The State of Population Health Analytics

2016

An Ongoing Research Study Conducted by the:

Healthcare Center for Excellence

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Executive Summary

Since 2014, the Healthcare Center of Excellence (HCOE) has been tracking the healthcare industry's progress towards population health analytics using their proprietary Healthcare Transformation Change Model. This model was developed in 2013 to help healthcare organizations understand the requirements to become an analytics focused healthcare organization. The concepts were based on a customer relationship marketing (CRM) implementation model, previously co-developed by Professor Bennett. The CRM model was considered by Gartner to be one of the top three CRM implementation visions at the time and has become the basis for most successful CRM implementations today.

The 2016 State of Population Health Analytics (SOPHA) study revealed that the overall healthcare industry is making progress but at a slower pace than expected. This is due to the challenge of integrating multiple sources and types of data and a focus on the data and technology to the detriment of people, processes and leadership. Larger healthcare organizations are making more progress than smaller ones due to their greater access to resources.

Methodology

Each year, the SOPHA study is conducted using a combination of primary and secondary research. This research includes:

- Interviews with healthcare executives
- Conversations with healthcare conference attendees
- Presentations from healthcare conference presenters
- News and journal articles

In 2016, the study was enhanced by utilizing a 20-question survey to add more empirical insights to the study. Once analyzed, the results were then validated through conversations with several healthcare executives.

The SOPHA study is based on the proprietary Healthcare

Healthcare Analytics Transformation Model

Analytics Transformation Model developed by the HCOE which is comprised of 3 continuums – Organizational/ People, Data/ Technology and Process/Workflows. To be successful an organization
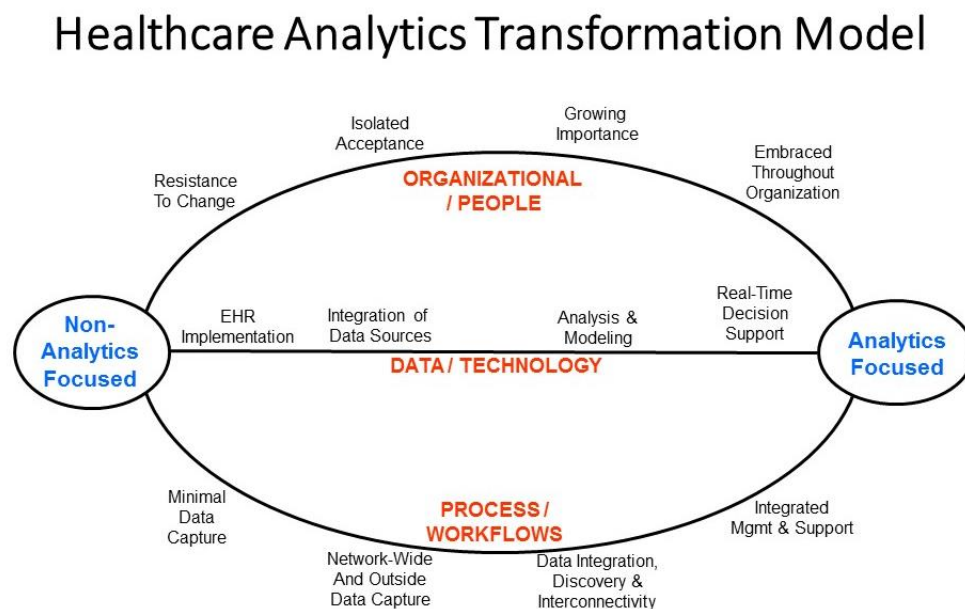
must move along all 3 continuums at the same pace to progress from Non-Analytics Focused to become Analytics Focused, by completing the various steps at each stage of the transformation.

By applying the different types of analytics to the model, an organization can determine what steps must be taken and at what stage they will be able to perform specific types of analytics.

- Descriptive analytics is just past the 'EHR Implementation' stage on the data/technology continuum. Most organizations can perform some type of descriptive analytics from their EHR systems. Answers to questions such as, "How many patients were diagnosed with X last year?" can easily be determined.
- Diagnostic analytics could be performed once the organization is beginning the data integration process. Questions such as, "Why did these patients develop X?" can be addressed at this stage.
- Predictive analytics requires the organization's data to be fully integrated in order to obtain a complete view of the patient's health management. Questions such as, "What can be done to prevent X?" can be answered at this stage.
- Prescriptive analytics will not only require fully integrated data, but also a robust analysis and modeling function. Additionally, for prescriptive analytics to be most effective in a healthcare organization, the results need to be delivered to the providers in real-time to help support their diagnosis and treatment plan. Questions such as, "What is the relationship between X and Y and how can X be minimized?" can be addressed at this stage. (Bennett, Competing on Healthcare Analytics: The Foundational Approach to Population Health Analytics, 2016)

Healthcare Analytics Transformation Model
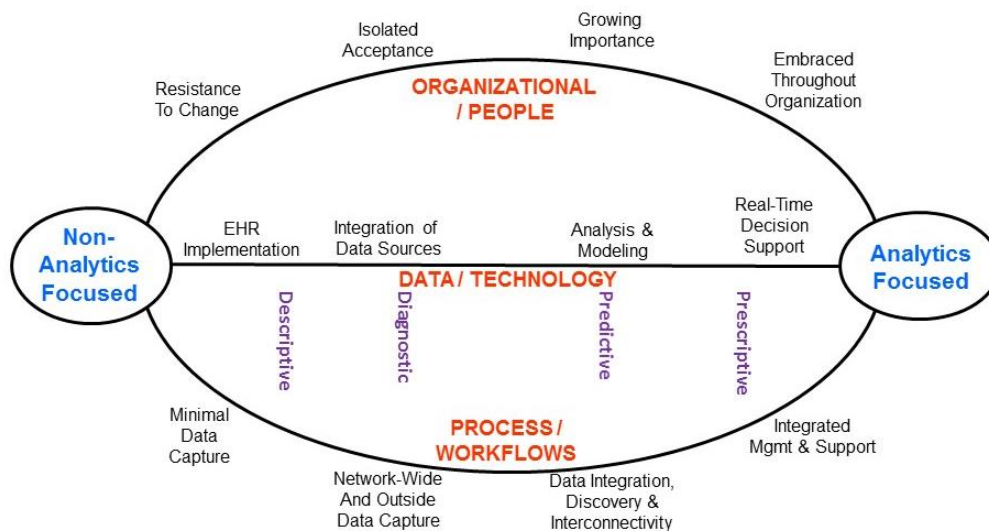
Based on the model, the HCOE determined that in 2014, the industry was just past the "EHR Implementation" stage on the Data/Technology continuum. In 2015, the dial moved a bit further as many organizations began achieving success with integrating data sources.

Healthcare Analytics Transformation Model

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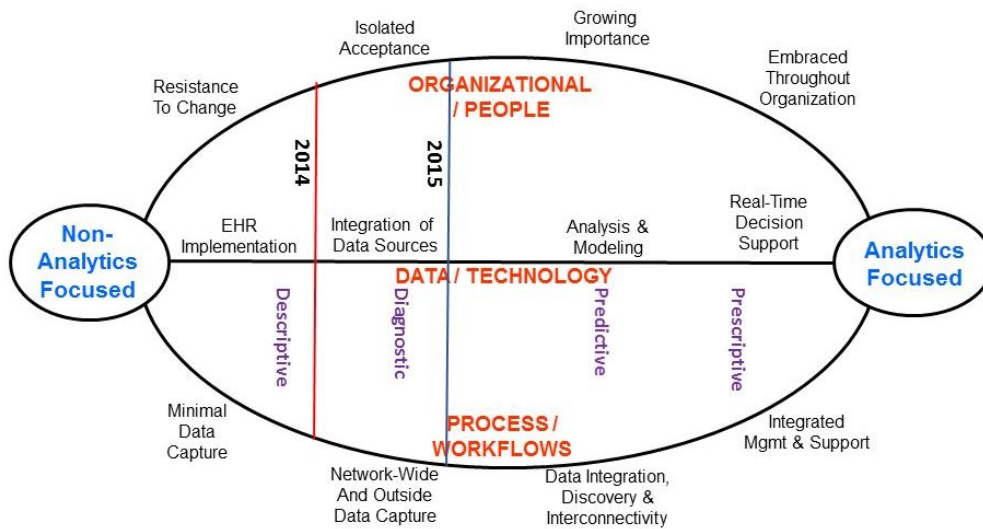
Impact of the 2015 Healthcare Analytics Challenges Study

In a separate study conducted in 2015 by the HCOE, participants were asked to identify 5 challenges faced in implementing healthcare analytics. (Healthcare Center of Excellence, LLC., 2015) The participants included people from all levels of healthcare organizations from locations across the United States. The challenges were classified into 10 categories for further examination. Those categories were:

- analytics tools
- change management
- costs
- data management
- education
- integration
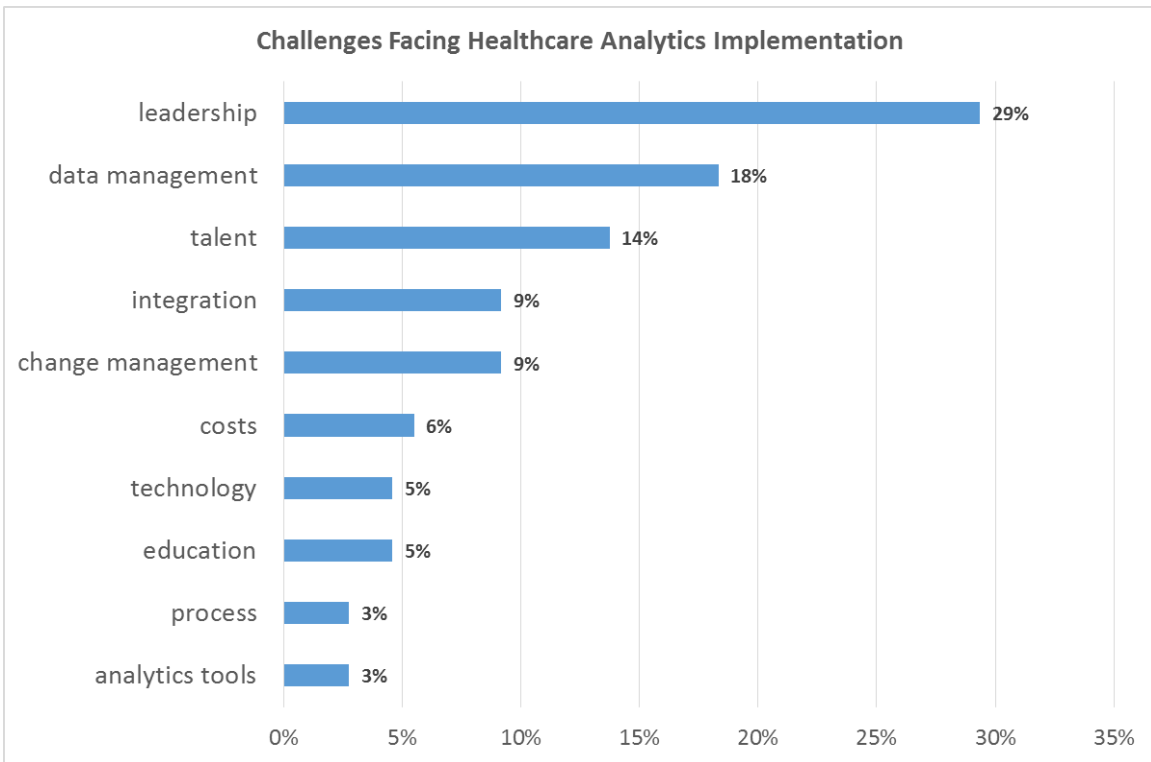- leadership
- process
- talent
- technology

The top 3 categories chosen were leadership (29%), data management (18%) and talent (14%).

Leadership included common terms/phrases such as "lack of priority", "lack of vision", "need for buy-in from staff" and "lack of direction", but also included "disparate EHR systems", "siloed systems" and "teams not working together". These issues can all be resolved through proper leadership.

Data management included "lack of data standardization", "lack of data stewardship", "lack of definition of key variables to study", "where does the data reside" and "quality of data".

Talent included "lack of adequate analytics talent", "hiring the right people", "lack of skills", "not enough qualified staff" and "retaining talent".

Overall, the distribution of responses was decidedly pointed at leadership.

Challenges Facing Healthcare Analytics Implementation

Challenge	Percentage
leadership	29%
data management	18%
talent	14%
integration	9%
change management	9%
costs	6%
technology	5%
education	5%
process	3%
analytics tools	3%

Even more surprising was the source of the comments. As part of the study, the participants were asked to include their title on the survey form they submitted. The titles were summarized into general categories which indicated the responses included all levels of the healthcare organization, from C-Level to the Analyst. The participants were divided into two groups – wide span of control, which included participants at the director level and above, and narrow span of control which included all others.
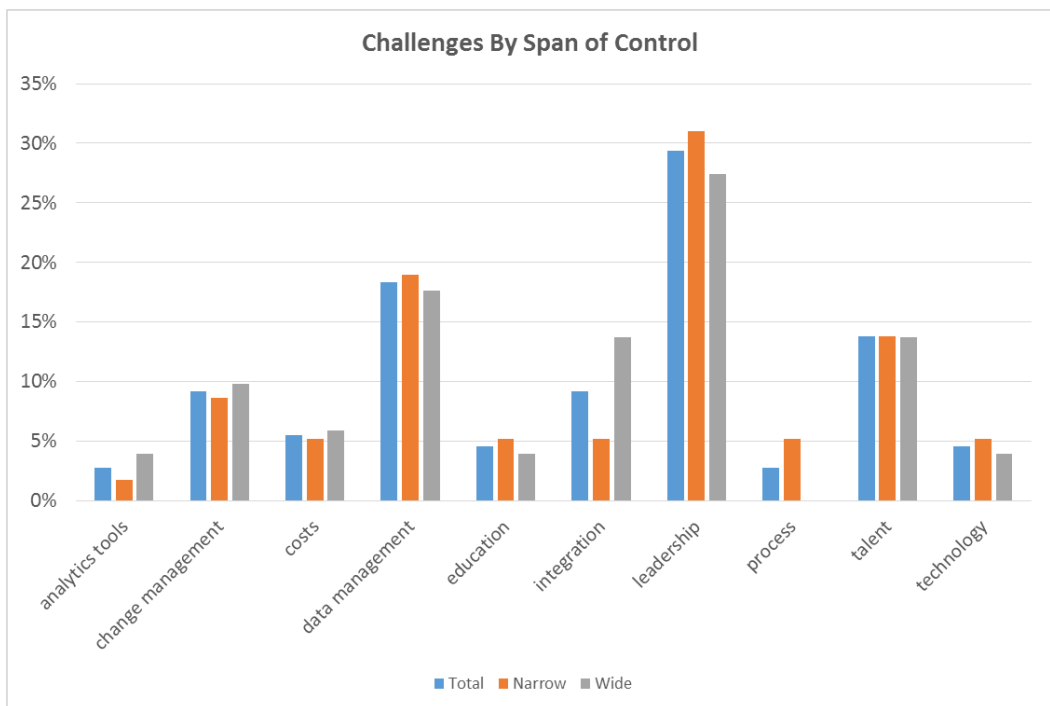
The only challenges where the disparities were significant were in integration and processes. This is likely because of perspective. The wide span executives are anxious to see results of their investments

Challenges By Span of Control

through data integration versus the narrow span personnel desire for more and better processes to make their jobs easier.

Based on this additional research, leadership was incorporated into the transformation model. Leadership is not a continuum, but it must be present in each stage of each continuum and applied consistently throughout the transformation. It is represented in the model like a thermometer going from the bottom, low-

Healthcare Analytics Transformation Model

level of leadership, to the top, high-level of leadership. It is the most important critical success factor in any change management situation and is also known as Executive Sponsorship in Lean Six Sigma or Project Management training. (Bennett, Competing on Healthcare Analytics: The Foundation Approach to Population Health Analytics, 2016)
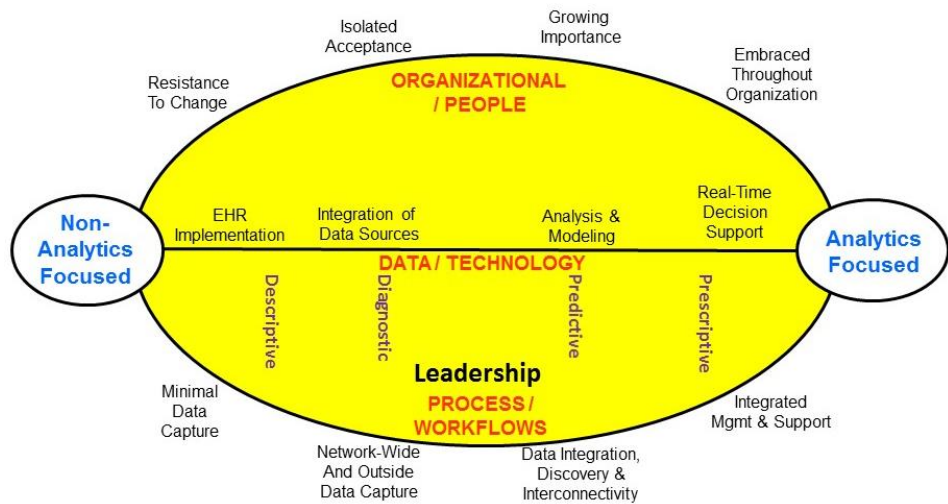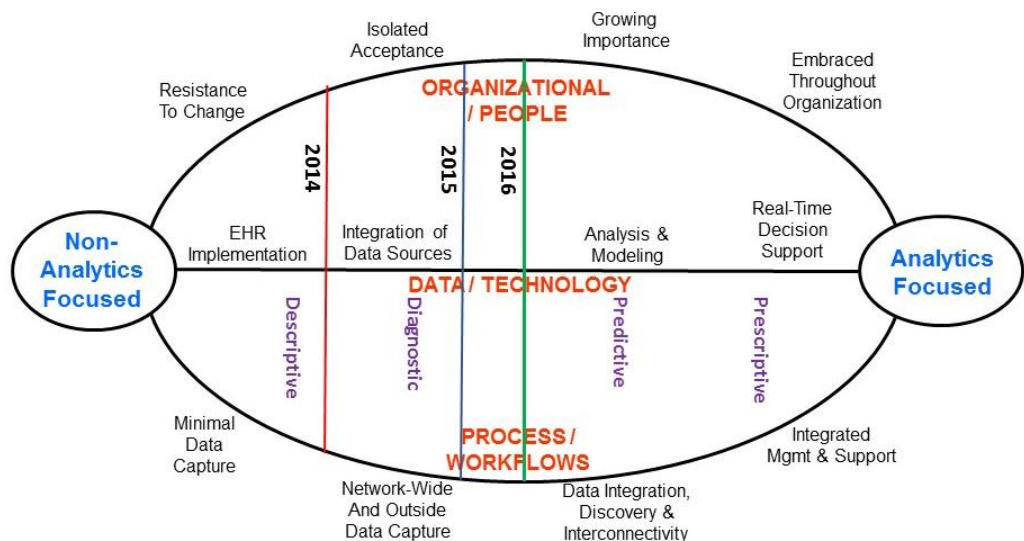
Results

The results of the 2016 State of Population Health Analytics study reveals that the needle has only progressed slightly.

<u>Integration of data is still a challenge</u> for many organi-zations. This not only includes integrating clinical data, but also other internal and external data, such


Healthcare Analytics Transformation Model

as operating costs, billing and reimbursement data, to achieve a complete picture of the patient population.

Many organizations are <u>focused on the data and technology</u> and not leveraging the people and processes necessary to build a successful population health analytics program. If the data is not collected and recorded in a timely manner, then the risk of incorrect or out of date information increases.

<u>Lack of leadership</u> is still an issue identified by parti-cipants. Analysis indicates that leadership is about one-third of where it needs to be for the organization to be successful. This is due to a variety of reasons, including:

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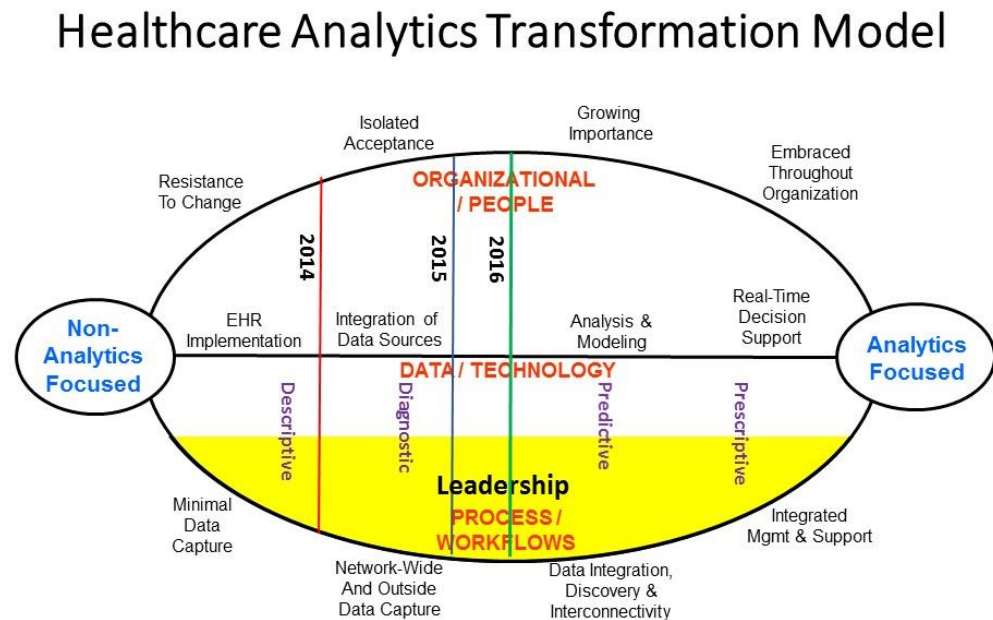
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- The complexity and timing of the transformation required by the industry. Healthcare organizations have had to integrate electronic health records solutions, ICD-10 and value-based care all within a short amount of time. It's like asking a major electronics retailer to also become a fine French restaurant in 24 months. It can be done, but the transformation is painful.
- Many organizations are led by clinically-trained professionals who may not have the broad business and change management skills necessary to navigate this transformation. This has led to an autocratic management style versus the inclusive style needed for success with such a complex transformation

Conclusions

Increasingly, the industry is facing a situation of the 'haves' versus the 'have-nots' due to an imbalance in resources enjoyed by the larger institution versus those of the smaller institutions. If the transformation model was segmented by size, it would reveal many of the top institutions well into, and some past, the predictive analysis stage. These organizations can afford the personnel and technological resources required to be successful in the later stages and typically have exceptional leadership. At this rate, the smaller institutions will have little choice but to lag behind or be acquired by their larger brethren.

Recommendations

The HCOE has several recommendations that could help an organization be more successful with their population health analytics implementation, including:

Understand and document where your organization is on population health analytics implementation

The HCOE has created tools that help healthcare organizations document where the organization is in their population health analytics initiative and identify gaps that need to be overcome to become an analytics focused organization. These tools include the Analytics Readiness Assessment tool for beginning to intermediate analytics organizations and the Competing on Healthcare Analytics Discovery tool for intermediate to advanced organizations. Although either of these tools can be utilized internally, the HCOE highly recommends having an unbiased third-party manage the process to insure accurate and candid responses. (Bennett, Your Population Health Analytics Needs…From Start to Finish, 2016)

Invest in leadership development

Strong leadership is required in such a challenging transformation motivate people to go over and above the basics of their job requirements. Healthcare is different from other industries and has unique needs as well as consequences for improper or incorrect actions. This requires a new approach to leadership. Many don't understand that leadership is not a position, but a process that can be learned and must be practiced daily like a professional athlete. The HCOE calls these professional leaders. Most leadership training falls short because of the focus on 'skills' development, when the focus should be on the process. (Bennett, Prescribing Leadership In Healthcare: Curing the Leadership Challenges Facing Today's Healthcare Executives, 2017)

Build an analytics function using alternative methods

Once the other continuums have been addressed, a key component of a population health analytics initiative is the data scientist. Most healthcare organizations are finding that hiring a qualified data scientist is a real challenge. Experienced data scientists are expensive and are usually employed elsewhere. An alternative to hiring a data scientist could be building your data scientist out of a team of people currently on staff or readily available in the marketplace. This is called the 'DataScienceStein' approach modeled after Mary Shelley's Frankenstein monster built from several human parts. Instead of an individual data scientist, the organization would deploy a data science team. (Bennett, Need a Data Scientist? Try Building a DataScienceStein, 2016)

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About the Healthcare Center for Excellence

The Healthcare Center of Excellence (HCOE) is a privately-funded healthcare research, training and consulting organization dedicated to helping healthcare organizations identify, understand, implement and manage the technology, processes and human resources needed to be successful in today's changing healthcare environment.

Our research studies are designed to understand how the healthcare transformation is progressing and includes results from predictive modeling research, ethnographic studies of physician engagement, healthcare transformation progress and management surveys.

Our lead experts have deep experience in their areas of expertise, including:

- ✓ Healthcare Transformation
- ✓ Healthcare Analytics
- ✓ Leadership Development
- ✓ Continuous Process Improvement
- ✓ Change Management

Professor J. Bryan Bennett is the Executive Director and founder of the Healthcare Center of Excellence. He is the primary researcher and blogger for the Center of Excellence website as well as a blogger for the HIMSS Future Care website on the subjects of Big Data and healthcare technology transformation.

He has been a healthcare technology consultant and national speaker on healthcare technology for many years. His worked helped several healthcare organizations meeting the Meaningful Use Stage 1 requirements as an Allscripts certified partner. He started the Center of Excellence after hearing the challenges healthcare executives were having implementing predictive analytics programs. Many were

concerned with 'reinventing the wheel' when it comes to analytics since successes experienced by other healthcare organizations was not being shared and they were challenged with identifying and keeping analytical talent.

He is a course developer and adjunct professor for several schools including Northwestern University, West Virginia University and Judson University where he develops and teaches courses in analytics, leadership and marketing.

Professor Bennett is highly requested international speaker on the subjects of healthcare transformation, healthcare analytics, leadership and customer management. His presentations are engaging and witty as he challenges his audiences to think in different ways to reach better solutions.

He is the author of the book *Competing on Healthcare Analytics* and the "Data Stewardship" chapter for the book *ADAPTIVE Health Management Information Management*. His work has been recognized by Gartner and has had an academic study published in Capco's Journal of Financial Transformation.

His upcoming book, *Prescribing Leadership in Healthcare: Curing the Challenges Facing Today's Healthcare Executives*, is scheduled to be published in early 2017.

Visit the resources section of our website at www.healthcarecoe.org to view other studies performed by the center and presentations made by Professor Bennett.
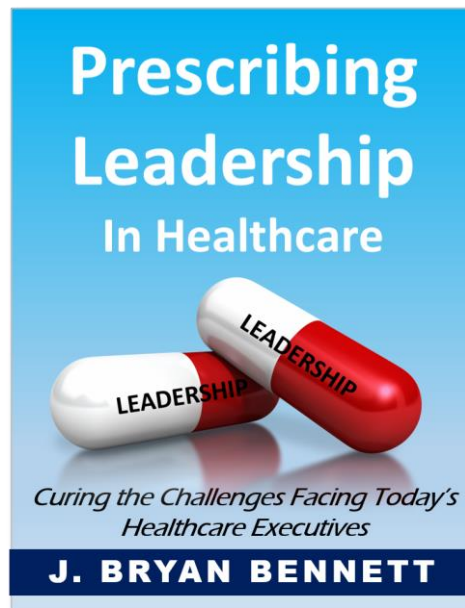
Upcoming Speaking Engagements

Hear Professor Bennett at the upcoming events:

U.S. Medical Travel Summit
Using Data Analytics to Define and Price Your Procedures
San Diego, California
March 30-31, 2017

Precision Medicine Congress
Big Data Analytics for Precision Medicine
London, England
April, 25-26, 2017

Predictive Analytics World
Need a Data Scientist Try Building a "DataScienceStein"
San Francisco, California
May 14-18, 2017

Becker's Hospital Review CIO/HIT + Revenue Cycle Conference
Competing on Healthcare Analytics
Chicago, Illinois
September 21-24, 2017