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A Community Health Worker Collaborative for Wyandotte County

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# Introduction

The purpose of this study was to investigate the development and progress of the Community Health Worker Collaborative. The Community Health Worker Collaborative for Wyandotte County is the result of 1.9 million dollar 3 year grant from the United Health Foundation and a partnership between the Community Health Council of Wyandotte County and KC Care Clinic. The partnership has expanded greatly since its inception in late 2015 and a team of community health workers now serve Wyandotte County exclusively. The Community Health Council is partnering with several other local agencies, the Metropolitan Community College, and many healthcare providers to help link Wyandotte’s residents to health and social services.

The CHW project has many component activities. These activities were grouped into the following categories to provide similarity to previous reports.

* Service-delivery
* Program promotion
* Collaboration building
* Quality Improvement
* Program Evaluation
* Advocacy for CHW infrastructure
* Funding

As a component of program evaluation this report covers collaboration building service-delivery, and quality improvement. Other listed activities—program promotion, advocacy, & funding—are outside the scope of this report.

Two different methods were used to describe the development of the collaboration and the current state of the project. The first method was qualitative in nature and included several key-informant interviews with Community Health Council staff and partnering organizations. These interviews covered many topics but largely focused on the relationship between the project and the partner organization. Additional Wyandotte-specific information was gleaned from the broader qualitative report produced for the HealthCare Foundation of Greater Kansas City that included interviews with CHWs, supervisors, and KC CARE staff. The second method included descriptive information pulled from annual reports and the BluePrint case management system that was pilot tested by the CHWs in the fall of 2016 and used for daily work starting January 1, 2017. This case management system allows for systematic data collection of enrollment questions, patient status, assessment, encounters, care plan items, and discharge questions.

The results from the qualitative interviews suggest overall satisfaction from partners with the CHW program while also identifying several key challenges that we describe below. The results from the quantitative work suggest a program that is providing key services to individuals to help improve their health and wellbeing.

# Methods

## Qualitative Methods

We conducted semi-structured interviews with 5 individuals involved in CHW project partnerships with the Community Health Council (CHC). These interviews took place over winter 2018 and ranged from 28 to 47 minutes. These semi-structured interviews encompassed questions about the relationship between the CHC/CHW project and partner organization and their perspectives on CHWs. The semi-structured nature of the interviews allowed us to draw comparisons while simultaneously capturing unique information from each respondent.

## Quantitative Methods

Quantitative data were taken from annual reports and the BluePrint Case Management system used by the Community Health workers since January 1, 2017. Data from annual reports provided by CHC was extracted and cataloged. The major components that were compiled were: goals, key metrics, activities, and lessons learned. Data from reports are reported in text and tables.

Information from BluePrint was sent to the research team on a quarterly basis. Extensive data cleaning was required as the data were not originally designed to be extracted, sent, and used for research purposes. BluePrint data cover the period of time from January 1, 2017 to January 10, 2018. The business unit was used to select clients receiving services through CHC-Wyandotte County. Information from all clients is included, with table notations for clients who were not yet discharged by the ending date. Descriptive statistics and tabulations were compiled by the researchers using Stata 14 and Excel.

# Qualitative Results

The interviews we conducted resulted in unique perspectives regarding the development of the Community Health Council’s (CHC) Wyandotte CHW team. Prior to receiving the grant from the United Health Foundation, individuals from the CHC of Wyandotte County and KC CARE began meeting to think through the possibility of establishing a group of community health workers to serve Wyandotte County.

*And all of a sudden, in the middle of that brainstorming, the United Health Foundation came with this [grant]…they actually contacted our mayor directly and said, you know, there is an opportunity for Kansas to get a very large grant, but it has to do with care coordination, and we would love to see Wyandotte going for it.*

The planning continued, and the grant was submitted and awarded to a partnership of CHC, and KC CARE. Due to budget constraints, they decided to narrow their original scope (which included CHWs working in Mental health centers, local jail, local hospitals and Safety net Clinics) to focus specifically on collaborating with safety net clinics and organizations with whom they had a prior relationship. This set a strong foundation for the growth of future relationships that would be implemented during the 3-year grant.

### Partner relationships.

The historically strong relationships with the partnering safety clinics contributed to the overwhelmingly positive reception toward community health workers:

*and [the partners] were like absolutely, we will love to have community health workers. And so we kind of explained what we were doing and what would that look like, and really there was no safety net clinic that will say no. They were like yeah, we really need them. We’re grateful that we don’t have to pay for it.*

Lucia Jones (CHC Project Director) set up monthly calls or emails with the clinics.

*In those calls I will have just a few questions, very simple—how is it going? Have you had any feedback from providers or patients about the service they are getting? What are the things we need to modify to make the referral process easy? And my goal truly was to be sure that they were comfortable and the providers feel buy-in into the concept, so they would either integrate the CHW, if the CHW was present in the clinic, or if he wasn’t, be sure that they had enough communication either with the team or with the CHW that they feel comfortable enough to say, well, I’m going to send you a client to work with, which is my client, that’s what the, you know, a provider, for a provider is important.*

Each clinic was different, though, and came with different preferences.

*Each clinic has their own personality, their own needs. And even the community they serve looks slightly different. Some clients have more complex needs coming from the clinics. Some clients are more receptive to services than from other clinics.*

From the partner perspective, these new collaborations were also viewed very positively.

*And we’ve been really blessed in the last two and a half years. It’s been really great.[…] And being a safety net clinic, I think [CHC] understand[s] the difficulties that face a lot of our patients and all the obstacles they have, and so when this community health worker program got initiated, we’re, yeah, thankfully, and we’re grateful to be one of the clinics that they work with, so it’s been a blessing.*

Since the initial establishment of the relationships between the Wyandotte CHWs and the partners, several changes have happened as these relationships evolved and sites figured out the best way to integrate CHWs. For example, some of the changes that partners reported included:

* Making a physical space for the CHW at the clinic
* Giving CHWs access to the electronic health record (EHR)
* Asking the CHW to share his/her caseload list with the clinic to facilitate communication and better continuity of care for shared patients
* Adding the CHW’s schedule to the overall daily clinic schedule so other providers know when the CHW is there

Partners explained that while monthly calls about the CHWs took time, the conversations were important to ensure successful partnerships and served as an important medium for concerns to be addressed:

*Q: Did you feel like during those meetings you were ever able to express concerns?*

*A: Yeah. And they were expressing concerns to me, too. I mean, they were able to recognize issues, too, so that felt better.*

### Partners see CHWs as beneficial to the health care team.

Partners universally believed in the value of CHWs and the crucial role in promoting the health of the populations they serve. The partners shared several areas in which the CHWs have been particularly effective at helping their patients:

* Utilities
* Taking medicines
* Scheduling and getting to appointments
* Food access
* Housing problems
* Language issues (CHWs who are bilingual were especially helpful)

One partner described what he/she saw as the importance of the “compassion piece” that CHWs bring to their work.

*And I think there was just…what I saw in ours was just a big compassion piece. Or, you know, like signing up for Medicare or whatever, the forms are difficult and it drives me nuts. And she was so patient with them. And I think that’s partly because she’d probably done it herself and been frustrated with it. So I appreciate that sort of thing.*

One partner expressed his/her transformation in understanding about CHWs through the involvement of a CHW at their clinic:

*so even though I’d heard about a community health worker, now I’m really starting to understand what they do and their value. It made sense academically to me, but… The fact that she speaks their language, that she understands the neighborhood. There’s so much more that I, I don’t know, that just makes that connection with the patient more powerful. But yeah, I’m learning a lot from them.*

## Improving the chances of success.

Despite the clear benefits of working with CHWs, partners described three common challenges to effectively partnering with CHWs: (1) ensuring provider knowledge of CHWs and their role; (2) integrating CHWs into the care team despite lack of physical presence; and (3) integrating CHW work and referrals into the clinic workflow.

### Provider Knowledge of CHWs and the CHW Role

Partners described that some providers at their clinics did not clearly or fully understand the role of a community health worker. At times, this led to frustration and difficulty working with CHWs:

*The provider wanted [the CHW] to be essentially a patient navigator for [his patient] to make sure he went to his appointments. I think he needed treatment for Hep C as well. And [the CHW] is not technically a patient navigator. I mean, if a patient’s ready to have her help, she can definitely help the patient navigate the system, but if they’re not to the point in their lives where they’re ready to take care of themselves to that extent she can’t really hold their hand and do that for them. And the provider in this case, instead of understanding that, saw it as a failure of [the CHW]. It’s not a failure of [CHW]. It’s not necessarily a failure of the patient. It’s just where we are.*

*So I think that there has to be a desire from the partner or a buy-in into the role of the community health worker, number one. If they don’t understand what [CHWs] do and how important they are, then they will not be providing…they will not be doing referrals properly…*

Some partners felt that some of their providers saw CHWs as a place to send their complicated patients, or when they got frustrated with a patient:

*I mean, there’s some resources and things [CHWs] can do, but they’re not here to fix the problems that overwhelm us. That’s not the role. That should have been said directly to the providers so that they understood.*

Sometimes there was also confusion about how what a CHW does differs from social workers.

*There was a social worker there most of the time, and then a community health worker, so they kind of felt like they were overlapping a little bit some of the time when they were there. But the community health worker, they started figuring out their roles and who could do what most effectively.*

*I think for me, to be quite honest, that line between what does a social worker do and what does a community health worker do is really close. And when you don’t have a social worker, I think your hope is that you take that community health worker probably further than they can go. So helping everybody understand this is like your educated neighbor, almost, I think that’s helpful. But once that training has been done and that person, like I said, we—I came to realize, at least, that she did have a lot of knowledge about how to make the community work.*

Clarity about the role was also related to the amount of time CHWs spent in clinic. Since CHWs primarily work in their communities, most spent only one day a week at their clinic. However, the lack of consistent CHW presence also created challenges for clinics:

Q: *So when you say you feel like it was really important for the community health workers to be there in the clinic, why?*

*A: Well, part of it was I think this role was new to our providers, and I’ve seen it happen as new providers come on, they don’t really understand how many things a community health worker can help with. […] So I think it just was an important part of getting them integrated into our clinic. The staff understood the role and the providers understood the role and trusted them so that when they’re not there we could still go you know what, this would be a great patient for the CHW.*

### CHW Presence at Clinic + Integration into Team

As mentioned briefly in the previous section, CHW presence and participation in the team was an ongoing tension. Providers wished that CHWs could be present in the clinics more frequently, but they also recognized that CHWs needed to be out in the community to do their work effectively.

Partners felt that the inconsistent CHW presence had several effects. One effect was that referrals or handoffs from the provider to the CHW was more difficult:

*But if there was a community health worker here, then it would be really great just to have like a less than one minute handoff between patients. Like if they see the patient first and they hand them off to me, and they’re like hey, we reviewed this and this and this, they’re really struggling right now, they can’t pay their bills, so the last thing on their priority list is taking their medicines, or purchasing their medicines. Well, that changes how I provide healthcare for them. That changes what prescriptions I want to give them or what to prescribe them, if I have that knowledge. And so on the flip side if, you know—well, I think I gave an example of the flip side. Like if I talked about a certain kind of diet or something, then I can hand that off to the community health worker in a seamless way.*

Perhaps more consequential, the lack of presence made integration into the clinic team more difficult.

*We now have a community health worker two half days a week, and that’s in clinic. That’s varied a little bit. We found, especially in the beginning, it was really important to have them there in clinic. And I would have them go in and see all of my patients in the beginning just to get a feel for what they could do and would do, and help them feel like part of the team. So that’s one way we’ve done it.*

Finally, the infrequent presence coupled with open and closed referrals sometimes made connecting with a CHW confusing.

*A couple of times [the CHWs] would get behind. […] so they would close their referrals, like say don’t send us any referrals until we get this stuff caught up. So I appreciate that, but then I think what it could do is kind of make us all sit back and then not refer when it was open again. And that communication was probably my fault, but again, […] they would say please close it, now it’s open again, and was that completely communicated to all the part-time people in the clinic? I don’t know. For us it was clunky.*

When CHWs were in clinic, the relationship between the CHW and the provider was improved:

*when you have a CHW in the clinic, it’s easier also because the relationship between the provider and the CHW is super important…[it] improves the relationship between those two individuals, and they become more of a collaborative. And also invites the CHW to feel comfortable in contacting the provider when there is something that is not going right. So when you just receive a paper referral and you don’t see the face of the physician, you probably, especially if you’re a CHW, you probably feel like oh, I don’t want to reach out to that person. It’s kind of like a higher level education. Is he going to question my judgment? But when they develop a relationship, the CHW feels comfortable in reaching back and saying hey, Dr. [Name] for example, I feel concerned about this client. This is what I’m finding out. I want to give you feedback. And then it’s an equal communication, and it makes it so much better for the client, and for the CHW and the provider. So I think that that’s very important.*

### Integrating CHW/work into clinic workflow

Finally, a related but slightly different challenge partners reported had to do with more of the practical or logistical challenges of integrating CHWs into their clinic workflow. Partners talked about experimenting with different workflows:

*So really finding a rhythm where okay, they know when they can go in, and then they’re part of the team enough that okay, they understand that yeah, it’s okay for me to go in while the provider is doing this other thing […] So getting them to be part of the team that way. There’s been some providers that are quicker to adopt the use of community health workers than others.*

Some clinics had to experiment with developing the best trigger for a CHW referral:

*So I think in the past what was happening with [CHW]—and this wasn’t with every case, but happening more often than we would like—is that a provider might be so overwhelmed that that’s the trigger. That’s not a very helpful referral. A helpful referral would be a specific question or need.*

[on referrals:] *And it’s been…that’s probably an area that we’ve struggled with just a little […] we need to make sure that everybody knows the process. So yeah, there’s a form, and we’ll fax the form, but there’s also a referral coordinator that can send those. And sometimes, I admit, I will call somebody’s cell phone, like this is kind of, I’ve got a patient here. I just did it last week. Q: Calling the community health worker’s cell phone? A: Mm-hmm, yeah. Like I know you’re not here, but I have somebody who really needs you. So different ways of making referrals. But yeah, the faxed referral form, we’re not sending the form through the electronic medical record right now.*

The electronic health records have also created some logistical problems for integrating clinic work with CHW work, as the CHWs used a different documentation system.

*that makes it harder because when the community health workers meet with the client, they have to document it, and currently they’re documenting on their own electronic health record, and we currently don’t have access to that electronic health record. And so because of that, the community health worker, when they do document for our patients, they have to document on that in Blueprint, but they also have to send me like a separate email or call me to let me know about a specific scenario, as opposed to if I had access to that, I could just log in and read it or whatever.*

Even when they technically had access to EMR, could still be challenging:

*We could also email our CHW directly, and we could also send a task in our EMR. I think it was more challenging for her to get into our EMR, although we gave her permissions. Something about her computer and getting into it, that was challenging. But that still was a good way to document in our EMR that we did it. So ideally what should have happened was that we would put it in our EMR. We actually put their form as a document loaded into our computer so it would preload the essential things, which was good.*

### Lessons learned.

Partners were also asked what advice or suggestion they would offer to another organization or clinic that was considering a partnership with CHWs. Here are a few of their insights:

*Oh, a good question. That they’re great. Embrace [CHWs] as part of your healthcare team. They’re probably more valuable than you think. And yeah, they’re great people. I have nothing but good things to say. It’s a great program. To utilize them. It’s worth doing. It’s worth spending the extra time. You have…every provider probably has a mental list of certain patients that they just really are having a hard time getting through to, and so, I don’t know, doctors are really arrogant a lot of times, and so it’s like we just keep on trying, trying, trying, and trying our own ways. But just humble yourself and recognize that the community health worker can probably do a better job than you, and could probably get through to this patient that you’re not able to get through to. And that patient that is needing help and you’re not able to give them help for various reasons, just to utilize them and have a low threshold to refer to the community health worker.*

*Prepare your providers for thinking about the things that she could do […] So there’s a lot of prep […] that you’d want to do. Not a lot, but some prep just so your lens can accommodate the questions and the framework that would allow [the CHW’s] work to be successful.*

*Well, for new programs I’m always one to try to find a couple people to really champion it. That’s been my way of doing lots of new things. You have a couple of people that are really flexible and willing to do something a little different and see the value, and once they start having great results and talking about how good this is, then before you know it you have other people asking for it. […] And have that [CHW] there with your champions as much as possible, have them be present in the beginning stages. It’s harder as they get busier because their work is out in the community and not in the clinic. But in the beginning they need to spend time with the organization so that everybody there can integrate them into the team.*

### Ongoing concerns + future directions

Sustainability of this project and future funding is a central concern on everybody’s minds.

*I really wish and hope that we’ll be able to continue to work with community health workers. I think it’s very valuable for our patients and their families. I’m just really worried, honestly, that because of reliance on grant funding that it’s not sustainable. And I hate it when things come—and it happens with grants all the time. I get grants and do things with them, and then the money goes away, and sometimes you feel like okay, not only did I maybe not do any good, did I make things worse off than they were before. […] Yes. I’m worried about the sustainability, and this continued reliance on grant funding. So advocate, advocate. Lots of good data. That would be my advice.*

It is also difficult to show a clear return on Investment, according to partners:

*I think part of what I’ve seen is it’s difficult to show a return on investment. So I have a lot of great stories to share. It’s difficult to really prove that that family is going to the ER less. […] Right, and I know there’s some data about it, but the data that…I mean, it’s all self-report and it’s just not really robust data, in my opinion. If I was sitting reviewing cost benefit, I would like to see some stronger data for what they’re able to do. And like any community project, I think they’re trying to be in a service role, and then you want them collecting all this data, too. But I would like to see the health systems come together and share some data related to ER utilization in particular, and readmission rates.*

Despite funding and sustainability challenges, all the partners were in agreement about the value of CHWs and their unique contributions to improving the health of individuals and communities:

*I wish there were more [CHWs]. I wish that somebody paid for their services in a way that made sense so that there could be more of them. I think the clinics that we work in, the social determinants of health are affecting way more of the family’s health than whatever little part I can do in the office.*

## Key Wyandotte-specific Insights from CHWs + KC CARE Leadership Interviews

There was a sense among the Wyandotte CHW team that their work and their jobs were “different” than other CHWs employed by KC CARE who were working in other areas.

*I just feel like community health workers in Wyandotte have different—we work differently than the ones that are at KC CARE Clinic. So our jobs are different.*

Respondents shared multiple factors impacting their work and making it *different.* One was the population of clients that they served in Wyandotte, who were generally high-need.

*On [our] team, I'm going to help you to find a primary care physician, but then I'm going to follow-up with you because, you know, since you don't speak English, you might need me to go a couple of times more to your appointments. And by the way, I'm going to go with you to apply for housing and for the food stamps and for Medicaid. So a case that on the—and we're talking about also Wyandotte, which is one of the—if you see the ranking of health for all Kansas, Wyandotte is the last one. So we are talking about patients that have like really high needs and that combined with a lot of patients—over 50% of the overall caseload speaks Spanish or other languages. And I would dare to say more than 50%. So that adds a layer of work to the CHWs.*

This creates workflow problems (how to get work done when interrupted by walk-in clients):

*So those are the things that kind of bring a little bit of frustration because sometimes it has happened to me that, okay, say I had to document on Friday and I could not because along came two people, and they're unannounced. They don't have an appointment with me and they come and they say, "Oh, can you help me please? My line has been turned off" and this and this and that. And of course, I'm going to help them, but I spend like 30, 40 minutes trying to call places.*

It also creates particular burnout concerns and pressures:

*I think our Wyandotte team struggled a little have, like, a little stronger with [burnout].*

Clients’ needs in Wyandotte are generally overwhelming:

*even bringing more CHWs will help—because if you have 15 CHWs, I can guarantee you that at this point, 15 CHWs will be with super high caseloads.*

Finally, the Wyandotte CHW team was also unique in that they work together more closely as a team—they are physically located together, in an open space design that facilitates closeness.

*when you are here at Wyandotte, …the… team is interacting…nine or eight hours daily…We are eating together. The relationship that we have is more closer than maybe other CHWs and other supervisor that are like apart, right?*

# Quantitative Results

### Goals and Metrics

The overall goals of the project as stated in the 2017 interim report were:

* Better health care through individualized coordinated care and coaching clients.
* Better health through utilization of preventive care and chronic disease management.
* Reduced costs through reduction of non-emergent ED visits and increased access to medications.

These goals were operationalized using several different metrics. The evolution of these metrics across time is shown below in Table 1. Seven different metrics were reported in Interim and Final reports. An important note is a change in the mechanisms of data collection over time, with some of the differences between the 2016 baseline and 2017 interim numbers being due to this change. According to the numbers tabulated for the reports, five targets were met by the time of the interim final report, one is still awaiting data collection, and one was not met. However, the unmet target is likely due to a ceiling effect. The goal was for at least 50% of clients to experience increased motivations. When clients were asked 27% reported being more motivated and 58% reported maintaining a high level of motivation. Given that 58% of clients reported being highly motivated (top of rating scale) upon being enrolled in the project it would have been impossible to meet at 50% threshold of improved motivation.

#### Table Evolution of project metrics over time based on Annual Reports

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Metric | Target | 2016 Baseline | 2017 Interim | 2017 Final Report  | 2018 Interim(10/17-3/18) |
| Number of clients who achieve a service plan goal while working with CHW. | 90% of clients who start a service plan will achieve one goal | 91% | 83% (289/350) | 92% (351/382)BluePrint: 313/335 (93.4%)Spreadsht: 38/47 (80.9%) | 92.95% (343/369) |
| Number of clients linked to a medical home | 80% of clients who did not have a medical home will establish one | 91% | 96% (124/129) | C2% (109/118)BluePrint: 83/91 (91.2%)Spreadsht: 26/27 (96.3%) | 78.72% (74/94[[1]](#footnote-1))  |
| Number of clients that report being more confident and motivated about their health care. | 50% of clients report feeling more confident[[2]](#footnote-2) and motivated about their health care | 20% more confident10% more motivated | 67% more motivated | 27% more motivated(36/135)BluePrint: 31/129 (24.0%)Spreadsht: 5/6 (83.3%)58% maintained high motivation(78/135)BluePrint: 77/129 (59.7%)Spreadsht: 1/6 (16.7%) | 75% (42/56) |
| Number of clients that report improvement in health status | 50% of clients report improvement in health status | 60% | 57% (45/79) | 62% reported improvement(85/137)BluePrint-80/130 (61.5%)Spreadsht- 5/7 (71.4%)9% maintained high health (12/137)BluePrint-12/130 (9.2%)Spreadsht- 0/7 (0%) | 52.83% (28/53)  |
| Number of clients who gain access to medications through different programs. | 80% of clients who reported difficulty obtaining medication will gain access to medication | 98% | 90% (57/63) | 89% (50/56) BluePrint-33/38 (86.8%)Spreadsht- 17/18 (94.4%) | 87.18% (34/39)  |
| Number of clients that report not revisiting the ED 90 days after initial visit with CHW. | 75% of clients who previously used the ED for non-emergency visits will not revisit the ED within 90 days. | 86% | 96% (23/24) | 100% (15/15)Clients Reduced ED utilization: 12%Clients Maintained no ED utilization with zero visits: 81% | 96.36%(53/55)  |

### BluePrint Data

Using data from the BluePrint system, we can illustrate additional outcomes. Individuals who enrolled in the program were given an assessment by a CHW and also asked additional questions about their health and use of healthcare. The same process was also followed (with minor differences) at discharge. Of clients who were also successfully discharged: 108 were missing both assessments (the majority of whom were enrolled during the first two months of 2017), 164 were missing discharge assessments, and the remaining 122 clients has at least one assessment with at least one complete domain. Given that the incentive for clients to complete an entire discharge assessment is very low, these values are not unexpected.

Each assessment included 13 domains, each of which was scored on a 5-point scale with higher numbers indicating higher levels of self-sufficiency. The potential range of scores was [13, 65]. On average, clients had assessed needs in nearly 4 of 13 categories and these needs were relatively evenly split between medical and social. Among clients with assessments (including those with incomplete domains) at enrollment and discharge, the average score increase was 4.85 points (SD 9.11). Among clients who additionally had complete assessments (no missing domains), 87% had better self-sufficiency scores at discharge, 5.22% had equivalent scores and the average increase in scores was 5.86 (SD 5.766).

The following charts compare client scores for those who completed the program (using intention-to-treat) by domain area. For direct health needs, the medical category showed the largest improvement. Medical needs were assessed for 39.8% of clients and dental needs were assessed for 38.8% of clients. Mental health, substance abuse, and medication adherence needs were less commonly (7-18%) assessed.

#### Figure Sufficiency scores for direct health needs

Other common needs were health insurance (43.7%), income (42.9%), medication cost (29.2%), and transportation (22.6%). Improvement was also shown for these categories.

#### Figure Sufficiency scores for healthcare access needs

The remaining categories were also frequently assessed for clients: education (53.3%), language (44.4%), food and household items (30.1%), and housing (11.7%). With the exception of food and household items, these categories showed relatively less improvement than the others. This may reflect prioritization by clients and CHWs, availability of resources in these areas, or the length of time to create meaningful change in some areas (such as language).

#### Figure Sufficiency scores for basic necessities

At discharge fewer individuals reported visiting the ED or having an inpatient hospital stay while enrolled than during the 90 days prior to enrollment. Significantly fewer clients reported having at least one mentally or physically health days in the past month at discharge than at enrollment.

#### Figure Differences in utilization and unhealthy days

Clients were also asked several questions about their health status, satisfaction with their health, motivation to be healthy, health-related self-efficacy, stress and social support. All of these indicators moved in a positive direction—in the direction of better health—with one exception. More individuals report lower health-related self-efficacy, but the difference was relatively small. The specific question asked respondents how true the following statement is “When I am confronted with a health problem, I can usually find a solution.” At discharge, fewer clients report this statement to be “exactly true” than at enrollment. However, 84.8% of clients reported the same or higher levels of self-efficacy.

Results for health status, satisfaction with health and stress were particularly strong. Many fewer clients reported poor/fair health at discharge than at enrollment, and many fewer reported being unsatisfied with their health. The question about stress, “In the last month, how often have you felt difficulties were piling up so high you could not overcome them,” is answered with frequencies. At discharge many fewer patients report feeling this way fairly often or very often than at enrollment.

#### Figure Differences in health status and related concepts

### Patient Characteristics

Hundreds of clients have been served by the CHW project in Wyandotte County. The table below gives the number of clients served aggregated to different time periods. After an initial ramping up period, around 600 clients per year are currently being served by the project. From project inception in October 2015, growth was steady until the end of year 1. In year 2, the project expanded greatly, and increase of 53% from year 1.

#### Table Number of clients served by the CHW project in Wyandotte County.

|  |  |  |
| --- | --- | --- |
| Time Period | Number of Clients | Data Source |
| May 2016-September 2016 (5 months) | 304 | Interim Report |
| October 2016-March 2017 (6 months) | 340 | Interim Report |
| Full Year 1 (12 months) | 384 | Interim Report |
| Full Year 2 (12 months) | 589  | Final Report |
| Total Served (October 2015-September 2017) | 939 | Final Report |

Enrollment did change somewhat over time and there might be seasonal patterns or changes based on turnover, partner acquisition or other factors. The figure below tracks the number of patients enrolled over the course of 2017. Given that the system began to be used on January 1, 2017, the high number of enrollment in January and February are expected.

#### Figure New enrollments by month

Discharge patterns over time also exhibit some changes. There were very few discharges during the first few months of using BluePrint.

#### Figure Discharges by month

Fully 1,200 patients had been entered into the BluePrint database as of January 10, 2018. Of this number the completed statuses are given in the table below. Many potential patients were lost because of failed outreach or failed referrals. Of these individuals, 54% refused services directly, 38.5% were unreachable, 7% did not have sufficient contact information, and 1% were out of scope. There were 226 individuals listed as being currently enrolled, referred, or outreaching. A successful discharge is one where the patient completes at least one care plan goal with their CHW, 32.8% of the total. Notably, there were relatively few unsuccessful discharges or missing data.

#### Table Patient status (N=1200)

|  |  |  |
| --- | --- | --- |
| Status | Frequency | Percent |
| Failed Outreach or Referral | 483  | 40.3% |
| Currently Enrolled/ Outreaching/Referred | 226 | 18.8% |
| Successful Discharge | 394 | 32.8% |
| Unsuccessful Discharge | 59  | 4.9% |
| Discharged but unknown (missing) | 38  | 3.2% |

Patient characteristics (successfully discharged, currently enrolled, and outreaching/referred) from the Enrollment Questions roughly mirror the distributions found in Wyandotte County as a whole although women are slightly overrepresented in the patient population compared to the county (60% female). The average age among patients is 37.4 years (SD 19.7). A broad age range is reported, up to age 87.

#### Table Demographic characteristics of patients (N=620)

|  |  |
| --- | --- |
| Characteristic | BluePrintMean (SD) or Percent |
| Female | 67.6% |
| Gender Identity |  |
| Female | 53.6% |
| Male | 26.6% |
| Unknown | 19.8% |
| Race |  |
| White | 32.9% |
| Asian | 21.6% |
| Other | 18.4% |
| Missing | 12.4% |
| Black/African American | 12.3% |
| American Indian/Alaska Native | 1.1% |
| Unreported/refused to report | 1.1% |
| Native Hawaiian | 0.2% |
| Language |  |
| Spanish | 33.6% |
| English | 19.2% |
| Missing | 13.6% |
| Swahili | 7.7% |
| Nepali | 7.6% |
| Burmese | 6.0% |
| Other | 2.9% |
| Arabic | 1.8% |
| Chin - Hakha | 1.8% |
| Chin - Lutuv | 1.8% |
| Zotung Chin | 1.3% |
| Somali | 1.0% |
| Karen | 0.7% |
| Kinyardwanda | 0.5% |
| Persian | 0.3% |
| Amharic | 0.2% |
| French | 0.2% |
| Sami | 0.2% |
| Tatar | 0.2% |

Determining the average length of enrollment depends on a few factors and exactly which fields have been used to enter the information. Using only successfully discharged patients, the average number of days enrolled was 93.39 (SD 70.76) and the median was 78 days. The full range was [0, 344] and interquartile range was [47, 112]. Among unsuccessfully discharged patients, the average was 76.07 days (SD 38.64) and the median was 64.5 days. As would be expected both the full range [5, 196] and the interquartile range [53.5, 93] were narrower than for patients who successfully completed the program. Given the spread of the data and the unlikeliness of the extreme values, the interquartile range is likely to be the best description of the length of enrollment.

### Activities

Service-delivery includes the people providing the services, CHWs, the service activities, such as home visits, and the individuals receiving the services, clients. The Wyandotte County CHW program now has 7 CHWs. One supervisor is located on-site. In addition to training provided on-site and at KC CARE, each CHW also completes the MCC Care Coordination Certificate. These requirements are higher than many other CHW programs. CHWs in Wyandotte County also connect patients to a wide array of health and social services compared to most other programs that have only patients with certain diagnosed conditions or only connect patients to necessary medical care.

The first set of results in this section discuss the content of the CHWs’ activities. From a work-flow perspective, after the CHWs complete each patient’s assessment, they discuss setting goals with the patients. From the list of categories, CHWs may pick items to add to the Care Plan for the patient. Care Plan item categories mirror the categories on the intake assessment: medical, dental, mental health, substance abuse, medication cost, medication adherence, health insurance, income, housing, food and household items, transportation, adults education, and language. There was a statistically significant correlation at the 1% level between the number of care plan activities and the number of days enrolled. An additional care plan activity was associated with an additional 4 days of enrollment on average after controlling for final discharge status (would expect unsuccessful discharges to be shorter) and CHW (proxy for caseloads and patient population).

On average, successfully discharged patients had 3.2 care plan items (SD 2.1). Among currently enrolled/outreaching/referred patients the average was 2.45 (SD 2.74) and we would expect a slightly lower number because many of the patients haven’t completed enrollment and goal setting with their CHWs. Among unsuccessfully discharged patients the average number of activities was 2.59 (SD 1.96).

The table below gives the percentages of total activities based on patient status and the average number of care plan items per category per patient. The most common care plan activities were medical, dental, and food and household items. This means that CHWs spend much of their effort on activities in these categories. On average most patients had slightly more than one activity per category. Categories with the highest average number of activities differed slightly by discharge status but medical had the highest average number of activities across the board.

#### Table Percent of activities in different categories and average number of activities per category

|  |  |  |  |
| --- | --- | --- | --- |
|  | Successful Discharge | Currently Enrolled/ Outreaching/Referred | Unsuccessful Discharge |
|  | Percent of CP activities | Average per patient | Percent of CP activities | Average per patient | Percent of CP activities | Average per patient |
| Medical | 25.5% | 1.48 | 20.3% | 1.58 | 29.2% | 1.26 |
| Dental | 11.7% | 1.05 | 10.0% | 1.02 | 13.1% | 1.00 |
| Mental Health | 2.3% | 1.08 | 2.8% | 1.14 | 4.6% | 1.00 |
| Substance Abuse | 0.3% | 1.00 | 0.6% | 1.33 | 1.5% | 1.00 |
| Medication Cost | 4.7% | 1.04 | 5.5% | 1.29 | 3.8% | 1.20 |
| Medication Adherence | 1.0% | 1.10 | 1.4% | 1.14 | 1.5% | 1.00 |
| Health Insurance Activities | 9.4% | 1.08 | 6.5% | 1.18 | 7.7% | 1.10 |
| Income | 9.3% | 1.17 | 6.7% | 1.29 | 7.7% | 1.00 |
| Housing | 3.1% | 1.16 | 2.4% | 1.00 | 3.8% | 1.00 |
| Food and Household Items | 10.9% | 1.16 | 12.0% | 1.48 | 6.9% | 2.22 |
| Transportation | 8.7% | 1.26 | 7.7% | 1.21 | 9.2% | 1.33 |
| Adult Education | 6.6% | 1.09 | 3.7% | 1.00 | 3.8% | 1.00 |
| Language | 5.9% | 1.08 | 3.9% | 1.10 | 3.8% | 1.00 |
| Other | 0.3% | 1.00 | 0.2% | 1.00 | 0.0% | n.a. |
| No activitiesa | 0.3% | 0.00 | 16.3% | 0.00 | 3.1% | 0.00 |
| *Notes: a. Not all patients have completed goal setting and enrollment* |

There are several potential activities that can be selected for each category according to the KC CARE workflow. The original list of activities in BluePrint was composed of choices suggested by supervisors and amended by CHWs during pilot testing. Training is now provided to CHWs for which items might be the most helpful in different situations. The list may evolve over time so the same options were not necessarily available for all patients. The tables below describes the most popular activities in each category in descending order. For some categories, such as dental, one option, such as “link to routine dental care,” was an activity for the vast majority of patients with at least one activity in the category. For other categories, such as health insurance, income, housing, transportation, and language, “other” was commonly used.

#### Table Most used activities for each Care Plan category: Direct Health

|  |  |
| --- | --- |
| Category | Percent |
| Medical |  |
| Link to Primary Care Physician/Medical provider | 37.7% |
| Link to specialty medical care | 13.5% |
| Link to medical equipment/supplies | 12.9% |
| Link to diagnosis-specific education/.. | 10.9% |
| Link to affordable health services | 10.4% |
| Other | 10.2% |
| Link to women's health services | 4.3% |
| Link to legal assistance | 0.2% |
| Dental |  |
| Link to routine dental care | 82.9% |
| Link to specialty dental care | 10.1% |
| Other | 5.5% |
| Link to Truman Medical Centers discount | 1.5% |
| Mental Health |  |
| Link to therapy/counseling services | 61.4% |
| Link to support/education group | 19.3% |
| Link to psychiatry/medication services | 17.5% |
| Other | 1.8% |
| Substance Abuse |  |
| Link to therapy/counseling services | 41.7% |
| Link to psychiatry/medication services | 25.0% |
| Link to inpatient substance abuse services | 16.7% |
| Other | 16.7% |
| Medication Cost |  |
| Assist client in accessing generic meds | 34.0% |
| Link client to agency that helps with meds | 24.7% |
| Link client to discount cards/coupons | 17.5% |
| Link to Prescription Assistance Program | 14.4% |
| Other | 9.3% |
| Medication Adherence |  |
| Assist client with medication adherence | 50.0% |
| Link client to provider to discuss adherence | 27.3% |
| Link client to education about their meds | 9.1% |
| Other | 9.1% |
| Link client to provider to discuss | 4.6% |
| Health Insurance |  |
| Apply for Medicaid | 55.4% |
| Apply for Marketplace Health Insurance | 19.6% |
| Other | 17.9% |
| Apply for employer-based insurance | 4.2% |
| Apply for Medicare | 1.8% |
| Link to legal assistance | 1.2% |

#### Table Most used activities for each Care Plan category: Social Services

|  |  |
| --- | --- |
| Category | Percent |
| Income |  |
| Other | 25.7% |
| Link to employment services | 24.0% |
| Apply for disability benefits | 17.9% |
| Link to Financial Counseling | 10.6% |
| Link to legal assistance | 10.6% |
| Assist client with job applications | 3.9% |
| Link to Free Tax Preparation | 2.8% |
| Link client to job fairs | 2.2% |
| Apply for unemployment benefits | 1.1% |
| Assist client with resume | 0.6% |
| Link to clothing | 0.6% |
| Housing |  |
| Apply for Section 8/subsidized housing  | 39.7% |
| Other | 27.0% |
| Link to rent/utility assistance | 14.3% |
| Link to a transitional living/housing.. | 6.4% |
| Link to furniture/dishes/household su.. | 6.4% |
| Healthy Homes check | 1.6% |
| Link to assisted living/senior housing | 1.6% |
| Link to emergency/temporary shelter | 1.6% |
| Link to legal assistance | 1.6% |
| Food and Household Items |  |
| Link to food pantries/groceries | 38.1% |
| Apply for food stamps | 16.5% |
| Link to baby supplies (diapers/formula) | 12.3% |
| Link to basic household items (furniture) | 9.6% |
| Link to personal hygiene/grooming products | 7.7% |
| Link to clothing | 6.2% |
| Apply for WIC benefits | 4.2% |
| Linking to cleaning/safety products | 2.7% |
| Other | 2.7% |
| Transportation |  |
| Assist client in using Medicaid transportation | 51.6% |
| Other | 16.7% |
| Assist client in using bus system | 14.5% |
| Explore client's support system for transport | 6.5% |
| Link to Share-A-Fare | 4.3% |
| Link client to reduced-fare bus pass | 3.2% |
| Assist client in using the bus system | 1.6% |
| Link client to clinic/hospital-provided trans | 1.6% |
| Adult Education |  |
| Link client to ESL program | 60.0% |
| Other | 12.7% |
| Link client to GED/HSED program | 9.1% |
| Link client to adult education services | 6.4% |
| Link to post-high school education | 6.4% |
| Link to computer/technology program | 3.6% |
| Link to trade school | 1.8% |
| Language |  |
| Teach client to request and use an interpreter | 63.1% |
| Other | 19.4% |
| Teach client and support system to access . .  | 9.7% |
| Assist client in navigating care  | 6.8% |
| Enroll in ESL services | 1.0% |

Now that we have covered the focus areas for Care Plans, we turn to the specific ways in which CHWs help patients accomplish the agreed upon goals. Using BluePrint CHWs are asked to document their encounters with patients or on their behalf. The following encounters are recorded:

* In-person visit with patient
* Consult with medical care team without patient present
* Phone Call
* Phone Call – Left Message
* Text, Letter, Email

There was some variation in the number of each type of encounter per patient (see the following table). Per patient, on average there were 2.4 in-person visits and almost as many consults with medical team without the patient present. Phone calls and electronic communications were very common. The ranges were quite wide and likely reflect some differences in documentation and potentially data entry errors.

#### Table Number of encounters per patient

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Mean | SD | Range |
| In Person Visit with Patient | 2.38 | 3.12 | [1, 45] |
| Consult with Medical Care Team w/o patient | 1.18 | 0.50 | [1, 3] |
| Phone Call | 5.04 | 6.71 | [1, 97] |
| Phone Call LM | 2.82 | 2.19 | [1, 20] |
| Text, Letter, Email | 2.08 | 2.28 | [1, 24] |

The length of encounters also varied dramatically both within encounter types and across them. The following figure shows the 25th, 50th, and 75th percentiles of the number of minutes per encounter for each type of encounter. In-person visits have the widest interquartile range and the highest median, at 45 minutes. Because of some very long encounters, 2 hours, the medians are generally lower than the means and are likely better indicators of the typical amount of time with such wide distributions. Meeting type was significantly related to encounter length for meeting types such as in-person/consult, compared to other forms of communication after controlling for CHW and adjusting for clustering by patient. There were some difference in average encounter length per CHW after controlling for type but, at most, the difference was 12 minutes between the person with the longest average encounters and the person with the shortest.

#### Figure Percentiles of the distributions of the length of encounters by type

# Conclusions

This report combines data from qualitative interviews and quantitative reports to trace the history, evolution, and outcomes of the Community health Worker Collaborative for Wyandotte County. Overall, the program has met goals, including development and maintenance of relationships with key partners and serving hundreds of patients in Wyandotte County with meeting their health and social needs.

1. Includes unsuccessful discharges. [↑](#footnote-ref-1)
2. Confidence data were not collected after baseline. [↑](#footnote-ref-2)