work with this population and now I can’t imagine myself doing anything else.’”

On the Leading Edge

Creating effective interprofessional student teams prepares those students for a career of collaborative and integrated work. Yet many find that clinical practice in general has not caught up to their innovative Nexus experience. One academic partner lamented that students feel “a sense of sadness [when they] go out into the real world and realize what a bubble the SHOW model really is.” It will be up to these students and others like them across the country to help push interprofessional clinical practice into the mainstream.

understanding, reporting, “We struggled mightily to translate the issues and needs of our initiative and this complex problem in health care.” He continued, “It took just over a year until we had this ‘aha moment’ where it was like, ‘Oh, this is where our nexus is. This is where we can really help each other.’” A precipitating event was an on-site meeting at Crossroads with faculty, students, administrators, and staff coming together to discuss the practice experience. It brought into focus how the curriculum and mindfulness training would be applied in practice. After this breakthrough, the team was better equipped to develop the preceptor guide.

Emerging Results

Arizona’s Nexus team has seen positive early results emerge for patients and students. An academic partner summed up patient outcomes: “Length of stay improved because people weren’t leaving for medical issues when it wasn’t an emergency. It improved patient satisfaction. Incident reports for any kind of medical issue, including transfers to higher level of care, went to zero in the two facilities that we were in.” Over the long term, the team hopes to measure reduced readmissions to treatment.

As described above, student outcomes included developing familiarity with and appreciation for the vulnerable adult population at Crossroads. They gained understanding of the challenges that substance abuse patients faced at the intersection of addiction and health care. In addition, faculty reported that students came to value the interprofessional approach and the expertise of other disciplines. As one partner characterized it, “The minute that students get exposed to what some of the other roles can bring to the table in terms of patient care they very quickly begin to rely on that other voice... [Students are] valuing what other people bring to the table and recognizing that that really improves the care that we deliver.” For example, another partner added, “A lot of the things that occupational therapy was doing related closely to social work’s scope. So it really, in a very meaningful way, helped students get a much broader perspective of scope of practice, the various professions and disciplines, and... what can happen when people work at the top of their scope of practice.” Overall, noted a third, “We are starting to see this mindset change about what we can do as professionals, as medical practitioners, within our community outside of that business-as-usual model.”

Faculty, too, realized a benefit in terms of their own training to facilitate student learning and collaboration, as well as in terms of key student preparation to enter the workforce. Among faculty, as one team member commented, the Nexus program was “creating a community that is... aware of ensemble thinking and discovery, and how teamwork is a practice.” Another spoke of “a huge disconnect between how we prepare our students and real-world health practice. So for academia, this is a huge opportunity to make sure that when we graduate students, they can walk into a healthcare organization and immediately be a benefit to them.”

“This is a huge opportunity to make sure that when we graduate students, they can walk into a healthcare organization and immediately be a benefit to them.”

Exhibit 5. Arizona's Nexus program: Emerging results

Beneficiary	Early Results
Patients	<ul style="list-style-type: none">• Improved treatment retention• Decreased incident reports• Improved satisfaction
Students	<ul style="list-style-type: none">• Improved interprofessional competencies• Appreciation of interprofessional team• Understanding of and interest in vulnerable patient populations

Sustainability

The future of collaboration between Crossroads and its academic partners is bright, yet for long-term sustainability, institutional support at the universities will need to evolve.

A new on-site clinic in development demonstrates ongoing investment in the partnership.

The strong academic-community partnership built through Arizona's Nexus program, and its early success in meeting Crossroads' needs, have created momentum for expansion and continued innovation. As one partner put it, "One thing I can say about Crossroads [is that] they want more... They're eager for more student participation for continued involvement."

As a result, outside of the current Nexus grant, Crossroads and the SHOW team are forging new solutions to sustain and grow the benefits they have seen through their partnership. Specifically, Crossroads is constructing an on-site primary care clinic that will be operated through the SHOW model to provide cost-effective interprofessional services to the community, and in particular to populations struggling with substance abuse. The Nexus team is developing a plan to bill for services to fund operations, and is assembling an operations team. "We've engaged many of our academic partners, so it will be starting small [and] scaling up," reported one.

Strong individual commitment by academic partners will need more institutional support over the longer term.

For some of the academic partners on Arizona's Nexus team, receiving stronger institutional support would help sustain their involvement in interprofessional community partnerships. "The individual faculty members involved in the program are very much dedicated," remarked a partner, but one faculty member wondered, "Am I going to have to keep doing it on my own time or can we build it into my workload?" The Nexus program demands faculty time for teaching, planning, and guidance roles. One team member described it as an "education-practice partnership because we have our learners both in the classroom, and then our learners in practice, with the same faculty preceptors seeing patients." Faculty and students also need flexibility to be able to engage interprofessionally around multiple university and individual calendars as well as schedules at the community facility. A partner summed up the situation, saying that "A lot of committed, dedicated,

tireless faculty and professionals [are] involved. But we don't always have the level of support behind us at an institutional level to fully realize our potential.”

Team members agreed that academic leadership has been verbally enthusiastic about faculty and student engagement in the Nexus program, but their support has often fallen short of designating paid faculty time and other resources to interprofessional work. Some faculty thus called for curricular changes that embed interprofessional and community-based learning, and options for faculty to dedicate paid time to fieldwork while lightening other responsibilities on campus. They also expressed optimism due to a sense that new academic deans in some disciplines are seen as highly committed to interprofessional education.

What Arizona Teaches Us

Insights from Arizona’s Nexus team Takeaways can inform academic-community partnerships more broadly.

Investing in a strong relationship with a community partner pays dividends over time.

The academic partners, led by Arizona State University College of Nursing and Health Innovation, developed a close partnership with Crossroads, discovering shared interests and ongoing opportunities to meet each other’s needs. A partner on the academic side declared, “It was the right relationship for the right time in the right place. [In Crossroads,] you had an organization that was seeking out help and was hungry for change... They have been incredible in letting us come into their facilities and use [them] as a learning laboratory. And they have seen the benefit,... so it's a synergistic partnership that I have been thrilled to watch grow.” A community partner, likewise, expressed appreciation for “the ability to use students and related faculty members to help us achieve things it never would have been possible for us to achieve. And that means new programming, new skills... not just bare bones physical health treatment.” As the relationship matured, the academic-community partnership grew to create new plans for the successful SHOW model to expand and integrate with Crossroads through a dedicated on-site clinic to meet residents’ medical and related needs.

Addressing a critical community need brings potential long-term benefits.

Underlying the Arizona Nexus program was the idea that students are a future workforce that must be ready to take on social challenges. Student participants observed firsthand the effects of opioid addiction and other substance abuse—a widespread public health concern. They also learned what difference they could make as part of an interprofessional practice team. For faculty, preparing students to thrive amid real-world complexities was central. As one put it, “We encourage our students to flex their leadership muscles. We try to give them opportunity to learn some models of managing ethical dilemmas; not shying away from challenges in practice, but being prepared to hit them quickly and think on their feet.”

The experience opened vocational possibilities beyond private practice, and broke down barriers to working with populations—and colleagues in other disciplines—that may have been outside of students’ comfort zones prior to

“We don’t want interprofessional education to end at the classroom door. We want to make sure that we’re advancing it in the community.”

participating in the initiative. A community-based experience, in short, added important value to interprofessional learning. As one Nexus partner commented, "We don't want interprofessional education to end at the classroom door. We want to make sure that we're advancing it in the community. This program is an exemplar for our university in terms of best practice for interprofessional education [in] that it's community embedded, community engaged, community focused."

Understanding the context of a practice setting is critical for interprofessional curriculum development.

The Arizona Nexus program took an innovative step by incorporating arts and design expertise in its curricular development. Team members discovered along the way, however, that making use of arts-based insights about process and mindfulness was difficult without a common understanding of the clinical context in which the lessons would be applied. With a diverse range of disciplines on the team, a shared understanding took time to develop and required deliberate opportunities for open conversation. As one faculty member quipped, "You can't be an expert with just one lesson." He added, "Before you have curricular development, you have to engage faculty in the processes so they start to understand what we're talking about." The team learned that grounding curriculum development in practical context was essential in creating tools for interprofessional education and practice.

Leveraging a strong academic-community partnership, Arizona's Nexus program has successfully developed a way to meet important dual needs. Through the initiative, Crossroads residents receive on-site attention to medical, care management, and social needs that enable them to attend to substance abuse recovery. At the same time, students practice interprofessional competencies and learn the value they can bring to a vulnerable population and a critical public health issue. With promising future steps in place to expand the partnership, this program has the potential to continue its positive influence on substance abuse recovery in Phoenix and on a workforce that will undoubtedly face challenges best addressed with cross-disciplinary collaboration.

The following represents updated preliminary outcomes from the Arizona State University *Interprofessional by Design: Meeting at the Crossroads* Nexus Partnership program as of June 2019. Further statistical analysis is in process.

Meaningful changes in practice result in systems changes and increased access to care.

- 2018: The campus-community partnership, led by the Crossroads Medical Director and SHOW's Program Director, Liz Harrell, worked together to plan a new integrated primary care clinic. The partnership planned clinic space, supplies, scope of services, policy and procedures, workflows and personnel hiring.
- January 22, 2019: after receiving its integrated state license direct care services moved into a new clinic space.
- The campus-community partnership developed a service delivery model that incorporates both billable and free service provisions. Services provided include Family, Women's Health, Adult and Psych Mental Health, Physical Therapy, Social Work, and Speech and Language.
- The Women's Health Nurse Practitioner was added as a new member to the team in direct response to health needs of women who use substances.
- April 2019: Credentialing with Arizona's Medicaid insurance plans finalized.
- May 2019: The practice continues to build its patient panel. In May alone, the practice saw 267 residents who received a level of care not previously experienced.

Students and Faculty are adding value to the clinical site resulting in systems changes.

- New Infectious Disease Screening and Treatment Protocol developed as a result of a DNP student applied program.
- DNP student's program on Hepatitis C resulted in Crossroads, Inc. adding a laboratory in the new corporate office building plans to meet the need to identify infectious disease providing a unique opportunity to treat individuals at the time of residential service admission, as opposed to waiting until they became a clinic client.
- All clinic providers are SHOW preceptors and are knowledgeable in Interprofessional practice and active in incorporating students into their practice.

Plans for further expansion

- Crossroads continues to expand and has plans to purchase another building in Arizona close to a University with room for another primary integrated care clinic.
- Crossroads plans to expand both residential and integrated primary services with the intent to engage academia in a nexus partnership at its new location.
- Additional grant funding has been secured to fund strategic planning which includes expanding IPE opportunities to all Edson College of Nursing and Health Innovation students.

Authorship:

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Arizona State University, Tempe, Arizona

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Matching High-Utilization Patients with Personal Care Teams: Creighton University's Interprofessional Nexus

A Case Study for the Accelerating
Interprofessional Community-
based Education and Practice
Program

November 2018

About This Nexus Program

Catholic Health Initiatives (CHI) Health, the College of Nursing, and the Center for Interprofessional Practice, Education, and Research (CIPER) at Creighton University in Omaha, Nebraska collaborated to apply the Nexus approach to bring quality care to a socio-economically disadvantaged community. In January 2017, following the closing of the university hospital, a new ambulatory care clinic (ACC) was established on campus to serve primarily refugee and racial minority populations from Southeast Asia, Northern and Eastern African countries. These patients are characterized by high instances of diabetes, asthma, COPD, and heart disease. The interprofessional team at CHI Health's new clinic, University Campus is a collaboration of multiple disciplines including behavioral health, community workers, medicine, nursing, occupational therapy, pharmacy, physical therapy, and social work that works to improve health and connect patients to non-medical social services that were previously outside the scope of clinical work.

The Accelerating Initiative at Creighton University is a partnership among Creighton's College of Nursing, Department of Family Medicine, and Center for Interprofessional Practice, Education and Research (CIPER), as well as Catholic Health Initiatives and the Community Link Program (Exhibit 1). The primary goals shared by Creighton and CHI are to:

4. Create interprofessional training to break down silos and help students understand the different possible scopes and roles of their future professions, and
5. Surround high-utilization patients with their own team of experts who can develop a common language to describe their problems and tackle upstream social determinants of health.

"Our model was about ... using effective communication skills to better promote intentional team-based care. That was a huge driver."

Exhibit 1. Partners in the Creighton University Nexus Program

	Partner	Role
Academic	Creighton University College of Nursing	<ul style="list-style-type: none"> Faculty provide clinical expertise and education around collaborative care. Students engage in interprofessional learning and practice, including providing care to patients at ACC. Grant secured hiring of new nurse practitioner for the ACC.
	Creighton University Department of Family Medicine	<ul style="list-style-type: none"> Serves as collaborative care anchor: family medicine residency training program housed within ACC. Students engage in interprofessional learning and practice.
	Center for Interprofessional Practice, Education and Research (CIPER)	<ul style="list-style-type: none"> Operates the "Passport Program" and the IPE 400 course, through which the ACC constitutes a primary collaborative care site. Provides IPE tools and resources as well Interprofessional Collaborative Practice courses for clinicians, faculty and students of the Creighton community.
Community	Catholic Health Initiatives (CHI)	<ul style="list-style-type: none"> Provides facility to house campus ambulatory care clinic. Matched funds from the University to have equal buy-in to the model. Oversees implementation of the IPE and collaborative care programs. Team Members including: behavioral health, community workers, interpreters, medicine, medical assistants, nursing, occupational therapy, pharmacy, physical therapy, social work.

Prior to the Accelerating Initiative grant, Creighton already had in place strong requirements for interprofessional practice and education through the model of “Passport Sites,” which are attached to an interprofessional course (IPE 400) with a clinical practice component. The Accelerating Initiative grant promoted the hiring of a nurse practitioner and building collaborations in the ambulatory clinic which, unlike other passport sites, was designed specifically for collaborative care. Launching a clinical culture around interprofessional practice began with Conflict Resolution Training Programs which helped faculty and clinicians build rapport and break out of rigid care roles. This open approach continues through morning huddles where the highest utilization patients are identified and matched with an appropriate care team to meet their needs. One nexus team member described the empowering nature of the approach: “How can we help patients make decisions in their lives by surrounding them with their own personal team of experts to say, ‘This is likely going to lead to a better positive outcome for you long-term.’”

While Creighton University has rich history of interprofessional education, the ACC represents the first opportunity for a new innovative design of collaborative care to be integrated into a clinical setting from its inception. This focus created an open, learning-based culture and, combined with strong institutional supports like the University Strategic plan, led to a sustainable interprofessional practice and education initiative.

Implementation Experiences

The Creighton and the CHI Health-University Campus initiative yields insights relevant to Nexus programs broadly.

Creating an open, learning culture was essential for increasing employee satisfaction.

The Creighton-CHI Health collaboration took two early steps to send a clear message that collaboration would be central to the ACC mission. First, early conflict resolution training created standards for open communication and jump-started the interprofessional teamwork that would come to define the Creighton-CHI collaboration. One member of the clinical team noted, “the conflict resolution was absolutely critical for us to start with ... to help deal with conflict resolution and establishing the culture that's really been a cornerstone for the development of our programs.” Second, the program was a catalyst for the hiring of a nurse practitioner by asking CHI to affirm in a written letter that this would be part of the ambulatory clinic plan. After securing matching funds from the clinic and university, this written promise institutionalized the role. As one nexus team member explained, “That health system didn't typically have nurse practitioner in those roles.” Expanding cultural notions of who can lead care teams began with creating an opportunity for new voices around the table.

Once the initiative was underway, several nexus team members noted the early emergence of “champions” who shepherded the interprofessional work and did a disproportionate share of the work of smoothing out logistical hurdles in the establishment of the campus site. These champions recognized the value of diverse knowledge and became role models in displaying an openness to new ideas. Additionally, the morning huddles in the clinic have created a more open atmosphere in which members of the medical staff feel comfortable bringing up problems and working through them

“You need to find people that are going to embrace the model and from the very beginning. You need to have champions. They are going to be role models for everybody else going forward with you.”

interprofessionally. "Policy change in the clinic around mandatory morning huddles, increased participation. This creates more openness in bringing up problems interprofessionally and working them out." The campus clinic initially ranked among the bottom in terms of employee satisfaction and engagement. However, the open culture of collaboration created additional support for attendings dealing with high-utilization patients. "The employees are really happy there and I just think students see that happiness and they'd love to be engaged and are reporting just such a positive experience there."

Shared values and an emphasis on addressing community needs strengthen the Creighton-CHI partnership.

Several academic partners mentioned that crafting medical practice around meeting the needs of the most disadvantaged was wholly consistent with the goals of a Jesuit institution. As a Catholic organizations, CHI and Creighton share this values-based orientation and felt a strong affinity. The nexus team expressed that Creighton and CHI shared a common mission and approach, and respondents described the close relationship as a "We - not us versus them."

Partners on both the academic and clinical side expressed that community needs should shape the type of nexus that is formed. It's not about bringing everyone together, but about bringing the right combination of players together for the particular goals and aims of the clinic. One partner stated, "I think a nexus is really about fluidity of team and about fluidity of experience and so people move in and out of leadership roles, in and out of teams as their experience and expertise dictates so that, for one person they might not need a diabetes educator, but for the next person they might need diabetes and physical and occupational therapy to really help elate their concerns and to figure out how we get them healthy."

Support from leadership played a crucial role but manifested differently on the clinical and academic sides of the initiative.

There is strong support for interprofessional education from both clinical and university leaders. On the academic side, support for interprofessional education is one of the eight pillars defining Creighton's strategic plan. The provost also mandated that deans collaborate towards this goal and it is discussed monthly at the dean council meeting. Academic partners were very explicit about the importance of support from leadership: "It has to be a university wide mandate – it can't be opt in. The leadership at a given campus at the top has to say, 'this is where we are going to break down silos and cultural differences that need to be broken down. You need to look for opportunity where education can be translated into collaborative care.'" These institutional supports leave no room for detraction and provide strong justification for the university campus work.

For the clinic, leadership was perhaps even more important due to concerns about the transitioning from the existing model of care. As one respondent explained:

"I would say the leadership presence has been important on both sides, but more so on the clinic side. Just because we were faced with some different things in the sense that we're doing this collaborative care model that nobody really knows the cost of and we're doing it in a

"I think it went from 'all these people are always here' to understanding that a true nexus is going to focus on the right skill, the right experience, and the right professional at the right time for that patient. "

clinic that's still a Retail Value Based clinics. People are paid based on the number of patients you see. There's some concern about whether collaborative care allows you to see the same number of patients and can it be successful in that type of model."

In addition to clinical leadership emphasizing the compatibility of patient care and revenue, differences between the professions determine comfort with collaboration.

Despite nuances in approach, once the national center grant was secured, leadership at both CHI and Creighton provided matching funds which ensured all players were committed to the model. "Getting that commitment financially from both sides made it seem like both sides were committed. They shared burden and glory."

Nexus partners have reframed initial challenges as opportunities that provide a clear roadmap for next steps.

Given the innovative healthcare work present at CHI Health's ACC, it's natural that some challenges and areas for growth remain. However, the large degree of consensus present among the nexus team about what these sticking points were evince shared recognition and a willingness to move forward. The main challenge most interview respondents reported related to the tracking and measurement of student activities. Clinicians and academics don't have a good sense of which students report to the ACC on a given day, which tasks they are assigned, and how they benefit from their rotation. Related to this challenge, one respondent suggested, "We need to have a better workflow around how students are identified that are rotated through our site to make sure that we're able to actually collect that data that we're looking for. It's really a process improvement, an operational improvement that needs to occur."

Also related to student participation, Nexus team members confirmed that student work at the campus site doesn't currently count towards their Passport requirements. Here again, the solution was readily available: "Right now we basically are accepting almost any student that wants to come over, but whether or not that's listed as a Passport activity is kind of the issue. It's about working with CIPER to fully flesh out what are the individual opportunities that are available to groups of students to come and be part of an inter-professional team?" The list of Creighton Passport activities needs to be expanded to include the work of the campus site.

Finally, another area for growth relates to ACC's status as a new facility which merged previous clinics and hospitals. One respondent explained:

"We have people that have different employers working within the same facility. Which schedule do we adhere to? Is it the university calendar? Is it the clinical calendar? How do we work through and reconcile this? Why does somebody have to work today and somebody doesn't have to work today just based on their employment? Those types of issues. These are worked out through open communication, negotiation, team meetings, and by putting the needs of the patient first."

"Aha!" Moments

Many residents expressed "aha!" moments in understanding how attending to high-needs patients is best done through teamwork:

"We have residents that are saying, 'I can't be an island unto myself. There are too many people who know more about all these various topics for me not to use them,' and so there's really been a shift to: 'I need to take advantage of the resources that I have available to me, so I'm going to pull in whoever I need to help me solve these issues.'"

"It's just navigating the waters of these different ways we've all been educated and deciding what we change and what we can't change. How we make it work when if we can't structurally change it?"

In each of these instances, when describing very real road blocks facing interprofessional education and practice, respondents were quick to point out opportunities and workarounds to address challenges. These solutions indicate the collaborative initiative between Creighton and CHI Health has entered the phase of self-reflection and growth.

Emerging Results

In the first year of Ambulatory Care Clinic (ACC) operations, Creighton and the CHI Health-University Campus initiative has showcased promising patient outcomes which faculty and clinicians are hopeful they can maintain. As mentioned in the previous section, steps are underway to better track and quantify student learning outcomes. In the meantime, many powerful testimonials have been relayed which demonstrate the types of student gains nexus partners are aiming to more systematically collect and analyze. The following table presents the quantitative patient outcomes from the first year in addition to a summary of key student learning testimonials (Exhibit 2).

Exhibit 6. Creighton University Nexus program: Emerging results

Type of Result	Preliminary Change	Description
Student Gains	<ul style="list-style-type: none"> Exposure to interprofessional collaboration 	<ul style="list-style-type: none"> Despite a lack of quantitative evidence tracking student participation and results in the campus clinic, there is ample testimonial evidence of positive experiences relating to collaborative treatment, perspective-taking, and expanded comfort/confidence. "They have all reacted positively to being on interprofessional teams and being able to interact with pharmacy, behavioral health, etc. to create better coordinated care for clients."
	<ul style="list-style-type: none"> Reductions in key health indicators 	<ul style="list-style-type: none"> In 2016, the patients with the highest ED visits, LACE scores, hemoglobin, and A1C counts were identified resulting in a population of 276 patients. Over a 12 month period, with the collaborative practice model, they found statistically significant reductions in every category. The question now is whether these results can be maintained as evidence of the role of collaborative work in reaching these benchmarks.
Patient Outcomes	<ul style="list-style-type: none"> Evidence of adaptive care 	<ul style="list-style-type: none"> After the daily huddle, there is a smaller team meeting where the occupational therapist, physical therapist, pharmacist etc. determine if a particular intervention is needed that day. "We have residents and physicians that are requesting to come to the collaborative care team meeting because they're like, 'My patient needs a team.' We also have patients that actually benefited from the team but have a different primary care but are coming back for the rest of the team."

Sustainability

The future of the Creighton and the CHI Health-University Campus Nexus program has multiple components to consider: continued institutional backing, evidence of success for patients and students, and substantial cost considerations. In general, most nexus team members were confident the program would be sustainable, but they indicated these were three areas to watch in determining whether the model could be expanded.

Strong institutional backing is paramount for continued success of the initiative.

Many positive signs have emerged related to institutional backing including the University's Strategic Plan including collaborative care. Of the eight initiatives currently emphasized as future priorities, interprofessional collaborative care was touted as "the highest priority in the philanthropy drive for the University." This is a major victory, since sustained funding is often the singular largest challenge faces nexus sites.

Additionally, the Conflict Resolution Training which paved the way for the open learning at ACC will be developed into a webinar for re-use for future faculty and clinicians. The consultants will create an online abbreviated version of key concepts to be recorded online. One nexus team member noted, "As far as ongoing training, we don't have anything planned, yet but the clinic has committed to training every 6-9 months. The staff feel engaged because they think they're getting resources to advance skills." The Conflict Resolution Training can also be made available for distribution in order to expand the Creighton model.

Another positive institutional development is the proliferation of accreditation standards relating to interprofessional practice and education. While these standards are diverse and present challenges in determining what form interprofessional education can take, its existence is now practically mandated. One of the academic leaders was optimistic in their appraisal stating, "I think we're going to continue to see accreditation requirements that demonstrate that we have the ability to educate our health professional students around collaborative practice. I think we will start to see increasing synergies around these requirements amongst the health professions where the deans are going to continue to support this to go forward."

The Creighton and CHI Health nexus site will continue with evidence-based practice to make "the numbers case."

While the first year of patient outcomes is incredibly promising, sustainability rests on making what was described as "the numbers case." Donors react to evidence, so early improvements in patient outcomes must be maintained. One of the program leaders highlighted the importance of data:

"I think collaborative care is preached to and happens causally in inpatient. But how can we be more intentional about that. We need metrics to measure that this is happening. We get there by Trying to make numbers case. I think people are worried about numbers. It's been one year. Is that sustainable. Follow for 2018 to at least see sustained change. I don't want to [patient utilizations] take the other dive up."

Additionally, evidence goes beyond counting hard numbers to analyzing the ACC experience. One team member is planning to publish research related to best practices that have emerged from the site, stating, "I believe that there's no substitute for qualitative understanding to new initiatives like this to uncover important things that could lead to grounded theory development and other things. What are the elements of best practice? The argument is that we need to fully understand some of these things I've been talking about. How that can fit into faculty development across the spectrum?"

"Can we take parts and pieces and trainings to model how we deliver care in different clinics that are family practice based? How can we replicate for inpatients or hospitals?"

"We are still doing the metrics work. We're still going to do training with our clinicians. We're now disseminating the nurse practitioner in there. We have things we could do better, and we'll continue to work on those things."

Cost considerations of a value-based medical model remain the largest unknown.

Despite promising philanthropic initiatives through the Creighton University Strategic plan related to interprofessional practice and education, funding will always be a consideration. Individual members of the nexus team stressed that, “while several grant applications are in the works, nothing has stuck.”

Beyond the University drive and individual grant applications, however, a larger question remains around how improved patient care relates to a revenue-based medical model. One clinician framed the tension in the following manner:

“If we’re going to be in a work RVU model ... I don’t know if this is going to be sustainable frankly because we are creating disincentives. We’re reducing hospitalizations and we’re reducing ER visits. That’s not what the bigger system wants with their work RVU model. So some reckoning is going to have to happen with that.”

If the clinic were to go to a value-based care model or reimbursement model, then current positive outcomes would create fewer incentive conflicts. Respondents were closely monitoring local and national debates about healthcare spending to gauge how collaborative care and the path-paving work at Creighton University fits into the larger conversation.

What Creighton Teaches Us

Takeaways and partners’ advice from the Creighton and the CHI Health-University Campus initiative are instructive for other interprofessional efforts.

Focus on community needs to bolster partnerships and reduce operating frictions.

Rather than applying a singular formula for how a nexus operates, Creighton and CHI assemble the right team for the particular high-utilization patient. For instance, one clinical partner expressed, “I think that many of us on the ground level, on the ground floor here seeing patients, we didn’t say, ‘Well look we’re seeing Mrs. Smith and we have to implement the nexus.’ That’s not the way this works. We saw Mrs. Smith and we said, ‘What could we do best for Mrs. Smith?’ And we did what we thought was best to do and she’s doing better.”

Collaboration is made smoother through this focus on community and patient needs, since a values-based mission eclipses the particularities of any medical/academic program.

Demonstrate how collaborative care yields insights beyond those of a traditional health education.

Some team members pointed to difficulties with conflicting training programs, employment structures, and schedules across medical disciplines, but the benefits were assessed as outweighing the costs.

One clinician stated: “If we’re in pre-visit planning, which means you have an individual with the medical resident and you can optimize, ‘Hey, there’s an

opportunity to collaborate.’ These light bulbs go off on how we can both help the patient that they may not have known before from their training.”

The Creighton and CHI Health Collaborative initiative provides ample evidence to suggest that an adaptive approach which pulls from a diverse professional skillsets creates the space for innovation in patient care.

Intentionally create program structures aligned with Nexus Site goals.

From the early implementation of conflict resolution training to continued coordinated care huddles, the nexus site created systemic opportunities for open dialogue and learning. This is evident across levels of the program, from on-the-ground patient treatment, to the University Council of Deans. As one team member noted: “There are always cultural challenges – this is the new wave of education. But ... Deans have to collaborate on this. We have a Dean’s Council that meets monthly. We discuss this and the importance of it. They all understand.”

One of the primary reasons the Creighton and CHI Health-University Campus Nexus Team is confident their program will be sustainable was the creation of opportunities for the free exchange of information. Interprofessional practice and education is part of the university strategic plan and the provost has mandated that deans support these initiatives. Additionally, the Accelerating Initiative grant created the opportunity for a nurse practitioner to be hired at the clinic. It also led to matching funds from both the university and the clinic, meaning that both sides had a stake in successful outcomes.

“The mission is for the patient and to build a team approach. It all starts with relational building and the face-to-face communication that we have.”

The following represents updated preliminary outcomes from the Creighton University *Cultivating Collaboration: Building a Successful Collaborative Care Model in an Academic Health Partnership Nexus* Program as of June 2019. Further statistical analysis is in process.

Health System Outcomes

- The collaborative care model is fully embedded into the clinic with champions leading the integration while outcomes are being tracked for high-risk patients. This is allowing the work and interventions to continue beyond Fall 2018.
- The collaborative care model has fostered improved employee satisfaction at the clinic. The CHI-Creighton clinic moved to first in staff engagement when previously, the clinic was in the bottom 2/3 in staff engagement.
- According to recent CHI system patient surveys, the clinic rates in the top five CHI clinics for patient satisfaction and "likelihood of recommending clinic to others."

Health Outcomes

- First cohort of high-risk patients continues to have sustained rates of decreased ED visits, hospitalizations, and HgbA1c levels.
- New cohort of high-risk patients is being tracked to evaluate for replication of outcomes.

Education System Outcomes

- Creighton University is fully embracing interprofessional education by threading IPE Core Competencies through all of the health sciences curricula and requiring all health science disciplines to take an online IPE foundations course and follow-up with application activities. All students complete three required application activities within a passport system. The collaborative care clinic is one of the experiential learning activities offered to students as an authentic clinical IPE experience.
- The original method of onboarding of students prevented ability to engage all eight health professions programs in the interprofessional clinical learning environment. This barrier led to a critical analysis and the development of a new centralized health compliance process for the entire University that will phase in over the 2019-2020 academic year for all eight health profession programs.
- Student assessment was also reworked to assess students experience in the collaborative care clinic. This new program is entitled *Exploring the Perceived Impact on an Interprofessional Clinical Learning Environment*.
- The team is exploring options to expand the learning opportunities for other student disciplines including working to add social work students to the team.

Authorship:

Case studies were authored by Harder + Company Community Research Team. Each case study was reviewed by the National Center Accelerating Initiative team including an additional external evaluator based on document review and site visits. Each Nexus Team reviewed their case for accuracy of content and context.

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Creighton University, Omaha, Nebraska

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Providing Health Care in a School Setting: University of Hawaii's Nexus Team

A Case Study for the Accelerating
Interprofessional Community-
based Education and Practice
Program

February 2019

About This Nexus Program

The University of Hawaii at Mānoa (UHM) and the Sanford Dole Middle School applied the Nexus approach to reduce health-related student absenteeism while providing health professions students community-based, interprofessional, primary care practice experience. This collaboration, known as the Hawaii Interprofessional Education and Collaborative (HIPEC) Alliance, builds on the Keiki Healthy and Ready to Learn (Keiki) Program that provides school-based health clinics in schools across the state. The Keiki Program is a partnership that was established in 2014 between the UHM School of Nursing and Dental Hygiene and the Hawaii Department of Education (DOE - Hawaii's statewide public school system) to increase access to advanced practice nursing services to achieve student, school and system success by providing school-based health services.

Through the University of Hawaii, academic partners include the School of Nursing and Dental Hygiene, the Daniel K. Inouye College of pharmacy, and the John A. Burns School of Medicine. These institutions worked with their community partners at the Sanford Dole Middle School (see Exhibit 1). The goals of the HIPEC Alliance include:

1. Integration of IPEC Competencies and clinical experience with a highly disadvantaged urban population as essential components of the curricula for health professional graduate students;
2. Increasing community engagement with health care through middle school student involvement, greater parental oversight, and modeling health professions through participation in the Keiki Program's School Based Health Clinic IPECP; and
3. Improving the mental, oral, and nutritional health of children and decreasing chronic absenteeism by increasing the Keiki Program's SBHC services using an IPECP approach.

Exhibit 1. HIPEC Alliance Partners

	Partner	Role
Academic	University of Hawaii School of Nursing and Dental Hygiene	<ul style="list-style-type: none"> • Nursing faculty provide clinical expertise; co-develop IPE curriculum. • Doctoral students and fellows engage in interprofessional learning and practice, including providing care to students at Sanford Dole Middle School. • Dental hygiene post BS pediatric expanded function certificate and BS students joined the team in September 2018. • Graduate dietician students joined the team in December 2018.
	University of Hawaii Daniel K. Inouye College of Pharmacy	<ul style="list-style-type: none"> • Faculty provide clinical expertise; co-develop IPE curriculum. • Pharmacy students in their fourth and final year of rotation engage in interprofessional learning and practice, including providing care to students at Sanford Dole Middle School.
	University of Hawaii John A. Burns School of Medicine	<ul style="list-style-type: none"> • Faculty provide clinical expertise; co-develop IPE curriculum. • Child/adolescent psychiatric fellows engage in interprofessional learning and practice, including providing care to students at Sanford Dole Middle School.
Community	Sanford Dole Middle School	<ul style="list-style-type: none"> • DOE funds the on-site APRN to operate the school based clinic and function as the preceptor for the University of Hawaii students • School provides the school health assistant and physical facility (portable unit), equipment and supplies, utilities, and custodial services • Teachers and counselors are members of the team, participate in in team huddles, and communicate with the school APRN

The Hawaii Accelerating Initiative (HIPEC) implements an IPE practice model at a school-based health center at Sanford Dole Middle School to provide comprehensive services to students with complex health issues. The school is located in urban Honolulu and enrolls 800 students in grades 5 through 8. The student population includes a large percent of students from Native Hawaiian and Pacific Islander cultures including recent immigrants who come from medically underserved areas of the Pacific. Further, as a designated Title I school, all of the students are eligible for free breakfast and lunch, and 20% are English as a second language (ESL) students.

The majority of students live in housing programs and face extreme economic disadvantage which can negatively impact their health. The HIPEC program seeks to improve students' mental health, oral health, and nutrition to increase school attendance and learning. The Nexus team has clinic once per week except for the child-adolescent psychiatry fellows who attend the HIPEC clinic every other week. Both during and outside of the clinic sessions, the team works to develop strategies to improve access to care for the student at the school.

Students in the DNP Family Nurse Practitioner, Doctor of Clinical Pharmacy, post-BS pediatric certificate and undergraduate dental hygiene, and Child and Adolescent Psychiatry Fellows are fully integrated as part of the healthcare team with the school-based APRN. The HIPEC students evaluate the Dole student/patient under the supervision of the school's nurse practitioner. The HIPEC team huddles prior to beginning the clinical day and debrief after the clinic day has ended. The end result is recommendations that are made by the HIPEC team to the school nurse practitioner that can be incorporated into

“Having this opportunity, with an interdisciplinary team, allows us to meet the kids' needs. And it's not just academic, because their primary needs have to be fulfilled before they're able to focus on academics.”

students' individual health plans, and are shared with the school faculty, students' families and students' health care providers. The HIPEC team uses a liaison model for facilitating access to resources recommended by the team members by working with the school staff, existing DOE programs, and community health services.

In addition to improving patient health outcomes, the Hawaii Nexus team is ensuring the education of the current and future health workforce by enhancing education of clinical preceptors in the IPEC Core Competencies. A preceptor orientation module was developed and tested in Fall 2018 that includes content on IPE practice competencies so this can be reinforced. IPEC Core Competencies are being integrated into the APRN nursing graduate education and throughout all levels of health professionals' education at the University of Hawaii.

Implementation Experiences

The HIPEC Alliance initiative yields insights relevant to Nexus programs broadly.

The Hawaii Nexus Team capitalized on an existing successful initiative by proving the value of IPE in a high-needs environment.

While the partnership with the Sanford Dole Middle School and UHM evolved out of the Accelerating Initiative grant, it built upon an existing state model of healthcare provision called the Hawaii Keiki: Healthy and Ready to Learn Program (Keiki Program). This high priority DOE and UHM School of Nursing program was enhanced by the services provided at a school-based health center. The HIPEC team is demonstrating the benefits of the model to the State, the University health professions leadership, students and faculty, and to the Dole Middle School students, principal, and teachers.

In order to most effectively show how their work could benefit student patients, a middle school partner was specifically selected that had a high need for the intervention. As one UH academic partner described, "This community is fairly underserved and underprivileged community. So you have issues of kids sleeping on the floor, coming in with sores on their skin. Unless you ask the questions: how often is your family doing laundry? Where do you sleep? Are you on a bed? Are you on the floor? Are you sleeping outside? Unless you ask the questions, you can't figure out these issues." Similarly, a partner at the middle school spoke to how the IP team helped them problem solve issues of high-needs students:

"So for us, when we start to look at a child, it's almost like we're finding out the root cause [of issues] by having the opportunity to be able to have them introduced to their team of individuals. It helps us to really identify where we need to focus. Sometimes it's relative. What comes first, the chicken or the egg, right? Because healthcare does impact attendance."

Importantly, in addition to intervening in an educational space characterized by economic deprivation and high health needs, the Nexus Team also had to demonstrate a responsiveness to the *specific needs* that challenged their community partners. A nexus team member explained, "We respond to the

"This is the first pilot in the community that is really solid. This is community based. And it's been so successful for the team and the school leadership and the DOE. It was an acceleration, I got to tell you. We weren't expecting to do this until a year or two later."

needs of the population. Our team may not need the full group going to each complex [i.e., school]. We try to be sensitive to the needs of the students as we have been there and support the health team. The other people are a health assistant and medical assistant. They identify needs. We have evolved in terms of dental hygiene inclusion.”

In particular, the Dole Middle School students struggle with issues related to mental health, oral health, and nutrition. For example, with over 50% of students experiencing obesity or being overweight, nutrition was addressed through a program called “Rethink Your Drink” designed to encourage students to drink water instead of sodas and juice. Similarly, UH partners expressed gratitude that dental hygiene students could benefit from this pediatric expertise and NPs and dental hygiene students “are getting well versed on integrating nutrition education.” Finally, with respect to mental health, a Nexus Team member described how psychiatrists worked with the Dole Middle School students to address mental health issues as they arose by “teaching them about self-care” and linking behavioral health to future success.

In sum, the Hawaii Nexus Team coupled the Accelerating Initiative grant with an existing opportunity for community partnership through the Hawaii Keiki Program. They were then able to identify a high-needs community for an intervention and tailor their approach to clearly demonstrate the benefits for both middle school student patient health and the university students’ learning.

Strong, innovative leadership allowed the initiative to overcome challenges and remain oriented towards the future.

The University of Hawaii initiative benefited from leadership at all levels who demonstrated a commitment to IPE and a willingness to take risks to advance the program. This was especially true of the Dole Middle School principal - a key community partner. One university representative spoke plainly on her approach:

“This particular middle school though, this principal is very progressive. Not just in healthcare. I mean you look around the campus, you can see signs of building culture, of building camaraderie, of building responsibility that you may not necessarily see at another public school. She’s very attentive and she’s very invested.”

It seems that in addition to partnering with a school characterized by a high degree of economic and healthcare needs, the middle school is led by a committed administrator. Speaking about the beginning of the initiative, one partner said, “the first challenge was finding a site with a principal who was *adventurous* and wanted to try it... If you want to try something she says – ok what do you need from me?” The principal was crucial for troubleshooting initial challenges. For instance, she found existing funds to renovate a space to allow for the examination of student patients.

However, while an adventurous community partner paves the way for smoother interprofessional collaboration, nothing would be possible without academic buy-in. On this front, one team member stated, “Interprofessional collaboration goes all the way to the top. The deans work really well together to benefit community. The program is a product of their collaborative relationship.”

“The Principal is very committed to students and faculty in the community. She is a force to be reckoned with but doesn’t interfere with us. She is supportive of the NP and other students. I’ve never heard a critical thing. As a leader she is among the students - not sitting in [her] office.”

In particular, the school based health center resulted from one dean's existing relationship with the DOE. "She is the one who saw this and went to me to see how it could get done. She is very excited and looking at moving the model to other schools." Another dean was instrumental in securing funds for her department to pay for students' clinical work at the school:

"Without her support, I wouldn't be here. We got the grant and are talking about sustainability and she carved out a budget to allow me to continue to provide the services we're providing here. But a verbal and mental commitment that is manifesting here is very supportive. The horizon is so far away that I feel that I can solve some problems."

Academic community leaders can provide both social and financial support which aid problem solving and allow Nexus Team members to concentrate on expanding efforts without impending fear over an initiative's sustainability.

The Hawai'i team models successful collaboration by putting partnerships above the personal.

All members of the Hawai'i Hawaii Nexus team described their approach as open and enthusiastic. This positive stance allows them to be flexible and take problems in stride because they know they can rely on one another.

The defining feature of such a team is the ability to set aside ego to focus on partnership. To summarize the benefits of their approach, one team member described, "We work well as a team. We communicate very well. We are very good at assessing the needs of the patients we serve and are receptive to feedback with the goal of improving services and health outcomes." This skillful relationship building is possible due to the communal and creative focus of the team. For instance:

"No one on this team has a big ego. Especially with the attention we get. We laugh a lot and we model relaxation and humor for our students. That's the ambience and excitement we see: even down-times are creative. Students are working on a health video right now and are going to do these every few weeks. You don't think about that with a clinic, but that's the kind of innovation and energy the team has!"

Setting aside egos also means going beyond the insular focus on developing a single, siloed health profession. In fact, many team members pointed to breaking down professional barriers as a pathway to problem solving. "It was really cool for me personally, and for the students, to come in where there is no model or template available. You know what you're supposed to do in your discipline, but we could work together and create something when there was nothing." Additionally, as health professionals work outside of their traditional scopes, they gain knowledge and a vocabulary from the other fields:

"Each profession has their own areas of expertise, but what I think is very successful when you do work in teams is you start to gain some skill level in someone else's field. Not enough to do the job, but certainly to have an appreciation of the skill set and what that person can do, so when you do see a problem, you know how to refer it. Pharmacists may not have a lot of training in say, adolescent

"This is really very close to my heart because I was raised professionally like this and I work professionally like this. The opportunity to expand it as a dean is very important to me."

"We did it because we're competent and interprofessional as well. We could start a clinic on the moon!"

psychiatric issues. They may understand medications that are given in adolescence but they may not actually see it in life because they're just dealing with the medications."

Finally, the Hawaii Nexus Team credited the unique nature of the clients (middle school children) with their successful orientation to the HIPEC work. "They [health professions pharmacy students] can't get this elsewhere because other sites are hospital based. They're my kids! We want to make sure they have a viable clinical [option]. We partner with other professionals – educational colleagues, behavioral health, and teachers. They have access to kids and eyes on the ground and in the trenches. They do a wonderful job selling us to the kids." Working with children was a positive experience for the team members which increased their dedication. This dedication in turn benefited the school. One community partner noted how the APRN was widely appreciated and had become an important part of the school culture.

IPEC work in a novel setting (middle school) demonstrates additional community benefits beyond health, such as professional development.

As was described in the last section, the University of Hawaii partnering with Sanford Dole Middle school created unique benefits due to characteristics of the young patients. Child patients present a unique opportunity to turn around existing health disparities before they deepen over time. For instance, one team member described, "What I think is important is a lot of the data these days about how you affect wellness in an adult really has to start in the childhood years, in the formative years." The key intervention then becomes that youth are learning along with the university students:

"If you educate them and get them on the right track, then they're more successful as they advance through adolescence and early adult years and into adulthood. I think that's it been a hallmark example of where we might want to shift our resources and our attention."

In addition to the added health benefits of early intervention, the unique learning environment offered unforeseen non-health benefits. This sentiment was well-captured by the nurse practitioner who stated:

"The thing that is most important to me is when one of our middle schoolers walks in and says 'Where are your people at?' they have come to thoroughly enjoy all these healthcare role models – young students who are successful but look like them and sound like them. We concentrate a lot on what college students are gaining, but to me it's about what middle schoolers are gaining. Every interaction has been positive."

For this initiative, "student learning" captures two distinct sets of learners at different phases of their life courses. The university student role-modeled professional behavior and health expertise to middle school students not unlike their past selves. In fact, some who participated in this clinical rotation came from the community and wanted to give back to it. "I think it gives them confidence that, 'Hey, I came from this neighborhood and look where I'm at. I can do this!' And it really inspires them to be a compassionate healthcare professional."

Modeling career paths for the middle schoolers took many forms during

"If I show a student how to do blood pressure, the middle schooler is enthralled and wants to learn along with us. They miss [the UH students] when they're not here. 'Is college expensive?' is a big question. It's been wonderful."

“career days” where students were given an opportunity to practice alongside the health professional students. One day pharmacists brought in trays to let the students count pills. On another occasion the dental hygienist did an informational session on flossing: “They had innovative ways to teach how to floss. Using rope and pretending the students are teeth and flossing between them with the rope.” These innovative approaches capture the energy and the spirit of the Hawaii Nexus Team in addition to showing the promise of using interprofessional care to model health in novel environments.

Emerging Results

At a little over a year since HIPEC started participating at the school based health center, it is too soon to see impact on educational or health-related outcomes. Although complete outcomes will take time to compile, early results regarding UH and middle school student outcomes are encouraging (Exhibit 2).

Exhibit 7. HIPEC Alliance: Emerging results

Type of Result	Preliminary Change	Description
University of Hawaii student gains	<ul style="list-style-type: none"> Exposure to interprofessional concepts and exposure to adolescent population Experience with high-needs population and social determinants of health Breaking down professional silos to increase problem-solving 	<ul style="list-style-type: none"> The Nexus Team Works alongside school faculty and other students to problem-solve treatment plans. “Interprofessional education is now part of the school system. Students educate each other and faculty just making sure that do everyone is doing the right thing.” Testimonial evidence from the students conveys a strong understanding of how social and economic conditions shape health needs: “Some of the stories they tell me of, ‘wow, you’re not just talking about getting them three meals, they don’t have the money to do laundry. You’ve got a number of multi-generational families living in a small space. Issues of domestic violence, of food safety are very high. And so, it’s not a typical pediatric clinic that you’re working at. You’re dealing with a lot of psychosocial issues that then infringe upon health.” There is strong evidence of inter-disciplinary learning and an understanding of the added value of diverse approaches. “Many rotation sites become siloed for a bit, but this is truly collaborative with nursing, psychiatry, pharmacy, school staff, and dental hygiene!”
Middle school students	<ul style="list-style-type: none"> Decreased absenteeism Increased access to behavioral health services Exposure to careers in health care 	<p>Data from September to December 2017 versus January to April 2018, show an increased percentage of students returning to class, i.e., 84% vs. 91% respectively. A total of 116 students were seen between January 2018 and April 2018 with 105 (91%) of students returning to class and 11 (9%) sent home. “We have a kid who hadn’t been to school for two years! And [used our services] a month or two ago, and boom. Now he’s there.”</p> <ul style="list-style-type: none"> Compared to the academic year 2016-2017, in the short time since the implementation there is clear evidence of access to behavioral health and clinical pharmacy consultations during the academic year 2017-2018 as a result of the new practice model with 9 mental health consults and 40 pharmacy consults providing access to services previously unavailable. Career Days allow health professional students to showcase their skills and develop activities to engage middle schoolers in the work. Middle Schoolers learn about the health professions and aspire to follow in their footsteps. A new class called Service Learning will expand upon this model. “Hopefully, if this partnership will still be coming to the classroom, they can come in and talk to our kids about future careers, and the types of education that they need to be able to accomplish that.”

Sustainability

The future of the University of Hawaii's Nexus program demonstrates strong commitment from leadership at DOE and the health professions schools; plans for expanding services to additional schools; and the pursuit of alternative funding following the completion of the funded program. In general, most nexus team members were confident the program would be sustainable, but they indicated these were three areas to watch in determining whether the model could be expanded.

Strong commitment from leadership will support sustainability.

While much uncertainty remains around *how* the Hawaii Nexus program will be sustained and what new forms it might take, one of the essential ingredients for sustainability is present: a firm commitment from leadership on both the community and academic sides. As one Nexus team member noted, "There has been buy-in from the University deans of nursing and dental hygiene, pharmacy, medicine, and state Department of Education. I see this continuing. Not just visits, but shifting how people feel about themselves that they feel that they're cared for. Sustainability is a challenge, but there is commitment from the Department of Education." Importantly, this comment notes both strong leadership support for the initiative and shifting community perceptions, which indicate how valuable the intervention has become.

There is no stronger evidence of how much the community values this work than the voices of community leadership:

"If at any point in time that we did lose the money, or our funding, then we would try to find alternative funding. Because I believe that this has really helped our kids in our community to get the necessary healthcare that they need. Not just healthcare, dental, vision, all of that. I believe strongly in it. So strongly that if it came to that point, that we couldn't have it, then I would look for other grants that would help us to continue the program."

Similarly, culture and policy changes within the University of Hawaii are responding to the success of interprofessional education and collaboration. One member of the College of Pharmacy explained:

"There is a movement to create interprofessional curriculum among the healthcare colleges. So, the deans have gotten together and created ...a designated a work force, a task force that really is meant to create and implement didactic interprofessional training as well as clinical site experiential training."

In a related development, their College also named a director of interprofessional education in the same year the middle school program began. Although these advances are not attributable to the Accelerating Initiative grant work alone, they are part of a pattern of indicators that show the academic system is ready to continue supporting this kind of work.

Plans are underway to expand to new schools, include more health disciplines, and add more services.

Policy changes are also evident among community partners. The HIPEC program will be expanded to include a local high school this fall. The principal at the neighboring high school is funding an APRN out of his own budget to implement the program and the partnership. To quote one Nexus team member, "We have become the thing that everyone is jealous of! Principals visited and said, 'how can we get this at our school?' We're the feeder school for this high school where we might expand. There is an NP there. So, the kids will have same resources available at high school."

In addition to expanding to new schools, there are plans underway to expand the types of services provided within the middle school:

"I would see it expanded to include staff, but there's a lot of interest in school health centers available in after hours and having billable services. That's a dean level [issue] – it won't happen tomorrow, but I want it to be part of the growth of particular pilot. Include staff, counselors, and parents. [We'll] also need involvement of the Department of Health."

As the above quotation illustrates, achieving these innovations requires collaboration from multiple players across levels of state and university partnerships. Some of the other future plans the UH Nexus Team mentioned include: Expansion of the model to other school based health centers in Hawai'i, working with the medical school HOME Program to provide care to the homeless, expanding oral health services in school-based health centers to include the application of dental sealants (to prevent caries), and exploring telehealth/teledentistry to further expand services to more school-based health centers. These initiatives require coordination and funding from community partners and stakeholders, but are also recognized as being urgently needed due to a lack of providers in the State.

Additional resources will be an ongoing issue despite recent HIPEC grants and Keiki program support.

The Hawaii Nexus Team has secured and leveraged additional resources to support their work with the program and build upon it. A Department of Labor grant obtained by a faculty from the School of Nursing and Dental Hygiene enabled the team to participate in a developing a preceptor training program that is being used with SON faculty and will be rolled out broadly to all APRN primary care preceptors in the future. A five-year HRSA grant awarded to another SONDH faculty has enabled the team to bring in dental hygiene students and, in the future, pediatric dental residents to the team. Currently in the second year of the five-year grant, part of the grant enabled the team to purchase a mobile dental unit that is now being used onsite at Dole Middle School's health center. Importantly, the team feels trends in grant-making are in their favor:

"We certainly always seek any type of innovation and scholarship, really try to always include one or two other professions in any of our grant submissions now. And that's what extramural funders want to see. They want to see interprofessional collaboration. The individual funding of a sole researcher is getting very quickly outdated. So, some

of our faculty are very aware of that and willing to participate in team efforts.”

The team has worked with other University of Hawaii faculty and some professional organizations to obtain equipment and access to some medication delivery services to improve care for Dole Middle School patients. Moving forward, the knowledge and support of HIPEC Alliance Model by the University’s health professions leadership (i.e., SONDH Dean and Deans of other health professions colleges and departments) can help to increase funding by the state through partnerships with DOE and DOH as well as others. In addition, the Hawaii Action Coalition can continue to support the initiatives for IPE education and models of care by disseminating results of the HIPEC Alliance Model to nursing professionals and educators, which can possibly lead to funding from foundations and other stakeholders. The success of the HIPEC Alliance pilot has been critical to demonstrate the benefits of an interprofessional collaborative practice approach to providing services to extremely vulnerable children with complex health, social and economic challenges.

What the HIPEC Alliance Teaches Us

Takeaways and partners’ advice from the University of Hawaii initiative are instructive for other interprofessional efforts.

Bold leadership is an essential component of Nexus Team success.

One of the defining features of the HIPEC Alliance is the strong commitment from leadership among both academic and community partners. Beyond this initial buy-in to the program mission however, leaders on the Hawaii Nexus Team were willing to take risks for the sake of the program work. Their bold approach was appreciated by team members and strengthened the chance of program success. As one team member put it, “You know, it truly makes a difference - the person that is here and is running, working with all of the people. I really believe strongly in the collaboration.”

The impressive work of the Sanford Dole Middle School principal was highlighted earlier as a prime example of strong leadership, and this characterization is also true of the program NP. “It is the people that make the program. And [the NP] has done a fabulous job with collaboration and working with the school. Our teachers love her. Our kids love her. It’s just been a blessing for us to even have this opportunity.” It was the NP’s dedication and the ease with which she put herself fully on the line to serve the local community that built strong team relationships. This model of a bold, committed approach to leadership should inform future interprofessional work.

Open, collaborative teams create both learning opportunities and solutions to overcoming work challenges.

Although leaders play an important role in shaping morale, each team member contributes to defining Nexus culture. For the HIPEC Alliance, it was evident that not all team members undertook the work with substantial experience in interprofessional practice. For example, one team member explained:

“Much of the model we have is inpatient based, but there the concept of IPE wasn’t taught as a major goal. It’s consultative or delegation to other disciplines. I didn’t realize that so much. That we were lacking that exposure and training... it was eye opening for me. It broadened our professional perspectives to see opportunities for reaching kids and expanding services and getting out there to delivery services to a broader population. Working with the team has been a complete shift in how we get things done. We have partners to collaborate with and don’t have to run the show ourselves.”

This evolution in the understanding of interprofessional work as a more collaborative and less top-down process is common for newcomers to the approach. Importantly, beyond just providing a teachable moment on how team dynamics could be different, interprofessional collaboration with a truly open style helps in solving challenges that come up in the work. Another team member noted, “I think we evolved from working together and playing off each other to seeing new problems and moving together as a team to solve them. From the pharmacy perspective, access to medication is difficult to tackle, but we can find a means as a team to provide meds to students.”

Non-traditional healthcare settings could be a model for future healthcare innovation.

Perhaps one of the most unique features of the HIPEC Alliance site is related to their program placement rather than their personnel: undertaking healthcare work in an educational setting with young patients provides distinct benefits to both university and middle school students. For the university students, they gain experience with a population facing unique challenges to hone their healthcare delivery prowess. For the middle school students, they gain knowledge of potential career pathways in health care and see how “people like them” could lead successful, service-based lives.

When asked about the main goals this program had for students, collaborators often spoke of both of these groups in a single breath. One academic partner said, “The final thing I would like to see them [the university students] do is to be role models for these middle school children.” By role-modeling, healthcare workers learn to act professionally and pass on their interest in the field. The partner continued:

“On the side of the middle school kids, obviously they’re getting some great healthcare. But I think they see this model and I think for some of them, it might intrigue them to consider, ‘Well maybe I can do this. Maybe I’d like to be a nurse or a pharmacist or go into medicine. This is how I was treated and I liked it because it helped me.’”

Just as the Hawaii Nexus team observes the life changing potential of their work, the benefits of interprofessional collaboration in non-traditional settings can also serve as a model for other programs to pursue new avenues for bringing healthcare workers together to address high need populations.

Authorship:

Case studies were authored by Harder + Company Community Research Team. Each case study was reviewed by the National Center Accelerating Initiative team including an additional external evaluator based on document review and site visits. Each Nexus Team reviewed their case for accuracy of content and context.

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- All Accelerating Initiative Grantees
 - National Advisory Council
 - Leadership Biographies
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Barbara F. Brandt, PhD, FAAN, Director

National Center for Interprofessional Practice and Education

Renowned for her work in health professional education, and specifically, interprofessional practice and education and continuing health professions education, Dr. Barbara Brandt serves as the director of the National Center for Interprofessional Practice and Education (National Center), a public-private partnership charged by its founders to provide the leadership, evidence, and resources needed to guide the nation on the use of interprofessional education and collaborative practice as a way to enhance the experience of health care, improve population health and reduce the overall cost of care. The founders and funders of the National Center are the United States Department of Health and Human Services, Health Resources and Services Administration; the Josiah Macy Jr. Foundation, the Gordon and Betty Moore Foundation, the Robert Wood Johnson Foundation and the University of Minnesota.

Dr. Brandt has served as a tenured professor of pharmacy and an associate vice president at the University of Minnesota for over 15 years. She has also served as a principal investigator of over \$25M in grants and contracts while at Minnesota. Under her leadership, several interprofessional programs were initiated, including the Academic Health Center Office of Education, the Health Careers Center, the Interprofessional Education and Resource Center and the 1Health Interprofessional Education curriculum

In her leadership roles, Dr. Brandt has served as a consultant, advisor and speaker for a wide variety of organizations such as the Institute of Medicine – now the National Academy of Medicine, the National Quality Forum, the Academy of Healthcare Improvement, the Josiah Macy Jr. Foundation, the Association of Schools of Allied Health Professions, the American Nurses Association, the American Speech-Language-Hearing Association and the American Medical Association, among many higher education institutions, other professional and academic associations and groups. She was a founding member of the Association of Clinicians for the Underserved, growing out of studying National Health Service Corps Scholars after placement in their first practice assignment.

Dr. Brandt holds a bachelor of arts in the teaching of history from the University of Illinois at Chicago and a master of education and doctor of philosophy degrees in continuing education, specializing in the health professions from the University of Illinois at Urbana-Champaign. She completed a W.K. Kellogg Foundation-sponsored post-doctoral fellowship for faculty in adult and continuing education at the University of Wisconsin-Madison. Dr. Brandt is a fellow of the National Academy of Practice. Her honors include: University of Illinois Distinguished Alumna; Honorary Alumna of the National Health Service Corps; Fellow, National Academy of Practice, and 2018 University of South Carolina-Greenville Luminary in Medicine.

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Dr. Carla Dieter is the Project Coordinator for the Accelerating Interprofessional Community-Based Education and Practice Initiative. In this role, Dr. Dieter provides leadership and serves as the primary point of contact for sites collaborating with the National Center team and supporting resources.

Dr. Dieter has been in nursing for 40+ years with experience ranging from clinical practice as an RN as well as a Family Nurse Practitioner. Adding to her clinical practice, she has been an educator for 30+ years with experience in the classroom, clinical practice, and administration. Dr. Dieter has served in numerous leadership positions including Coordinator of the Family Nurse Practitioner program at South Dakota State University and as Chair of Nursing at The University of South Dakota.

Dr. Dieter is also the past chair, and is currently on the Advisory Board, for the South Dakota Nexus, also referred to as the South Dakota Interprofessional Practice & Education Collaborative (SD-IPEC), and Professor Emeritus, Department of Nursing at The University of South Dakota.

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