



Team-Based Primary Care in Health Centers

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The **National Health Center Training and Technical Assistance Partners (NTTAP) on Clinical Workforce Development** at **Community Health Center, Inc.** funded by the **Health Resources and Services Administration (HRSA)**

ABOUT THE EDITORS



Dr. Kathleen Thies has been consulting with the Weitzman Institute since 2014, when she worked with nursing staff to implement care coordination in primary care, an initiative funded by the Yale School of Public Health. Since then, she has worked on several projects as a researcher, evaluator and faculty. These have included: an analysis of specialist recommendations to participants in Project ECHO Chronic Pain; an analysis of issues raised by participants during Project ECHO COVID-19 early in the pandemic; evaluation of and faculty for the Health Resources and Services Administration (HRSA)-funded National Training and Technical Assistance Partners (NTTAP) learning collaboratives and webinars focused on team-based care, quality improvement, and postgraduate nurse practitioner residency programs, as well as the evaluation of the Prescription for Play (P4P) initiative funded by the LEGO Foundation. These efforts have resulted in several publications, presentations.

Before joining the Weitzman Institute, Dr. Thies was the first nurse researcher for the Elliot Health System in New Hampshire for six years, working with hospitalists and nurses in acute and ambulatory care on a variety of data-driven initiatives to improve patient care using evidence-based practices. These included preventing hospital acquired infections, standardizing clinical processes and documentation in the electronic health record, and screening for perinatal mood disorders. Prior to this work, Dr. Thies spent many years in academia, most notably as an associate professor and the founder of a direct entry program into nursing for non-nurse college graduates at the University of Massachusetts Medical School Graduate School of Nursing, and as the tenured chair of the Department of Nursing at Colby-Sawyer College, an affiliate of the Mary Hitchcock Hospital at the Dartmouth Medical Center in New Hampshire. During that time, Dr. Thies also received training in quality improvement methods and data from the Dartmouth Institute and its Microsystems Academy.

Dr. Thies received her BS in nursing from Cornell University–New York Hospital School of Nursing, and an MS in psychiatric-mental health nursing from Adelphi University in New York. She worked as a mental health counselor in hospice in New York City with patients from lower socioeconomic backgrounds. Her PhD is in developmental psychology from Boston College, where her research focused on resilience in children experiencing adversity. She has published books in child development with faculty from Boston College and Harvard Medical School. She has taught statistics to under-graduates, and nursing and psychology at the undergraduate and graduate levels. Dr. Thies lives in New Hampshire, where she has been on the Board for the New Hampshire Children’s Health Foundation. While she was on the grant committee, the Foundation funded the pilot study for ACERT—Adverse Childhood Experiences Response Team—a joint initiative of police, crisis and behavioral health services. It has become a national model.

ABOUT THE EDITORS



Meaghan Angers is the Senior Program Manager of the Health Resources and Services Administration (HRSA) funded National Training and Technical Assistance Partners (NTTAP) on Clinical Workforce Development at Community Health Center, Inc. (CHCI). In this role, she supports the activities providing free technical assistance (T/TA) nationally to health centers in the key areas of training the next generation, transforming teams, HIV prevention, advancing health equity, and preparedness for emergencies and environmental impacts on health. These activities include outreaching to health centers across the nation to enroll them in the learning collaborative activities and supporting expert faculty in the development of curriculum, materials, and presentations.

Meaghan is also responsible for coordinating the NTTAP efforts around evaluation, data analysis, and publications. Meaghan received her Bachelors of Arts and Sciences in Communications from Bryant University.

ABOUT THE EDITORS



Dr. Margaret Flinter is the Senior VP and Clinical Director of the Community Health Center, Inc. (CHCI) and the Moses/Weitzman Health System (MWHS), a statewide federally qualified health center serving 150,000 patients from its primary care centers across Connecticut, while leading practice transformation initiatives across the country. A family nurse practitioner since 1980, she has held progressive roles in the organization as both a primary care provider and executive leader as CHCI transformed from a free clinic to one of the country's largest and most innovative health centers. In 2005, she founded CHCI's Weitzman Center for Innovation, now the Weitzman Institute, which is CHCI's research, innovation, and quality improvement arm. She serves as the Director Emeritus of the Weitzman Institute. Margaret served as the national co-director of the Robert Wood Johnson Foundation's Primary Care Teams: Learning from Effective Ambulatory Practices (LEAP) project, which is studying exemplar primary care practices across the country. Margaret has led the national development of a model of postgraduate residency training programs for new nurse practitioners and established and serves as the Chair of the Board for the Consortium for Advanced Practice Provider. Margaret is the Co-Principal Investigator for the Health Resources and Services Administration's (HRSA) National Technical Training and Assistance Partners on Clinical Workforce Development. Since 2009, she has co-hosted, along with CHCI's CEO Mark Masselli, a weekly radio show, "Conversations on Health Care", which connects people with issues of health policy, reform, and innovation, and speaks widely on topics related to primary care transformation.

Margaret received her BSN from the University of Connecticut, her MSN from Yale University, and her PhD at the University of Connecticut. She is a fellow of the American Academy of Nursing and the American Academy of Nurse Practitioners, and served in the U.S. National Health Service Corps.

ABOUT THE EDITORS



Amanda Schiessl (she/her), MPP, is the Chief of Staff of the Moses/Weitzman Health System (MWHS) and Project Director/Principal Investigator (PI) of the Health Resources and Services Administration's (HRSA's) National Training and Technical Assistance Partners (NTTAP) on Clinical Workforce Development at Community Health Center, Inc. (CHCI)/Weitzman Institute. As Chief of Staff, Amanda serves in a strategic position responsible for supporting executive/senior leadership across the system/affiliates with interpreting executive vision and strategic plans, formulating operational project plans, and driving results to achieve budgetary goals and organizational objectives. Prior to her role as Chief of Staff, Amanda was the Deputy Chief Operating Officer (COO)

where she project-managed CHCI's statewide COVID-19 testing efforts in collaboration with the State of Connecticut. Amanda served as the site lead for Connecticut's first mass vaccination drive-through clinic, supporting efforts to design, launch and innovate workflows and processes for mass vaccinations. In the role of Project Director/Co-PI, she leads CHCI's work in creating, implementing, and executing free innovative training and technical assistance (T/TA) nationally to health centers in the key areas of training the next generation, transforming teams and emerging issues such as COVID-19 response, HIV prevention, emergency preparedness and health equity. Amanda served as Co-Principal Investigator on the creation of an organizational readiness tool to implement change in federally funded health centers, resulting in the creation of the Readiness to Train Assessment Tool (RTAT). As part of the HRSA Health Profession Education and Training (HP-ET) initiative, she directed the RTAT national assessment in partnership with all HRSA funded primary care associations.

Amanda started at CHCI as the first Interprofessional Student Coordinator. Her diverse background in higher education provided her with the skills to develop systems needed to support efforts to train the next generation of health care professionals as outlined in the CHCI Healthcare Student Playbook. She provided support to two HRSA grant partnerships with affiliated academic institutions with the objectives of providing comprehensive didactic and clinical experiences that prepare students to deliver effective integrated care services upon graduation within complex health settings for medically underserved communities. Amanda completed her Bachelor's Degree in Allied Health at the University of Connecticut and received a Masters of Public Policy degree with a Health Policy concentration from Trinity College.

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From Community Health Center, Inc.'s NTTAP Co-Principal Investigators:

A project like this book would not be possible without the contributions of many individuals. **We would like to thank our editors, contributing authors, and all of the individuals who shared their time, talent, and expertise with us throughout our Clinical Workforce Development National Training and Technical Assistance Partners (NTTAP) focused on providing education and training to interested health centers in transforming teams and training the next generation.** This book began before the COVID-19 pandemic and concluded with the end of the Public Health Emergency (PHE). To make this book possible, the editors interviewed dozens of individuals at Community Health Center, Inc. and health centers across the nation. We owe a debt of gratitude to all of the health centers across the country, the health center leaders and program directors who have taken on the work of transforming teams to implement an advanced model of team-based care in the nation's health centers. **We also want to acknowledge the leadership and support of the Community Health Center, Inc., its Board of Directors and its leadership, particularly Mark Masselli, President and CEO, for their commitment to special populations and their investment in improving health outcomes and building healthier communities through clinical excellence, research and innovation, and training the next generation.**

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We want to acknowledge and thank the individuals who served as expert faculty for the NTTAP, often developing new tools and resources for our webinars and learning collaborative that are now available to anyone to use through our website <https://weitzmaninstitute.org/nca>.

Thank you as well for your input and feedback throughout the development of this book, and for the contributions you are making every day to the transformation of primary care!

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CHAPTER 2: **Foundations of Team-Based Care**

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Brief bios start on page [256](#).

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Our maternal-infant teams offer support to expectant mothers during their journey. The seamless care process is driven by expert Business Intelligence staff. Pediatrics is a joyful part of primary care practice. Staff always have opportunities to learn new skills through hands-on practice.

“...train, practice, and strive constantly to achieve new goals in increasing access and outcomes, achieving greater health equity and lessening disparities, and creating joy and satisfaction in practice.”



INTRODUCTION

Welcome to this latest contribution to our collective efforts to advance primary care! There are many paths to improving health and health care—to making healthcare a universal right, not a privilege. Sharing our knowledge and expertise is one way, and we hope this concise and practical book, *Team-Based Primary Care in Health Centers* gives you strategies, tools, and encouragement to do just that! Wherever you are in the health center movement, it is likely that you are part of a team. You train, practice, and strive constantly to achieve new goals in increasing access and outcomes, achieving greater health equity and lessening disparities, and creating joy and satisfaction in practice. It’s a tall order! The recent years from the COVID-19 pandemic to the national reckoning that the nation had to face with the deaths of George Floyd, Breonna Taylor, and Ahmaud Arbery make our work to address racism, health disparities, and health equity life or death issues.

We applaud the 1,363 federally funded community health centers and the 133 look-alikes nationwide that provide comprehensive care to over 31 million people. While reading this book, we recommend readers keep in mind the key patient characteristics of patients served including:

- About 90% of patients had incomes at or below 200% of the federal poverty level
- 24.7 million uninsured, Medicaid, and Medicare patients
- 9.7+ million rural residents
- Over 1.4 million people without homes
- 1 million migrant and seasonal agricultural workers
- Nearly 405,000 Veterans
- 1 in 8 children
- 1.1+ million patients served at school-based service sites
- 585,000 pregnant patients and 172,000 deliveries

(Health Resources and Services Administration, 2024)

We want to thank the Health Resources and Services Administration (HRSA) and the Bureau of Primary Health Care (BPHC) for recognizing the power and the value in

creating the National Technical Training and Assistance Partners (NTTAP) model. As one of twenty-two NTTAPs our charge is to work with health centers on innovation and training to develop their clinical workforce, as well as transform and advance their model of team-based care. We want to thank our Moses/Weitzman Health System (MWHS) and its Weitzman Institute and the Community Health Center, Inc. (CHCI) NTTAP leaders and all the clinical, technical, and operational experts from our affiliated organizations that worked to bring this book to fruition.

Our mission for over 50 years at CHCI has been to build a world class primary care organization, committed to special populations, improving health outcomes and building healthier communities through clinical excellence, research and innovation, and training the next generation. As we've grown and expanded over the years to take innovations to scale, including creating new organizations, we recognized that we were no longer an organization, but a system—living, dynamic, changing, and responsive. The MWHS, which is also home to our Weitzman Institute and its research, education, training and policy centers, was created to address this new reality and provide strategic direction and full support to CHCI and the family of affiliates it has given rise to.

We are excited about the future and our continued collaborations with all of you, and the opportunity to learn, share, and grow as we move forward.

Mark Masselli, Founder
President/CEO

Community Health Center, Inc. and Moses/Weitzman Health System

Margaret Flinter, APRN, PhD, c-FNP, FAAN, FAANP
Senior Vice President/Clinical Director

Community Health Center, Inc. and Moses/Weitzman Health System

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Health Resources Services Administration (HRSA). (2024). *Impact of the Health Center Program*. Retrieved August 6, 2024 from <https://bphc.hrsa.gov/about-health-center-program/impact-health-center-program>



Margaret and Mark in the early years of the community health center.

“As we’ve grown and expanded over the years to take innovations to scale, including creating new organizations, we recognized that we were no longer an organization, but a system—living, dynamic, changing, and responsive.”





It takes a team! In a fully integrated model patients may see a Dentist for routine and restorative dental care, meet with a Behavioral Health Provider, and engage in health education with a Registered Nurse on managing health conditions.

“...the importance and the power of a fully integrated model of team-based primary care.”



PART I

Foundations of Team-Based Care

We began development on this book about team-based care prior to the onset of the COVID-19 pandemic in March, 2020, but put it aside to respond vigorously to the pandemic. We're glad we did. The pace of change and acceleration of team-based care wrought by both challenges and innovations of the pandemic have changed all of health care, especially for those of us who are community health centers providing care to vulnerable and underserved populations. Our initial 2020 draft has evolved to include what we learned from the pandemic, lessons which have only reinforced our belief in the importance and the power of a fully integrated model of team-based primary care. [Chapter 1](#) begins this section with reflections from our clinical chiefs on team-based care before and during the pandemic. [Chapter 2](#) reviews the foundations and culture of team-based care, and the infrastructure needed to support it. We will end this section with [Chapter 3](#) on lessons we have learned. Along the way, we will provide stories from our own organization and our colleagues around the country about how it works in real life settings.

The Eve of a Pandemic: Reflections from the Clinical Chiefs

Let us start by saying team-based care is not new at Community Health Center, Inc. (CHCI), and it is reflected in our leadership structure. Each major clinical discipline—behavioral health, dentistry, medicine, and nursing—is led by a clinical chief who in turn, is part of a team of chiefs, who practice and lead their respective and quite large departments of clinical staff as peers within the executive leadership and reporting structure of CHCI. Each chief reports to the same executive leader in our organization, the Senior Vice President/Clinical Director, and has strong collaborative relationships with senior leaders in operations, information technology, human resources, and other key resource departments. This approach translates into how our disciplines have practiced together, collaborating in building and advancing team-based care across all sites and disciplines of our organization, and in developing the policies and procedures that support all of our work.

Prior to the COVID-19 pandemic, the entire primary care team—medical, nursing, behavioral health clinicians, and sometimes a dental hygienist—literally sat together in a common work space that we call a “pod,” which we came to appreciate as a key component of an integrated approach to providing primary care. These pods usually allowed space for at least one trainee of a clinical discipline, as well as a specialist that might support many pods such as a chiropractor, podiatrist, or dietician. That is, our disciplines were physically co-located. This allowed us to be in constant communication with one another in real time, in addition to having a morning huddle. We shared a panel of patients and documented in the same electronic health record, our notes visible to one another, and continue this best practice today.

As a result, our perspectives on practice have broadened to incorporate what each discipline has to offer clinical care. The COVID-19 pandemic disrupted physical co-location in pods, one of our key elements to integration, as the majority of the clinical staff temporarily moved to remote work. The challenge for us, like you, was to reimagine team-based care during the pandemic and its attendant shift to various versions of telehealth and remote work, as well as for a future that will increasingly embrace remote practice.

Our mission is our North Star, which guided us as we navigated the pandemic. Like many of you, we serve the underserved and vulnerable, and we regularly adapt to



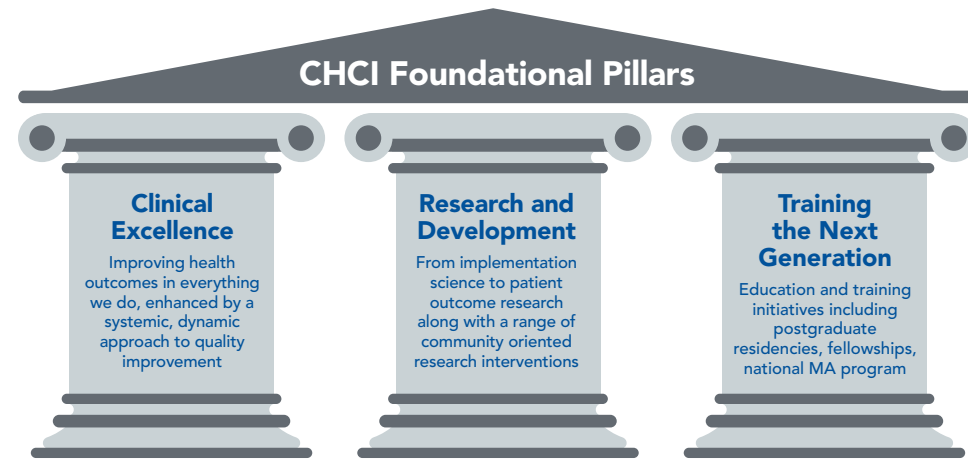
We welcomed our first COVID-19 vaccine shipments in December 2020 and soon ran mass vaccine clinics throughout the state of Connecticut.

“...collaborating in building and advancing team-based care across all sites and disciplines of our organization, and in developing the policies and procedures that support all of our work.”



new ways of doing so as the needs of our target population and our service area change. Our patients continued to need high quality care during the pandemic, but we needed to change how we provided that care. We looked to our three foundational pillars (Figure 1.1), which shape everything we do. First and foremost, we are committed to clinical excellence and improving health outcomes in everything we do, enhanced by a systemic, dynamic approach to quality improvement. Second, through our Weitzman Institute, we are engaged in research, from implementation science to patient outcome research and a range of community oriented research interventions in areas of great concern to our communities and patient populations.

Figure 1.1: CHCI Foundational Pillars



Third, we are committed to training the next generation of the healthcare workforce, which will be discussed more in [Part IV: Training the Next Generation](#). We take a highly disciplined approach to partnerships with schools and universities from which we accept students at the certificate, undergraduate, graduate and postgraduate level across all of the disciplines found on our care teams. Over the last 20 years, we have progressed to sponsoring our own education and training initiatives through directly sponsored and accredited postgraduate residencies and fellowships for psychologists and nurse practitioners, and through a fully accredited national school to train medical assistants. We are not alone in this work. **In fact, 85.33% of the 1,363 federally funded health centers provide health professional education/training; 85.12% do so in partnership with educational and postgraduate institutions and 20.03% sponsor their own programs** (Health Resources Services Administration [HRSA], 2023a).

As clinical chiefs, our shared perspective on patient care as a team effort, combined with a true commitment to the three pillars of the organization, stood us in good stead to respond to the COVID-19 pandemic. On the eve of the pandemic, almost

all our clinical services, perhaps like yours, were delivered on-site and face-to-face. We had been talking about telehealth, advocating for it, and wanting to do it for years, but reimbursement and an easy to implement telehealth platform were hurdles. While Connecticut had mandated that private insurance must cover telehealth, there was no such requirement for Connecticut’s Medicaid program nor was it an option for services provided by any discipline. We watched the commercial insurance markets begin to support telehealth, while at the same time our patients, who had difficulty accessing face-to-face care due to transportation, employment, disability, and other issues, were being denied that opportunity.



The COVID-19 pandemic spurred the expansion of telehealth and became part of our ongoing model of care.

In 2019, pre-pandemic, we trialed a model of virtual care (without reimbursement), starting very small and focused on behavioral health/psychiatry services for our enrolled school-based health center patients. In March, 2020, when the pandemic hit us, our “little pilot” involving a few behavioral health clinicians spread almost overnight to our entire behavioral health system of 200 behavioral health providers. In fact, **behavioral health patients adapted to telehealth quite readily, aided by Connecticut’s Medicaid Program, which responded quickly to the pandemic with temporary regulations for virtual care.** Meanwhile, we were on our way to losing 70% of our in person visits, particularly medical and dental visits which faced



different challenges trying to combine in-person with virtual care. We knew we needed a plan to turn the tide.

At the start of the pandemic, we convened a central work group of clinical and operational leaders to assess and review our existing foundation and culture. We asked:



What do we have in place that we can replicate or expand on?

What do we need that is new and how do we implement quickly?

How do we monitor for continual success?

How do roles need to change, and what technology must be created or modified?

We realized that the foundations for our response to the pandemic were in place, not because we had a comprehensive emergency preparedness plan tucked away in a policy and procedure manual (which we did), but because we had been working to develop a comprehensive team-based approach to care for years. Also, almost our entire workforce, clinical and non-clinical, were very experienced in using videoconferencing through Zoom as a primary communications strategy.

Like so many health centers across the country, we had very engaged leadership, strong and centralized information technology, a great business intelligence team, and a culture that recognizes that you cannot care about clinical **or** business needs—everyone has to care about **both**. We cannot succeed and deliver on our mission without **both**. All of our years of focus on performance improvement and its core tenets, such as engaging front line staff in solving problems with care delivery, using data to define the problem and guide our progress, developing and revising playbooks, testing each “play” and measuring impact, gave us an advantage going into the pandemic.

While nothing could have prepared any of us for such system wide disruption calling for prolonged change, we realized that we could draw from our extensive experience with operationalizing our three pillars—clinical excellence, research, and training the next generation. We had learned that the combination of infrastructure and skills served as the foundation for putting our values into practice pre-pandemic, and anticipated they would serve us well in a crisis. We recognized that data-driven decisions for clinical care and quality improvement, clarity about roles and expectations, as well as investment in staff training were some of the key factors that make team-based care work. And while physical co-location was now minimized during the COVID-19 pandemic, **we would build on our systems and teams to lay the foundation for a strong virtually integrated care delivery system.**



Throughout the COVID-19 pandemic, health centers were a vital source of ongoing primary care for patients across the country.

“While nothing could have prepared any of us for such system wide disruption calling for prolonged change, we realized that we could draw from our extensive experience with operationalizing our three pillars—clinical excellence, research, and training the next generation.”



Foundations of Team-Based Care



What is team-based care? The National Academies of Sciences, Engineering, and Medicine (NASEM) report *Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care* cites a commonly used definition: “the provision of health services to individuals, families, and/or their communities by at least two health providers who work collaboratively with patients and their caregivers—to the extent preferred by each patient—to accomplish shared goals within and across settings to achieve coordinated, high-quality care” (NASEM, 2021 p. 182). Many primary care practices consider themselves to be working in teams because they have a staff of medical assistants, nurses and non-clinical staff working for a primary care provider (PCP). But that is not the whole picture.

What Works in Primary Care

Learning From Effective Ambulatory Practices (LEAP)

Community health centers have long espoused a genuine commitment to team-based care and, by both philosophy and necessity, have encouraged health professional and support staff to practice at the top of their licensure. It is only in recent years that the science of how to revamp a practice effectively from silos to fully integrated team-based care has been developed. In 2012, the Robert Wood Johnson Foundation (RWJF) funded a multiyear initiative to identify primary care practices across the United States that were excelling where others were struggling (Ladden et al., 2013). It was co-chaired by Community Health Center, Inc.’s (CHCI) Senior Vice President Margaret Flinter, APRN, PhD and by Ed Wagner, MD from the MacColl Center for Health Care Innovation. This initiative—*The Primary Care Team: Learning From Effective Ambulatory Practices*, known as LEAP—revealed that re-defining the roles of professional and administrative staff were key to developing more effective and efficient practice (Flinter, et al., 2017a; Flinter, et al., 2017b; Wagner, et al., 2017).

High-performing primary care practices distribute functions across team members and use data to improve care outcomes. They recognize that we can make automatic that which should automatically be done by policy or standing order without waiting for direction. An effective team adds capacity by reducing duplication of efforts using standard workflows and clear descriptions of roles and responsibilities. They



“Instead of delegating **tasks** to non-clinician team members throughout the day, routine **responsibilities** for patient care can be re-allocated based on licensure and training, and do not need to be delegated each and every time, leading to a culture of mutual accountability for patient care.”



use pre-visit planning or better yet, automated dashboards built on the practice standards, to ensure, for example, that routine screenings from depression to cancer, and chronic illness management measures from hypertension to HbA1c control in patients with diabetes, are completed. To improve communication, they use daily huddles and sit together in common workspaces for all team members, including the PCP (Sinsky, et al., 2013). High-performing health centers invest in the knowledge and skills of registered nurses, medical assistants, and other staff to assist with chronic care conditions and to be trained as health coaches (Ghorob & Bodenheimer, 2012; Meyers, et al., 2019).



Team-based care has been shown to result in better health outcomes, higher patient satisfaction, decreased PCP burnout, lower utilization of emergency rooms, and improved patient access (Agarwal, et al., 2020; Berry & Beckham, 2014; Bodenheimer, et al., 2014; Bodenheimer & Sinsky, 2014; Coleman et al., 2014; Edwards, et al., 2018; Meyers, et al., 2019; Reiss-Brennan, et al., 2016; Safety Net Medical Home Initiative, 2019; Schottenfeld, et al., 2016; NASEM, 2021). Most importantly, a team-based model represents a significant culture shift in primary care which Dr. Bodenheimer and his colleagues refer to as “share the care” (Ghorob & Bodenheimer, 2012): not my patient but our patient. It is a different mindset. Instead of delegating **tasks** to non-clinician team members throughout the day, routine **responsibilities** for patient care can be re-allocated based on licensure and training, and do not need to be delegated each and every time, leading to a culture of mutual accountability for patient care. For example, if a patient is due for a flu shot, the PCP should not have to delegate the task; rather, the nurse or medical assistant can be given responsibility for ensuring it is done. We will expand on this further when we discuss pre-visit planning and standing orders, among others.

Team-based care not only addresses critical issues within clinical care, but also addresses the long-term shortage of PCPs, particularly in safety net settings. The solution is not only to increase the number of clinicians trained and committed to being PCPs, but also to address demand-capacity, whereby health centers increase their capacity to meet patient demand if they reallocate clinical responsibilities to non-physician team members (Bodenheimer & Smith, 2013). These findings are complemented by the patient-centered medical home (PCMH) program at the federal Agency for Healthcare Research and Quality (AHRQ, n.d.) and by the Chronic Care Model developed by Ed Wagner, MD, at the MacColl Center for Health Care Innovation. [Note: The MacColl Center has been folded into the Accelerating Care Transformation (ACT) Center (n.d.) of the Kaiser Permanente Washington Health Research Institute. Resources for PCMH are available on the AHRQ website. Resources for the Chronic Care Model are available on the ACT website. The links to both sites are provided in the reference list.]

Patient-Centered Medical Home

A patient-centered medical home (PCMH) is defined as “not simply as a place but as a model of the organization of primary care that delivers the core functions of primary health care” (AHRQ, n.d.). For those of you who are not familiar with the PCMH program (Figure 2.1), a medical home’s core functions are: 1) providing comprehensive care using a team of clinicians; 2) developing partnerships with patients and families; 3) coordinating care across all parts of the health care systems including specialty care, hospitals, home health care, and community services and supports; 4) delivering accessible services, including urgent needs; and 5) demonstrating a commitment to quality and quality improvement (AHRQ, n.d.).

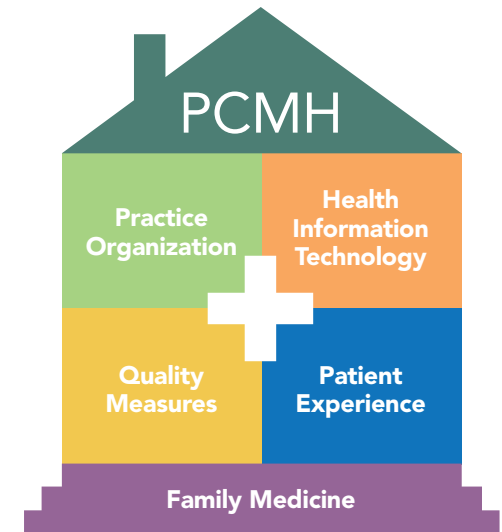


Figure 2.1: Patient-Centered Medical Home Model

Recognition by the National Committee for Quality Assurance (NCQA, n.d.) as a PCMH or by The Joint Commission (n.d.) as a Primary Care Medical Home have become a standard of care for the Health Resources and Services Administration (HRSA) funded health centers (HRSA, 2021). **As of 2023, 78% of 1,363 health centers nationwide are currently PCMH recognized** (HRSA, 2024a). The standards for recognition are rigorous, and studies provide evidence for the added value demonstrated by organizations who meet the criteria. Evidence from longitudinal and cross-sectional studies indicate that PCMH practices have greater improvement across quality and cost outcomes compared to non-PCMH practices, for example, diabetes measures, cervical cancer screenings, vaccination rates, and reductions in hospital admissions and emergency department utilization, (Hu, et al., 2018; Jabbarpour, et al., 2018; Mahmud, et al., 2018; NCQA, 2019; Swietek, et al., 2018), especially for patients with chronic conditions who have been enrolled in the practice for a longer period of time (Swietek, et al., 2021). Health centers that are PCMH-recognized demonstrate cost-savings as well (Nielsen, et al., 2016; NCQA, 2019; Philip, et al., 2019), which can be a feature of value-based contracts. An example is PCMH+ which we will describe further in [Part II: Data-Driven Care](#).

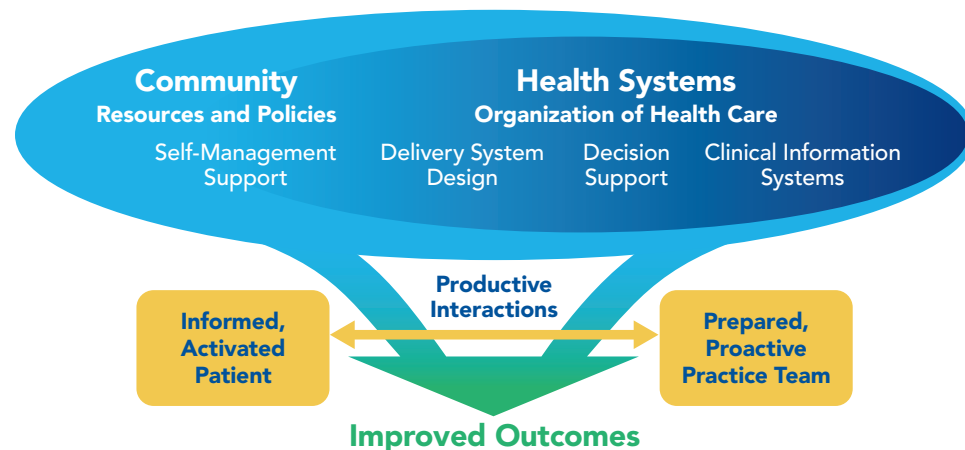


Chronic Care Model

A turning point in the history of community health centers was in 1999 when HRSA and the Bureau of Primary Health Care (BPHC) invested in bringing health centers together in a learning collaborative—a model developed by the Institute for Healthcare Improvement—to improve outcomes for patients with chronic conditions (Landon, et al., 2007). The Chronic Care Model was introduced at the first health disparities collaborative convened in 1999. (CHCI joined the second cohort shortly thereafter.)

The Chronic Care Model (Figure 2.2) was developed by Dr. Ed Wagner and colleagues in the late 1990s at the MacColl Center for Health Care Innovation (Wagner, et al., 1996; Wagner, 1998) after extensive reviews of the literature at that time. The model has evidence-based concepts that are designed to foster high-quality chronic disease management, community resources and policies, health care systems, support for patient self-management of chronic disease, changes in the design of care delivery systems, and decision support for clinicians, as well as to optimize clinical information systems/health information technologies (Bodenheimer, et al., 2002).

Figure 2.2: Chronic Care Model



The details for each of the six categories in the Chronic Care Model have changed in 20 years with the increasing sophistication of health information technologies and changes in reimbursement policies, but the model still holds (Berwick, 2019). Its change strategies have become foundational to our own approach to building and implementing models of team-based care. Most importantly, there must be enhanced integration between community resources and policies and the organization of health systems. Applying evidence-based change concepts for redesign of current systems paired with productive interactions between patients and staff will lead to improved outcomes.

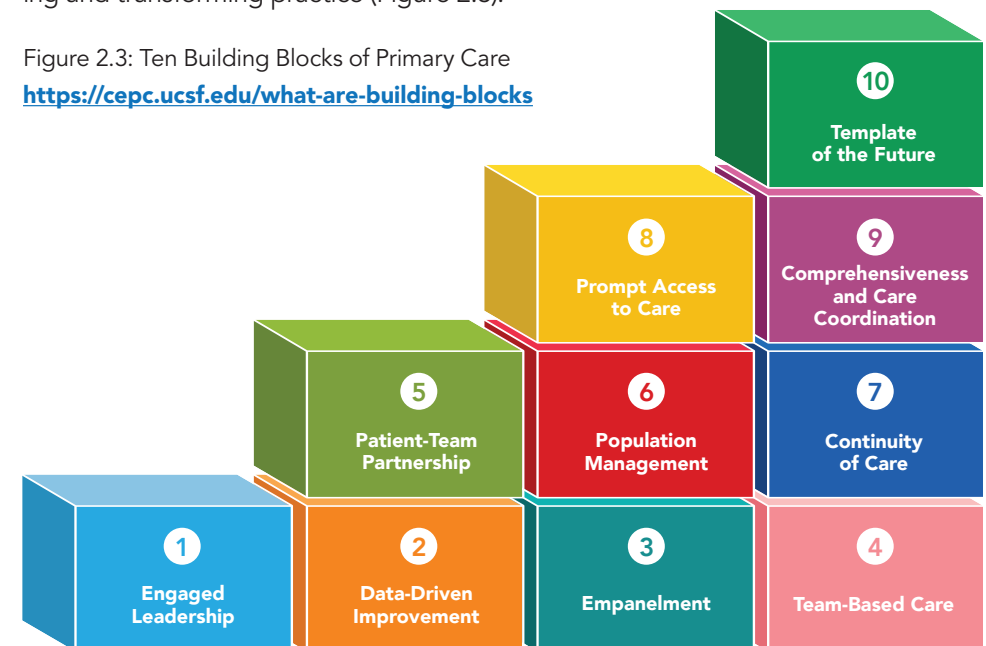
Building Blocks and Functions of Team-Based Primary Care

CHCI and the Weitzman Institute have been fortunate to work with Tom Bodenheimer, MD, a primary care physician and founder of the Center for Excellence in Primary Care (CEPC, n.d.) at the University of California San Francisco, and a leader in promoting the transformation of primary care. Dr. Bodenheimer had also worked on the LEAP project as Chair of the National Advisory Committee for the Robert Wood Johnson Foundation (Ladden, et al., 2013). Dr. Bodenheimer and Rachel Willard-Grace, MPH, the current Director of CEPC, are faculty on our HRSA-funded National Training and Technical Assistance Program (NTTAP) Learning Collaboratives on Team-Based Care. The concepts in this section are based on their work, and that of so many others who have adopted and adapted these concepts. We suggest that you visit the following websites, all cited in our reference list, for further resources: Center for Excellence in Primary Care (CEPC, n.d.); STEPSforward from the American Medical Association (AMA Ed Hub, n.d.), a collection of educational materials for redesigning practice; and the American Academy of Ambulatory Care Nurses (AAACN, n.d.).

Building Blocks of Primary Care

The Ten Building Blocks of Primary Care (Bodenheimer, et al., 2014), developed through extensive work with primary care practices, provide a blueprint for developing and transforming practice (Figure 2.3).

Figure 2.3: Ten Building Blocks of Primary Care
<https://cepc.ucsf.edu/what-are-building-blocks>



The blocks are numbered, indicating not just their importance, but how the functions within those blocks build on one another. For example, without good data (#2), you cannot do population management (#6) or care coordination (#9). More importantly, all of the blocks build on engaged leadership (#1). Brief descriptions of the building blocks follow, and we will refer to and expand on them with examples throughout this book.

It is worth noting that much of the literature that we cite regarding the building blocks of care was published prior to the pandemic, and thus prior to the rapid expansion and implementation of virtual and hybrid models of practice and care delivery. While the principles behind the blocks remain valid, the details of their application might vary in the post-pandemic world!

#1 Engaged Leadership

It is not enough for leaders to express support for staff; they must be actively involved in the work, not just direct others to do it. Leaders recognize that staff must be seen and heard. Leaders develop the knowledge and skills to build a culture of practice transformation, build leadership across a team, and embrace the process of change in full partnership with their staff by setting goals together while ensuring staff have the time and resources, and the data and skills, to meet those goals.

#2 Data-Driven Improvement

We have noted that high performance care is driven by data, so that transformations in practice can be strategically targeted, measured and tracked. The information technology and business intelligence personnel are partners in team-based care and practice improvement. Data-driven improvement is also related to the component of the Chronic Care Model which references how information systems support decisions among the clinical team. We will expand on the importance of data in [Part II: Data-Driven Care](#).

#3 Empanelment

Empanelment means that each patient is assigned to a PCP and clinical team, who work together to develop ongoing relationships with patients, promoting patient-team partnerships and continuity of care. Empanelment tells patients who their primary care clinician is, and tells clinicians which patients they are responsible for. Managing that panel is the work of the primary care team and the foundation for the patient-team relationship. The team knows the patients well, and patients know whom to contact for both routine care and urgent needs. Aided by data-driven dashboards to guide their care, panel management imparts specific responsibility

to team members for ensuring coordination of care across transitions, adherence to preventive care schedules such as cancer screenings, and closing gaps in that preventive care. Assigning patients to a PCP's panel not only fosters continuity of care, but also provides a reliable measure for the denominator in quality measures, and allows calculation of panel size.

One of the most burning questions about team-based care is about PCP panel size (Paige, et al., 2020; Sinsky & Brown, 2020; Altschuler, et al., 2012; AMA Ed Hub, n.d.). A systematic review found little evidence about the relationship between panel size and effective care, the latter often measured as access to care and not patient outcomes (Paige, et al., 2020). However, the number of patients in a panel may be the wrong focus, and while access is important, it is an insufficient measure of quality of care. Rather, the focus should be on what resources and practice models are optimal for managing a specific patient population (Sinsky & Brown, 2020).

For example, for adults with high social needs, a panel of 1,000 patients per PCP may be reasonable (Meyers, et al., 2018), which is consistent with the CHCI panel size of 900-1,200 patients per PCP. It can be difficult to identify an optimal panel size per PCP given the unique variations in patient populations, especially for those with multiple chronic conditions and high social needs. Most importantly, the PCP's effectiveness and expertise can be optimized, and patient health outcomes improved, by working with a core team of medical assistants and nurses, and an extended care team of a pharmacist, social worker, behavioral health specialist, and others (Sinsky & Brown, 2020). That is, a team gets more done when their roles are used effectively. Of course, scope of practice issues can affect the ability of PCPs to delegate some responsibilities to other team members, especially for preventive care. We asked Dr. Bodenheimer and Rachel Willard-Grace, MPH, from the Center for Excellence in Primary Care for their opinion (See vignette on next page).



Dr. Tom Bodenheimer and staff from the Center for Excellence in Primary Care located in San Francisco, California.

**Panel Size by Tom Bodenheimer, MD
and Rachel Willard-Grace, MPH
from the Center for Excellence in Primary Care**



How many patients can a primary care clinician reasonably manage?

Research indicates that it would take a primary care provider 21.7 hours per day to deliver recommended services to a standard panel of 2,500 patients (Yarnall, et al., 2009). Yet, in the United States, the average panel size is about 2,200, compared to Norway where average panels are 1,100. Our overly large panels are responsible for poor patient access and high levels of clinician and staff burnout: the larger the panel, the worse the access and the greater the burnout. But it is not just size of the panel but the complexity of the patients that contributes to the difficulties. For example, community health centers have smaller panels, around 1,200 per full-time clinician. A community health center panel of 1,200 creates about the same amount of work as a typical private practice panel of 2,200 because the average community health center patient has a greater burden of illness and more socio-economic problems, which takes much more clinician time (Bodenheimer, 2022; White & Twiddy, 2017).



Why are patient panels so large?

The main cause is the shortage of primary care providers. **Primary care has suffered from financial neglect in the United States, spending only 5.4% of health care dollars on primary care as compared to 7.8% and as high as 12% in other developed countries** (Bodenheimer, 2022; Koller & Khullar, 2017; National Academies of Sciences, Engineering, and Medicine [NASEM], 2021).



What can be done to improve patient access and reduce burnout caused by large panels?

The only remedy is to build powerful teams that work together efficiently, with standardized workflows and clear expectations about roles and responsibilities. Too often, the PCPs' time is taken up with tasks that can be better accomplished by another team member. We know that registered nurses, pharmacists, behaviorists, podiatrists, and physical therapists can manage many patients independently. We know that having two medical assistants per clinician allows the medical assistant to perform almost all documentation work in the electronic health record. Medical assistants can reinforce chronic disease self-management in patients, and assist patients as they navigate through the health system, for example, what they need to do for laboratory testing. With a strong team caring for a panel, we can optimize the time patients spend with their primary care provider, patients can enjoy greater access to care, and clinicians can be spared much of their burnout.

#4 Team-Based Care



A core team can be as few as two or as many as 6-8 people who work together on a daily basis to provide care to a panel of patients, depending on the practice setting and staffing capacity. **A two-person team is called a teamlet, which is a PCP-medical assistant dyad** who work together **every day**, that is, they are assigned to one another. The core team includes the teamlet, and perhaps a registered nurse, behavioral health provider, and front office staff (e.g., for scheduling). The composition will vary by practice but clearly defined roles, workflows, and standing order sets/protocols optimize the team's capacity. **An extended team might include clinicians and staff who work with multiple teams**, such as a care coordinator, pharmacist, dietician, or social worker. Roles of team members are discussed further in [Part III: Roles in Team-Based Care](#).



Medical Assistants play a key role throughout the entire patient encounter developing long-term relationships with patients.

#5 Patient-Team Partnership

Sustained trusting relationships over time between patients and their PCPs, as well as the rest of the health care team, are foundational to primary care and always have been. Like you, we have developed a suite of strategies with which to engage patients. For example, we know that working with patients to set self-management goals can improve their health-related quality of life, and their knowledge about and confidence to manage their conditions (Dineen-Griffin, et al., 2019). In the online patient portal, patients are able to access their medical records, visit notes, lab results, and to ask questions and send messages back and forth with their PCPs and care team. Outside of the online portal, text, email, and robo-call messages are regu-

larly used to inform patients of important healthcare updates, including upcoming appointments, missed appointments, changes to their care team, or the need to schedule a visit to resolve a gap in care, such as a flu shot. Because a significant portion of engaging with patients is focused on scheduled appointments, our approach to scheduling has evolved from site-by-site administrative support staff scheduling locally, to a centralized, fully remote, flexible call center able to support all sites and services.

#6 Population Health Management

Population health management occurs at multiple levels. The patient panels of individual PCPs can be stratified based on risk factors and needs. For example, patients living with diabetes, especially those with consistently high HbA1c values, can be referred to programs established to offer health coaching, self-management support, and complex care management for this population. Population health management is increasingly important for value-based contracts at the organizational level, and for identifying gaps in care across patient panels. Population health will be discussed in detail in [Part II: Data-Driven Care](#).

#7 Continuity of Care

Like the patient-team partnership, continuity of care is about sustained relationships over time between patients, their PCPs and members of the care team. Continuity of care is associated with higher patient satisfaction (Palmer, et al., 2018), lower mortality rates (Gray, et al., 2018) and lower rates of re-hospitalization (Kao, et al., 2019). Gaps in care may occur when patients are seen by a succession of different PCPs, when patients transition from hospital or rehabilitation center to home, and when routine preventive care is missed. These gaps can be prevented. Empanelment (discussed above) and planned care (discussed later) are important strategies. Managing transitions from a hospital or rehabilitation facility to home is a particularly critical responsibility in ensuring continuity of care, especially for older patients, and can be managed by a range of staff that includes, but is not limited to nurses, depending on patient needs (Mora, et al., 2017; Naylor, et al., 2017). Transition management is one aspect of care coordination, discussed below as #9 Comprehensiveness and Care Coordination.

#8 Prompt Access to Care

Seeing patients when they want and need to be seen is important for improved patient satisfaction and continuity of care. The definition of timely access is in the eye of the beholder, of course—patient and PCP—which may require innovations in practice, such as having urgent care access built into the primary care setting. The



Having a primary care provider that knows you and your family is central to our model of care.

good news is that access to care seems to have improved with the implementation of the Affordable Care Act, although challenges remain, especially among the poor and underserved (Shartzter, et al., 2016; Sommers, et al., 2015).

#9 Comprehensiveness and Care Coordination

When primary care cannot meet all of a patient's needs, or when patients have multiple co-morbidities and corresponding specialists, care coordinators—usually registered nurses—can assess a patient's health needs, navigate the network of services for the patient, and track patient outcomes. Putting together a comprehensive plan of care requires ongoing communication to support the relationship between patients and their PCPs, especially when there are discrepancies between patient preferences and what the PCP considers the best plan of care.

The term "care coordination" has been defined by the National Quality Forum (2010) as "...patient-centric endeavor that seeks to deliver the right care (and only the right care) to the right patient at the right time...Care coordination maximizes the value of services delivered to patients by facilitating beneficial efficient, safe and high-quality patient experiences and improved health care outcomes." The American Academy of Ambulatory Care Nurses (AAACN, n.d.) asserts that care coordination and transition management (CCTM) are not tasks but nursing practice, and "involve individualized patient-centered assessment and care planning across settings, providers, and levels of care. CCTM, in its broadest sense, deals with populations of patients over time, especially those with chronic illnesses/diseases such as diabetes, heart disease, asthma, etc." We will discuss care coordination further in [Part III: Roles in Team-Based Care/Chapter 7 Role of the Registered Nurse](#).

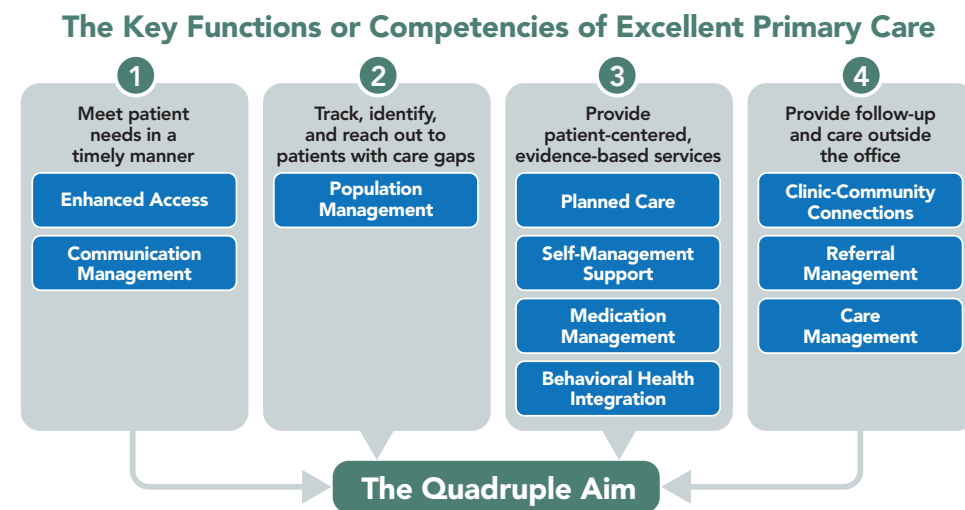
#10 A Template for the Future

The National Academies of Sciences, Engineering, and Medicine (NASEM) report *Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care* begins by highlighting how the COVID-19 pandemic brought into stark relief the problems in our current model of primary care: fee-for-service models of payment, lack of integration of primary care and public health, lack of understanding of the role of primary care in pandemic planning, lack of support for telehealth, and the role of social determinants of health in patient outcomes and access to care (NASEM, 2021). Clinicians need time to care for patients based on their needs, and to reflect continually on and improve their practice. The NASEM report addresses possible solutions for transforming clinical care delivery as well as payment reform (NASEM, 2021). In [Part V: The Future](#), we will present some thoughts of our own and our colleagues about the future of primary care.

Functions of Primary Care

Team-based care in primary care, developed in the context of the other nine building blocks of primary care, allows you to re-imagine how to provide excellent care efficiently, effectively, and as our CEO at CHCI likes to say—elegantly. It is a strategic redistribution of work among members of a core and extended team centered on the functions of primary care rather than the tasks, and then mapping education, training, and licensure to those functions. To better understand this, review Figure 2.4 below, developed by the Center for Excellence in Primary Care at the University of California San Francisco.

Figure 2.4: Key Functions of Excellent Primary Care



For example, printing out an after visit summary is a **task**; ensuring that patients understand next steps in their care—such as medications, referrals, and so on—is communication management with patients, a **function** of primary care. Calling in a prescription refill to a pharmacy is a **task**; medication management is a **function** of primary care, such as checking the refill against the current medication list, updating that list, and educating the patient. All **functions** have a series of **tasks**, but completing a **task** is not the same thing as accountability for a **function** of primary care.

The functions in Figure 2.3 were designed to meet the Triple Aim of improved health care: enhance the patient experience, improve population health, and reduce costs (Berwick, et al., 2008). A fourth aim and a fifth aim have been added, but are not represented in the graphic. The fourth aim is to improve the work life balance of all providers of health care services, including clinicians and staff (Bodenheimer & Sinsky, 2014). The fifth aim is to advance health equity, prompted by the gross inequities experienced by underprivileged populations during the COVID-19 pandemic. Together, these aims create the Quintuple Aim, sometimes represented by a five-pointed star (Mate, 2022; Nundy, et al., 2022). The purpose of Figure 2.3 is to emphasize that when functions and roles are reduced to being task-based, some staff end up doing things that could be effectively done by someone else with a different set of skills. A task-based approach not only leaves a lot of untapped potential on the table, but can be unnecessarily rigid in scope, leaving gaps in care and discouraging professional growth and engagement.

Consider planned care as an example, also called pre-visit planning (discussed further in [Part III: Roles in Team-Based Care](#)). The goal is to ensure there are no gaps in routine preventive care for all patients (e.g., cancer screenings) and also for management of chronic conditions (e.g., retinal exams for people with diabetes). With the right tools and technology, a medical assistant can preview charts of patients being seen for a routine or acute care visit, and set up orders for preventive care and illness management in the electronic health record (EHR) for the PCP to review with the patient, and then submit. Indeed, some dashboards can be updated throughout the day as patients are added or canceled, flagging what each one needs for prevention and chronic illness management.

We acknowledge that most days feel like there is a mountain of never ending tasks, from school forms and prior authorizations to administrative follow up. But you want your professional staff to practice at the top of their license, that is, in accordance with their abilities based on education, training, and legal scope of practice. They become not just responsible for completing **tasks**, but accountable for the **functions** of the practice commensurate with their roles. They do not just do, they think. When they also participate in data-driven quality improvement, and share a panel of patients with their colleagues, they find more joy and satisfaction in their practice.

Integrated Primary Care



We have noted that team-based care is a building block of comprehensive integrated primary care. But what does “integrated” mean? In many settings, behavioral health providers may share a building or office space with the primary care providers and yet not be integrated into the primary care team. The same could be said of dentists, physical therapists, dietitians, podiatrists, and chiropractors. Cohen and colleagues (2015) observed three patterns of interactions between behavioral health providers and PCPs, which can be applied to other disciplines as well. Those patterns are **consulting, coordinating and collaborating**.

Consulting involves asking for and taking advice from clinical experts about a discrete issue related to a patient’s care. Consultants can be outside of or within the same organization that provides the patient’s care; consultants may or may not see the patient. Consultation can be done by phone, videoconference or electronically, both in real time and asynchronously. Often sending patients’ information to the consultant rather than sending patients themselves is sufficient. In the consulting model, there is communication about the patient, but no coordination or collaboration of care among clinicians.

Coordination involves separate, but somewhat aligned care delivery, as when the consulting expert and PCP are employees of the same organization. They may occupy different physical locations, with different staff. The consultant may or may not provide the care directly to the referred patient, but does make recommendations to the PCP for ongoing treatment, for example, changes in medication.

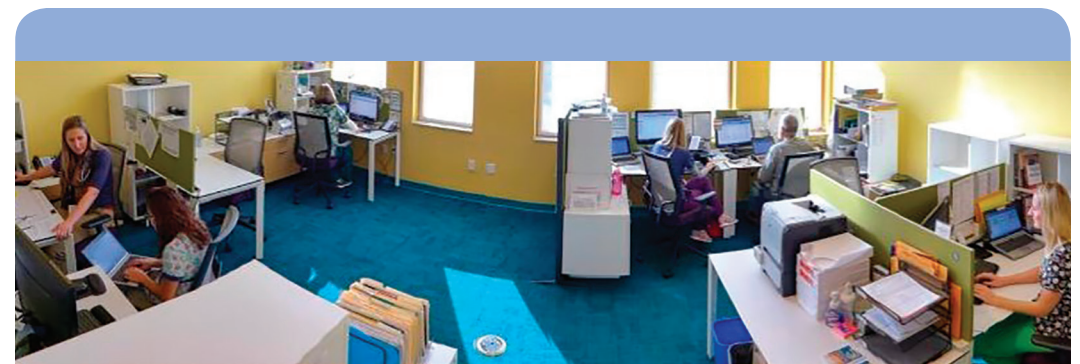
Collaborative integrated care is most appropriate for patients with complicated medical, behavioral health, dental, and social issues, such as those seen in health centers. The difference between the Consulting and Coordination models and the Collaborative Integrative care model is that the former involve separate clinical teams that confer with each other, whereas in the latter, there is only one care team—medical, nursing, oral health, and behavioral health clinicians, as well as appropriate support staff—collaborating together on patient care. Health centers are unique in that we integrate oral health and behavioral health into primary care, with federally funded health centers conducting over 15 million mental health visits (HRSA, 2024b) and over 14 million oral health visits (HRSA, 2024c). Thus, the collaborative integrated care model suits us well.

The mindset of collaborative integrated care must be reflected in an organization’s social, physical, and technological infrastructure. Providing medical, nursing, dental, and behavioral health care in one setting requires organizational and systemic redesign. For example, patients need to have one health record that can be accessed by

all disciplines (more on that later). Ease of real time direct communication between all members of their care team also promotes collaboration. Prior to the COVID-19 pandemic, this communication often took place in our pods, the large common workspaces in which core team members sat together. Of course, the dental staff is usually in its own separate suite to accommodate specialized equipment, but the shared medical record and dashboards support the collaborative model. The pandemic taught us that virtual co-location can work, but the mindset of collaborative integrated care should be in place first.

A common concern is that team members lose their unique professional identities in team-based care. Remember that at CHCI, all of our clinical chiefs—medicine, dentistry, behavioral health, and nursing—work as a team as well. The mutual respect among them for the contributions of each discipline to patient care is modeled at the team level, so that the value of the care brought by each team member increases.

The collaborative model and common workspace for the teams has implications for patients as well. Prior to the COVID-19 pandemic, and again as we shifted back to in-person visits, patients at most sites enter through the same doorway in the health center, are greeted by the same patient service representative, and wait for their appointment in the same area whether checking in for a medical or behavioral health appointment (again, dentistry has a separate suite). This practice, suggested by our own patients, reduces the stigma often associated with seeking behavioral health care. As a result, consultation rooms for medicine, nursing and behavior health also share a hallway. Co-location with shared support staff and a common scheduling system means that a patient is offered true one-stop shopping. Hence there are no “medical patients” or “behavioral health patients,” just health center patients.



A healthcare pod designed for comprehensive and convenient medical services, promoting accessible and patient-centered care.

Structure and Culture of High-Performing Teams

For this section, we again acknowledge the work of Tom Bodenheimer, MD, the founding director of the Center for Excellence in Primary Care (CEPC) at the University of California San Francisco, and Rachel Willard-Grace, MPH, the current director. Their expertise and insight into how primary care works and needs to evolve in all of its settings is compelling. Much of the following section comes from the resources provided by CEPC's didactic presentations in the Comprehensive Care Learning Collaborative offered by CHCI's HRSA-funded NTTAP program.

The structure of high performing integrated primary care teams include: a stable team structure; physical co-location of the teamlet and core team; communication (team meetings, huddles, and minute-to-minute interactions); clearly defined roles with training and skills checks; standing orders or protocols; defined workflows; and staffing ratios adequate to allow for new roles. (We will discuss standing orders under the role of the registered nurse in [Part III: Roles in Team-Based Care](#), and describe the rest below.) However, the structure is hollow without the accompanying shift to a culture of "share the care" accompanied by ground rules to manage communication among colleagues.

A Stable Team Structure, Physical Co-Location and Communication



The core team in an integrated team-based model typically includes the PCP-medical assistant teamlet, a nurse, a behavioral health provider, and office staff in patient-facing roles, especially the person who schedules patient visits. The extended team consists of clinicians and staff employed by the health center who typically work with more than one team, such as dentists, pharmacists, podiatrists, chiropractors, community health workers, certified diabetes care and education specialist (CDCES), registered dietitians, social workers, and others depending on the needs of patients and available resources. Dentists, dental assistants, and other hygienists can be part of the core team or extended team, but as we noted are usually located on site but in a separate suite because of the need for special equipment.

The exact composition of the core and extended teams may vary based on the setting and the types of services the health center provides. But the **stability** of the core team structure, especially of the teamlet, is critical to the success of team-based care. Working together **every day** promotes trust and collaboration. That stability is enhanced when the team members are co-located, that is they share a common phys-

ical space—a pod—in the clinic. While PCPs may initially resist co-location, studies indicate that it fosters face-to-face communication among team members, and is associated with improved team collaboration and coordination, and better outcomes (MacNaughton, et al., 2013; O'Malley et al., 2015; Sims, et al., 2015). For example, they provide higher quality cardiovascular disease care at a lower cost (Mundt, et al., 2015).



Healthcare professionals gathered in a huddle, discussing patient cases and coordinating strategies for effective team-based care.

Teamlets and/or core teams communicate using huddles in the morning, and sometimes early afternoon, to review the expected work for the day, such as certain complex patients, or noting which patients will need immunizations. The core team meets regularly, during which performance data is shared, and challenges and achievements are routine agenda items. Members of the extended team also may attend these meetings as needed to support core teams in accomplishing the key **functions** of integrated primary team-based care. For example, a pharmacist at CHCI attends interdisciplinary care team meetings at which specific patients are reviewed, something that can be done in person or using videoconferencing.

We recognize that there are barriers to assigning individuals to teams and teamlets on a regular basis. Some staff work part-time. Some have different start times for their shifts, making huddles difficult. Staff turnover and call-outs for illness or family needs is always a challenge to staffing. Co-location can be a physical challenge in existing spaces. At CHCI, we literally tore down walls between offices 20 years ago to create the first pods to co-locate the core team; today we design all clinical spaces to reflect the pod and team-based nature of our practice. We recognize that tearing down walls is not always possible. However, other spaces can be re-purposed to increase physical proximity, especially for the teamlet, such as setting aside a stand-up

work station along a hallway where the PCP and medical assistant can confer before or after seeing a patient. We also realize that with increased use of dictation software for PCPs, it is important to find a quiet space. Of course, co-location and real time communication can also occur virtually, using shared platforms for telehealth.

Team-based care does not necessarily mean hiring new staff or moving walls. Nevertheless, work space and work schedules are variables that must be managed when building and optimizing a stable team. When teams work together well (more on that next), job satisfaction increases (Lyon, et al., 2018).

Defined Roles and Workflows

Defining roles is more than creating new job descriptions. As noted earlier, it is a strategic redistribution of work among members of a core and extended team centered on the **functions** of primary care rather than the **tasks**, and mapping education, training, and licensure to those functions and tasks. This should not be confused with “cross-training,” in which each member of a team is trained to take on the tasks of other team members, a strategy used to alleviate staffing shortages among hospital nurses (Inman, Blumenfeld, & Ko, 2005). Although there are some tasks that can be performed by more than one person or discipline in team-based care as needed, and flexibility is often essential, the more important principle is to be clear who is ultimately **accountable** for the work being completed. For example, who is accountable for making sure that this patient gets a flu shot today? When you develop standardized workflows, you can identify who owns each step, and train the team accordingly in order to avoid either duplication of efforts or gaps in care. Accountability and standardized workflows are founded on clear expectations, which can be achieved using checklists for training staff.

The teams with which we have worked to implement team-based care assess who does what using the *Advanced Team Based Care Role Activity Assessment and Optimization* (modified from work by the Cambridge Alliance, 2015), which itemizes 60 different tasks that could be completed by 12 different roles. [The American Medical Association’s *STEPSforward* (AMA EdHub, n.d.) also has practice assessment tools.] The teams find that while some **tasks** do not get done at all, other **tasks** are undertaken by multiple people in different roles, each of whom completes the task differently. These irregularities are driven by the “just get it done” approach to patient care. This approach often means that critical **functions** of primary care are not being met. One of our teams found that four different people did scheduling, three identified which patients needed immunizations (a **function** of planned care), but no one was contacting patients with chronic conditions who were overdue for an appointment (a **function** of care management).

Let us use a patient with diabetes who is due for a retinal exam as an example. Who is **accountable** for ensuring that the retinal exam is ordered (planned care), that the exam is completed, within or outside of the organization (referral management), and the results are in the health record and reviewed (care management)? At CHCI, our medical assistants are trained in securing high quality retinal images as part of comprehensive diabetes care during a primary care visit. Those images are then stored and forwarded to an ophthalmologist for review and interpretation. About 25% of health centers are approved to provide vision services on site (National Association of Community Health Centers, 2023). More on that in [Part III: Roles in Team-Based Care](#). It is important that team members understand how their individual roles and responsibilities in a workflow combine with those of other staff to accomplish **functions** of primary care. Clarity about these responsibilities and workflows is an example of “share the care.”

Adequate Staffing Ratios

Like panel size for individual PCPs, the composition of the primary care team in team-based care and the staffing ratios required for optimal practice depend on multiple factors: practice size and type (e.g., large vs. small), practice location (e.g., rural or urban), patient complexity (e.g., geriatric patients), a given state’s scope of practice issues for nurse practitioners, physician associates, nurses, and medical assistants, as well as PCMH status (Auerbach, et al., 2021; Edwards, et al., 2018; Helfrich, et al., 2017; Meyers, et al., 2018; Patel, et al., 2013; Peikes, et al., 2014; Zhong, et al., 2018). The implications for patient outcomes, financial productivity and staff turnover and burnout are significant. There is no “one size fits all” but what is clear is that organizations must ensure that a team is able to complete the work at hand, while also leaving room for the innovation and ongoing changes that result from an evolving primary care model.

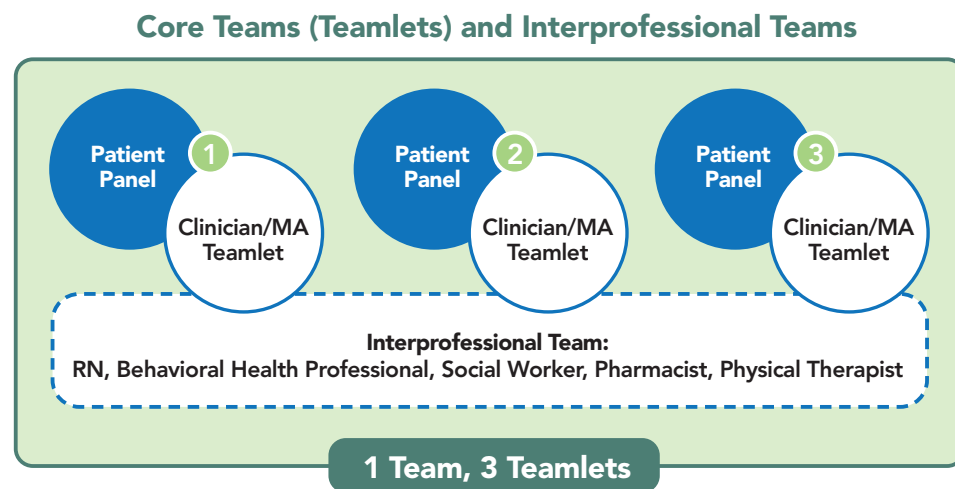
For example, turnover among team members and a panel size larger than a PCP’s or team’s ability to manage are also associated with burnout, contributing to a vicious cycle of overworked staff who then leave (AMA EdHub, n.d.; Helfrich, et al., 2017). On the one hand, small practices and health system-owned practices, including federally funded health centers, report greater burnout than solo practices, perhaps because the latter have greater professional autonomy (Edwards, et al., 2018). On the other hand, small and solo practices cannot offer as many services as larger and/or primary care practices that have transitioned to PCMH, adding a range of different types of new staff—e.g., nurses, pharmacists, social workers—and thus broader functional capacity (Patel, et al., 2013; Peikes, et al., 2014).

So much of the literature and experience about staffing ratios is based on pre-pandemic models of practice making it difficult to apply these findings post-pandemic.

For example, many smaller and solo practices closed their doors early in the pandemic, while others persevered by cutting back on non-essential preventive care and by laying off staff (Corlette, et al., 2021). While primary care has returned, for the most part, to pre-pandemic ways of doing business, most settings have also re-organized their practice to incorporate more telehealth, creating a new normal.

At CHCI, we continue to use the teamlet model of one medical assistant to one PCP (1:1), though other practices around the country with whom we collaborate report 1.5:1 or even 2:1 ratios, depending on what the medical assistant is charged with, such as scribing, managing referrals, or other administrative functions. Nursing ratios can vary based on whether the care management and triage models being implemented are centralized ones, versus those nursing functions accomplished at the point of care (e.g., medication administration, walk-in triage, and others). For behavioral health, CHCI scales its behavioral health staff to match the demand for care coming from the site's PCPs with a goal of a 1:1 ratio. Also, each dentist has one assigned dental assistant. However, in a setting with multiple dentists, an additional dental assistant may be needed to maximize flow while ensuring that infection control processes, such as instrument sterilization, are continuously carried out.

Figure 2.5: Teamlet/Core Teams



For extended team members in general, such as pharmacists or care managers, staffing ratios—or more specifically caseloads—depend on how you utilize their roles. The more important point is that team-based care has a greater probability of providing a full complement of services than other models of practice, especially for the elderly and patients with high social needs (Auerbach, et al., 2021). Ultimately though, staffing ratios need to be routinely reviewed as team-based models of care change to make sure that staff can continue to accomplish all of their functions with success.

Share the Care and Ground Rules: Building a Collaborative Team Culture

As we noted previously, “share the care” is a term coined by Dr. Bodenheimer and his colleagues at the Center for Excellence in Primary Care (Ghorob & Bodenheimer, 2012). It is a culture shift, a move away from a PCP-centric mindset toward one that is more team-centric, less “I” and more “We.” The team does not just assist or help the PCP; the team shares responsibility for the health of the panel of patients. For example, instead of a PCP delegating a task—“*Could you check this patient’s blood glucose*” or “*Please give this patient his flu shot*”—a team member, such as the medical assistant or nurse, depending on scope of practice for the task, checks the blood glucose levels or gives the immunization without being directed to do so because these routine actions use protocols written by the teams, endorsed by the organization, and built into the patient plan of care in the electronic health record. Thus when the PCP sees the patient, today’s blood glucose level may already be entered into the record for the PCP to review. The team knows who is responsible for following through and how that will happen, and they hold each other accountable. Re-allocating responsibilities for key **functions** rather than delegating **tasks** builds a collaborative mindset, as long as those responsibilities are clear, and the workflows are standardized to support them.

Ground rules are expectations for behavior among team members. There are two situations in which ground rules are particularly important: team meetings and team behavior during patient care. Everyone needs to agree on them and they need to be clearly stated, not assumed. Consequences for breaking ground rules should also be clear.

For example, what are your organization’s expectations about arriving on time for work? Or personal grooming and clothing? During meetings, is there a timed agenda? Do team members take turns running the meetings? Does everyone feel able to speak up? If someone suggests an area for improvement, how is it received? Do derogatory remarks stifle improvement and undermine morale? While providing patient care, when is it appropriate for patient service associates or medical assistants to interrupt the clinician who is seeing a patient? If someone makes a mistake, or is abrupt with patients, how is this behavior addressed? By whom? If someone disagrees with an order by the PCP, or believes that a delegated responsibility is beyond that individual’s scope of practice or ability, how is that handled?



Why is team culture important? A 2014 study by Rachel Willard-Grace, MPH, and her colleagues at CEPC, investigated the relationship between team structure, team culture, and emotional exhaustion of clinicians and staff in primary care practices (Willard-Grace, et al., 2014). The survey included items such as: “My professional

skills are used to the fullest at my clinic, "I can rely on other people at my clinic to do their jobs well," and "We have a 'we are in it together' attitude at my clinic." PCPs who reported higher team culture and tighter more stable team structure, especially in the teamlet, also reported less exhaustion. The authors suggested that fostering a team culture may be an important strategy to protect against burnout in primary care.

Essential Infrastructure for Integrated Primary Care: Data-Driven Decisions

Part II: Data-Driven Care goes into more detail about the roles of information technology, business intelligence, and quality improvement in integrated primary care. In this section, we want to emphasize the importance of data in the hands of frontline teams as essential infrastructure for applying the Chronic Care Model to practice and for fulfilling the functions of primary care. Data is Building Block #2 for a reason: everything else builds on top of it. The blocks are numbered to indicate not just their importance, but how the functions within those blocks build on one another. For example, without data-driven care (#2), you can't do empanelment (#3) or team-based care (#4).

Data-Driven Decisions: Clinical Care

First and foremost, it is essential for all of us to be data-driven organizations. Furthermore, up-to-date data must be in the right hands at the right time. This data includes information about patients at the individual, panel, and population levels, and the right hands include frontline primary care teams. Without good data, decisions about needed changes in practice are simply opinions.

The electronic health record (EHR) is a significant source of practice data. For all of their challenges, none of us would go back to the pre-EHR era. In that era, each discipline had its own record, making integration of critical health data virtually impossible. Today, regardless of the specific record, integration is the norm. For example, every patient at CHCI has one EHR shared by all disciplines: that is, ONE medication list, ONE problem list, ONE health history. All disciplines enter their notes into that shared record, accessible by all members of the primary care team who provide care to that patient. Of course, adaptations for specific specialty areas or disciplines are made as appropriate, which we will address later.

Integrated data are useful data, and useful data are the foundation for useful tools. Health centers will vary in their approach to generating and using data. Some health centers have in-house business intelligence personnel and data analysts who can

create their own data warehouses, allowing them to generate tools such as dashboards, standardized care plans, and reports on performance measures, including for the Uniform Data System (UDS). Other health centers outsource their information technology needs, and are served by one of many national groups that specialize in this work. Your best solution is one that works for you—but you must have a process for structured entry of data and information. This allows you to then capture and review essential data about your practice so that you can meaningfully use it to improve care.



Clinical and Business Intelligence staff work together to ensure high-quality care.

For example, all clinical CHCI staff members receive extensive training about how and where to enter specific information such as screenings, vital signs, and labs in the EHR as required by their role. Each primary care team has ready access to data about subsets of their panels, such as patients with hypertension or diabetes, or living with chronic pain. With data that updates daily, PCPs, nurses, and medical assistants can see both individual and group data regarding the degree to which patients' chronic conditions are under control and complicating factors such as smoking or obesity. Dashboards using this information can stratify patients by risk so that they can be referred to nurses for care management.

The **planned care dashboards** (also called pre-visit dashboards) are reviewed by medical assistants to identify patients being seen in the next few days who are due for routine preventive care based on clinical guidelines, such as vaccines, mammo-

grams, HbA1c or other bloodwork, or colorectal screening, to ensure that the care is provided. Dashboards alert behavioral therapists that a patient coming for a behavioral health visit is also due for a routine immunization, and a nurse will close that care gap in real time that day. Conversely, dashboards can alert medical PCPs that a patient has an active behavioral health condition on the problem list, but is not currently receiving behavioral health services.

Data-Driven Decisions: Performance Improvement for Practice Change

Improving the quality of a team’s performance cannot happen without reliable and accessible data. We subscribe to the Clinical Microsystems approach to quality improvement (QI) (Godfrey, et al., 2024; Nelson, et al., 2011). A hallmark of the Clinical Microsystems approach is that the people who do the work are engaged in how their work can be improved. When done well and consistently, QI is not just about performance data or a mechanism for practice change at the team level. It is part of the culture of the primary care team and the organization.

The Clinical Microsystems approach to QI at CHCI, which is discussed in detail in [Part II: Data-Driven Care](#), is especially well-suited to team-based care. It is data-driven (building block #2), team-based (building block #4), and built on a culture of share the care/share the improvement. The improvement team at a clinical site is a small group of clinicians and staff who work together on a **regular basis**, a principle of **team-based care**, who have been trained in this approach and its tools, and who have a coach to guide them. Working together, they develop and revise workflows that support the **functions** of primary care—such as planned care, population management, and referral management—to improve their team’s performance.

When the pandemic began, our staff’s extensive experience using this approach and their commitment to clinical excellence were critical to our response to the COVID-19 pandemic. **Everyone** from PCPs to support staff knew how to assess their practice data, set aims, draw a process map, trial new ways of working while tracking their effectiveness, and create playbooks, often doing so many times, in response to the shift to virtual care. This allowed our teams to **problem solve together and with other teams across the organization seamlessly and in real time**.



Technology brings us together across geography and departments.

*“Working together, they develop and revise workflows that support the **functions** of primary care—such as planned care, population management, and referral management—to improve their team’s performance.*”



What We Have Learned About the Foundations of Team-Based Care

As we have noted, the pandemic reinforced our belief in integrated primary team-based care. It tested the systems and values we had in place. We are an organization invested in constant growth and improvement—there is always more work to do—yet the foundations of team-based care and our approach to continuous improvement positioned us well to make changes quickly in real time. Clinical excellence, in a pandemic or otherwise, is not a status you achieve, but a goal you must constantly pursue with frontline teams using quality improvement skills and the data needed to support their decisions. Some key lessons from the pandemic that confirmed our model, as well as the building blocks of primary care, follow.

First, be an Engaged Leader.

It is building block #1 in primary care for a reason. Our own research indicates that without engaged leaders, the other nine building blocks cannot be developed or sustained no matter how invested the staff may be (Thies, et al., 2020). The COVID-19 pandemic re-affirmed this stance because it required a whole team response: executive leaders in administration, operations, facilities, information technology, communications, human resources, finance, and clinical care. Everything changed, and everyone had to change with it. Daily meetings began on the second Sunday of March 2020 and continued daily as we learned, evolved, and adapted. Each of the clinical chiefs met with their staff—and not just managers, but every single frontline staff member—to hear directly from them, both the vision for what needed to happen as well as “in the weeds” discussions about how the day to day work would need to change, and probably change multiple times. Never underestimate the need of even your most competent employees to communicate regularly with leadership, to get support for even the smallest change, and for flexibility in their life/work balance.

Employees also need to see that leadership not only knows what is happening on the frontlines, but can pitch in during a crisis. For example, when our organization stood up multiple state-wide testing clinics that operated week days, week nights, and weekends, senior clinical leadership staffed the clinics regularly engaging in roles ranging from registration to logistics. Nine months later, when the first vaccines became available, our organization stood up multiple mass vaccination drive through clinics across the State of Connecticut in settings such as an abandoned airfield, not just for our patients but for the entire state community. Clinical staff—medical,



Community health centers were instrumental in boosting COVID-19 vaccination rates across the U.S. among underserved and minority populations.

“...our organization stood up multiple state-wide testing clinics that operated week days, week nights, and weekends, senior clinical leadership staffed the clinics regularly engaging roles ranging from registration to logistics.”



dental, behavioral health, nursing—from Community Health Center, Inc. (CHCI) sites all across the state, from front line staff to executive leadership, teamed up to give vaccines and found a new level of camaraderie in the process. Volunteer health professionals from the community joined us as well.

Continuously following up and checking in with your staff is critical. Engaged leadership can be more difficult in the virtual world, but the basic principle still applies. Connecting with staff does not happen organically as it would when physically together, so leaders must be intentional in meeting with employees and creating different platforms by which staff can feel connected to leaders.

Develop Data and Quality Improvement Skills in Frontline Teams.



We cannot emphasize enough that **primary care teams, and the staff who support them, must be well-versed in the language and tools of quality improvement, and have access to clinical data, so that they can quickly apply those skills in a crisis.** The extensive experience that our staff had using the Clinical Microsystems approach to quality improvement (QI) prior to the pandemic was absolutely foundational to our response. Think of it this way: everyone knew how to ride the bike, just the route changed. Being able to rely on these skills and shared language help staff to feel competent, especially in a new and stressful situation, like a pandemic. Most importantly, they had a shared mental model of practice transformation on a larger scale, which is essential to normalizing change (May, et al., 2009).

Nurture Relationships with Patients.

Clinical excellence begins with good relationships with patients and understanding that the need to deliver high quality standard of care never diminishes. Whether in person care or telehealth, the high clinical standards must be met. We need to keep patients engaged. One way is to demonstrate our commitment to them.

At the start of the pandemic, we re-assigned almost 60 staff from different areas and disciplines within the organization to reach out to literally **every** patient with phone calls, using carefully crafted scripts to respond to patient questions and needs, to let them know we were still open and available to them, but in different ways. When patients received a call from CHCI, our number appeared on their screens so that they could feel secure in answering the call. This was very labor intensive, but very much appreciated by our patients, and put staff who were no longer interacting with patients in person to good use in a coordinated productive effort in the midst of disruption. As visits shifted to virtual, this team also provided telehealth support to patients, as they waited in virtual rooms to see their primary care providers (PCPs).



Focus on Functions not Tasks.

We found the “functions not tasks” mindset to be essential when we were faced with the pandemic. Staff got the big picture of what had to happen. We still needed to accomplish all of the basic **functions** of primary care, but the list of **tasks** for in-person care did not always translate well to a virtual world. For example, there was no after-visit summary to print out and hand to the patient. Tapping into the existing and potential **abilities** of staff gave us the flexibility to provide care in new ways, creating new patterns of work. At the same time, clarifying who is responsible for what and when allows you to standardize workflows to accomplish essential functions, for example, for medication refills, pre-visit planned care, and standing orders.

Train, Train, and Re-train Your Staff.

Staff are our collective number #1 asset. Take care of your staff and they will take care of your patients. In that first meeting in March of 2020, we resolved as an organization that there would be no lay-offs and no furloughs. We had come this far because of our staff and we were not going to let them down now. This was critical, and staff stepped up for the training and retraining, adoption of new roles and strategies, and understanding that they were part of a once in a lifetime need and opportunity to serve.

Staff need constant training and re-training, especially as they take on new roles and tasks, stretch their abilities, and adapt to new ways of working—and not just during a pandemic. In fact, by re-purposing and training staff to address essential functions, such as communicating with patients in the earlier example, we kept our commitment to not lay anyone off during the pandemic. When schools were closed and our school-based health center nurse practitioners were available, they stepped up in the early days of the pandemic as expert COVID-19 resources to do patient outreach, manage the urgent call line, and provide counseling on positive COVID-19 test results. Even after schools re-opened and they went back to their regular positions, many contin-

ued to volunteer for extra weekend assignments to the pandemic response effort out of their commitment to this work. Similarly, when the dentists and hygienists could no longer provide routine care, we relied on them to deploy first as COVID-19 testers at outdoor test clinics and later as COVID-19 vaccinators, from migrant and seasonal agricultural workers' farms to drive through clinics. In fact, underneath all the personal protective equipment in a COVID-19 testing clinic, you could find a dentist, a senior executive, a clinical chief, a patient service representative, front line staff, data specialists, nurses, and administrative staff—all trained to do what was needed and operating as a team.

Nurture Relationships with Your Community.

Community leaders—the Mayor, superintendent of schools, clergy, police, and parks and recreation staff, and including CHCI executive leadership—organized a community forum by Zoom, broadcast live on Facebook, during the first weeks of the pandemic for **sharing information, responding to concerns, and building community spirit**. Our chief behavioral health officer joined the group, providing a wise, calm reassurance as well as strategies for coping with the strains and stressors of the pandemic. It turned into a wonderful community itself! The broadcast ended in the summer 2022 and provided up to date information about the COVID-19 pandemic, as well as a forum for the discussion of positive change and successful initiatives in the life of the community. During the COVID-19 pandemic, in partnership with our communities and school districts, we also hosted several open meetings statewide on Zoom and Facebook to support families and parents.

Conclusion

This section (Chapter 1, 2, and 3) introduces the foundations and culture of team-based care, as well as the infrastructure needed to support it. Through sharing reflections from our clinical chiefs on the pandemic and lessons learned, we hope this part served as an introduction to team-based care and will provide a foundation for future sections on data, roles of the care team, training the next generation, and the future. Additionally, we hope this introduction generates and guides discussion about what team-based care means to your organization and supports best practices for implementation.

PART I: Foundations of Team-Based Care

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zoom

"Community leaders—the Mayor, superintendent of schools, clergy, police, and parks and recreation staff, and including CHCI executive leadership—organized a community forum by Zoom, broadcast live on Facebook, during the first weeks of the pandemic for **sharing information, responding to concerns, and building community spirit.**"





Integrated primary care is essential for high-quality primary care.

“...we need data to not only provide safe, efficient, and effective care; we need data to continuously improve that care and to justify further investments in care.”



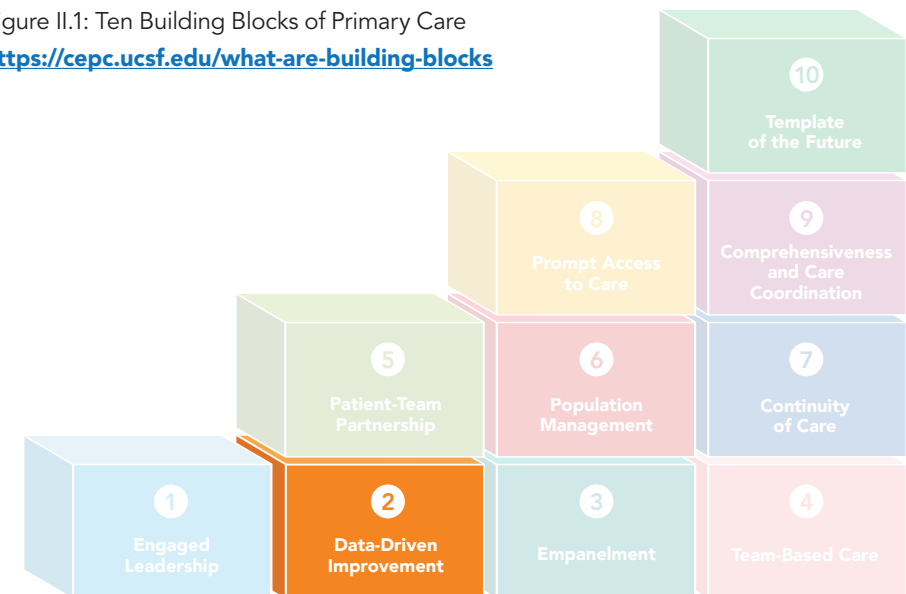
PART II

Data-Driven Care

In [Part I: Foundations of Team-Based Care](#), we noted that the second building block of primary care is data-driven improvement (Bodenheimer, et al., 2014). We often find in working with teams seeking to improve outcomes that they are surprised that data holds such a prominent position in primary care. Most of our teams think of data as something the Quality Improvement (QI) department handles. However, every time your staff enter a patient’s blood pressure into the electronic health record, or select an option from a drop-down menu, they are entering data. **Do they understand this? Do they know where the data goes and how it is used? Do they understand how the data they enter contributes to performance on Uniform Data System (UDS) measures submitted to the Health Resources and Services Administration (HRSA)? To reimbursement from insurers? To their organization’s financial health?**



Figure II.1: Ten Building Blocks of Primary Care
<https://cepc.ucsf.edu/what-are-building-blocks>



Data have always been important in health care. Hippocrates tracked flu epidemics across seasons (Hippocrates/Adams, 1886). In the 19th century, Florence Nightingale tracked patients’ response to treatment using a log of notes at the bedside (Nightingale, 1859/1992), while Pierre Louis did the first randomized trial to demonstrate that

bloodletting was ineffective (Best & Neuhauser, 2005). Today, clinical data is used in primary care not just to track the health status of an individual patient, but also of populations of patients, in order to predict trends in utilization of care, response to treatment, outcomes over time, disparities by patient group, and of course, costs associated with care. That is, we need data to not only provide safe, efficient, and effective care; we need data to continuously improve that care and to justify further investments in care.

Health centers have a proud legacy of submitting data on service and utilization since the very early days of the health center movement. The UDS has evolved into a very sophisticated public report that tracks data for each federally funded health center and look-alike in the United States. (Health center program look-alikes are community-based health care providers that meet the requirements of the HRSA Health Center Program, but do not receive Health Center Program funding [HRSA, n.d.]). These data include patient characteristics, services provided, clinical processes and health outcomes, patients' use of services, staffing levels, costs, and revenues for the calendar year, among others. This information is public for you, your staff, your patients, and your community to see on [HRSA.gov](https://www.hrsa.gov). (If you are unfamiliar with your organization's data, check the website. When we work with teams to transition to team-based care, we like to tell them that every baseball team knows their "stats." You should know yours! Without that knowledge, you don't know what needs to be improved.)



In other words, as **health centers are held accountable for the federal dollars they receive, they must demonstrate that they continually make efforts to improve the quality of their care.** Furthermore, the performance data for every federally funded health center and look-alike is publicly available, not only creating transparency in what we do but providing benchmarks for performance among federally funded health centers and look-alikes. When those data are aggregated, they also demonstrate the advantages of federally funded health centers and look-alikes in providing high value care compared to other settings such as private practice (Goldman, et al., 2012; Oronce & Fortuna, 2019).

Clinicians and staff in patient-facing roles cannot provide care, improve care, and get reimbursed for care without the Healthcare Information Technology (HIT) systems infrastructure that organize data from multiple sources and for multiple purposes. These systems include, to name a few: the electronic health record (EHR) for documenting all patient encounters both within and external to the health center, scheduling and billing software, Human Resources and financial data systems, and in some cases, additional systems developed to monitor, track, and improve care and performance. Some of these programs are standardized across settings, others are customized within specific settings. Data can be stored in data warehouses, and

pulled for reporting population level quality measures, such as UDS, and for developing tools for clinical decision support, such as dashboards, best practice alerts, and panel management (Bucalon, et al., 2022; Evans, et al., 2016). Data is also used as the foundation for quality improvement efforts. Flexibility, timeliness, and interfaces are hallmarks of the most useful systems.

The accumulation of so much information has resulted in data sets that are large in both scale and complexity, and which have the potential to translate raw data into sophisticated predictive models using population health analytics (Dash, et al., 2019; Kruse, et al., 2018; Mehta & Pandit, 2018; Peters & Buntrock, 2014). Despite evidence that HIT, and EHRs in particular, can improve care (Kruse & Beane, 2018; Wager, et al., 2017), challenges remain. Usability is always a concern, as clinicians find that documentation in the EHR can be onerous, and contribute to burnout (Gardner, et al., 2019; Staggers, et al., 2018; National Academies of Sciences, Engineering, and Medicine, 2021). The lack of interoperability between different systems in different organizations can constrain the flow of data (Kruse, et al., 2018), and safety and privacy of patient records is always of concern (Sittig, et al., 2020). The National Academies of Sciences, Engineering, and Medicine (2021), in its recommendations for improving primary care, has advocated for HIT re-design that better serves clinicians as well as patients.

To address these concerns, the Health Information Technology for Economic and Clinical Health Act (HITECH) of 2009 provided funding to improve health care quality, safety, and efficiency in the use of health IT, including interoperability across EHR systems, and the private and secure exchange of Electronic Patient Health Information (ePHI). In 2015, the Office of the National Coordinator for Health Information Technology (ONC) released the Nationwide Interoperability Roadmap to advance these goals, which in turn facilitate reimbursements for value-based care (ONCa, n.d.). Progress continues to be made through the publication of new regulations from the Centers for Medicare and Medicaid Services (CMS) (CMS, n.d) regarding how health care application software and services are integrated, as well as prohibitions about blocking information that could be used for treatments purposes (ONCb, n.d.).

The professionals who build, manage, and adapt information systems in health care, and in primary care in particular, must be able to meet a range of technical and regulatory challenges of HIT. At the same time, they must be responsive to a wide range of demands for their time and talents. These can include requests from clinicians for customized templates in the EHR, to requests for population level data from government agencies and insurers, delivered in specific formats from specific fields in the EHR. In [Chapter 4: Business Intelligence](#), [Chapter 5: Population Health](#), and [Chapter 6: Data-Driven Performance Improvement](#), we will demonstrate why these efforts are essential infrastructure for team-based care in community health centers.

Business Intelligence

While the term “Business Intelligence” is only about 20 years old, decision support systems have been in development since the 1950s, with the greatest growth beginning in the 1980s as computers became more sophisticated and their use more widespread (Power, 2007). One definition of Business Intelligence is that “BI systems combine data gathering, data storage, and knowledge management with analytical tools to present complex internal and competitive information to planners and decision makers. Implicit in this definition is the idea (perhaps the ideal) that business intelligence systems provide actionable information delivered at the right time, at the right location, and in the right form to assist decision makers” (Negash, 2004, p. 178).

Actionable Data

The term “actionable” in this definition was emphasized in conversations with our Director of Business Intelligence (BI) at Community Health Center, Inc. (CHCI) and with the two founding members of the BI team who have built the HIT infrastructure from scratch over the past decade. They noted that you can collect all the data you want, but if it is not structured in a way that is useful and meaningful, staff will not be able to use it in a timely manner to provide or to improve patient care. Therefore our BI team, which has grown, works closely with the clinical chiefs, senior administrators, and the population health team to identify what data are most important to them and their staff, what they are trying to improve, and when/how often they need to see the information.

The end-users, from executives to medical assistants, see customized reports and dashboards produced by BI. These dashboards and reports are built in collaboration with the end-users, and there are many iterations tested until all parties are satisfied that these products are usable and the data is actionable. What end-users don’t see is the back end of these products. The BI team has had to build the data warehouse that integrates copies of patient and operational data in the background in a way that data is being fed into it correctly so that the data can be extracted correctly and used for analysis. They have also developed the programming codes that make the warehouse work by processing the data into reports and dashboards. Every night, the warehouse runs an extract, transform, and load (ETL) process to integrate data from multiple sources. Some examples of data-processing programs that have become automated, but also must be maintained, follow.



“The BI [Business Intelligence] team has had to build the data warehouse that integrates copies of patient and operational data in the background in a way that data is being fed into it correctly so that the data can be extracted correctly and used for analysis.”



- Every day, a program cleans the data, looking for outliers that represent invalid data entry. For example, systolic and diastolic entries for blood pressure may be reversed, so that what should be 140/80 is entered as 80/140.
- Every night, a report on 40–50 Clinical Quality or Healthcare Effectiveness Data and Information Set (HEDIS) measures are run to identify missed opportunities for closing gaps in care, such as cancer screenings, and the percentage of patients on a panel who are up to date with HbA1c testing. Considered one of the most important automated reports, it is monitored regularly by the Chief Nursing Officer (CNO) and the information contributes to QI efforts, re-training of staff, and performance appraisals.
- There are reports that tell the staff in operations how quickly phones are answered, appointments are filled, and how far out appointments are being booked.
- Finance staff receive reports on how long it takes to file claims, how many claims are rejected, and how many were rejected because of incorrect coding.
- There are reports on patient utilization of emergency rooms, and on hospitalizations, prescriptions, and lab work from outside labs.
- An opioid dashboard tracks prescribing trends across primary care providers and outliers can be identified for support and education.
- Reports are created for special projects. For example, during the COVID-19 pandemic, we needed to know where our homeless populations were after shelters closed. By using an interface with the state immunization registry, we could determine if our patients were receiving the COVID-19 vaccine outside of CHCI.

Data Accessibility and Validity

Many of the frontline teams with whom we have worked have had difficulty accessing UDS and other population-level data about their patients. The data may be available only to senior staff, requests for reports may need to go through several committees, and/or reports are not structured to be actionable. Health centers that we work with through the Health Resources and Services Administration (HRSA) funded National Training and Technical Assistance Partners (NTTAP) have expressed that relying on outside vendors presents more challenges in accessing performance data and customizing reports.

One biggest challenge to data **validity** is ensuring that the denominator in a measure is correct. Teams have improved their quality metrics just by eliminating from the denominator patients who were no longer patients or did not fit eligibility criteria for that specific quality measure. For example, with completed screening rates, your denominator as total patients versus a denominator of total patients who **were supposed to be screened** based on eligibility criteria is crucial for data validity. If

your organization screened 100 patients out of 300 total patients (33%), but only 250 patients were supposed to be screened based on eligibility criteria (40%), you have a very different screening rate.

Numerators and Denominators at Harbor Care, Nashua, NH

Numerators, denominators, target goals...these concepts were somewhat foreign to our clinical care team and their impact on delivering high-quality patient care even more so. In running the Uniform Data System (UDS) report for HbA1c in our diabetic patients, we were able to separate those who had been screened, those who were not screened, and patients eligible for screening. Through the data analysis and workflow development, we were able to determine our baseline performance for percent screened, set a target, and execute process change during team meetings. Once our clinical members began to recognize the improvement in care—they were fully engaged.

—Janna O’Leary, RN, Harbor Care, Nashua, NH



How does BI know that their data are valid and reliable? At CHCI, we noted that the data is cleaned daily to eliminate outliers and typos. To ensure that the denominator for UDS measures is accurate, BI routinely runs lists of patients for year-to-date that fit denominator criteria, and this data is updated on the UDS Current Year Dashboard. This was a significant challenge during the high capacity points of the COVID-19 pandemic, when CHCI expanded its testing and vaccination program, and even sick visits, to include patients who did not have a UDS qualifying visit. BI had to write a program that put lots of exclusions into the quality metrics when data was run in order to maintain the integrity of the denominator.

Another approach to data validity is chart reviews. For example, a pharmacist regularly reviews patient records in the electronic health record to make sure that the most up to date medications are not only listed, but are picked up correctly when data is run. Otherwise, BI relies on the expert end-users to let them know if the data does not seem right. For example, during pre-visit planning, medical assistants may note that a patient is flagged as being due for an HbA1c test when in fact they know it has been ordered because they did it. Medical assistants can notify BI directly to investigate.

The biggest threat to data **integrity** is invalid and/or inaccurate data entry by end-users. For our BI team, end-users include every staff person who enters any kind of data into the electronic health record and other HIT systems, such as billing and coding. That is, data integrity involves everyone with access to these records. Consequently, the BI team cannot emphasize enough the importance of close collaboration among BI, clinicians, and the population health team.



“There are many definitions of, and strategies for population health management, depending on your perspective and context—insurer, policy maker, or provider of clinical care.”



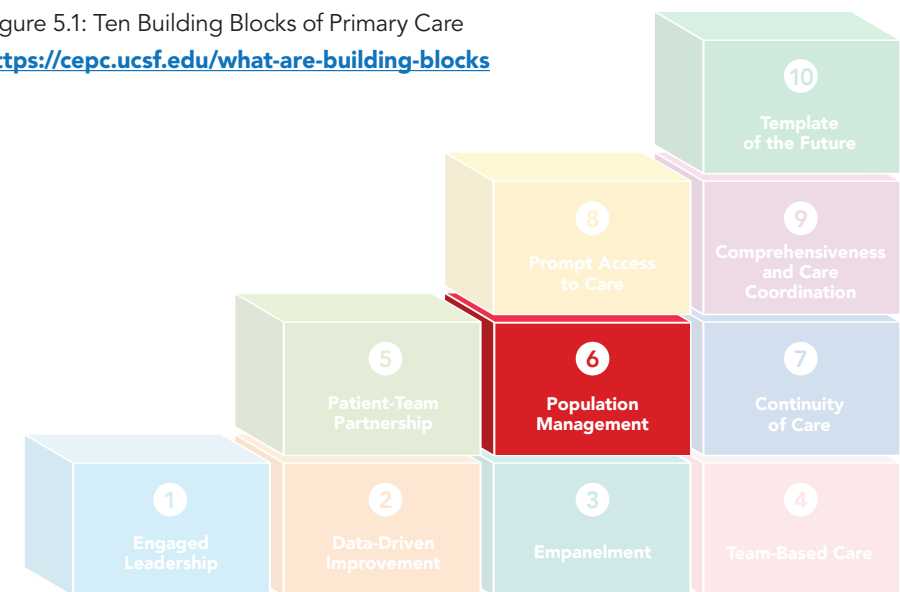
CHAPTER 5

Population Health

A commonly used definition of population health is “the health outcomes of a group of individuals, including the distribution of such outcomes within the group” (Kindig & Stoddart, 2003, p. 381). The distribution of outcomes can refer to inequities that can be attributed to multiple determinants of health, including social, economic, and co-morbidities. For primary care providers (PCP), the group of individuals is the patients within their own practice (American Association of Family Physicians, 2020). This is very different from public health which “promotes and protects the health of people and the communities where they live, learn, work and play” (American Public Health Association, n.d.).

Population health is the sixth building block of primary care and one of the functions of primary care discussed in **Part I: Foundations of Team-Based Care** (Bodenheimer, et al., 2014). Its foundations are #2 data-driven improvement, #3 empanelment, #4 team-based care, and #5 patient-team partnership for a reason. Teams caring for a panel of patients who don’t have data about their panels in the aggregate, and who do not engage patients in improving care, cannot do population health management, or improve their efficiency and effectiveness. In addition, as we discuss further below, population health data is the foundation of value-based care.

Figure 5.1: Ten Building Blocks of Primary Care
<https://cepc.ucsf.edu/what-are-building-blocks>



There are many definitions of, and strategies for population health management, depending on your perspective and context—insurer, policy maker, or provider of clinical care (Steenkamer, et al., 2017). All are data-driven. However, the goals are much the same: enhance the patient experience, improve population health, and reduce costs, that is, the Triple Aim, which we discussed in [Part I: Foundations of Team-Based Care](#). First, of course, you must define the populations and/or subpopulations of patients who fall within the selected distributions of health outcomes that are of interest for your organization. Strategies for population health management include: clinical dashboards; identifying and closing gaps in care; stratifying your population using risk scores; reaching out to patients, including those who are transitioning from hospital to home; and tracking outcomes to determine the effectiveness of clinical interventions.

For example, rather than approach patients with consistently high HbA1c values one at a time, identifying this group of patients as a subset within the distribution of patients with diabetes enables the health care team to develop a suite of strategies to improve their care, such as health coaching, self-management support, and complex care management. A population health approach is not just better care, but has implications for financial reimbursements.

The Evolution of Population Health at Community Health Center, Inc. (CHCI)

The road to population health management at Community Health Center, Inc. (CHCI) has perhaps been very similar to your own. As noted earlier, health centers that receive federal funds under the Health Center Program authorized by HRSA have long been required to submit Uniform Data System (UDS) data to HRSA. The UDS is complemented by the Patient Centered Medical Home (PCMH) program, which is defined by the federal Agency for Healthcare Research and Quality (AHRQ) *“not simply as a place but as a model of the organization of primary care that delivers the core functions of primary health care”* (AHRQ, n.d.). As many federally funded health centers are certified as PCMH through the National Committee for Quality Assurance (NCQA, n.d.), population health management usually begins with the need to report quality measures to HRSA and NCQA, and to work with clinicians to understand those measures and implement strategies to improve them.

At CHCI, our journey began in earnest with the appointment of a Senior Program Manager for Population Health in 2014 whose initial charge was to focus on the UDS measures. As we discussed in [Part I: Foundations of Team-Based Care](#), CHCI had an existing infrastructure of data-driven quality improvement at the team level. Thus, she was able to work directly with the clinical chiefs and the QI teams as well as front

line staff to learn, map, and make changes in workflows and role responsibilities to improve outcomes.

Like many major developments in health center practices over the years, it often takes a pivotal moment or event to take a big step forward (think telehealth after the onset of COVID-19 pandemic!). Over the years we’ve seen major changes, for instance, when states transitioned Medicaid to managed care organizations, or when the Affordable Care Act (ACA) was implemented and insurance became more accessible to more people, pre-existing conditions were eliminated as the basis for setting fees or denying care, and certain preventive services were required to be covered regardless of deductible or type of coverage. At CHCI, a pivotal moment for a major step forward in population health was the State of Connecticut’s decision in 2017 to launch an enhanced Patient Centered Medical Home (PCMH) program called PCMH+ for Medicaid patients enrolled in the state’s Medicaid program HUS-KY (Connecticut Department of Social Services, n.d.).

PCMH+ practices offer patients the opportunity to participate in expanded services, including integrated primary care and behavioral health care, and enhanced care coordination, that is, care coordination beyond what is typically provided by a PCMH. For example, the care coordinator would facilitate patient access to community resources for rent assistance, housing, food, medication assistance, child care, transportation, education programs, and help pediatric patients transition to adult care. A key priority is to screen patients regarding social determinants of health and coordinate their care with the appropriate resources, not simply refer them to these resources.

PCMH+ in Connecticut provides add-on payments for care coordination to qualifying health centers and the opportunity to participate in shared savings if the practice achieved individual or aggregated group quality scores that were higher than previous reports. CHCI has used this program and the add-on funds to invest in specific strategies that over the past six years have reduced ER visits and hospital readmissions dramatically, and driven significant improvement on other (though not all) quality measures. Across the country, we hear similar stories from colleagues about the impact of a population health approach and the value-based payment rewards.

PCMH+ requires the establishment of an Oversight Committee, which includes patients, to monitor activities among the network of community service agencies and health centers. The purpose of the committee is for the Participating Entity, that is, the health center, to have input from patients about the services they are receiving, fostering a continuous feedback loop about the PCMH+ program. Here is where building block #5, patient-team partnerships, is part of the foundation for population health efforts.

While PCMH+ HUSKY is unique to Connecticut, these kinds of programs are being developed across the country in the movement toward value-based comprehensive care. The role of our Senior Program Manager for Population Health has evolved from data analyst to leader of the team that generates essential data sets on utilization and care gaps at the agency, at the site, and provider levels for the purposes of improving patient outcomes. Her team oversees the quality improvement innovations, and manages the value-based contracts. We note these programs may not be permanent as they are subject to state and federal priorities.



Value-based care is a delivery model in which providers of care, including hospitals and physicians, are compensated in part based on patient health outcomes. Under value-based care agreements, primary care providers are rewarded for helping patients improve their health, reduce the effects and incidence of chronic disease, and live healthier lives. As noted in Catalyst, the New England Journal of Medicine series on innovation in health care, *“the ‘value’ in value-based healthcare is derived from measuring health outcomes against the cost of delivering the outcomes”* (Catalyst, NEJM, 2017). Without population health management, there is no value-based healthcare.

How Population Health Management Works

Population health management may be a department or a job description in most organizations, but responsibility for it is widespread. In conversations, our Senior Program Manager for Population Health and Director of Business Intelligence emphasized many times that it is a mindset of care that occurs across several levels of functioning within a health center. That is, **everyone** at CHCI contributes to population health, beginning with individual patient encounters and extending out to value-based contracts with external agencies. There is a direct line between the former and the latter: if a patient encounter does not result in care that can be measured as demonstrating quality (or not), that encounter cannot contribute to the database which informs clinical strategies and tools to improve and support care and ultimately demonstrate value at a population level.

Below we discuss some of those tools and strategies, and how population health is interwoven with clinical care. But first let's be clear: all of these tools and strategies depend on having staff who are trained in the standardized workflows that ensure the data is 1) entered correctly in the electronic health record; 2) retrieved appropriately; and 3) used effectively to close gaps in care, identify high risk patients, and reach out to patients as needed for follow-up. That is, data without a clear plan for how to use it to improve patient care is not actionable data.

Clinical Dashboards: Identifying and Closing Gaps in Care

A key piece of population health management is the clinical dashboard, specifically the planned care dashboard which is the engine driving all visits in primary care. The medical assistant does the pre-visit planning by reviewing the dashboard to identify what tests or services a patient is due for. For a patient with diabetes, for example, that might be HbA1c blood work, and retinal or foot exams. Other items to be addressed can be routine screenings for cancer (e.g., breast, cervical and colorectal cancers), substance use (e.g., tobacco, alcohol and others), depression, and so on; many are UDS measures. Even if a patient encounter is for a sick visit, there are items on the dashboard that can be addressed that day, so that gaps in routine and preventive care can be closed. We noted in [Part I: Foundations of Team-Based Care](#) that all CHCI patients have just one electronic record, accessible by all disciplines, making it easier to close care gaps. A dental hygienist on the primary care team can administer fluoride treatments for children when due, or the dentist might note that a patient with diabetes needs to have an HbA1c drawn.

Again, dashboards are not useful if there are no clear workflows in place for how to provide the care that the dashboard flags as needed. It is one thing to identify that a patient needs a retinal exam. It is quite another to ensure that the exam is done and that the results are documented in the EHR and reviewed.

Lessons Learned—Planned Care Dashboard

As the number of reportable measures grows, so do the items on the dashboard. The first primary care dashboard for adults at Community Health Center, Inc. (CHCI) had 20 items on it, and most, but not all, were Uniform Data System (UDS) measures. Our Senior Program Manager for Population Health and other members of her team who had developed the dashboard in collaboration with the business intelligence team decided to visit various clinical sites to see how it was working: ***“It was such a great eye opener. While I got the impression from clinical leadership that the planned care dashboard was working as intended, the medical assistants on the ground had a different view based on their experience. It wasn't as neatly tied up in a bow as we thought.”***

—Tierney Giannotti, Senior Program Manager for Population Health,
Community Health Center, Inc.

She found this to be a great lesson about centralized versus decentralized decisions in organizations, and how to find the right balance. If the workflow to use the dashboard is overly cumbersome, it won't get used, and leadership doesn't have the data needed to track and improve performance, and thus benefit from the financial rewards of doing so.

Because the population health team is very much focused on ensuring that the essential measures on a dashboard are addressed and documented appropriately, they met with the core health care team who use the dashboard daily, including the dashboard developers from BI. This strategy is consistent with our philosophy of quality improvement: ask the people who do the work how to improve their work.



For example, the medical assistants are usually the first to review the planned care dashboard prior to a patient visit and set up actionable items for PCPs, such as placing an order for colorectal screening. Thus, after Senior Program Manager’s team consulted with the medical assistants, nurses and PCPs, changes were made to the CHCI dashboard and the required workflows. Again, there is a role in population health for everyone on the primary care team, and everyone on the team needs to know what that role is.

Our current planned care dashboard for adult patients now has more than 45 items! You have probably experienced “dashboard creep” as well: the more items deemed essential, the more difficult it is for the primary care team to address them during a visit, especially during virtual visits. During the COVID-19 pandemic, the medical assistants were not necessarily present during virtual visits, and so sometimes the dashboards were not being used. (We will discuss telehealth more in [Part V: The Future](#).) A consequence of the increasing number of items on the dashboard is that they must be prioritized in real time: the UDS measures come first. It is necessary to train current and new staff continually about not just how to use the dashboard and workflows, but why doing so is important. Figure 5.2 is an example of the tool used to train medical assistants and others regarding one item on the planned care dashboard (PCD): breast cancer screening.

Figure 5.2: Planned Care Dashboard Training Tool

PCD Item	<p>***Breast Cancer Screening</p> <p>■ (turns red 3 months prior to due date)</p> <p>■ (turns yellow for 30 days once the mammogram has been ordered or declined)</p>
Patient Population	Women age 50 to less than 75
How Often	Alerts every 12 months (but due every 24 months)
What MA/LPN Does (or other clinical staff)	<ul style="list-style-type: none"> • Ask the patient if she has had a mammogram in past 24 months. If yes, complete Non ROI and send to the facility where she got it done and order a “Mammogram Outside” (via Manage Orders) [MA] • If she has not had one, order a mammogram using DI. <ul style="list-style-type: none"> • Order DI = Mammogram—Bilateral Screening [MA] • Mammogram—Bilateral Diagnostic [Prov] • Mammography screening with U/S—Hospital specific [MA/Prov] • If she declines, order a “Mammogram Declined” (via Manage Orders) [Prov] • Once results come in: Results checked as “Received”, “Collection Date” entered and “Attached” [MA] or Medical Records • DI Result “Reviewed” [Prov] • If the patient has had a bilateral mastectomy please be sure that Z90.13 is on the current problem list so that the patient is excluded from the measure. [Prov]

Note: This Planned Care Dashboard was created using national guidelines from the United States Preventive Services Task Force (USPSTF).

Risk Stratification and Strategies to Mitigate Risk



We all care for vulnerable patients who are at higher risk for poor health outcomes for many reasons. **How do we decide who is highest risk? How do we allocate resources accordingly?** The Johns Hopkins Adjusted Clinical Groups System (n.d.) is a health analytics software system that has collected data from commercial and government health plans, as well as from health systems, for over 30 years. The Adjusted Clinical Groups (ACG) System is based on the premise that current clusters of morbidity are good predictors of future resource-intensive multi-morbidities. In Connecticut, the PCMH+ HUSKY Medicaid program uses the ACG System to assign

risk scores to patients, which are accessible to providers who care for those patients. The ACG system is service claims-based and does not account for social determinants of health, medication use, or patients who are new to Medicaid or to Connecticut. At CHCI, we identify vulnerable patients who are at higher risk for poor health outcomes with the ACG System, as well as other sources of information.

For example, it is well known that patients recently discharged from the hospital are at higher risk for re-admissions within 30 days of returning home, especially patients with chronic conditions (Brunner-La Rocca, et al., 2020). Their PCP is expected to provide transitional care services in that time frame (Centers for Medicare and Medicaid Services, 2021). However, for PCMH+ patients, the measure is within seven days after discharge. It is therefore critical that PCPs have timely information about these patients in order to intervene and mitigate risk.

We have a vendor that delivers real time notifications when patients are admitted or discharged from hospital or emergency room. Notifications from the vendor about CHCI patients are reviewed daily by triage nurses for immediate follow-up. The recent implementation of a new statewide health information exchange in Connecticut, referred to as CONNIE (n.d.), may significantly enhance this function when fully deployed.

Prior to the COVID-19 pandemic, a patient with an ACG risk score above a certain number and who had a recent emergency room visit or hospitalization would pop up in our scheduling software, and the patient service associate (PSA) called the patient about the need for follow-up and also ensured that the triage nurses contacted that patient. Post-pandemic, this risk stratification information is now viewed by a behavioral health coordinator who works with the population health team. She organizes and leads the monthly Integrated Care Meetings that are conducted at every site to review high risk patients. The health care team reviews the patient's record and changes the plan of care to better support these complex patients. Many of these patients require complex care coordination facilitated by the registered nurses on the primary health care teams.

Beyond the Dashboards: Closing Care Gaps and Patient Outreach

Population health extends beyond the primary health care teams. Closing care gaps in the most effective, efficient, and least intrusive way requires developing and using other sources of information, as well as personal outreach to patients. There are three primary ways to close care gaps. Some examples of ways to close the gaps from the CHCI perspective follow. We would love to hear from you about ways that you have devised!

1 First, identify patients for whom the care gap has been addressed, that is the expected care was actually provided, but for whom there is no record indicating it was addressed. Not all patients get all of their care within CHCI or within any health system for the matter. Yet as a PCMH, we, like you, are accountable for their care. A common challenge is when patients go to an outside lab for tests, but those results do not make their way into the patients' primary care records. At CHCI, a member of the population health team can access patient lab results in the records of our laboratory vendor. Using the patient's name and date of birth, this person can find the specific claim, download the lab report, and then notify the PCP and the two medical assistants responsible for uploading the results into the EHR. It's about making the data count.

2 Second, as we noted earlier, close care gaps in real time when the opportunity arises. For example, when a patient is seen for an acute visit, such as a sinus infection, you can order the cancer screening or the HbA1c that is due.

3 Third, reach out to patients by text or telephone to schedule a visit or remind them of one so that they get the care they need to receive. When patients do not attend a wellness visit, a designated member of the CHCI population health team contacts them to re-schedule, and determines the reason for the missed appointment, such as lack of transportation, so that the issue can be anticipated and addressed in the future. Similarly, as children ages zero to 15 months should have six documented well-child visits. During this time, there is a designated member of the CHCI population health team to contact those parents who miss a well-child visit to emphasize the importance of these visits. This dedicated work-flow helps to prevent risky events from occurring.

Of course, the process of contacting patients is always evolving due to changes in technology—how we use it and how patients use it. At one time, we relied almost exclusively on telephone reminders but with limited results. In 2023, we implemented a far more sophisticated and effective text messaging system that is interactive yet still HIPAA compliant, which is showing enormous promise. Nevertheless, wherever you are on your technology journey, communicating with patients outside of the visit is likely a critical concern.

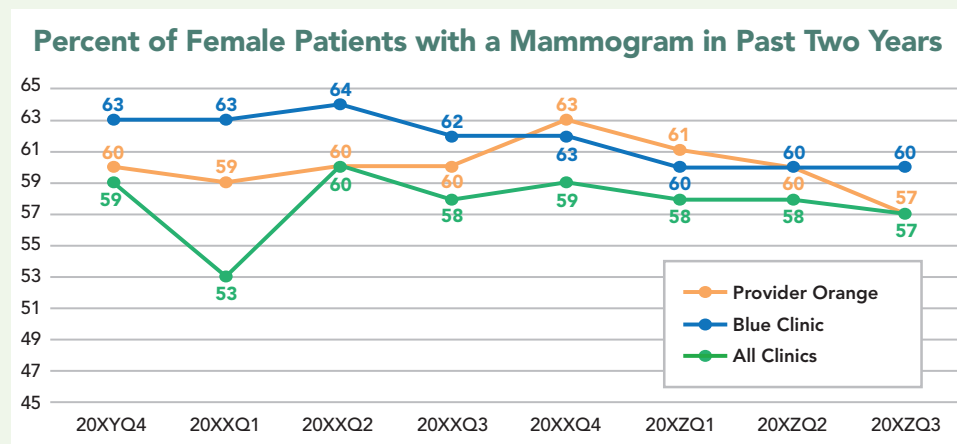
Example of a Report Run by Community Health Center, Inc. (CHCI) Business Intelligence for Population Health

The graphic below (Figure 5.2) is a modification of a report from the QI Scorecard dashboard that the Senior Program Manager for Population Health and a member of the Business Intelligence team developed. It displays performance on the Uniform Data System (UDS) measure “Percent of patients eligible for a mammogram in the last two years” over eight reporting quarters (exact dates have been eliminated). The orange line is for a panel of patients for a selected primary care provider (PCP) we will call Provider Orange. The denominator is the number of Provider Orange’s patients who met eligibility criteria for a mammogram in the noted time frame. The numerator is the number of Provider’s Orange’s patients who have a documented mammogram in their record. As the patients in a denominator change daily, the data is backed up once a month so the quarterly report reflects past denominator data.

The blue line is the performance of all PCPs practicing at the same clinical site as Provider Orange. The green line is the performance for all sites across CHCI who see adult patients. The number of patients in the denominator for Provider Orange is included in the denominators for the Blue Clinic and All Clinics for all data points, and again, as denominators change daily, the data is backed up monthly.

The report is used to provide feedback to the PCPs and primary care teams regarding their performance with their own patients and how their performance compares with PCPs at their own site and agency wide. It can also open up discussions about additional training for staff or changes in workflows.

Figure 5.2. Example of a QI Scorecard Report



Population Health and Public Health



What is the difference between population health and public health? As we have used the terms in this chapter, population health refers to health outcomes of a selected group of patients in your care, whereas public health is concerned with the community at large. **A more important question is: what is the relationship**



between primary care and public health? The intersection of population health, primary care and public health is not new (Folsom Group, 2012; Institute of Medicine, 2012; National Commission on Community Health Services, 1967). While a full discussion is beyond the purposes of this book, we need look no further than our experience with the COVID-19 pandemic. An early lesson is that there are wide disparities in both public health and primary care infrastructure funding and resources across the country, in part, as a consequence of decreased funding for public health over the past few decades (Sen-Crowe, et al., 2020; Trust for America’s Health, 2019).

When the pandemic began, state health departments, as well as local health departments, did their best to respond, but among the first calls they made were to community health centers because we exist at the intersection of individual care, community care, and public health. Working in tandem with state health departments and HRSA, health centers stood up both testing and vaccine clinics that ranged from mass drive through operations to individual shelters, migrant and seasonal agricultural workers’ farms, and public housing complexes. As of the official end of the public health emergency on May 12, 2023, CHCI continues to administer and encourage uptake of the COVID-19 vaccine. We need to ensure that we learn and preserve our lessons from this unprecedented primary care/public health connection.

The increase in calls for better integration between primary care practices and public health institutions at the local and state levels (e.g., American Association of Family Physicians, 2020; Catalyst, 2020; Koo, et al., 2012; Martin-Misener, et al., 2012) is consistent with one of the competencies of primary care discussed in [Part I: Foundations of Team-Based Care](#): clinic-community connections. We will address the opportunities forging these connections has for health centers in [Part V: The Future](#).

Data-Driven Performance Improvement

All federally funded health center and look-alikes must submit quality performance measures through the Uniform Data System (UDS) and demonstrate efforts to improve those measures, all of us are involved in quality improvement (Health Resources Services Administration, 2024). According to the Health Resources Services Administration (HRSA), “quality improvement (QI) consists of systematic and continuous actions that lead to measurable improvement in health care services and the health status of targeted patient groups” (HRSA, 2011, p. 1). HRSA goes on to emphasize that the focus is on patients, teams of health care professionals caring for those patients, and data.

In our previous chapters on [Business Intelligence](#) and [Population Health](#), we made the case for why data-driven care is the second building block in primary care (Bodenheimer, et al., 2014). We noted that “business intelligence systems provide **actionable** information delivered at the right time, at the right location, and in the right form to assist decision makers” (Negash, 2004, p. 178), with emphasis on the term **actionable**. In our conversations with the primary care teams with whom we work on QI and team-based care, we have learned that QI efforts vary widely across health centers. Some have QI departments whose members are trained in Lean or Six Sigma. Others report that they use Plan-Do-Study-Act (PDSA) cycles, which are part of the model promoted by the Institute for Healthcare Improvement (IHI, n.d.). Most tend to take a top-down approach, that is, the QI department initiates and/or facilitates the change effort, often using an improvement team of managers from multiple sites.

We subscribe to the Clinical Microsystems approach to QI (Godfrey, et al., 2024; Nelson, et al., 2011), which was initially developed by the Microsystems Academy at The Dartmouth Institute for Health Policy and Clinical Practice. Microsystems Academy is now housed within the Institute for Excellence in Health and Social Systems (IEHSS, n.d.) at the University of New Hampshire. Clinical Microsystems has roots in ecological systems theory in developmental psychology (Bronfenbrenner, 1979, 1992), in experiential learning (Kolb, et al., 2014; Kolb, 2005), as well systems-based improvement models like Lean and Six Sigma. Clinical Microsystems use many of the same tools as Lean, Six Sigma, and the model developed by the Institute for Healthcare Improvement (IHI, n.d.), such as aim statements, fishbone diagrams, and Plan-Do-Study-Act cycles. It is built on the premise that the people who do the work know how to improve it, which is consistent with the principles of team-based care.



Every community health center must have a Performance Improvement plan and goals.

“...the most important reason for assessing your practice is the discussion that ensues among the team, a discussion that builds ownership for practice through a **shared information environment**.”

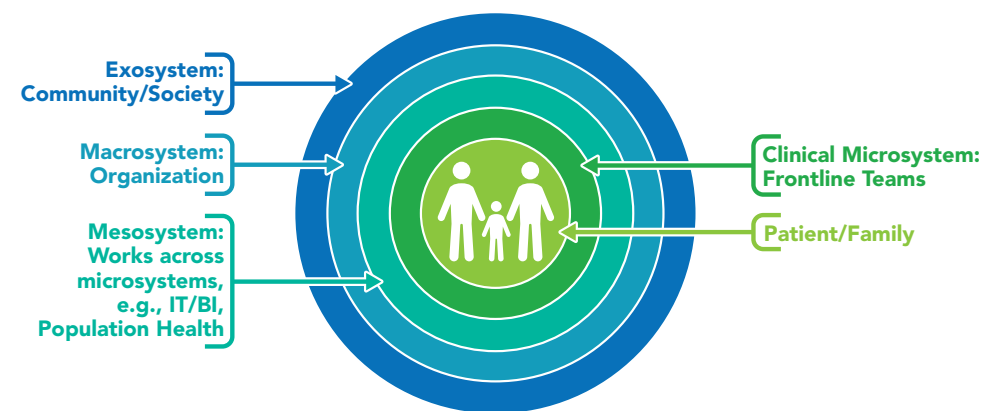


Many staff of Community Health Center, Inc. (CHCI) and our Weitzman Institute, our research and education arm, have had formal training in Clinical Microsystems from the Microsystems Academy, but today we train most of our active coaches internally using the same methods. We continue to use the model in our improvement work with teams who are transitioning to team-based care, with some modifications. A full description of Clinical Microsystems is beyond the scope of this book, and there are many publications available on the IEHSS website. In this chapter, we will review the basic model, why it works with team-based care, and how we use it at CHCI.

Clinical Microsystems Model for Quality Improvement

Consistent with ecological systems theory, the patient and family are at the center, with micro-, meso-, macro-, and exosystems extending outward in concentric circles (Figure 6.1). A clinical **microsystem** in health care is “a small group of people who work together on a **regular basis** to provide care to discrete subpopulations of patients. It has clinical and business aims, linked processes, and **a shared information environment**, and it produces performance outcomes” (Nelson, et al., 2002, p. 474) (bold added). The **mesosystem** consists of teams/departments that work across and support other systems, for example, Information Technology/Business Intelligence, Population Health, as well as Quality Improvement. The **macrosystem** is the organization itself, especially at the administrative/leadership level. Finally, the **exosystem** refers to the community and society at large, for example, organizations such as the local hospital, but also state and/or federal agencies and their rules and regulations, such as the Centers for Medicaid and Medicare Services or HRSA.

Figure 6.1: Ecological Systems in Health Care



The relationships among the systems is bidirectional and even transformational: changes in one system affect how other systems function. For example, in our [Part III: Roles in Team-Based Care, Chapter 12 on the Role of the Pharmacist](#), you will

learn how the rules and regulations of the Medicaid 340B drug pricing program (exosystem) determines how prescribers (microsystem) have to write the prescriptions, and how our CHCI clinical pharmacist (mesosystem) works with local pharmacies (exosystem) and prescribers (microsystem) to ensure the process is correct in order for the organization to benefit financially to support the costs of patient care (macrosystem) and for the patient (patient system) to receive the right medication at the right price. In other words, all systems are involved in optimizing medication management, which we noted in [Part I: Foundations of Team-Based Care](#), is a **function** of primary care.

The key components of the Clinical Microsystems approach to QI are the improvement ramp, the microsystem teams who do the work, and the improvement coach.

The Improvement Ramp

The Clinical Microsystems approach to quality improvement provides a data-based systematic approach to changing practice: the improvement ramp. In our work with primary care teams in federally funded health centers and look-alikes, we have modified the improvement ramp originally developed by the Microsystems Academy to be more descriptive for the teams who are working with us (see Figure 6.2 on next page), but the concepts and tools are the same. The tools are also common to many improvement methods, such as LEAN and Six Sigma: measurable aim statements (using numerators and denominators); fishbone and cause and effect diagrams; process maps; PDSA cycles; standardization cycles; and playbooks.

As with any improvement effort, the work is not linear: when developing a specific aim, you may find that your assessment data needs to be reviewed or updated. The work is iterative and recursive, often two steps forward and one step back, more like a spiral in experiential learning theory (Kolb, et al., 2014; Kolb, 2005). Nevertheless, the ramp is easy for teams to follow.

The first two steps up the ramp—identify your team and assess your practice—are so important, yet surprisingly, few of the primary care teams we have worked with nationally begin their improvement efforts by assessing their practice first. That assessment is building block # 2 data-driven care. **Think of your practice as it if were a patient: How can you plan a course of treatment without doing an assessment first and identifying what needs to change? How will you know if there is a change or if it matters?** For example, we find that teams may know that their cancer screening rates are low, but don't understand the meaning behind the numerator and denominator. They start their improvement efforts with PDSA cycles, that is, they propose solutions before understanding their current practice. Many also attempt to spread improvement strategies to other sites without testing sustainability at the initial site, or accounting for how other sites may differ in physical layout and staffing. One size does not always fit all.



Figure 6.2. CHCI Improvement Ramp



There are multiple ways to assess your primary care practice, such as UDS measures, cycle time, patient satisfaction, staffing ratios, and population health data. When we work with teams, we also ask them to complete the following: **Primary Care Team Guide Assessment** (Improving Primary Care, 2015) and the **Role Activity Assessment**, modified from the *Team-Based Care Implementation Guide and Toolkit* developed by the Cambridge Health Alliance (2015) in Massachusetts. Both tools challenge you to look more closely at how well you are using different members of the team to optimize efficiency and effectiveness. However, the most important reason for assessing your practice is the discussion that ensues among the team, a discussion that builds ownership for practice through **a shared information environment**.



Role Activity Assessment at St. Francis House NWA, Inc.

Community Clinic, a federally funded health center in NorthWest Arkansas, participated in the National Training and Technical Assistance Partners (NTTAP) on Clinical Workforce Development Team-Based Care Learning Collaborative in 2021. The interdisciplinary team was asked to complete the **Role Activity Assessment**. This self-assessment illustrated what the teams and leadership thought were barriers to efficient and effective team-based care, with the foundation as clearly defined roles and responsibilities. As multiple team members discussed their assessment responses, a lack of standardization across the different health center sites was an obvious barrier to efficient and effective team-based care. For instance, within the various school-based sites with teams comprised of the same roles, some teams relied on patient coordinator to complete tasks, while others relied on the medical assistants or even the primary care provider. It became clear that without well-defined functions, team members were not working to the top of their training or licensure. We also found ourselves asking why certain roles would ever complete some of the activities listed. Although it was helpful to learn about the history of workflow and role development, oftentimes we realized that short staffing necessitated cross-coverage, for example, but that the responsibilities were not reallocated once roles were filled. This seemingly simple task of identifying tasks or responsibilities completed by each role within the healthcare prompted much needed discussion amongst the team, and served as a catalyst for continual quality improvement.

—Gillian Woods, Quality Manager, St. Francis House NWA (NorthWest Arkansas), Inc. (D/B/A Community Clinic), Springdale, AR

Aha Moment! Discovering Data at Harbor Care, Nashua, NH

As we traveled up the improvement ramp, stage two (assessment and baseline data) was where our team experienced its first AHA! moment. This came as the team recognized the importance of how data is collected, why it is collected, how it is interpreted, and most importantly how each staff member plays a role in quality outcomes. Explaining these concepts, developing global and specific aim statements, at first seemed like a distraction from the “important” work. But understanding data, not just as a task in a process, but as a tool of knowledge and action to affect health outcomes, was a turning point in our quality efforts.

— Janna O’Leary, RN, Harbor Care, Nashua, NH

Team Structure and Meeting Skills

The microsystem improvement team structure and regular meetings are critical to QI success. The improvement team and the primary care team in a microsystem can be but are not always identical. Team members should be from different disciplines/roles and work in a **shared** clinical environment. In practice at CHCI, there may be one clinical microsystem team at clinical sites with multiple pods, with a medical assistant and PCP from one team, a nurse and a patient service associate (PSA) from another, and so on. The team supports multiple pods within that clinical site. We emphasize one clinical site because staff at that site **share** the same physical plant, work schedules, and resources, which have implications for workflow and staffing. What works at one site needs to be adapted a bit to optimize standardization at a second site by the team at that site.



Microsystems teams meet regularly, preferably once per week for one hour. Weekly meetings? We recognize that weekly meetings are difficult, but suggest that you put them on the calendar and as long as two or three people meet for at least 30 minutes most of the time, you will move forward. **Practice makes progress.** There is no substitute for time on task.

Good meeting skills are essential for good meetings. The Microsystems approach identifies four roles for meetings. The **leader** goes through the timed agenda. The **timekeeper** watches the clock and alerts the team when time spent on a particular agenda item is about to run out, at which point the team can decide to stop or take time away from another agenda item to complete the discussion. The **recorder** takes the notes, and the **facilitator** makes sure everyone has a chance to speak up. The leader for the meeting is not the same role as the leader for the improvement effort. In fact, everyone on the improvement team should take turns in filling the meeting roles—including being the meeting leader—in order to share the improvement.

We mentioned “share the care” (Ghorob & Bodenheimer, 2012) in [Part I: Foundations of Team-Based Care](#) as a culture shift, a move away from a PCP-centric mindset toward one that is more team-centric. We propose that “share the improvement” is an extension of that mindset because meeting skills and the improvement ramp provide a shared mental model for how to do the work of improvement. This promotes ownership and cohesion among team members trying to normalize change (May, et al., 2009). Too often, improvement efforts take a top down approach, with managers trying to get buy-in from staff rather than developing ownership among staff, and then becoming frustrated when staff won’t buy (Thies, et al., 2020)

A Lesson in Buy-in Versus Ownership from National Training and Technical Assistance Partners (NTTAP) on Clinical Workforce Development Faculty

I was taking a course at The Dartmouth Institute on quality improvement around 2007, when James Brian Quinn, a renowned professor at Dartmouth’s Tuck School of Business and author of the groundbreaking book Intelligent Enterprise (1992), walked into the class to listen to the presentations. Unfortunately for me, I was up next. When I used the term “buy-in,” he stopped the class and gave an impassioned lecture on why that approach was all wrong in managing people and effecting change. “Buy-in” implies that you are trying to sell a done deal, which means that prospective buyers can refuse to buy it. They may not say “no”, but their actions do. The better approach is to develop “ownership” for change among the people who will actually execute it. It takes more effort, but is more sustainable and effective. I have never used the term “buy-in” again and correct others when they do.

—Kathleen M. Thies, PhD, RN, NTTAP Faculty, Weitzman Institute, Middletown, CT

The Role of the Improvement Coach

Trained improvement coaches are critical to the success of the Clinical Microsystems teams. Team coaches meet with their assigned improvement teams when those teams meet. They are **not** the leader of the team’s meeting or of their improvement effort. They guide Clinical Microsystems improvement teams through the improvement process and in the use of the improvement tools by asking good questions, encouraging teams to think differently, reviewing their data, and helping them get unstuck when they are frustrated with their progress.



A “Parking Lot” is a tool to capture and store ideas that are not relevant to the current discussion, but can be used to drive other improvements.

The Senior Quality Improvement Manager at CHCI is a mentor coach for the NTTAP Learning Collaborative on Team-Based Care, and a consulting coach for Clinical Microsystems teams across the country through the Microsystem Academy at IEHSS. She has been instrumental in developing the CHCI coaching program, which she sees as the art of improvement, whereas the ramp tools are the science of improvement.



When needed, CHCI coaches attend a six-to-eight week training program of about 90 minutes of didactic each week, and are assigned to work alongside a senior coach mentor on an identified performance improvement goal with a Clinical Microsystem team at one site. The Senior Quality Improvement Manager meets with each coach once a month to talk through challenges and share successes, and also holds a monthly meeting for all coaches. Clinical Microsystem team coaches present progress reports on their teams at a bimonthly system-wide Performance Improvement (PI) meeting. Meanwhile, more experienced senior coaches lead macrosystem or mesosystem teams. Between meetings, members of the PI committee might meet with coaches to provide support for their teams, and the PI chair/co-chair reports out monthly to the Clinical Issues Committee of the board of directors.

Relationship Between Clinical Microsystems Approach to Quality Improvement (QI) and Team-Based Care

The Clinical Microsystems approach to QI is especially well-suited to team-based care for several reasons.

First, the Clinical Microsystems improvement team is “a small group of people who work together on a regular basis...,” which we noted is also a principle of team-based care. The people who do the care are in the best position to improve it with the appropriate coaching and skills.

Second, the Clinical Microsystems approach is consistent with the foundations and functions of team-based primary care discussed in [Part I: Foundations of Team-Based Care](#): it is data-driven (building block #2), team-based (building block #4), and built on a culture of share the care/share the improvement. The Clinical Microsystems approach also helps to clarify processes within and across systems that need to be improved in order to support the **functions** of primary care—such as planned care, population management, and referral management—which contribute to reportable outcomes measures.

Third, the Clinical Microsystems approach to improvement begins with an assessment of your practice, not PDSA cycles or proposing solutions. The process of assessment by itself builds team ownership of the work.

Fourth, the Clinical Microsystems approach to quality improvement supports the importance for engaged leadership. Teams must have the resources they need—time to meet, data, a trained coach, access to staff in Business Intelligence, and so on—in order to make progress (Thies, et al., 2020).

Finally, actively engaging in the Clinical Microsystems approach to quality improvement as a team member or coach, is a professional development opportunity to learn new skills. For example, a federally funded health center in Lancaster, Pennsylvania that worked with us to implement team-based care using the Clinical Microsystems approach created a new quality improvement position for the nurse who volunteered to coach her team. Years later, she is still there, as are many other members of the team, leading their organization toward excellence in care.

Developing Quality Improvement at the Team Level: Lancaster Health Center, Lancaster, PA*

Prior to our community health center's involvement in the National Training and Technical Assistance Partners (NTTAP) on Clinical Workforce Development Team-Based Care Learning Collaborative offered by Community Health Center, Inc., most changes in our organization started with a great idea that somebody wanted to implement immediately. Usually this idea would be popular a few weeks and then fall by the wayside when it was felt to be ineffective or inconvenient. Participating in the learning collaborative gave us both tools to use and a mentoring structure that allowed us to look at change as a step-wise process that needs to be measured in order to speak of its effectiveness. During our participation in the learning collaborative, our interventions did result in several workflow changes that improved the patient and staff experience. Most importantly, we now have an infrastructure in place to achieve process improvement—including a director of organizational performance improvement and public health analysts at each of our clinical sites—to assist teams in thinking about how to design and measure clinical intervention projects.

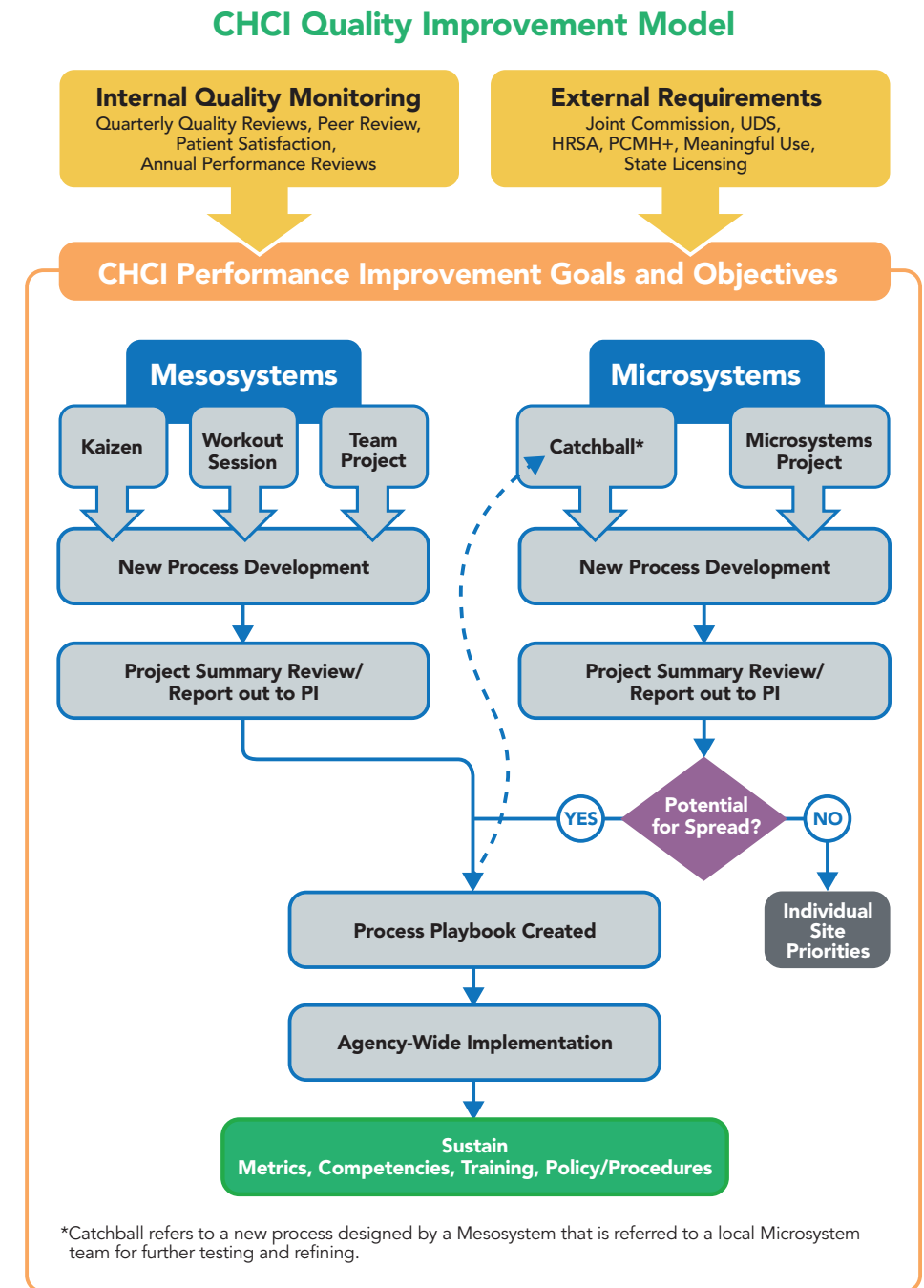
—Jenni Black, Chief Operating Officer, Lancaster Health Center, Lancaster, PA

*Lancaster Health Center has since merged with Welsh Mountain Health Centers to form Union Community Care.

How Community Health Center, Inc. (CHCI) Uses the Clinical Microsystems Model for Quality Improvement

Figure 6.3 is a schematic of how CHCI uses the Clinical Microsystems model for quality improvement. Like you, we have internal and external monitoring reporting systems and requirements. Quality improvement work conducted by small, front line teams at each of our sites are categorized as Microsystem Interventions, whereas larger quality improvement efforts involving staff from a wider range of departments and locations are classified as Mesosystem Interventions. Work at both the microsystem and mesosystem level often results in new processes that are spread and implemented agency-wide using formal change management tools. Change management describes a formal process to maximize the likelihood of a successful implementation using tools and techniques to enhance communication, secure staff support, and successfully achieve project goals. Mesosystem improvement teams are comprised of a group of interdisciplinary staff members who are knowledgeable about a process or represent a specific department, can add a level of value to the project, and are energized to work on performance improvement.

Figure 6.3: CHCI's Performance Improvement Structure



The system-wide Performance Improvement (PI) Committee reviews the progress of existing microsystem teams toward goals that have been set with those teams based on current practice. For example, a Microsystem Intervention might be to improve cancer screening rates among a panel of patients. The PI Committee and presenting coach discuss if any modifications to the goals are needed, what seems to be working and what is not, and what the PI Committee can do to help the coach and the microsystem team progress.



Sometimes a new focus for improvement arises, and a new Mesosystem Intervention team might be needed. Let's use an example: the improvement of the Uniform Data System (UDS) measure of an HbA1c of 9 or below in patients with diabetes. In 2022, CHCI received a grant, Optimizing Virtual Care (OVC) from the Health Resources and Services Administration (HRSA), to develop, implement, and evaluate innovative, evidence-based strategies that optimize the use of virtual care to increase access and improve clinical quality. CHCI developed a mesosystem team consisting of the Chief Medical Officer, the Chief Nursing Officer, the Clinical Pharmacist, and Certified Diabetes Care and Education Specialist (CDCES), as well as staff from Population Health, Information Technology, Business Intelligence, Finance, and others to select, test, and design a workflow for continuous glucose monitoring with a subset of our patients. The coach and the team studied the results, which led to a process for patient selection, ordering, and coordination with a CDCES, now open to all of our patients.

For this example, we use the term "catchball," that is, an improvement initiative passes between meso- and microsystem teams. Another example of catchball is when the PI Committee or a meso- and/or microsystem team recognizes that an existing process may no longer be sufficient to achieve identified goals. Again, the initiative passes between systems to ensure that the mesosystem provides the support that the microsystem needs to test and refine a new process.

When the COVID-19 pandemic began, extensive experience with change management and quality improvement skills by our teams and coaches allowed for a systematic approach to implementing new processes. Indeed, that experience in addition to their commitment to clinical excellence were critical to our response to the pandemic. Teams were formed for both Mesosystem and Microsystem interventions to meet emerging needs, with a shared systematic approach for mapping out new workflows for COVID-19 testing, virtual visits with patients, and more as we re-imagined our model of care. This process of spreading and sustaining change requires staff engagement and ownership. Staff could easily apply learned skills and the common language of improvement to new situations because **everyone**—from primary care providers to support staff—knew how to assess their practice, set aims, draw a process map, trial new ways of working while tracking their effectiveness, and create playbooks, often doing so many times, in response to the shift to virtual care. This allowed our teams to problem solve together and with other teams across the organization seamlessly and in real time, so that we could quickly trial and standardize new workflows.



Optimizing Health Information Technology at Colorado Community Health Network

Meaningful integration of Health Information Technologies (HIT) for team-based care begins with the first four building blocks of primary care: #1 engaged leadership, #2 data-driven improvement, #3 empanelment, and #4 team-based care. Everything we do in team-based care transformation comes back to these foundations, which work together. Business Intelligence and HIT are not just Information Technology (IT) functions or responsibilities. Rather, everyone who is engaged with any of the HIT programs should have a clear understanding of their responsibilities relative to HIT **and** be trained in how to execute those responsibilities appropriately.

One of the biggest pitfalls we see when coaching teams is lack of clarity about roles, about who is doing what, when, and how. Who needs access to data? In what form? There are different dashboards, reports and uses of reports for different roles/functions, for example, for pre-visit planning and care coordination. Lack of clarity results in either duplication of tasks, incomplete and inaccurate tasks, or tasks not being completed at all. For example, here are the explicit responsibilities of the role of the patient services associates (PSAs) who staff the reception and registration area, and are the first point of contact as patients arrive:

Each Monday, run outreach registries for patients:

- If patient has alerts due next week: Outreach to schedule.
- If patient has appointment scheduled: Do not contact, make a note within appointment to indicate that patient has chronic disease alerts (e.g., HbA1c check), preventive care alerts, or other alerts due.
- If patient needs information about prep for visit (e.g., fasting for labs), contact patient with instructions.
- Document all contact attempts within the TE (telephone encounter) template in Electronic Health Record with your initials.

Optimizing the use of HIT can also optimize the roles of care team members, allowing them to practice at the top of their license, creating greater clinical efficiency and effectiveness. Consider the following schedule in Table 6.1: A Morning in the Life of a Primary Care Clinic. We have highlighted activities that do not require a PCP to complete them.

Table 6.1: A Morning in the Life of a Primary Care Clinic

Time	What's Happening?
3:00 PM (day before)	Pre-visit planning: Review of registries or chart scrubbing tools to plan next day's huddle, obtain outstanding labs or referral notes
7:45 AM	Daily Huddle: Brief team check-in to review patients on the schedule, walk-in slots, anticipate equipment or staffing needs, obtain necessary records
8:15 AM	Medical Assistant: First patient roomed—Intake, select appropriate template, documentation of vital signs, screenings, pending "standing order" items
8:15 AM	Front Desk: Receives a call from a new patient that would like to schedule with a provider that is accepting new patients
8:35 AM	Care Coordinator: Managing and placing referral to specialist
9:00 AM	Nurse: Reviewing lab report and calling patients with results; follow up protocols

HIT can support a number of activities to optimize care. For morning huddles, the team needs access to reports and time set aside in the schedule to review and prepare them. Standing orders facilitate trust and confidence that non-licensed staff are working according to guidelines, and not having to guess when an action is appropriate. Simple examples include ordering HbA1c and FIT tests as they become due. More complex examples include protocols that allow nurses to screen for urinary tract infections, sexually transmitted infections, and strep throat. Ultimately, effective use of HIT resources helps the primary care team to "share the care" (Ghorob & Bodenheimer, 2012) by opening up constraints that allow a more effective division of work among team members.

We recommend that you begin by choosing one day during which to reflect on your practice in real time. Where are the bottlenecks, the inefficiencies that happen again and again? What process would you improve? How could you improve it, and how can HIT contribute to that improvement? Can you test this change on a small scale? How will you know whether the test is successful? You know your practice—what works and what doesn't. You can change it! Let your HIT team help.

—Taylor Miranda Thompson, MPH, Senior Quality Initiatives Manager, Colorado Community Health Network, Denver, CO

Conclusion

We hope that reading this section on data-driven primary care (Chapters 4, 5, and 6) will help you to think differently about your practice. The approach we describe is a different mindset, where the primary care team is at the center of care with the patients, and not at the bottom of the organizational chart. Providing care and improving care go hand in hand. In the following chapters, you will see that data is the foundation for optimizing roles in team-based care and is included in all efforts to train the next generation of the health care workforce to a high performing model of integrated team-based primary care.

PART II: Data-Driven Care

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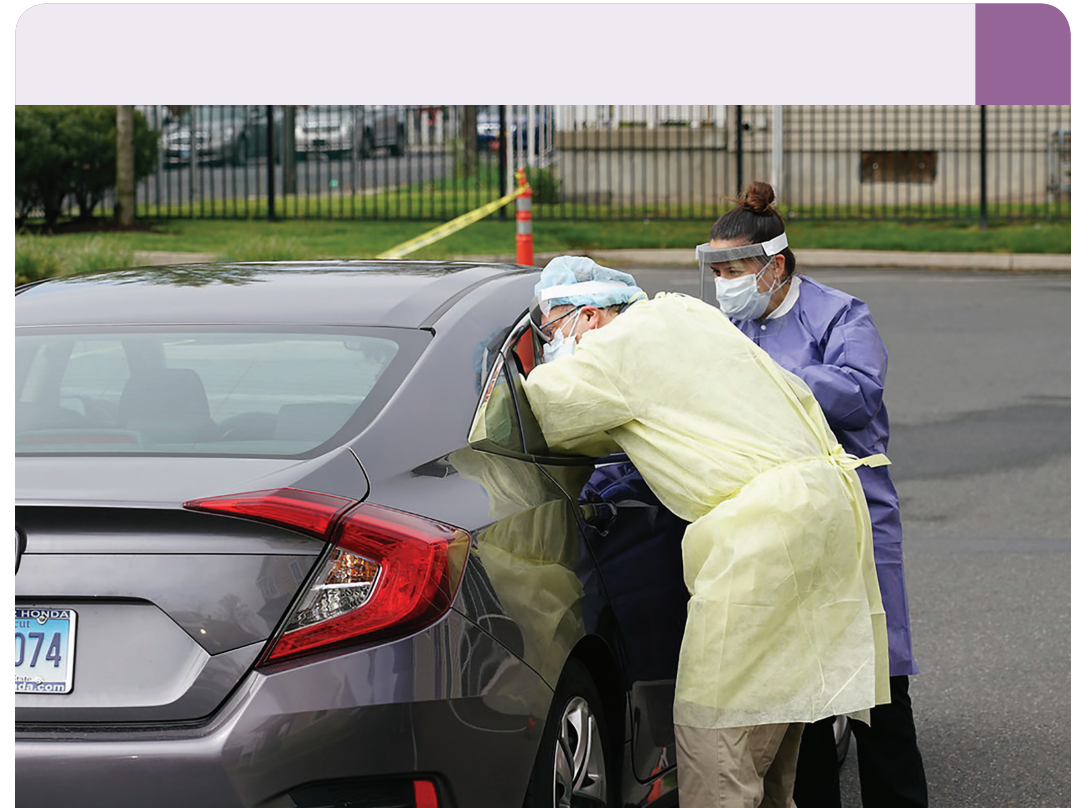
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"When the COVID-19 pandemic began, extensive experience with change management and quality improvement skills by our teams and coaches allowed for a systematic approach to implementing new processes."



PART III

Roles in Team-Based Care

In [Part I: Foundations of Team-Based Care](#), we noted that many practices consider themselves to be practicing patient-centered team-based care, but perhaps have not achieved the full potential of that model. That is, while employing staff from different disciplines is common, doing so does not constitute the structure and culture of a team (Bodenheimer, 2019), nor does it achieve the functions of primary care that we discussed in [Part I](#), such as medication management and care management. Significant challenges remain to establishing team-based care for most organizations, including: developing the structure, infrastructure and clinical processes needed for efficient and effective care; defining roles and responsibilities among team members, including clinical, operational and administrative staff; recruiting and retaining the right staff and providing the training they need to practice at the top of their license; fostering a culture that supports collaborative relationships among team members; ensuring continuity for the relationship between primary care provider (PCP) and patient over time; and of course, paying for all of this (MacNaughton, et al., 2013; Mitchell, et al., 2012; National Academies of Sciences, Engineering, and Medicine [NASEM], 2021a; Nutting, et al., 2011; O'Malley, et al., 2015; Schottenfeld, et al., 2016).

Clinicians working in truly integrated primary care, and working together in pods (i.e., commonly shared work spaces), physically or virtually, must be willing to adapt to a different way of working and thinking about their practice. They may sacrifice some autonomy in the process, such as making treatment decisions independently. They will need to acquire new skills, especially with regard to documentation in a shared electronic health record, but also how to communicate with team members with different clinical perspectives. And, they have to be comfortable working in an ever changing clinical environment with rapid developments in care being managed across disciplines in real time.

It is critical to note that evolving roles in primary care must align with state laws and regulations regarding clinical practice and licensure, but also with an organization's policies as well as the experience and training of individual staff. For example, in most states medical assistants can give injections after receiving the appropriate education and training, but the rules and regulations do vary. But even within one state, Clinic A may allow it, but Clinic B may not. And, of course, medical assistants may vary in their education, training, and confidence in giving injections.



“Clinicians working in truly integrated primary care, and working together in pods, physically or virtually, must be willing to adapt to a different way of working and thinking about their practice.”



It is important to differentiate between state regulations governing scope of practice, the policies and procedures in a health care organization regarding practice activities within that scope of practice, and the extent to which individual clinicians are competent to engage in specific activities within their scope of practice. For example, state regulations may allow registered nurses to provide care independently using standing orders, but the employing organization needs to ensure that the nurse is properly educated and trained in using the standing orders and assessed as competent to do so. Once this is accomplished, the nurse is expected to use the standing orders commensurate with the job description. That is, being trained to the required level of responsibility and accountability is required, and expectations for performance must be made clear.

At Community Health Center, Inc. (CHCI), we continue to focus on these challenges in different ways, as do the teams with whom we work implementing team-based care. And we should note that not all of our teams are primary care teams per se. Some teams require specialized providers, such as prenatal/obstetrics teams, but the principles of team-based care remain the same. You most likely have these teams as well. Nevertheless, we all continue to face challenges in developing and sustaining our teams at a level of high performance: team-based care is a journey, not a destination. The COVID-19 pandemic has certainly tested all of us. Yet when we share our challenges, we find solutions for moving forward, often in ways we could not imagine!

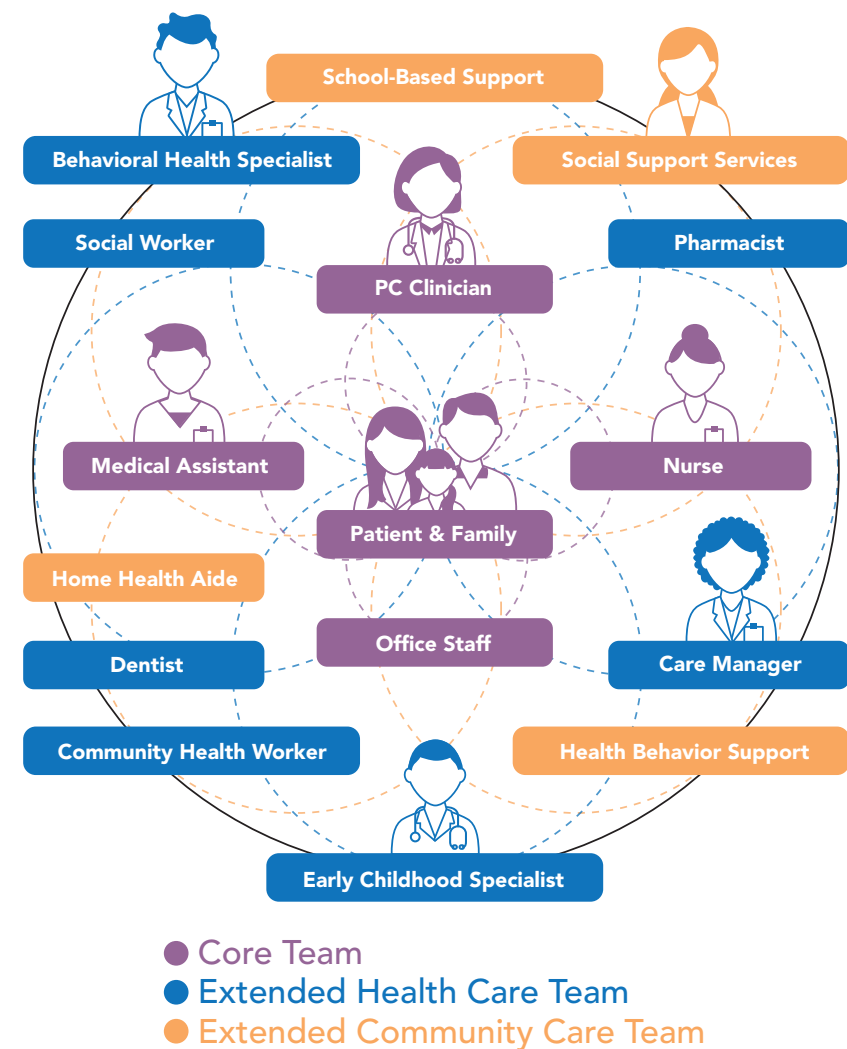
Figure III.1 on the next page is from the 2021 report *Implementing High-Quality Primary Care: Rebuilding the Foundation of Health Care* by the National Academies of Sciences, Engineering, and Medicine (NASEM, 2021a). The structure of an interprofessional primary care team includes core and extended teams in primary care with links to community-based health teams to optimize the health of people across the United States. Health care has changed because patients have greater needs, and therefore roles in health care must change in response. **Consider that in 2018, 51.8% of adults in the United States had at least one chronic condition, and 27.2% had multiple chronic conditions, such as diabetes, hypertension, heart disease, chronic obstructive pulmonary disease, and depression** (Boersma, et al., 2020).

The primary care provider (PCP) can no longer, and really should no longer, be the sole person responsible for the delivery of all of the elements of care. Indeed, the effort to do so contributes to burnout among clinicians and staff in primary care (Agarwal, et al., 2020; Edwards, et al., 2018). Although PCPs remain ultimately accountable for that care, other team members are ready and able to step up, step in, and fully meet the needs of patients, provided they have the appropriate training to do so within their scope of practice.

In [Part III: Roles in Team-Based Care: The Core Team](#), we will go deeper into the vision of Figure 1, and describe the evolving roles of the core team, with a focus on

medical assistants, nurses, PCPs, and behavioral health providers whose roles have changed the most significantly with the advent of team-based care (Ladden, et al., 2013). We also will discuss the roles of dentists and the dental team, pharmacists, and community health workers. We know that some of you now include optometrists, chiropractors, and physical therapists, among others, on your clinical rosters. Later, in [Part V: The Future](#), we will discuss the critical administrative operations infrastructure that supports clinical care and the importance of training this group of professionals to work in community health centers. We will also discuss the relationships between health centers and service and government agencies in their communities, including those responsible for public health.

Figure III.1. Interprofessional Care Teams National Academies of Sciences, Engineering, and Medicine (NASEM, 2021a)



The Role of the Registered Nurse

The role of registered nurses (RNs) in primary care was already changing before the COVID-19 pandemic began, in large part because primary care was evolving to address increased expectations for access to care, evidence-based quality care, and better management of chronic conditions. As we noted in [Part I: Foundations of Team-Based Care](#), the Chronic Care Model (Bodenheimer, et al., 2002) and the Patient-Centered Medical Home (PCMH) model called for a redesign of primary care, with a more proactive team-based approach for patients, especially for those with chronic conditions, such as diabetes and heart disease. This was a shift from the reactive model in which the primary care provider (PCP) sees patients for acute exacerbations of chronic disease. For example, in the proactive team-based approach, nurses could support patient self-management between routine visits, rather than wait for patients' symptoms to worsen.

In the early 2000s, policymakers began promoting Accountable Care Organizations (ACOs), in which PCPs and health care systems would coordinate delivery of health care to increase efficiency and reduce costs associated with duplication of services and over-utilization of emergency and acute care services by a small population of high cost patients (Matulis & Lloyd, 2018). The Centers for Medicare and Medicaid began to adopt the ACO model, charging ACOs with improving care coordination across primary care, acute hospital admissions, long-term care, and home care settings. When the Affordable Care Act (ACA) was enacted in 2010, it expanded access to primary care for millions of Americans, increasing demand for services. The following year, the Institute of Medicine (now the National Academies of Sciences, Engineering, and Medicine) called for **organizational and regulatory changes so that health care could take better advantage of nurses' education, training, knowledge and skills** (Shalala, et al., 2011).



In June 2016, the Josiah Macy Jr. Foundation convened national leaders in nursing and primary care to make recommendations for redesigning the role of nursing in primary care, focusing on chronic disease management, care coordination, care transitions, prevention and wellness, interprofessional teamwork, and triaging (Bodenheimer & Mason, 2017). These leaders noted that these activities, which are among the functions of primary care discussed in [Part I: Foundations of Team-Based Care](#), are within a registered nurse's scope of practice. Their knowledge of the pathophysiology of disease, pharmacology and other therapies, medication management,



“...redesigning the role of nursing in primary care, focusing on chronic disease management, care coordination, care transitions, prevention and wellness, interprofessional teamwork, and triaging.”



education, health system design, and quality improvement prepares them to use their nursing judgment within four major domains of primary care: **episodic/acute care, preventive/routine care, chronic disease management, and practice operations**, including supervision of staff and practice improvement (Flinter, Blankson & Ladden, 2017). In 2019, American Academy of Ambulatory Care Nursing (AAACN, n.d.), a leader in mapping out the roles of registered nurses in ambulatory settings such as primary care, published the second edition of their Care Coordination and Transition Management (CCTM®) curriculum for primary care nurses. Certification is offered by the American Nurses Credentialing Center.

It has been increasingly clear that registered nurses have important roles to play in primary care. Their traditional roles in telephone and in-person triage and routine tasks such as immunizations, while valuable, do not use the full complement of their skills and may even contribute to burnout (Bodenheimer, et al., 2015). Given the challenges that health care is facing in the wake of the COVID-19 pandemic, including shortages of PCPs and nurses, it is past time for nurses to step up to ensure that patients benefit from all of the available activities that contribute to high quality primary care.



Best Practices for Optimizing the Role of the Registered Nurse

1. Standing Orders
2. Delegated Order Sets
3. Care Coordination and Chronic Care Management

During a conversation with the Chief Nursing Officer at Community Health Center, Inc. (CHCI), she emphasized that our registered nurses are and have been vital members of the core primary care team, before the pandemic, during the pandemic, and now. She pointed out that CHCI added registered nurses to its primary care staff more than 30 years ago, and has steadily built the role of nursing since so that nurses practice at the top of their license. Nurses bring not only their nursing skills of nursing assessment and diagnosis, patient education, care coordination, and system management to the care of patients, but also can be force multipliers for the entire team.

That is, by optimizing the role of registered nurses, they can meet many of the patients' needs that PCPs try to handle alone or do not have time to address, such as questions about medications or laboratory tests, or issues related to care coordina-

tion and ongoing self-management. This can free up PCPs' time for visits that require their diagnostic skills while also improving patient care and satisfaction. She noted the **tasks** of registered nurses may have changed during the pandemic and the use of telehealth, but the **functions** did not.

At CHCI, there is a nurse manager for most of our primary care sites. One registered nurse may be assigned to one or two panels and the associated PCPs, depending on panel size and need. Using data-driven dashboards and knowledge of the patients, the nurses manage these panels alongside the PCPs, medical assistants, and behavioral health providers assigned to that panel. **The nurses at each site also rely on one another as resources, especially related to care coordination of complex patients.** For example, the nurses share knowledge about community services and programs to lower prescription costs. We use the best practices discussed below to optimize the nurses' role, as we are sure that many of you do as well. If you have examples or other suggestions to share, please let us know!



Standing Orders

Standing orders are developed by the organization in accord with Community and Clinical Integration Program Standards (CCIP) and Centers for Disease Control and Prevention (CDC) standards, and executed under the authority of the Chief Medical Officer or another licensed independent member of the team. Standing orders allow registered nurse to manage common episodic health conditions or complaints, such as urinary tract infections (UTI), upper respiratory complaints, and some sexually transmitted infections (STIs). Standing orders can also be used for more comprehensive visits. For all standing orders, the expectations are clear, and when the registered nurses are located in the physical or virtual pod with the providers, any deviation from the routine can be addressed immediately.

For example, during well-child visits, nurses select the appropriate immunization to administer, based on specific vaccine- and interval-based protocols developed by the organization and/or CDC/ACIP (Advisory Committee on Immunization Practices) guidelines. This is a responsibility of greater complexity than those outside of health care might imagine. Patients are often not up to date on their immunization schedules due to missed appointments, illness, and parent preferences about the timing of immunizations. Other countries use different vaccines and vaccine schedules, so that the nurse needs to account for these prior immunizations with individuals from outside of the United States when choosing the correct dose and timing of a vaccine.

Delegated Order Sets

Delegated order sets are unique to an individual patient's plan of care, especially for patients with chronic conditions. It requires a provider to outline the specific orders, including what the registered nurse should assess, and what actions to take based on the results of the assessment. For example, when a patient has an asthma action plan, the registered nurse can tell the patient to increase or otherwise change inhaler use according to the prescribed plan, and then assess and monitor the patient's response, either during a face-to-face or virtual visit. For patients with diabetes, insulin can be titrated and the patient's response assessed and monitored by a registered nurse, again according to a pre-set plan with appropriate follow-up.

Delegated Order Sets at Community Health Center, Inc.

A.R. is a 67-year-old Latinx male who sees his PCP to follow up regarding his hypertension. During the visit, the provider determines that the patient continues to have uncontrolled hypertension on his current regimen. The provider titrates his medication, and orders a follow-up visit for A.R. with the registered nurse in 2 weeks to re-evaluate his blood pressure. The provider puts the delegated order in a telephone encounter in the electronic health record and assigns it to the registered nurse on the team as follows:

"Mr. R. will be following up with you in 2 weeks. Please complete a brief history to include whether he is taking his new medication, and whether he has any concerns since taking it. Please also confirm that he has taken this medication daily, and that he has taken it on the day he is seen.

If his blood pressure continues to be elevated (above 140/90), please call in a new dose of his medication, increasing from 10 mg to 20 mg once per day, and then have him follow-up with me in 2 additional weeks. He should call us immediately or dial 911 should he experience any dizziness, blurred vision, or severe headache in the meantime. If his BP is controlled (<140/90) when he sees you, please have him continue at the current dose and follow-up with me in 1 month for routine provider follow-up. Thank you."

The registered nurse would then complete the visit as ordered, following the guidance given within the telephone encounter. Should there be anything that presents outside of this order, the registered nurse should consult with the provider during this visit. The provider can give additional guidance as needed at that time.



Care Coordination and Chronic Care Management

The 2021 National Academies of Sciences, Engineering, and Medicine (NASEM) report on *The Future of Nursing* notes that "nurses are uniquely qualified to help improve the quality of health care by helping people navigate the health care system, providing close monitoring and follow-up across the care continuum, focusing care on the whole person, and providing care that is culturally respectful and appropriate" (p. 119). Interventions to improve the quality and safety of health care includes care management, care coordination, and transitional care (NASEM, 2021b). There is of course some overlap among these interventions in primary care, as well as the patients who can benefit from them, especially those with complex health and social care issues derived from multiple overlapping areas of vulnerability (Kuluski, et al., 2017). These can include: multiple concurrent chronic medical conditions; mental health challenges; major changes in a patient's life or health status; and social vulnerability related to social determinants of health, family and relationship issues, racial and ethnic characteristics, unemployment, and unstable housing. Many patients may need a combination of interventions, which is why registered nurses are uniquely equipped to work with them.

Care Coordination and Transition Manage

In [Part I: Foundation of Team-Based Care](#), we discussed two of the building blocks of primary care that are particularly relevant to nursing practice: building block #7 Continuity of Care (including management of care transitions across settings) and #9 comprehensive and care coordination (Bodenheimer, et al., 2014a). To review, the American Academy of Ambulatory Care Nursing (AAACN, n.d.) asserts that “*individualized evidence-based plans of care and follow-up plans of care serve as the basis for the Care Coordination and Transition Management Registered Nurse (CCTM RN®) model*” (AAACN, 2019, p.4).

The time during which the nurse is involved in CCTM with any one patient can vary from a day or two to several weeks, depending on a patient’s individual situation and needs. A scoping review of care coordination found that nurses’ activities fell into three main categories:

- Working with the patient and family in collaboration with the care team, for example to support illness management;
- Linking the patient with community and/or medical specialty services; and
- Working with the care team to coordinate areas of responsibility (Karam, et al., 2021). The intricacies of this work can be daunting.

There are many moving parts that are interrelated and thus require not only clinical judgment but knowledge of community resources and availability of those resources based on a patient’s insurance status. Other team members can assist with managing patients’ care, depending on the complexity of the patients’ clinical and social

needs and the extent to which clinical judgment is required to meet those needs. For example, a case manager who is not a nurse might help patients with insurance issues (AAACN, n.d.) or connect patients to community resources that offer housing assistance. But when patients have multiple chronic conditions involving multiple specialists, **and** a mental health diagnosis, **and** insecure housing and employment, among other vulnerabilities, the complexity of their health care is best addressed by a registered nurse who can call upon other resources as needed.

Complex Care Management at Community Health Center, Inc.

Complex care management at Community Health Center, Inc. (CHCI) offers patients high-level care coordination to those with chronic conditions, such as diabetes, high blood pressure, and more. When a patient is first referred to a registered nurse for care coordination, the nurse interviews the patient about personal goals. Where do you see yourself in a few weeks/months? What changes would you like to make to your lifestyle? From there, the nurse works with the patient to develop self-management goals. For instance, if a patient’s goal is to lose weight, we break that down into smaller milestones, related to eating habits and exercise. We could also involve a registered dietician or a certified diabetes care and education specialist (CDCES).

Additionally, our nurses offer transitional care coordination to those patients being discharged from the hospital, those who are experiencing housing insecurity or homelessness, or rejoining the community after incarceration. For example, filling prescriptions can be a challenge for people with chronic conditions under these circumstances when their insurance does not cover the medication, they are uninsured, or they don’t have stable housing. We are the medical home for these patients. Therefore, to meet the patients’ needs, we do a thorough assessment of their health and social vulnerabilities and strengths, and develop a plan to first stabilize their situation so that they can move on with their lives. We often coordinate with community-based organizations, pharmacies, behavioral health, specialists, and other resources in the process. We are patient-driven and our flexibility allows us to be both comprehensive and individualized in our approach. Our goal is to empower patients and give them the strength and support to improve their health...and their lives.

—Leonela Espinal, BSN, RN, and Bozena Roberts, BSN, RN,
Staff Nurses, Community Health Center, Inc., Danbury, CT



Patient Experience of Care Coordination at Community Health Center, Inc.

A 62-year-old Cambodian patient with diabetes, hypertension, and history of stroke was referred to the nurses for care coordination by his provider because his diabetes was not well-controlled. He had been on a sliding scale of insulin, but when I started working with him, it occurred to me he had difficulty reading the Arabic form of numbers. For example, 2 and 5 looked similar to him. When we used the language line to communicate, he would write the directions down in his own language, that is, top to bottom, not left to right. I said to the provider, “a sliding scale is not going to work.” He could understand pictures more easily. Once we put him on long-acting NPH insulin, his blood glucose improved. I was also able to help the patient improve his blood pressure by teaching him how to take medications and fill his pillboxes.

At one point, he required surgery for prostate cancer, but the surgery could not be done because he had not given himself an enema beforehand. The surgeon thought he was being noncompliant, but I had to explain that he did not understand what an enema was and could not follow the instructions. From there, we printed out picture instructions for an enema and reviewed them together. I also wrote a note to the pharmacist so that the patient would purchase the correct product and the pharmacist could reinforce how to use it. After receiving the support, the patient was able to understand and follow through with the pre-operation procedures.

Without care coordination, we would have never understood his inability to follow medication instructions due to the language barrier. By working with him, this man was able to better manage his diabetes and hypertension, and to have much needed surgery.

—Leonela Espinal, BSN, RN, and Bozena Roberts, BSN, RN,
Staff Nurses, Community Health Center, Inc., Danbury, CT

Chronic Care Management

Chronic care management tends to be more population-focused than care coordination, which focuses more on individual patients (Agency for Healthcare Research and Quality, 2015). Chronic care management is based on the principle that health risks can be reduced and costs decreased with the right interventions for populations of patients. As we noted in [Part II: Data-Driven Care](#), first you must identify those populations and their needs using risk stratification, and identify which risks can be mitigated or modified. Chronic care management can consist of a suite of interventions offered to a population, such as diet and exercise programs for patients

at risk for developing type 2 diabetes. Because it tends to be population-focused, measuring the effectiveness of interventions across the population is important.

Chronic care management by registered nurses addresses the needs of patients transitioning from hospital to home or from being incarcerated to rejoining the community. Examples of other populations include people with HIV, patients with uncontrolled hypertension, and those with multiple co-morbidities, such as heart disease and diabetes, unstable housing, and lack of critical social support. Rather than wait for these patients to be hospitalized or use emergency care for exacerbations of their illness, nurses can manage, stabilize, and monitor these patients, either through nurse visits or telephonic check-ins, between visits with providers. **Nurses can also work with other members of the primary care team, including community health workers and medical assistants, as well as with outside health care entities and community service providers to ensure optimal health for these patients.**



In 2015, the Centers for Medicare and Medicaid Services (CMS) recognized chronic care management as a new billable service for Medicare beneficiaries with “two or more chronic conditions expected to last at least 12 months or until the patient’s death and or that place them at significant risk of death, acute exacerbation and or decompensation, or functional decline” (CMS, 2019, p. 6). The chronic care management services can be provided by a range of staff, not just nurses, operating under the license and direction of a licensed independent provider. Eligible practitioners can bill at least 20 minutes or more of care coordination services per month. These services usually occur outside of a provider encounter and can be delegated to other team members, such as when a registered nurse needs to speak with a family member or someone from a pharmacy or visiting nurse service. This is an opportunity for any health center to structure a formal, care plan driven approach to care management. Practices may choose to provide this service directly, or to partner with another organization. CHCI chose to contract with a service that specializes in this area.



Chronic Care Management—Chronic Care Staffing, LLC

Chronic Care Staffing, LLC is a privately run organization founded in 2015, the same year that Medicare introduced chronic care management as a reimbursable service program. Since 2016, we have worked with health centers of all sizes to implement chronic care management services paid for by Medicare. In order to qualify for chronic care management services, the person must be a Medicare part B or a Medicare Advantage plan patient with two or more chronic conditions and must have seen by their PCP in the previous 12 months. After verbally consenting to participating in the chronic care management program, the patient is assigned to a dedicated care coordinator, who is a registered nurse. The care coordinator will call the patient monthly for at least 20 minutes to discuss the status of the patient’s chronic conditions, and provide education about and support for self-management. The care coordinator identifies barriers to care, coordinates referrals, and reviews medications, as well as adjusts patient goals as needed. Patients also may reach out to the care coordinator with questions or concerns in between monthly calls. Table 7.1 is an example of potential monthly topics of conversations with chronic care management patients:

Table 7.1. Chronic Care Management Monthly Concentrations

Month	CCM Concentration
January	Remind and schedule patients for Annual Wellness Visit (AWV) appointments (as needed)
February	Fall risk screening and prevention; Medication adherence
March	Comprehensive diabetic screen (HbA1c between 6–9, every 6 months; HbA1c > 9, every 1–3 months)
April	Web enable virtual visits in electronic health record (EHR)
May	Social determinants of health review (financial, transportation, support system, nutrition)
June	Pain and functional status screening
July	Hydration; skin cancer/sun exposure education; severe weather preparedness
August	Tobacco screening
September	Colonoscopies for ages 45–75 years every 10 years
October	Vaccinations (COVID-19, flu, pneumonia, shingles vaccines)
November	Mammogram screening until age 74 at least every 2 years
December	Depression screen

The purpose of chronic care management is to: (1) increase coordination of care for the patient; (2) assist patients in managing their chronic conditions; (3) improve the overall quality of care; and (4) help reduce healthcare costs by eliminating unnecessary ER visits and hospitalizations. For instance, a 60-year old male living in rural Mississippi may only see his PCP once a year. With chronic care management, the patient is able to receive regularly scheduled check-in calls for specialized education on his chronic conditions, as well as support for food access, transportation, medication adherence, and more. Ultimately, patients can improve their health outcomes, reduce ER visits and hospitalization stays, while also experiencing more comfort and communication with their PCP and care team and an improved understanding of their chronic conditions.

—Allison Auld, MSN, RN, CEN
Former Regional Clinical Director of Chronic Care Staffing, LLC

Differences Between a Registered Nurse and a Licensed Practical Nurse

It is important to understand the difference between a Registered Nurse and a Licensed Practical Nurse (sometimes called Licensed Vocational Nurse). There are three pathways to becoming a Registered Nurse (RN): a 3-year diploma program, typically administered in hospitals; a 2-year associate degree usually offered at community colleges (some of these students have a baccalaureate degree in another field); and the 4-year baccalaureate degree offered at colleges and universities. **About 56% of new RNs graduate with a baccalaureate degree in nursing (AACN, n.d.), and this degree is increasingly the preferred qualification.** Baccalaureate nursing programs encompass all of the course work taught in associate degree and diploma programs plus a more in-depth treatment of the physical and social sciences, nursing research, public and community health, nursing management, and the humanities. Graduates of all three programs sit for the national NCLEX-RN® licensing examination administered in each state. The training for Licensed Practical Nurses (LPNs) varies across the country but graduates of all programs sit for the national NCLEX-PN® exam to apply for licensure. Some programs are one year of full-time coursework, usually at a community college, in addition to supervised clinical practice. Other programs are offered by private educational institutions, and can be completed part-time. There are bridge programs for LPNs to become RNs, and for associate degree RNs to complete the baccalaureate degree.

The scope of practice for RNs is broader than for LPNs, and can vary by state. A full discussion of the differences is beyond the scope of this chapter. RNs are expected to use their clinical judgment in assessing patients’ health status, taking a health



history, doing a physical exam, and deciding upon, executing and evaluating the effectiveness of a plan of care. They educate and counsel patients, functioning more or less autonomously within a patient's plan of care, that is, without direct supervision, depending on the setting, policies and procedures, and patient acuity. In ambulatory care, triage of acute complaints, either in person or by phone, is usually within the scope of practice of RNs rather than LPNs, because of the higher level of education and training of the RN. RNs usually collaborate closely with medical providers, and may also delegate tasks to medical assistants and LPNs depending on the practice acts in a given state. LPNs are more task-based, and usually practice under the supervision of an RN or medical provider. For example, LPNs may give injections, take vital signs, administer medications, dress wounds, and perform simple laboratory tests, such as testing a urine sample.

Other Strategies to Optimize the Role of the Registered Nurse

In all of the above activities, registered nurses provide patient education and support, especially regarding medications and others therapies, and promote self-management in patients with chronic conditions. Most importantly, our nurses develop strong relationships with the patients on the panels that they support. They continue to assist providers with some acute care visits, provide routine wound care and immunizations, and administer long-acting psychotropic medications to patients with severe mental illness. In the latter case, seeing the patient in person also allows the nurse to assess the patient's response to treatment, and ask about psychosocial issues, such as unstable housing, which affect ongoing management of the illness. At CHCI, registered nurses have been invaluable in addressing opioid use disorder (OUD), and collaborating closely with pre[HIV]-exposure prophylaxis (PrEP) navigators, behavioral health clinicians, and PCPs to support patient safety, compliance, and progress through follow up after buprenorphine visits. Registered nurses' practice when working with this population of patients is guided by standing substance use disorder (SUD) protocols developed in collaboration with other licensed clinicians.

In encounters with these patients, registered nurses also are always looking to reduce harm and support health by addressing smoking cessation in current smokers and alcohol use in individuals who have been identified as having higher than healthy intake, through SBIRT data collection (Screening-Brief-Intervention-Refer for Treatment). Nurses' expertise extends beyond direct patient care to ensure the safety and integrity of other activities within the primary care practice, such as vaccine storage, infection control, and accuracy of CLIA (Clinical Laboratory Improvement Amendments) testing. Registered nurses can also ensure that all staff are trained and knowledgeable in emergency preparedness and response. Some of the ways in which registered nurses ensure safety and the integrity of the system is through

the supervision of medical assistants during codes, ensuring that all members of the team are working to the top of their licenses and that non-clinical staff are assisting with crowd control and reaching out to emergency services when appropriate. Registered nurses ensure that daily checks of emergency medication and supplies are completed and work with purchasing to ensure that appropriate replacements are obtained during product shortages. They are the frontline staff who are the liaison between emergency response personnel, the medical or behavioral health provider, ancillary medical staff, family members, and bystanders.

Nursing Scorecards

As roles, responsibilities and workflows in team-based care become clearer and more standardized, it is easier to identify how the actions of individual staff contribute to outcomes. For example, if registered nurses are ultimately responsible for childhood immunizations, it is possible to track how many patients in the panel they cover are up to date based on documentation in the electronic health record. As payment models shift to value-based care, staff can be recognized for, and also held accountable for, their contribution to outcomes measures because each measure can be broken down into specific role assignments within the team.

In [Part II: Data-Driven Care](#), we presented a graph that the CHCI staff in Population Health and Business Intelligence developed to display a specific provider's performance on the Uniform Data Systems (UDS) measure "Percent of patients eligible for a mammogram in the last two years." It is one example of a scorecard used with providers and their teams. In the case of mammograms, the scorecard reflects the work of providers and medical assistants in particular (see [Chapter 8, Role of the Medical Assistant](#)). The goal of scorecards is to provide timely, accurate and meaningful feedback about individual and team performance in order to foster discussion about how to improve patient outcomes using quality improvement tools. Where was the gap in the workflow? Improved outcomes not only benefit patients, but also enhance the financial performance of the organization, through pay for performance rewards which may in turn lead to the organization's ability to offer higher compensation or performance bonuses to high performing teams and their team members.

For registered nurses, CHCI has developed and refined a clinical scorecard to accompany the usual yearly qualitative performance appraisal process for nurses and medical assistants. The scorecard corresponds to measures on dashboards for which nurses are responsible, so that their data is readily captured by Business Intelligence. These include nurse visits, immunizations, and chronic disease management. Individual performance is compared to the average performance of nurses in their site and also to the organization as a whole. Nurses meet with their nurse managers to review their performance, and develop plans for improvement as needed. Boxes [7.1](#) and [7.2](#) provide samples of scorecards for primary care nurses.

Box 7.1: Nurse Performance Evaluation 2023—Site A



Nurse Performance Evaluation 2023

Nurse Name: _____

Category	Measure	Nurse's Data	Site A	Agency Average
Productivity	Nursing visits based on capacity	87.6%	105.7%	82.7%
Vaccine	Pneumococcal Vaccine (PCV 20) for patients age 65+ OR 19+ with COPD, Diabetes, persistent asthma or current smoker	16/87 (18.4%)	5.3%	2.3%
Chronic Disease Management	Opportunities met to do Self-Management Goal setting among patients with uncontrolled DM, HTN and/or obesity (per Planned Care Dashboard)	0/481 (0%)	0.0%	0.6%
	Patients with 1 or more visits with PCP who have HTN and whose last BP was in control	148/191 (77.5%)	71.3%	65.4%
	Patients with 1 or more visits with PCP who have DM and whose last A1c was in control	85/113 (75.2%)	77.6%	75.2%
Action Items	Addressing Abnormal cancer screening Action Items (BI will pull all pts who had abnormal pap results and then indicate who has an open action item)	5/5 (100%)	100%	88.2%

Box 7.2: Nurse Performance Evaluation 2023—Site B



Nurse Performance Evaluation 2023

Nurse Name: _____

Category	Measure	Nurse's Data	Site B	Agency Average
Productivity	Nursing visits based on capacity	114.4%	114.4%	82.7%
Vaccine	Pneumococcal Vaccine (PCV 20) for patients age 65+ OR 19+ with COPD, Diabetes, persistent asthma or current smoker	10/250 (4%)	4.0%	2.3%
Chronic Disease Management	Opportunities met to do Self-Management Goal setting among patients with uncontrolled DM, HTN and/or obesity (per Planned Care Dashboard)	0/1,187 (0%)	0.0%	0.6%
	Patients with 1 or more visits with PCP who have HTN and whose last BP was in control	321/458 (70.1%)	70.1%	65.4%
	Patients with 1 or more visits with PCP who have DM and whose last A1c was in control	178/216 (82.4%)	82.4%	75.2%
Action Items	Addressing Abnormal cancer screening Action Items (BI will pull all pts who had abnormal pap results and then indicate who has an open action item)	12/12 (100%)	100%	88.2%

The Role of the Medical Assistant

The medical assistant occupation is described by the U.S. Bureau of Labor Statistics (2022) as persons who “complete administrative and clinical tasks in hospitals, offices of physicians, and other healthcare facilities.” The role of medical assistants (MAs), as well as their preparation for the role and their scope of practice per state law, varies widely. In the past, some were trained on the job by the primary care providers (PCPs) that they assisted, and under whose license they practiced. Today’s medical assistants are likely to have completed a formal medical assistant training program at an accredited school, community college, or other entity. Medical assistants are generally not licensed by a state authority, but many sit for a national certification exam, depending on the requirements of their organization. Currently, the only state that requires medical assistants to pass a national recognized exam and receive a state issued healthcare credential is Washington (Stepful, n.d.a).

Their scope of practice is often determined by the organization in which they are employed and with certain specific state-mandated exclusions. That is, state regulations often spell out what the medical assistant **cannot** do, even with supervision. Furthermore, state regulations vary regarding who can delegate responsibilities to a medical assistant. In some states, registered nurses cannot delegate to an MA—only providers can (Stepful, n.d.b). In addition to physicians, most states have now extended that scope of practice to include registered nurses, nurse practitioners and physician associates.

The Health Resources and Services Administration (HRSA), in its role as having oversight of health center requirements for staff qualifications, categorizes certified medical assistants as “other licensed or certified practitioners (OLCPs),” a category that includes nurses, respiratory therapists, some behavioral health staff, and others, that is, persons who provide care but are not licensed as independent practitioners, such as physicians. Medical assistants without certification are classified as “other clinical staff” along with community health workers (HRSA, n.d.a).

In **Part IV: Training the Next Generation**, we will describe a new model of education and training for medical assistants that was conceived, planned and launched with the goal of training medical assistants to a high performing model of primary care in the setting of health centers. **In partnership with Salud Family Health, Community Health Center, Inc. (CHCI) created the National Institute for Medical Assistant Advancement (NIMAA), which partners with health centers and**



“...[Medical assistants] are full members of the core team...because the provider is assigned to the same (patient) panel, medical assistants are part of the medical assistant-provider teamlet for that shared panel.”



other healthcare organizations across the country to host medical assistant students virtually for the 8-month combined classroom/didactic and clinical skills practice training. By partnering with health centers and recruiting from their service areas and target populations, NIMAA also advances the work of health equity and building a workforce representative of the patients that the health center serves (National Institute for Medical Assistant Advancement, n.d.).



Best Practices for Optimizing the Role of the Medical Assistant

1. Pre-visit Planning/Planned Care
2. Patient Follow-Up
3. Health Coaching and Motivational Interviewing
4. Coordinator of Activities among the Primary Care Team
5. Medication Reconciliation
6. Quality Improvement

In some primary care settings, medical assistants only room patients and check vital signs, or perhaps review the medication list with the patient. In community health centers, they are likely to practice and contribute at a much higher level, supporting many of the functions of team-based primary care. They are full members of the core team, assigned to a provider and that provider's patient panel. However, because the provider is assigned to the same panel, medical assistants are part of the medical assistant-provider teamlet for that shared panel (Bodenheimer & Laing, 2007; Bodenheimer, et al., 2014b; Chapman & Blash, 2017).

At CHCI, our medical assistants work with PCPs—and the rest of the team—at our primary care sites, in school-based health centers, homeless shelters for those experiencing homelessness, and during outreach screening and education events in the community. We have also added mobile health units to our strategies to reach patients wherever they are in the community. They form strong relationships with patients over time. They are essential to gathering accurate biometric data, vital signs, and screening measure results; performing Clinical Laboratory Improvement Amendments (CLIA) waived lab tests; and entering that key data into the electronic health record in structured fields. **A key responsibility is obtaining the chief complaint and reason for the visit, which provides direction for the PCP.** As we noted in [Part II: Data-Driven Care](#), data entry is a critical respon-



sibility for anyone using the electronic health record. The data the medical assistants enter is used not just to address the needs of the patient today, but the data is also retrieved for the purposes of future calculation and monitoring of quality measures, population health characteristics, quality improvement, and thus reimbursement. At CHCI, our medical assistants report to the nurse manager for their practice site, who is responsible for ensuring they are appropriately trained for their role as part of a primary care team and accountable for their performance (discussed further under Medical Assistant Scorecard below).

Pre-visit Planning/Planned Care

We described pre-visit planning, also called planned care, earlier. It occurs when the medical assistant reviews the planned care dashboard before the visit in order to identify, provide or arrange for routine preventive and chronic disease care that the patient needs, such as a mammogram, HbA1c, flu vaccine, or retinal exam. The medical assistant can set up the order for the provider or nurse to execute, thus ensuring that gaps in care do not occur. For example, as we mentioned, our medical assistants have been trained to capture retinal images on-site during a patient visit.

Patient Follow-Up

Similarly, medical assistants can provide telephone or in-person follow-up with patients to ensure that they filled a prescription or were contacted by a community-based service agency as planned. During the COVID-19 pandemic, we learned that in some health centers, medical assistants would call a patient if a COVID-19 test was negative, whereas the registered nurse would call with positive results in order to counsel the patient about next steps. Activities involving the logistics of patient care, such as checking on appointments or a prescription or communicating negative test results are not care management or care coordination, which require professional judgment and are best performed by a registered nurse.

Health centers provide invaluable clinical training experiences for medical assistant students.



Health Coaching and Motivational Interviewing

With the appropriate training, medical assistants can also do health coaching and motivational interviewing during routine interactions with patients, such as when they are providing preventive care or following up with patients. Nationally, medical assistants are more diverse compared to either medicine or nursing—57% white non-Hispanic, 23% Hispanic, 14% African American, 4% Asian (Chapman & Blash, 2017)—and often come from the population that community health centers serve. Thus, patients may be more willing to confide in or listen to the medical assistant than the nurse or provider, especially if a language barrier is involved. This is an example of “social concordance,” a measure of shared social characteristics between patients and physicians, such as, gender, race, socioeconomic status, education, expectations, and beliefs; higher concordance is related to greater patient satisfaction and better health outcomes (Adriano, et al., 2021; Kurek, et al., 2016; Shen, et al., 2018; Thornton, et al., 2011). For example, medical assistants may more easily broach the subject of smoking cessation with patients from their own community, opening the door for the registered nurse or provider to follow-up with a plan to help the patient do so.

A real-world example involved a Spanish-speaking mother who filled a prescription for antibiotics in liquid form to treat her child’s ear infection. The Spanish-speaking medical assistant learned that the mother was putting the antibiotic into the child’s ear rather than giving it to him by mouth. This is a surprisingly common misunderstanding, but one that may go uncorrected when there is a language barrier, or patients are embarrassed to disclose their error to an authority figure, such as a nurse or provider. In this case, the medical assistant was able to explain to the mother how to administer the antibiotics as intended. The medical assistant communicated this episode to the registered nurse, advancing the **function** of medication management in primary care while also ensuring patient safety.

Coordinator of Activities Among the Primary Care Team

Medical assistants can also coordinate activities among the primary care team. For example, our medical assistants play a major role in warm handoffs (WHO) with the behavioral health providers (see [Chapter 10: Role of the Integrated Behavioral Health Provider](#)). Another example is the role of care team coordinator (CTC) for medical assistants created by Bellin Health in Green Bay, Wisconsin, a role which requires additional extensive training (Bodenheimer, 2022). Each provider works with two CTCs, that is, a 1:2 ratio (they covered the cost through increased productivity). The following paragraph will describe how it works—it’s a bit like leapfrog:

Before the provider comes into the room to see Patient A, the CTC #1 does pre-visit planning/panel management with Patient A to identify and address care gaps, and reviews the patient’s history and medications. The provider enters the room to see



Patient A and CTC #1 remains in the room during the visit to act as a scribe so that the provider can give full attention to the patient. When the provider leaves, CTC #1 makes sure Patient A understands the care plan, helps the patient navigate next steps involving lab work, imaging, referrals, or pharmacy-related tasks. CTC #1 may do health coaching while reviewing the after visit summary. Meanwhile, while CTC #1 and provider are meeting with Patient A, CTC #2 is already in another exam room with Patient B doing the pre-visit planning/panel management, ready to act as a scribe when the provider enters the room. CTC #1 finishes with Patient A and moves on to Patient C while the provider and CTC #2 are with Patient B.

Medication Reconciliation

Medication reconciliation is a process, not a task, which involves several members of the health care team. It begins when the medical assistant reviews the medication list in the electronic health record (EHR) with the patient, and flags any inconsistencies or questions that the patient might have for the provider to review. While a registered nurse, using delegated order sets, can modify the frequency or dosage of a medication and even highlight when the patient may not be on an evidence-based regimen (for example, a controller inhaler for moderate persistent asthma), only a provider can cancel a prescribed medication or order a new one.

Quality Improvement

Medical assistants should also be active participants in quality improvement work. Their deep knowledge of routine workflows makes them valuable team members in improvement efforts. In addition, their responsibilities regarding planned care contribute to the success of many reported quality measures, such as routine screenings and other preventive care, because they enter the data into the structured fields. When MAs understand the **functions** of the care they provide, as opposed to simply doing rote tasks, they are more invested in a high level of team performance.

Medical Assistant and Quality Improvement at Community Health Center, Inc.

One part that I love about my job is the ability to participate in quality improvement (QI) projects at Community Health Center, Inc. (CHCI). I have been involved in a few QI projects, but one that stands out is the one for our Intimate Partner Violence Screening or Hurt, Insult, Threat, and Scream (HITS) (see Figure 8.1). To develop a workflow, departments from across CHCI met during a dedicated meeting time once a week for about three months. It is important for all departments to be involved in a team-based care setting to learn about their current workflows and how a handoff would work best for the patient. Following the rollout of the workflow, we continued to meet for a few weeks to work through any issues and barriers encountered by staff members.

This was a unique and important opportunity to be the voice of medical assistants during a QI project, but also the voice of the patient because I know how they would see it. It was a great opportunity as well to listen and learn from other areas outside of medical, such as behavioral health. It is important for medical assistants to have a clear understanding of screenings, why we do them, and how it impacts the patient afterwards. By being involved in QI projects directly, we are able to more clearly understand this importance. Participation in QI projects also increases my job satisfaction by allowing me to explore other avenues.

Figure 8.1. Intimate Partner Violence Screening or Hurt, Insult, Threat, and Scream (HITS) Screening

Over the last 12 months	Never 1	Rarely 2	Sometimes 3	Fairly Often 4	Frequently 5
Physically HURT you					
INSULT you or talk down to you					
THREATEN you with physical harm					
SCREAM or curse at you					

—Natasha Quinn, Medical Assistant, Community Health Center, Inc., Middletown, CT

Other Strategies to Optimize the Role of the Medical Assistant

Medical assistants can assist with many other functions of team-based care, depending on state regulations and agency policies. During the COVID-19 pandemic, our medical assistants did telephonic outreach to patients, assisted with specimen collection during drive-through COVID-19 testing, oriented patients to telehealth platforms, completed data entry for positive case reports for the Department of Public Health, and otherwise supported the efforts of team-based care as needed. Again, the focus is on the **functions** of primary care, and the **tasks** to meet those functions are revised as needed.

Effective October 1, 2022, medical assistants in the state of Connecticut who have graduated from an accredited school, and achieved national certification can participate in vaccine administration. This has provided a unique opportunity to strengthen the medical assistants workforce by moving toward national certification as a standard, as well as to ensure that they can deliver all aspects of care that they were trained in as a part of their accredited programs, equating to top-of-training practice, which is the goal for every role on the care team. CHCI’s Chief Nursing Officer developed the strategic map to take current medical assistants through a rigorous upskilling program of coursework through our NIMAA affiliate and supervised extensive clinical practice administering vaccines at our sites. With this increased responsibility and privilege, medical assistants have become an even more vital part of the primary care team. They have deepened their own knowledge, skill and ability to contribute to the expert care of patients, and simultaneously created more capacity for nurses to devote more time to care that is only within the scope and licensure of nursing.

Medical Assistant Scorecards

In [Part II: Data-Driven Care](#), we presented a graph that displayed a specific provider’s performance on the Uniform Data Systems (UDS) measure “Percent of patients who were eligible for a mammogram in the last two years”, comparing that provider’s performance with other providers at the clinical site and across the organization. In [Chapter 7: Role of the Registered Nurse](#), we discussed the rationale for, and development and utilization of the scorecards for primary care nurses that accompany their yearly performance appraisal. Because medical assistants report to the nurse managers at their clinical site, they review the individual medical assistant’s scorecard together and develop plans for remediation as needed. As with nursing staff and providers, individual performance is compared with average performance of medical assistants at their clinical site and across the organization. Boxes 8.1 and 8.2 provide samples of scorecards used with medical assistants, correlating the categories on which they are measured with outcomes measures in the planned care dashboard used by medical assistants.



Medical Assistant Performance Evaluation 2023—Site A

Medical Assistant Name: _____

Results: _____

Category	Measure	MA's Data	Site A	Agency Average
Quality Measures	Adult BMI and exercise/nutrition education	81/131 (61.8%)	43.2%	61.9%
	Colorectal Cancer screening	30/147 (20.4%)	19.6%	19.1%
	Depression screening and follow up	122/183 (66.7%)	37.7%	50.8%
	Depression monitoring (PHQ9)	18/41 (43.9%)	30.1%	39.3%
	Diabetes A1c (completed or ordered, regardless of result)	15/22 (68.2%)	67.2%	70.1%
	Hypertension—% of time MA took it a 2nd time if it was out of range the first time	21/96 (21.9%)	10.3%	61.4%
Administering Immunizations	Administering Immunizations			



Medical Assistant Performance Evaluation 2023—Site B

Medical Assistant Name: _____

Results: _____

Category	Measure	MA's Data	Site B	Agency Average
Quality Measures	Adult BMI and exercise/nutrition education	57/62 (91.9%)	62.2%	61.9%
	Colorectal Cancer screening	23/75 (30.7%)	22.0%	19.1%
	Depression screening and follow up	84/96 (87.5%)	72.8%	50.8%
	Depression monitoring (PHQ9)	10/14 (71.4%)	63.9%	39.3%
	Diabetes A1c (completed or ordered, regardless of result)	14/14 (100%)	93.7%	70.1%
	Hypertension—% of time MA took it a 2nd time if it was out of range the first time	49/67 (73.1%)	89.4%	61.4%
Administering Immunizations	Administering Immunizations			

The Role of the Primary Care Provider

We have held off on describing the role of the primary care provider (PCP) until after the discussion of the roles of the registered nurse and medical assistant. This was intentional. We want to review the role of provider in context of the functions of the primary care team, and how those functions can be met and supported by other team members. The PCP's role in the overall management of patients does not change in team-based care, especially for complex patients. This includes building a therapeutic and trusting relationship with patients over time, supporting planned care, and delivering evidence-based care while diagnosing illness and managing treatment for all but the most unusual and complex conditions, which may require specialist care. A sustained therapeutic relationship between provider and patient, over time, is the essence of primary care. However, in primary team-based care, providers also have an additional and critical role as the driving force behind the team itself. Providers must be a champion for team-based care, and empower team members to practice at the top of their license and certification by delegating tasks and responsibilities in service to the functions of team-based care as discussed in previous chapters.



The ranks of PCPs have long since expanded beyond physicians to include nurse practitioners (NPs) and physician associates (PAs). In fact, in health centers, the full-time equivalents (FTEs) filled by the combination of NPs, PAs, and certified nurse midwives (CNMs) who practice as PCPs now outnumber that of physicians (Health Resources and Services Administration [HRSA], 2023). The demands and expectations of primary care mean that the PCP can no longer, and really should no longer, be the sole person responsible for the delivery of all of the elements of care. Contributing factors include the increased expectations for screenings and assessment, preventive counseling and anticipatory guidance, as well as the range of chronic illnesses to be managed, and the need to manage substance use disorder and behavioral health disorders either alone or in collaboration with behavioral health professionals—all the while being the trusted partner for patients and families as they move through their lives. The explosion in health information technology, dozens if not hundreds of new practice guidelines and medications each year, convoluted reimbursement regulations, and the complexity of patient populations with multiple co-morbidities all place additional burden on the PCP (Mitchell, et al., 2012; National Academies of Sciences, Engineering, and Medicine [NASEM], 2021a).


No one person, however dedicated, can keep up with these demands. It's overwhelming, exhausting, and inefficient! Ultimately, the provider engages in the sys-



“A sustained therapeutic relationship between provider and patient, over time, is the essence of primary care.”



tems in place that leverage the full care team to support each patient. For example, at Community Health Center, Inc. (CHCI), each clinical site has a PCP who is designated as the on-site medical director (OSMD), responsible for ensuring those systems work as intended and providing support and leadership to the medical team. Depending on the size of the practice site, there is also an on-site behavioral health director, and a dental on-site director. Each provider's team includes a medical assistant, registered nurse, and behavioral health provider, with access to the pharmacist and oral health providers a click away and to with a host of "off-stage" operational support staff surrounding the teams. In other words, providers are not on their own, but surrounded by a group of people dedicated to high quality patient care.



Best Practices for Optimizing the Role of the Primary Care Provider

1. Confidence in the Competence of their Team
2. Team Members' Activities Support a Patient Visit
3. Having the Right Providers on the Primary Care Team
4. Culture of Collaboration

Our Chief Medical Officer emphasizes that optimizing the role of the provider in high performing team-based care requires that providers support the model in the first place. A major barrier to team-based care is that many providers who trained as physicians are uncomfortable relying on others to do pre-visit planning or to use standing orders for some aspects of patient care (NASEM, 2021a; O'Malley, et al., 2015). The way to get them to support the model is to ensure they can trust the clinical competence of the interdisciplinary members of the team.

Only then can the role of PCPs be optimized to take full advantage of their expertise by delegating some of the functions of team-based care to other disciplines.

Confidence in the Competence of Their Team

First and foremost, providers must have confidence in the competence of their team to perform as expected. Trust is the foundation for safe practice. This trust begins with the providers understanding that all team members have accountability in the patient's care, and are trained accordingly. HRSA requires health centers to have a credentialing and privileging process not just for licensed independent providers,

like physicians, nurse practitioners, and physician associates, but also for other licensed and certified personnel (OLCPs) as well. But as we noted at the beginning of [Part III: Roles in Team-Based Care](#), you must differentiate between state regulations governing scope of practice/licensure and the role of the policies and procedures in your health center regarding practice activities within that scope of practice.

Ultimately, it is the responsibility of the health center to support providers by ensuring that team members are in fact competent to execute their responsibilities in patient care effectively and safely. This begins when candidates are interviewed for the positions, but cannot stop there, as many new team members have not been trained to a high level of performance. Having team members practice at the top of their license according to a health center's policies and procedures requires that the health center and the clinical chiefs upskill team members accordingly, and make expectations clear. We cannot emphasize the importance of training and retraining staff, and of clear expectations for accountability enough.

The provider's trust in the team is further strengthened when the leaders from different disciplines work together as equals. We have noted that at Community Health Center, Inc. (CHCI) our clinical chiefs report to the Senior Vice President/Clinical Director individually and as a team. That is, the structure of team-based care is a reflection of how the clinical chiefs' leadership is structured within the organization. Our clinical chiefs are responsible for ensuring that team members are trained, competent and performing as expected within and across disciplines, and according to policies and procedures. **Team members must be clear about their own roles and responsibilities, but also those of their team members.**



At CHCI, the providers are accountable to the Chief Medical Officer, while the medical assistants and nurses ultimately are held accountable to the Chief Nursing Officer. The Chief Behavioral Health Officer and Chief Dental Officer are responsible for the competence of members of their disciplines as well. The chiefs oversee the upskilling of their disciplines, and together manage relationships and expectations among team members. As a health center grows, other roles may be created as the size and number of disciplines expands.

For example, our medical assistants receive a scorecard of missed opportunities, that is, gaps in preventive care addressed during pre-visit planning/planned care, such as cancer screenings. These missed opportunities are tracked using data from the planned care dashboard. The Chief Medical Officer will work with the provider to better communicate in real time with the medical assistant about what needs to be done, while the Chief Nursing Officer will work with the medical assistant to better understand expectations. They work with the staff so that the team understands how each has a vital part of the overall care of the patient, and are held accountable for

that care. It's important to note that high performance is also reported on the scorecard, so that staff's performance and contribution to care is celebrated.

Team Members' Activities Support a Patient Visit

When providers can have confidence in their teams' competence, their role is optimized when those team members support a patient visit by doing the pre-visit planning, providing comprehensive coordinated care, and educating and managing patients. This allows providers to be more efficient, as they are not searching for information or making sure something was done. Most importantly, providers can be more focused during the patient visit, which is especially important for the complex patients that health centers serve.

However, it is important to recognize that when a high performing model of team-based care leverages the competence of other team members to fulfill some of the tasks and functions of primary care, more patient care needs are identified and more care gaps are closed. That means the results from more routine screenings and other tests are posted in the electronic health record for the provider to review, either at the time of a patient visit or after the patient has left. After the results are documented in the electronic health record, the provider must review these results and follow-up as needed. Similarly, a provider may need to sign off on aspects of a plan of care developed by a nurse doing care coordination, such as home visiting services. In other words, high quality team-based care may require more of the provider's time precisely because other team members also are attending to patients' needs.

Having the Right Providers on the Primary Care Team

When our Chief Medical Officer interviews PCPs who want to practice at CHCI, she is transparent about the team-based model of care, especially the evolving roles of nurses and medical assistants as we have described them in other chapters. Most candidates respond positively to the idea of having a team around them. But she presses further: *"Would it be a problem for you to have team members proactively practicing on standing orders and complete planned care on your BEHALF, as opposed to you delegating orders to them?"* She reviews real clinical scenarios. For example, the provider may walk into the exam room to find that the routine depression screening, blood glucose levels for patients with diabetes, and a spirometry test for patients with asthma have been already completed, with the results in the electronic health record ready to be reviewed by the provider with the patient. She notes that this may add additional clinical information to be reviewed beyond just the chief complaint. Patient visits become a little more complex and certainly more meaningful. Team-based care frees the provider to spend more time with the patient, but it means relying on others to work more or less autonomously.

The hospital training that is part of all postgraduate medical residencies may not prepare physicians for the high-performing team-based model in primary care that we have been describing. During their hospital training, physicians deal with complex acute care patients whose unstable status calls for quick and conclusive decisions. Hospital-based physician residents answer to their supervising resident or chief, so that they feel and usually are ultimately accountable for patient outcomes. They are not prepared to rely on standing orders or delegated order sets executed by nurses, for example, and as we noted, their discomfort may pose a barrier to team-based care (NASEM, 2021a; O'Malley, et al., 2015).

This perspective was shared by a panel of physicians in the HRSA funded Training and Technical Assistance Partners (NTTAP) Team-Based Care Learning Collaborative. Many physicians are uneasy about letting go of tasks that others on the team can perform within their level of licensure and training. They may not know the scope of practice for primary care nurses, medical assistants, pharmacists and others. Understandably, they worry about things getting done correctly and whether others are adequately trained for their jobs.

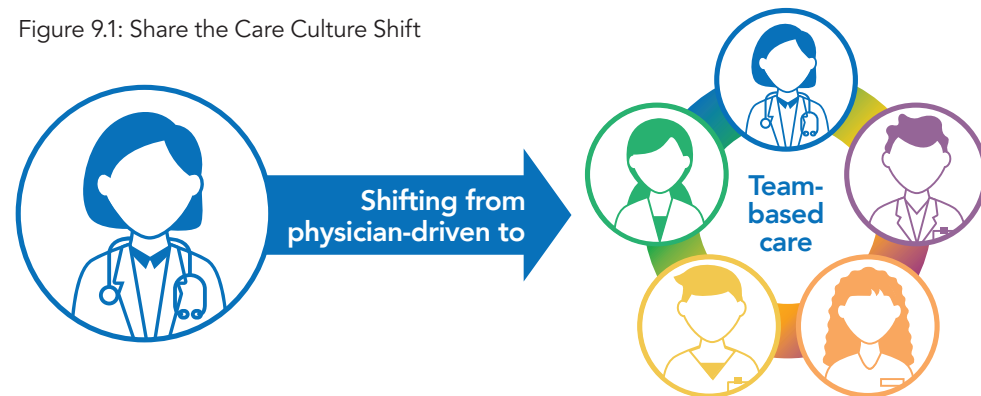
All the more reason to emphasize the importance of a **stable team that works together consistently**, one of the key elements of higher performing primary care. It is essential that team members are trained to the top of their license or certification, with clearly defined roles, competencies, responsibilities and workflows. And when highly trained team members work together on a day to day basis, it is easier to hold each other accountable for their work. This builds trust which is essential to a culture of collaboration.



Culture of Collaboration

In team-based care, the provider's role goes beyond clinical expertise. It is about building a collaborative team culture, as we discussed in [Part I: Foundations of Team-Based Care](#). It is about a culture of "share the care," "ground rules," and a paradigm shift from "I" to "we" (Ghorob & Bodenheimer, 2012). Building a collaborative culture requires a more nuanced style of leadership, not just telling others what to do. As we have noted, it is about staff performing functions of patient care, not doing tasks. If the PCP is not invested in team-based care as a culture shift, it is difficult to make it work.

Figure 9.1: Share the Care Culture Shift



By **reallocating responsibilities** (*not only tasks*), all team members **contribute meaningfully** to the health of their patient panel.

The provider's role in promoting a culture of collaboration among team members is vital to team functioning. The provider should model the behavior of being part of the team. This means having a role in the huddle, communicating with team members throughout the day regarding patient needs, and addressing gaps in team flow, should they come up. To champion team-based care, providers can work with other disciplines to create the standing orders and protocols that facilitate team-based care, rather than hinder these efforts. They can help the team to identify and share goals for practice, participate in quality improvement efforts, and encourage the professional growth of team members. Keeping lines of communication open and troubleshooting issues in real time go a long way to acknowledging and accepting that others have the knowledge and training to be effective team members.



"In team-based care, the provider's role goes beyond clinical expertise. It is about building a collaborative team culture."



The Role of the Integrated Behavioral Health Provider

Recognizing the need to integrate medical health and behavioral health services is not new (Goldman, et al., 1982). Given that *“comorbidity between mental and general medical disorders is the rule rather than the exception,”* treating these conditions separately has fragmented care, resulting in gaps in access to care and poor coordination among providers, leading to both inefficiencies and poor quality of care (Druss & Goldman, 2018, p. 1199; Bierman, 2019). **In the year 2020, 10% of American adults sought mental health counseling** (National Center for Health Statistics, 2021).



It is well-established that individuals with mental health difficulties are more likely to develop chronic medical conditions, and vice versa (Momen, et al., 2020; Walker & Druss, 2017). For example, chronic pain is associated with depression, but depression raises the risk for chronic pain (Schmaling & Nounou, 2019). People with type II diabetes are more likely to develop cardiac problems, but also depression (Zghebi, et al., 2020). In fact, depression in particular is a common comorbidity of multiple chronic diseases (Birk, et al., 2019; Lotfaliany, et al., 2018). The COVID-19 pandemic has only exacerbated these relationships (Hossain, et al., 2020).

Also, there are strong associations among different mental health conditions; for example, depression, anxiety, and substance use are often found together (McGrath, et al., 2020). Furthermore, poverty multiplies the burden of the combination of chronic physical and mental health conditions; or perhaps health problems multiply the burden of poverty (Walker & Druss, 2017). In other words, cause and effect between physical and mental health can be difficult to unravel: the relationships are complex and multidirectional (Goodell, et al., 2011), providing a compelling rationale for an integrated multidisciplinary team approach for these patients.

The road to better integration in community health centers has been underway for about two decades. **Between 2002 and 2007, the number of federally funded health centers increased by 43% from 748 to 1,067, with 77% of those offering mental health services** (Wells, et al., 2010). With the Affordable Care Act of 2010, the integration of medical and mental health, as well as substance use disorder, became a matter of federal policy (Druss & Goldman, 2018). **Now, in 2024, 99% of Health Resources and Services Administration (HRSA) funded health centers provide mental health services and have conducted over 15 million mental health visits** (HRSA, 2024).



“...integrating behavioral and medical health care improves outcomes, especially for patients with co-occurring depression and chronic physical conditions.”





There is compelling evidence that integrating behavioral and medical health care improves outcomes, especially for patients with co-occurring depression and chronic physical conditions (Balasubramanian, et al., 2017; Druss, et al., 2017). For example, a randomized controlled study compared quality and outcomes of care in an integrated behavioral health home with usual care among patients with mental and physical co-morbid conditions. **Patients in the integrated behavioral health home, who received care from a nurse practitioner and a nurse care manager, had greater improvements in their mental health and blood pressure, and attended more primary care visits, than those in usual care** (Druss, et al., 2017). In other studies, patients with depression who were enrolled in integrated practices had significant reductions in mean PHQ-9 scores [Patient Health Questionnaire-9 is a measure of depression] (Balasubramanian, et al., 2017), and also had lower mean total healthcare costs (Unützer, et al., 2008).

However, the transition to integrated care is context-specific (Cohen, et al., 2015). Issues to reconcile include:



- Access to a behavioral health provider, especially a same day warm handoff (WHO), and subsequent expectations about productivity;
- Composition of the primary care team, and how team members interact;
- Recognizing the educational value of a behavioral health team member in helping others on the primary care team better understand the relationship between physical and behavioral health;
- How physical space is used;
- And operational issues about sharing the electronic health record and other resources (Balasubramanian et al., 2017; Reiter, et al., 2018).

In a conversation with our Chief Behavioral Health Officer, a licensed psychologist, he pointed out that from its very beginning more than 50 years ago, Community Health Center, Inc. (CHCI) has provided behavioral health treatment along with dental and medical care. However, clinical departments operated independently, with medical and behavioral health providers in individual offices, often in different buildings, and with separate charts. This may have been your experience as well. A lot had to change to get us to where we are today: an integrated care organization committed to ensuring that all patients who come through the door get the care and treatment that they need across disciplines.

Our model of integrated behavioral health is founded on best practices that reflect these issues: a shared electronic health record; physical co-location of behavioral health with the core team, adjusted to include virtual co-location as needed; timely

access to behavioral health therapists as well as psychiatric providers (i.e., psychiatrists and psychiatric nurse practitioners); and, hiring the right people for integrated care. There are no medical or behavioral health patients, only patients.



Best Practices for Optimizing Integrated Behavioral Health

1. One Electronic Health Record
2. Physical and Virtual Co-location of the Care Team
3. All Patients are Community Health Center, Inc. (CHCI) Patients
4. Timely Access to Comprehensive Behavioral Health Care
5. Having the Right People on the Integrated Behavioral Health Team

One Electronic Health Record

We have discussed that patients have one electronic health record (EHR) to which all disciplines on the team have access. In our organization, when patients sign informed consent for behavioral health care treatment, they are informed that a shared EHR among clinicians is standard practice. They are assured that only those who have a need to know their information will be viewing their charts, as our information technology specialists monitor access to patient records and human resources intervenes with staff who violate privacy policies. Behavioral health providers record the type of session (individual, family, or group) in the EHR and whether patients were seen in person, via telephone, or via video, and then give a brief summary of the content of the session. Each patient has a detailed treatment plan developed jointly by the patient and the treating behavioral health clinician, who records progress toward these goals in accordance with legal, clinical, ethical, and billing standards. Patients rarely object to the shared EHR, but if they do, we are happy to provide referrals to other agencies.

Physical and Virtual Co-location of the Care Team

As we have noted before, the behavioral health team is physically and virtually co-located with the other clinical disciplines, in order to form an integrated care team that works together to provide patient-centered care and communicates seamlessly. We

found during the years of the COVID-19 pandemic that the real time interactions between providers of various disciplines and real time availability of behavioral health providers to see patients in a warm handoff (WHO) or a curbside consult can be maintained in a hybrid/in-person team.

We write this at a time when radical change in how and where behavioral health services are delivered has occurred due to the COVID-19 pandemic, when care was shifted overnight from primarily in person to primarily virtual contact between all clinicians and patients. With the years of the intense disruption of the COVID-19 pandemic behind us, we note that medical services at CHCI have largely returned to in person/on site care (90%), even when virtual care is available, while about 80% of behavioral health services have remained virtual due to patient preference, with on-site in person care available at each site. This natural experiment and its high level of acceptability to patients has led both public and private payers to extend and in some cases make permanent access to behavioral health services by telehealth, both by video and/or by telephone with some restrictions in terms of length of visit, and need for periodic in person visits. In November 2022, the Centers for Medicare and Medicaid Services (CMS, 2022) released final telehealth rules for 2023, including rules for Federally Qualified Health Centers (FQHCs). **At the time of this writing, each state across the country is establishing their own long-term approach for telehealth as a result of policies put into place during the COVID-19 pandemic. In Connecticut, as of March 2024, a bill was passed to adopt certain temporary expanded requirements for telehealth services delivery and insurance coverage, including audio-only telehealth (State of Connecticut, 2024). These policy and payment shifts are among the most significant and lasting impacts on practice in the federally funded health center setting that we have seen in a generation.**

Medicaid has issued guidelines for states addressing the statutory and regulatory infrastructure they must consider as they evaluate the need to expand their telehealth capabilities and coverage policies in light of the COVID-19 pandemic. Medicaid regulations for telehealth will be determined by each state ([Medicaid.gov](https://www.medicaid.gov), n.d.). Nevertheless, the fact remains: if the patient is the center of our focus and is receiving both primary medical and behavioral health care, then the patient must still be the focus of an organized team based approach—virtually or in person.

Prior to the COVID-19 pandemic and through today, the absolute number of clients seeking services and the intensity of the issues brought to treatment have increased. One important way to address this challenge is through the provision of services in hybrid groups where some participants and providers may be on-site and others are joining remotely. With the help of an Optimizing Virtual Care grant from HRSA, CHCI has found that having dedicated staff to assist clients with the technological side of



joining care remotely and assist clinicians in the management of the scheduling has been instrumental in our ability to increase the number of people in groups and the sessions delivered.

All Patients are Community Health Center, Inc. (CHCI) Patients

All patients are “CHCI patients.” We do not have “medical patients” or “behavioral health clients” or “dental patients.” As we have previously noted, all patients enter through the same doorway to be greeted by the same patient service associate (PSA), avoiding the stigma associated with being seen for a mental health condition. At CHCI, our model of integrated care is supported by focusing on providing our behavioral health services to established medical patients. This serves two purposes: we can grow the behavioral health team in tandem with growth in primary care patients/providers and we can deliver on the model of fully integrated care. There are exceptions, of course, such as our two child guidance centers, which are state designated to provide behavioral health care to any child in a specific region, and our school-based health centers which are open to any enrolled child.

Getting behavioral health care outside of our integrated team-based care system does not disqualify a patient from getting medical care at CHCI, though it makes coordination of services more difficult. However, we have found that as the shared electronic health record allowed greater coordination of patient care between the clinical disciplines, medical patients were more likely to keep initial appointments for behavioral health than those who had no previous connection to CHCI. To use a behavioral health therapeutic term, we have found that there is a positive transference to the organization by the patients when behavioral and medical health care are provided within the same agency, and especially along the same hallway. This appears to be true also with virtual care—it transcends physical location.

Timely Access to Comprehensive Behavioral Health Care

At CHCI, we aim to fully meet the demand for care by increasing behavioral health staff as medical staff increases. Our staff may come from any of the seven behavioral disciplines (psychiatrists, psychiatric mental health nurse practitioner [PMHNP], psychologists, social workers, licensed professional counselors, marriage and family therapists, and drug and alcohol counselors) to practice independently in Connecticut after the required hours of training in their respective discipline. The psychiatrists and PMHNP have prescribing authority, and are available to assist other behavioral health clinicians and medical providers at all times regardless of physical location.

Knowing the percentage of dual medical and behavioral health patients, when combined with panel size for medical providers, allows us to predict utilization of behavioral health services, enabling us to staff appropriately. **In 2023, 12.0% of patients receiving primary care at CHCI also received behavioral health care at CHCI. On the other hand, in 2023, 65.3% of patients seen by a behavioral health provider were also seen by a medical health provider.** That is, our behavioral health patients are also currently accessing medical services in primary care.

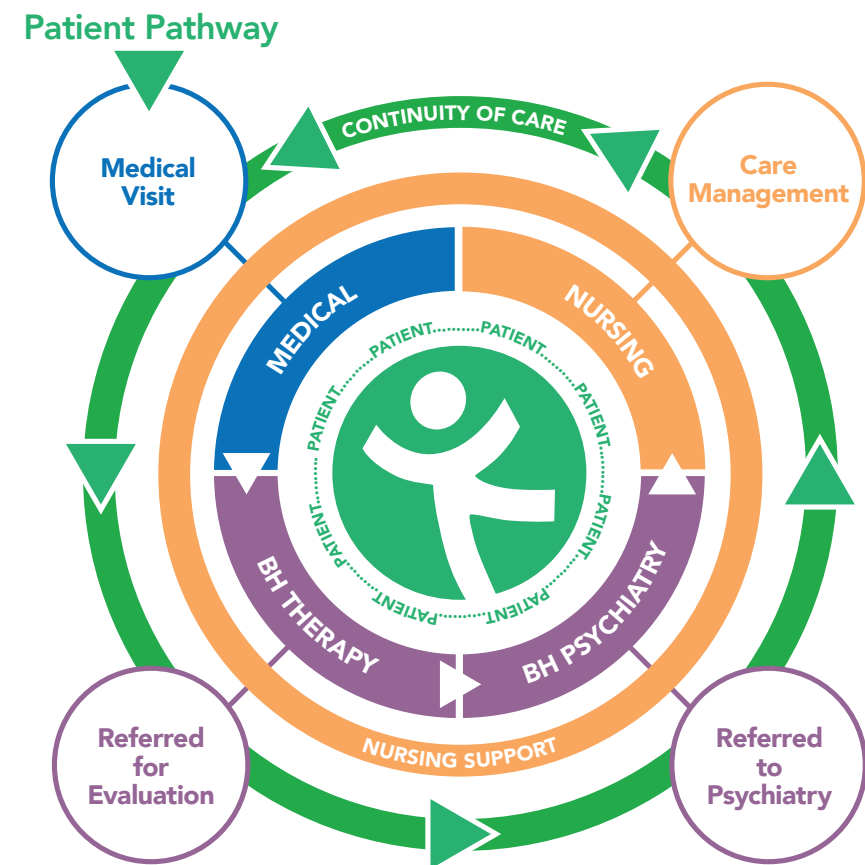
With the increased acceptance by patients and behavioral health providers alike of telehealth services, the adequacy of physical clinical space may no longer be the issue it once was in practices. With adequate staffing, either in person or remotely, we can offer a wide range of behavioral health services: brief assessments; individual, family and group therapy; short-term and long-term behavioral health care; and Medication Assisted Treatment (MAT) programs with relapse prevention support groups. Under Connecticut Medicaid guidelines for community health centers, we are able to bill for all licensed independent behavioral health providers, as well as for providers from all seven of our behavioral health disciplines who are completing their required hours of supervised training before passing their licensing exam. A licensed independent provider is the billing provider of record for these trainees. We are also able to bill for students who are providing care under the supervision of a licensed independent provider.

We readily acknowledge that our system sometimes falls short. WHOs may not be immediately available, an intake (45 minutes to one hour) may not be available for some time. In these situations, the referring PCP and behavioral health staff work to figure out how to best meet the needs of the patient, either internally within CHCI or by referral to community partners. Telehealth is a great help here as we are not limited by the resources of a specific site and can offer remote care with a provider available at another location. Additionally, Medicare now pays for care provided through the Collaborative Care Model (CoCM), an integrated delivery of behavioral health and

primary care services by a behavioral health care manager, psychiatric consultant, and the treating or billing practitioner. In this model, the psychiatric consultant provides treatment advice either virtually or in-person (Medicare Learning Network, 2023).

The benefits of our comprehensive, in-house, across the lifespan approach to behavioral health care are experienced by patients and providers. Patients can have immediate referrals to other disciplines in the same building, providing the convenience of one-stop shopping with the comfort of being in a familiar place and not having to travel elsewhere. **By integrating behavioral health with primary care, our patients see the behavioral health providers as a part of a larger comprehensive team, and are more accepting of these services.** Furthermore, integrated care creates a pathway (Figure 10.1) through which behavioral health is accessible through all disciplines on the team—medical, dental, and nursing—enabling us to do a WHO in real time, as well as to triage, treat, and stabilize patients with behavioral health conditions more effectively, united in our support of the patient.

Figure 10.1: Patient pathways for referral to and treatment by behavioral health providers.



Warm Handoff (WHO)

If any member of the team thinks that a patient needs to see a behavioral health provider before leaving the appointment (either in person or virtually), that team member can contact the behavioral health provider assigned to that team directly, in person or electronically. If that provider is not available, the medical assistant finds one who is through electronic messaging, either in person in the same building, or if necessary, virtually from another site. The WHO behavioral health provider tries to consult with the patient's PCP before talking with the patient if possible. Sometimes a behavioral health provider is available immediately, sometimes the patient may wait for 10-30 minutes, and occasionally, the patient may decide to leave before seeing someone from behavioral health, but every effort is made for the patient to meet with a behavioral health provider before leaving. With the advent of a robust tele-behavioral health program, a good thing to come out of the COVID-19 pandemic, we have more options for the patient who prefers not to stay and can follow-up virtually.

During the WHO, the behavioral health provider may need to introduce himself or herself and asks the patient if she or he understands the reason for the interview. If the patient agrees to be seen by the behavioral health provider, the provider gets a history of the issue at hand, the degree to which it impacts the patient currently, and what interest (if any) the patient has in seeking behavioral health care. Most critically, during a WHO, the behavioral health provider is determining a patient's immediate safety. For example, is the patient a danger to himself or herself, to other family members, or might others be a danger to the patient, as in the case of domestic violence or child abuse?

A disposition will be indicated in the electronic health record: no need for behavioral health treatment, follow up with behavioral health at the patient's next medical appointment, or treatment for a specific issue either at an outpatient level of care or a higher level of care, such as hospitalization. If outpatient treatment is recommended, and the patient wants to seek treatment at CHCI, an intake session is scheduled, often with the same provider who did the WHO. If the patient needs a higher level of care or hospitalization, the behavioral health provider will help to arrange that, often with the help of the nursing staff, who work with both the medical and behavioral health providers following a specific patient panel regardless of which discipline of provider has been working with them.

—Tim Kearney, PhD, Chief Behavioral Health Officer,
Community Health Center, Inc., Middletown, CT

Having the Right People on the Integrated Behavioral Health Team

Building an integrated primary care team means **having the right people**, not just the right disciplines, on your team. Some decisions about integrating behavioral health with primary care may be pre-determined by state laws and regulations, which vary regarding the scope of practice for different behavioral health disciplines: who can do what; whether they can work independently or need supervision or collaborative agreements; which insurances they can bill for what services; which disciplines can supervise unlicensed members of another discipline, as well as many aspects of student training. For example, in an increasing number of states, clinical psychologists can also be licensed to prescribe psychotropic medications with appropriate training (Baker, 2020).

At CHCI, and at other community health centers, most of our behavioral health practice with adults dealing with anxiety, depression, trauma, and substance use disorders. For children, behavioral disorders, trauma, depression and attention deficit/hyperactivity disorder (ADHD) are among the chief diagnoses. Our behavioral health clinicians, like those in other settings, continue to focus on the interplay between a patient's inner world and social reality, with the intent of helping a patient identify challenges and develop new ways to cope more successfully with life's challenges. The therapeutic relationship remains meaningful.

The outward structures of our training and disciplines have to be carefully reconsidered when integrating behavioral health clinicians with medical providers. For example, the 45-minute session or weekly sessions that are often the norm in free standing behavioral health programs are often not needed, and the opportunity to have other team members provide parts of the care that behavioral health providers would need to do if they were solo practitioners can lead to more effective and efficient care.

A powerful effect of the pod structure—either in person or virtual—is a strong pod identity, whereby team members think of their interdisciplinary colleagues as their team rather than others in the same discipline who are placed in pods throughout the building. While the behavioral health disciplines across all pods still meet for clinical case reviews and other discipline-specific activities, the functional unit in our day-to-day work life is the interdisciplinary team. Pod identity also builds camaraderie, such as when we host pod decorating contests or lunch pot lucks during the holidays.



Finding the right people and orienting them to an integrated model of care can be challenging (Gold, Green, & Peek, 2017). Many behavioral health providers are trained in medical-centric settings, such as in-patient hospital units led by psychiatrists. Even in outpatient settings, their training is historically more traditional, working in silos, independent of non-behavioral health disciplines (Blount & Miller, 2009; Cubic, Mance, Turgesen, & Lamanna, 2012).

This is evolving, as evidenced by the changes in the last ten years in those applying to our American Psychological Association accredited post-doctoral residency program (described in [Part IV: Training the Next Generation](#)). None of the four residents who came to us in our first year of training (2010–2011) had previous integrated behavioral health experience as compared to 43% in the recent cohort (2020–2021) who had previous integrated behavioral health training. In our experience, training programs that work in silos do not adequately prepare behavioral health providers to work in a team-based integrated care setting. CHCI is often the first exposure that new behavioral health specialists have to a setting where all the disciplines and their contributions are valued equally, where all clinicians work at the top of their license. Since 2019, we have been the recipient of a Graduate Psychology Education (GPE) Program grant from HRSA (2021), which has allowed us to provide training to psychology practicum students in the early years of their graduate training in the hopes that early exposure to working in a team-based care setting will catch their attention and they will seek out this work professionally.

At the same time, what it means for health centers to provide behavioral health services is evolving. In 2015, the Department of Health and Human Services issued criteria for health centers to be designated as Certified Community Behavioral Health Clinics (CCBHCs). CCBHCs provide: comprehensive, coordinated mental health and substance use services across the life span; increased access to high-quality community mental health and substance use care, including crisis care; integrated person- and family-centered services; a range of evidence-based practices, services, and supports to meet the needs of their communities; and services to anyone seeking help regardless of their diagnosis, place of residence, or ability to pay. **Since 2015, the initial criteria have been updated through demonstration projects and public feedback, and today there are over 500 CCBHCs across 48 U.S. states, territories, and the District of Columbia** (Substance Abuse and Mental Health Services Administration [SAMHSA], 2023).



“Building an integrated primary care team means **having the right people,** not just the right disciplines, on your team.”



The Roles of the Dentist, Dental Assistant, and Registered Dental Hygienist

The relationship between oral health and physical health is well-established, as is the role of oral health in mental, social and economic well-being (Dörfer, et al., 2017; National Institutes of Health [NIH], 2021; Peres, et al., 2019; U.S. Department of Health and Human Services [DHHS], 2000). The oral cavity is the gateway to the gastrointestinal system, the lungs, and the sinuses in the face, so that the presence of disease in the mouth affects these and subsequently other systems, and sometimes vice versa (Kane, 2017). The relationships can be complex and bidirectional, with significant implications for treatment. For example, there is considerable evidence for the relationship between periodontal disease and cardiovascular disease, diabetes, and respiratory diseases (Herrera, et al., 2023; Molina, et al, 2023; Sanz, et al., 2018). There are also strong relationships between oral diseases and depression (Cademartori, et al., 2018; Decker, et al., 2020), and, of course, between oral diseases and nutrition (Winning & Moore, 2021) and gastrointestinal disorders (Chi, et al., 2010). In addition, children of mothers who receive oral health care during pregnancy have fewer caries in early childhood than do the children of mothers who did not receive oral health care while pregnant (Xiao, et al., 2019).

Dental decay in particular is one of the most common chronic diseases in children and adults, causing pain and interfering with daily activities, such as eating, socializing, and going to work and school (Centers for Disease Control and Prevention [CDC], 2019; Peres, et al., 2019; NIH, 2021). Cavities (also known as caries or tooth decay) are one of the most common chronic diseases of childhood in the United States. Untreated cavities can cause pain and infections that may lead to problems with eating, speaking, playing, and learning. **About 20% of children aged 5 to 11 have at least one untreated decayed tooth, and those from low-income families are twice as likely to have cavities as children from higher-income families** (CDC, 2019). Children who have poor oral health often miss more school and receive lower grades than children who don't (Griffin, et al., 2016). **Among American adults 26% have untreated tooth decay, and nearly half aged 30 years or older show signs of gum disease** (Eke, et al., 2018).



Despite their prevalence, dental diseases are among the most preventable public health challenges of the 21st Century (DHHS, 2000; Peres, et al., 2019). Disparities in access to dental care contribute to the prevalence of dental caries and other oral dis-



“Oral health care is primary health care, and better integration of oral health care with primary care is increasingly recognized as best policy worldwide to optimize overall health.”



eases. This is especially the case among people who are low-income, uninsured, and/or members of racial/ethnic minority, immigrant, or rural populations (Northridge, et al., 2020), profoundly affecting quality of life and health status throughout the lifespan. The COVID-19 pandemic has only increased those challenges. During the shelter-in-place periods in 2020, dental utilization decreased more drastically than medical utilization, and rebounded more slowly after reopening as well. As a result of delayed dental treatments and anxiety stemming from the pandemic, on average, patients at the health centers experienced worsening oral health conditions and received more invasive dental procedures (Choi, et al., 2024).

Oral Health Care is Primary Health Care

Oral health care is primary health care, and better integration of oral health care with primary care is increasingly recognized as best policy worldwide to optimize overall health (D'Souza, et al., 2022; Harnagea, et al., 2018; NIH, 2021; Peres, et al., 2019; Weyant & Watt, 2020). Using an interdisciplinary care model establishes comprehensive and bi-directional complete care for patients, expands the potential for high-risk individuals to have access to care that prevents, halts, and even reverses dental disease, avoiding or reducing the need for expensive treatment later on, visits to emergency rooms, and absence from work or school due to acute dental problems.



The dental team communicates critical health information with other members of the team through the electronic health record and warm handoffs.

In fact, Community Health Center, Inc.'s (CHCI) first clinical service at its founding in 1972 was a single-operator dental clinic (Barber, 2022)! In an interdisciplinary care model, dentists and other dental health providers can collaborate more easily with

primary care and behavioral health providers to optimize patients' overall health. When patients come to get any service, the team works to provide services across all discipline with warm handoffs. Doing so also alleviates the burden of transportation issues as patients can see their dentist and primary care provider (PCP) within the same trip.

Health centers are unique in the United States for our inclusion of preventive oral health services as a **required** service, which can be provided directly by the health center, by contract with another agency, or by a formal referral agreement with another agency in which the patient has true access to the services. All health centers provide dental preventive care, but most health centers, including CHCI, have gone way above and beyond this minimum standard to embrace comprehensive dentistry within our organizations. In fact, **82% of health centers provide dental services on-site, using a variety of modalities, structures, and settings** (National Association of Community Health Centers, 2022).



Each health center has its unique approach to prioritizing patient populations for care. In many communities, for instance, patients may have access to medical care (e.g., elders on Medicare) but no financial ability to access dentistry given that Medicare doesn't cover dental services. Similarly, Medicaid eligibility and coverage for oral health care varies widely among states, whereas medical coverage is more consistent. At CHCI, we prioritize our established primary care patients for access to dental services, but also focus on key groups such as the elderly, migrant and seasonal agricultural workers, individuals who experience housing insecurity or homelessness, and refugees, regardless of whether they receive primary care with us or not.

At CHCI, we provide comprehensive dental services in the majority of our locations. We are both idealistic and pragmatic; issues of space, financing, and transportation all play a role in where we locate services. As part of our comprehensive dental services, we provide restorative services, such as root canals, oral surgery, and replacing the teeth with dentures or partials. Patients can also get full and partial dentures through CHCI, as well as replacement of partial and full arch dentitions with removable prosthetics. For many years, we have offered preventative dental hygiene services using portable equipment to schools/school systems across Connecticut, and today a team of hygienists can be found on any given day in schools across the state with whom we have a formal agreement for such services. We use this same model (and equipment) to go to shelters, soup kitchens, migrant and seasonal agricultural workers' farms, and to special community events, such as an annual Stand Down event that provides various services for veterans.

Providing comprehensive oral health services requires significant investments in staff, special equipment and materials, and keeping up with best safe practices. Dental is

well prepared in this safety, which was helpful in their role in COVID-19 pandemic. Demand and need always exceed capacity. Dental practice must be managed for maximum productivity and efficiency across the dimensions of preventive, restorative, and prosthetic care while maintaining the same focus on health equity, special populations, and community engagement that we expect from all health center services. It's a challenge! But consider the cost to our patients of **NOT** doing this.



Best Practices for Optimizing Oral Health Care

1. Shared Information Technologies
2. Full Scope Oral Health Care
3. Integration of Topical Fluoride Application within the Primary Care Setting
4. Mobile Dentistry

The impact of effective integration of oral health into primary care is seen through increased prevention of oral health conditions, earlier identification of disease precursors and underlying conditions, reduced patient-specific barriers to accessing services, increased awareness of the importance of oral health, and improved chronic disease management and prevention. Let's review key best practices that many health centers, including ours, have used to achieve effective integration of oral health into primary care. Those practices are: **an integrated electronic health record, full scope team-based oral health care in primary care, and mobile dentistry.**

Shared Information Technologies



We have addressed the importance of a shared electronic health record (EHR) throughout this book. **Shared information technology systems allow dental staff across our brick and mortar as well as mobile sites to communicate via instant messenger, such as a dental hygienist at a mobile school program posing a question to a dentist at one of our sites, but also for the dentist to reach out to the primary care team with questions about a chronic illness.** Telephone encounters, recalls and reminders are easily shared across the primary care team. Using new technologies with intraoral cameras, our school-based and mobile hygienists can capture the images in the EHR, which allows colleagues in the primary care centers to support clinical assessment and decision making in the field about

the level of care that may be needed. And as we noted in the section on integrated behavioral health, the dental team can initiate a warm handoff (WHO) to a behavioral health provider. Similarly, a medical assistant in primary care can initiate a hand off to dentistry if a patient has immediate needs or is due for a dental wellness visit.

Full Scope Oral Health Care

Full scope team-based oral health includes utilizing dental assistants and registered dental hygienists at the top of their license. As is the case with registered nurses, medical assistants, and behavioral health providers, it is important to understand your state's laws and regulations that address the education, training, and scope of practice for these members of the dental team, as well as the policies and procedures within your own organization regarding competency to undertake activities within that scope of practice.

Dental Assistants



In Connecticut, dental assistants have either received on the job training, or attended an accredited dental assistant program of study. All candidates must pass the three components of the Dental Assisting National Board (DANB) examination in order to work as a dental assistant to a licensed dentist. Those components are radiation health and safety (i.e., taking dental x-rays as delegated and supervised by a licensed dentist), infection control, and chairside assisting. **Dental assistants are trained to assist chairside in a 4-hand dentistry model as experts in the technical performance of supporting the dentist.** To watch them in practice is to witness the seamless coordination of skilled actions and deep awareness of anticipating the needs of the dentist and the comfort and safety of the patient.



Registered Dental Hygienists and Dental Therapists

Registered dental hygienists in Connecticut graduate with at least an associate degree from a program accredited by the Commission on Dental Accreditation, and complete the National Board of Dental Hygiene Examination. Registered dental hygienists see patients more often than the dentist, as regular cleanings are scheduled every six to twelve months. **Registered dental hygienists monitor the overall care of the patients, and collaborate closely with the dentist.** This provides the dental hygienists with the confidence and competence to spot early signs of disease and focus on providing quality prevention services, which encourages them to practice at the top of their licensure. It is very important that the dental team looks into other systemic diseases and interacts with the PCPs to take care of the patient's interdisciplinary needs. Registered dental hygienists can practice with increasing autonomy. Allowing them to provide preventive care in community and public health settings (as in our mobile units discussed below) without the immediate supervision of a dentist has been shown to improve dental outcomes in adults (Langier, et al., 2018).



Early dental care is critical to optimal oral health.

An expanded role of the registered dental hygienist is the dental therapist, a role that has been compared to physician associate in that it includes diagnosing and treating oral diseases of a limited scope. In Connecticut, for example, 2019 legislation allows dental therapists to practice under the supervision of a licensed dentist and only in public health settings. Dental therapists are licensed to practice in 13 states (including Connecticut), although in four of those states, they practice only in tribal settings (Pew Trusts, 2022). Registered dental hygienists require 18 or more months of additional training and clinical rotations from an accredited program leading to certification or licensure as a dental therapist, depending on the state. As of 2022, the Commission on Dental Accreditation (n.d.) lists two dental therapy programs, one each in Alaska and Washington state; others are being planned in Minnesota.

Integration of Topical Fluoride Application within the Primary Care Setting

In some health centers, pediatric medical staff provide topical fluoride treatments during well child visits. At CHCI, one of our most successful "best practices" was adopted from our colleagues at Salud Family Health in Colorado. We embedded the hygienist in the pod with the primary care team. The planned care dashboard identified children who were scheduled each day for a non-acute visit with medical, nursing, or behavioral health and who are due for the fluoride application. The hygienist saw the child in the exam room, and provided the treatment, as well as oral health education for both the child and parent. Unfortunately, the State of Connecticut Medicaid program has changed its guidelines to disallow reimbursement for these visits. As always, it is important to be aware of the billing opportunities and restrictions in your state among the various payers.

Mobile Dentistry

At CHCI, we have an approach to care known as "wherever you are," or WYA, a concept originally developed under our Healthcare for the Homeless program. We use portable sophisticated units to bring registered dental hygienist services to multiple locations across the state of Connecticut. **Providing dental care where people are rather than expecting them to come to you removes major barriers to accessing preventive care and identifying the need for follow up restorative care.** For example, providing sealants at our school-based mobile dental sites, in addition to other preventive care, such as routine cleanings, represents best practices in preventive oral health measures, engages children in the importance of integrating oral, physical health and behavioral health.

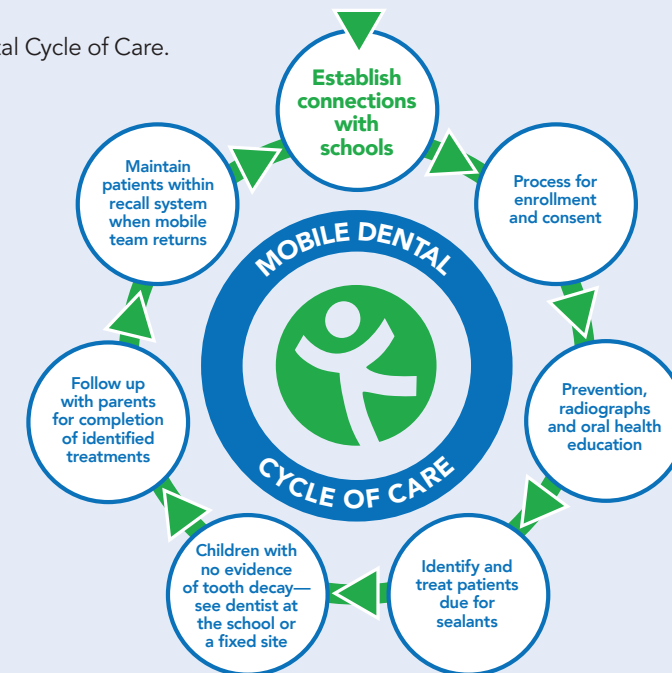


CHCI's approach to dental services in the community is a marriage of technology, clinical expertise, and data analytics. The portable equipment allows for a full service dental set up for preventive services provided by the registered dental hygienist, although a dentist can also be assigned to the unit to follow up for simple restorative services. The equipment includes a unit that is stored in a large rolling trunk that can be wheeled into a school, shelter or community center, and that opens to a full dental chair, complete with lights, cavitrons (ultrasonic cleaners), and other necessary tools. Mobile dental has the ability to capture radiographs that can be forwarded to dentists at the brick and mortar sites for interpretation. The registered dental hygienist can instantly message the dentist if patients have more severe dental issues than can be managed by the mobile unit, so that we are triaging potential dental emergencies appropriately, and of course, arranging for follow-up care.

The Cycle of Mobile Dental Care at Community Health Center, Inc.

Like all community initiatives, a successful school-based mobile dental program requires close communication and coordination with community leaders and school officials, attention to problem resolution and follow up, and attention to fiscal and personnel challenges. The process begins with marketing the services and enrolling patients (see Figure 11.1). Leveraging those key stakeholders is a strategic way to create buzz within the community! Parents are vital to the enrollment process as this care will be provided to children during the school day when parents will not be present. Once enrolled in the mobile dental program, children can begin to receive services on days that a hygienist and/or dentist is present in the mobile site.

Figure 11.1:
Mobile Dental Cycle of Care.



Our school-based mobile dental program is crucial to achieving our goal of raising a generation of kids that are caries-free. In our experience, it is well worth the investment to create new positions to ensure comprehensive high-quality care, including a registered dental hygienist assigned to the school-based mobile dental unit full time throughout the school year, as well as a coordinator to manage the challenges of off-site scheduling, school logistics, and follow up care. Creating partnerships with schools through our mobile dental program allows our dental teams to provide oral health and nutrition education from an early age.

—Sheela Tummala, DDS, MPH, Chief Dental Officer, CHCI, Middletown, CT

The Role of the Pharmacist

Pharmacy is the third largest health profession in the United States, after nursing and medicine, with more than 300,000 clinicians practicing in a variety of health care and community settings (American Association of Colleges of Pharmacy [AACP], n.d.a). Like so many of the other clinical roles on the primary health care team, the role of pharmacists has evolved considerably in response to changes in health care and patient populations. Patients have multiple chronic comorbidities, which means multiple medications that require management. Treatments for HIV, Hepatitis C (HCV), and opioid dependency have become highly specialized. Every year, dozens if not hundreds of new pharmaceutical treatments come on the market. The retail side is challenging as third-party payers or state laws regulate what medications can be distributed or reimbursed.

Pharmacists' expertise in these areas, among others, brings much needed value to the primary health care team and to patient care (Berenbrok, 2020; Blouin & Adams, 2017; Khaira, et al., 2020; Manolakis & Skelton, 2010; Yon, et al., 2020). The transformation of pharmacy practice aims to *"improve health outcomes and reduce health disparities through medication use optimization, chronic disease management, and other pharmacist-provided patient-care services"* (AACP, n.d.b).

This can be accomplished through formalizing collaborative relationships between primary care providers (PCP) and community-based pharmacists to improve patient outcomes (Centers for Disease Control, 2017a; Cranor, et al., 2003). Some health centers have their own pharmacies on site, which can facilitate and formalize provider-pharmacist collaboration.

Another way to optimize the expertise of pharmacists is to integrate them into the primary care setting (Centers for Disease Control, 2017b; Jorgenson, et al., 2013; Jorgenson, et al., 2014). This is especially relevant for management of chronic diseases (Rodis, et al., 2019; Centers for Disease Control, 2012). Evidence indicates that adding a pharmacist to the care team can improve outcomes in patients with diabetes (Ip, et al., 2013), chronic pain (Giannitrapani, et al., 2018), and HCV (Naidjate, et al., 2019). Primary care pharmacists can decrease the workload of the primary care provider (PCP) and decrease patient utilization of emergency care, as the pharmacist can address medication questions in real time (Hayhoe, et al., 2019).

There are many ways to integrate pharmacists into primary care. We know that many of you operate your own pharmacies, with teams of pharmacists, many of whom work directly with patients, such as at Holyoke Health Center in Massachusetts (see



Health centers may operate their own pharmacy or collaborate with community pharmacies.

"Like so many of the other clinical roles on the primary health care team, the role of pharmacists has evolved considerably in response to changes in health care and patient populations."



vignette). Some of you have retail pharmacies on the same premises as your clinics. At Community Health Center, Inc. (CHCI), we currently have retail pharmacies at two sites that rent space and operate within our building. We also have a robust contracted pharmacy model for our 340B pharmacy program (more on that below) and have established strong relationships with community pharmacies, including local pharmacy partners as indicated, over the years (Health Resources and Services Administration [HRSA], n.d.b).

Clinical Pharmacist at Holyoke Health Center Pharmacy in Massachusetts

At Holyoke Health Center in Massachusetts, our pharmacy is uniquely placed within our health center. Our team consists of 20 on-staff pharmacists who provide patient-centered care. For instance, if a provider has a patient with diabetes with an HbA1c of 11.3, our pharmacist can do a comprehensive medication review and a Collaborative Drug Therapy Management (CDTM) appointment. During that initial visit, our pharmacist explains the disease state, provides education on diabetes in a language easiest to understand for the patient, helps the patient understand how to improve conditions, and reviews the patient's medication, how the medication works, and the importance of taking it on time. Our pharmacist also helps the patient understand important lifestyle changes (i.e., better nutrition, increasing activity, or especially testing blood sugars more frequently) that can contribute to medication titration. After the initial visit, the pharmacist will continue to meet with the patient weekly or bi-weekly until the medications are titrated and the patient is stable. Once the patient is showing progress, the patient and pharmacist will move to 6-month to one-year follow-up visits. Meanwhile, the pharmacist is still able to monitor the patient's glucose readings using the clinical dashboard. In this instance, the patient with an HbA1c of 11.3 was able to reduce it to 5.3 with the support of our pharmacy team.

Our health center's pharmacy also provides 30-day medication boxes, which are available in English, Spanish, and Pictorial. Over 1,200 patients currently receive these medication boxes. Beyond clinical services, our pharmacy also does over 1,000 deliveries a month, which has significantly increased since the COVID-19 pandemic (about 200 deliveries per month prior to the COVID-19 pandemic). Our pharmacy has developed standing orders to provide emergency contraception and naloxone, which our pharmacist can train patients' in their use curbside or via phone call. Adherence to the medication schedule has been shown to greatly improve disease state management and to result in positive health care outcomes.

—Lori Lewicki, Chief Pharmacy Officer
Holyoke Health Center Pharmacy



Best Practices for Optimizing the Role of the Pharmacist in Team-Based Primary Care

1. Consultation with Clinicians
2. Population Health and Key Populations
3. Teaching and Training
4. Medication-Related Programs and Regulations

CHCI has a Director of Clinical Pharmacy Services, who primarily works in a consultative model with the clinical care team. She practices at the intersection of clinical staff and all the other domains influencing pharmacy—third-party payers, retail pharmacies, state and federal regulations, value-based contracts, and quality measures. It's a busy intersection that has a major impact on patients, including our key populations. Her responsibilities are broad. They include consulting with clinicians individually, advising the development of medication management policies, chairing the Pharmacy and Therapeutics committee, advising the clinical team on formulary issues, driving improvements in pharmacy related quality measures, training and educating team members on medication safety, and of course, helping appropriate staff resolve the issues of access to pharmaceuticals for low income and uninsured/underinsured patients. We describe these responsibilities as ways to optimize the role of the pharmacist—whether you have one or many, or are beginning to assess how a pharmacist could be incorporated into your practice.

Consultation with Clinicians

In team-based care, a clinical pharmacist is a real time resource for clinicians, especially prescribers. At CHCI, clinicians can contact our pharmacist through a message in the patient's electronic health record, an instant message, phone call, email, or a combination of methods. Like all pharmacists, she performs comprehensive medication reviews, helping prescribers to improve medication effectiveness, simplify regimens, manage drug interactions, improve medication safety, as well as suggest cost-effective equally efficacious alternatives.

Our clinical pharmacist, like those in many centers, participates in interdisciplinary care team meetings in which selected individual patients, usually those with high complexity, are reviewed. The pharmacist reviews relevant lab results, hospital discharge summaries, treatment history, barriers to care such as inadequate insurance,

in order to support a meaningful resolution to clinical concerns. During the meeting, the pharmacist can address a range of medication management issues for the patients selected for discussion based on concerns from the behavioral health provider, registered nurse, the community health worker and/or PCP, and/or based on population health risk scores (discussed in [Part II: Data-Driven Care](#)).

Population Health and Key Populations

Our clinical pharmacist is a resource for the CHCI Population Health team, which has developed initiatives that focus on hypertension and smoking cessation, and which is responsible for managing the value-based contracts for which we receive financial incentives based on quality of care outcomes. These include the PCMH+ program described in [Part II: Data-Driven Care](#). For example, each year the Centers for Medicare and Medicaid Services (CMS) measures how well Medicare prescription drug plans perform using a STAR rating of 1 (poorest performance) to 5 (highest performance). And some of these are triple weighted scores. Because 41% of Medicare Star Ratings performance is influenced by proper prescribing and medication adherence (CMS, n.d.), and thus affects financial incentives, our clinical pharmacist and her team monitor these outcome measures carefully. They review medication adherence by utilizing Medicare payer portals for pharmacy claims data, communicating directly with pharmacies, transitioning patients to 90 day supplies of medication when appropriate, suggesting automatic refill programs, and identifying non-adherence in patients to providers so that the care team can address the issue with patients.

At CHCI, our Center for Key Populations (CKP) provides care to individuals who experience housing insecurity or homelessness, to the LGBTQIA+ community, to migrant and seasonal agricultural workers, as well as people with HIV, Hepatitis C (HCV) and substance use disorders. The clinical pharmacist works with CKP staff to bridge treatment gaps in areas such as gender-affirming care, Pre-Exposure Prophylaxis (PrEP), HIV, HCV, and Opioid Use Disorder (OUD). For example, those individuals who were diagnosed while incarcerated, and needed treatment and re-engagement with primary care when they re-entered the community, often experiencing housing instability. She also co-chairs the Controlled Medication Review Committee with the Chief Medical Officer, reviewing reports on internal prescribing trends in opioids across the organization to ensure safety mitigation strategies are met, such as controlled medication agreements with patient, and piloting new long-acting treatment options such as buprenorphine to treat opioid use disorder. CHCI's Director of Clinical Pharmacy Services has also recently worked with our Chief Medical Officer and Chief Nursing Officer to implement continuous glucose monitoring, which is now supporting over 650 patients.

Teaching and Training

As you will find in [Part IV: Training the Next Generation](#), CHCI, like most health centers, is actively engaged in pre-licensure and postgraduate training, hosting students from a variety of disciplines. Our focus on reducing health disparities, increasing health equity, and improving overall health in vulnerable populations can be challenging. Our clinical pharmacist is our in-house resource for teaching our postgraduate primary care and psychiatric/mental health nurse practitioner residents, along with our CKP Fellows, about optimum, safe prescribing in the complex setting of a community health center. [CKP Fellows are alums of our CHCI NP Residency program who chose to do an additional yearlong specialty Fellowship in caring for key populations such as people living with HIV/HCV—See [Chapter 15: Postgraduate Nurse Practitioner \(NP\) and NP/Physician Associate \(PA\) Training Programs](#).]

This means addressing pharmacologic approaches to smoking cessation, alcohol use disorder, opioid use disorder as well as optimum management of the most chronic illnesses of diabetes, hypertension, asthma, pharmacogenetics, as well as behavioral health disorders such as anxiety and depression. She also disseminates information about new medications to prescribers, and searches the literature when a specific question comes up about possible side effects, long-term use, clinical trials and guideline changes that may impact medication management. She also serves as faculty for many of CHCI's Project Extension for Community Healthcare Outcomes (ECHO) programs, for example, key populations and complex care management.

Medication-Related Payment Programs and Regulations

Pharmacists who have worked in retail pharmacies are well-versed in how they operate, and in the challenges dispensing and reimbursing prescriptions presented by the different rules and regulations of multiple third-party payers. For example, a provider may order a generic "albuterol inhaler," but a pharmacist can advise the provider which brand name to use from the specific formulary available to the patient in order for the prescription to be reimbursed. Pharmacists also know which prescriptions require prior authorizations in order to be filled, and which do not. A pharmacist's guidance in such cases can avoid pharmacy processing issues that delay patients' receiving their medications when they need them. In fact, our clinical pharmacist has learned that about 25% of prescriptions sent back to the health center for prior authorization do not require prior authorization at all and are actually pharmacy processing issues. And like all health center staff, the relationships that are developed externally over time with these community partners in pharmacies are a critical part of the health care neighborhood in which we operate and upon which our patients rely.

Many of you are likely familiar with the 340B drug pricing program through HRSA (HRSA, n.d.b). (If you are not familiar with it, we encourage you to ask your leadership

team to share with you how this program impacts your health center). There are many complexities and challenges associated with the 340B program, but it is of great value to health centers in assuring patients have access to affordable medications. However your health center engages with the 340B program, in terms of specialized staff or functions, we encourage you to consider having a clinical pharmacist as part of that effort to help navigate the financial, administrative, and pharmacy processing issues that are associated with a successful program. At CHCI, our program has grown substantially with the investment of both clinical and administrative expert staff, and this directly ties to increased access to pharmaceuticals for uninsured and underinsured patients as well as revenue to the organization. The CHCI Pharmacy Team has also streamlined specialty medication workflows. This helps ensure prior authorizations are approved and 340B revenue is maximized.

For instance, our clinical pharmacist built and maintains an internal pharmacy web page that includes critical information for staff on the 340B discount drug program details and a list of medications that are inexpensive for uninsured/under-insured patients that prescribers can search for by condition, drug name or class. There are links to key Medicaid documents to ensure authorizations are not denied because of insufficient information or outdated form.

We encourage every health center to have a formal Pharmacy and Therapeutics (P&T) committee (Ciccarello, et al., 2021). As noted, our clinical pharmacist has the responsibility of chairing this committee, which is responsible for ensuring the safe and effective selection, storage, and use of drug products across CHCI, including managing the formulary of medications administered in visits. The Committee is responsible for overseeing policies and procedures related to all aspects of medication management within CHCI, such as standing orders and delegated order sets authorized by the Chief Medical Officer which can be used by registered nurses in their chronic illness management care of patients.

In-house formularies require expert attention. For example, CHCI began stocking and distributing Paxlovid for the treatment of mild to moderate COVID-19 in patients 12 years of age and older as soon as it became available for health centers to order. All aspects of adding this drug to the formulary—storage, dispensing, tracking, reporting, patient education, managing adverse reactions—called upon the expertise of the clinical pharmacist and the P&T committee. As we have referenced throughout the preceding chapters, one goal of team-based care is to build resilience and positive team function by reducing avoidable frustrations. It is hard to overstate the impact of having an expert resource, in house, such as a pharmacist who can educate the team, support the medication management process, and intervene with insurers when necessary, preventing both delays in treatment and burden on the part of the providers.

The Pharmacist and the Center for Key Populations at Community Health Center, Inc.

The Director of Clinical Pharmacy Services at CHCI collaborates closely with the provider teams in the Center for Key Populations (CKP), especially with our Nurse Practitioner Fellows. Our migrant and seasonal agricultural workers program is an area where our CKP fellows face many issues related to medication, specifically the cost and availability of medications globally. Migrant and seasonal agricultural workers are transient and move according to the work and the produce seasons. This creates barriers to obtaining medications and adhering to them when their continuity of care is disrupted, especially during the 4-5 months when they return to their native country between seasons and have no or limited access to health services. Most of our farmworkers are uninsured and participate in our 340B program to obtain low or no cost medication; unfortunately, this is typically on a month-to-month basis. The Director of Clinical Pharmacy Services works with our CKP fellows and other providers to anticipate the needs of patients on medication to control chronic conditions, such as hypertension. Together, they identify the scheduling issues that will arise when farm workers return to their own country without access to their medication or a provider for a period of months. The provider and pharmacist work together with every resource available to ensure that the patient returns to their own country with enough medication to sustain their health until they return to the U.S. for care. This requires communication with pharmaceutical companies who distribute medications, in addition to written letters and forms that verify the severity of the situation. The pharmacist expertly guides the provider in provision of appropriate medications that will be eligible and serve the needs of the patient and assists in providing education on safety, storage and compliance when necessary.

—Kasey Harding, MPH, Director of the Center for Key Populations, Community Health Center, Inc., Middletown, CT

Evidence suggests team-based care is one organizational approach to meet the increasing demands in primary care. The pharmacist-provider collaboration may have a positive impact on physician burnout (White, 2021). Clinical pharmacists provide reassurance on treatment decisions for medically complex patients. They can provide additional strategies to achieve quality measures. **A clinical pharmacist included as a member of the integrated care team plays a role distinct from the traditional medication-dispensing role. At CHCI, it is a position that is constantly evolving to identify and meet the needs of the organization and its patients.**



The Role of the Community Health Worker

Community Health Workers (CHWs) have provided health services in their communities around the world for decades, especially in low-income countries in which there are shortages of health professionals and accessible health care facilities (World Health Organization [WHO], 2016). Unfortunately, these conditions also exist in the United States, a fact brought into stark relief during the COVID-19 pandemic as poor and minority populations in underserved communities experienced the highest rates of mortality and morbidity (Rossen, et al., 2021). The roles and training of CHWs vary widely across the globe, but there is widespread agreement that they not only be trusted members of the communities that they serve, but that they are experts in the community itself—its resources, beliefs, language, and culture—so that they can help their neighbors navigate community-based services and counsel them on self-care (American Public Health Association, n.d.; Hannay & Heroux, 2016; Peretz, et al., 2020; Scott, et al., 2018; Vanden Bossche, 2022; World Health Assembly, 2019; WHO, 2016).

CHWs are not a substitute for primary care health care services; rather, they act as a liaison between the community, the clinic, and the social services available. Thus health systems in low, middle and high income countries are increasing the use of CHWs in order to better meet population needs, improve access to services, address social determinants of health, and decrease health inequities (WHO, 2016; Zulu & Perry, 2021). Evidence suggests that CHWs can be a cost-effective intervention for low-income, underserved, and minority communities (Kim, et al., 2016). For example, **CHWs have been effective in reducing hospitalizations (Kangovi, et al., 2018), improving outcomes among individuals with chronic conditions, such as asthma, hypertension and HIV/AIDS (Hannay & Heroux, 2016; Scott, et al., 2018), and in reducing self-reported symptoms among individuals with chronic mental health conditions (Barnett, et al., 2018).** During the COVID-19 pandemic, CHWs were critical to public outreach in their communities by building trust with members of their communities (Vanden Bossche, et al., 2022).

However, CHWs as an intervention is highly context specific. Each community is unique, CHW training programs vary, and their integration into health systems is uneven, creating challenges for evaluating effectiveness across programs (Hannay & Heroux, 2016; Hodgins, et al., 2021; Peretz, et al., 2020; Scott, et al., 2018). In 2021, the journal *Health Research Policy and Systems* published an 11-part series about CHWs



“CHWs [Community Health Workers] are not a substitute for primary care health care services; rather, they act as a liaison between the community, the clinic, and the social services available.”



titled “Community Health Workers at the Dawn of a New Era” which addressed their roles and tasks (Glenton, et al, 2021), their training programs (Hodgins, et al., 2021; Masis, et al., 2021), career paths, salaries (Colvin et al., 2021), integration into health systems (LeBan, et al., 2021), and related policy issues, in an effort to highlight the challenges to better integrating this unique workforce in health care systems, and to recommend some solutions and standards for doing so (Zulu & Perry, 2021).

Community Health Workers at Holyoke Health Center Pharmacy, Massachusetts

At Holyoke Health Center in Massachusetts, community health workers (CHWs) are an integral and essential member of our pharmacy team. Our CHWs complete 64-hours of core competency instruction and 16-hours of specialized training through the New England Public Health Training, one of ten Regional Public Health Training Centers funded by the Health Resources and Services Administration (HRSA). CHWs also receive CPR training. The role of CHWs in the Holyoke Health Center pharmacy includes serving as a patient advocate, scheduling patient visits, demonstrating cultural competency, performing needs assessments, and conducting community outreach.

- **Patient Advocate:** Establishes trusting relationships with patients and their families/caregiver(s), provides general support and encouragement, serves as the main point of contact, assists the patient in completing patient consent forms, and supports the development and execution of the patient’s care plans.
- **Schedule Patient Visits:** Works with patients to schedule medication therapy management (MTM) visits, Medbox pick-up and utilization, and Transitions of Care (TOC) or Hospital Discharge Follow-Up (HDF). TOC and HDF terms are interchangeable and refers to when we meet with patients within 48 hours of discharge and prior to their scheduled visit with their PCP to go over medication changes since hospitalization, we clean up the electronic health record’s medication list, and make recommendations to the provider.
- **Cultural Competency:** Facilitates effective communication between patients, their families/caregivers and the pharmacist by translating written or spoken language from English to patients’ language and vice versa, and by interpreting medical language into conversational language. Pharmacy CHWs also have a strong understanding of common cultural health beliefs and foods in their communities (i.e. Puerto Rican illnesses or Hispanic foods).
- **Needs Assessment:** Performs needs assessment to understand barriers (i.e. transportation, community barriers, social supports), family or caregiver preferences, language, literacy, and cultural preferences.

- **Community Outreach:** Conducts patient outreach and engagement activities through face-to-face, mail, electronic and telephone contact, as well as provides education. For instance, pharmacy CHWs identified 18 patients who were affected by the fatal New Year’s Day fire in Holyoke (2017) and contacted these patients to replenish their medications that were damaged or destroyed.

—Lori Lewicki, Chief Pharmacy Officer,
Holyoke Health Center Pharmacy, Holyoke, MA

Optimizing the Role of Community Health Workers

Many of you have far more experience with CHWs than we do! We hired our first CHW in 2019 as part of a grant from the Connecticut State Innovation Model (SIM) Community and Clinical Integration Program (SIM, 2016). We agreed to implement the Penn Center for Community Health Worker’s IMPaCT model, which is standardized and scalable, rather than create our own training and list of responsibilities for the CHW (Penn Center, n.d.). We especially appreciated that the Penn CHW model is an evidence-based approach that is shown to reduce hospitalizations by 65%.

The Connecticut SIM Advisory Committee defines a CHW as a “frontline public health worker who is a trusted member of the community or has an excellent understanding of the community served. This trusting relationship allows the worker to serve as a link between health/social services and the community to help people access services and be sure that services are offered in the person’s language and respectful of their cultural beliefs” (Connecticut SIM, 2016, p. 79). It identifies the following roles and functions for CHWs:

- Provide culturally appropriate health education and information;
- Provide coaching and social support for individuals navigating the health system, and in need of care coordination and case management;
- Advocate for individuals and communities, and building their capacity to advocate for themselves across the health system;
- Provide direct service, such as implementing individual and community assessments;
- Conduct outreach as part of evaluation and research efforts.

Recall that in [Part I: Foundations of Team-Based Care](#) and in [Part II: Data-Driven Care](#), we discussed population health management, which is building block #6 in primary care (Bodenheimer, et al., 2014a). CHWs are by definition population health oriented. We currently have several CHWs working out of specific clinical sites across the state, each with a different population and for different periods of time: patients

diagnosed with Type 2 diabetes; patients with high emergency room utilization for behavioral health and/or substance use disorder; and patients who have not been regularly engaged with primary care, with a focus on children under the age of 15 who are behind in routine preventive care. For example, CHWs work with about 60 patients who have Type 2 Diabetes for a six-month period to establish a long-term health goal, such as losing 20 pounds, and then establishing achievable short-term goals toward that long-term goal.

The majority of the work of a CHW happens in the community rather than the clinic. A CHW can meet with a patient at a location that is most convenient and comfortable for the patient, such as in the patient's home. One of the tools the CHWs use is a research supported screening tool called **PRAPARE** (Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences) (n.d.), which was developed in partnership by the National Association of Community Health Centers, Inc. (NACHC), Association of Asian Pacific Community Health Organizations (AAPCHO), and Oregon Primary Care Association (OPCA) to assess social determinants of health (SDOH). CHWs ask specific questions related to housing, transportation, utilities, food insecurity, and interpersonal relationships, with responses documented in Community Health Center, Inc.'s (CHCI) electronic health record. If the patient identifies a need in any of these areas, a care plan is created and contains patient stated goals and an associated action plan with timelines and action items for follow-up. The CHW works with the patient until goals are achieved or modified based on patient direction.

The CHWs also collaborate with the Access to Care Team (ATC), which is part of our Health Disparities Project. ATC educates patients on insurance and third-party coverage options available to them. Every ATC team member is certified as an application counselor under the Connecticut state insurance hub Access Health CT to ensure that patients are making informed decisions based on all changes made prior to annual open enrollment. ATC can conduct eligibility screenings in-person, over the phone or videoconference, or through bi-directional texting or email. CHWs can refer patients to ATC, help enroll children and parents in the ATC program, and screen patients for potential issues regarding social determinants of health (SDOH) to identify additional areas where a patient may need supportive resources, such as SNAP or WIC benefits.

Referrals for patients who are in need of CHW services come directly from the medical provider and primary care team. **CHWs work with "clinical collaborating partners" to create a "circle of care." The partners are anyone on the primary care core or extended team, and within the community, with whom the CHW works to achieve the patient's goals.** The care is team-based and patient-centered, uses panel management, and has a goal of barrier free access to care, that is, the CHW navigates the patient through health systems and community resources.

The Importance of Community Health Workers at Community Health Center, Inc. (CHCI)

As a family doctor, I've spent most of my career working in federally funded health centers, treating people whose social determinants of health contribute tremendously to their illnesses. Though I can order the correct diagnostic workups and prescribe the correct medicines, I have so many patients who just don't respond as one might expect based purely on their medical situation. The burdens my patients carry and the obstacles they face so often set them up to be overcome by otherwise manageable acute and chronic situations. This is where Leo comes in. Leo connects with my patients who seem to be struggling the most. She spends time with them and they really trust her. Her explanations to them help them follow my plans. If the patient needs to improve their fitness, she doesn't just recommend exercise; she takes them to the Y and negotiates a discount for them. If the patient needs improved nutrition on a limited budget, she doesn't just recommend a diet; she takes a trip to the grocery store with them. These interventions have consistently led to the kind of lifestyle change and self-care that I'd been counseling on for my 17 years in CHCI.

One of my longstanding Spanish-speaking diabetics who had never managed to be well-controlled engaged with her around a goal to improve his diabetes. Leo reached out to me with the suggestion of getting him a continuous glucose monitoring (CGM), something fairly new to us in primary care. This particular patient had always seemed to me to be fairly unsophisticated and I suspected that he would not be a good candidate to learn all of this new technology and apply it to his health. Leo advocated for him and let me know that she could do all the leg work (which is extensive). She taught him to use Zoom during the COVID-19 pandemic and then went through bunches of training calls with him. She was able to get me the right forms and bird-dog the order to make sure he got it (a Herculean task.) Our patient was not just able to use the CGM, he began to make major lifestyle changes in response to his levels and to Leo's counseling and cheer-leading. He developed a great deal of satisfaction as he gained great control of his sugar. Clearly he took pleasure in showing Leo his improvement, but he was doing it for himself. With the new information and his weight loss he no longer needed as much insulin. It turned out that Leo was the best person to connect with him on his meds and his dosages.

Not only that, but the last time I spoke with him, I found him to have become an excellent self-advocate. I realize that all of those years of appreciating him as a person with nonspecific cognitive limitations I was really just seeing deferential behavior. He just needed Leo.

—Dan Wilensky MD, Family Physician, Community Health Center, Inc., Meriden, CT

Conclusion

We hope by reading this section (Chapters 7 to 13) on the roles of the core team in team-based care, you better understand how to optimize the roles of your care team at your health center! The journey to implementing team-based care is exciting and challenging, and we are also constantly learning, but we hope these best practices for evolving the care team roles will support your health centers and ultimately improve the care for your patients.

PART III: Roles of Team-Based Care

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PART IV

Training the Next Generation

Training the next generation of your primary care team to serve your specific patient population is an effective way to plan for the future and create a sustainable workforce. Training the next generation is one of Community Health Center, Inc.'s (CHCI's) three foundational pillars that is core to our mission and is shared across the nation by our peers. Each calendar year, Health Resources and Services Administration (HRSA) health center and look-alike awardees are required to report a core set of information as part of a standardized reporting system known as Uniform Data System (UDS). **In 2019, HRSA's UDS report introduced Table WFC: Workforce to the reporting requirements. As of 2023 UDS data, 85.33% of health centers provide health professional education/training; 85.12% do so in partnership with educational and postgraduate institutions and 20.03% sponsor their own programs** (HRSA, 2023a). This displays the increased effort within primary care to grow our own workforce in response to shortages of health care personnel and the need for sharing best practices and replicable models. The COVID-19 pandemic, along with other challenges such as the opioid epidemic, demonstrated the importance of a well-trained, competent, and responsive public health workforce for safeguarding the health of the nation. To continue to grow our own workforce, the Bureau of Health Workforce (BHW) within HRSA has increased workforce funding to provide access to health services and improve the quality, distribution, and supply of the nursing, behavioral health, and public health workforce to communities in need (Padilla, 2023).

From your own experience, you know that for health centers, the COVID-19 pandemic has only worsened long-term challenges in recruiting and retaining health care workers (Damian, et al., 2021; National Association of Community Health Centers, 2019; Wakefield, 2021). In November 2022, the National Center for Health Workforce Analysis (NCHWA) under the HRSA released workforce projections through 2035 to better understand how changes in population will affect workforce demands within health centers (National Center for Health Workforce Analysis, 2022a). Nationally, across all physician specialties in the United States, there is a projected shortage of 81,180 full-time equivalent (FTE) physicians. However, these workforce projections also demonstrate an excess of nurse practitioners (NP) and physician associates (PA), which will mitigate the shortage, but only if these health professionals are fully prepared for practice in the challenging setting of health centers (National Center for Health Workforce Analysis, 2022b). If not addressed now, these projected impactful



“Training the next generation of your primary care team prepared to serve your specific patient population is an effective way to plan for the future and create a sustainable workforce pathway.”



workforce shortages will lead to poor patient outcomes and decreased quality and safety (University of South Carolina, 2023).

As we noted in our previous book *Training the Next Generation: Residency and Fellowship Programs for Nurse Practitioners in Community Health Centers* (Flinter & Bamrick, 2017), the transition from student to practicing in a health center is a challenging one. New graduates in the health professions are often overwhelmed by the complexity of the patients that we serve, and a successful transition from student to a confident, competent health care professional—in any role—is crucial to long-term retention in the primary care field (Hart, et al., 2022). Growing our own presents a unique opportunity to not just fill a job vacancy, but to prepare health professions across all disciplines to practice with confidence at a high level of performance. Health professionals trained within primary care are equipped to join a high performing model of team-based care that *“addresses and removes systematic barriers to providing excellent care to complex patients, leads to quality outcomes, and arms the next generation with the tools and skills available to us from the science of quality improvement to continually improve the practice environment”* (Flinter & Bamrick, 2017, p. 29).

Joining your peers in training the next generation can be as simple as partnering with a local academic institution to take a cohort of two students for a semester of clinical rotations to as complex as sponsoring your own 12-month postgraduate residency program. No matter the pathway chosen, you would be contributing to the nation’s strategic workforce plan (HRSA, 2022). However, to positively contribute, you must ensure you are organizing and supporting a high quality, satisfying, and productive training experience that retains individuals in the health center environment. Our own journey to training the next generation mirrors national trends in workforce development. We have also expanded beyond clinical disciplines and have a year-long Administrative Fellowship to train master’s-level post graduate students on the management and delivery of healthcare services (Johnson & Coffinbargar, 2022). In order to effectively train learners with the goal of retaining them within primary care, we have developed systems needed to ensure that we are providing a quality experience.

CHCI has followed three common pathways:

- (1) Establishing relationships with academic and health system partners for pre-licensure (nursing, medical, dental, behavioral health and more) training, as well as postgraduate training,
- (2) Directly sponsoring programs for formal postgraduate trainings (NP and psychology residency training), and

- (3) Incorporating opportunities for certificate level training (MA, DA).

In all of these pathways, we are grounded in competency-based education and training, which has been the dominant model in curriculum development in the health professions since the 1970s (Del Bueno, 1978; Gervais, 2016; Larkin, et al., 2016; Lockyer, et al., 2017; Lukewich, et al., 2020; McGaghie, 1978). This model has constituted a shift away from education that used on-the-job training models emphasizing time spent and a list of skills performed. Instead, health professions education and training programs measure the knowledge, skills and attitudes/values required for professional practice. In fact, many of the competencies and program standards in health professions education are similar (Accreditation Council for Graduate Medical Education, 2020–2021; American Psychological Association Commission on Accreditation, 2015; The Consortium for Advanced Practice Providers, 2023). They address the required knowledge and skills for practice; ethics; communication and collaboration; a population focus; research; professionalism; and quality improvement/systems change. This foundational work at CHCI has led to national impact through creation of a fully accredited national school (NIMAA) to train medical assistants with particular focus on primary care for underserved populations, and Consortium for Advanced Practice Providers, an accrediting and advocacy organization for postgraduate Nurse Practitioner (NP) and NP/Physician Associate (PA) training programs.

In [Part IV: Training the Next Generation](#), we will share our organization’s work to develop specific models of health professions training. These best practices can support you in your work to engage with or expand health professions training at your organization.

Hosting Health Professions Students

Community Health Center, Inc. (CHCI) has been hosting health professions students from academic institutions as a core pillar of our mission for decades. As the number of health professions students seeking education and training at CHCI increased, it was evident that the organization needed to evaluate the systems and processes we had been using in order to support and sustain these efforts to train the next generation of health care professionals. Rather than cutting back on our commitment to students, CHCI leadership established a year-long working group in 2017 which included staff from operations, clinical, human resources, information technology, facilities, communications, and every department in which a student would interact during their experience. The working group was tasked with redesigning the process in order to provide a quality, satisfying, and productive training experience for students from external education programs leading to certification, undergraduate, graduate or doctoral degrees that required training and education in primary care. **The intention was to**

establish a step-by-step playbook, which would serve as a living document that would be updated as the processes and systems evolved over time.



The working group concluded with a process that worked for all parties, which was developed into a playbook. The playbook outlined the processes for establishing agreements with academic partners, handling requests for placements, assessing capacity, matching students to willing and available preceptors, onboarding and training students to the CHCI environment and technology, providing a high-quality learning experience throughout their placement, and finally, obtaining feedback from students on their CHCI experience relative to their expectations. The completed playbook was handed off to a staff member who was responsible for operationalizing and improving the existing systems across all departments of the health center as outlined in the playbook. We recommend that health centers identify a lead project manager for this work most likely within the operations, project management, or quality improvement teams.

During this year-long effort to operationalize health professions student training, the staff documented best practices within the playbook leading to the opportunity to scale and share this replicable model nationally through the Health Resources and Services Administration (HRSA) funded National Training and Technical Assistance Partners (NTTAP) on Clinical Workforce Development at CHCI. The NTTAP on Clinical Workforce Development disseminates this knowledge through national webinars, activity sessions, learning collaboratives, and attendance at Primary Care Associa-

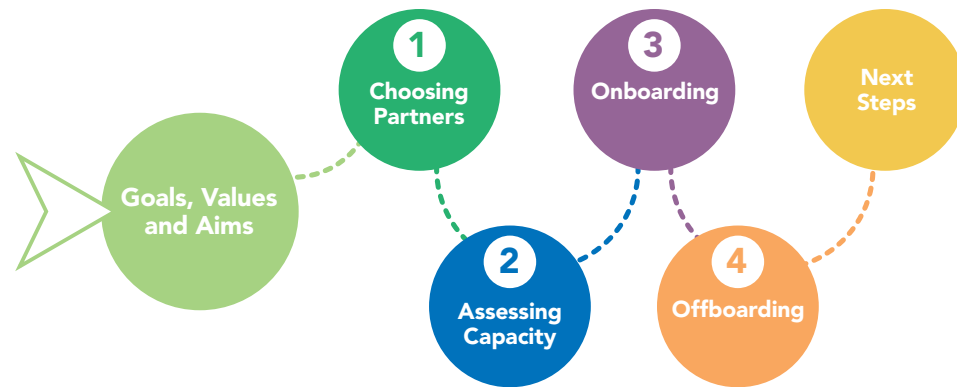


“To build a successful culture of training and education in your health center, teaching must be part of your mission.”



tions (PCA) conferences. The six-month Health Professions Student Training Learning Collaborative walks health centers through the development of a playbook that maps out the processes for an organized, streamlined, and efficient approach to health professions training (see Figure 14.1). This chapter continues those efforts by walking you through our playbook and sharing the best practices that can guide your health center through the work of establishing new or revising your current processes to ensure an efficient, quality training experience.

Figure 14.1. Framework for Establishing an Organized, Streamlined and Efficient Approach to Health Professions Training



Community Health Center, Inc. (CHCI) National Training and Technical Assistance Partners (NTTAP) Health Center Team Accomplishments

In 2022, as part of the evaluation for the Health Professions Student Training Learning Collaborative, we asked participating health centers for their feedback. Overall, they found that developing a formal structured approach to hosting health professions students would help them and their academic partners to provide a meaningful experience. Below describes some of their insights and accomplishments:

- "It was very informative, and helped me to streamline the processes we already had in place."
- "Having a structured approach to compiling a documentation manual that otherwise would never have gotten done."
- "It gave our organization the tools needed to develop an onboarding platform."
- "The onboarding and training of health professions students."
- "We implemented a student and preceptor tracking system in Excel. We documented communication templates and affiliate agreements. We moved our exit survey online."

- "We have assessed all our programs for recognition, IT onboarding, and student capacity."
- "We implemented a structured onboarding policy and procedure."
- "Adding a student calendar."
- "Started organizing a list for preceptor capacity."
- "We will be implementing an affiliation agreement, tracking preceptor availability, implementing a collaborative student credentialing processes across our organization."
- "This gave us the opportunity to re-evaluate processes and procedures."
- "We have started an online survey for students through Survey Sparrow. We have started an excel spreadsheet to document all students."
- "Created an operations manual for our learner programs."
- "Presentation of the health professions student training program to Health Center Board; place as an agenda item for monthly QA meetings to continue improvement."

The Playbook for Hosting Health Professions Students at Community Health Center

As Figure 14.1 illustrates, our playbook addresses five areas of importance: identifying goals, values, and aims; choosing partners, communication, and affiliation agreements; assessing our capacity for hosting students; onboarding students; and offboarding students. Once you have implemented these five areas, the next steps of the process would be to continuously evaluate your processes through a formal yearly evaluation, and update your playbook as necessary.

Goals, Values, and Aims

Health care workforce shortages have been an ongoing problem for decades and is an ever increasing problem beyond the COVID-19 pandemic. Long-term contributions to training the next generation will be required to combat the projected workforce shortages through 2035 (National Center for Health Workforce Analysis, 2022a) and to sustain long-term solutions. CHCI has found that grounding our organization in the foundational pillar of training the next generation has allowed us to recognize our top executive leaders as our sponsors. Leadership engagement and support in improvement work is crucial for implementation, acceptance, and sustainability (Thies, et al., 2020). It is important before pursuing health professions training to ask yourself: **What are our organization's goals, values, and aims of investing in health professions training?** It is imperative that you not only answer this question,





but that you incorporate health professions training into your health center’s mission and strategic plan, and communicate that it is a priority to the entire organization, as well as to all potential candidates. To build a successful culture of training and education in your health center, teaching must be part of your mission.

Play 1: Choosing Partners

When CHCI operationalized our health professions playbook in 2018, there were dozens of long-standing and successful academic partnerships. While this made re-structuring our partnerships challenging, this work was crucial to establishing a streamlined process between our health center and the academic institutions. Health centers want expert clinicians that are best equipped to provide care for underserved and vulnerable populations, while academic institutions want quality clinical placements to produce excellent clinicians. While each has their own mission, the partnership is critical to preparing the next generation for practice. **Guiding principles to govern collaborative academic-practice partnerships have been developed jointly by the American Association of College of Nurses (AACN)–American Organization for Nursing Leadership (AONL) (AACN–AONL, 2012).** Although published by two nursing organizations, several of these guiding principles are suitable for all health professions disciplines. A summary of these principles is in Box 14.1.



Box 14.1. Guiding Principles for Partnerships Between Health Care and Academic Institutions

<p>Collaborative relationships between academia and practice are established and sustained through:</p>	<ul style="list-style-type: none"> • Formal relationships established at the senior leadership level and practiced at multiple levels throughout the organization • Shared vision and expectations that are clearly articulated • Mutual goals with set evaluation periods
<p>Mutual respect and trust are the cornerstones of the practice/academia relationship and include:</p>	<ul style="list-style-type: none"> • Joint accountability and recognition for contributions • Frequent and meaningful engagement • Mutual investment and commitment • Transparency
<p>Knowledge is shared among partners through mechanisms such as:</p>	<ul style="list-style-type: none"> • Commitment to lifelong learning • Shared knowledge of current best practices • Joint preparation for national certification, accreditation, and regulatory reviews
<p>A commitment is shared by partners to maximize the potential of each registered nurse [or health professions student] to reach the highest level within his/her individual scope of practice including:</p>	<ul style="list-style-type: none"> • Culture of trust and respect • Shared responsibility to prepare and enable nurses [or health professions students] to lead change and advance health

Academic Partnership Communication

Prior to establishing our new affiliation process, academic institutions and/or individual students seeking clinical placements were reaching out directly to staff and providers. This informal approach may seem easier than setting up a standardized process, but the latter is more effective, reliable, and manageable. With limited resources to support a single, full-time position to support this coordination, health centers have instead identified a variety of existing positions within their organizations to take on this work. For example, positions such as Executive Assistant or Administrative Assistant, who is responsible for managing communication of key executives at the organization can work with an Onboarding Specialist, who is responsible for onboarding new employees and supporting their transition into the organization. These roles have shown to be capable of effectively managing a significant number of steps in the recommended process for hosting health professions students. Our organization managed for years with this structure and has seen this work at health centers nationally as well.



You may ask yourself: **What position in our organization is best to manage the relationship with academic institutions?** Similarly, you will want to ask for a point of contact at the school with whom you will communicate with to ensure that legal affiliation agreements and onboarding paperwork, including immunization forms, are completed appropriately. Once you’ve identified these key positions internally and within the academic institution, you must conduct internal and external communication campaigns to reinforce the new process that moving forward. All communication regarding health professions training requests must be sent to the newly identified internal primary contact moving forward. Commonly, academic institutions and/or students outreach staff directly within the health center; it is key that you establish a streamlined process to ensure the identified internal primary contact is receiving all communication in order to better manage all requests.

Internal Communication

In order to effectively operationalize new processes, you must send an internal communication to your staff and providers. The communication should include a reference to your mission and/or strategic plan to train the next generation, an overview of the redesign work, why you’ve undertaken this work, and their role in this new process. Ensure that the staff and providers are equipped with the information needed to stay true to the newly defined process, specifically that all academic partner communication and requests must be directed to the new primary contact. A sample communication plan to providers on the redesign process is in Box 14.2.

Dear Providers,

As you know **Organization Name** is dedicated to a model of not only delivering clinically excellent care, but also in training the next generation to the model of patient centered, interdisciplinary, team based care. I want to thank the many of you who are integral in this mission as **Organization Name** provides excellent education to the many students yearly among all of our disciplines.

Organization Name has developed and continues to have strong strategic relationships with many academic partners in training institutes, colleges, and professional schools. A working group was developed comprising of all the clinical leaders and multiple departmental leaders. The goal was to streamline the process in which students are accepted, on boarded and off boarded here at **Organization Name**, providing for an excellent clinical rotation and provider teaching experience. I want to make sure we update you about this important new initiative.

As you all know, we welcome students of all the health professions to **Organization Name** for part of their education and training—last year, almost **Number of Students Trained Previous Year** of them! Medical and dental assistants, students of nursing, social work, medicine, dentistry and more came to **Organization Name** under formal agreements with their schools, colleges, and universities. It takes a great deal of coordination to make their entry to CHCI and their stay here smooth. The workgroup focusing on students and trainees has been working to redesign the process to make their on-boarding, training period, and exit efficient, effective, and as welcoming as possible. After all, we hope to hire many of them back when they complete their education and training!

As part of our work, we have completed a “playbook” that details our redesigned process for supporting our goals in this area. We have developed a communication plan for all of the many groups of **Organization Name** employees and stakeholders who play a role in achieving our goals, and would be happy to review that playbook and share the communications plan with you.

What we ask of you, as a provider taking on students, is to ensure that we all stay true to this now well-defined process. All student rotations should be set up through Human Resources, who will work directly with the clinical leadership, and not directly with the site or providers. Your warm response to any student or teaching facility who may reach out to you is always appreciated, but please be sure to connect them directly with Human Resources before any commitments can be made.

We have also added a post-experience component to our process, so that we can give each student/trainee a chance to comment on and evaluate their experience. We will be sharing the ongoing results with the leadership team.

Thank you for supporting our students and trainees!

Organization Clinical Leader

Affiliation Agreements



Affiliation agreements are formal, written agreements that lay out the expectations and responsibilities of both the health center and academic partner prior to taking students, and allow the health center to receive requests for placement from the academic partner. Affiliation agreements do not guarantee clinical placements for students unless that is part of the special arrangement per both parties in writing, such as through a memorandum of understanding or a shared governance structure between the school and clinical setting. We recommend that you collaborate with your legal counsel to establish a template for standardized affiliation agreements with academic partners. Key components should include:

- Start/End Date;
- Infection control/immunization health statement requirement are met*;
- Termination procedures;
- Contact Information;
- Liability insurance;
- Emergency processes;
- Confidentiality/privacy; and
- Financial payments, if applicable.

* Note: Infection control/immunization/health statement requirements are a responsibility for both the academic partner and student. In some cases, academic partners will send a letter of attestation/health statement indicating a student has met infection control requirements. Other times, the student will need to submit directly to the health center in the case the academic partner does not have that information on file.

Affiliation agreements are key as health centers’ capacity to accommodate health professions students varies constantly due to recruitment and retention challenges. Prior to engaging in a communication campaign to academic partners on your new process for hosting students, you must review your existing agreements/contract to determine what changes are needed. Requests for revisions to your agreements should be included in the communication. Additionally, it is important to establish a process, system, and location for affiliation agreement storage and management. A sample communication plan to academic partners on the redesign process is in Box 14.3.

Dear **Academic Partner Contact**,

As you know, **Organization Name** is deeply committed to training the next generation of health care professionals. As part of that mission, we welcome hundreds of students of all of the different health professions to **Organization Name** annually for educational and training experiences in our many sites, programs and departments. We have a long standing and successful relationship with **Academic Partner Name**, and look forward to continuing that relationship. This year, a workgroup was formed at **Organization Name** to study and make recommendations for improving the process to make it more transparent and satisfying to all parties. We know how important clinical placements are to your program, and that there is an urgent need for preceptors and placements by all programs. We have completed that work, and I want to reach out to you to advise you about some changes to our former process.

Our goal is to ensure that the entire process works for all parties. This starts with developing agreements with our academic partners, continues on through considering requests for placement and accepting requests, when **Organization Name** has the capacity. Following assessing capacity, **Organization Name** will match the student to a willing and available preceptor, and begin the onboarding and training process for the students to the **Organization Name** environment and technology. This will ensure that **Organization Name** will provide a high quality learning experience throughout their placement. Finally, **Organization Name** will provide feedback to the student on their performance, and obtain feedback from them on their **Organization Name** experience relative to their expectations.

Since **Organization Name** and **Academic Partner Name** already have a valid, “evergreen” contract/MOA in place that meets our standards, we will not need to develop a new contract. The new process begins with outreach from you or your fellow faculty members requesting placement for a type of clinical experience sought, dates of requested placement, and specific days/hours if restricted. The request must be made to the **Organization Primary Contact**, who is serving as the central point of contact for academic affiliations and placements across all of our clinical disciplines. This may be initially sent by email. The **Primary Contact** will notify the appropriate clinical chief, who in turn will review our roster of available and interested preceptors relative to the experience sought.

If the clinical chief confirms that **Organization Name** has the capacity to accept the student, he/she will notify the **Primary Contact**, who will in turn notify the requesting faculty member. At that point, a formal addendum to the contract specifically

identifying the student, date range of training, assigned faculty member, assigned site, and **Organization Name** assigned preceptor must be developed and sent to **Organization Name**.

We are very committed to each student having a rich and meaningful experience, and using today’s technology appropriately is central to that. To this end, we are publishing a schedule of training dates throughout the year, by discipline. All prospective students **MUST** attend a training session specific to their discipline. I am enclosing a calendar of training dates for the coming year.

We want to make sure that the student and faculty receive feedback and evaluation on the student’s performance, and we will require our preceptors to provide that feedback. We also want to evaluate how effective **Organization Name** was at providing a meaningful clinical placement and a satisfying experience, so **Organization Name** will be sending a brief survey to each student at the end of the rotation.

Finally, we would like to acknowledge all of our academic partners, by including your institution’s logo on our website on a page devoted to our work in training the next generation of health care professionals. Please let us know if you object to our putting your institution’s name and logo on that page as one of our academic partners.

We think these changes will help bring more coherence and elegance to what we know has often been a very stressful process. We look forward to your ongoing feedback and recommendations for further improvement.

Warmest regards,

Organization Clinical Leader

Partnership Approval



A streamlined health professions training framework should outline your organization’s strategy for how your organization will determine who to affiliate with moving forward. We recommend including clinical leadership as key stakeholders that review the affiliation requests with the primary contact serving as the facilitator of these strategic discussions. We’ve seen that decisions to affiliate with an academic partner can be based on some of the following factors:

- Geography;
- Ranking;
- Strategic partnership;
- Capacity for requested discipline;

- Current staff alumni or relationship;
- Willing and available preceptors;
- Contribution to the clinical workforce pathway in the health center; and
- Financial commitment to the academic partner to the health center, if applicable.

An important best practice to establish is that if your organization receives a request directly from a student, you must have the student ask their academic institution reach out directly to the designated contact person in your organization to establish an affiliation agreement before you can consider the request. **We encourage you to have a formal, organized approach between your organization and the educational program, school or university in which the students are enrolled, rather than coordinating the arrangement with the student directly.** A sample communication plan to students inquiring for placement is in Box 14.4.



Box 14.4. Sample Communication Plan to Students Inquiring for Placement

Hi Student Name,

We appreciate your interest in our health center for a placement!

Unfortunately, we do not have an affiliation agreement with **Academic Institution**, which is needed in order to accommodate you as a student. We would be happy to consider this request once we've affiliated with your academic institution. We advise that you connect me with your field advisor or clinical coordinator so that we can begin these conversations.

Should you have any questions, please reach out at any time.

Warmest regards,

Organization Clinical Leader

The informal approach may seem easier than setting up a standardized process, but the latter is more effective, reliable, manageable, and legally paramount in the long run. Strategic partnerships are more than a health center offering clinical placements for students from a particular school. Opportunities abound for strategic partnerships to drive health and education policies and regulations, to innovate models of care delivery and health professions education, to do research, and to invest in the health of the community (AACN-AONL, 2012; Carthon, et al., 2017; Witteman, et al., 2018).

Yale University Partnership with Community Health Center, Inc. (CHCI)

CHCI enjoys many strong, longstanding relationships and formal academic partnerships with universities across Connecticut and beyond, starting with our original connections to Wesleyan University at the time of our founding in 1972, which continues today through research training for students in Wesleyan's Health and Society course. CHCI's longest standing academic partnership for clinical training is with the Yale University School of Nursing (YSN), which dates back to 1980. In the 43 years since, YSN master's level and now doctoral level students have been here every year, representing specialty areas of family, pediatric and adult nurse practitioners, as well as nurse midwifery students. We also welcomed the YSN Graduate Entry Prespecialty in Nursing (GEPN) students for their community health rotation in satisfaction of the registered nurse (RN) educational component requirements. They have been a vital element of our health profession training program and left an indelible stamp on CHCI as many went on to seek positions at CHCI.

Today, 34% (43) of all NPs are alums of the Yale School of Nursing and well represented in leadership roles throughout the organization. YSN has been a true partner. When we were designing the country's first Postgraduate Nurse Practitioner (NP) Residency Program (2007), the late and legendary former Dean, Donna Diers, was an early advisor and supporter, along with her successors. Three of the four members of the first NP Residency cohort were YSN alums. Today, we continue that tradition through a formal academic partnership between YSN and CHCI for the postgraduate NP residency program which has evolved to include not just advice, guidance, and feedback on the program but formal training opportunities for the NP residents using YSN's state-of-the-art simulation labs.

CHCI's former Postgraduate NP Residency Program Clinical Director, Nicole Seagriff, YSN 2011 graduate and a recipient of YSN's prestigious award for distinguished accomplishment within the first decade post-graduation says, "I was placed at a CHCI site during my final year at YSN and felt such synergy between the mission of YSN to create better health for all and CHCI's core premise that healthcare is a right and not a privilege. During the rotation, I learned about the opportunity to participate in the nation's first NP Residency program, which allowed for a structured transition to practice addressing the high demand, high complexity nature of community health. It is from these partnered foundations of school and residency that I have enjoyed my 12 years (and counting!) as a primary care provider."

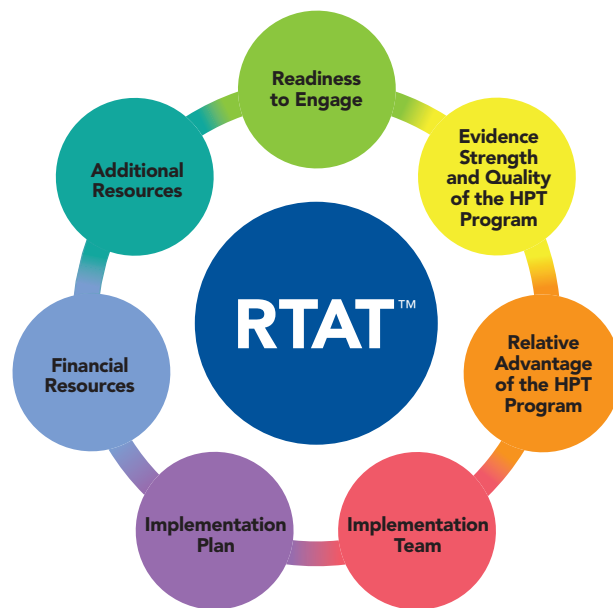
—Margaret Flinter, Senior Vice President/Clinical Director,
Community Health Center, Inc. and Moses/Weitzman Health System

Play 2: Assessing Capacity

Accommodating health professions students will require an honest assessment of your capacity, resources, and space. In fiscal year 2018, the Health Resources and Services Administration (HRSA) and Bureau of Health Workforce (BHW) authorized the creation of a new survey instrument, the *Readiness to Train Assessment Tool* (RTAT™), to help health centers, primary care associations (PCAs), and HRSA develop insight into the readiness of health centers to undertake health professions training. RTAT™ is a 41-item, 7 subscale survey instrument (See Figure 14.2) developed and validated by the Weitzman Institute of the Community Health Center, Inc. that allows health centers to assess their organization's readiness to engage in health professions training programs (Health Resources and Services Administration [HRSA], 2020; Zlateva, et al., 2021). **The survey instrument covers dimensions of health center readiness for engaging with health professions training (HPT) programs that were deemed critical to evaluate by subject matter experts.** For the purposes of RTAT™, we broadly define HPT as any formal organized education or training program, undertaken for the purposes of gaining the knowledge and skills necessary to practice a specific health profession or role in a healthcare setting.



Figure 14.2. Readiness to Train Assessment Tool (RTAT™): Subscales



The RTAT™ results are intended to aid in identifying the focus of strategic workforce development plans and to encourage dialogue and action in organizations completing the survey. By completing the survey and scoring the results, health centers can

identify areas to improve their overall readiness to engage with HPT, or readiness to implement any HPT program that they deem appropriate for their workforce and patient population. This is done by having different stakeholders (employees who are directly or indirectly involved with the health center's current or future plans to engage with HPT programs) complete the RTAT™. The survey takes approximately 15–25 minutes to complete and will require individuals to answer questions related to the health center's overall readiness and plans to engage with HPT programs. Survey participants will need to indicate the extent to which they agree or disagree with the survey statements as they pertain to their health center's readiness to engage with HPT program(s). Participants are encouraged to respond openly and honestly, based only on their own judgment, regardless of what others expect at their health center. For more information on RTAT™, and to download the survey, visit www.chc1.com/rtat as well as read a peer-reviewed article on the RTAT™ (Zlateva, et al., 2021).

Capacity changes rapidly in primary care and must be assessed regularly, at a minimum a few months before each semester starts for your academic partner programs. At some point, it is likely that you will be unable to informally manage the incoming volume of requests in an efficient, orderly, and safe way that ensures success for students, health center staff, and the academic partner. This is the situation CHCI found itself in around 2017. After decades of various clinical and organizational leaders managing the process, we had to admit that we just could not continue without real focus and structure. Begin by considering your capacity to train students or postgraduate trainees in a requested discipline, which is predicated on the availability of clinical preceptors in that discipline. **The number of students you can accept per semester is absolutely tied to how many willing and able preceptors are available.** Each preceptor's availability may change from time to time and will require review by your clinical leadership.



Preceptors are critical to the success of pre-professional students or postgraduate trainees in the health professions (Bartlett, et al., 2020; Billay & Myrick, 2008; Soric, et al., 2017; Ulrich, 2018). Preceptors teach at the point of care, usually while also caring for their own patients, making for a complex work environment. They need to be knowledgeable and skilled practitioners in their discipline, but that alone does not make a good preceptor. Preceptors must be adept at teaching—creating and facilitating clinical learning experiences that foster student attainment of learning objectives, and assessing whether those objectives have been met. They must model professional behavior, including communication and collaborative skills with other professionals as well as with patients. Most preceptors benefit from receiving formal training (American Society of Health-System Pharmacists, 2022; Good, 2021; Griffiths, et al., 2022; Gueorguieva, et al., 2016; Soric, et al., 2017; Wu, et al., 2018).



What makes a good preceptor? It is often assumed that being an expert clinician is the most important factor, but good clinicians do not necessarily make good preceptors. Characteristics of effective preceptors have been identified in several disciplines. Preceptors need to be knowledgeable and skilled practitioners, but more importantly, they must be adept at and committed to teaching. That means creating and facilitating clinical learning experiences that foster student attainment of learning objectives, assessing whether those objectives have been met, and providing students with constructive feedback. They must model professional behavior, including communication and collaborative skills with other professionals, students' faculty, as well as with patients. The desire to precept is critical (American Society of Health-System Pharmacists, 2022; Bartlett, et al., 2020; Benner, et al., 2010; Good, 2021; Griffiths, et al., 2022; Gueorguieva, et al., 2016; Smedley, et al., 2010; Soric, et al., 2017; Ulrich, 2018; Wu, et al., 2018). Most preceptors benefit from receiving formal training (American Society of Health-System Pharmacists, 2022; Good, 2021; Griffiths, et al., 2022; Gueorguieva, et al., 2016; Soric, et al., 2017; Wu, et al., 2018).

For your clinical leadership to effectively assess and approve your organization's clinical staff regarding their availability to precept, we recommend that you maintain an available preceptor capacity report. We encourage you to work with your Human Resources team to utilize your employee systems to generate on a recurring basis an accurate list of clinical staff with the below information:

- Length of time in the organization;
- Percentage of full-time employment (FTE);
- Business title; and
- Site location.

Upon review of this list of clinical staff, your clinical leadership should consider the below factors when considering availability:

- Performance (e.g. unlocked notes every week);
- Other commitments (e.g. leadership role, faculty positions);
- Personal factors (e.g. in school, personal leave);
- Fit for teaching/training; and
- Length of time in organization.

Our organization follows the best practice that staff must complete one year at the organization prior to being considered as a preceptor. Following the clinical leadership determination that the clinical staff member is available to serve as a preceptor, you must conduct additional outreach to determine if the clinical staff member is willing. A sample communication plan to clinical staff on initial interest to precept is in Box 14.5.

Box 14.5. Sample Communication Plan to Clinical Staff on Initial Interest to Precept

Hi Provider Name,

As we start preparing for the **semester**, I wanted to check in on your thoughts about taking a **discipline** student this **semester**. If you have any interest in working with a student, please let me know. Thanks in advance for your time and consideration!

Warmest regards,

Organization Clinical Leader

Once you've identified willing and available preceptors, the primary contact at your organization should compile all placement requests from the academic partners for review by the clinical leadership in a recurring meeting before making commitments. It's important to collaborate with your academic partners to determine the best recurring meeting schedule, as academic programs run on different schedules. This will allow you to have an understanding of all requests and your organization's capacity when making the strategic decision regarding which requests you can accommodate. Also, we recommend that your primary contact compiles the credentials, experience, and any preferences and clinical interests of your willing and available preceptors in order to match with the student requests.

Consider the capacity of your physical layout and other resources as well before a student arrives. Having students and trainees on-site means having more people in your space. **Ask yourself the following questions to determine your capacity based on infrastructure: Where will students sit? Have lunch? Where will they hang up their coats or park their cars? What computers will they use and how? Is there any particular type of equipment students are expected to master, and do you have it? Do you have enough exam rooms?**

The factors to consider are sometimes not immediately obvious. Walk through a typical student day and determine what you need to provide for the student during their placement. We consider this process the secondary review of capacity before formally matching a preceptor with a placement request. Secondary review includes:

- Adequate space on site (e.g. desk, set-up, parking);
- Adequate training time to electronic health record (EHR);
- Systems access (e.g. email, EHR accounts);
- Equipment (e.g. laptop); and
- Adequate onboarding to organization.



Availability to accommodate a student is subject to your organization's clinical staff and their willingness to host and teach students, and not to a school's demands on your capacity. As assessing capacity may take some time, we recommend that you conduct a final email check-in with the willing and available preceptor prior to confirming the student's placement.

Play 3: Onboarding

So far in our process, there has been no mention of the student. Our recommended best practice is to not involve the student until the start of the onboarding process. Just as you would not bring a new employee into your organization without a formal welcome with training, you will want to have an established process in place for onboarding pre-professional students that covers the key elements: communication, human resources, information technology, training, and facilities. Once the academic institution receives the confirmation on placements, request the names and emails of the students who will be in your health center from the academic institution. The academic institution will be responsible for the quality of the students and determining the best fit for your organization. Depending on the placement and discipline, the preceptor may request an interview with a student when planning for placements that last more than a few weeks or semester, such as yearlong placements in behavioral health.



Effective communication from the initial point of contact is key to starting a quality student experience. Establish a standardized welcome email for students outlining all of the onboarding requirements and instructions to start the placement at your organization. This will vary based on organization, so we recommend that you mirror an existing process, such as your process for contingent workers to ensure you are following organization rules and regulations, including HIPAA. When emailing students the welcome email, ensure that you copy the contact person from the academic institution on the email as well. Students' ability to begin their placement is contingent on a variety of factors (e.g. infection control, background checks). Additionally, start dates cannot be finalized until the students have completed onboarding with Information Technology (IT) and Human Resources (HR). It is important to effectively communicate with academic institutions and the students on their progress towards completion. Once students have satisfied all requirements, communication to all internal key players should be initiated. For in-person placements, it is important to discuss start dates with operations, leadership, and preceptors. For virtual placements, clinical staff can determine start dates once requirements are satisfied.

We encourage organizations to incorporate students into existing human resources processes if possible. CHCI's process is to hire students as contingent workers, which utilizes the human resources platform to trigger the ticket that will notify IT of the

new student. Using an existing system/process allows for an automated process for communicating necessary information to IT, such as the position title and location of students. It has been effective for our organization to use "student" as a standardized position title to allow IT to create a profile that is specific to the students' technological and equipment needs. Students will need varied access based on discipline, location, educational level, and more as determined by your organization. Finally, we recommend that you work with your organization's IT department to determine the necessary time needed to set up an account.

Our organization feels it is important that students receive access to the electronic health record (EHR), which will require varied training based on educational discipline and level. Training on the EHR policies, standards, and functions of your organization and appropriate clinical discipline is important for setting the foundation of the student experience. We recommend scheduling the EHR training as close to the start date as possible, as well as working with your training team to identify opportunities to abbreviate the existing training schedule to accommodate students (e.g. attend first hour of three hour employee training). It is crucial to provide the students with the dates/times of the training and ensure they understand that if they are unable to attend, it will impact their start date. We are unable to accommodate one offs and follow this as a best practice. Prior to the student's start date, ensure that all key personnel/departments have been notified in advance to:

- Coordinate appropriate facilities access (e.g. badges) and space (e.g. desk, chair) for student prior to arrival;
- Communicate details to the student (e.g. time, parking, student laptop process);
- Notify the site operations and clinical leadership; and
- Add the student to internal distribution lists.

To complete the onboarding process, the designated student coordinator at your organization will communicate final details to students, such as completing Health Insurance Portability and Accountability Act (HIPAA) training, dress code, ID badges, parking, directions, on-site laptop processes, and so on. At CHCI, students who are non-behavioral health disciplines are not issued an individual laptop, and are required to keep laptops on-site—they are not allowed to take them home. If you follow this policy regarding student laptops, we recommend having a sign-in and sign-out process, as well as a secure storage location at the site to mitigate risk.

Play 4: Offboarding



As you would when offboarding employees, you need to notify the appropriate departments of students' departure, terminate students' access to the clinical site and to the electronic health record or other platforms used during patient care, and collect any equipment that belongs to your health center. **This is also an opportunity to get feedback from students, and faculty if appropriate, about their experience at your health center, either through surveys or discussions.** Be sure to share this with your leadership and make improvements where needed. In order to successfully conduct a survey, distribute the survey within a week of the students' last day of placement at your organization. A sample student survey is in Box 14.6.

Box 14.6. Sample Student Survey

Please rate each of the following statements on a five-point scale where (1) is Very Poor and (5) is Excellent:

Statement	Very Poor (1)	Below Average (2)	Average (3)	Above Average (4)	Excellent (5)
The communication with CHCI prior to starting the experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The onboarding to company policies and regulations prior to the experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The formal welcome that you received to CHCI	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The training provided on CHCI technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The equipment provided to complete your placement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilities access and space for the experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Statement	Very Poor (1)	Below Average (2)	Average (3)	Above Average (4)	Excellent (5)
The degree to which your experience met the learning objectives established by your college/university for this experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The attention of the preceptor/supervisor to your needs as a student/trainee	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The off-boarding and exit process (evaluation, wrap up, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Based on your experience as a student/trainee, please identify your level of agreement on the following statements:

Statement	Disagree	Neutral	Agree	Not Applicable
I was trained to a high performing model of care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I gained the opportunity to increase my confidence and competence in my area of practice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was provided the opportunity to be exposed to the needs of underprivileged populations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would consider CHCI as a place to work/practice following completion of my education and training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would recommend CHCI to my friends and colleagues as a place to work/practice/train	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I experienced a high quality, educational experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

A critical part of the student training program is to establish an offboarding process and to follow-up on any pending items. This will help to maintain a positive relationship with the students. On a recurring basis, present the student survey feedback to the leadership team to continue to evaluate your program and improve as needed.

Minnesota Community Care, Equity Agreement

Minnesota Community Care is a federally funded health center that is required to conduct a Community Health Needs Assessment (CHNA) every three years as required by the Health Resources and Services Administration (HRSA). The 2019 CHNA report identified 24 recommendations that Minnesota Community Care adopted to create new jobs, systems, and policy changes from the lens of equity and inclusion. The organization hired Cindy Kaigama as health equity design partner in the newly created equity, people and culture office. These two critical changes at Minnesota Community care were as a direct response to the CHNA. The CHNA continued to guide our work centered on the community's needs, employees, and patients we serve.

Initially, there were no written guidelines or procedures. The organization tasked the health equity design partner (HEDP) to redesign the student experience process, quality improvement, and research projects. She engaged staff at all levels of the business to understand how the student process previously operated. This engagement led to cost-benefit analysis, benchmarks, and workflow processes. After that, the HEDP created an equity-focused student application that the organization's executive leaders approved.

Additionally, in partnership with other internal leaders, Minnesota Community Care streamlined and cultivated school relationships to tailor our student's experience to fulfill their school requirements and meet our patient needs. Minnesota Community Care is committed to ensuring our future workforce is equipped to succeed while honoring the communities we serve by putting the patients' voice first. As a result of creating this equity-focused application, Minnesota Community Care was able to retain one of the students as an employee. The application has become a catalyst in retention and hiring diverse talent for our clinics.

—Cindy N. Kaigama, Author,
Health Equity Design Partner, Minnesota Community Care

Establishing a health professions training program will create clinical workforce pathways and provide clinical staff the opportunity to teach. Investing in the time and efforts to create an efficient, quality experience for students to train to a high performing model of care, to increase their confidence and competence, as well as to train to the needs of underserved populations will positively impact the primary care workforce. A student who joins your clinical workforce pathway will be prepared to care for a panel of patients, to become a preceptor or faculty, and ultimately one day, to be a future leader of your organization.



“Establishing a health professions training program will create clinical workforce pathways and provide clinical staff the opportunity to teach.”



Postgraduate Nurse Practitioner (NP) and NP/Physician Associate (PA) Training Programs

In 2005, Dr. Margaret Flinter, Senior Vice President/Clinical Director for Community Health Center, Inc. (CHCI) and Moses/Weitzman Health System (MWHS) and a family nurse practitioner who started at CHCI in 1980 as a National Health Service Corps (NHSC) scholar, published her observations on the very difficult transition that new nurse practitioners (NPs) often experienced in entering primary care in the setting of a community health center (Flinter, 2005). She identified the absence of formal postgraduate training as the major contributing factor. The new graduates were brilliant, well educated, and fully committed, but simply had not had the breadth and depth of clinical experiences, with the support of preceptors, to prepare for the level of complexity of patients and of care.

As formal postgraduate residency programs for NPs did not exist at the time, CHCI set out to design and launch a model that could be replicated by other health centers. The rest, as they say, is history. With the support of the Board and leadership, CHCI launched the first postgraduate NP residency program in the United States in September 2007 when it welcomed four NP residents. **As of Fall 2023, there are over 500 NP and joint NP/Physician Associate (PA) postgraduate residency and fellowship training programs in 47 states in the United States, over 120 of which are in health centers.** There is continued growth in primary care, specialty care, and acute care focused NP and joint NP/PA postgraduate training programs. CHCI's program is focused on the primary care specialties: family NPs and pediatrics NPs, as well as psychiatric/mental health NP residency focused on the outpatient setting. [CHCI chose to use the term "residency" because it is consistent with other disciplines' definitions of intensive postgraduate training following completion of the academic degree.]

In 2014, CHCI launched a strategy to provide support to health centers seeking to launch a postgraduate NP and joint NP/PA training program. Dubbed "remote hosting," this model has allowed CHCI to work closely with the host health center to plan, implement, and operate every element of the program such as recruitment, preceptor training and support, didactics, and evaluation in the early years.



"CHCI's [Community Health Center, Inc.] program is focused on the primary care specialties: family, pediatric and adult/gerontology NPs as well as psychiatric/mental health NP residency focused on the outpatient setting."





We often say this is an initiative that has grown from a model to a movement, in part with the support the Health Resources and Services Administration's (HRSA) Bureau of Health Workforce, which created a funding opportunity (Advanced Nursing Education—Nurse Practitioner Residency [ANE-NPR]) for both new and existing programs in 2018 (HRSA, 2023b). For the first time, postgraduate NP residency or fellowship programs had a potential source of federal funding, and that has further fueled the development of these programs along with opportunities for accreditation by the federally recognized Consortium for Advanced Practice Providers (the Consortium, n.d.), as well as the American Nurses Credentialing Center (ANCC) and the Commission on Collegiate Nursing Education (CCNE), which is the accrediting body of the American Association of Colleges of Nursing (AACN). The Consortium for Advanced Practice Providers, founded in 2015 under the name "National Nurse Practitioner Residency and Fellowship Consortium", provides ongoing advocacy and support to programs, as well as accreditation. **The Consortium for Advanced Practice Providers (APP) also builds community within the APP postgraduate training movement with an annual conference for nurse practitioner and physician assistant/associate postgraduate training programs, as well as a preceptor development training for clinical preceptors.**

Postgraduate Nurse Practitioner Residency Program at CHAS Health

In September 2017, CHAS Health welcomed our first cohort of our Postgraduate Nurse Practitioner Residency Program with three residents. Our organization's initial drivers for beginning a residency program were two-fold: (1) create additional access to quality healthcare in a federally qualified health center by recruiting and training new NP graduates with an interest working in a safety-net setting, and (2) improve the clinical preparation and skills of those newly graduated NPs given the complex medical and psychosocial issues commonly encountered in those settings.

In the first year, we learned the need for dedicated time to discuss cases, diagnostic results, workflows, and more outside of the health center environment. From there, we developed weekly meetings for residents to learn from each other and help solve clinical problems. These sessions vary in length from 1–2 hours and are adjusted based on our learners' needs as the program year evolves. Additionally, at the start of the program, we lacked clear interval goals, such as achieving a rating of "good" or better on a minimum of 50% of chart notes reviewed. Therefore, our program developed quarterly goals that tie directly to the eight core competency

areas and allow us to identify a struggling learner earlier in the program so that we can provide targeted feedback and assistance. These quarterly goals also allow residents to focus their learning and build sequential knowledge, while fostering increased responsibility (e.g., taking call in month 6 of residency and participation in the CHAS Health organization wide chart review process). For example, by the end of the first quarter, we expect our resident to see and manage 10 patients per day. By the end of second quarter, that number goes to 14 patients. Finally, it is important to recognize the mental health and well-being of residents as they transition into independent practice. In our fourth cohort year, we began a Balint group** led by a psychiatric ARNP. This group provides an opportunity for residents to discuss the patient/provider relationship and the associated challenges.*

For our fifth cohort in 2021–2022, we were able to expand our program to four residents. Our program has several benefits to our organization, including additional access for patients, fostering an environment of learning, job satisfaction among employees through precepting and mentoring, and quality improvement (QI) projects that contribute to the ongoing QI work within the larger organization. With the residency program, we are able to grow our workforce pathways by retaining a diverse population of NPs who are prepared to meet the challenges of working with our patient population and community.

**Refers to competencies in The Consortium for Advanced Practice Providers.*

***A Balint group is a group of clinicians, often physicians, who meet regularly to present clinical cases in order to improve and to better understand the clinician-patient relationship.*

—Todd Smith, MN, ARNP, FNP-BC, Nurse Practitioner Residency Program
Clinical Director, CHAS Health, Spokane, Washington

Elements of a Postgraduate NP Training Program

A health center based postgraduate residency or fellowship program for new NPs and/or PAs is typically a 12-month period of full-time employment by the host community health center. The program typically begins in August or September after the new graduates have completed qualifications for licensure and practice in the state in which the community health center is located. As fully licensed, board-certified NPs or PAs, they are then eligible for credentialing and privileging and appointment to the staff of the health center in accord with the organization's credentialing, privileging, and appointment processes and in accord with state regulations regarding practice by NPs and PAs.



The Consortium for Advanced Practice Providers (2023) sets standards for nurse practitioner/physician associate postgraduate residency program accreditation in eight areas: 1) program mission, goals, and objectives; 2) curriculum; 3) evaluation; 4) program eligibility; 5) administration; 6) operations; 7) staff; 8) postgraduate trainee services. In the National Training and Technical Assistance Partners (NTTAP) Learning Collaborative for NP and joint NP/PA Training Programs, we walk community health centers through all of these areas to prepare them to launch their own program. The emphasis is on knowledge and skills for practice, ethics, professionalism, population health, systems-based learning, quality improvement systems, trainee and program evaluation, as well as standards for program resources. The standards are reviewed and revised at a minimum of every five years and were most recently revised in 2023 with a heightened emphasis on health equity, wellness promotion, and technology.

The Consortium for Advanced Practice Providers standards do not dictate how many hours are spent in different clinics nor what topics are covered in didactic presentations and seminars. Those are decided by you when your community health center hosts the program, and should reflect the patient population that you serve. During the postgraduate training program period, you train the NP or PA to be the kind of provider that you want and need for **your** patients. What does that look like at the end of 12 months?

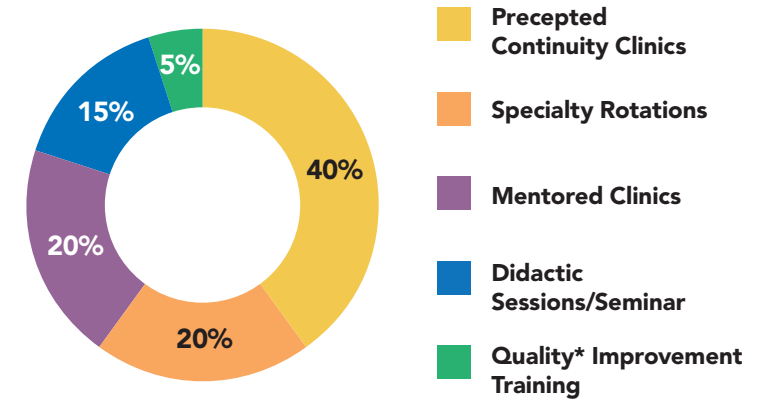
For example, you do not have to re-teach diabetes management to residents/fellows. Instead, you are preparing the residents/fellows to care for your patients with diabetes, that is, patients with diabetes and co-morbidities, unstable housing, minimum wage employment, and/or lack of access to fresh food.

At CHCI, our residency program, like all accredited programs, is a combination of clinical-based practice experiences, didactic education, and quality improvement and leadership training, consisting of about 2,000 hours (based on 40 hours per week for 50 weeks). As indicated in Table 16.1, 80% of the CHCI residents' time is spent seeing patients, either with a preceptor or mentor. Residents typically have a reduced salary to account for the 20% or so of time not seeing patients. *Our book Training the Next Generation: Residency and Fellowship Programs for Nurse Practitioners in Community Health Centers* (Flinter & Bamrick, 2017) explains program development in more detail, including staffing and financial operations.

The elements listed in Table 16.1 apply for the most part to Family Nurse Practitioner residents. CHCI also offers a postgraduate residency program for Psychiatric/Mental Health Nurse Practitioners, who share some aspects of their program with Postdoctoral Clinical Psychology residents and other behavioral health providers ([See Chapter 16](#)). Again, the majority of the time is spent in clinical practice.

Table 16.1. Elements of a Postgraduate Residency Program for Nurse Practitioners

How a CHCI Postgraduate Residency Program for Nurse Practitioners Resident's Time is Spent



40% Precepted Continuity Clinics	Residents spend the majority of their time in a single setting as part of a primary care team as they develop and manage a panel of patients. They work alongside an expert preceptor (NP, PA or MD) who has no other clinical obligations during that time.
20% Specialty Rotations	Residents see patients alongside a mentor in specialty areas to expand and enhance their practice knowledge and skills. Specialty areas are determined by the community health center based on the needs and volume of patients, e.g., women's health, dermatology, healthcare for the homeless, and adult and pediatric psychiatry.
20% Mentored Clinics	Residents work within a primary care team focusing on diversity of chief complaints in episodic and acute care. Residents see patients on their own and discuss the case with a mentor.
15% Didactic Sessions/Seminar (interdisciplinary)*	Didactic sessions are presented by clinicians either within or outside of the health center. The topics are chosen by the program to represent high volume, high complexity and/or high burden issues found in the population of patients served by the health center or in primary care in general. Examples include participation in Project ECHO sessions for managing chronic pain, and treating HIV/Hep C; managing diabetes in homeless patients; trauma-based care; and working with patients with chronic physical and mental health conditions.
5% Quality* Improvement Training	Residents participate in data-driven QI training and in QI projects with front line care teams, to develop collaborative and leadership skills.

* Nurse practitioner residents and postdoctoral psychology residents share many of the same didactic presentations and participate together in Quality Improvement Training.

What We've Learned

Our experience and research in the years since that initial foray into postgraduate training in 2007 confirmed that formal postgraduate residency was the bridge between entry level skills and competencies needed for safe practice, and the achievement of mastery of practice and professional satisfaction and well-being in a highly complex setting (Flinter, 2011). Years of data analysis from CHCI resident's journal entries show a fairly predictable transition path from being completely overwhelmed to becoming a confident provider with a deep understanding of the challenges of practice in the setting of a health center (Figure 16.2). It may be best, based on your resources, to start small but we always encourage a minimum of (2) postgraduate residents or fellows.

At CHCI, we have also responded to a request from our nurse practitioner residents for extended, intensive experience with special populations. In 2017, we established a 12-month Fellowship with our Center for Key Populations (CKP) for NPs who have completed the CHCI Postgraduate NP Residency Program and seek to deepen their expertise in care of special populations and clinical challenges such as caring for patients living with HIV, SUD, experiencing housing insecurity or homelessness, refugees, and more recently, LGBTQIA+ health care, including gender affirming care. Fellows engage in 1:1 didactic education sessions to review topics related to care for CKP, starting with general education and becoming more tailored based on each Fellow's interests and needs, and they participate in Project ECHO programs that are related to the CKP populations. Fellows also develop a formal capstone project with the potential for a formal research opportunity with CHCI's Weitzman Institute. Seven Fellows have completed the CKP Fellowship, and four of them continue to work at CHCI, serving as faculty in the Postgraduate NP Residency Program and for Project ECHO. As of this writing (2023), seven nurse practitioner CKP Fellows have completed the program.

Figure 16.2. A Year in the Postgraduate Nurse Practitioner Residency Program

A Year in the Postgraduate Nurse Practitioner Residency Program

Based on Analysis of 1,200 Journal Entries from 2008 through 2013



Nurse Practitioner Resident's Story

I have been passionate about working with diverse and underserved populations for many years. When I was an FNP (Family Nurse Practitioner) graduate student, I knew that working at a community health center would be a great fit, but that it also came with many complexities and a steep learning curve. I applied for the CHCI Nurse Practitioner Residency Program to support the transition from learner to skilled and confident provider. The residency program was invaluable. The first year of practice is a challenging one, and the residency provided support both for clinical practice and navigating the emotional realities of our work. I gained knowledge and skills that were specific to my population and my clinic, as well as a deeper appreciation for healthcare justice and the community health center movement.

After graduating from the residency program, I became a PCP [primary care provider] at a community health center in Seattle. I credit the residency program for the successful transition from student to long-term, sustainable practice a PCP. I feel immensely grateful I had the support to turn a passion into tangible, sustainable work.

After eight years of clinical practice, I approached leadership at our health center and proposed a residency program of our own. I hear over and over again about the need for more support during the first year of practice. I want those who have this kind of work in their hearts to get the support they need for a long and fulfilling career. Residency programs are a great benefit for our providers, but they also benefit our clinics and our patients. In the end, our mission is to improve the health of our patients, and our patients certainly feel the immense impact of confident, skilled, and supported providers.

I am now the director for my health center's nurse practitioner residency program, and we will welcome our first class of residents this fall (2022). There has been an immense amount of support from every person I talk to at my clinic and from the national community. The value is clear to everyone. I feel a deep sense of satisfaction as I think about my path from student to resident to provider to creating a residency program of our own. It's all coming full circle.

—Ellie Wytychak, ARNP
Former Nurse Practitioner Residency Director



“At CHCI, our residency program is a combination of clinical practice, didactics/seminars, and quality improvement and leadership training, consisting of about 2,000 hours.”



Postdoctoral Residency Program for Clinical Psychologists in Health Service Psychology

When Community Health Center, Inc. (CHCI) launched the Health Resources and Services Administration (HRSA) funded National Cooperative Agreement (now known as the National Training and Technical Assistance Partners [NTTAP]) on Clinical Workforce Development in 2016, we had a goal of supporting health centers in developing Postgraduate Nurse Practitioner Residency Programs. Our Chief Behavioral Health Officer, a licensed psychologist, had implemented a postdoctoral psychology residency program in 2010 and noted how few Postdoctoral Psychology Residency Programs were sponsored by community health centers. Since then, CHCI has been committed to encouraging health centers to consider adding Postdoctoral Psychology Residency Programs to their health professional training program along with expanding opportunities for behavioral health training at every level.

As the Patient Centered Medical Home (PCMH) model evolves as the core of the health care system, especially in health centers, this model is becoming more common. In fact, it can be argued that primary care has been the principal mental health care delivery system in the United States for years given that most mental health care occurs in primary care (Barkil-Oteo, 2013; Kessler & Stafford, 2008; Larkin, et al., 2016; Park & Zarate, 2019). At CHCI, we begin the psychology/behavioral health workforce pathway at the pre-professional student level, welcoming students pursuing master's degrees in social work, mental health counseling, and marriage and family therapy. With the support of a Graduate Psychology Education (GPE) Program grant from the Health Resources and Services Administration (HRSA, 2021), we also offer a practicum to clinical psychology students early in their doctoral studies. We host an American Psychological Association (APA)-accredited doctoral level internship in addition to the APA-accredited Postdoctoral Psychology Residency Program. That is, exposing pre-professional students to working in a team-based care program at various stages in their careers can move them along from one level of education and training to another, and eventually to a staff position. We also have postgraduate nurse practitioner residents specializing in mental health ([Chapter 15](#)), as well as the residency for doctoral-prepared clinical psychologists.



“The Postdoctoral Psychology Residency Program at CHCI provides comprehensive training in the provision of psychological care to uninsured and underserved populations under the patient-centered medical home model, with a focus on positive client outcomes and building healthy communities.”



The training for doctoral-prepared clinical psychologists working in primary care has changed significantly over the past decade. Most states do not require postdoctoral training to be a licensed psychologist as psychologists complete a full-time internship as part of their doctoral education (Connecticut does require postdoctoral training). Nevertheless, specialty areas in clinical psychology have emerged which benefit from post-doctoral training and supervision, but not necessarily a formal training program. Health Service Psychology is one of those areas (McQuaid & McCutcheon, 2018; Silberbogen, et al., 2018).

The American Psychological Association (APA) defines Health Service Psychology *“as the integration of psychological science and practice in order to facilitate human development and functioning. Health service psychology includes the generation and provision of knowledge and practices that encompass a wide range of professional activities relevant to health promotion, prevention, consultation, assessment, and treatment for psychological and other health-related disorders”* (American Psychological Association Commission on Accreditation, 2015, p. 2). Health service psychologists are trained at the doctoral-level as clinical psychologists leading to licensure, and have postdoctoral training in health-related settings working with diverse populations. **Integrating postdoctoral psychology residents into high performing primary care teams in community health centers, sharing the electronic health record and sitting in the pod, prepares them to practice in collaboration with physicians, nurse practitioners, nurses, social workers, and others in the treatment of complex vulnerable patients with multiple physical and behavioral health co-morbidities.**



Elements of Postdoctoral Psychology Residency

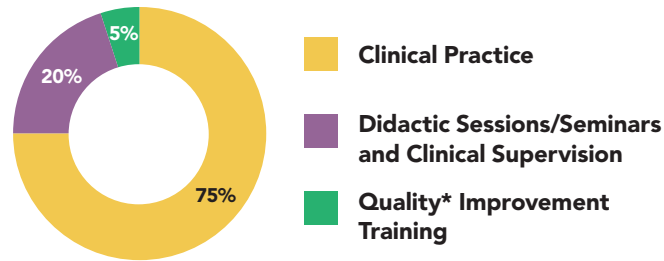
Our Chief Behavioral Health Officer at CHCI is a licensed clinical psychologist who has been with the organization for 25 years, and has been instrumental in the integration of behavioral health within the primary care team. He noted that 15 years ago, there were not many psychologists on staff, and most were hired after completing the yearlong internship that is part of doctoral education leading to licensure. However, many new psychologists were unprepared for the complexity of the patient population at CHCI and required more supervision. Some called for establishing a formal training program, and in September 2011, CHCI welcome four postdoctoral residents into a new 12-month program designed to meet their needs. After the first cohort completed their program successfully, the postdoctoral residency in psychology program was accredited by the American Psychological Association (APA) Commission on Accreditation (2015), and continues to have full accreditation.

The Postdoctoral Psychology Residency Program at CHCI provides comprehensive training in the provision of psychological care to uninsured and underserved populations under the patient-centered medical home model, with a focus on positive client outcomes and building healthy communities. We believe this is the future of clinical psychology. CHCI provides integrated behavioral health services in 17 licensed clinics, 7 homeless and domestic violence shelters, and more than 100 school-based health centers across the State of Connecticut. Residents are assigned to one or more sites in which they are members of the primary care team, although they also see patients in schools, shelters, and other non-traditional treatment settings. They provide services both in person and via telehealth, and receive supervision both in person and via videoconferencing. Residents complete postdoctoral hours needed to meet the requirements to be eligible for licensure in the state of Connecticut, which also meets criteria for most other states requiring postdoctoral training (adjustments to hours can be made for residents who plan to apply for licensure in other states).

As is the case with the Postgraduate Nurse Practitioner Residency Program, the APA Commission on Accreditation does not dictate how many hours should be allotted to different elements of the residency program, with one exception. Postdoctoral clinical psychologists must receive a minimum of three hours of supervision per week by a licensed psychologist, two of which must be individual supervision, and submit to rigorous evaluation of their progress at least twice per year. Table 17.1 displays the elements of the 12-month Postdoctoral Residency Program at CHCI.

Table 17.1. Elements of a Postdoctoral Residency Program for Health Service Psychology

How a CHCI Postdoctoral Residency Program for Health Service Psychology Resident's Time is Spent



75% Clinical Practice	<p>Residents: Four days per week. Individual, family/couples and group therapy in a primary health care setting, with an opportunity to work in school-based health centers, homeless shelters, and other settings, as well as an opportunity to specialize in a particular area; behavioral health assessments of patients; weekly multidisciplinary clinical team meetings with other behavioral health disciplines.</p>
20% Didactic Sessions/Seminars and Clinical Supervision	<p>Didactic Sessions/Seminars (interdisciplinary): One day per week. Didactic sessions are presented by clinicians either within or outside of the health center. The topics are chosen by the program to represent high volume, high complexity and/or high burden issues found in the population of patients served by the health center or in primary care in general. Examples include participation in Project ECHO sessions for managing chronic pain, and treating HIV/Hep C; managing diabetes in homeless patients; trauma-based care; and working with patients with chronic physical and mental health conditions.</p> <p>Clinical Supervision: A total of three hours of supervision per week factored into the one day per week of didactics.</p> <ul style="list-style-type: none"> Two weekly hours of individual supervision must be conducted by a doctoral-level licensed psychologist who is involved in an ongoing supervisory relationship with the resident and has primary professional clinical responsibility for the cases on which he/she provides supervision. A postdoctoral resident must have a minimum of two doctoral level licensed psychologist supervisors, at least one of whom serves as the resident's primary supervisor who maintains overall responsibility for all supervision, including oversight and integration of supervision that might be provided by other mental health professionals. One hour as a group with the Chief Behavioral Officer and the Director of the Postdoctoral Residency Program.
5% Quality* Improvement Training	Residents participate in data-driven QI training and in QI projects with front line care teams, to develop collaborative and leadership skills.

* Postdoctoral psychology residents and nurse practitioner residents share many of the same didactic presentations and participate together in Quality Improvement Training.

Although the Postdoctoral Residency Program is a generalist program in Health Service Psychology, over the years, residents have requested the opportunity to delve deeper into specific areas of interest. In the 2022 training year, we began offering three specialized concentrations in addition to the generalist approach to training:

- The Addiction Psychology Concentration focuses on providing the resident with specific skills to assess, understand, appropriately refer, and treat clients with substance use disorders (SUD) including opioid use disorder (OUD). Residents in this concentration participate in co-facilitating and/or leading a Medication Assisted Treatment (MAT) group and are provided didactic training specific to SUD/OUDs.
- The Child and Adolescent Concentration focuses on providing the resident with specific skills, interventions, and supervision related to treating children, adolescents, and their families. Depending on location of assignment, residents administer Multidisciplinary Evaluations of all children newly taken into custody by the Department of Children and Families, and/or participate in a weekly shift with the Mobile Crisis unit at the Child Guidance Clinic in Stamford.
- The Center for Key Populations Concentration works with LGBTQIA+ clients and clients with health conditions such as HIV and Hepatitis C. Residents learn harm reduction and preventative practice, and are paired to co-facilitate a Medication Assisted Treatment (MAT) group.

What We've Learned

CHCI offers behavioral health clinical placements for pre-professional students at the undergraduate, graduate and doctoral levels and also postgraduate training at the postdoctoral level. **We have found that, as the field evolves, working with students allows for everyone involved to gain not only new knowledge and skills, but also a deeper understanding of what other clinicians with different levels of training bring to patient care.** Earlier in this section on hosting health professions students, we noted that an organization must have teaching as part of its mission, that it must have the capacity to offer training, and that it must prepare preceptors/supervisors and other staff to contribute to teaching.

We've been fortunate that 60% of our postdoctoral residents in psychology remain at CHCI for a year or more. We have also learned to be flexible with admissions to the program. Four to five years ago, there were more applicants to postdoctoral programs in psychology than there were programs. Now, there are more openings than applicants nationwide. We have attributed this to the preference for newly licensed psychologists to enter practice immediately after graduation and/or to their preference to work with less complex and vulnerable patients. Our recruitment process is now on a rolling basis, and we admit four to seven residents in each cohort.

Postdoctoral Residency Program Community Health Center, Inc: Resident's Story

I was a postdoctoral resident at CHCI for the 2014-2015 training year. What I particularly enjoyed about being a resident at CHCI was being a part of a cohort of residents who worked at clinics across the state and came from a variety of education and training backgrounds. I particularly felt connected to them as well as my clinical team and the clients with whom I was working. I found I never was bored as there was always something new to learn in working with clients with diverse and complex presenting concerns within a primary integrated care context. Staying on at CHCI allowed me to continue to engage in challenging clinical work with a supportive clinical team. Working in an integrated care setting also provided me with the ability to better address my clients' needs as I had direct access to their medical providers. I was excited to stay on in a work environment where I felt I could continually grow and learn as a provider.

I had the opportunity to apply as training director and I sought it as a growth opportunity within my career. In working in this role, I have been able to work within a team that is passionate about learning and training. We think about ways to continually improve how we are preparing the next generation of behavioral health clinicians, and how we can best support the individuals who provide the training. Having been a resident, I have been able to apply my experience directly into thinking about ways to further advance the program.

For individuals who are passionate about engaging in work to address the needs of diverse and underserved populations, community health is a great setting to learn how to meet those needs. Working in a community health center, you not only work within a treatment team, but work as part of a network of providers in the surrounding community to best meet client needs. If a trainee is not particularly interested in community-based work, it is still a great training setting, because as a trainee you are exposed to a wide range of presenting concerns and a diverse client population, that from a learning perspective expands a trainee's training opportunities.

—Chelsea McIntosh, ABPP, Psy. D, Licensed Psychologist
Community Health Center, Inc. Postdoctoral Training Director



"...as the field evolves, working with students allows for everyone involved to gain not only new knowledge and skills, but also a deeper understanding of what other clinicians with different levels of training bring to patient care."



National Institute for Medical Assistant Advancement (NIMAA)

As noted in [Part I: Foundations of Team-Based Care](#), the role of medical assistant (MA) in high-performing teams has evolved considerably (Ladden, et al., 2013). **As of 2021, there were more than 743,500 MAs in the United States, with predictions of employment to grow by 16% from 2021 to 2031, faster than other occupations** (Bureau of Labor Statistics, 2022). They are a racially and ethnically diverse group, and come from the communities served by the health care organizations that hire them. According to the U.S. Census Bureau data for 2020 (U.S. Census Bureau, 2020/datausa.io), 48.7 % of MAs are White (Non-Hispanic), making that the most common race or ethnicity in the occupation. Those who identify as White (Hispanic) make up 16.4% of the MA workforce followed by people who identify as Black (14.4%), and Asian (4.6%). Women constitute 90.7% of MAs, with an average age of 36.8 years. Educational preparation for MAs varies from on-the-job training to certificate programs that range from several months to two years, the latter often part of an associate's degree program at a community college. Some programs are offered by for-profit schools, and can be expensive. Furthermore, states vary regarding educational requirements and oversight of MAs. As the role grows and changes, opportunities to learn new skills, especially skills suited to team-based care, are often limited.

In 2016, Community Health Center, Inc. (CHCI) and the Salud Family Health in Colorado launched a school to prepare MAs to work in Federally Qualified Health Centers within a high-performing model of team-based primary care. That school, National Institute for Medical Assistant Advancement (NIMAA), has taken a novel approach to MA preparation. NIMAA offers an 8-month online program with an on-site externship offered in collaboration with community health centers around the country. The program is offered twice per year, with start dates in the fall and spring. NIMAA provides the didactic content and the clinical site offers the on-site clinical externship portion of the program, creating a workforce pathway for the community health center. NIMAA is an especially attractive option for students and health centers in rural areas where MA programs may not be readily available.

In February 2021, NIMAA was accredited by the Accrediting Bureau of Health Education Schools (ABHES) (recognized by the U.S. Secretary of Education as a private,



“[Medical assistants] are a racially and ethnically diverse group, and come from the communities served by the health care organizations that hire them.”

non-profit, independent accrediting agency since 1969). located in Colorado, it also NIMAA is an approved partner with the National Healthcareer Association, the American Medical Technologists and the American Association of Medical Assistants and prepares all students to take a credentialing exam of their choice, depending on the state and organization in which they work: Certified Medical Assistant (CMA), Certified Clinical Medical Assistant (CCMA), and Registered Medical Assistant (RMA).

NIMAA Program Structure

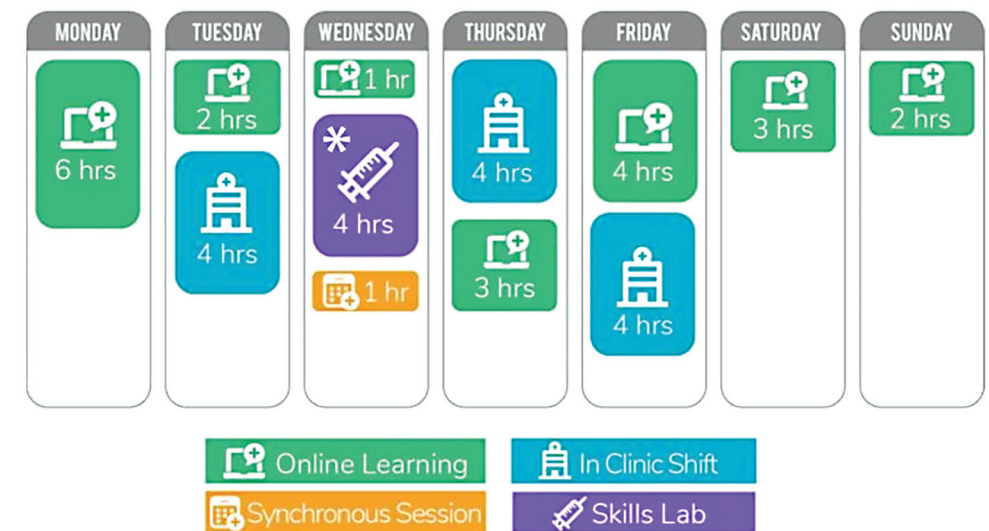
ABHES (ABHES, 2022) identifies 10 competencies to be achieved by students in accredited medical assistant programs (See Box 18.1). It also states that a Medical Assistant program must consist of at least 720 clock hours, including at least 160 clock hours in clinical experience, that is, an externship. (Externs are students, not employees.) The 8-month NIMAA program consists of 960 clock hours, with 240 of those hours in the clinical setting, exceeding the ABHES minimum requirements.

Table 18.1 Accrediting Bureau of Health Education Schools Competencies of Accredited Medical Assistant Programs with Examples

Accrediting Bureau of Health Education Schools— Competencies of Accredited Medical Assistant Programs with Examples	
Role of the MA: Identify general responsibilities and skills	Pharmacology: Identify parts of the prescription; know the purpose, effects and side effects of commonly prescribed medications
Anatomy and Physiology: Identify systems and their structures and functions	Administrative Procedures: Collect and process documents; navigate electronic health records systems
Medical Terminology: Define and use medical abbreviations	Clinical Procedures: Use sterilization technique, assist with procedures
Medical Law and Ethics: Documentation; HIPAA; liability	Medical Laboratory Procedures: Collect and process specimens; dispose of biohazardous waste

NIMAA and the health centers that host MA students (and potentially hire them upon program completion) establish a contractual agreement in which NIMAA provides the didactic education and the health centers provide hands-on clinical training. The program is divided into four seven-week sessions, or about 29 weeks, with 15–20 hours of online learning and 10–15 hours of clinical time for a total of 30–35 hours per week. Students are placed in the health center from week one. Figure 18.1 depicts a typical weekly schedule.

Figure 18.1 A Typical Weekly Schedule for the NIMAA Program



* This is an example schedule of a week that includes a skills lab, but skills labs do not occur every week of the NIMAA program.

The online learning is self-paced: each week, students are given didactic content that they have one week to complete, which includes knowledge checks. For the skills labs, students demonstrate the skills in the clinical setting with a site facilitator, and a remote instructor from NIMAA is responsible for signing off on the students' competency. During their clinical hours on-site, students work under the supervision of experienced preceptors. The synchronous seminar is held in real time via a video-conference platform, allowing up to 25 students to discuss course content. **Box 18.2** lists some of the basic content offered during the program. There is also a checklist of skills that students must demonstrate, for example, handling lab specimens and writing emails. Concepts related to team-based care are woven in throughout the curriculum and skills checklist.

Table 18.2: Sample Content of MA Curriculum

Sample Content of MA Curriculum	
Rooming patients	Working in an interprofessional team
Taking vital signs	Integrated team-based primary care
Teach-back at the end of visits	The MA role in care coordination
Communication skills	Health coaching
Agenda setting	Motivational interviewing
Goal setting	Population health
Self-management support	Management of a large panel
Venipuncture	Social determinants of health
Quality improvement	

About the Students

NIMAA students tend to be representative of the communities that the partner health center serves. During the 2022–2023 program year, 54% of NIMAA students reported their ethnicity as Hispanic/Latino, while 24% reported their race and ethnicity as White (Non-Hispanic). Students reported their race as: Black (18%), Native Hawaiian/Pacific Islander (6%), Native American (5%), two or more races (4%), and Asian (1%). From 2020 to 2022, most NIMAA students were native English speakers (83%), 13% were native Spanish speakers, and 1% had another native language, and 49% spoke a language in addition to English. As for the age range, 22% of students were in the 18–4 age range, 50% between 25 and 34, 18% between 35 and 44 years old, and 10% over age 45. Many older students have worked in health care in other entry level or non-clinical positions. About 94% of the students were female.

Summary of an Interview Conducted by The Colorado Health Foundation for a Case Study on NIMAA, 2022 (with permission)

An early NIMAA graduate, Desiray Lewis, joined the program in 2018, after having spent several semesters in a Colorado community college but was still unsure of her career. “I just felt like I was wasting my time and not moving towards a career,” she says. So she decided to apply for NIMAA after hearing about it from a family member who worked at Salud Family Health Center. “I had done a program to be a CNA but wasn’t familiar with this kind of program for MAs or even what a MA did.”

The \$6,000 tuition (note: the tuition has increased), she says, was “very reasonable,” even though she was living on a tight budget. Coming from a middle-class family with two other siblings, she notes that they didn’t have a lot of money, so she worked her way through college. She did the same with NIMAA. While attending NIMAA, she held a part-time job as a lifeguard. That kept her costs at bay. Plus, if she continued to work at Salud Family Health Center for two years, the health center would help pay off the remaining costs of her program after completing NIMAA. “I’m now debt-free and that’s really important to me,” she says.

Lewis worked in an entry-level role as a MA for just two years. Her days were filled with various tasks: scheduling appointments, taking blood samples, helping patients, supporting physicians, and providing vaccinations. “It was pretty non-stop from 8 to 5, but I loved it and I was learning constantly.” Now, she’s been promoted to be part of the administration team at Salud Family Health Center. She works with other administrative staff to oversee care at Salud’s 13 clinics, organizes vaccination programs, and helps manage daily administrative tasks. Still only 22 years of age, she’s keen to keep progressing in her career in healthcare.



Program Outcomes

In its most recent annual report to the accrediting body ABHES for July 1, 2022–June 30, 2023, NIMAA reported the program outcomes, including **student retention (87%) and job placement (74%)**. The benchmark for compliance is 70% minimum for each measure, which NIMAA exceeded. Although not required in the field, 84% of NIMAA students participate in the credentialing exam with 74% passing the exam. Despite the COVID-19 pandemic, or perhaps because of it, NIMAA has experienced growth in the number of students per year and the number of health centers that host students. **NIMAA enrolled 118 students in the 2023 spring cohort, a sharp increase from 35 students in the 2021 spring cohort, and putting NIMAA on track to enroll about 200 students each year.** Over 50 health centers in 13 states have developed partnerships with NIMAA to host externships for clinical training of medical assistants.



Upskilling MAs

Most MAs have not attended a program that prepares them to practice within a high performing primary care team in a community health center. Therefore, NIMAA developed upskilling courses for MAs, which are designed to help current MAs develop more advanced skills. Currently, upskilling courses are offered through CHCI's Weitzman Institute. The courses focus on interprofessional team-based care; immunizations; quality improvement; professionalism and effective communication; and introduction to health coaching.

NIMAA's upskilling courses led to a collaboration with CHCI and Community Care Cooperative (C3) in Massachusetts. C3 is a MassHealth Accountable Care Organization (ACO) created by health centers to better serve their communities. C3 contracted with NIMAA to deliver its team-based care course to medical assistants from a number of their member practices. At the same time, leadership from those health centers engaged in a series of discussions regarding the role of MAs in their practices, including the scope of the MA role, use of standing orders, financial compensation and career ladder opportunities for MAs, education of other team members on the role of MAs, and so on. The effort was so successful that C3 requested a second round of training and discussion.

NIMAA's approach to training new MAs and upskilling current MAs in partnership with health centers can yield big results for practices that are interested in maximizing the MA role. This type of innovation provides MA students and current MAs with a career ladder while supporting them and the partnering health centers in realizing the full potential of the role.

Testimony before the Subcommittee on Employment and Workplace Safety Committee on Health, Education, Labor and Pensions United States Senate

My name is Norma Quinones and I am the nursing services manager at Clinica Family Health, a community health center in Lafayette, Colorado that serves low-income individuals. I applied to Clinica Family Health as a Medical Assistant (MA) in 1992, when our organization had just one site with six exam rooms and about 25 employees. I have been able to grow with Clinica over the past 30 years and will never forget being given the opportunity to start my career as an MA. With Clinica's support, I became an LPN and worked as a nurse manager for several years before becoming the Nursing Services Manager. Part of my job is helping coordinate the NIMAA program at Clinica, which means I support future MAs on their own educational journeys.

Before working with NIMAA, we had trouble finding qualified MAs prepared to work in our demanding environment. Some who graduated from expensive programs incurred a lot of debt, making it hard for them to resist higher paying jobs in the for-profit sector. NIMAA's program has helped us build a workforce pathway within our own community, and reflective of our community. It provides an affordable option that allows students to work part-time while completing the program. It prepares graduates well for demanding primary care settings that desperately need MAs. It is a true "grow your own" model that provides opportunities for non-traditional students, single parents, recent immigrants, first generation high school graduates, or those re-entering the workforce at an older age. Nationally, 90% of MAs are female, and the majority are Black, Indigenous, or People of Color. NIMAA's program allows us to help participants begin a health career that would otherwise be out of reach for them, and earn a livable wage.

Over the past three years (2019–2022), Clinica has hosted 18 NIMAA externs. We hired 15 of those 18 upon graduation, and most are still with our organization. This is a very valuable workforce pathway and it is extremely rewarding to watch these students growing into their careers, as I did.

—Norma Quinones, LPN II, Nursing Services Manager,
Employee Health Coordinator, NIMAA Program Coordinator and Site Facilitator,
Clinica Family Health, Lafayette, Colorado

February 10, 2022

Conclusion

We hope that reading this section on training the next generation (Chapters 14, 15, 16, and 17) will inspire your organization to implement and sustain effective training programs. Through sharing several replicable models and training programs, we hope this part served as an introduction to how your organization can create your own clinical workforce pathway. Investing in the time and efforts to create a quality experience for students to increase their confidence and competence to care for the needs of underserved populations will positively impact the primary care workforce.

PART IV: Training the Next Generation

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"Joining your peers in training the next generation can be as simple as partnering with a local academic institution to take a cohort of two students for a semester of clinical rotations to as complex as sponsoring your own 12-month postgraduate residency program."





“We are charged with advancing health equity not just for our patients, but our target population and defined service area(s), reducing and eliminating health disparities across all ages and conditions, and incorporating strategies to address the social determinants of health, unmet needs, and social risk factors.”



PART V

CHAPTER 18: The Future



In the preceding chapters of this book, engaged experts in the organization and delivery of team-based care have identified key principles, strategies, and suggested roadmaps that others on the journey towards team-based care will hopefully find useful as they do their work. **Now we ask the questions: What is ahead for health centers in delivering on the full promise of highly effective, team-based, accessible primary care? How will we contribute to its implementation and advancement beyond community health centers? What can we offer to other health systems?** As we create the best possible future health in our country, we are

conscious that the roots of the health center movement as translated into both policy and practice include fundamental and key responsibilities that go far beyond the daily activities within the walls of our health centers. We are charged with advancing health equity not just for our patients, but our target population and defined service area(s), reducing and eliminating health disparities across all ages and conditions, and incorporating strategies to address the social determinants of health, unmet needs, and social risk factors. We know and must respond to the known contributors to rising early and mid-life mortality, specifically substance use disorders, alcohol and tobacco use, and cardiometabolic diseases along with contributing factors of loneliness and isolation. We have come through the COVID-19 pandemic and the related school closures and disruption to social networks to find a higher rate of “disaffected youth” and behavioral health issues than ever before. At the same time, we are called upon to address the environmental impact of climate change and the accompanying heat, floods, droughts, and dislocations that are accompanying it. If that weren’t enough, we are operating in a moment of time in the United States where we seem to have enormous discord and wildly divergent political beliefs on the best path forward for the country.



How do we maintain the optimism, energy, and drive that has carried this movement so far and use it to improve health and health care for the country at large? Our relentless focus on access to the highest quality primary care, while addressing and resolving adverse social determinants of health, is part of that path forward.

We will do this through research, engagement, and training those in practice today—both clinically and administratively—and those who will follow us. We will do it through a full commitment to ending discrimination and racism, and a commitment to recognizing all of our own individual and collective implicit biases. We will do it

through partnerships with each other, and with the local, state, and governmental bodies that support and impact the work of health centers.

We have a 60-year history as a healthcare movement. Lest anyone doubt our appetite for innovation in health care, we note that much of what has become mainstream in policy and health systems originated in the health center movement. Let us name just a few: integration of oral health and behavioral health into primary care, community-based residency and fellowship training for physicians, nurse practitioners (NPs) and physicians associates (PAs), and annually published quality and utilization “report cards” (Uniform Data System [UDS]) on individual health centers and the system as a whole. The health center movement has demonstrated over and over again its ability to organize and deliver care in new ways to address new health challenges from HIV to healthcare for the homeless to the COVID-19 epidemic. **How does advancing a model of team-based care advance the goal of ensuring high quality primary care is implemented for all people in the United States and how can health centers contribute to this goal?** We turn to the five objectives laid out by the National Academies of Sciences, Engineering, and Medicine (NASEM) report *Implementing High Quality Primary Care* in answering this question as we head into the future (NASEM, 2021, p. 1).



Health centers are making an important contribution to the National Institutes of Health (NIH) All of Us Research Program.

Recommendation 1:

Pay for primary care teams to care for people, not doctors to deliver services.

Health centers, thanks to now decades old policy developments that led Medicaid and Medicare to adopt first “cost-based reimbursement” and later “prospective rate setting” in the broad categories of medical, dental, and behavioral health care, are better aligned with this objective than most healthcare systems. As we have emphasized throughout this book, the health center team is an intentional, highly structured, activated unit of individuals with their specific roles and responsibilities that together, create an organized and proactive response to the needs of their patients and communities. That is not to say that this work is done; far from it. The roles and the demands on these teams have expanded, and payment even by Medicaid and Medicare has not been uniformly responsive or kept abreast of emerging needs. Scope of practice variations persist between states and commercial insurances vary in their approach to payment for services provided by primary care providers other than physicians. Practices have responded to key emerging needs by adding community health workers (see [Chapter 13](#) for more details) to improve chronic illness outcomes and specialized outreach staff to address maternal-infant health disparities. We have added specialized substance use disorder navigators and counselors in response to the opioid crisis, and created new positions to support patients and providers in taking advantage of telehealth and virtual care. Health centers continue to work with commercial and public health plans and insurers to educate them on the elements of a team-based care approach to primary care for underserved and vulnerable populations. A full discussion on payment reform is beyond the scope of this book, but it is clear public and private payers need to be accountable to fully reimburse health centers for their costs of providing primary care. The rapid rise of value-based care plans, with their emphasis on prevention, care management, and coordination of care offers new opportunity to health centers to strengthen and expand our model of team-based care. We note that Medicare has set a goal of having 100% of “original” Medicare beneficiaries and the vast majority of Medicaid beneficiaries in a care relationship with accountability for quality and total cost of care by 2030 (Centers for Medicare and Medicaid Services, 2022). Health centers across the country are engaging in innovative structures, from Accountable Care Organizations (ACOs) to the Medicare Realizing Equity, Access, and Community Health (REACH), Medicare Shared Savings Program (MSSP), and Making Care Primary as this frontier of innovation unfolds.

Recommendation 2:

Ensure that high-quality primary care is available to every individual and family in the community.

The NASEM report states that every individual and family, in every community, should have the opportunity to have a usual source of primary care (NASEM, 2021, p. 10). Health centers go further in this regard with their requirement to define a service area and a target population with that service, measure and categorize the level of need within that service area and the target population, and design their response in relationship to those needs. The very best model of team-based care is, however, inherently vulnerable to limits: the number of people that a team or a collection of teams in a health care can effectively care for, and the awareness and action of individuals to seek and establish care with a primary care provider/team. The NASEM recommendation calls for all payers to ask all covered individuals to declare a usual source of primary care annually, and for health centers, hospitals, and primary care practices to “assume and document an ongoing clinical relationships with the uninsured people they are treating”—a practice that is generally already standard in health centers (NASEM, 2021, p. 10). To address the capacity issue, the NASEM report calls for congressional action and United States Department of Health and Human Services (HHS) response to “target sustained investment in the creation of new health centers (including federally funded health centers, look-alikes, and school-based health centers), rural health clinics, and Indian Health Services facil-

ities in federally designated shortage areas” (NASEM, 2021, p. 10). To this, we would add the need to support the expansion of capacity, via new sites, staffs and services in those health centers that already exist through increased federal funding. Additionally, the NASEM report calls for the Centers for Medicare and Medicaid Services (CMS) to permanently support the allowances for innovations in telehealth and virtual care that were born of urgent necessity during the COVID-19 pandemic (NASEM, 2021, p. 11). CMS has responded with by making some of the telehealth innovations permanent, while designating others as expiring December, 2024 (Centers for Medicare and Medicaid Services, 2023). We encourage our readers to closely monitor their state Medicaid program policy briefs as well as the CMS determinations regarding both permanent and temporary changes to telehealth access and benefits that are of interest to health centers and impact the way we deploy our team-based care model. As we have described in this book, we have seen a profound impact of virtual and telehealth care, increasing access to both behavioral health and primary care services, including urgent care services, and believe that this is a key strategy to addressing many of the barriers to comprehensive primary care experienced by our health center patient populations.

Recommendation 3:

Train primary care teams where people live and work.

We hope the preceding chapters, and particularly [Part IV: Training the Next Generation](#), have communicated our enthusiasm and sense of urgency for health centers to be leaders in training the next generation of individuals who will be on the primary care team, as well as those who will create and support the complex infrastructure that sustains the primary care teams! The NASEM report calls for local, state, and federal agencies to expand and diversify the primary care workforce, strengthen interprofessional teams, and better align the workforce with the communities they serve—just as many of you are doing (NASEM, 2021, p. 12). Health centers shine in this area! **In 2023, 85.33% of the 1,363 federally funded health centers in the United States reported they provided health professions education and training that is hands-on, practical, or clinical, and they provided training to over 79,000 pre-graduate/certificate and postgraduate health professions students across the full spectrum of team members. Moreover, 20% of federally funded health centers directly sponsored a formal health professions training program** (Health Resources Services Administration [HRSA], 2023a). We need to encourage people in our communities—our patients and our neighbors—to consider primary care roles and professions and to design the economic, educational, and social systems to support and encourage their success. That’s why Community Health



Center, Inc. (CHCI) along with Salud Family Health created the National Institute for Medical Assistant Advancement (NIMAA), a fully accredited school for the education and training of medical assistants and why so many of you have instituted workforce training programs at every level (see [Chapter 17](#) for more details on NIMAA). **We have to address the pathway issues at all levels, including postgraduate residency and fellowship training.** The Affordable Care Act (ACA) took key steps forward with the authorization of both the Teaching Health Center legislation for physician and dentist residency training, and authorization of postgraduate residency training for nurse practitioners. Nearly 15 years later, the Teaching Health Center program is well established and 2,027 new primary care physicians and dentists have entered the workforce through this program (Health Resources and Services Administration [HRSA], 2023b). More than 100 federally funded health centers now directly sponsor postgraduate NP or NP/PA residency and fellowship programs.

The NASEM report specifically calls upon CMS, HRSA, Veteran Affairs, and states to support interprofessional training in community-based, primary care practice environments (NASEM, 2021, p. 13). Our work in advancing a high performing model of team-based care will be advanced by the implementation of NASEM recommendations for increased HRSA funding and redesign of graduate medical education (GME) payments to support the training of all members of the interprofessional primary care team *“including but not limited to nurse practitioners, physician associates, behavioral health specialists, pediatricians, and dental professionals”* (NASEM, 2021, p. 13). We stress again that a fundamental element of achieving health equity in health care is to achieve equity in representation of the people health centers care for, in the diversity of health professionals that care for them.

Recommendation 4:

Design information technology that services the patient, family and interprofessional care team.

Throughout this book, the importance of information technology and the meaningful use of data to support the patient, family and the team has been emphasized. We appreciate and are excited by the evolving frontiers of this work. Our work in quality improvement, population health, transitions in care, and interprofessional communication within the health center team and throughout our healthcare neighborhoods has been greatly enhanced, even while we still struggle with the tyranny of the clicks and the demands of the inbox. We recognize the potential for artificial intelligence (AI) to accelerate progress in all of these areas as one of the most exciting development for primary care. The recommendation of NASEM calls for the Office of the

National Coordinator for Health Information Technology (ONC) and CMS to *“plan for and adopt a comprehensive aggregate patient data system to enable primary care clinicians and interprofessional teams to easily access comprehensive patient data needed to provide whole person care”* (NASEM, 2021, p. 14). It recognizes that digital health and electronic health records create opportunity for improving care, but that they are also a contributor to clinician burn out. In working with many health centers across the country through our National Training and Technical Assistance Partners (NTTAP) on team-based care, we know that innovation is proceeding at a rapid pace. Our own health center is rapidly advancing its capacity for patients to engage with, navigate through, and participate in their care through self-scheduling, asynchronous communication with their team, interest-specific patient education, remote patient monitoring, and virtual care options wherever possible. As we write this conclusion, the one certainty is that the rapid advances in AI will present new opportunities and challenges for primary care that we have yet to fully appreciate.

Recommendation 5:

Ensure that high-quality primary care is implemented in the United States.

For all of us engaged in the work of health centers, from our board members to our staff, we take pride in knowing that we make a major contribution to ensuring that high quality primary care is delivered to our patients, while recognizing that it is far from available to all individuals and families in the United States. We also know that what we ourselves do falls short of our own goals for service, responsiveness, and effectiveness due to our own limited capacity, resource constraints, and perhaps our own implicit biases. Much of this book has been focused on enhancing, strengthening, and improving our delivery of care through a high performing team-based model. We continue to advocate for the resources and policy changes that increase our capacity to deliver such care, including virtually, while also taking responsibility upon ourselves, at the level of leadership, the team, board, and staff. Along with this, we have a responsibility to do the research and disseminate the results of that research to continue to inform policy. The United States Department of Health and Human Services (HHS) has been charged with establishing a Secretary’s Council on Primary Care to drive this work forward and to coordinate primary care policy across HHS agencies, with annual reports to Congress and the public on progress, including through the development of a primary care implementation scorecard based on the recommendations described above (NASEM, 2021, p. 15).



The 2nd score card, released in February 2022 (Jabbarpour et al., 2023), is somewhat bleak in its national report, concluding that on five core measures, the country has much work to do:

- **Financing:** The United States is systemically underinvesting in primary care.
- **Workforce:** The primary care physician workforce is shrinking and gaps in access to care appear to be growing.
- **Access:** The percentage of adults reporting they do not have a usual source of care is increasing.
- **Training:** Too few physicians are being trained in community settings, where most primary care takes place.
- **Research:** There is almost no federal funding available for primary care research.

The charge to health centers could not be more clear. On each of these measures we have both a mandate and a system on which to build, innovate, and expand.

Conclusion

We are collectively called upon to play a leading role in creating a future in which every individual, family, and community has access to high quality, team-based primary care that contributes to our vision of health equity, optimal health, and a fair and just society. The focus of this book—team-based care—is but an element of a healthy society that addresses the fundamental needs of people for food, shelter, safety, education, and a decent income—in short, meeting basic human needs. Investing in high quality primary care, including team-based care, will make a significant contribution towards our goal of a healthy and just society. Through it all, a focus on health equity is essential.

Every health center has a unique story, and an opportunity to chart its own course. Our CHCI story over the past 52 years has taken us from a single dental chair in a 2nd floor walk-up apartment to the creation of the Moses/Weitzman Health System (2023), a national primary care health system. Its roots in organizing and delivering comprehensive primary care now has breadth of programs in formal research, training, and education of health care workers in all 50 states and territories, a policy institute, and international engagement with other countries seeking to improve health outcomes (Barber, 2022). We admire

and salute your health center's individual story, as well as our collective stories, as we seek to advance health and health care for all people.

We applaud all those who are engaged in advancing knowledge, policy, and action that support the public good, as well as those who contribute through your practice, leadership, and/or research. We hope you approach your work with advancing team-based care in health centers with the same level of joy and purpose that we have experienced, and hope our wisdom through this book will inspire excellent and effective healthcare as a right, not a privilege.

PART V: The Future

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Kerry Bamrick, MBA, Executive Director, Consortium for Advanced Practice Providers

Kerry Bamrick is the Executive Director of The Consortium for Advanced Practice Providers (“the Consortium”). In this role, she serves as the key management leader of the Consortium. Bamrick is responsible for overseeing the administrative, fiscal, and technical, programs, and services of the Consortium while carrying out the strategic plan of the organization. As the Executive Director,

key responsibilities include oversight of the development, implementation, and operation of the Accreditation Commission of the organization in accord with the rules governing that Commission, supporting the business growth and development of accreditation business for the Consortium, and maintaining its Federal Recognition as an accreditor by the U.S. Department of Education. Over the last sixteen years, she has been directly involved in the growth and development of the organization including moving it from an informal group of six organizations to becoming its own 501c3. In addition, Bamrick was a member of the accreditation planning committee and contributed to the development of consortium’s accreditation standards. She served as both faculty and trainee in the online accreditation site visitor-training program.

Bamrick is a recognized leader in the area of postgraduate Nurse Practitioner/Physician Associate training. She has extensive experience in both managing postgraduate nurse practitioner residency training programs and serving as a content expert to organizations interested in implementing postgraduate APP residency and fellowship programs. Prior to becoming the Executive Director, she managed CHCI’s remotely hosted nurse practitioner and joint nurse practitioner/physician associate postgraduate training programs in the states of California, Hawaii, Illinois, Indiana, Massachusetts, New York, Oregon, Rhode Island, and Washington. Bamrick served as the Co-Principal Investigator for HRSA’s National Cooperative Agreement (NCA) on Clinical Workforce Development focused on providing training and technical assistance to health centers interested in transforming teams and training the next generation. Her passion and interest in this field is reflected in her work nationally.

Bamrick has an undergraduate degree from Merrimack College and a Master’s Degree in Business Administration from Western New England College. Read author contribution [Chapter 15](#).



Mary Blankson, DNP, APRN, FNP-C, FAAN, Chief Nursing Officer

Mary Blankson DNP, APRN, FNP-C, FAAN is the Chief Nursing Officer (CNO) for Community Health Center, Inc., (CHCI) overseeing diverse nursing services across the CHCI network, including primary care, health care for the homeless, and school based health services. As CNO she ensures the quality and expansion of nursing services, the development of nursing policy, and continuing nurse education. Mary also works collaboratively to ensure Joint

Commission and Patient Centered Medical Home compliance throughout CHCI.

Building upon her service in various mission organizations, Mary continued to develop her passion for meeting the needs of the underserved by earning her MSN at Yale University in 2005. Mary joined CHCI as a family nurse practitioner shortly after graduation. While at CHCI, Mary has served as the On-site Medical Director of the New London County Sites, the Vice President of the Medical Staff, the Chair of the Pharmacy and Therapeutics Committee, and has served as a preceptor for CHCI’s Nurse Practitioner Residency Program. She completed her DNP education at Johns Hopkins University in 2015 with her capstone focusing on “Increasing Identification and Treatment Referral of Individuals with Hepatitis C (HCV) in the Primary Care Setting Through Clinical Dashboards.” Mary is certified and holds professional membership in the American Association of Nurse Practitioners. She continues to support various quality improvement projects throughout the agency to increase the visibility of nursing’s contribution to the Medical Home. In 2017, Dr. Blankson was awarded an Honorary Doctor of Humane Letters degree by Quinnipiac University School of Nursing for her contribution to nursing and for helping meet the health care needs of the underserved. Read author contributions [Chapter 7](#) and [Chapter 8](#).



Veena Channamsetty, MD, Chief Medical Officer

Dr. Veena Channamsetty is the Chief Medical Officer of Community Health Center, Inc. (CHCI). In this role, she is responsible for the clinical leadership of a large staff of medical providers and caregivers for Connecticut’s largest Federally Qualified Health Center. She is responsible for the delivery of evidence-based medical standards, the medical staff recruitment and retention, and provider affairs. Dr. Channamsetty oversees the clinical and

non-clinical training, orientation, and onboarding for all new CHCI medical providers. With the vision of a stable and solid medical staff, Dr. Channamsetty coordinates clinical care with provider professional interests, promoting provider well-being and work-life balance, overseeing clinical and non-clinical affairs of Physicians, APRNs,

and Physician Assistants. Dr. Channamsetty is the President of the Medical Staff and the Chair of the Medical Quality Improvement Committee. She is a clinical preceptor for the APRN residency. Dr. Channamsetty works closely with the chiefs of Behavior Health, Dentistry, and Nursing to promote interprofessional and team-based care. She is responsible for ensuring Joint Commission and Patient Centered Medical Home compliance throughout CHCI. Read author contribution [Chapter 9](#).



Nicholas Ciaburri, BS, Director of Business Intelligence

Nicholas Ciaburri is the Director of Business Intelligence at the Moses/Weitzman Health System (MWHS). Since 2011, he has led a team that has developed a business intelligence dashboard and reporting platform for the organization. The team delivers actionable data to MWHS providers and leadership so that they can efficiently provide the highest quality of care possible. He also provides data to support the organization's quality improvement and research initiatives. He holds a Bachelor's degree in Computer Science from Northeastern University. Read author contribution [Chapter 4](#).



Charise Corsino, MA, Postgraduate Nurse Practitioner Residency Program Director

Charise Corsino is the Program Director for Community Health Center, Inc.'s (CHCI) Nurse Practitioner Residency Training Programs. In this role Charise manages the operations and growth of CHCI's NP Residency Programs which includes training programs for Family, Adult-Gerontology, Pediatric, and Psychiatric Mental Health Nurse Practitioners. In addition, Charise also serves an expert faculty and coach on the National Collaborative Agreement on Clinical Workforce Development funded through HRSA. In this role, Charise supports organizations in the planning, implementation, and evaluation of new postgraduate NP Residency Programs at FQHCs across the country. Charise has developed expertise in the development, planning, implementation and operation of postgraduate NP Residency Programs, particularly focused on the safety net setting. Charise also serves as a member on CHCI's Emerging Leadership Team as well as Weitzman's Education Programs Leadership team.

Charise joined CHCI in 2010 as the Program Manager for the Statewide Mobile Program and Community Wellness Programs, overseeing the organization's in-school dental program, Community HealthCorps program, and a portfolio community wellness programs. In 2012, Charise became the Director of Middlesex County Sites,

managing the daily operations of three of CHCI's primary care health center locations. She joined the Weitzman Institute in 2014 as a Program Manager for the NP Residency Programs. Charise completed training at the Dartmouth Institute and is a certified Clinical Microsystems coach. She also completed a 10-month Health Leadership Fellowship through the Connecticut Health Foundation focused on system-based strategies for reducing racial and ethnic health disparities in Connecticut.

Charise earned a Bachelor of Science in Health Care Management from the University of Connecticut's School of Business and a Masters of Arts degree in Health Communication from Emerson College in collaboration with Tufts University School of Medicine. Read author contribution [Chapter 15](#).



Tierney Giannotti, MPA, Senior Program Manager, Population Health, Moses Weitzman Health System

Tierney Giannotti is the Senior Program Manager for Population Health at the Moses/Weitzman Health System (MWHS), where she leads the agency's work on the movement to value based care. Tierney brings over 20 years' experience in data analysis and quality improvement to her role in proactively driving organizational change. Tierney is dedicated to using data to improve outcomes

for vulnerable populations. In this role she serves as the key programmatic leader for the PCMH+ program, develops reports to support clinical staff and oversees implementation of new strategies to improve clinical outcomes. Tierney collaborates with other departments at MWHS to develop strategies for improvement and to track and monitor performance.

Prior to joining CHCI, Tierney worked at UConn's Center for Excellence in Developmental Disabilities. There, she coordinated the Leadership Education in Neurodevelopmental Disabilities grant, helping to train the next generation of leaders in a variety of disciplines to work with children with disabilities. Her work also focused on improving systems of care for children with autism spectrum disorder and their families including serving as the Centers for Disease Control and Prevention's Act Early Ambassador for Connecticut, promoting their "Learn the Signs. Act Early." campaign. As a former data analyst, project coordinator and senior research associate at Qualidigm, Tierney was steeped in quality improvement and data analysis for ten years, focusing on the Medicaid population. She received BA from Johns Hopkins University and an MPA from the Robert F. Wagner Graduate School of Public Service at New York University. Read author contribution [Chapter 5](#).



Timothy Kearney, PhD, Chief Behavioral Health Officer

Dr. Kearney earned his BA with a combined major in Psychology and Spanish Literature at Yale University and pursued graduate work at Fuller Theological Seminary where he earned his MA (Theology) from the Graduate School of Theology and his Ph.D. (Clinical Psychology) from the Graduate School of Psychology. He has also completed the postgraduate Primary Care Behavioral Health training program at the University of Massachusetts Medical School, Worcester. He is a licensed psychologist in Connecticut.

He joined the Community Health Center, Inc.'s (CHCI's) behavioral health staff in 1998. He is the author of *Caring for Sexually Abused Children: A Handbook for Families and Churches* (Intervarsity Press, 2001). In addition to administrative and clinical leadership of the Behavioral Health programs at CHCI, Dr. Kearney supervises and trains postdoctoral psychology residents, co-leads psychotherapy groups with students and younger staff to train them in the provision of child group therapy, and provides direct client care with the clinical focus of providing care to children and adolescents and their families, especially those impacted by medical illness, trauma, and abuse. Read author contributions [Chapter 10](#) and [Chapter 16](#).



Kara Lewis, PharmD, Director of Clinical Pharmacy Services

Kara Lewis graduated from Duquesne University with a Bachelor of Science in Education and received her PharmD in 2005 from the University of Connecticut. She has experience in several health care settings including clinical trials, community pharmacy, long-term-care consulting, and pharmacy benefit management. She is part of an interdisciplinary team as the Director of Clinical Pharmacy Services at the Community Health Center, Inc. (CHCI),

in Connecticut. She clinically supports the 340B drug pricing program, teaches in the residency program, and has spearheaded new specialty medication services. She is a faculty member on the CHCI Weitzman Extension for Community Health Outcomes (ECHO), which provides support for primary care providers across the country seeking to gain expertise in HIV, HCV, and key populations care management. Read author contribution [Chapter 12](#).



Victoria Malvey, MS, Interprofessional Student Specialist

Victoria Malvey, MS, is the Interprofessional Student Specialist for Community Health Center, Inc. (CHCI). She earned her Bachelor's in Strategic Communication at Central Connecticut State University, and then went on to earn her Master's in Human Services at Purdue University. Prior to joining CHCI in 2021, Victoria worked as the first coordinator for all counselor student placements in a collegiate counseling firm, Ingenius Prep. She assisted in creat-

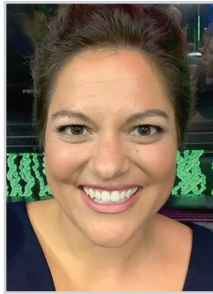
ing the operating procedure for the position within the company and supported all student placements. She then continued her career by joining Post University's academic success program, as part of a specialist team of academic counselors that spearheaded efforts to bring academically challenged students back to acceptable educational standing within the University. Through this, she assisted in the coordination of efforts for student success via communications with all academic Deans and the Provost. Continuing her career within higher education, Victoria then advanced to become a Matriculation Coordinator within Post University, providing support to incoming transfer students for a smooth matriculation into their new program. Victoria then joined CHCI in June of 2021 as the Student Specialist, working as sole management within the Human Resources team to onboard, offboard, and coordinate all student relations within the organization. She has continued to build upon the Playbook in her time at CHCI, as well as assist to build her skillset as a member of the Human Resources team. Read author contribution [Chapter 14](#).



Chelsea McIntosh, ABPP, Psy. D, Licensed Psychologist, Community Health Center, Inc. (CHCI) Postdoctoral Training Director

Chelsea McIntosh, PsyD is the Training Director for Community Health Center, Inc.'s (CHCI) Postdoctoral Psychology Residency Program, as well as the On-site Behavioral Health Director for the clinics located in Stamford and Norwalk. She was a previous resident in CHCI's program. Dr. McIntosh obtained her undergraduate

degree at Drew University and her doctorate in clinical psychology from Baylor University. Dr. McIntosh trained as a generalist, working across a diversity of settings such as probation, adolescent residential, university and other educational settings, as well as the outpatient setting. Her clinical interests focus on interpersonal, systems-based work, and the implementation of general practice, taking evidence-based treatment and adopting it to various populations and settings. An additional interest is the development of clinical identity and how it impacts ethical decision making and the therapeutic relationship. Read author contribution [Chapter 16](#).



Adriana Rojas, *Populations Health Project Manager*

Adriana Rojas (she/her) is a Population Health Project Manager and was integral in developing and implementing the Community Health Worker role at Community Health Center, Inc. (CHCI). She is also a trained quality improvement coach and has overseen numerous agency-wide initiatives. Adriana's current focus is implementing a system for Community Health Workers to improve colorectal cancer screening rates. She serves on the Community Health Worker Advisory Body for the state of Connecticut.

Adriana started at CHCI as an Executive Assistant and then joined the Weitzman Institute where she was a quality improvement coordinator before becoming a project manager where she oversaw a statewide grant that aimed to improve comprehensive care management, health equity, and behavioral health integration. Adriana holds a BA from Wesleyan University, where she majored in English and Sociology. Read author contribution [Chapter 13](#).



Elena Thomas Faulkner, MA, *Chief Executive Office of the National Institute for Medical Assistant Advancement (NIMAA)*

Elena Thomas Faulkner is the CEO of NIMAA. She brings a strong record of organizational leadership, management and development to the role, along with a deep commitment to and passion for working alongside underserved communities. Thomas Faulkner was previously the Chief Strategy Officer for Denver's La Clinica Tepeyac, Inc. Prior to her work at La Clinica Tepeyac, Thomas

Faulkner spent more than a decade with John Snow International (JSI), where she developed projects related to the health care safety net, access to care and capacity building. Previous to JSI, she held leadership positions with the Colorado Community Health Network and has worked extensively within and on issues of importance to the Latino community. She holds an MA in International Development from American University and a BA from the University of Colorado. Read author contribution [Chapter 17](#).



Sheela Tummala, DDS, MPH, *Chief Dental Officer*

Sheela Tummala, DDS, MPH is the Chief Dental Officer for the Community Health Center, Inc. (CHCI) Prior to joining CHCI in 2006, Dr. Tummala worked as a general dentist at Meri Care Dental in Meriden and also served as an on-site dental director since 2006. Dr. Tummala also worked in her own private practice in Woodbury until 2015.

In her role at CHCI, Dr. Tummala treats patients, supervises staff, and maintains the goals and needs of the staff. Dr. Tummala also serves as the Dental Quality Improvement Chairman for CHCI, where she is responsible for conducting meetings, writing policies, maintaining quality improvement, and assessing the needs for quality improvement from the patient and staff perspective.

Dr. Tummala has served on a number of committees such as the Electronic Dental Records Committee where she was responsible for the creation of templates in open dental and consent forms. Dr. Tummala, who has a passion for research, was involved in the research study "Side effects of Triazolam in Children" published in *American Academy of Pediatric Dentistry* 21:1, 1999. She is also involved in organizing many events such as the Mission of Mercy events at CHCI.

Dr. Tummala completed her DDS degree at New York University and her General Practice Residency at Jamaica Hospital in Queens, N.Y. She also completed her MPH at Western Kentucky University. Read author contribution [Chapter 11](#).



Deborah Ward, RN, *Quality Improvement Manager*

Deb has completed Clinical Microsystems* training at the Dartmouth Institute, receiving her Coaching Credentialing Certificate and currently is a Senior Coach for IEHSS. She has completed lean training at the Denver Health Lean Academy and certified as a Yellow Belt. She received certification in Relational Coordination from Brandeis University and trains staff in Motivational interviewing.

Deb Ward, a registered nurse and served as the Senior Quality Improvement Manager at Community Health Center, Inc.'s Weitzman Institute. Ms. Ward is CHCI's lead coach, responsible for providing ongoing support for all of CHCI's coaches and the continuing spread of Microsystem teams at CHCI. Deb is working with teams who focus on the development and spread of Team Based Care within the primary care setting and improving HIV care to specific teams in

Kentucky. Deb also coaches improvement work with IEHSS, working specifically with Cystic Fibrosis improvement work in Toronto and Boston. Read author contribution [Chapter 6](#).



Marie Yardis, MA, Access to Care Director

Marie Yardis is the Director of Access to Care at Community Health Center, Inc. As a leader of that department for the last 16 years, her goal is to do just that: ensure access to healthcare for everyone, while acknowledging and breaking down social determinant and health equity barriers in the process.

Marie graduated from New England College with a Bachelor of Science degree in Psychology and Educational Studies. She continued her education at Johnson & Whales University, obtaining her Master of Arts in Teaching. Marie's objective at work and in life is to develop and nurture authentic and meaningful relationships. Being a strong leader is incredibly important to Marie and helps put her education and experience to good use. She relies on her background in case management and training as a Community Health Worker Manager & Director to successfully coach her team members through daily patient support interactions. The ability to connect to people and communities in a genuine way is what drives the foundation of work that her teams are so committed to, which requires a mentor who is as passionate about the work they share.

Marie strives to continue expanding her teams, with a focus on Community Health Work and reducing health disparities. Read author contribution [Chapter 13](#).



Team-Based Primary Care in Health Centers

“Clinicians working in truly integrated primary care, and working together in pods, physically or virtually, must be willing to adapt to a different way of working and thinking about their practice.”

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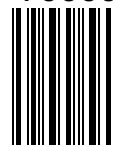
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