

Transcript, “Introducing the New Care Management Suite: A Comprehensive, Data-Driven Approach,  
Webinar, July 1, 2020

Amy Flaster:

Great. Thank you so much, Brooke. Thank you, everyone, for joining. Next slide. This is how we're planning to structure our hour together today. I will begin by covering the care management landscape, some trends that we've seen in late 2019 and in 2020. Then, we'll turn it over to Darian, who will provide an overview of our new Care Management Suite and how our new tools can meet the needs of each of the trends that I'm going to cover. Darian will, then, demonstrate our new products. Finally, at the end of the hour, we will open it up for questions, and we'll do our best to answer any questions that you have.

Next slide. One more. Perfect. As I mentioned, I'm going to cover a number of trends and updates that we've seen in the care management landscape. The first trend that I'm going to be talking about today is around Medicaid populations and the successes that we've seen this past year in Medicaid-focused care management models that really have yielded a lot of success and improvements, both in terms of clinical outcomes and spend. I'm going to double click on one model, in particular. That is the model of CareMore. I'm going to show a trial done by some of my colleagues at CareMore Health in their Memphis location. This work was published this past year in the American Journal of Managed Care.

What the folks at CareMore did is they randomized around 250 Medicaid patients who were super complex. Actually, the patients were a bit younger. They were in their 40s. They randomized them to either routine care or a complex care management program that they've developed, led by community health workers and social workers and primary care docs. What they found in this randomized study was that the program had really impressive and impactful results, as you can see here. There was a statistically significant reduction in total medical expenditure of about \$7,700 per member per year. There was a reduction in inpatient bed days, a reduction in admissions, and a reduction in specialist visits. Pretty good results across the board.

I've chosen to highlight this study for two main reasons. The first is just that I think it's really notable that it showed such significant reduction in spending utilization for Medicaid populations. We've actually seen this replicated in a number of other studies and models in the past years. What it suggests to me is that, I think, Medicaid patients who have traditionally been thought of as harder to care manage due to some of their complexities, psychosocial complexities, social determinants of health needs, well, these patients are, in fact, great candidates for complex care management programs, and, in terms of outcomes are as good or, potentially, even more impactful than Medicare patients.

That's very interesting. I think as Medicaid ACOs have proliferated in recent years, we're going to continue to see more Medicaid-focused care management models with similarly strong outcomes. The second reason that I chose to highlight this paper was that I think they had a notable use of data, and I really

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wanted to focus on that with our time today. That points to a trend we're seeing across the board, which is a desire to integrate as many disparate data sources as possible to identify the right patients for an intervention, so that you can have results that are as impactful as the folks that CareMore did.

I'm going to quote a couple of sentences from the discussion section of this paper where they say, and I quote, "Patterns of utilization in the two study groups underscore the importance of precise patient targeting. To be most effective, complex care management programs to target patients at risk of persistently high spending and those whose spending and health outcomes are amenable to complex care planning and engagement." Then, the article goes on to say that many care management programs just use claims data to identify patients, but that CareMore, their approach was what they described as a hybrid strategy in the integrated historical claims data, predictive models, and also, clinician judgment.

I wanted to point this out because I thought it was really powerful and it's a trend that, as a company, we're seeing across the board, which is the need and the desire to leverage as many data sources as possible to identify patients who are most impactable for an intervention. With the goal of identifying patients who are both high utilizers, yes, but also those who have utilization that's potentially modifiable by a care management intervention. I think leveraging broad data sources really makes that possible.

Next slide. Still on the topic of data algorithms and prediction, I wanted to touch on a second trend, which is, from earlier this year, that actually is very timely in this exact moment in history, which is a shift away from closed, opaque, nontransparent risk algorithms. What prompted this trend was a paper published in Science this past October, written by some colleagues of mine. What the paper showed was that amongst one specific commercial risk prediction algorithm, though, we've seen this replicated in other algorithms, in this one specific commercial algorithm that was aimed at identifying high-cost, high-need patients for care management. It was shown that the algorithm was systematically biased against specific racial populations.

In this specific study, what they found was that, at a given predicted risk score, black patients were considerably sicker than white patients. When they remedied this disparity, when they adjusted for it, it increased the percentage of black patients that were identified as high risk. That's what have received additional help, from 17.7% up to 46.5%, meaning that this algorithm that the paper studied was really systematically under-identifying specific racial groups for care management programs.

Then, the authors asked, why was this happening, and actually published a really interesting follow up discussion paper in Health Affairs. Where they

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landed was that, in this paper and with this algorithm, the bias was thought to arise because the algorithm was relying on health care costs rather than illness as an input to the algorithm. Or put another way, the algorithm was predicting future health care costs rather than an individual's actual severity of illness. Because of this, unequal access to care was a really big factor and meant that we know we're spending less money caring for certain vulnerable populations. Thus, because of that, there was an appearance of lower health care costs, which predicted, in theory, future health, as opposed to using actual severity of illness as a proxy for health. From this large racial biases arise.

I think that this has opened up a really interesting conversation. In the care management landscape, what I'm seeing is that this has prompted many health care systems and many care management programs to look more deeply at how they are predicting risk and what inputs they're using, and to move away from closed, non-transparent algorithms, to make sure that they're really able to look under the hood of what they're using to predict risk. In addition to using as many data sources as possible, there's also a strong desire to use a transparent and configurable algorithm as a foundation to ensure equitable patient identification and to really work on eliminating bias. I think that's something that we're seeing a real commitment for right now, something that health systems are demanding. That's a second trend that I wanted to touch upon.

Next slide. The third big piece of care management news this past year, and I'm sure you all saw this and read this, highlighted the importance of evaluation. This is the story of the Camden Coalition's care management model. I think it really told a strong message about the importance of evaluating impact. This paper was published in The New England Journal of Medicine this past January. It reported on a randomized controlled trial evaluation of the nationally acclaimed and replicated Camden Coalition model. I think many know, this is a very hands-on high touch model. It's transitional care management or post discharge care management. It's focused on vulnerable complex patients, both Medicare and Medicaid, but a very vulnerable super utilizer group.

What this paper showed, unfortunately, is that this intervention had no statistically significant impact on the primary outcome of the study, which was 180 day readmission rate. This was a very disappointing results, because prior studies of this work, which were done in pre-post analysis, actually showed a reduction of admissions by 38%. Randomizing and doing this rigorous evaluation and showing no impact was both surprising and disappointing.

At a higher level, I think what this points to is a known challenge in evaluating care management programs, which is this concept of regression to the mean, where we know that sick patients identified for care management are likely on their own to, in time, get better and have lower future hospitalizations, lower TME, just with the tincture of time. That'll happen to patients that get care

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managed and it will also happen to patients in a control group. I think that's what led to the difference in results that were yielded from this more recent trial.

I think, from this, we see a real emphasis in the discourse and in conversations I'm having on the need for rigorous evaluation. I'll say, of course, there's a balance needed. It's normal to need short-term evaluation and short-term results to make decisions. You can't always wait for a multi-year randomized controlled trial. I think that this also emphasize the importance of longer term rigorous evaluations to make sure that our program really is impacting care and having an ROI.

Next slide. This is the last trend that I'm going to be covering today before we turn it over to Darian to introduce our new Care Management Suite. This is sort of the elephant in the room, which is, obviously, COVID-19 and the way this pandemic has shifted so many elements of our society and, as part of that, has had a very significant impact on care management. Firstly, I'm going to touch upon the fact that COVID-19 has transitioned most of care management to being virtual or remote. This presents a challenge. I think it also presents an opportunity, but it is a difference in the way we do business.

Based on evaluation, most remote care managers, care management programs, historically, have not been effective. We know that care management models that have a larger in-person component tend to be those that are more successful, whether that's the CHW impact model at UPenn, or one of the programs that I'm affiliated with, the iCMP program that partners. These models have large face-to-face elements. It's often thought that that's part of the secret sauce of what yields such a strong clinical and financial impact. Shifting much of care management to a remote setting hasn't really changed workflows and the care management experience for both staff and patients. I think it presents an opportunity. It's a new way of doing business, but it's a very big change to the way that we do care management.

Next slide. In addition to changing workflows for care management, a second element to consider in the care management space, as it relates to COVID-19, are the new populations of patients that are now in need of care management. One that I want to touch upon are patients that are at high risk of poor outcomes from COVID-19, meaning patients that need care management to avoid getting the virus. I think, in conversations with colleagues and in looking at what we've done at partners, different systems are approaching this in different ways.

I don't think there's yet a studied or proven model. I've certainly seen systems where patients that are highest risk are really being kept out of the health care setting, receiving mostly virtual care, home services, home labs, paramedicine.

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I've seen other models where clinic operations are being altered with specific hours for high risk patients, lower density times in the clinic, separation of respiratory versus non-respiratory clinics. Various different approaches, no proven model yet, but multiple types of innovation to keep patients that are at higher risk of poor outcomes safe.

That begs the question, how do you identify these patients when this pandemic and this virus is so new? I'm highlighting here an article that was published in BMJ just last month. This article looked at 5,279 patients that were admitted with COVID-19 to the NYU network, both in New York City and Long Island. This article looked at patients that had what it defined as poor outcomes. It defined poor outcomes as patients being admitted to the hospital, as opposed to those who could be treated in the outpatient setting. Those that had critical illness defines that as needing an ICU stay or a ventilator, those that were discharged to hospice, or those that passed away. Then, using regression modeling and analyzed which patient characteristics were predictive of these poor outcomes.

What they found was that the strongest risk for hospital admission was associated with age, with an elevated odds ratio for age groups over 44, most significant for age greater than 75. Other risks that were statistically significant were heart failure, male sex, chronic kidney disease, any increase in body mass index, BMI. The strongest risks for critical illness, as opposed to any poor outcomes, were age, as well as heart failure, BMI, and male sex. I thought this was really interesting, because this suggests to me that there's a new cohort of patients who are at higher risk of poor outcomes from COVID-19 and may need specific care management and are going to need to be identified for these interventions.

What I think is so interesting and a little tricky is that, typically, these are similar patients to who we already care manage. Those that are listening on this webinar that are in the care management field know that a patient over 75 with CKD and heart failure sounds like a patient that is already in care management. What's a little different is that these patients may not previously be high utilizers, meaning these patients may be vulnerable, but may not historically be identified for care management based on their utilization. This likely creates a need for new algorithms and new ways to identify these patients based on their clinical conditions and also will likely create a new crop of care management programs and new ways to keep these patients safe and out of the hospital.

Next slide. The last point I'll make about COVID-19 and the way that it's changing care management, in addition to changing workflows and creating a new algorithm of patients for prevention, is that we also are seeing a new need that COVID-19 is presenting. That is the need for care management for survivors. I think many in the field suspect that survivors of COVID-19 are going to have unique long-term sequelae. Respiratory complications, patients

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discharged with long-term mechanical ventilation needs, on dialysis, with PTSD. I think the list goes on.

The disease is new, so we haven't had the opportunity yet to study what the long-term effects are going to be in to really think about how to manage them. We have to use proxies, which are former diseases like SARS, or Middle East Respiratory Syndrome, just to predict as best as we can what some of the long-term impacts may be, though, they're far from perfect, are different diseases pathophysiologically.

Using SARS as an example, I included this paper on the slide, which is from Thorax and looked at long-term effects. We see that, at six months, about a third of patients had ongoing radiographic abnormalities, about an eighth had impaired pulmonary function. There was also reported ongoing functional disability, with some impairments seen, actually, at 15 years post follow up. I think it would be reasonable to anticipate that there will also be long-term impacts of COVID-19 that we don't yet know what those are. Based on this, I think we're seeing another need and another use case for care management, which is going to be taking care of and coordinating the care of patients who have survived COVID-19 and are now medically complex.

I'm going to pause at this point, turn it back over to Brooke. We've covered a couple of trends today related to care management, related to the need for disparate data sources, successes in the Medicaid population, desire for transparent algorithms to avoid bias, the need for rigorous evaluation, and then, some of the new challenges that COVID-19 is posing. I'm going to turn it over to Brooke for this poll question. Then, Darian is going to address each of those trends and how our new suite of care management technology can support them.

Brooke MacCourtney: Great. Thanks, Amy. I'm going to go ahead and launch this poll question for us. We'd like to know, to what extent has COVID-19 affected your system's approach to care management? Your options are that you've doubled down care management, no change, you're continuing with the status quo, or you're continuing prior progress but working in new ways, such as virtually or with telemedicine, or you can select that you've scaled back and halted care management. I'll give you a couple of seconds to get your answers in. We appreciate you voting. Looks like we've got some more votes coming in. We will go ahead and close the poll and share the results.

9% said they're doubling down on care management. 16% said no change, continue with the status quo. 68% said continuing prior programs but working in new ways. 7% are scaling back or halting care management. Thanks for sharing that with us. It's interesting to see how everyone's reacting to COVID-19 with

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their care management program. Thanks for sharing that. I'll go ahead and hide the results, and pass it back to you, Darian.

Darian Allen:

Thank you, Brooke. Thank you, Amy. I'm excited today to introduce to you the new Care Management Suite. I want to discuss how the new suite uniquely adapts and meets the needs of the recent trends and updates that Amy just went over. To start, I want to introduce our care management framework. It all starts with our approach. Health Catalyst took a data and analytics driven end-to-end approach with transparent and flexible algorithm logic, and patient centric views optimized for care management workflows. With that in mind, I'd like to introduce the products. We've built three products that make up the Care Management Suite. One for identification, one for workflow, and one for analytics.

Let's start with the identification product. The Population Builder: Stratification Module, it's built and powered by the Health Catalyst data operating system and leveraging population builder. Stratification Module contains pre-built content, bringing in together your claims and your clinical data in a rapid and transparent way.

Population Care Flow is our new workflow product. It's integrated an end-to-end application that takes the user to the entire care management work, takes the user, I'm sorry, through the entire care management workflow process. Lastly, for analytics, Population Care Insights. This is powered by Health Catalyst Leading Wisely and it delivers operational, financial, and clinical metrics required to measure and maximize ROI for your care management programs.

All these applications work together in an integrated and transparent way. That's not enough. You also need to partner the products with services. Lastly, I would like to talk about or highlight really quickly some of our experts services that work with our products to help deliver real ROI. Services around optimization, assessment, population design, program design, and evaluation of your programs.

With that in mind, I'd like to talk about how we approach building the Care Management Suite. Everything we do with the Care Management Suite has the patient in the middle. We took a patient-centric approach. The importance of coming off that is to ensure that you're building transparent and flexible algorithms to help identify and select the right patients. In addition, you need consolidated and longitudinal patient-centric views of all the data, of your claims and your clinical data integrated together.

Data and analytics need to drive the workflow and the assessment process. You need to have analytics that are driven by ROI and build ROI metrics that support that, partnered with services to really drive changes in the care manager

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programs. Then, you need to take the results of your analytics-driven ROI metrics. You need to go back and optimize your stratification process, always thinking about ROI in mind. All of these work together to support your entire clinical care pathway, and an end-to-end solution.

Let's walk through the new Care Management Suite and demonstrate each of these elements. This is a prepared demo. As I walk us through each piece, I will tie that concept back to the trends that Amy laid out earlier. First, let's start with transparent and flexible algorithms. We will use Population Builder: Stratification Module to loosely replicate, create targeted care management models that Amy referenced earlier. Population Builder: Stratification Module brings together your claim to clinical data, allowing the user to build a comprehensive algorithm. We will end this section of the demo with an algorithm that we can, then, save and leverage in our care management program.

We're in Population Builder: Stratification Module. I'm going to grab the patient filter and I'm going to make sure that they are alive and filter that first. Then, I'm going to grab facility count. I want you to go and grab having dates within the last year, and patient class of inpatient. I'm kind of loosely building and showing how we can build a model that Amy referenced in the Medicaid model. We'll go ahead and grab a financial class description, and grab a Medicaid.

We want to go up and check to see if they had two or more inpatient visits within the last year. Now, we want to do the same thing for emergency visits. To make that quicker, I can click the Duplicate button here. I can now grab this, change in-patient to emergency. Remove in-patient. I can make sure we're still looking at Medicaid patients within the last year. Instead of two or more, we want to look for three or more ED visits for the Last year.

Now, I'm going to grab a filter over here around patient populations. These are pre-built populations within Population Builder: Stratification Module that are transparent, can be configured and customized for your environments. Once you've built them, you can go ahead and use them in other populations. I'm going to grab some based on the CMS chronic condition warehouse definitions. I'm going to grab asthma patients, diabetes, COPD, hyperlipidemia, heart failure, and hypertension. Click Apply.

Now, I'm going to grab the risk filter. I'm going to look at a risk model that was built out using machine learning and data science around predicted readmission. Again, transparent, open, and configurable for each environment we work with. I'm going to go ahead and say we want the most recent risk score. I can take the 1.85 million patients and execute this and get it down to 305 patients. Let's go ahead and save this as Complex Care Management. Now, we have a population that we can feed into our population care flow tool.



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Before we continue the demo, I like to, now, tie it back to the trends that Amy discussed earlier. Earlier, Amy discussed how Medicaid patients can be effective and complex care. She also discussed the increased awareness of bias in algorithms. Both of these trends point to the importance and the need for highly sophisticated, flexible, and transparent approaches to building your algorithms.

Continuing on, I would now like to move on to the importance of a consolidated and longitudinal patient-centered view. Claims and clinical data are brought together to ensure a complete view for the patient. We're going to pick up the story in population care flow. This is where the complex care management patients have been recently uploaded. Here, we are logging into Population Care Flow.

Here is the homepage where our care manager would usually live to start their day. I'm going to play the role of an intake user or an outreach specialist. I'm going to go to the patient's tab here and I'm going to go to New Qualification. I'm going to go ahead and filter on the source of complex care management. Here are those patients that we've identified earlier. I'm going to go ahead and search for a particular patient. I want to continue the story with one patient in mind. That patient is Eliana. Let me fix that spelling there, Eliana.

Here's Eliana. We'll click on Eliana here. We can see some basic information here on the Overview tab. I'm going to jump to Medical History. The first thing I want to do is the outreaches. I want to go look at their medical history in a new tab. Clicking on that, that opens up to fast charts. Here, we can see an integrated view of the claims to clinical data brought together for Eliana. We can see basic medical history information around encounters, diagnosis, and procedures. Again, this is bringing together all the disparate data sources into one view.

I'm going to jump down and look at patient populations. We know that we included hypertension in our definition, as well as diabetes. I'm also noticing that Eliana meets the needs for the chronic condition warehouse definition of depression. We'll continue that story in the next clip. First, let's go back and tie this to the trends that Amy discussed. Amy mentioned the trend around Medicaid patients, specifically, the CareMore model. Amy pointed out that data is key and is needed for various data sources. She also mentioned the importance of precise patient targeting. This is why we've built our care management solution on top of the data operating system and that supports the entire clinical pathway. That allows us to bring and show a consolidated and longitudinal patient-centric view.

Next, let's see how the data and the analytics we have gathered so far drive the assessment in the workflow process. We will continue the story of Eliana after

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she's been enrolled for the complex care management program. The average user, as we noticed earlier, notice depression. As already assigned to our care manager and a social worker. The story is going to continue with the care manager and our new Population Care Flow application.

The first thing that care manager wants to do is go ahead and add an assessment and do a PHQ-2 depressant screen. I'll go ahead and assign that to myself. I have a patient with me, and I'm going to go ahead and click on the assessment and conduct this assessment now. Here it is. I'm going to go ahead and ask the questions about little interest or pleasure in doing things, as well as feeling down, depressed, or hopeless.

I'm going to go ahead and finalize this. When I do that, we'll go ahead and score this assessment. If I hover over here, I can see that the score was a PHQ-2 of four. Then, it tells me here that individual scoring three or higher should be evaluated further. With that, I'm going to go ahead and jump to the problems, goals, and interventions tab here within our Population Care Flow.

Knowing that depression is something else we want to focus in on, we're going to go in to add some problems, goals, and interventions. We're going to add in mental health domain for our problem, with patient who has a history of mental illness. We're going to save that. We're going to go ahead and add a goal. All these dropdowns you're seeing are configurable and set up our end users, or you can put in free text as well. I'm going to put in psychosocial and find a therapist to walk through problems or challenges. I'm going to save that. Now, I'm going to add a barrier. What's a barrier to obtaining these problems and goals? A lack of access to health care, unable to get an appointment to a specialist. Great.

Now, we, as a care team, what are we going to do to help? We've agreed to help by referring to a social worker. You can type that in here. This is a coordinate care. We already have a social worker identified on the team. I'm going to go ahead and say, "Let's do that by Friday." I'm going to associate this to the goal of finding a therapist to talk through problems or challenges. I'm going to save that.

Now, lastly, what did the patient agreed to do? In talking to the patient, the patient agreed to call a specialist or call a therapist. This is a high priority item. Again, it's associated with the goal of finding a therapist. Now that we have these basic elements in place, we have the start of a care plan. Now, I'm going to go up here and actually generate a care plan.

Here, you can open up the care plan dialog and you can customize and configure what you want to include in a care plan. Start with care notes. Let's go ahead and add the initial outreach note when we enrolled Eliana. Let's include

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all the various problems, goals, and barriers. Let's add the results of the PHQ-2 assessment. Let's add some additional care management information, as well as patient details. Lastly, what's our reason for communication here. We'll go ahead and say, new patient care plan.

Now, we can preview this. Now, we can see this configurable and customizable care plan here for you, with all the different elements that we chose. Looking good. We'll go ahead and generate that. Now that care plan is stored within the Documents tab. Here, we can click on that care plan and view it, download it, print it, or we can even export it and send it up to an EMR system.

Honestly, all the trends that Amy discussed earlier point to the importance of data and analytics driving your care management workflow. I'll highlight one. I'll highlight the BMJ article that discusses that patients that are vulnerable to poor outcomes, and that are high risk for poor outcomes. With that in mind, we need to be able to adapt your care management programs based on new data and analytics impacting the world today.

Few more to go. Now, let's look at how to drive your ROI. In order to do that, you need to look and monitor operational, financial, and outcome analytics. Evaluation methods are crucial. What we'll do is we'll now jump into Population Care Insights, powered by Health Catalyst Leading Wisely as a VP of care management. Here, we are. I'm first going to look at historic view of various operational metrics that we can look at that are key to monitor with all of your care management programs that you have, things like qualification details, etc.

I'm going to continue the story on the complex care that we've been looking at. Here's a complex care dashboard we've created for this particular program. Here, we can see an overview of the program and we can see different measures laid out here, like patients discharged with goals met, for example. We can see how that's trended over time. We can see that when we started versus now, and that things are trending well. We can look at things like 12-month medical costs, prevalence of chronic conditions with this population, current caseloads.

Then, we can scroll down here and look at cost and utilization metrics. You can look at the total population, total medical paid PMPM, versus the complex care management population. We're going to see, for example, how the complex here mass population has trended, as well as look at inpatient admits per 1,000, as well as ED visits per 1,000. Also, we can monitor and look at various clinical quality metrics.

Let me scroll back up. I'm going to focus in on one metric over here to the right on percent disqualified due to incorrect algorithm. We can see that, in December 2019, we made some changes to kind of make our algorithm a little

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more efficient. It's doing much better, but we're still hovering in the 30% range. As we continue, we'll see about how we can use this and use ROI to even do a better job in the stratification process.

Amy mentioned the trend around the Camden Coalition, and the importance of evaluation methods, and how crucial they are, and to invest in both the long-term evaluation, as well as looking at key metrics in the short-term, and that it's a rigorous process. Well, Population Care Insights allows you to monitor your media effectiveness. With that and with our experts services, we can monitor long-term effectiveness of your program and really look to drive ROI.

Last but not least is the importance of optimizing your stratification process based on driving ROI. We're going to go back and change the algorithm based on improving the qualification process. Maybe, we probably need to fine tune the program with new sources of data, or world events that impact your overall care management process. In this last clip, I'll show you how an analyst can go back into Population Builder: Stratification Module and make adjustments to the complex care management algorithm.

We're back into Complex Care Management algorithm we built earlier. One of the things that we can do is go ahead and use the data we've generated within the care management workflow tool, Population Care Flow. Here, we can grab the assessment filter. We actually could take this and look at the PHQ-2 results. We want to take complex care patients that also had a PHQ-2 over three, for example, three or greater. We wanted to build a program specific to depression as well, so we can do that, execute that.

Then, we could save that and feed that into the workflow tool. Or let's take that away and let's say a world pandemic hits, like COVID-19. We can grab the stratification module diagnosis filter, which has claims and clinical data all integrated together. We can go and search through here and look for COVID-19. We can look for confirmed diagnosis and apply that.

Now, we're wanting to possibly build a program for COVID-19 survivors who also have been in the complex care management program. We can go ahead and save a copy of this, name it "COVID-19." Now, we have something that we can feed back into Population Care Flow and continue to work through the product. I like to end the demo by going back to Eliana. I want to show how we can optimize and adapt, too, to COVID-19. I'm going to go ahead and add an assessment for Eliana. I'm going to add a self-assessment because Eliana is on a high risk group for contact, if she were to contract COVID-19.

Let's do this self-assessment with her. I'm going to ask you these questions. Have you been within six feet of person with a lab-confirmed case? She said, "yes." Whoops, I accidentally put "no." We're going to put "yes." Based on that,

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you see the questions change based on how you answer these. Does the person with COVID-19 live with you? Yes. Now, finally, are you having any of these symptoms? Now, we can see right here the results of filling out the survey and seeing that, at this point, manage symptoms at home, the assessed symptoms, and if she has any later, we can redo this assessment.

Back to the trends. Amy discussed COVID-19 and COVID-19 survivors. She used SARS as an example of the potential long-term impacts to patients. This all points to the importance of a care management suite that is adaptable and can be optimized. With that in mind, that means we may need to build new stratification routines quickly and on the fly. They may need to implement new workflows. All of that in mind is important as we think about an ROI optimized stratification process. With that, I'd to turn it over to Brooke for another poll question.

Brooke MacCourtney: All right. Thanks, Darian. We're going to go ahead and launch our second poll question. We'd like to know what do you see as the greatest challenges in care management. Your options are data availability, realizing ROI (return on investment), identifying and prioritizing the right patients, patient/provider engagement, or other. I'll give you a few seconds to get your votes in.

Thanks, again, for participating in these polls. A couple of more seconds. We will go ahead and close that poll and share the results. It looks like we have kind of a split. 25% said data availability, 18% said realizing ROI, 20% said identifying and prioritizing the right patients, 31% said provider and patient engagement, and 6% said other. Is that kind of what you expected to see, Darian?

Darian Allen: It is. Thank you, Brooke. I think that's a good segue into some of my final slides here. What you and I just saw on this poll results and kind of what we just went through, really goes back to the importance of what I'm calling the care management flywheel. It points out the importance for a patient-centric approach, with the ability to build transparent, non-biased, flexible algorithms, a consolidated and longitudinal patient-centric view, allowing the data and the analytics to drive the workflow and the assessment process, to have analytics-driven ROI metrics, then, to optimize your stratification process, and continue to rinse, repeat, and over and over again, always thinking about improving ROI and the quality of life for the patients.

I like to close with highlighting the application one last time. When we designed the new care management solution, we took a data analytics-driven approach with transparent, flexible algorithms. Hopefully, the brief demo that we went through shows that. We have the identification process with Population Builder: Stratification Module, with the workflow tool, our Population Care Flow, partnered with the analytics tool, our Population Care Insights. All these

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products working together with our expert services help drive deliver real ROI.  
Thank you.

Brooke MacCourtney: All right. Thank you, Darian. Before we move into our Q&A session with Darian and Amy, we wanted to remind you about our Annual Healthcare Analytics Summit or HAS, as you might know it, HAS will be held virtually this year, September first to the third. Our theme is “The Transformative Role of Data and Analytics in the New Normal.”

We will be featuring speakers who battled COVID-19 in the trenches, as well as other speakers who will discuss adjusting and pivoting to this new normal. We plan to provide a unique and innovative experience, including national recognized keynote speaker, the few of which you can see listed here. We'll be announcing more soon. We'll also facilitate individual connections throughout the summit with Analytics Walkabout, networking with Braindate, and many other virtual activities.

We're really excited about this event. We have a lot of fun things planned. We hope that you'll be able to join us. You can get more information and register now at [hasummit.com](https://hasummit.com). We'd like to give away three complimentary passes right now. If you know that you're able to attend HAS and you're interested in being considered for one of these passes, please go ahead and answer this poll question that I will launch right now. We'll give you a couple of seconds to answer that. Then, we'll move on to our last poll question. Then, we'll move on to the Q&A session. I'll give you a couple of more seconds to answer. We will go ahead and close that. Hopefully, you've had a chance to vote. I'm going to close that. All right. Then, we're going to move on to our last poll question.

Some of you may want to learn more about the Health Catalyst Care Management Suite, or maybe, you'd like to learn about other products and professional services at Health Catalyst. If you are interested in learning more, please answer this poll question. We'll go ahead and leave that open for a moment as we begin the Q&A session. Amy Flaster, who you've heard from at the beginning, will be moderating our questions today. I will hand it over to Amy.

Amy Flaster: Thank you so much. I am going to start with a question that actually was submitted just before the webinar. That is, how should a health system think about balancing the need for quick evaluation results with what happened in the Camden Coalition example, where there was no way impact in a longer term evaluation?

I think I addressed this a little bit when covering that slide. I think there is a tension there. I think for those of us with operational roles as we on the line who run care management programs, you understand the need for having data

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and having information on impact and outcomes early and upfront, so that you can modify the program, change the patient's you're selecting, justify the spend on the program to leadership in your organizations. I think there has to be a balance of having directional information upfront with also investing in longer term evaluations.

I think that there are a number of ways to accomplish getting information upfront using the tool that Darian demonstrated, Patient Insights. I think that using our evaluation tool, you can almost immediately track outcomes from your care management programs, so you can see whether admissions are going up or are flat or going down, is total medical expenditure going up, down, or flat. You can see it just for your population, which runs the risk of regression to the mean, as we discussed.

You can also structure up cohort, or comparison population, to see whether the changes in your population, really, are due to care management. I don't think it's an either or question. I think it's a both. You need both short-term information on impact as well as to invest in long-term evaluation. I think they serve different but both important purposes. I think, Darian, you're going to take the next question.

Darian Allen:

Yes. Thank you, Amy. This question came in around the identification of new patients is crucial. How long does it take for claims data to be available for use by the identification tool? Great question. First of all, completely agree around the timeliness. How I think about that is the integration of the clinical and the claim data together to create that comprehensive data.

Yes, the more quickly we can obtain that clinical data, the claims data, I'm sorry, the better. A lot of times, there is a claims lag. We're aware of that. Bringing that data together within the data operating system allows us to bring all claims sources, all clinical data sources. As new data flows through, via claims or clinical, the algorithms will change. Those definitions are already pre-built, a new patient would flow through and be identified, and would be loaded into the population care flow tool.

In terms of claims lag, I know it can vary by payer and where you're getting that source. I do know that we look at all the data available. As soon as it comes in, we can, obviously, change. The algorithms will automatically update and load those new patients. Great question.

Amy Flaster:

Great. I will take the next question. That is one that was submitted during this webinar, which is, can this new system be used by pharmacists in a pharmacy? The answer is, yeah, absolutely. I think that one of the strengths of this tool is it's flexible and configurable. There are a number of pre-built populations and

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assessments that come out of the box. We've seen, in discussing with clients, a lot of different needs for these tools.

Certainly, an organization could, for example, create certain cohorts in the stratification tool, for example, patients with certain disease states that need care management. Then, similarly could create customized assessments. I'll share that there's a beta client that we're working with now that is focusing on using this tool for its pharmacists. That's definitely a yes.

Darian Allen:

Thank you, Amy. I'll take the next question here. Would the new suite allow us to invite community partners to view and update care plans? Let me give a quick generic answer before I specifically answer that. Obviously, today, I only highlighted some of the features that are built out in the limited time that I had. I want to let you know generically how we are approaching features as they come in. Then, I'll answer this specific question.

Our approach, as we continue to drive forward and continue to invest in the new Care Management Suite, is to build features that support deriving the changes in care management and kind of back to that flywheel that we talked about. With ROI in mind and the patient in the center, that's how we're going to continue to invest and look at what features to continue to build out in the future.

For this specific question, would the new suite allow us to invite community partners to view and update care plans? Today, yes, they can view the care plans. We can allow those community partners to have access to those care plans and be able to have those by either sending through email, or exporting out to EMRs, etc. At this point, today, we do not have the ability for those community partners to update those care plans. Again, that's why I gave that generic answer first. As we continue to invest, we can look to continue to add features like that one. Thank you for the question.

Amy Flaster:

I'm going to address a question related to COVID-19. How can Health Catalyst's new suite identify COVID-19 patients and support the care programs you mentioned? There are a lot of use cases that I could cover here. I'll touch upon just a couple. If there are ones that you had in mind with the question, feel free to contact us after. I will say that some use cases that we are sort of already hearing about and are ready to support are, one, using the stratification product to create cohorts of patients that are COVID-19 positive, so that those patients can be care managed and tracked over time.

To the point that Darian was making, I think one of the really powerful things is using both clinical and claims data, so that patients that may be in your risk contract or in your ACO who have COVID-19 but who did not get tested within your system, and therefore, you don't have their results in your clinical record,



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can still be identified and cohorted based on claims data. That might be a patient in your ACO or risk network who went to a drive-in clinic or got tested out of state, or within a skilled nursing facility and tested positive. For whatever site they got tested, it's not appearing in your clinical record system, using our care management tools, you can create a COVID-19 positive cohort, care manage them, and really track that population. That's one example.

A second example that we're in the process of finishing up build as an algorithm around patients that are at high risk of poor outcomes from COVID-19, what I will say is, I think that one of the strengths of our tools is that you can really customize and configure the algorithms that you develop and the cohorts that you identify. I think, in COVID-19, that's particularly important because, the expression is all health care is local. I think much of COVID-19 is local. Within your system, you may say, "We know that zip code A, B, and C are particularly vulnerable, so we want to care manage and cohort those patients." Perhaps, you want to create a high risk group of patients that have pulmonary disease that go to your pulmonary clinic.

We've created kind of a foundational algorithm with criteria that are all evidence-based and in the literature that are high risk for poor outcomes of COVID-19, but would encourage any user of the tool to add in their own local and specific criteria. Those are a couple of examples of how the tools can support cohorting for COVID-19. There are many others I haven't covered, and I'm happy to talk more offline.

Darian Allen:

Thanks. I'll take the next question here. Other providers/clinicians typically use the EMR. Does this system integrate with the EMR, shared assessments, PGI, and other info? Is this real time? Thanks for the question. I think, it was talked about and demonstrated in the demo itself, the creation of a care plan. I'll start with the care plan. The care plan in itself which includes the assessment information, the problems, goals, interventions, and some other info can be shared with the EMR. That will be via HL7. It will be kind of pretty close to real time.

Now, the question, probably, is after the basic elements, the problem, goals, interventions, and the various components. With that, we would call that closed loop functionality. That is definitely something that is on our product roadmap. We continue to invest and build that out. Thank you for the question. Brooke, I think we'll turn it back over to you.