Dialogue4Health Web Forum
Community Care Coordination Systems Leveraging Technology to Close the Loop
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>> Laura Burr: Welcome to today's Dialogue4Health web forum Community Care Coordination Systems: Leveraging Technology to Close the Loop, brought to you by Nemours Children's Health System. My name is Laura Burr. I will be running today's web forum with my colleague, Tonya Hammond.

Now I would like to introduce our moderator, Daniella Gratale, she is the Director of the Office of Child Health Policy and Advocacy at Nemours Children's Health System. In this role she oversees policy development and advocacy to advance Nemours' federal agenda. Daniella and her national partners promote policies that support children's hospitals and the children and families they serve. Additionally, she leads strategic planning for Nemours' national office. Welcome, Daniella.
>> Daniella Gratale: Thank you, Laura. On behalf of Nemours I would like to welcome you to today's webinar. We are in the Delaware Valley in Florida providing the clinical care searching for cures to pediatric illness and disease and training the next generation of specialists. We seek to improve the health of children nationally. This includes recognition that much of health happens outside of the healthcare system.
At our national office where I work we influence national policies and catalyze practice changes that will help nurture a nation of healthy children. We focus on the future, especially on what has the potential to make it easier for children and families to stay healthy. Over the last year that led us to explore closed loop Community Care Coordination Systems.
Today it is my pleasure to introduce and interview our speakers who will provide insight into that technology. It's a distinguished panel and I'm eager to hear from them.
First we will hear from Laura Hogan. She will provide our participants with key findings and recommendations. Laura consults with nonprofits and other organizations to improve the health and wellbeing of communities. She currently serves on the program management team for the California Accountable Communities for Health initiative. Previously she was vice-president of program for the California Endowment and before that the Executive Director for Community Care Health Centers.
For the past year I had the pleasure of collaborating with her on Accountable Communities for Health for children and families. I'll turn it over to Laura for her opening comments.
>> Laura Hogan: Thanks, Daniella. Good morning or good afternoon to everyone.

So what we are going to talk about now is a series of slides that have been put together to talk about technology supports. But those technology supports are being considered in the context of Community Care Coordination Systems. It's important to spend a minute or two talking about those Community Care Coordination Systems first.

As most of you on the phone I'm sure are part of within your own communities and systems and organizations, health systems are really moving beyond coordinating within their own healthcare system which needs to be done and people have made great strides to that. Also now engaging across communities and across multiple sectors.

Let's talk for a minute about the Community Care Coordination Systems that are emerging. Many of us are joining tables that are multi-sector, are working on disparate kinds of either social needs or health conditions that require us to partner together.

So this Community Care Coordination Systems series of core elements is a framework that is emerging. There's consensus coming forward, I think, from multiple sides for us to begin to settle into these. They are not called the same thing in every care coordination system, but generally speaking people are seeing these as being the core elements. As you look across these between leadership and governance and integrator or backbone across this system, it is easy to imagine why we quickly turn to talking about technology. There's a lot of moving parts in these Community Care Coordination Systems and it is a natural evolution, I think, to think about how technology can help support the connections between these disparate sectors and disparate players.

As we began to interview people, talk to communities who were implementing these Community Care Coordination Systems, the kind of needs that people had for technology began to form into four bucks, more or less. And they are displayed here on the slide. So first, just using technology to make sure that there's a good inventory. You know, what community resources are in my community? Where are they? All the different kinds of granular information that people want to know about what they have in their community. That's best maintained online and most communities now, 2-1-1 systems and other individual systems have begun to inventory their resources online or within systems.

Identifying consumer health-related social needs. This is something we will talk about as we go through the slides but it is a newer area of how technology is supporting the continuum and multi-sector table.

As you go around, health information exchange. This is part of some systems and not part of all systems. We will talk about that.

Lastly, reports and analyzing data. This really happens on two levels. Certainly within an organization, whether it is a healthcare provider or social service organization, they are looking to technology to tell them more about what kinds of services they are providing and hopefully how well those services are being provided. Something about quality.

But also I think newer ideas about how to take this data cross sectors are to think about where are the gaps in our community around service resources, where are they located? Are they located in the same places need them to be where they are living? This report and analyze data has an internal point of view as well as a community-wide point of view.

What we tackled next in this particular inquiry was to do two things. One, interview people in communities who are part of collaboratives who are either implementing technology or have ideas about that technology and what they would like it to do.

Secondly, survey technology vendors who are coming forward. You are going to hear more about that later in the webinar. What are they producing? How far have they gotten in meeting all of the needs that people have identified?

So first, what we hear from people in communities via interviews, they want very granular information about the quality. They want a lot of updates. They want maps that they can use to direct their clients to just the right service. They are even using, looking for user satisfaction feedback.

It is a tall order. A lot of technology systems are incorporating these elements in the systems that they are bringing forward. You see below in the bars those were the results of the survey as to what did vendors tell us about how they are meeting these particular needs. Many of them -- they all have inventories. Many of them are using 2-1-1 databases, either as part of or to feed their resource inventory. And you see down the bars how they are meeting the rest of the needs.

As we move along, interview participants also talked about, well, how do you identify those needs with individual clients or consumers? Some really say we need a universal approach. We don't need another screening tool. I think in most cases technology systems are incorporating screening tools. Many of them go beyond that to incorporate other approaches as well. As far as how people screen, wide variation there. People talked about screening at every visit. Some people only at intake or for high risk clients, certain populations.

I want to underscore, many of them called for continuing research about screening, about the questions, how often, what questions to ask, what might be some of the unintended consequences if you are screening a child and you are asking parent questions. All of these things have consequences. We are certainly not finished, I don't think, understanding how best to identify these needs.

The technology systems, again I won't go into a lot of detail because you are going to hear more about that later. You see that most of them are using, all of them use a screening tool. Most of them incorporate other ways of identifying referral needs and sometimes even with predictive analytics, prompting the provider or the person who is talking to a consumer about what those needs might be.

The next slide -- sorry, I'm not getting my slide to advance.

Information exchange. Again a very complex and thorny topic. What information needs to be exchanged, and how do we safely and securely protect consumer needs for privacy and the security of their data. And make sure that only people who have certain permissions have access to certain data.

So the flow of referrals in multiple directions is really what interview participants would like to see. They like to see centrally stored information that is managed securely so that data can be aggregated across different provider systems, for instance, or different social service systems. How might we take that data from individual organizations and put it together to better use.

Most of the vendors that we surveyed do have healthcare staff that can make direct referrals. More than half of them allow community organizations to refer to each other so that rather than something having to be started within the healthcare sector and moving out to social services, it's a bidirectional, multidirectional kind of system.

So analyzing and reporting data. I think I talked about this. When we interviewed people, they really want to go beyond their own organization and printing reports of what referrals they made or what referrals were completed with individual consumers. They really are looking to use that data at a community and population level to help identify capacity gaps, to think about quality improvements that they can make, working at this table together as a collaborative.

Technology systems really seem to understand this. 90 percent of them do have some sort of aggregated data that can be proud. A dashboard, they'll display data referring back and forth. And allow some sort of individual adaptation of that.

So now we are going to move to talk about how are people financing these systems. What does it look like so far? I think the most important message here is the word patchwork. People have cobbled together a lot of financing mechanisms in order to put together their collaboratives and finance the technology that they need to make that collaborative function well.

There are some major public sector accelerators. Probably not a surprise on many of the people on the phone. State innovation model grants, section 1115 waivers and incorporated into many of these are financing for different technology systems. This is still an increasing area of public sector accelerators. People are braiding and wrapping around those public sector accelerators private sector finances as well and some of are living exclusively with private financing. Health systems are sometimes paying for this on their own, hospital and community benefits. Interestingly, many of the vendors are traditional startups with venture capital investment as well.

So when we see the challenges to adoption, and this is something that was handled through interviews and talking to people in communities, the top of the list over and over and over again was really the capacity needs in the social service sector. There has been a long standing history of short-term funding. It has a very direct service focus. And infrastructure, the kinds of needs for sitting at a collaborative table for implementing technology, for maintaining the ongoing upgrades to that technology have not yet generally speaking been acknowledged with funding on the social service side. Many people, whether they were in healthcare systems or the social service sector were speaking to the need to expand capacity for social services.

That relates, of course, to the direct services within those organizations.

Secondly, the collaboration is a very big challenge. We need ongoing funding for some sort of background integrator. When we are talking about technology, the costs of that can be quite steep if there is a true health information exchange system being put in place or relied on by the folks around the table. Privacy, security, and data governance. This has been with us for a while but it does remain a key challenge. People talk about the long timelines that were required to really get all of this in place. And the fact that there are worries in the community, I think sometimes, about privacy and security. There's a whole communication element of this as well as the technical element of it.

Data exchange is definitely a challenge to adoption. We already talked about. I think defining value is something that we are only at the beginning of. There isn't really a shared framework or unified communication for exactly what these cross-sector collaboratives and closed loop systems are accomplishing on behalf of the various parties at the table.

So what are some of the federal opportunities that emerged from the research? I think first as you can hear more and more alignment of strategic leadership, our people speaking -- are people speaking similarly about community collaboratives, acknowledging the need for these technology systems? There is a lot more work to be done to align ourselves into a way forward. That is emerging. I think those conversations are happening in many rooms, but more to be done there.

Secondly, really move upstream. High utilizers and people directly impacted by chronic diseases or other kinds of social needs, homelessness, are certainly important to address. But we want to be sure that we also have longer time or eye sons for perhaps what -- horizons for what success

looks like and move upstream and incorporate initiatives for children and just generally speaking encompass the entire life span.
Third, I think federal guidance about flexibility, how they can encourage innovation. They are a key partner in this health transformation that is occurring.
At the state level we have Medicaid, we have cross sector data exchange at many levels in state cases. We have a lot of increasing attention at the state level on meeting health related social needs and services. State level is a great place to have conversations about this wrong pocket problem that crops up in conversations. I won't go into detail about that, but I think state level opportunities and state level policy change are going to be an ever-growing driver of how we accelerate these systems going forward.
And then last bit on levers, I think really to look at thighs quality levers within different systems. Certainly within healthcare. How are the quality measures within healthcare able to expand a bit to encompass and bring back information beyond the healthcare sector itself. How can there be shared outcomes on quality, shared measures that require a collaborative approach, require success dealing with health-related social needs.
Secondly, how do we incorporate all of these health-related social needs, concerns in public and private procurement. That's an important place for us to state values and allow for the capacities that I was talking about previously to be addressed. And lastly, staying power. We really need private funders to stay in with this topic over some number of years. These are not implemented and sustained in even a three-year timeline or four-year timeline. Many of the community collaborators are finding these are potentially five to ten-year timelines in order to see that they are sustained permanently as a system with the technologies that they need.
I will close out this part of the conversation and certainly look forward to your questions by chat which we'll take up later.
I will pass the baton back to our next presenter.
>> Daniella Gratale: Thanks so much, Laura. Next presenter is Erine Gray, the founder and CEO of Aunt Bertha, whose mission is to connect all people in need with programs that serve them with dignity and ease. Prior to founding Aunt Bertha Erine helped the Texas Health and Human Services commission successfully scale their enrollment process for every resident that received state funded services. He lives in Austin, Texas, with his wife and dog and is a 2014TED fellow.
To begin with, we should start with the basics. Can you share with the group why you developed Aunt Bertha? What the impetus was?
>> Erine Gray: Sure. Thank you, everybody, and thanks for the chance to share our experience. As Daniella mentioned, I worked with the Texas Health and Human Services commission on adding more dignity to the process of people getting enrolled for state-based benefits. The state of Texas grows at 20 percent every ten years. And just scaling the enrollment process was kind of ingrained. How do you manage that much growth with one of the largest states?
So going through that project, especially during the economic downturn and seeing what happens when there's a 4X demand for food stamps and what happens outside of government programs and how do people receive services became very interesting to me.
In addition, I'm also my disabled mother's legal guardian and have been for the last 16 years. I have been helping navigate her care and seen it from a family member's side of it. Just saw a broken system. Back in 2002 I made a decision to go back to school and focus on these issues. There's a lifetime's worth of work and it's fun to do.

>> Daniella Gratale: Great, thank you. Now could you explain a little bit more about how the system actually works?
>> Erine Gray: Sure. So it is pretty straightforward. Anybody in the United States can go to www.aunt Bertha.com and type in their zip code. When you type in your zip code, actually five searches are done. It pulls programs that cover any resident of the country. It pulls in programs that cover state. Programs that cover residents of a given County, of a city and also neighborhood type programs. It stitches them together and taxonomies and organizes it in a way that people in need could discover, if you will, which programs are available within their community.
So what I have here as a background is a quick heat map from the last month of where our users are coming from. We see some interesting things in the data of what people are searching for by location. And it is telling. That is the general area.
For those that want to connect, we allow for realtime referrals to agencies to receive those referrals and close the loop on those refers. Aunt Bertha.com is completely free. We also have an enterprise version of our software at customers with larger groups of social workers that they manage can level up to help manage their social determinants of health management program.
>> Daniella Gratale: Great. Thank you. So how do users achieve community buy-in and engagement from across sectors when they are first coming together to consider purchasing a closed loop technology system?
>> Erine Gray: Sure. Yeah, I think it varies by community. But I think the way that we tried to approach it is really I think what our collective technology providers are trying to do is stitch together a very fragmented sector. Probably one of the most fragmented sectors. That is, how do you get tiny organizations as well as large gigantic organizations to collaborate and to communicate on one platform. That is a really hard task.
With that, you have to make it easy. I actually worked in government right after graduate school, the City of Austin. I worked for a wonderfully motivating manager, Toby. In Austin, two in the morning you drive by city hall and the light would still be on. She would be working. What she used to say is that the more people that own something, the harder it is to kill. In her context she was talking about programs at the city and people that have buy-in are likely to stick with you when it gets difficult, things like that. I always remember her advice on that. She would say at staff meetings and things. That applies to this situation. Meaning the more people that are involved, the more likely the project is to be successful. That requires finding benefits and making it easy for the disparate types of entities. A hospital system might be interested in driving down the cost and avoiding penalties. So that might be their goal. Of course, helping people.
But maybe a smaller agency, portable housing unit or complex, might be interested in managing their intake so that they can do that in a way that they can update in an easy way availability. So they are not overwhelmed, things like that.
So the challenge for a technology in an organization is how do you do that. In our experience, it is varied. So we have had the benefit of establishing a user base in a community even before we had an enterprise product to sell. And that allowed us to build trust. Our customers have been able to have meetings and get feedback from local CBOs and service providers in government. They are starting with something that people can play with and envision and sort of imagine.
So we have seen anything from some early community meetings with some Advisory Committees. We work with collaboratives with a health plan, with local CBOs as well as hospital systems that are so large and so ingrained in their communities that they are able to

make a decision based on the usage and traction in their area. It depends. It depends on the customer. This is such a new field that we are all kind of keeping an eye on it and seeing what is happening.

>> Daniella Gratale: Great. We've received a number of questions about financing prior to the webinar. Could you just give some background on how some of your users typically finance purchase of a system like Aunt Bertha?

>> Erine Gray: Sure, yeah. So some people would be surprised to know how software is sold certainly in the health IT sector. One of the really interesting things of the way software was sold in the past was it was usually a large capital expense. You would build servers and host them in your offices. Then companies like sales force.com came along with cloud software hosting. And built a model that you can pay by user.

What is interesting, from what I observed and I am not a healthcare expert, but health IT is very much one of those entities in which buying software is expensive. It is time-consuming and there's a lot of risk involved. Typically it is priced by usage and things like that. I can only speak for our company but we tried to do something different. That is, sort of going back to Toby's advice, allow for customers to purchase at a reasonable rate. Our pricing is on our Web site, ranging from $5,000 a year to $80,000 a year depending upon which functionality you want. It is unlimited.

Once organizations started looking at the actual costs, the a least of the software and the toll, they realized although it is an expense it is not quite as high as they thought it would be. So they have budgets to move forward.

The way our model works is that our data team that is in-house based here in Austin outside of my office is responsible for keeping the data current. Validating information and things like that. That takes the load off of the agencies.

Of course, in areas in which there is good participation, many of the agencies interact and update that information because they know when things change. For example, if a food pantry at a church is going to close its doors for two weeks while the person who runs it is on vacation, they can go in and update from there.

In our experience, once they start looking at the cost, they find that it may not be as expensive as they once thought.

>> Daniella Gratale: Great. Can you speak to some of the barriers and challenges you see to more widespread adoption?

>> Erine Gray: I see widespread adoption as a great thing. Even as a startup, I think the natural inclination is not to like competition, but I think it is a good thing for folks. Because there's just such a demand for services out there. And there is a lot -- we have a good economy, but there is a lot of pain and suffering and we see it in our logs. Every one of these little green dots is somebody's life and their most desperate or vulnerable moment. It runs the gamut of the type of searches that they are looking for. Anything from human trafficking and how you find services for that, all the way to affordable housing and emergency food. It is tough.

So some of the trade-offs might be that it is shining a flashlight on that. And sure, closed loop referral systems exist, but being able to measure that and document that is a really good thing. However, what it is highlighting is that many of these organizations, nonprofits that are actually providing the services aren't funded well enough. And I think healthcare might be under sort of hoping that the local nonprofits can solve the poverty problems of some of their patients. But I think what is highlighted is that sure, you can connect them. But there may not be enough supply of services in these communities, especially when you look at rural communities.

And I think that's some of the unintended consequences. Net, that's a really positive thing in that it is real data to force policymakers to address the issue. And it's real data to force the hospitals and health plans to address the issue and potentially just help alleviate that need by that pair of shoes, as they say, or give them food. But I think that's some of the things that we are seeing.
>> Daniella Gratale: We've received some questions from the audience. Some folks have been interested in how you actually close the loop.
So how does the information about the community service that was utilized actually get back to the actual referring provider?
>> Erine Gray: Sure, sure, good question. So a couple of things to understand. One is how we curate our data and then how we recruit CBOs to participate in the network.
Similar to Yelp, we'll list social services that we find out about. Every listing when it is originally listed is done by somebody in our Austin team. They verify based on publicly available information, website. They will call and verify information and get as much as they can and publish it.
We also then reach out to those agencies, kind of like Yelp and encourage them to claim their listing. Part of the strategy is that what value are we creating to those CBOs? Our approach has been to provide a suite of intake management tools for any CBO in the country that wants to use it. Some CBOs have a sophisticated case management system which includes intake, basically screening applicants and deciding whether or not they can receive the program, whether it be affordable housing or food delivery. But many don't. So some of the functionality that we provide is the ability to receive referrals, respond to referrals in a secure HIPAA compliant system.
One of the other ones which we're excited about is the ability to configure a screener. For example, if you are a CBO that needs to know whether or not your applicant has children of a certain age, you can build that in to your screener referral. So that way if anybody wants to refer to you in the future, they have to put the age of the system so you save people time as well.
Lastly, one of the ones we launched in the spring was a schedule management, point management. We called them point referrals. Those are integrated with your calendaring system and actually allows you to publish available point slots and close the loop on those appointments to see whether or not they showed up.
Three entities can close the loop on any one of the different kind of referrals. It could be the social worker at the hospital who made that outbound referral. It to be the patient themselves. Or it could be the agency that received the referral.
To give you a context at least in our system, the ability to close the loop is available after they claim their listing. We've got a pretty fast-growing list of programs that claim their listing every month. October, last month we had about 1500 programs nationwide just in the month of October that claimed their listing. It is growing at quite a quick rate.
I think the need that is being fulfilled is that if you want them to do it, make it easy for them to do it. Our strategy is to give them tools to help them decide, help them make their intake process better.
>> Daniella Gratale: So on the listing side there have been some questions about how can organizations get added to your resource list? And how do you work with 2-1-1?
>> Erine Gray: Sure. So any organization can add their listings. At the bottom there's an add program link on any one of our pages. When you add your listing, just tell us what you know about it. It is then on us, on our data team actually assigned in a task management system that

we use. We try to list, go ahead and verify and list it within two business days. In many cases it's faster. Anybody can do it.
The types of programs we list are free and reduced cost services, direct services directly to the client. Seeker is the term we use. And also needs-based services, of all different verticals, but based on a need. Whether it is a child with cancer that is recovering and wants to go to a camp in Colorado, to a local food pantry. That's how folks get in there. We evaluate that information and that's how we start the program.
2-1-1 is an incredibly valuable services. When I started in Texas when you called 2-1-1, one could go to the state based programs and one to eligibility offices.
I worked in the state based programs. We actually have a way that we build relationships. United way became a customer. We are working with them on a project for multigenerational services.
One interesting anecdote that I will share is that we did a pilot with the Austin 2-1-1. We were very curious about this transformation of self service to the call center model. Over the course of a few months, we have an automatic box that shows up based on certain criteria within our search platform. That criteria is time of day, geographic location, and the types of searches that are happening.
Keep in mind any user can be anonymous. Of the thousands of times, what we did is show a pop-up box based on those criteria: Location, time of day, and the types of searches. That box said would you like to speak to an experienced person that can help you navigate to it? It actually connected it to the 2-1-1 in central Texas.
What was really interesting, about one and a half percent of the users -- it's still alive today, you can check it out. One and a half percent of users actually click to call. What is interesting, what we are finding, more and more people are comfortable with self service. When they are comfortable with self service, they can find their needs. Sometimes they are not. What is exciting about that pilot is that that's when you want to intervene. That one and a half percent, that may seem like a small percent, those types of interventions are where you can make a difference in those moments.
So that is one way of working with the 2-1-1s. We would love to work with more. In this cases because we are self service and nationwide, in the past we have been seen as a threat. But I don't see it that way. I think we can help supplement the services that they are currently providing.
Hello? Did I lose you?
>> Daniella Gratale: Can folks hear me now? Thank you, Erine. Our next presenter is Dr. Stacy Lindau. She is the founder and Chief Innovation Officer of NowPow and a professor of obstetrics and gynecology at the University of Chicago. She focuses on advocacy related to the health of aging women and urban populations, a Robert Wood Johnson Foundation Clinical Scholar and member of the Aspen Institute Global Leadership Network. She is also president of MAPSCorps, a non-profit community mapping organization.
Stacy, can you describe what you mean by a closed loop? And what inspired the idea for NowPow?
>> Stacy Lindau: I think I'll answer the second half of that question first. It sort of leads in the direction. I'm a physician here on the south side of Chicago and a scientist working together in a community-engaged way with community practitioners and residents to think about how when we combined all of our expertise we can solve big problems impeding the health of the populations we serve.

In 2011, the U.S. Centers for Disease Control and Prevention launched an innovation center and put out a call for ideas that would address the triple aim, in other words improve health, improve healthcare, contain or reduce costs. They were looking for innovations that also would stimulate the healthcare workforce of the future and lead to a sustainable business model.
In that opportunity we saw ourselves in the workforce of the future. Because we had been working for several years already employing and training youth from our communities to conduct a comprehensive census by walking every block of every street in our city to gather data about all of the businesses and organizations that were open and operating to serve the public. That's the entity that became known as maps Corps. That was giving youth meaningful work, teaching them science, technology, teaching them to see the assets of their communities and then making these data available to the public.
When the innovation award opportunity came out, the collectively, I did lead the team, but there were many people involved. The collective league had the idea that our people in the medical community, doctors, nurses, nurse practitioners, we would be better if we had the data the youth were collecting in our workflow. There was a model for that. It was called E-prescribing of drugs. That model is what drove doctors and the whole health sector from paper and pencil to digital a few years before.
We suggested to CDC the ePrescribing community. This is a sustainable business model together with MAPSCorps for the community called Community RX supported with that healthcare innovation award. That was our deliverable on the expected sustainable business model.
And today NowPow is a technology company and information technology company. We think of it like a utility company. Every community needs one. And what we provide is the highest quality data about all the resources of the community that people need to live well, to manage with chronic conditions, physical, mental conditions and to care for others.
What is closed loop have to do with that? When we did the experiment, we wanted to test the closed loop functionality of a software like this. The experiment as I mentioned was funded by this innovation award. We had six months to develop our technology and 30 months to demonstrate proof of concept.
We were able to integrate a new software into the EMR systems at 33 health sites, mostly community health centers but also some emergency departments and a senior health center. We were able to generate more than 250,000 community resource referral prescriptions which we called Healthy RXs. Those were stored digitally into the electronic medical record of every one of more than 13,000 people who received one but we weren't able to digitally deliver those to the commune based organizes that participated in our work. NowPow, like others and you heard Erine describe Aunt Bertha's work, does have closed loop functionality which allows a person in the caring community to generate a referral digitally from their own workflow. It allows a referral taker or referral receiver to receive that digital information, take action on it and communicate that action back to the individual who made the referral.
>> Daniella Gratale: Thanks, Stacy. How can NowPow help communities along the spectrum of readiness to meet the needs of consumers?
>> Stacy Lindau: There are some critical readiness factors that are -- I won't say determinants but are indicators of success in implementing a digital solution or digital infrastructure that able enables matching of people and tracking of people to and from community resources. A critical factor, and this has already been touched upon in Laura's excellent review an also in Erine's comment, is policy alignment. In other words, communities an ecosystems that are moving

towards or largely adopted value-based payment or serious per capita type population health management strategies are more ready than those who are still in a fee for service or healthcare as sickness, as I like to call it, model.
Strong cross-sector relationships are key. It is important to see that people across the caring community are capable of speaking a common language. They know each other. They may have or they are ready for codified relationships. This might be business associate type relationships or other contractual relationships that allow sharing of information with integrity. And they have a shared interest in quality improvement and data-driven investment in the communities they serve.
There is one other feature that we haven't touched on. That is the availability of broadband. It may be shocking to imagine, but even in some of the communities we serve in the City of Chicago are working with dial-up Internet services. They are this regions where there is a monopoly or at best an oligopoly on service provision. They have high cost, poor quality Internet access. Internet access is like plumbing at this point. Communities that have a large number of their community-based organizations operating off the grid because of poor quality broadband access are probably not fully ready. It is not impossible, but that is a factor we would have to overcome.
>> Daniella Gratale: Here is another question from one of our audience members. Typically how are collaborations, that includes closed loop systems financed? Who owns the technology? How is it staffed? How is it maintained?
>> Stacy Lindau: I thought Laura gave a very good overview on the finance question. I think that's relevant. The financing drivers, I would say, for a vendor like NowPow from the health system perspective might be the population health strategy or business priority of the organization. It might be the community benefit domain of a health system. And certainly accountable care structures are driving or the location, you know, for budgets for this kind of technology.
That said, those revenue streams are most pertinent, of course, to the health systems who might be customers or purchasers of one of these technologies.
There are some higher level policy levers that I think vary quite a bit from geography to geography. And that will be essential to the adoption and sustainability of these kinds of solutions for this problem of community resource connection.
>> Daniella Gratale: Thanks, Stacy. Can you speak to your vision for the future of health and healthcare? And how closed loop community care coordination systems fit into that vision?
>> Stacy Lindau: I like stories, too. I really appreciated Erine's anecdote. I also have a colleague who gave a powerful metaphor to me several years ago, her name is Dana and she is a psychologist who worked in this field for many, many years.
Many of you probably remember the story of Apollo 13 where the oxygen tank exploded in outer space and we had some of our most valuable human assets on a space craft that needed to quickly get back to earth.
The way the story goes is that NASA had to make a decision about whether they would focus on what was working or what was broken. Now, they made the decision to focus on what was working, which I would call an asset-based approach to problem solving. That philosophy under girds the work that we started here on the south side of Chicago and now is the foundation of how NowPow as expires to do its work.

They not only knew every working part on that space craft but they had an expert on the ground who knew every working part and could put heads together to put back together the space craft and bring the astronauts back to earth alive.
We regard the resources of the communities where the people we serve live as assets. We treat them with the same level of respect that, for example, I'm a practicing physician. We treat drugs. I have relatively speaking perfect information about every drug that is available on the market. What it does, what its side effects are, what its costs are, and how to connect a patient to the drug. Drugs can be life saving. We know what really determines the long-term health and success of individuals is not drugs. It is not medicine. It is everything each of us does every day to stay well, manage with disease which is inevitable as we age, and take care of others.
My vision of the health system is one where the caring community, the whole caring community including the growing population of informal unpaid caregivers, has what they need to operate in their sector just like every other 21stcentury economic sector. The system, the caring community is fully wired with the highest speed communication capables, it is fully transparent and leverages the assets of the communities we serve. We treat every program an service, most of which are funded with our tax dollars and charitable dollars, we treat them like a critical asset. We expect them to work and we expect to know, for whom than, and when they are not working. We have interest mate understanding of these assets so they can be ultimately deployed. They are accessible to everyone. The people who need these resources most can get them. Those of us who signed up to be members of the caring community tend to devote our are ins to tending to and caring for people rather than scrounging around looking for critical assets.
>> Daniella Gratale: Thank you so much, Stacy. Well, now let's move on to our final speaker, Kim Birdsall, she is the Executive Director of the Health Coalition of Passaic County and a user of NowPow. Her coalition is focused on significantly improving the health and overall quality of life for the greater Passaic County area, focusing on the Medicaid community, through addressing social determinants of health. She worked in the health profession for over 32 years, including experience in the private government religious and nonprofit sectors. She also serves on multiple boards and commissions.
So, Kim, can you briefly describe your coalition and why you became interested in investing in a closed loop system?
>> Kimberly Birdsall: Sure, Daniella. Can everyone hear me okay?
I hope everyone can hear me, great. First of all thank you so much for this opportunity to participate in the webinar today. I think it is important to hear about the journey of offerings and talk about how we can be better in the future. I appreciate the opportunity.
The Health Coalition of Passaic County began in 16. We were formed by a grant from the Nicholson Foundation. The goal was for us to be essentially a look-alike Medicaid ACO. There were three organizations in the State of New Jersey who did become certified Medicaid ACOs. We were a little bit behind the curve there, but certainly the need was within the community we are serving. Thanks to the Nicholson Foundation with their funding and continued support we were able to form the Health Coalition of Passaic County.
A little bit of benefits. In order to kind of build on the lessons learned by those other organizations that had a little bit of the lead on us, and we really work in close partnership with those three certified Medicaid ACOs in the state of New Jersey. We have a 17-member board of directors with a mission, as you stated, to create a thriving and sustainable community coalition so we can all work together to improve the health and quality of life for the residents in the

greater Passaic County area. Our focus is primarily on the Medicaid population in Patterson, New Jersey. Our goal is to ultimately become a broader coalition at the County level.
Patterson is a very unique community with a lot of needs and a lot of resources. And I certainly appreciate the discussion in regarding to using the assets of a community. That has been one of the ways that we are driving to that end. We have 37 members currently in our community advisory board. Those are our community-based organizations that we want to work together in order to meet the needs of the community.
We've done extensive work in regards to looking at our provider network and mapping those assets within the community and also forming our team.
Our goal is to be the bridge between the critical needs we identify in the community and the community resources that exist within our network.
Our initial project funding from the Nicholson Foundation, our first step was to do a deep dive into the Medicaid data. Specifically through St. Joe's hospital here in Patterson. They are a strong supporter of the coalition and we could not do this work without that clinical support. We were able to identify a population that would benefit the most from care coordination of the folks that they serve within the hospital system. And after we had that initial identification of folks that we wanted to serve, which included the top 3 to 5 percent of the emergency department utilizers as well as men ages 40 to 64 with chronic conditions such as asthma and diabetes we were then tasked with looking to identify a care coordination model that we could use in order to serve that population most effectively.
And after a lot of research, our team identified and brought forward to our board the Pathways Community HUB Model. That would be the best model to serve our community here and connect the clinical needs to the communities resources.
Then our third step was now that we had this tool in place was to really find an effective technology platform that would allow us to most efficiently track and measure the results of our care coordination. Those connections to the community services and ultimately hopefully the positive effect that we would have in regard to improving the health outcomes for our folks that are part of our program.
So we did a lot of research again. We did select the NowPow platform as the best fit for our needs here in this community. We have been working to build our resource directory as well as integrate our model, the model that we selected within the technology.
My favorite graphic, I think, that everyone can see on the slide there, hopefully you can read it, but it is really our strengths currently and our vision is that we are an organization that certainly is data-driven, but we unify the community around what those needs are that we've identified through that data analysis and have innovative programming and the tools that we need in order to meet those needs.
I think it is important to take those strengths. We can really translate those into serving various populations around the community.
>> Daniella Gratale: As you investigated the closed loop system and along with the Pathways Hub, were there expect steps you went through or processes to get buy-in from all the other partners in the community you were hoping would use the platform along with the clinical side?
>> Kimberly Birdsall: Certainly building a coalition requires all those steps we touched on previously in regard to trust an communication. We are very blessed here in having a strong network of community partners. I think they are amazing resources that all of us, regardless of where we live, can tap into if we take the time to do the asset mapping.

Our team which is a very lean team. We have four members, really researched various platforms. Then we made our recommendation to our board, our 17-member board.
We did hold demonstrations and they were very, very supportive of the goals of the coalition and how we wanted to move forward.
Our first year of funding for the implementation of the platform was solely grant-funded, but we did receive some supplemental support from particularly one board member organization. And in regard to our community partners and our community advisory board, I think the fact that we already had this coalition, that we already convened, that we talked about how we want to do better here in the community was a great process in then bringing forward this technology platform to those organizations to say this is something that we see as incredible value here not only for the coalition but also for each of your organizations.
So the buy-in part was not -- I think it was something that everyone can see the value in. Of course, there's always challenges in implementation and coordination. But really trying to work through those communication challenges and connecting agencies among one another and also in ways that we can integrate other resources, has been very, very effective.
I anticipate that as we continue to grow and roll out these tools and make additional progress within the community that the interests and our partnerships are going to continue to grow and solidify.
I won't say that it hasn't been a lot of work. It certainly has. But I think the passion is there and the value is very much something that the community partners here can see.
>> Daniella Gratale: As you move towards implementation, have you learned anything that helped to inform either upstream actions or policy changes within your community?
>> Kimberly Birdsall: So we've definitely through the work with the Pathways Community Hub Model -- I'm not sure how many folks on the line are familiar with that model. It essentially has 20 recognized Pathways that allow us really to be able to measure and track what the needs of our clients are and how we can connect them to resources that currently exist.
In doing that, I'll just give a snapshot. At a point in time where we had 58 clients enrolled in our program, there were a total of 442 Pathways that were initiated for those 58 clients. Meaning certainly there is tremendous need among the pop layings of folks we are trying to serve.
In working through the steps of the Pathways you are able to track the progress and also when they are able to be completed. If I look from a broad spectrum and policy and where we can hopefully inform upstream action, in this community housing and behavioral health are two Pathways where there are significant needs and very high rates of implementation. However, we are having significant challenges in closing those Pathways. So to me, although it is frustrating on the ground when you are trying to meet the needs of people you want to serve, that you don't have the appropriate resources to close those loops for them, there is value in gaining this information so that we can talk about are there certain policies that are either in place that are no longer effective and should be revisited and removed, particularly say with housing. Are there enforcement issues. Is it a lack of resources? Is it ineffective resources? How can we inform that upstream action?
And with housing, one point I want to make that I think is interesting and important for all of us to realize is when we are using this model, activating the housing pathway does not mean just lack of housing. It could mean unhealthy or unstable housing. You know, we do the homeless count in all of our communities. However, that doesn't really take into consideration folks who are not necessarily meeting the definition of homeless, but yet are couch surfing or highly

asthmatic I can and living in substandard housing. If that environment doesn't change, you are not going to be able to improve their health outcomes and get them the appropriate level of care. So we are learning a lot. We certainly have a lot more to learn, but I see opportunity there particularly in those two Pathways of how we can work to take the information, take the resources that we have and how can we as a community address some of those policy or upstream actions. I hope that answered your question.

>> Daniella Gratale: Yes, definitely. Last question before we move on to more audience questions. Are there any other big picture lessons or advice you would like to share with other communities who might be considering moving towards a closed loop system or using a Pathways model?

>> Kimberly Birdsall: I think with the closed loop technology we are really looking forward to being able to increase community capacity. Also to as a community with nonprofits and other stakeholders hold one another accountable. I have a colleague that often talks about: I can connect someone to a food pantry, but if the supplies that are being available, say it is somebody who is diabetic and they are only resources available there that could make their condition worse. How do we as a community kind of lift everyone up? I think this closed loop referral capacity will help us to have a little bit of insight in that.

I would really look at the fact that all communities have needs but all communities do have these resources. We feel blessed to be that bridge between the needs and the resources, to be able to solidify those partnerships and the communities collaboration. I think apply the tools that we have in place right now with NowPow and with the Pathways model to most effectively measure our connections, our assets, and translate all of that back into positive clinical outcomes.

So we are very optimistic about the future. I think that these types of lessons and tools are translatable to any community. But the organization and communication are the two really key factors in making this work.

>> Daniella Gratale: Great. Thank you very much, Kim.

Now I'm going to pose a few more questions from our audience. I'll be using a combination of questions that have either been previously submitted or those that I've seen come in during the webinar today.

So first I thought Erine and Kim could help out with this. Can you please discuss how you address privacy and HIPAA concerns.

>> Kimberly Birdsall: Certainly I don't know if you would like me to go first, Erine?

>> Erine Gray: Sure. This isn't my area of expertise but we have a CIO who manages our compliance. Usually when we go live with a customer it involves -- I'm sure Dr. Lindau can relate -- a spreadsheet with 18 tabs and 100 questions on each tab. We are HIPAA compliant. We acquire the consents when we do make the referrals and the agencies accept our terms. So we follow all the best practices recommended out there.

>> Kimberly Birdsall: To echo that, from the HCPC standpoint, we are also HIPAA compliant. We make sure all the appropriate agreements are in place with all our community partners. In regards to the folks we use the closed loop technology for, they are offered the opportunity to participate in our program. And informed consent process is taken for those participants who accept that invitation.

>> Daniella Gratale: Thank you. Stacy, question for you. We had a couple questions come through to get to the nitty-gritty of how your system works and how you closed the loop. Can you give an example of what that might look like?

>> Stacy Lindau: Sure. So I'll give an example because I'm a physician, from the physician workflow. I use an electronic medical record every day. I did it this morning with my patients. And because of the limits on time and the amount of intensity in the care, I take care of women with cancer. It is very difficult for me to leave my workflow in order to access any kind of information.
So our technology is built with functionality that enables the access to the community resource information and to make the community resource referrals directly from the electronic medical record workflow.
Users, the type of use I would ideally have in my workflow would be an automated functionality. We use algorithms that draw on the vast amount of data in the electronic medical record about an individual. Like where they live, their age, their gender, the language they speak, the problems they have. That information is fed into an algorithm that then queries the community resource referral database.
An individual receives the information back. My patient could receive the information back in the form of a text message with a list of these referrals and all the relevant information. It could be printed or emailed according to her preference.
And with my patient's consent I can make digital referrals to partnering community-based organization that agreed to receive digital referrals from me. Those would have an instance of our technology. We give our technology free to community-based organizations that want to receive referrals. They can see through our platform that a patient has been referred or an individual has been referred. They can see why they have been referred. They can then track through an Internet connection what activities have happened with that patient.
When the community-based organization does its tracking activity, that information is digitally sent back and logged into by electronic medical record workflow. So that when I see my patient again I can tell whether she has been, how long it took. Over time as I generate more and more of these referrals I can start to learn which community-based organizations are at capacity, which are able to pick up referrals and close the loop quickly. As Kim was saying, we can start to use these data to help inform data driven investments to support the organizations doing great work and maybe lift up the organizes that are at capacity or need more assistance.
That's just one example. There are other workflows where we can close the loop. I'm giving you the workflow I love best.
(Chuckles.)
>> Daniella Gratale: Thank you. Laura, as you are doing the review of different systems, did you see that most closed loop systems were able to interface with health information exchanges or electronic medical records? What does the state of the field look like?
>> Laura Hogan: I'm sorry, Daniella, was that for me, Kim?
>> Daniella Gratale: Sorry, that was for Laura.
>> Laura Hogan: Yes, I think as we talk to people, certainly motion of the vendors recognize that interfacing with an electronic health system is the way to go and either already incorporate that or have plans to incorporate that. These are systems that are still pretty new in communities. And you've heard from two leading vendors today. They are certainly operational. Many people that we spoke to in community collaboratives were in planning stages. Were looking at different systems and had not yet fully implemented all of the technology capacity that was available in their system.
So some are using it as a fully integrated into their electronic health record. I think all vendors see themselves moving towards full integration with electronic health records.

>> Daniella Gratale: Thank you, Laura. In our questions that were submitted in advance we received a number that had to do with schools. Folks are very interested in how there is coordination that may or may not be existing between the medical sector and school districts and whether or not there have been incidents where school nurses engaged. I leave that to any of the panelists. Have any of you been engaged in coordination that included school districts?
>> Erine Gray: I can share some experience. We actually work with the Dallas community college district that is focused on helping to address the social determinants of education. In many cases, in fact in one of their most inspiring stories I heard was from their chief innovation officer, Dr. Mary Brumbach. They did an ethnographic study for nine months to follow up students who drop out. They are following the role of academic advisors, encouraging them to get to know their students and make referrals. We heard lots of stories about how that is happening.
In addition there's an interesting project with the Austin school district that we are launching. That is the ability to coordinate the referrals for those types of programs that allow for subsidized programs for low income kids and the ability to get them enrolled on the fly to after school programs and then in which once they are enrolled, depending upon income an eligibility, the foundation that funds that enrollment gets the bill.
We are seeing more an more inbound requests for those organizations through the schools that are interested in trying to solve this problem except from a different angle.
>> Laura Hogan: I could add to that two points. One, there was an interesting research project done with youth an closed loop type systems. And maybe not surprising to people on the phone it actually improved the up take of using the system. That it was a technology-based system. Youths were more likely to do the screening, to answer more sensitive questions and to follow up on the referral because it was a technology system as opposed to a paper-based or in-person interview.
I think that's an important consideration in favor of working within schools and school populations.
I think on the other side of the coin there are lots of very specialized security and information technology exchange barriers that have to do with working with schools and even school based health centers. There are, as you can imagine, there are consent issues with youth and then separately schools have some pretty serious blocks on their information systems that sometimes can make it difficult -- not impossible, but require some special actions in order to work easily to transfer information.
>> Kimberly Birdsall: Just from the community advisory board standpoint, we certainly have very important partners that are in the educational field such as representation from the Board of Education and the local community college. We're certainly hoping they will be our referral partners and are also listed as resources within the community. As far as the data integration and how that closed loop will serve with those organizations, I can't honestly say that we are there yet. We certainly have those folks around the table. We want to hear their voice and see what their needs are from the populations that they serve, and where there can be coordination.
(Overlapping speakers.)
>> Stacy Lindau: That was great to hear from everybody on the schools question. Obviously young people spend a big portion of their most important years for their long-term health in schools. I think all of us would aspire to be sure that school nurses and counselors and even students themselves can access the information about critical resources in their communities using our solutions.

I wanted to add to Laura's point about research. We have just completed research jointly funded between Chapin Hall, which is a world class child policy research center at the campus at the University of Chicago. Chapin Hall was interested in an application for caseworkers who work in foster care and child welfare settings. We were able to work with one agency that had caseworkers working in the home to support intact families. The idea was, could we connect intact families to the community-based resources they need to remain intact. That was an implementation study. We don't have, say, youth health outcomes or parent health outcomes. But the implementation was successful. We were, caseworkers were able and willing to use this workflow out in the feel. We got great feedback from them. That helps us iterate the tool to meet their specific needs.

I wanted to end on that point here that the beauty of working with information technology systems is that they are, there is that last mile of customization that really is an important determinant of whether people in any given community feel understood by the technology, they trust the technology and it meets their needs.

And so some degree of iteration and customization at the last mile is a very important feature, I think, for long-term adoption and sustainability.

>> Daniella Gratale: I think we have time for one final question. We had a question about metrics. If any of you have thoughts on some of the most effective metrics communities are using to measure changes in community engagement.

Any thoughts on metrics or community engagement would be helpful.

>> Stacy Lindau: This is Stacy again. I'll be brief. Coming off of the CMMI Award we received an RO1 grant from the National Institution on Aging to study connecting community resources to people during a health care home visit. We only had three months to visit and were focuses on Medicare and Medicaid beneficiaries. We did not find an impact using the original beta version of NowPow, the community RX technology. We did not find and impact on health, measured as health related quality of life for either -- for Medicare or Medicaid beneficiaries. That was our primary outcome. Secondary was self evidence education for self care. I'm so sorry.

There are a growing number of studies that identify self-efficacy as upstream of health outcomes and Gray's Model of Self Care and Self Management would say that self-efficacy is a factor upstream that might determine downstream health out comes. We did find and impact compare cases to controls on self efficacy, on people's confidence that they could identify health promoting resources in their communities.

>> Daniella Gratale: Thank you. Any other panelist want to provide comment on that topic?

>> Kimberly Birdsall: We've actually found some interesting points in regard to the scale of belonging on one of the ISL measures and rate of engagement for folks we are working with showing that initially, at least, that the lack much sense of belonging has actually increased their engagement in working with the community health worker and with the technology. There remains more to be seen but we are looking to measure utilization in regard to the healthcare system but also engagement, path way completion, interactions with the community health worker and also out in the community and doing the initial intake assessments to see pre-and post for both health education as well as some of these types of measures for ISL measurements, et cetera.

>> Stacy Lindau: I could add that CMMI did contract with third-party evaluators to look the a all the healthcare evaluations, including the Community RX effort. The research firm in our case was RTI. They did look at health care utilization impact and their work should be informative to

anyone out in the field. It is hard to replicate their study. They compared thousands of cases and controls. Cases being the people who got the Healthy RX community or information to similar people who did not receive the intervention. It is not a randomized trial. It is a case controlled design.

For the Medicare population they found an increase in primary care utilization and decrease in hospital utilization. And overall they found that a 60 percent likelihood of cost savings. It means that the original version of the will technology was probably somewhere between cost savings and cost neutral on a percent per beneficiary per year basis.

>> Daniella Gratale: With that, I think we'll wrap up. I want to thank all of our speakers again for their insight full comments and time and want to thank Laura Burr and Dialogue4Health for their support.

I'll turn it back to Laura for her closing comments.

>> Laura Burr: Thank you so much, Daniella, Laura, Erine, Stacy, and Kim for today's presentations. We want to thank our sponsor, Nemours Children's Health System. And thank you to our audience for your participation.

Slides from today's web forum will be available for you next week at Dialogue4Health.org. You will receive an email from us with a link to a brief survey we hope you will take. We would like to hear from you. The survey includes instructions for getting a certificate of completion for this event.

Thank you so much for being with us. That concludes today's web forum. Have a great day.

(The program concluded at 3:30 p.m. EST.)