

# Comparative Analysis of financial and operational performance of a healthcare service provider relative to its peers

Top 50 Best Companies to Work for in India 2016 – Silicon Review Magazine

Predictive Analytics Company of the Year 2014 – CIO Review Magazine

Top 20 Company in India - TIE Lumis Entrepreneurial Excellence Awards 2013

Top 50 Big Data Analytics Companies in India 2013 – CIO Review Magazine



# Introduction

U.S. per capita healthcare expenditures are more than two folds that of other developed countries and estimated to increase by over 65% over the next decade. The implementation of the Affordable Care Act (ACA) has led to a change in reimbursement models from fee for service to outcome-based. This requires healthcare providers to be adaptive to innovation to improve their service delivery, operational efficiency and patient engagement.

With large volumes of data generated everyday by healthcare service providers the previous practices of making business decisions on simple reporting and retrospective analysis through Excel and Access are a thing of the past. Providers need to deploy state-of-the-art open source big data technologies and build sophisticated predictive models to measure quality and cost performance and understand how they can improve those equations in better utilizing their facilities and resources.

Hospitals need visibility on their peer groups and compare themselves in the utilization of services for any specific groups of diagnoses, benchmark themselves and find opportunity areas in improving care delivery.

## **Business Opportunity**

Client is a 450+ beds university-affiliated teaching hospital with annual operating revenues exceeding \$1B providing services in burn care, stroke care, behavioral health and primary care including family health care and over 40 outpatient specialty care services.

With a large previously uninsured population entering the system, including a large volume of Medicaid patients, and those who are marginally above the Medicaid line but receiving subsidized insurance the client wanted to understand how this new segment & other factors are impacting its hospital and those of its peers from a volume and profitability perspective.

This required going beyond analyzing historical intrinsic data such as claim-level data to also external data sourced in different formats and varying levels of information and be able to stitch them together and build an understanding of how the client compares to its peers to make better decisions going forward.

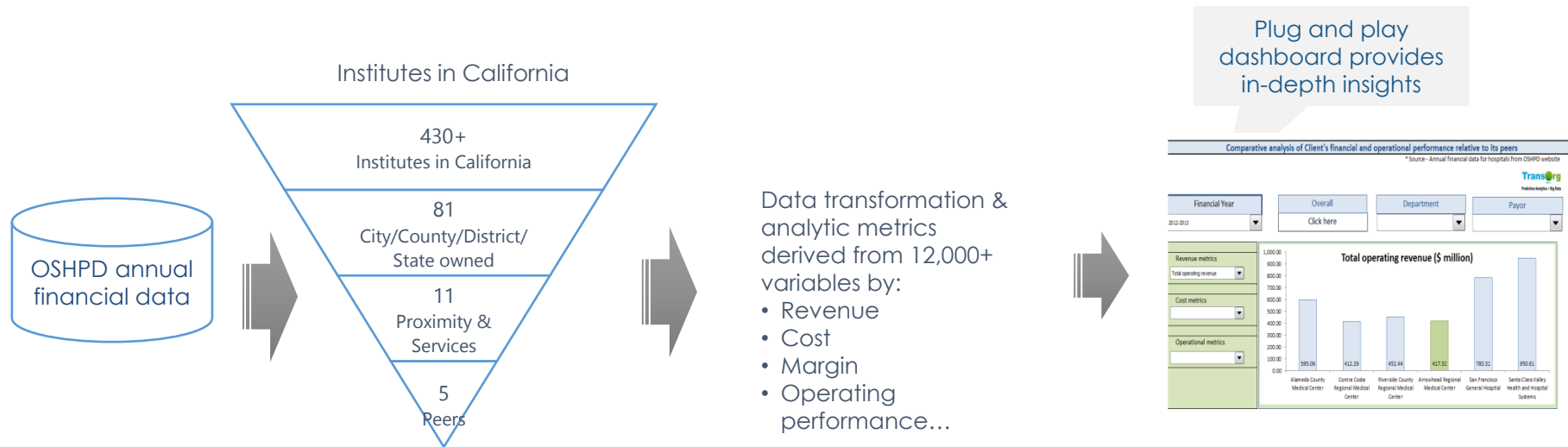
In this paper we share our key findings & recommendations from an analytics study comparing the financial and operational performance of the client relative to five of its peers prior to and post implementation of ACA measures in January, 2014.

Patient Protection and Affordable Care Act (PPACA) is commonly called the Affordable Care Act (ACA) or the Obamacare



# Approach

We evaluated different data sources such as Center for Medicare and Medicaid Services (CMS), Healthdata.gov, Agency for Healthcare Research and Quality (AHRQ) and California's Office of Statewide Health Planning and Development (OSHPD). We finally narrowed it down to OSHPD due to comprehensive coverage of financial, utilization and cost allocation data for over 430 healthcare service providers and institutions in California.



The analytics tool ingested, cleaned and transformed data creating over 100 analytic metrics from 12,000+ variables. Since the client was a county owned hospital the peer group selection was made basis criteria such as:

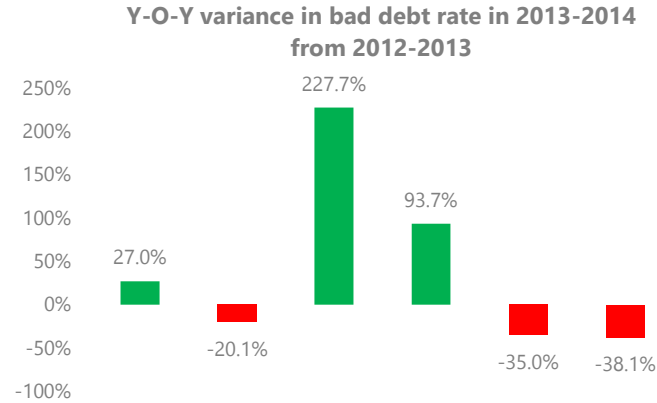
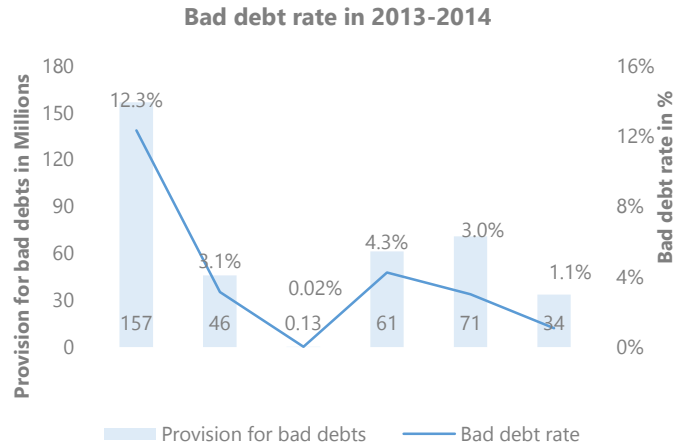
- County ownership
- Proximity to client location
- Similar lines of services
- Operational metrics such as number of outpatient visits, number of discharges, number of licensed and operational beds
- Total operating revenues

Dashboard provides insights and identifies opportunity areas such as in operational efficiency, revenue cycle management, pricing, payers' denial risk and claims management.

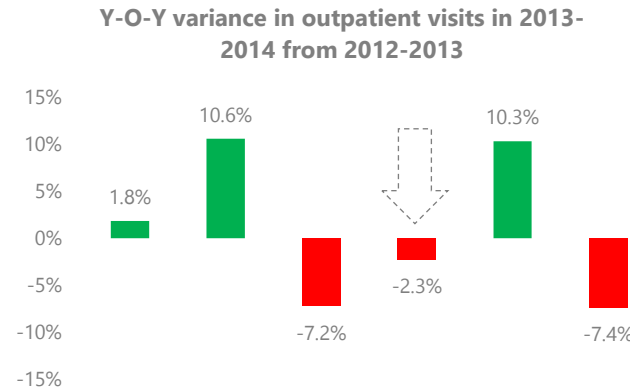
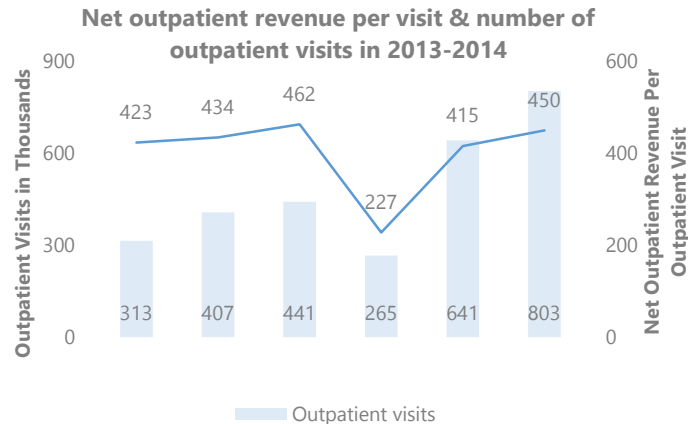


# Sample Insights

## Sample insights



- At 12.3% the bad debts rate is over five times that of peers (2.3%) for the client
- Client could achieve higher profitability by proactively identifying and responding to bad debts



- 29% increase in net outpatient revenue per visit and 14% decline in outpatient visits for the client from prior year
- Client could develop targeted community awareness programs by patient segments to drive visits



# Key Takeaways and Recommendations

## Key takeaways

Analytics revealed opportunity areas for the client to optimize operations and improve revenues for e.g. client's :

- Net patient revenue is 29% lower than peers
- Outpatient visits is 39% lower than peers
- Bad debts rate is 5.3X of peers
- Lower revenue per unit of service e.g. in ER revenue per visit 29% lower than peers
- Lowest outpatient visits across payers
- Lowest inpatient revenue per day across payers

Analytics also revealed areas of strengths where the client performed superior to its peers such as:

- Positive operating margin compared to peers
- Average ER wait time of 30 minutes is 31% less than peers
- Occupancy rate is 16% higher than peers
- Average length of stay (ALOS) is 15% lower than peers
- Competitive employee costs for e.g. in ER 35% lower average hourly rates than peers

## Recommendations

In light of the findings we proposed the following action items to the client:

- Conduct internal data analytics to evaluate reasons for low revenue realization compared to peers
- Implement programs to screen uninsured patients and help them enroll
- Develop targeted community awareness programs based on patient segmentation to drive outpatient visits
- Develop models to predict:
  - Payer denial risk
  - 30-days readmission risk
  - Propensity of patients to acquire hospital acquired conditions and infections
  - High-cost high-risk patients



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