

# Deloitte.



## **The power of people analytics**

Using data to maximize return on workforce investments

Definition: People analytics

**[pee-puh | an-l-it-iks]. Noun.** Using advanced statistics to expand the discovery, interpretation, and communication of meaningful patterns in data to drive high quality people and business decisions.

# What's at stake?

Payroll is one of a health system's largest and most important expenses. However, executives typically are less effective at managing their employee assets and labor costs than other expenditures (e.g., capital, inventory, facilities). According to the US census bureau, Healthcare and Social Assistance invests an average 39 percent of revenue on payroll—more than any other major industry.<sup>1</sup>

Employees are traditionally lauded as an organization's most valuable asset. Yet, many health system executives may lack a complete or accurate understanding of their employee makeup. And while an overwhelming majority (84.8 percent) of surveyed organizations view employee retention as a "key strategic imperative," it is not evident in operational practice and planning—only half, or 51.5 percent, have a formal retention strategy.<sup>2</sup>

Combine these two trends together and what do you get? Leaders who lack a true understanding of their largest expense. Accurately determining employee value can be challenging—especially since the health care workforce is undergoing radical changes:

- **Rising turnover:** Health care industry turnover has been on the rise for years. According to the 2016 National Healthcare Retention & RN Staffing Report, while the national rate of hospital employee turnover leveled off at 17.1 percent in 2015 (slightly below 2014),<sup>3</sup> bedside registered nurse (RN) turnover increased from 16.4 percent in 2014 to 17.2 percent in 2015.<sup>4</sup> Newly hired nurses are also leaving faster than they once did: A 2014 study in Policy, Politics & Nursing Practice revealed that an estimated 17.5 percent of newly-licensed RNs leave their first nursing job within

the first year, and one in three (33.5 percent) leave within two years.<sup>5</sup> This trend was confirmed by the 2016 National Healthcare Retention & RN Staffing Report<sup>6</sup>, which highlighted first year RN turnover (i.e., leaving within 12 months of hire) as accounting for nearly 3/10 (29.2%) of all RN separations.

- **Potential retirement bubble:** The aging US population is producing a potential employee retirement bubble, and the health care industry is not immune to this. According to a 2013 survey conducted by the National Council of State Boards of Nursing and The Forum of State Nursing Workforce Centers, 55 percent of the RN workforce is age 50 or older.<sup>7</sup>
- **Changing required skillsets:** Staff turnover is not the only challenge facing health system executives: The required skillsets for health care professionals are changing to address the impact of health technology advancements (e.g., electronic health records [EHRs], Computerized Physician/Provider Order Entry [CPOE], Clinical Decision Support), new value-based payment models, and alternative care delivery approaches (e.g., patient-centered medical home [PCMH], retail clinics).

Health care tends to lag other industries in the adoption of new processes and technologies, and we find this to be consistent in their use of big data and analytics to improve organization performance. This is likely due to a number of factors, including the nature of health care work, tight margins and limited funds, and historically conservative cultures. Yet, the successful use of data analytics in other industries (see sidebar) could indicate that it's time for health care systems to up their game.

## Many industries and functions benefit from data analytics

Only 44 percent of companies overall currently use workforce data to predict business performance. However, high-profile organizations in a variety of industries are using data analytics to improve performance in a number of functional areas, and this approach may be leveraged to increase HR effectiveness.

- **HR**—Hewlett-Packard Company (HP) used data and analytics to combat the problem of employee attrition. The company pinpointed \$300 million in estimated potential savings with respect to staff replacement and productivity loss across all of HP employees.
- **Marketing**—Video-streaming giant Netflix analyzes customer, market, and distribution data to increase program views and subscriber numbers by recommending shows and movies based on past views/ratings, gender, age, education level, zip code, etc. The company also uses analytics to guide content creation for its entertainment-producing business.
- **Supply chain**—Big data and cloud computing are providing many manufacturer supply chain networks with improved data accuracy, clarity, and contextual intelligence. Organizations have developed quality early-warning systems that detect and then define prioritization frameworks that isolate quality problems faster than more traditional methods. These early-warning systems are deployed upstream of suppliers and extend out to products in the field.
- **Finance**—Many banks and credit card companies are using predictive analytics to spot instances of potential fraud, often alerting consumers before they notice anything amiss. The Visa payment network's anti-fraud detection system, for example, gathers hundreds of pieces of transaction information and analyzes up to 500 unique risk attributes, looking for clues that may indicate fraud. Visa relays the risk score to the cardholder's financial institution, where the decision is made to either approve or decline the transaction. This process is repeated up to 32,500 times per second, with the system analyzing more than six billion pieces of data every day.

# Our take

Qualitative measures that are based on a company's mission statement, its HR handbook, or an individual's experiences during his or her employment often guide critical workforce decisions; *however, this lens provides only a partial view into an organization's "people portfolio"*—blind spots are common. To capitalize on employee-related opportunities emanating from health care consolidation and shifting workforce patterns, forward-thinking health system leaders—including the CEO, COO, CHRO, CNO, and Directors of Analytics, Workforce Planning, and Talent Management—are striving to better understand what is changing, who/what is driving the change, and what value creation to expect from addressing core business and talent issues. To gain insights that drive value, executives should transition from qualitative- to quantitative-based Workforce Planning.

People analytics helps enable health care leaders to flip the lens; *to scientifically unlock and measure the value of people to the organization*. People analytics treats employees as a critical asset in the supply chain; an asset that can be analyzed and optimized to benefit individuals and the company as a whole. It is an approach that can uncover opportunities to transform HR practices and optimize talent-focused investments and programs by helping executives make more informed decisions about their workforce. Just as important, people analytics can increase day-to-day

and long-term employee satisfaction by helping to identify opportunities for fulfilling career development.

Health care provider awareness and use of people analytics is gaining speed but there is a growing maturity gap among many organizations in how to optimally leverage big data for enhanced organizational value. In the past, providers' analytics use was directed externally to better understand their patients. But even as today's health systems turn their focus to internal HR applications, they may lack a thorough understanding of necessary data and capabilities, a sound implementation strategy, an effective governance program, and robust data privacy standards to realize people analytics' full potential.

Among the drivers of change for people analytics in health care are the movement towards integrated cloud HR systems, the growing number of HR and health care professionals with analytics backgrounds, and the persistence of CEOs pressing CHROs to use data to inform decision-making before taking action. Also, there is growing, quantifiable evidence of analytics ROI: Cross-industry research shows that organizations which use HR-related data analytics have stock market returns 30 percent higher than the S&P 500; are twice as likely to be delivering high-impact recruiting solutions; and have leadership pipelines that are 2.5X healthier (Figure 1).

To gain insights that drive value, executives should transition from qualitative- to quantitative-based Workforce Planning.

Figure 1: HR-related data analytics ROI



# The path forward

Deloitte Workforce Planning and People Analytics solutions can help an organization's executives and HR leaders understand the workforce drivers creating the imperative for data-informed decision-making. Deloitte solutions combat HR disrupters and can bridge the gap from current-state challenges to future-state value.

Workforce driver	Solution	Potential value
Changing workforce demographics	Deploy analytical techniques to isolate employee segments and identify talent, data analysis, and reporting program options to mitigate excessive termination activity	Combining internal and external data to develop workforce plans and optimize talent
Leadership development	Combine deep analytical skills with learning strategy expertise to quickly identify where learning spend opportunities exist	Projecting necessary skill sets to enable successful leaders
Culture and engagement	Use analytics to identify employee characteristics for promotion to senior levels	Identifying diversity roadblocks, skill gaps, etc.
New organizational models	Use multiple tools to accelerate and deepen insights, and provide a granular and aggregate view of organizational structure and workforce data	Identifying the opportunities to more effectively align, allocate, and/or deploy staff
Driving productivity	Use labor cost optimization principles to identify opportunities to reduce excessive employee labor and overtime cost without negatively impacting service quality	Optimizing employee productivity using critical employee characteristics

# Case study: People analytics uncovers hidden drivers of employee turnover



**Issue:** A regional health system with 20+ acute care facilities, 100+ clinics/physician offices, and ~40,000 employees was experiencing above-average RN turnover. The system sought to better understand its nursing workforce in order to predict and mitigate the negative impact of future workforce trends. In 2016, a Deloitte Human Capital team implemented a program using advanced analytics and data science principles to better understand drivers of turnover.



**Solution:** The Deloitte team first aggregated five years of workforce data (down to the individual employee and applicant level) from more than six disparate internal information sources, and segmented clinical units to better understand their unique drivers of employee movement. The team then deployed multiple machine learning and statistical methods and alternative visual techniques to deliver data-driven insights. Finally, Deloitte developed a roadmap to guide the health system in developing and implementing talent and analysis programs aimed at reducing future turnover.



**Impact:** Based on the statistical analysis of employee data, health system executives were able to see that many of their prior hypotheses regarding the drivers of employee turnover were inaccurate. The Deloitte team uncovered many previously unknown drivers of turnover, including:

- Instances where managers were not addressing employee desires for alternative assignments/positions (the analysis showed that employees who changed jobs within the health system were significantly less likely to terminate)
- Large departments with a large (80+) Span of Control (“SPOC”) was directly related to higher rates of employee termination, in some cases nearly 2x the organization’s average

These seemingly minor challenges were proven to have a statistically significant impact on employee turnover via a number of advanced statistical methods. Using this analysis, Deloitte helped the client create a predictive model to identify employees at high risk for resignation to address these challenges, and worked with the client to develop targeted, fact-based talent management solutions to address these challenges.

## Bottom line

Many forward-thinking executives and HR leaders are deploying people analytics to maximize the return on workforce investments. Using people analytics requires a strategic approach that leverages senior leadership support and a skilled team of analytics professionals. Among smart first steps:

- **Begin at the beginning.** Some health care providers may hesitate to explore the use of people analytics because they fear their organization lacks good quality data, adequate technical capabilities, and/or knowledgeable staff. Numerous external resources are available to help them “begin

at the beginning”, gaining quick actionable insights while helping evolve their analytics capability and use over time.

- **Target business problems that are leadership priorities.** Analytics ventures often fail due to chasing a problem that is not a top priority to leadership. It is critical that people analytics project advocates proactively establish executive-level buy-in and focus on business, not just HR, issues.
- **Invest in the right people with the right expertise.** Next-generation HR professionals will likely need to be more business-oriented and possess critical

new skills in organizational networks, employee engagement and culture, building and leading teams, analytics and statistics, digital platforms and applications, and employee experience and brand. Companies increasingly are hiring or assigning business professionals, mathematicians, and data scientists to their HR departments to boost people analytics capabilities. Health care systems should follow suit and invest in staff that possesses analytical, interpretative, and transformational skills to ensure that their insights are relevant and deliver value to the business.



# Let's talk

Are you ready to discuss how people analytics can help maximize the return on workforce investments? Let's talk about how to combat HR disrupters and bridge the gap from current-state challenges to future-state value.

## Author

**Brian Augustian**

Principal

Deloitte Consulting LLP

braugustian@deloitte.com

## Acknowledgements

We would also like to thank Dave Fineman, Matt Brocks, and Julie Capps for their contributions to this report.

## References

1. <http://www.census.gov/data/tables/time-series/econ/aces/2015-csr.htm>;  
<http://www.census.gov/econ/snapshots/index.ph>
2. 2016 National Healthcare Retention & RN Staffing Report, NSI Nursing Solutions Inc., March 2016, <http://www.nsinursingsolutions.com/Files/assets/library/retention-institute/NationalHealthcareRNRetentionReport2016.pdf>
3. 2016 National Healthcare Retention & RN Staffing Report, NSI Nursing Solutions Inc., March 2016, <http://www.nsinursingsolutions.com/Files/assets/library/retention-institute/NationalHealthcareRNRetentionReport2016.pdf>
4. 2016 National Healthcare Retention & RN Staffing Report, NSI Nursing Solutions Inc., March 2016, <http://www.nsinursingsolutions.com/Files/assets/library/retention-institute/NationalHealthcareRNRetentionReport2016.pdf>
5. "Nearly One in Five New Nurses Leaves First Job Within a Year, According to Survey of Newly-Licensed Registered Nurses," Robert Wood Johnson Foundation, September 4, 2014, <http://www.rwjf.org/en/library/articles-and-news/2014/09/nearly-one-in-five-new-nurses-leave-first-job-within-a-year--acc.html>
6. <http://www.nsinursingsolutions.com/Files/assets/library/retention-institute/NationalHealthcareRNRetentionReport2016.pdf>
7. Nursing shortage fact sheet, American Association of Colleges of Nursing, 2014, <http://www.aacn.nche.edu/media-relations/fact-sheets/nursing-shortage>
8. <http://deloitte.wsj.com/cfo/2013/01/29/capital-expenditure-planning-using-metrics-to-monitor-effectiveness/>
9. "How Data Analytics is Shaping What You Watch," Wharton University of Pennsylvania, September 3, 2015, <http://knowledge.wharton.upenn.edu/article/how-data-analytics-is-shaping-what-you-watch/>
10. "Ten Ways Big Data Is Revolutionizing Supply Chain Management," Forbes, July 13, 2015, <http://www.forbes.com/sites/louiscolombus/2015/07/13/ten-ways-big-data-is-revolutionizing-supply-chain-management/#3658866b3d38>
11. "How Credit Card Companies Spot Fraud Before You Do," US News Money, July 10, 2013, <http://money.usnews.com/money/personal-finance/articles/2013/07/10/how-credit-card-companies-spot-fraud-before-you-do>
12. <https://usa.visa.com/visa-everywhere/security/outsmarting-fraudsters-with-advanced-analytics.html>
13. "Big Data in Human Resources: A World of Haves And Have-Nots," Forbes, October 7, 2013, <http://www.forbes.com/sites/joshbersin/2013/10/07/big-data-in-human-resources-a-world-of-haves-and-have-nots/#3eb72c8c539c>
14. "HR: Growing momentum toward a new mandate," Deloitte University Press, February 29, 2016, <https://dupress.deloitte.com/dup-us-en/focus/human-capital-trends/2016/changing-role-of-hr-skills-crisis.html>
15. "The Geeks Arrive in HR: People Analytics is Here," Forbes, February 1, 2015, <http://www.forbes.com/sites/joshbersin/2015/02/01/geeks-arrive-in-hr-people-analytics-is-here/#49fbf6157db3>



As used in this document, "Deloitte" means Deloitte Consulting LLP, a subsidiary of Deloitte LLP. Please see [www.deloitte.com/us/about](http://www.deloitte.com/us/about) for a detailed description of our legal structure. Certain services may not be available to attest clients under the rules and regulations of public accounting.

This communication contains general information only, and none of Deloitte Touche Tohmatsu Limited, its member firms or their related entities (collectively, the "Deloitte Network"), is, by means of this communication, rendering professional advice or services. Before making any decisions or taking any action that may affect your finances, or your business, you should consult a qualified professional adviser. No entity in the Deloitte Network shall be responsible for any loss whatsoever sustained by any person who relies on this communication.

Copyright © 2017 Deloitte Development LLC. All rights reserved.