Steve Vance: Good to be here this morning or afternoon depending on where you're calling in from. Before getting started, I want to take a little bit of a step back in time and go through some specific things that I remember growing up. In 1974, I was 10 years old, lived in Rochester, Minnesota where my dad worked for IBM. He was a computer engineer. And at the time, he purchased a Texas instruments calculator. At the time, it was just under $150. I remember him being very excited about getting this calculator and made a big impression on me. And reflecting back in time, that's about $800 in today's dollars, but it was a very powerful instrument at the time. Up until that time, the main means of calculating was through a slide rule, very simple calculator, had basic, simple arithmetic, a few other functions. It had no battery, but the memory associated with calculators came a few years later.

Steve Vance: Now, kind of advancing to 10 years more into the future, 1984, was when I was in college, my dad continued to work for IBM and was able to get an employee discount on a computer. This one was, at the time, called Portable. Looking back, if I would really view that as being a portable computer, was really referred more to as a luggable computer, was about the size of a sewing machine, really difficult to kind of carry around. So I primarily used it in my apartment for my work.

Steve Vance: There was no hard drive, had two five and a quarter inch floppy drives, had 256 kilobytes of memory, had to load the operating system first up off of one of the floppy drives and then load the program. At the time, I primarily was using WordPerfect, if many of you might remember that word processing program, but again, had no hard drive, didn't have an internal battery, so it always had to be plugged in. But just in those 10 years, the significant advancements that we're seeing in computing power were just a really quite incredible. And later that year, my dad purchased, again through the employee discount program, external drive, was called an expansion unit. And I remember at the time him telling me, "You're never going to be able to use this much memory. It's got 10 megabytes." And I think that's kind of laughable when you think back at that time, but really how powerful that was at that time and how amazing it was to have that particular computing power.

Steve Vance: And then advancing to 1994, at that point in time, I'd been working for a couple of years in healthcare at Intermountain Healthcare. This was the configuration of the computer I had at that time. It now had quite a bit more ram storage than a decade earlier. Four megabytes of RAM was pretty typical at that time, with a 350 megabyte hard drive, and color screens were around and introduced at that time. So, really receive some significant advancements again over that 10 year time period.

Steve Vance: Later that year, I also received a Toshiba laptop. It had a nine inch color screen and had about the same amount of memory, and was very powerful in and of its time. It did have an internal battery, so then, now at this point in time, it really was a portable computing device. At that time in healthcare, at Intermountain we had a costing system that had been internally developed and was utilized on

paradox for DOS, and it was used on this type of computer, really quite sophisticated at the time, and it would take however overnight to run. So before leaving work, we'd set that off, and come morning, if had gone through all the overhead allocations and algorithms, we were in good shape. If not, we had to kick that off again the next night. So a little bit cumbersome, but really quite powerful processing power in the day, and again, quite a bit more than we'd seen a decade earlier.

Steve Vance: Now fast forwarding 25 years, we no longer talk about storage in megabytes, but we refer to memory in gigabytes, terabytes and even petabytes. And smartphones were much more powerful than computers over a decade ago. We're really seeing significant changes in our economic environment. We've got healthcare initiatives that are being changed on a continual basis. We've got regulation with Stark and HIPPA that were non-existence decades earlier. The implementation of DRGs, significant medical advancements in mapping of the human genome, and significant advances in medicine. We're also seeing shifting trends towards patient responsibility. And really, what's in store for us in the coming years, anybody could guess on what that might be. Could it be a single payer system perhaps? Could there be a cure for cancer? All we do know is that there will be significant advances in both technology and also in healthcare.

Sarah Stokes: All right, so we've hit our first poll question here. So I'm going to go ahead and launch that. So in this first poll question, we'd like to know what functional area do you represent? Your options today are administration, clinical, CFO or finance, IT, and other. We'll give you just a few moments to respond there, and then I'm sure Steve will tell you how this is relevant to you no matter where you lie in that spectrum. If anyone join late, you will have access to the slides, and we are recording today's session just so that you are aware.

Sarah Stokes: All right, we've already had nearly 60% of the audience voted. That was very quick. I'll give you just one more second. Okay, it's starting to slow down. I'm going to go ahead and close that poll and share the results.

Sarah Stokes: All right. So 22% came from administration, 6% clinical, 18% CFO and finance, 25% IT, and 29% other.

Steve Vance: Great. Thanks, Sarah. I think that's pretty typical of what I would have expected, a broad spectrum of individuals joining this webinar. And I think it definitely is applicable to no matter where you're at in terms of the functional area that you represent, whether you're in finance, whether you're in administration, whether you're in clinical and IT, those all relevant aspects on how costing data is utilized, and we'll go through some of those specific examples as we go through the presentation.

Steve Vance: Before going there though, I want to just talk a little bit about the current state of healthcare to set the stage for the importance of costing. There's really many different forces that are shaping the current state of healthcare. Some forces have come to the forefront in the past decade. Some have been around in

healthcare for a fair amount of time. I think over the past decade, consumerism is certainly one that's come more to the forefront. The consumer is really more front and center. They're taking more or needing to take more responsibility for their care through the way that the insurance reform is happening with the Affordable Care Act, for example, for high deductible health plans. We're seeing more changes and developments in health reform. And as I mentioned, technology is certainly increasing rapidly. And we're seeing a big shift in volume to value in terms of payment arrangements. No longer are we getting paid just on the volume that we're providing, that shifting towards value, and certainly that has implications on providing care and how we are paid.

Steve Vance: The Advisory Board had conducted a survey towards the end of last year that was administered to CEOs, trying to identify their top concerns. And I found it interesting that the top three are financially focused, and preparing for sustainable cost control was at the top of their concern list. And the developing innovative approach to expense control was another concern. And the third financially identified concern was on exploring diversified revenue streams. So certainly, CEOs are seeing pressures around financial sustainability and performance. And then quite frankly, the last two of the top five concerns really can be translated back to financial motivated type issues and concerns on being able to boost outpatient market share. We're certainly seeing a lot of shift from the inpatient side, moving over to the outpatient side, which creates more competition and more choices for patients, and then also meeting those rising consumer demands as we see the consumerism force come more to the forefront.

Steve Vance: As a result of all these key forces, we're certainly seen some impacts on hospitals, and there's just over 5200 community hospitals in the U.S. But in the past seven years, through 2016, there was only one year when there was more hospitals opening rather than closing, and it's remained fairly stable over the last several decades in terms of the number of hospitals, but clearly, the number of hospitals or are shrinking for a number of reasons. One of the top reasons was on low occupancy of those hospitals that closed in 2016. 32% of them were a result of low occupancy. Poor profitability was another reason, minus 3% on their margins on an overall average basis of those hospitals that closed. And then a fair number of them converted over to outpatient facilities.

Steve Vance: So these forces certainly are having an impact on our hospitals within our nation. Rural healthcare is becoming increasingly more difficult to manage and to administer. 68 hospitals closed in that time period, and 273 more are at risk. It's often difficult to get physicians to want to practice in rural locations. However, we are seeing alternatives around that with telemedicine, for example.

Steve Vance: We've also seen spending increase significantly due to a number of factors, population growth, and that may depend on where in the country you are. Some areas we are actually seeing decreases in population, but on an overall basis, we're seeing population growing and population aging as the baby

boomers enter the retirement years and start getting Medicare. We are seeing more utilization around that aging population. Disease prevalence is rising, and utilization, as well as services in terms of price are increasing with the goods and services associated with providing that rising. We're seeing some specific conditions where increases are more prevalent in diabetes, hypertension, and low back and neck pain.

Steve Vance: And then we're also seeing more dollars at risk in healthcare, specifically with Medicare. And you can see in 2013, there was just about 2% of the Medicare dollars that were at risk, and that's risen significantly over the last five to six years to just over 7%. Looking at that increase, the biggest risk is with readmissions and then value-based purchasing. I know some would argue that there's some mixed results in terms of, is this really having an impact? But I think CMS would argue that, yes, we've been seeing some improvements associated with having those dollars at risk at the hospital level, but that does create challenges and more complications for hospitals to be able to manage that risk and to have those quality in outcomes being tied to payments to be able to manage that financially.

Steve Vance: So where are we at in this value journey? Predominantly, I think many are still in the fee for service bucket in terms of how they're being paid. But clearly, the direction is being tied more around quality and value, rather than just strictly based on volumes. And I think many organizations have been reluctant to spend too much time in that area, but clearly we are seeing that direction move towards value, and that becomes more important for us to really understand our value that we are providing as an organization. And that is becoming increasingly more relevant towards how we're being paid, and incentives around wellness versus sickness is certainly key.

Steve Vance: Often, as regional CFO is asked how business was going at the hospital, and quite ironically, it felt a little uncomfortable to say, "Oh, things are going great, our admissions are up, we're full, we're at capacity." It's really not the direction we want to see healthcare going. We want to make sure our population is healthy and that our payment models are aligned with that condition.

Steve Vance: So in summary, our problem is centered around shifting payer mix. As the demographics change and as the population ages, we're seeing that shift into more of the government paid programs. We're seeing declining volumes in specific areas, the shift from inpatient to outpatient is also creating some challenges, increasing costs and in shrieking payments. So essentially, costs are going up and payments are going down, which results in shrinking margins. And according to an article in HFMA, margins were at 1.6%, which is the lowest that we've ever seen in the industry. And preliminarily, we've been seeing that there looks like there will be a further decrease for fiscal year 18. A Navigant study showed a 39% drop in margins in just two years, from 2015 to 2017. So clearly, these economic forces and issues that are within healthcare are shrinking margins that makes it critical for us to have an understanding of what those forces are and how we can react.

Steve Vance: And really to summarize, in today's complex environment, you cannot successfully manage a business on a 1.6 margin without deeply understanding and managing your expenses. That's really what I want to focus in on today, is on deeply understanding and managing your expenses through the costing process. So really with those decreased margins, small changes in net revenue and expense have a much greater impact on the bottom line than we've experienced before with these small margins. And it's imperative that healthcare organizations really do understand their cost structure and to be able to enable a strategic decisions. I think the time is over for, especially CFOs to just carry on with business as usual. There needs to be a strategy in place for a long term strategic plan on how to address these economic forces rather than reacting to increasing financial metrics. And that strategy does need to be built on a solid foundation of cost, data and information.

Steve Vance: So really we have a situation of a greater need for costing, and I think it's important, too, that our costing methodologies are understandable and defendable, and it becomes more important as we're dealing with others within our organizations, whether they be clinical individuals or others, physicians, we need to develop that trust with those users. They need to understand our costing, it needs to be clear, it needs to be understandable. If finance can understand or explain how the costing system works, you cannot develop that trust with others so that they can react and make changes based on that data. And then it also needs to be very accessible to those that are the users of costing, that they have that data, they can see what's happening, see what is happening with trends, and also be a part on being able to manage those rising costs.

Steve Vance: I want to shift gears a little bit and talk a little bit about different costing methodologies, and there's many different variants out there. These are some of the more common different methodologies that are available. One of the most simple is just based on the cost-to-charge ratio where costs are assigned a percentage allocation of what charges are, and in the most simplest form, that's just spread across the whole system. So costs do get allocated based on an overall basis in that particular instance, but they're not very precise in terms of individual procedures that are being done, or overhead that might be allocated.

Steve Vance: So another methodology is on the cost-to-charge ratio, but coordinating with what information is on the Medicare cost report, so somewhat of a hybrid approach on... also allocating additional overhead allocations on the cost to charge-ratio-methodology.

Steve Vance: Another methodology is on tying those costs and allocations on a departmental basis. Again, not very specific or not very granular, but is attempting to allocate those costs on a more specific basis. The challenges with allocating costs at that level is oftentimes the data is not very actionable and precise enough to really have value in terms of being able to provide change and make improvements.

Steve Vance: I think one of the more common methodologies is based on relative value units or RVUs and the chargemaster. And so, costs are assigned based on costing studies that are done periodically throughout the year, and hopefully updated on a regular basis to identify what types of supplies are utilized in a particular charge that's administered, and what time elements that are associated with that. So certainly a much more precise methodology than the cost to charge ratio, but there's still limitations to that, in that if a patient receives the same charge as another patient, then the assumption is, is that costs would be identical to another patient, which that may not be true.

Steve Vance: So that leads us to activity-based costing, which is another costing methodology that we will delve into in more detail going forward.

Sarah Stokes: Okay. We are to our second poll question. In that poll question, we'd like to know what type of costing system do you have? And Steve just gave a great overview of those. So your first option is cost-to-charge ratio, second option is RVU or chargemaster, third option is activity-based costing, fourth option is other, and fifth option is you're just not quite sure what you're using right now, which given, there was a pretty big spread of the nonfinancial folks on the line. I'm sure we'll get a good chunk there.

Sarah Stokes: All right, those votes are pouring in. We'll leave that open for just one more moment. I'll remind you again, we are recording today's session, and we will be making that recording as well as the slides available after the fact. And we are going to be holding Q&A at the end of this presentation, so please do submit your questions as they reach top of mind.

Sarah Stokes: Okay, we're going to go ahead and close that poll and share the results. Okay. So 11% said cost-to-charge ratio, 22% said RVU or chargemaster, only 9% said activity-based costing, 17% said other, and 41% are majority, said they were not quite sure.

Steve Vance: Great. Well, thanks, Sarah. I think that's not too surprising. Costing is often misunderstood, and so not being sure of what costing system you have, I think it's pretty common. But I would say to those of you that aren't sure, that you would go back to your organizations and talk with your finance teams in terms of what costing methodologies that are within your organization. And activity-based costing, that also is not surprising that there are only 9%. My bias going into this was that most would be on an RVU/chargemaster type basis, which does seem to be the case if you factor out those that aren't sure. But again, I think it's important for you to go and identify what a costing system that you do have.

Steve Vance: So in going back to activity-based costing, this graphic I think is illustrative of if you are on an RRV/chargemaster type costing methodology versus activity-based. Under the RVU basis, if you have three different patients that are receiving the same charges, they're going to have the same costs because those relative value units are assigned based on those charge codes. And if the costing

studies have been done appropriately, you will have some pretty good average costs associated with those charges that have been provided, but you're not going to have the variability that really is hap happening in real life.

Steve Vance: So, for example, with those three patients, you would have different time elements associated with providing those same charges. You'd have different volumes and supplies associated with providing those same services, because on activity-based costing, it's not tied to two charges, but rather those activities that are necessary to provide those services.

Steve Vance: And delving into this a little bit further, even the time element that may vary between the patients is also able to be drilled down on in terms of the amount of tech time, or the surgeon time, or if MRI was provided, how much time was spent with the MRI, or a nurse, or the OR time. So with activity-based costing, pulling information based on what activities were utilized in providing those services, really gives a more detailed and granular level associated with providing those activities. So the cost truly are tied to specific activities that are relevant to a particular patient, to a particular procedure, rather than based just on averages.

Steve Vance: On this next slide, I don't know if this will be familiar to many of you on what this is, but over the course of my life... excuse me, the course of my life, I've had many remodeling and tile projects that I've done.

Steve Vance: This is a tile cutter, and this allows for simple straight cuts. And if you want to do any kind of intricate cuts, this isn't the tool for you. But the way that it works is there's a diamond wheel, much like how glass is cut, where a straight line is scored across the tile, and then pressure is placed on either side of that, and the tile breaks in half. This sufficed for me early on some of my remodel projects, just because I didn't have the experience or the ability to really do much more than that. And if I did need a precise cut, I would take it to the local home improvement store to have them do that. I'd mark on the tile where I wanted those cuts to be done. But oftentimes, I'd come back and wasn't quite in the right spot, or the markings that I had made, had washed off at the home improvement store when they were providing those cuts. But this tool did suffice for me in the short term, and it was something that helped me get through these remodeling projects.

Steve Vance: But as I became more experienced and learned more about tiling, this was the tool that I really needed to have, a much more powerful tool to be able to increase my efficiency and be able to get the job done. And this is much like the different costing methodologies and tools that are in place. Many of us have costing tools, they've been sufficient, they've served their purpose, but really a more powerful tool is necessary really to be able to get the job done, and activity-based costing really is that powerful tool to be able to really understand our costs at a granular level and be able to make decisions and improvements associated around those costs.

Steve Vance: So, again, many organizations have data in multiple areas. That data may be isolated in different sources. It's difficult to find that data oftentimes. Many of our analysts are spending countless hours in trying to gather that data, creating reports for clinicians and administrations and others, and it's really difficult to get those answers responded to in a timely manner.

Steve Vance: Here at Health Catalyst, as Sarah introduced at the beginning, Health Catalyst is an organization that does take that disparate data, pull it together into a single platform that we call a DOS system or Data Operating System to have that in a single environment. We saw opportunity at Health Catalyst, by having all that data tied together with that platform, with the clinical variation that we were seeing and not really being able to understand the costs associated with that. We were really in a good position to be able to set out to make a change.

Steve Vance: So we created application called CORUS, which is an activity-based costing system that ties into, not only a financial data, but also quality data and other patient-related data that becomes very powerful when tied to that financial data, which we'll talk about how there are many different applications on being able to utilize that clinical data and qualitative data along with the financial data.

Steve Vance: So with CORUS and with activity-based costing, really provides an environment to be able to access that data in a timely manner. We see here the analyst kicking back on the desk. It's not a situation of having them have more free leisure time, but really have the opportunity to become analysts. I thought it was very ironic that many of the analysts that I came across in my career, whether they be financial analysts or data analysts, were referred to as analysts in that they weren't doing much analysis. They were really spending a lot of time trying to set up processes, trying to gather data, and really not spending much time in providing that analysis. It's so necessary for greater efficiency. This platform really allows the financial analysts and the data analysts the opportunity to have much more time to really delve into the data and really be much more satisfied in their positions in providing that analysis that is so needed.

Steve Vance: So in summary on activity-based costing, costing and activities are able to be done down to the patient level. There's an adoption of a standardized methodology that's in place. It's a single cost management system that can be done across all providers, and it, too, is reconciled against the general ledger, and costs are able to be measured across the entire continuum of care.

Steve Vance: As an organization, there're different levels that CFOs and administrators have in order to be able to pull to manage their operational and financial performance. Some of the measures are more difficult to do than others, for example, volumes. Although there is some influences organization can have on their volumes, that's pretty difficult to manage. The mix of patients that are seen is quite difficult to manage at times, although there is some influence that can be placed there. And then, rate changes on expenses are often difficult to

change, but are possible through negotiations with vendors and so forth. And charges is a lever that has traditionally been pulled in raising rates to increase the payments that are received. But with shifting payer mix and with different payment methodologies, that's also a lever that's difficult to really have a material impact on financial performance.

Steve Vance: Salaries and supplies is an area that we do have available to us, and we have those levers that are able to be pulled to manage our expenses. And activity-based costing does help with being able to get at specific data around salaries and supplies and other resources, and costs associated with providing those services to be able to impact our financial performance associated with that.

Steve Vance: So on activity-based costing, really the strategy there is to be able to utilize the data. So if we have the data, what's going to be done with that? We'll talk a little bit about specific use cases, but we really need to have a strategy in place and have strategic decisions and be looking at our long-term viability as an organization rather than reacting to financial metrics as they come along. And having that more timely information will provide more focus on analysis as I've mentioned, and really, when we get to that point, can we truly begin to develop strategies that will help with long-term viability of our organizations.

Sarah Stokes: All right, we are to our next poll question. So I'm going to go ahead and launch that. In this poll question, we'd like to know to what degree do you agree with this following statement? "I understand my organization's costing methodology." So your options are: you strongly agree, you somewhat agree, maybe you're neutral, then we have somewhat disagree, and strongly disagree. So maybe you knew which system your organization used, but maybe you don't totally understand how that works. So we want you to respond here, and we are having votes come in. We'll leave this open for just another moment. Again, if you joined late, we are recording today's session and you will have access to that recording as well as the slides. And we are going to be holding a Q&A at the end of this session, so please do submit your questions.

Sarah Stokes: Okay. Those are tapering off. We're going to go ahead and close that poll and share the results. So 22% voted strongly agree, 23% somewhat agree, 32% neutral, 16% somewhat disagree, and 6% strongly disagree. So it looks like the majority feel like they have a pretty good grasp of what's going on.

Steve Vance: Certainly. And I think given that many didn't know what costing methodology they have, it's not surprising that we see a fair amount of neutral or disagree. It's certainly important to understand what costing methodologies that your organization has so that you can have a better understanding on how you can impact your costs and what actionable data can be used to impact that.

Steve Vance: So I want to talk a little bit about the specific use cases if you were to have specific cost accounting data on how that can be utilized. I think one of the areas is on pricing. Pricing needs to be updated frequently, and I think many organizations don't do that very often, mainly because it requires a lot of

technology to get accurate information to be able to set those prices. And quite frankly, I think most organizations adjust their prices across the board and set rate increases based on what was done last year and factor that inflation.

Steve Vance: But I think what's becoming more and more important, is that as we see competition increase, pricing needs to be competitive at a hospital compared to the outpatient counterparts, and hospitals can't compete on pricing alone. Certainly, it's more expensive to provide services within a hospital healthcare setting. So the more important aspect of that is to be able to tie quality data to pricing, which the CORUS activity-based costing system allows that to happen. The costs associated with providing those services at a hospital need to be able to demonstrate the added quality or other outcome metrics associated with providing those services.

Steve Vance: Certainly, we need to understand what markup is sufficient for a margin associated with providing those services, and not in all cases are we able to set prices at a level that is sufficient to provide a margin for a number of reasons. One is, how we're paid may not matter in terms of what prices we set, and for other reasons too and to be competitive. But understanding those costs associated with providing those services is very important on the other use case of being able to conduct margin analysis and to be able to evaluate our profit margin and our contribution margin for different facilities, different service lines, our different departments, and even getting down to the level of by attending physician or patient on how important that is to really understand where we're at any level across the organization in terms of profitability, so that decisions can be made appropriately on where we need to focus.

Steve Vance: I think certainly, in many cases, organizations are very good about starting up new programs. I think where it's difficult for many is on existing programs. Being able to have accurate information on margin analysis really puts that more into perspective on what particular service lines are we financially performing poor in.

Steve Vance: This next slide shows some of the different types of reports that are available through the core system and other applications within Health Catalyst. This particular report is a sample report from women's and children's looking at hysterectomies. And you may have information from a global perspective that the contribution margin in this particular case is positive at $832, but looking at a little bit more granular level and looking at it from the different ways that these hysterectomies are performed, really gives insight into what's going on at a more detailed level.

Steve Vance: So in this particular example, on the laparoscopic procedure, the contribution margin is $810, so quite profitable and fairly consistent with what we're seeing on an overall basis, but on the vaginal category is where the contribution margin is the greatest, and on robotic and open is where we're seeing some negative margins. And so, there is some opportunity there to really determine what's going on with payment levels and/or a expense categories associated with

providing those services. And where it does become very important is to tie that to the clinical and quality data, which you can see on those open procedures. Not only are we not profitable from a contribution margin basis, but we're seeing complications at a higher rate, 30-day returns, and transfusions are much higher than the other modalities. So certainly, being able to tie that to clinical data is very helpful in developing strategies and reacting to those different margin analysis scenarios.

Steve Vance: This is another example of the type of detail that's available on a profit and loss basis, and looking at specific expense categories, and direct and indirect supplies associated with providing those services. Again, having that detailed information really helps on being able to identify how to react and what to focus in on a specific issues.

Steve Vance: Also, contract negotiations is another potential use case of having accurate costing information. Certainly, knowing what costs are associated with providing services puts us into better negotiation positions with our contracted payers, also knowing what our costs are and how that relates to our pricing on the lesser of language, which might be a new concept to many of you on the Webinar, but oftentimes, payers will pay the lesser of billed charges or what was contracted to be paid. So if pricing is not set appropriately, payment levels will not be as high as what has been contracted to be paid. And certainly, having patient specific data puts us in a better position to be able to speak to the situation that we have when we're dealing with our payers.

Steve Vance: Again, here's another specific example of some of the information that's available through the cost application and associated applications on that level of a cost detail.

Steve Vance: Then there's also different payment models. Will Caldwell, if any of you had listened to his webinar last month on the Medicare shared savings program, how important it is to really understand our costs associated with these different payment models. Many of you are probably in a situation of having bundling arrangements, where a specific payment is received for services that spread across the continuum and knowing what those costs are associated with, providing those services helps be able to spread out that payment to specific providers within that bundling arrangement as well as those that have shared savings arrangements, and knowing what our costs are to be able to specifically identify those savings associated with those particular payment programs.

Steve Vance: Population health management is clearly another use case of being able to utilize costing data for that. Many of you may be familiar with the Institute for Healthcare Improvement, Triple Aim statement that identifies quality and cost being connected, and the decisions made based on this data are to provide the highest quality of care at the best cost, and by doing so, improves our population health.

Steve Vance: And then process improvement initiatives. This is where I see significant opportunity, and as a CFO, utilize this area of use case as much as possible. I think this is one of the greatest levers that we have in healthcare is through process improvement initiatives and being able to have that specific costing data that is at a granular level, helps us to identify variability, whether that be, again, on a facility level or on down to the patient level. And I think we could spend a whole webinar topic on this alone, but suffice it to say that this is a very powerful tool that I utilized as a CFO that really helped me achieve financial viability and achieve the margins that were necessary in the long run.

Steve Vance: And then aligning cost and quality, as I've touched on before, is very important, and that creates opportunities where we can focus in on these process improvement initiatives to really make change, and not only save cost, but increase quality as well. Value is quality divided by cost, and so certainly cost is necessary to have that value proposition be in place for us to provide care at the highest quality at the lowest appropriate cost.

Steve Vance: I'll quickly go through some of these other slides as we're kind of coming towards the end of time. But providing information to physicians is really important, and I've seen some great changes take place just in providing this information to these physicians. They like to see how they compare and relate to others within their practice or within their group, and sharing those metrics, whether they be costless metrics or quality metrics, is very important, and to have that information visual and tied back to specific cost data is very important. I think this is an area that takes some time to develop that trust, and having a costing system that is defendable and explainable is very important to develop that trust and to then have these clinicians be able to trust that data and act on those initiatives that need to take place. Here's also another example of being able to provide that physician variability to physicians.

Steve Vance: So in summary, I just want to reiterate what we've talked about in terms of needing to have that activity-based costing system tied to clinical and related data to have really a very powerful tool in place for us to be able to utilize those use cases that have been identified in being able to set pricing decisions, to be able to set strategy and analysis and really have a long term vision on how we approach our financial viability going forward, being able to set contract negotiations, and focus in on strategy and analysis, and also on our process improvement to efforts on how key that really is given what we're seeing in the healthcare environment today.

Sarah Stokes: All right, great. Thanks so much, Steve. So before we move into the Q&A, we have a few giveaways for complimentary Healthcare Analytics Summit registrations. This is the first time we're offering that this year, so that's exciting as we gear up for the event in September. This is an annual event with more than 1000 provider and payer attendees, and this year it's occurring September 10th to 12th in Salt Lake City, Utah. And we'll have a brilliant slate of keynote speakers from the healthcare industry and beyond. This is just a quick glimpse of some of the confirmed speakers that we will have at this year's event.

Sarah Stokes: Will you click over to the next slide for me, Steve?

Sarah Stokes: So, we're going to run our first poll question here. So if you know that you would be able to attend the Healthcare Analytics Summit and are interested in being considered for complimentary passes for a team of three to attend that event, please respond to this poll question. We'll give you just a few moments there. It's great to see those results pouring in. Then we're going to dive into the Q&A.

Sarah Stokes: This is also a great moment if you get your response in for this poll, if you have any questions, get those in now, or we're just about to dive into that Q&A with Steve. We've already had some great questions coming in.

Sarah Stokes: Okay, I'm going to go ahead and close that poll, and then see if you'll click over one more for me. All right. And then again, one more giveaway for the Healthcare Analytics Summit. If you know you're able to attend and you would like to be considered for a complimentary individual pass, again, to come to the Healthcare Analytics Summit, out here in Salt Lake City, Utah, again, please respond to this poll. We'll give you just one more moment there.

Sarah Stokes: Okay. The votes are tapering off. I'm going to go ahead and close that. All right, and then, Steve, if you'll click over one more for me. And then we have our final poll question here before we dive into the Q&A.

Sarah Stokes: While today's topic was an educational webinar focused on the key role that costing can play in financial performance, some of you may want to know more about Health Catalyst products or professional services, or the CHORUS application, or other work that we're doing in this space. If you'd like to learn more, please answer this poll question. We're going to leave that open as we go ahead and dive into the Q&A. So let me pop these out here, Steve, and should we just start at the top?

Steve Vance: Yeah, we’ve got a lot of good questions here. Let's take the first one here in terms of, where do you see pharmacists playing a role in this realm? I think I can think of a couple of examples associated with that. One specific example is in having a prescription prescribed by my physician a couple of years ago. What he had prescribed was much more expensive than some of the other alternatives. And when I went back to the physician after researching that a little bit more, the physician had no idea what the cost was associated with that. So I think in terms of pharmacists being able to communicate with physicians in terms of what the level of costs are associated with providing those medications, I think is very important. Certainly, physicians are wanting to provide the best possible care, but oftentimes they don't have the understanding of what those costs are. And I think that applies not only to pharmaceuticals, but clear across the board.

Steve Vance: There's been many times when we've shared that information with physicians. One specific example I can think of is when we were working with orthopedic

surgeons, and what the cost was on the implants associated with joint replacement was really an eye opener for some of these physicians that they'd never been exposed to what those costs are. So I think really in communicating out what those costs are, is very important and really does affect change in and of itself.

Sarah Stokes: All right. Your next question here asks, if time is the key factor to not use RVU, what systems do you use to collect time by activity that's simplified, gathered and disseminated?

Steve Vance: So if I'm understanding the question here is certainly having an activity-based costing system that is tied to data in an automated process certainly is important from an efficiency standpoint. But the question here is what systems do you use to collect time-

Sarah Stokes: By activity.

Steve Vance: ... by activity. So with that automated system or approach and having all of those data sources tied, the methodology associated with the activity-based costing system pulls in information, whether that be from a time in attendance, whether that be from the supply utilization tables, a number of different sources. So I don't know if I'm answering the question specifically on that, but by having that DOS platform and having all of those different tables at the disposal of the costing system, really simplifies and automates that process by having it all in one central location. So I don't know if I've answered the question as was intended, but feel free to reach out to me after the webinar, I'd be happy to go into that in more detail.

Sarah Stokes: All right. Your next question comes from Rob who asks, "If the goal is to optimize the cost of delivery of care, why go through the hassle expense and complexity of full blown ABC, which has the dicey proposal of allocating fixed costs? It's much cheaper and just as effective to do analytics on a slimmed down but relatively available datasets of direct variable costs."

Steve Vance: Well, a couple of things come to mind when talking about that. An activity-based costing system is certainly more granular and more complex at the outset, but certainly less complex going forward. So once the system is set up and available to use, we've seen a great decrease in the number of analysts that are used to be able to deploy that costing on an ongoing basis. We had one specific vendor that had six analysts associated with providing those costing services and updating them on a regular basis with their existing system, which was based on RVUs that actually went down to a little over two analysts providing that service.

Steve Vance: So, the way that I functioned as the CFO is I did... We did not have an activity-based costing system, and we were able to pull in information on an ad hoc basis, but it was very difficult and very time consuming to do so, and I certainly

see the benefits in the long run from a cost benefit standpoint of utilizing activity-based costing on a long-term situation. Again, I think activity-based costing really sets the tone for a long-term strategy rather than reacting and doing one offs on that analysis.

Sarah Stokes: All right. This was also a follow up I think from Rob who said, "My experience is that the finance team is typically consumed by RCM challenges, but department and service line managers are more receptive. Do you see the same thing?

Steve Vance: Yeah. I think revenue cycle is certainly a top of mind for the finance team, and I guess this kind of goes back to my example before on automating the process does free up time to be able to then spend more time on other challenges and other issues such as costing. So I don't want to discount the need to focus on revenue cycle management, but costing is every bit as important, and I think they go hand in hand in needing to be addressed. But I have seen that, and I think there needs to be a balance between the two.

Sarah Stokes: All right. Your next question comes from Gary who asks, "Why is the adoption rate for ABC so low? Is one reason that some in the organization do not want anyone to know the truth about costs, which might lead to profit margins by treatment and even by patient?"

Steve Vance: I think that's possible. I think one is that many don't even know what activity-based costing is. I think even those within finance don't understand activity-based costing. So I think part of it is an educational viewpoint, another is kind of the age old reason of what I've always done, I feel comfortable with, and that's what I'm going to do going forward. I don't want to change any more than I need to. I think those are all reasons for that. I don't know as though it's necessarily for trying to hide information in terms of how a particular unit or entity is doing. I certainly hope not, because there's significant opportunity out there. And again, by having that detailed costing information is really a powerful tool that a CFO or the finance team has at their disposal for process improvement initiatives, which can amount to millions of dollars for a typical organization.

Sarah Stokes: Great. And I do want to just call out, we are at the top of the hour. Steve has kindly agreed to stay on for a couple of minutes of extra Q&A time, so we're going to keep chugging along for a few more minutes here. We do have a solid list of questions still ahead of us.

Sarah Stokes: The next question comes from William, who asks, "Please explain how the patient's specific labor data, nursing, physician tech, et cetera, is collected for use in activity-based costing. Who is doing this?"

Steve Vance: Well, it depends on the application that's being utilized. So, again, it's really specific in terms of what system is being done, but many have HR applications, Kronos, for example, where that data is collected, but oftentimes that data is

siloed in a different location. So being able to pull that information from each data source is difficult if it's not connected like it would be in a data operating system. So not all organizations have everything electronically at their disposal, but again, it just kind of depends on what systems currently are in place, whether that be part of the EMR, whether that be part of some supply system that you have. But all these disparate locations are tied together, and then the activity-based costing system pulls from those particular data sources.

Sarah Stokes: All right. Your next question comes from Thomas who asks, "Can you give an example of how ABC use case analysis helped you improve a process affecting patients?"

Steve Vance: Yeah. One, I think, specifically that I can think of, is in working with a group of physicians delving into their costs, it was identified that one physician versus another was using a different type of bone cement where one was medicated and the other was not. And in looking at that and tying that to quality data, it was determined that the one that was using the medicated bone cement`, which was significantly more expensive, was not providing any differences in terms of outcomes for that particular physician's patients. And so as a result, costs were able to be reduced significantly and no change in outcomes. I think that's one small example of how activity-based costings was used. Ultimately, in my organization as costs were reduced, we reflected that in charges, so the patient was benefiting from a cost perspective there. There's other examples associated with quality that come into play as well, but that's one example of how that improved a patient's experience.

Sarah Stokes: Okay. The next question comes from Robin who asks, "Speaking of you, can you talk a little about how the time components used in activity-based costing are developed? I don't know if you already kind of touched on that a little bit."

Steve Vance: Yeah, I think that was kind of touched on, but I'd be happy to... If you'd like to send me a follow up on that, if I've not completely answered that, let me know and I'd be happy to address that.

Sarah Stokes: Next question is from Malik, who asks, "How do you capture length of procedure or exam done outside of the OR, i.e., procedure or exam room to understand staffing and room utilization costs?"

Steve Vance: Yeah. Again, I guess that depends on the particular system that's being used, and many EHRs capture that information when clinicians log in and log out, and that information is captured and then tied into the activity-based costing system based on that time element.

Steve Vance: Now, I think certainly going through the process of setting up an activity-based costing system will identify issues associated with that. If that information is not captured appropriately upfront in terms of the time allocations, that's certainly going to have implications. But in deploying any of these types of processes,

there are lessons learned and modifications are made, but that's usually captured, again, through kind of timestamps associated with when a clinician logs in and logs out.

Sarah Stokes: Okay, great. We are about five minutes past. Do you have time for a couple more questions?

Steve Vance: Yeah. Let's just take this last one, which is an easy one, wanting to see slide 40 again. Let's take a look at that. And also, these slides will be made available after as well to take a look at more closely.

Sarah Stokes: Okay. All right, well, Steve has to dash. Thank you for staying on for a couple of minutes of extra Q&A time.

Steve Vance: Thanks, Sarah. I appreciate it.

Sarah Stokes: We do still have some unanswered questions. Are you willing to, if I send those over, maybe shoot-

Steve Vance: Sure, I'd be happy to.

Sarah Stokes: Or you can even type up the responses and I'll get back to everyone for you. So we apologize if we weren't able to get to your questions. We did have a ton pouring in there at the last minute.