

HealthDataViz helps clients “see how they’re doing.”



Katherine S Rowell, MS, MHA
Co-Founder & Principal

HealthDataViz
<https://healthdataviz.com/>

Contact:
Katherine S. Rowell, MS, MHA
Co-Founder + Principal
617-396-4525
info@healthdataviz.com

Interview conducted by:
Lynn Fosse, Senior Editor
CEO CFO Magazine

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CEO CFO: *Ms. Rowell, what led to the founding of HealthDataViz?*

Ms. Rowell: The founding of HealthDataViz comes out of many years of being in the healthcare space where I (and others) received and delivered lots of data tables. If you were really dogged (or a true data nerd) you could figure out some of the patterns and potential opportunities buried in the data, but it was tedious at best. I learned about data visualization thought leaders such as Edward Tufte and Steven Few and then I became aware of emerging data visualization applications like Qlik and Tableau. I had a true “aha” moment and I was bitten hard by the data visualization bug. This was what I and everyone else needed to be able to finally “see” the patterns and opportunities in the mountains of data we worked with. I was completely hooked. I knew that data visualization was going to be the up-and-coming thing because it makes patterns and trends visible in a way you could never see in a table. I knew that you can’t improve what you can’t see and understand – and I knew we could and had to do so much better if we were sincere about wanting to improve our health and healthcare. It was almost like I didn’t have a choice -- HealthDataViz just had to exist to help us all “see how we’re doing.”

CEO CFO: *Where were the challenges in structuring the visual so it is intuitive for someone? Not everyone looks at things from the same perspective?*

Ms. Rowell: Data visualization is based on hard research about how we see and understand our world, how we see and understand data and information. And this research informs the best practices of data visualization -- that is how we do see and understand patterns, how we group things in our mind, when we see something on a page what jumps

out at us, how does our brain work, how does human cognition work. The fact of the matter is that there are rules of the road, that is, best practices based on research.

Once you have the data and know what it is that you wish to convey, the graphs are last. Let me give you an example. If I want to show time series data, my first choice is almost always a line chart. If I want to rank data, I would most likely use a bar chart. When you learn the best practices, you know that there are certain graphs that are designed to show certain patterns and data and it all starts to snap together. This is not different from person to person. What is different is what data they need to see to support their work and decisions they need to make.

CEOCFO: *According to your site, HealthDataViz is the only data visualization consultancy solely dedicated to the health and healthcare ecosystem. Why does that make a difference? How does your specialized knowledge come through?*

Ms. Rowell: Regardless of what the industry sector is, you have to have subject matter expertise. You must know why data was designed and captured the way that it is, what you can and can't do with it, its lineage, why was this data created, and for what purpose. For example, was the data you are working with created to get medical claims paid or was it for a clinical research project, or was it for a quality initiative, or a public health campaign? The team we have built at HealthDataViz all have direct health and healthcare experience. At HDV we understand the data, the different sectors within the health and healthcare sectors, how healthcare and public health works and we are expert at helping our clients get the right data in the right views. And I probably don't need to tell anyone that it is complex!! When clients talk with us, they very often say "you get it" with a big sigh of relief! And because we "get it" we are uniquely positioned to create clear and compelling, useful data displays.

CEOCFO: *Would you give us an example of where that might come into play, where the fact that you understand makes a difference in what you are showing?*

Ms. Rowell: As you are aware, in the United States, we do not have a single payer system. We have a very complex multi-payer system. There are private companies such as Cigna, Aetna, Blue Cross (to name only a few) that offer plans and within those plans there is a myriad of payment arrangements that would make your head spin, such as the traditional fee for service v. risk sharing arrangements, or preferred provider organizations, health maintenance organizations, accountable care organizations; you need a PhD just to keep up. Then, there are the government plans such as Medicare, and there is not just one Medicare plan, there are all sorts of Medicare plans like the private companies, who by the way, have contracts to administer the Medicare plans. Then there are the Medicaid plans that vary by state in the benefits they provide and the waivers they may have for certain programs. On top of all the plan types there are often incentive payments to providers based on achieving agreed to performance goals for quality and patient experience (for example). So, to create useful analysis and displays of the data you must understand all the intricacies and what is important for the end user to see and understand when making decisions.

The provider side is an entirely different animal, with medical centers and clinics and private practices and academic centers versus community centers versus federally qualified centers or critical access hospitals. Research and academia are a whole world unto itself. Public health, public health surveys, public health data is another entirely different space. And it is not static, it is an evolving space every single day! My favorite word is, "gnarly" for the professional world we travel through.

CEO CFO: *How do you work with clients in the different segments of health?*

Ms. Rowell: We have a process, and it includes the following four steps – we call this our HDV 4Ds. We conduct Discovery sessions where we talk with and listen to our clients to understand their business, we do our research, who they are, what they want to accomplish, what a successful project looks like to them. Then we have a well-defined Design process built on design thinking methodologies and techniques to create the blueprint for the project. During this step we are developing personas, low-fidelity prototypes and iterating to a final design. Next, we move to the Development phase when we create high-fidelity prototypes, conduct usability testing, performing quality assurance to the source data to a final suite of dashboards, reports, infographics (depending on the project). And finally, Deployment where we push it out into production. Regardless of the project we use this framework and process because we know it works.

It saves time, money, frustration and results in happy clients and great visualizations.

CEO CFO: *Do you find that most of your clients really know what they should want, or do you have to point them in the direction what they should want to see?*

Ms. Rowell: That is an interesting question, and I think it goes back to where our expertise comes into play. Very often, clients have a generalized idea of what the focus of a project will be, but not much more. It might be, "I want to better understand my patient experience data," or it might be, "I want to understand how well we are treating diabetic patients," or, "We want to know which line of business is most profitable". They have a general idea, and our job research and interview and help them dig deeper about what they want and need using our subject matter expertise. We seek out who the end users really are and what their scope and role in the decisions they need to make so we can get the right data in front of them.

We use our expertise to get them to think and consider what they need much more deeply. We use our expertise to help provide context. We coach and nudge them by asking things like "Have you thought about adding this data," or "What about that metric," because people have not really thought much beyond simple key metrics and they are not experienced in puzzling it all together. They are stuck on summary metrics but not at the place of, "Let me contextualize it and explore it and dig a little deeper to understand what is driving these metrics, to understand what I need to focus on" – this is a recurring theme. We spend a lot of time helping them figure out those views that provide deeper insights and creating a guided analytic framework. We start with summary overviews of key metrics, focused topical reports to provide

additional context, details on demand and what we have coined Multi-dimensional Exploratory Displays (MEDs™) for user defined exploration of the data. We often describe this as helping our clients fit thousands of puzzle pieces together when the puzzle comes with no box or picture.

CEOCFO: *How do you reach out to the various entities in health that should be paying attention to HealthDataViz?*

Ms. Rowell: That is a great question. When we started out, I wrote a newsletter every month. Then as we got busier it went to bi-monthly, and now, after almost 10 years, I am embarrassed to say that maybe it's bi-annual. That little newsletter was really a great way, especially early on, just to introduce people to the concepts of data visualization and to our work. It is a very personal sort of newsletter that might start out with, "Hey, here is what my family did today, and it made me think of this," and I hook it into some sort of data viz and healthcare concept. And because it's my personal newsletter, I can have provocative and fun titles like the perennial favorite "Is My Dog Stoned?" I cannot tell you how many people meet me and say "hey, don't you write that newsletter – I love that newsletter?" and it leads to work! As we have gotten bigger, we sponsor conferences, such as the American Public Health Association, Health DataPalooza or Tableau conferences. Many times, we present as well as sponsor. And we do public workshops and training to help folks get up to date on data viz and techniques and which also gives us some visibility for our consulting services.

Quite frankly, at present we have a big old catcher's mitt right now. We have been lucky enough to work with very high-profile groups and people see our work, so they will call us up. We have responded to some requests for proposals and now we are at a place where we are starting to think seriously about, "Okay, we do not want to just have a catcher's mitt." We want to actively do more sales and marketing and responses to RFPs and working sometimes as a sub-contractor with a larger organization, so we are thinking and acting on all these things. To date, we have grown organically, people call us who know us or have been referred to us and trust us.

CEOCFO: *What if anything, has changed over time, certainly over the last couple of years? Are people looking at visualization in certain areas more than they once did?*

Ms. Rowell: I would say the Affordable Care Act which reduced the barriers for providers to capture data electronically has been a game changer. Payers have captured data since the early 1980's with the introduction of Uniform Billing (UB82), but now providers are able to systematically capture data as well. This coupled with increased public and regulatory reporting about quality and safety and new risk contracting has created a huge need for groups to be able to see how they are doing and meet performance goals of all kinds. All of this (and a lot of other factors we don't have enough time for!) coupled with new data visualization software has changed the landscape forever.

The emergence of new software applications such as Qlik, Tableau, Power BI, etc., has made it much easier to analyze and display data – to see and explore it. These applications are designed specifically to visualize data and their arrival in the marketplace came at just about the

time as the other changes I mentioned. Ten years ago, you might have said, "data visualization means what?" Now people are much more aware of what we do and the need for it.

CEOCFO: *Do you sometimes find flaws in the collection of data in the way the medical records system is working, the way, perhaps, a company has built their system or adapted their system?*

Ms. Rowell: Yes. The short answer is absolutely yes. No two ways about it, and anyone who says they have perfect data, are lying – mind you, they are not knowingly or maliciously lying, but they are lying nonetheless (laugh)! There are very few uniformly recognized and accepted data standards and data governance in health and healthcare. It is disheartening when we continue to see data definitions that aren't harmonized, but that is the professional world we live in. There is still a lot of missing data. Data is not as timely as we would like to be. It is far from where we need it to be to make all our work easier and to truly improve health and healthcare. I think and hope it will get better, but it is an enormous struggle.

CEOCFO: *Why pay attention to HealthDataViz? Why should a company be making use of your services?*

Ms. Rowell: HealthDataViz is a team of health and healthcare experts, technology experts, and data visualization and human cognition and design experts. It takes those three skills, and a well-defined process to do this work competently. In addition, a large part of our value proposition is that we do not just come in and do the work while, our clients, are left in the dark. We work cooperatively to transfer knowledge about what we are doing, so when we leave the room, our clients can continue to do this work and grow their own internal practice.

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