

Bringing 'Moneyball' to Medicine: Paul DePodesta On His Time with the Oakland A's and the Future of Analytics

Written by Jessica Kim Cohen and Molly Gamble | October 23, 2018

As healthcare organizations seek to tap into data for actionable insights, they are looking outside of healthcare for best practices. One of the world's most well-respected minds on the use of data analytics to drive change is someone you may know, but likely have never heard of — Paul DePodesta.

Mr. DePodesta was famously profiled in the book and hit movie *Moneyball*. This true story of turning the worst team in baseball — with lowest payroll — into baseball's best team revealed the stunning and hidden power of how data and analytics can make a difference.

In the movie, the unsung hero is an analyst played by actor Jonah Hill — a character based on Mr. DePodesta's time with the Oakland Athletics. In the early 2000s, Mr. DePodesta was assistant to the general manager for the Oakland A's, where he helped to pioneer the use of analytics to build a better baseball team. But Mr. DePodesta's affinity for data started much earlier, when he began working as an advance scout with the Cleveland Indians in the 1990s.

"The advance scout is the one who goes out and watches all of opponents before you play them," Mr. DePodesta told Becker's Hospital Review. "At end of the first game I walked back to my office quarters and thought I was wholly unprepared to do this job ... I thought, 'Who is going to listen to a 23-year-old who hasn't played professional baseball, and doesn't have the benefit of all this experience and insight?' I was rattled."

As Mr. DePodesta continued scouting for the Cleveland Indians, he realized he didn't have to provide the players with insights — he could gather data from the opponents' games, and report back to his team. "Rather than being a columnist, I was going to be court stenographer and just record the action and report on the action," he said.

"For instance, rather than saying you should throw sliders to this hitter with two strikes, I could say this hitter is one for 24 on sliders with two strikes, and then allow you to do with that

information whatever you like," Mr. DePodesta continued. "I started digging deeper and deeper into the data, and I realized there was a treasure trove of information. It really astounded me."

Today, he is bringing the *Moneyball* concepts to football in his role as the chief strategy officer for the Cleveland Browns — a team that recently made headlines for winning their first game in almost two years.

Mr. DePodesta, who is slated to keynote the Strata Decision Summit Oct. 24 in Chicago, is now nationally known and sought after expert on applying data to drive changes. At the Strata Decision Summit, he will discuss how he's used analytics throughout his career with the MLB, and how that journey led him to bring his experience to the NFL.

"For me, Paul's work is a great example of how the thoughtful, collaborative use of data can fundamentally change the game," Dan Michelson, CEO of Strata Decision Technology, told Becker's Hospital Review.

"At this point, no one would question that folks in the front office as well as managers and players are more effective when they have data in their hands," he added. "They now draft players, as well as coach and play the game, completely differently. Given what's at stake in healthcare, both clinically and financially, we all have a responsibility to bring the concepts of *Moneyball* to medicine."

Becker's Hospital Review caught up with Mr. DePodesta to discuss his time with the Oakland A's, how he addresses industry leaders who are skeptical of shaking up traditional processes, and his tips for applying data insights in any industry.

Editor's note: This interview has been edited for length and clarity.

Question: What were some struggles you encountered in the early days, when you were first taking steps into analytics?

Paul DePodesta: It really is a sea change in how you think about decision-making. You get a lot of pushback from different areas — people who have been doing it a certain way for a long time, or an industry doing it a certain way for a long time. You get push back from people who are hugely successful in their field, who have a framework for how they've done things. Then, there is also human psychology. There are all sorts of biases built into human decision-making — some of them are valuable, which is why they are so deeply ingrained, but the reality is a lot of this work in analytics ends up both exposing and coming into conflict with those mental shortcuts that we almost all employ daily. Those are obstacles we faced then, still face today and will continue to face going forward.

Q: Can you give an example of a time when analytics contradicted a cognitive bias?

PD: Recency bias really plays prominently in sports. We expect whatever happened recently is more likely to affect what happens going forward, or more likely to be status quo going forward. When you are playing 162 baseball games, what someone has done in the last three to five days features prominently in your mind, even if that person may have a 10-year career behind them that — taken as a collective — is much more predictive of future performance. Has this guy “lost it” because he’s two for 20 over the last five days, even though he’s been good enough to maintain a 10-year career in the major leagues? We’re human, so it happens to all of us.

Q: What is your response to people who say, “But this is the way we’ve always done things”?

PD: When Thomas Paine wrote *Common Sense* to advocate for democracy in the late 1700s, it was not widely accepted — it was a pretty controversial piece of literature at the time. In second edition he wrote a forward, where he said that a long habit of not thinking that something is wrong gives it the superficial appearance of being right. That continues to be true today. When I’m confronted with someone saying that, I try to preempt those conversations by proactively putting that out there. But what I don’t want to do is indict what they’ve been doing for a long time. There is probably a reason they have been doing it, and that reason might have been a really, really good reason once upon a time. As times and circumstances change, it’s important to change our processes along with it.

Q: To keep coaches with you as you introduce new ways of thinking and strategizing, you need to not completely indict what they’ve done in the past. Can you talk more about that?

PD: Absolutely. Going further, you really need to gain insight into why those things were done in the past and what made them successful, rather than dismissing them as being outdated

now. There could be some valuable insights in there that help whatever new model or process you’re trying to create. These people’s experiences and expertise are invaluable as you continue to try to build something that is new and better. We had a lot of conversations with our experienced baseball personnel — people who had deep knowledge of a particular piece of the puzzle, say our pitching coach, which ended up back in our algorithms or models. It’s a process we’ve gone through in the NFL, trying to pull as much knowledge as we can from all these people who have a tremendous amount of expertise.

Q: Across other industries, how would you recommend people reexamine tasks or functions that could be better leveraged with data-driven insights and decision-making?

PD: Anything that involves a good dose of uncertainty can benefit from analytics or some type of data and analysis. For us in sports, it is the fundamental principle that we are trying to predict the future performances of human beings. It’s true for a lot of different industries too; everyone is dealing with uncertainty and trying to get their arms around what the future is going to look like or what they ought to do in a particular situation. In all those circumstances, if you have the right data and insights, it can help you consistently make better decisions. Not that it will help you be perfect by any stretch, hopefully just consistently better.

Q: Right now, in healthcare, data isn’t shared. Looking across an organization with a couple thousand physicians, what are the first steps you would take to make data actionable?

PD: There are two things I’d initially focus on, and they are awfully broad. The first is, what is it you would like to know that you don’t currently know? What piece of information would be valuable to you in making a decision you have to make that you don’t currently have? We asked ourselves that in Oakland and we continue to ask this all the time. The second question is, what is it you are sure you know? Whatever those things are, make sure you go back and study them to verify whether they are actually true.

There was an exercise we went through in Oakland, where there were all these clichés in our industry that we had grown up to believe as true, and at one point we decided to study everything. In my experience, 80 percent to 90 percent of things believed to be true are in fact true and continue to be true. But there is this small percentage where maybe it isn’t true anymore, and if you come up with a new process or better insight in that small percentage, that can lead to significant advantages. It gives you a tremendous advantage over your competition, because the rest of the industry continues to believe something is true, when in reality it is not, or it’s not true anymore.