The power of data: Transforming the future of care?

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00:06–00:58 **Heidi:** Data and analytics are growing in importance in life sciences and health care, fueled by stakeholders' thirst for information; the need to manage large, diverse data sets; increased competition; growing regulatory complexity; and innovations ranging from precision medicine to population health management. Today, robust and meaningful analytics hold the potential power to unlock new sources of value, create competitive differentiation, and transform the life sciences and health care ecosystem. Is the industry ready?

This is Tales of Transformation. Today I have Tony Jurek and Deborshi Dutt from the Deloitte Consulting LLP Life Sciences and Health Care practice with me to discuss how the industry can harness the potential of the enormous amounts of data available today. Welcome, gentlemen.

00:58–00:59 **Tony:** Thank you.

00:59–01:00 **Deborshi:** Thank you, Heidi, for having us here.

01:00–01:06 **Heidi:** Tony, let's talk about this phenomenon with data inundation. And is there such a thing as too much data?

01:06–04:54 **Tony:** Is there too much data? That's an interesting question. I was talking today with a manager of a large regional health system. Her first response to the same question was, "Dear God, yes, there's way too much data." And as she explained her response to my question, she listed all the sources of data that she knows her physicians received, yet they put aside, as really not pertinent to the visit or to the next best actions. They don't need all the past lab results, all the past visit notes, things like that.

So on the surface the answer in the industry might be yes. There is too much data. I on the other hand believe there is not too much data out there. The answer to the question really isn't, is there too much? It's a question that must be addressed from really multiple perspectives. And the first perspective is disparate data versus accessible data, even with the advent of the EMR, which by the way accounts for only approximately about or around 20 percent of the data that really matters or is associated to a patient.

Across multiple sources, if you will, and variations of data that accelerates, or accelerating them again, unbelievable pace right now. It makes it hard to assess the data that's needed to make the necessary care decisions. And this accessibility issue is forcing unnecessary practice of things like copying data, copying lab results, copying other things into notes fields in the EMR, and what that does is, that lack of accessibility, that disparate nature of the data is starting to create issues around data quality, security concerns, and some other issues around the accuracy of the information that's derived from the data. So data disparity versus data accessibility becomes one lens by which we look at this question, is there too much data? The second lens really is around availability or available data versus relevant data; just because data is available doesn't mean it's relevant to the task at hand.

Health information exchanges, HIEs as we know them, have seen really limited success on the broader scale. This is really due to two main reasons. The fact users have to log in to a separate system to access data about a patient is a problem. And again this accessibility issue shows itself here, but it's also the fact that most of the systems, most of these HIE systems, provide limited capabilities to filter data, and filter the data they provide, down to relevant data for the purpose for which it's needed. And oftentimes the data is provided in read-only form, 80 plus pages of a medical record for example, which includes really expansive historical data requiring lots of users to manually dig through a mountain of information data to find useful and relevant points that they can use during that course of care.

The third dimension that I talked about usually is around this idea of form versus function. You know, data is defined in this conversation, it can come in many forms: discrete data attributes, unstructured data fields, like a physician notes field, or unstructured often complex data files, like images—think x-rays, CT scans, and other MRIs and other types of these files.

And the variety in the form of this data, it's got to match the functional needs of the data in order to make that data both relevant and accessible. Again in that HIE example, the helpful information exchange example I provided, it's proven time and again that these 80-page PDFs of patient medical records is not really a form of data that's useful to the task at hand, the task of providing accurate patient diagnoses. Now, I realize my answer to your original question—is there too much data?—is no. But what is missing in this industry is really the disciplined focus of matching the form of the data with its functional needs, making it both accessible and relevant to the end user of that data.

04:54–05:06 **Heidi:** We just heard from Tony who indicated that there is not too much data in the industry. However, we do need to do a better job at matching the form of the data to the functional needs. Deborshi, what's your take?

05:06–05:44 **Deborshi:** What we are seeing clients now do is saying, let's organize and figure out how best do we use, not just the data itself for getting the comparative advantage, but, with the new age of technologies coming out in the sense of cognitive and the sense of cloud computing, the big data stacks, how do I sort of harness these technologies to go through and comb through the data and find exactly what I'm looking for, which will then help me become more what I would call as an insight-driven organization, and drive from there?

05:44–05:49 **Heidi:** Tony, what do you think is one of the key areas that's holding health care back?

05:49–08:20 **Tony:** The health care industry itself lags quite a ways behind other industries in terms of what I called data use maturity, but the question you're really asking is why is this the case? Why is the case that when technologies that the health care industry has been using and exploring even today have been used for quite a while in other industries? I'm talking about things like data warehouses and big data, and big datalinked environments and some of these more buzzword-like terms, but also the ability to look through and read through unstructured data and find pertinent, key reference points and other cross-referenceable capabilities, predictive analytics. These things have been around for a while and is represented across all the industries that when you talk about the consumerism of health care. Consumerism of health care is to bring health care up to those levels where consumers are expecting things in these other industries. I could buy my dream car on the Internet. Now, it's this kind of, except you know, this expectation that's being set, but from my perspective, health care lags not because of the technology; it lags because the industry as a whole continues to be what we call document-centric. You think about it. EMRs—electronic medical records, electronic health records, care management systems, revenue cycle systems, all of the systems that guide health care are really focused around, less on managing the events of providing care and more on documenting, or documentation management after the fact of the things that go on in health care. Documentation practices unfortunately are not standardized and therefore the availability of consistent data is not really standard as well. This is why health care continues to share these large blocks of documentation versus homing in and filtering and making available the data that's both accessible and relevant to the point of the activities at hand.

What the industry needs to do to overcome these issues of accessibility and relevance is to shift the focus away from document-centric to one that is really event-driven and message-centric. Providing only the relevant data needed at specific points of care to determine next best action associated with that care delivery. It's one thing to really know everything associated with the care plan of a particular patient with a particular condition or diagnosis. It's another to be able to tailor that plan so that it's addressing the needs of the patient that's dynamically in real time on an event basis and that's where the industry needs to be going in order to overcome this lag if you will in truth of data.

08:20–08:28 **Heidi:** Deborshi, what more do you see in terms of industry versus other industries that may be holding life sciences back?

08:29–09:58 **Deborshi:** The discussion: get me access to the data and get me the data so I can do my job better and get insights from there. The catch happens in which people don't start thinking about three basic pieces. The first one is the data silos. As these organizations have grown over time they sort of start creating kingdoms of data and you don't share data. So within the Pharma companies the R&D site sort of has a very close tight knit on its own data. It does not share it with the commercial side or with finance and vice versa, so it becomes like independent pillars that keep coming up. Even within the pillars there are groups that don't want to share data because they believe it's too sensitive. That problem is the first bucket of the barrier. The second one on the barrier is a role definition difference between what should the business role be on getting the access to data and playing with it. Was it IT and who sort of the custodian versus the enabler versus the owner, and that there is sort of a shifting going on that's happening. And that problem was the second barrier, and the third one that sort of comes into picture is, there is a bunch of new tools and technologies coming in and people are also spending more time playing with it than sort of leveraging it to figure out what can be done or can't be done. In the life sciences industry we've seen those three and in the last I would say we start seeing a shifting trend, which is somewhat removing the barriers and somewhat introducing a new set of barriers that are coming through.

09:58–10:26 **Heidi:** When I think about data analytics and the missing key to unlock the value, I would love to just walk in and have information prepopulated and just concentrate on the symptom. You know, patients wonder about that all the time. If I fill out another form and then prepay, how is this data going to really help me? So, what are your thoughts, Tony, as far as data analytics in health care, what do you think is the missing key to unlock these new sources of value?

10:26–12:27 **Tony:** That's a great question. And I think the answer is really hidden and how you're looking at the use of the data and what generates the source of those uses of data in the health care world. In the traditional sense of health care we've had this idea of providers doing a certain set of activities and delivering the care, being the care managers, being the care providers of patient populations, and the health plans taking on a certain level of risk in order to enable that capability, but those two industries have generally never really acted in concert with each other in terms of doing that. As much as I believe they would like to and have aspirations to do that, they really haven't achieved again what they need to achieve, mostly because again the health care lags in terms of the state of maturity use and its ability to be more events-driven and preemptive in nature.

But as we look forward to the nature of the use cases that will drive where the industry is going, it is really from the standpoint of the requirements of an integrated delivery network. It is really the requirement that's not just what a provider does or what a plan does, but being able to leverage through analytics and through event-driven workflow capabilities this notion of aligning resources, all the resources available to provide patient care, integrated patient care delivery. That's not just providers, it's providers working with plans, working with community in order to understand what resources are available, where the best points of interaction with that particular person are, and how to start solving if you will some of the operational issues that we're facing, which is operating at the top of license for physicians and our nurses, being able to provide seamless care where it's patients not being called by five different people with the exact same questions or for the exact same reasons. These types of things are really where the industry is starting to progress in terms of eliminating some of those costs of industry, and then leveraging analytics for providing analytics at that point of work, or that point of need again relevant and accessible, so that things can be done dynamically and can be done in right time to that particular care of that patient.

12:27–12:38 **Heidi:** It sounds like what you're describing is this shift to a more fluid data environment. What would that fluidity make possible in a plan and provider environment?

12:38–13:54 **Tony:** I think one of the things we struggle with in the health care industry around data and analytics is leveraging some of the terms that are associated with consumerism, being able to identify a target market of one. We think of it in terms of the target market of one patient. Data fluidity will be the key to enabling this idea of taking populations from the broad level, i.e., people who have diabetes, down to a population of one very seamlessly, and to be able to take the analytical elements at those broader levels and to apply them dynamically to you as a patient. So as we look at data fluidity, it's making accessible, making it relevant, making it event-driven, more message-centric, so that you can take things down from the highest level, to population of a million people with diabetes, down to a population of one patient, so that their treatments can be more customized.

The key word here is data. The one thing about data that always has to be kept at the forefront of conversation, is that data accurate? The accessibility and availability is one thing. Its accuracy and relevancy are totally different, because it's fluid, because it comes in all forms, it comes from all directions. So we have to keep those disciplines in mind as we look at this idea of data fluidity in the health care industry.

13:54–14:02 **Heidi:** Deborshi, how have you seen the evolution of data play out on the manufacturing side? And where can life sciences companies get the most value from the data?

14:02–16:06 **Deborshi:** So the first thing which came and impacted us was the entire concept of the cloud and the cloud computing, where storage became cheap and the computing power became a lot more as per . . . as against cost. Companies started investing in it and sort of moving most of the data into the cloud. As that happened, it sort of created a place where I could now get access to a variety of data and now also got access to tools which could wrangle and mix data and with that also came a responsibility where the business said because I will need to be agile and I need to be a lot quicker in my change, a lot of responsibilities were picked up by the business. For example, IT became from a . . . came to a role of just being that of platform provider and sort of helping with the data injections to the platform and the business picked up all the data wrangling mishmash and creating all the insights and visualization that they require. So from a manufacturing perspective of the pieces that with the most impact by unlocking data, the first one is definitely on the R&D side, and the questions that we're trying to solve for the questions we are getting right now is, how can I get my drug to market faster or how can I go through clinical trials quicker? And can I start using real-world data, which is sort of actual people in the real life who are using my medication to start looking for indications. As well as patterns, which I could not have before through a limited clinical trial and use that to sort of get additional approvals on my drug. The second one is looking more so from a predictive perspective of using predictive technologies, of saying how do I structure my organization? Can I transform how my people within my company interact to make it a lot more aggressive and assertive and get to my end goals faster than I traditionally would have? So now you're using real-world data to sort of get through indications and approvals and then using data on yourself to transform your organization to become competitive and agile are interesting notions that we are seeing happen, which we never saw before, just because of the access to data and the tools we have right now.

16:06–16:10 **Heidi:** How do you strike the balance between accessibility and control?

16:10–18:43 **Tony:** The idea of security is an always-evolving thing, but we do have to get to the point where we're talking about the contextual use of the data and distinguishing those users of the data from the stewards and/or managers of the data and the actual owners of the data. You get to this idea of data protection: Who owns the data, who is responsible for the protection of that data, who's responsible for the consent, management of that data? The way that we are recommending that the industry starts to look at it is from the standpoint of this event-driven environment. As events occur, there's always two sides of the event. The people being served a service from the health care provider standpoint and the people providing services. So as you set the context for who's on both sides of that interaction, then you have to be able to identify, are they authorized based on the roles they play in this interaction to see certain data or to see all of the data. A physician's access, by the way, is going to be unfettered compared to maybe my access to my parents' medical records.

This conversation on ownership versus management of data is going to I think take us in directions that we aren't necessarily ready for yet. Saying that the patient owns their data is an interesting one, but in reality do I actually want to walk around with my medical data? Do I want to be responsible for the quote-unquote protection of that medical data as it sits in databases and is being used by my primary care physician? The answer is I'm not geared up for that. So this idea of not just ownership of the data but stewardship and management of the data, to do a good job of standardizing the data, making it more protected from an event interaction standpoint so it's constantly being monitored, constantly being logged, tracked, and managed even during an interaction between you and a telehealth physician or a call center representative or your own physician. So that it's never used out of context and it's never shared without your consent. So technically speaking this results in a couple of things: one, a framework around consent management, the set of services that are defined to manage my consent—who can see my data, what form they can see my data, and when can they see my data? The second is in terms of understanding the roles of this interaction and what those roles are enabled to do through this consent framework. These two things working in concert along with, again, the traditional or more cybersecurity types of constructs are really where data protection is going to need to evolve to in order to make it as secure as possible.

18:43–18:49 **Heidi:** What do you think the capabilities are for manufacturers to become these insights-driven organizations?

18:49–20:38 **Deborshi:** We sort of have five key pillars: the first one strategy, the second one's around organization, the third one's around data itself, the fourth one's around technology, and the fifth one's around the communication and the organizational change aspect of things. And the intent is to sort of tell the companies saying when you're going through the change or the transformation or the thought process of becoming insight-driven, these are some of the pillars in which you need to think through. It always starts with the strategy as to where they're looking for and what does the end vision look like, and you baseline yourself so at least you have a baseline and you start measuring it to how the change happened year over year. And as you self-define the strategy in terms of itself saying what types of organizational construct do I need, what type of services, of capabilities would I be establishing that will be consumed by the remainder of the organization? Should these be centralized, distributed, federated? And then what type of data should I start with, and as I start growing how do I start create the jigsaw puzzle of data to sort of create my organizational data set and then how do I onboard the organization into

using it and consuming it? The second part, which is sort of become a prevalent of late is around using the concept of the study. That's where you start creating a catalyst to sort of ignite that entire insight-driven concept where you're saying, let me start with a hypothesis. I can prove or disprove the hypothesis by using the current big data set of tools and technologies and come out with or using statistical tools and come out with the insight which proves or disproves the hypothesis and what it does for me then is sort of help me generate that ROI or for the interest for my organization to see what the value of data is and then from goes into the same back to the motion of pathway one, where an investment happens to move down that path.

20:38–20:45 **Heidi:** Tony, coming to the close of the show, what do you think is needed in health care industry to take the potential of analytics and data to the next level?

20:45–21:39 **Tony:** The biggest challenge in health care today is nonstandard documentation practices. So as we look at these variations of data documentation practices, if we don't get to the point where we can work hard to standardize that, we're not gonna be able to collect data in a uniform or more standardized way, and we're going to continue to keep chasing this idea of rich data through the use of technologies that may or may not be as complete as it could be for the health care world. You make a mistake in the business world you lose some money; you make a mistake in health care you lose a life. Mature organizations that are focused on this don't measure business cases in terms of ROI, they measure it in terms of lives saved. And so data acquisition is pretty much the biggest object in the way of achieving a lot of the promise of where analytics and data use maturity can be derived from.

21:39–22:07 **Heidi:** In the future, data- and analytics-driven insights are likely to play a major role in helping life sciences and health care organizations improve costs and quality, identify and improve treatments for atrisk populations, connect with consumers, and gain a greater understanding of the performance health innovations have on health outcomes.

I want to thank my guests Tony and Deborshi for joining me today on Tales of Transformation. Thank you so much.

22:07–22:09 **Tony:** Thank you for having me.

22:09–22:11 **Deborshi:** Thank you for having us. I appreciate it.

22:11–22:36 **Heidi:** And this concludes our first season of Tales of Transformation. We'll be taking a short break, but we'll be back late this summer for season 2 to continue exploring trends transforming the future of the life sciences and health care industry. Stay tuned.