US Healthcare Analytics Market

Feb 2015

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Executive Summary

Executive Summary
US Healthcare Analytics Market

Healthcare Analytics Market

- The Global healthcare analytics market is estimated at $4.4 billion and is expected to grow at a CAGR of 25.3% between 2013 and 2020 to reach $21.3 billion
- In the US, healthcare analytics market is growing faster than other healthcare IT markets

Healthcare in US

- Healthcare spending is a major component of the US GDP averaging 17.6% over the last 10 years
- Healthcare expenditure is expected to grow at an average of 5.7% between 2013 and 2023

Barriers to Implementation

- Data accessibility, ill-equipped workforce, high costs, difficulty in demonstrating return on investment, implementation success, cultures and habits are some of the biggest barriers for the healthcare analytics market in US

Comparable Analysis

- As of January 2015, the Healthcare Analytics market is currently trading at an average of 2.3x EV / 1yr forward-revenue and 11.9x EV / 1yr forward-EBITDA multiples
- There has also been a number of significant M&A deals in the healthcare analytics space with private as well as strategic players noticing the growth of nascent stage companies

Healthcare Analytics market is still in a nascent stage with potential to grow across different sectors

Introduction

Introduction
Healthcare Analytics

Overview

- Analytics is the systematic use of data and related business insights developed through applied analytical disciplines (e.g. statistical, contextual, quantitative, predictive, and cognitive) to drive fact-based decision making for planning, management, measurement and learning

- Helps organizations thrive in a dynamic and challenging environment by aggregating data from disparate sources and delivering relevant information in a timely, accurate, and prescriptive manner

- Application of analytics enables a level of transparency that brings accountability to the system

- Using analytics, healthcare companies can explore 'what-if' scenarios without causing inconvenience or driving up costs

- Healthcare analytics involves application of statistical tools and techniques to healthcare related data in order to study past situations, such as operational performance or clinical outcomes, to improve the quality and efficiency of clinical and business processes

- The three types of Healthcare Analytics are :

- Descriptive Analytics

- Predictive Analytics

- Prescriptive Analytics
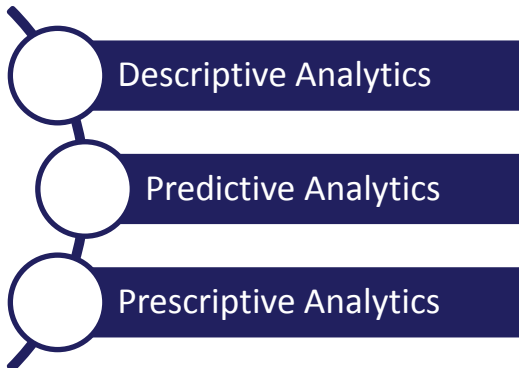
Introduction
Types of Healthcare Analytics

Types of Healthcare Analytics

Descriptive Analytics

- Mining of historical data to look for the reasons behind past success or failure

- Accounts for the biggest chunk of big data across industries

- Common examples: Management reports providing information regarding sales, customers, operations, finance and later correlating these variables

- Gives hospitals a better understanding of current status and key stats of all their employees

Predictive Analytics

- Provides organizations with estimation regarding the likelihood of a future outcome

- Primarily used to avoid preventable events as a way to reduce healthcare costs

- Techniques involve the use of data mining, modelling and game theory

- Historical and transactional data are used to identify patterns and statistical models

- Helps to answer what will happen in a particular situation

Prescriptive Analytics

- Anticipates events and suggests decision options on how to take advantage of a future opportunity or mitigate a future risk

- Ingests hybrid data – a combination of structured (numbers, categories) and unstructured data (videos, images, sounds, texts) – and business rules to predict events

- Helps pharmaceutical companies to expedite their drug development by identifying patient cohorts that are most suitable for the clinical trials worldwide

Introduction
Types of Healthcare Analytics

Competitive Advantage	Degree of Complexity		
Prescriptive	Optimization Under Uncertainty	How can we have the best outcome, given variability?
	Optimization	How can we have the best outcome?
Predictive	Predictive Modeling	What will happen Next?
	Forecasting	What if these trends continue?
	Simulation	What could happen?
Descriptive	Query / Drill Down	What exactly is the problem?
	Ad Hoc Reporting	How many, how often, where?
	Standard Reporting	What happened?

Competitive Advantage (vertical axis)

**Degree of Complexity** (horizontal axis)

Introduction
Global Healthcare Analytics Market

Global Healthcare Analytics Market

- Global healthcare analytics market was estimated to be $4.4 billion in 2013 and is forecasted to grow at CAGR of 25.3% between 2013 and 2020 to reach $21.3 billion*

- The healthcare analytics market is well-established in the US, growing faster than other healthcare IT (hardware, software and IT services) markets

- In the US, the market is poised to grow from 10.0% adoption in 2011 to 50.0% adoption by 2016, a CAGR of 37.9%, according to a 2011 Frost and Sullivan market analysis
  - The European market is the second largest market, growing at a lower rate due to the macro-economic slow-down
  - The Asian market is relatively new to the healthcare data analytics, however, the increasing initiatives and outsourcing will drive the market
  - Australia and New Zealand are developed market in terms of healthcare IT and are setting an example for the use of healthcare data analytics

Global Healthcare Analytics Market Size

$ billions

CAGR – 25.3%

2013: $ 4.4
2020: $ 21.3
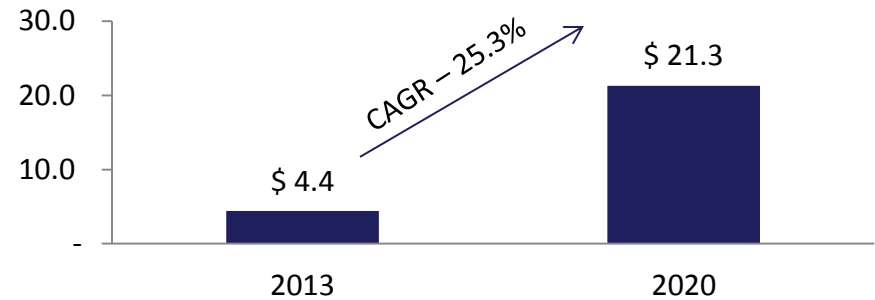
US Healthcare Analytics Adoption Rate

CAGR – 37.9%

2011: 10%
2016: 50%

*Source: MarketsandMarkets

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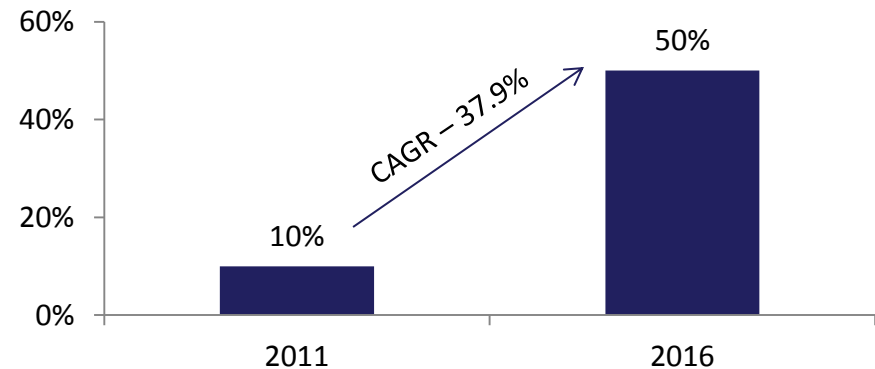
Healthcare Analytics in US

Healthcare Analytics in US
Healthcare

Healthcare - Overview

- US national health expenditure totalled $2.9 trillion in 2013 which is equivalent to $9,255 per person and accounted for 17.4% of GDP[1]

- Healthcare has always been one of the major component of the GDP averaging 17.6% over the last 10 years

- The expenditure has increased at a CAGR of 5.0% during the same period

- National Health Expenditures (NHE) are projected to grow at an average rate of 5.7% between 2013 and 2023

- Even though US spends more money per person per year on healthcare than any other nation in the world, it is still placed on the 44th spot on Healthcare efficiency[2]

Healthcare Spending[1]

Year	Spending ($ trillion)	Spending as a % of GDP
2003	$1.8	14.6%
2004	$1.9	15.0%
2005	$2.0	15.5%
2006	$2.2	16.2%
2007	$2.3	16.8%
2008	$2.4	17.6%
2009	$2.5	18.8%
2010	$2.6	19.1%
2011	$2.7	19.6%
2012	$2.8	20.0%
2013	$2.9	20.1%
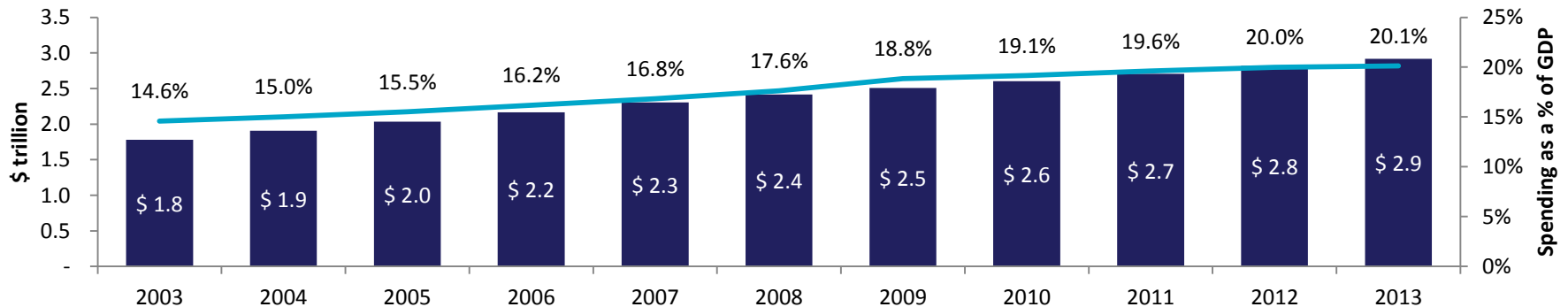
Source:
(1) Centres for Medicare & Medicaid Services
(2) Bloomberg

Healthcare Analytics in US
Electronic Health Records

EHR in US

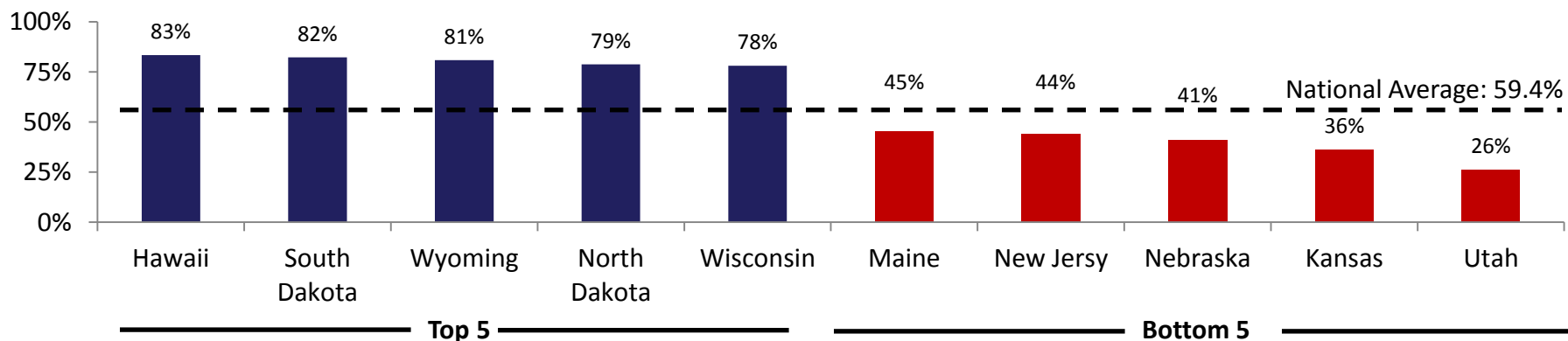- An Electronic Health Record (EHR) is a systematic collection of electronic health information about an individual patient or population
  - It is a record in digital format that is theoretically capable of being shared across different health care settings
  - In some cases this sharing can occur by way of network-connected, enterprise-wide information systems and other information networks or exchange

- In the US, clinics and physicians have started to adopt EHR, with nearly six in ten (59%) hospitals having at least a Basic EHR system in 2013[1]
  - This represents an increase of 34% from 2012 and a five-fold increase since 2008

- Also, over nine in ten (93%) hospitals possessed a certified EHR technology in 2013, increasing by 29% since 2011

Hospitals with Basic EHR system[1]

State	Value
Hawaii	83%
South Dakota	82%
Wyoming	81%
North Dakota	79%
Wisconsin	78%
Maine	45%
New Jersy	44%
Nebraska	41%
Kansas	36%
Utah	26%

National Average: 59.4%

Top 5 — Bottom 5

Adoption of EHR is essential for a successful implementation of analytics software

Healthcare Analytics in US
Need and Potential for Analytics

Need

Evidence continues to mount that globally, healthcare is increasingly challenged by inefficiencies, including wasting more than US$2 trillion annually

Clinical outcomes are not of the highest standard, in the US, where 96 people per 100,000 die annually from conditions considered easily controllable

Citizens have higher expectations from their healthcare providers and are demanding increasing accountability from their doctors, nurses and health plans

Market dynamics and competitive pressures require enhanced understanding of underlying trends and a path to differentiation

Potential

Analytics can be used to gain better insights to demonstrate value and achieve better outcomes

Awareness about public health can help consumers become more accountable of their own health

From managing small details to large processes, analytics
- Helps design and plan policy and programs
- Enhances sustainability
- Provides a means for measuring and evaluating critical organizational data

Can expand access to healthcare, align pay with performance and help hold down growth in healthcare costs

Source:
The value of analytics in healthcare by IBM

Healthcare Analytics in US
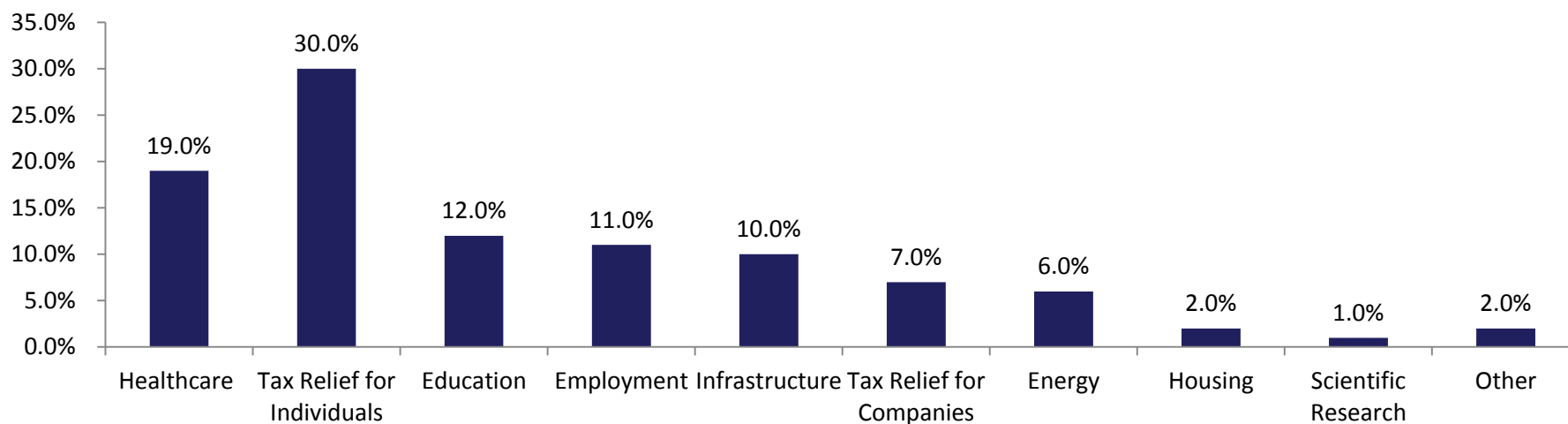## American Recovery and Reinvestment Act of 2009

ARRA
American Recovery and
Reinvestment Act of 2009

- American Recovery and Reinvestment Act of 2009 supports $27.0 billion (out of total $150.0 billion allocated to healthcare) in payments to clinical professionals and hospitals that "adopt, implement, upgrade or demonstrate meaningful use" of EHR technology

- The enabling legislation, the Health Information Technology for Economic and Clinical Health Act (HITECH Act), provides physicians and hospitals with financial incentives if they successfully implement EHRs
  - $44,000 per physician over five years under the Medicare program
  - $64,000 per physician over six years under the Medicaid program

- More ominously, penalties for failing to successfully implement EHRs by 2015 include reduced payments from both Medicare and Medicaid

- To receive full incentives and avoid penalties, hospitals must have started implementing EHRs in 2011 and must finish by 2015

- There are approximately 5,686 hospitals in the US and tens of thousands of physician offices are rushing to implement EHR at break-neck pace

> **$27.0 billion is allocated to clinical professionals and hospitals to adopt EHR**

Allocation by Category

Category	Percentage
Healthcare	19.0%
Tax Relief for Individuals	30.0%
Education	12.0%
Employment	11.0%
Infrastructure	10.0%
Tax Relief for Companies	7.0%
Energy	6.0%
Housing	2.0%
Scientific Research	1.0%
Other	2.0%

*Source: MarketsandMarkets

Healthcare Analytics in US
Advantages of Analytics

Clinical effectiveness and patient satisfaction

- Improves clinical quality of care

- Improves patient safety and reduce medical errors

- Improves wellness, prevention and disease management

- Understands physician profiles and clinical performance

- Improves customer satisfaction, acquisition and retention

Operational effectiveness

- Reduces costs and increases efficiency

- Optimizes catchment area and network management

- Improves pay for performance and accountability

- Increases operating speed and adaptability

Financial and administrative performance

- Increases revenue and ROI

- Improvements in utilization

- Optimizes supply chain and human capital management

- Improves risk management and regulatory compliance

- Reduces fraud and abuse

Healthcare Analytics in US
Advantages of Analytics to Different Organizations

Healthcare Providers

- Integrate analytical decisions about patient care that would address clinical, financial and quality concerns

- Employ clinical decision support tools to administer the most effective treatment protocols

- Understand the financial implications of different treatment approaches
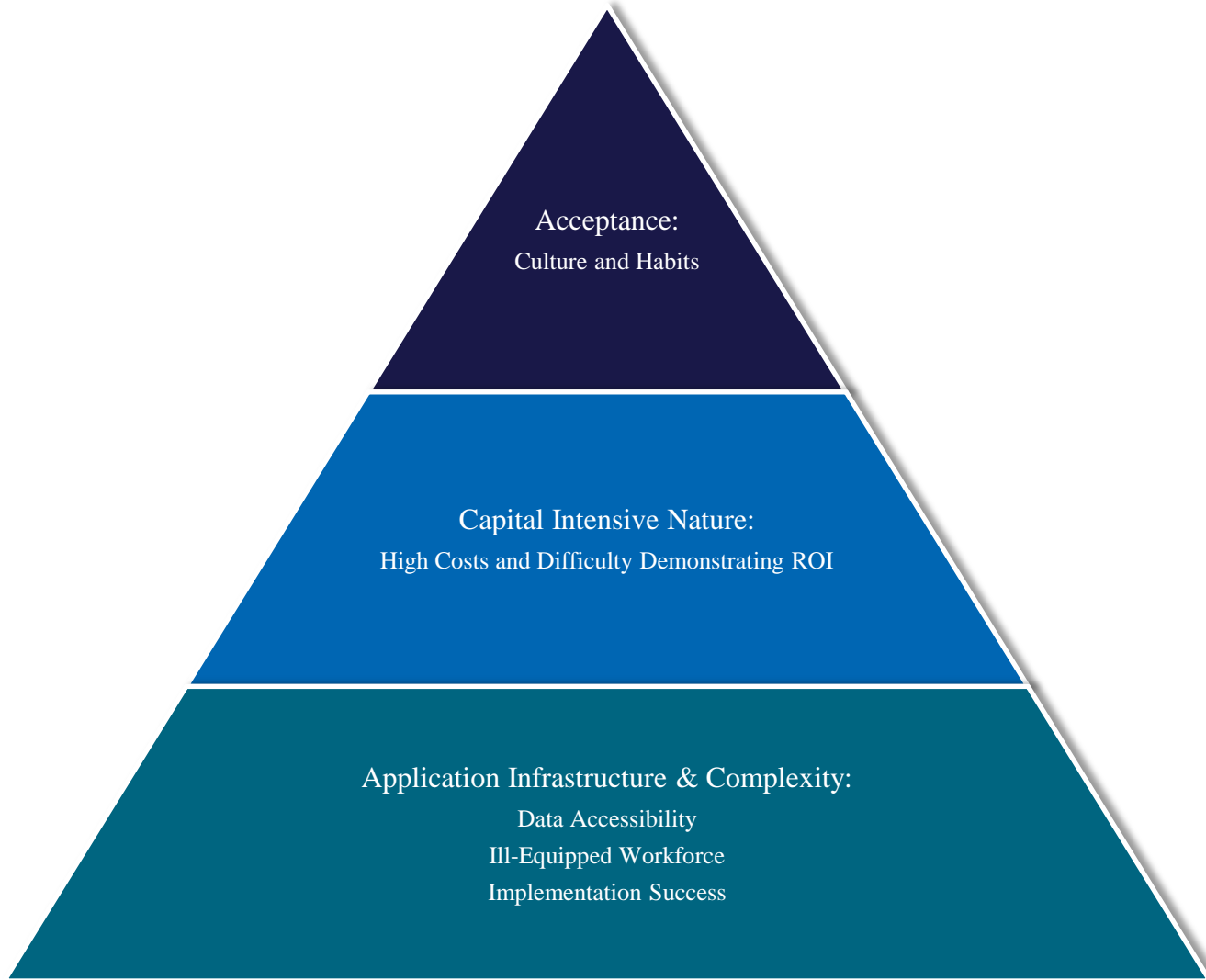
Life Sciences Firm

- Determine how best to market drugs and devices to physicians and patients

- One problem: They keep their data and analytics to themselves, and do not collaborate with both internal and external analytical groups

Payer Organization

- Can make sure that the right amount of premium is quoted

- One problem: Due to their process oriented culture they face issues like addressing claims and other data with an analytical focus

Healthcare Analytics in US
Barriers to Implementation (1/3)

Acceptance:
Culture and Habits

Capital Intensive Nature:
High Costs and Difficulty Demonstrating ROI

Application Infrastructure & Complexity:
Data Accessibility
Ill-Equipped Workforce
Implementation Success

Healthcare Analytics in US
Barriers to Implementation (2/3)

Culture and Habits

Culture does not encourage sharing information as has been stated in the case of Life Sciences firms

Physicians might be reluctant to use evidence based data and rely on their judgment in decision making

High Costs and Difficulty Demonstrating ROI

Business analytics software at a typical community hospital costs tens of millions of dollars; whereas at multi-hospital health systems, it costs hundreds of millions of dollars

There is a significant concern to justify the expense of implementing analytics, which includes technology costs as well as the cost associated with loss in productivity due to workflow changes

Garnering the support of executives to justify the expenditure will require CIOs to demonstrate a positive return on investment

Lack of financial resources may lead to hospitals struggling to repair or replace their aging facilities and update older, less capable medical technology

Data Accessibility

Analytics requires access to critical pieces of data and many organizations struggle to obtain data from different sources

Patient data from a variety of sites, such as providers, labs, pharmacies, clinicians, and other stakeholders needs to be collected and integrated

Healthcare Analytics in US
Barriers to Implementation (3/3)

Ill-Equipped Workforce

Most employees do not have the appropriate skills to support advanced analytics

Without internal staff to support analytics, some organizations are seeking out & employing consultants and third-party organizations for support

In many organizations, adequate funding has not been assigned to support staffing needs for analytics

The problem of workforce starts at the top as executives must deal with competing priorities and demands

Given all the challenges organizations face today, senior leadership has not prioritized data analytics as a critical area for staffing

Implementation Success

Integrating different analytic systems is a major hindrance in implementing an enterprise analytics system such as integrating information from mobile devices, social media, and unstructured clinical notes

Data is recorded in different manner in different places, even though social interactions and communications differ across places

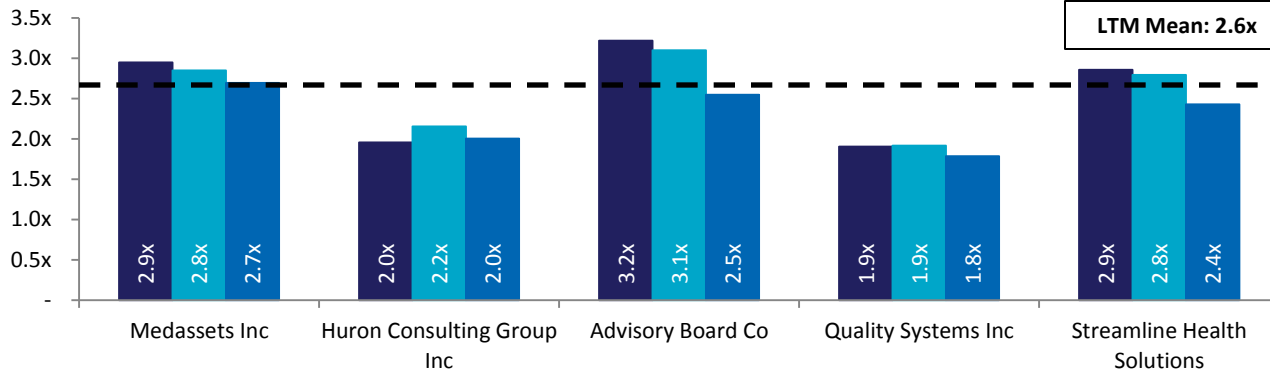Ownership of such data is unclear or governance is ineffective
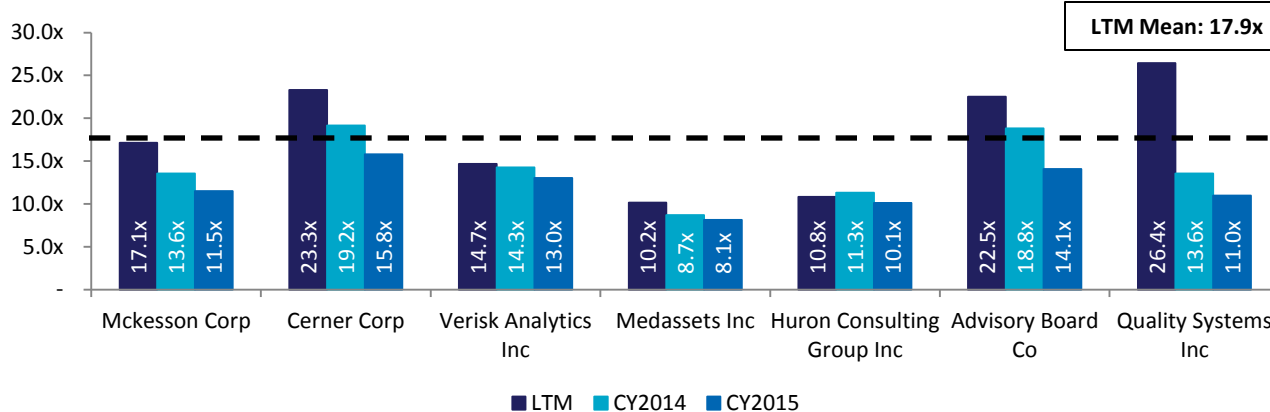
Comparables Analysis

Comparables Analysis
Comparables

Trading Comparables : EV / Revenue

LTM Mean: 2.6x

Company	LTM	CY2014	CY2015
Medassets Inc	2.9x	2.8x	2.7x
Huron Consulting Group Inc	2.0x	2.2x	2.0x
Advisory Board Co	3.2x	3.1x	2.5x
Quality Systems Inc	1.9x	1.9x	1.8x
Streamline Health Solutions	2.9x	2.8x	2.4x

Trading Comparables : EV / EBITDA

LTM Mean: 17.9x

Company	LTM	CY2014	CY2015
Mckesson Corp	17.1x	13.6x	11.5x
Cerner Corp	23.3x	19.2x	15.8x
Verisk Analytics Inc	14.7x	14.3x	13.0x
Medassets Inc	10.2x	8.7x	8.1x
Huron Consulting Group Inc	10.8x	11.3x	10.1x
Advisory Board Co	22.5x	18.8x	14.1x
Quality Systems Inc	26.4x	13.6x	11.0x

■ LTM ■ CY2014 ■ CY2015

- The companies are trading at LTM mean EV / Revenue 2.6x and LTM mean EV / EBITDA of 17.9x
- The M&A space in healthcare analytics market has been quite active with Google Ventures making its largest investment in Medical startup till date in Flatiron Health
- Veritas Capital's $1.1 billion Acquisition of Truven Health Analytics Inc. at 10.0x EV / EBITDA multiple is one of the biggest acquisition in healthcare analytics till date*

*For trading comps, please refer the appendix

Public Players in US Market

Public Players in US Market
Optum Health

OPTUMHealth™

Company Description

- The company's areas of expertise range from behavioural and clinical health support, online health coaching and counselling for complex medical conditions, to health savings accounts

- Optum Health is a division of UnitedHealth Group, which is a diversified managed health care company headquartered in Minnetonka, Minnesota

Products / Analytics

- Offers care solutions which include chiropractic care, physical occupational therapy, and alternative medicine programs; and complex medical conditions program for various diseases

- Offers consumer solutions for employers and payers

- Provides specialty benefits that provide access to dental, vision, life, disability, and stop loss insurance benefits

- It also offers various financial services

Financials – FY 2013

	US$ mm
Revenue	$9,855.0
EBITDA	1,169.0
EBITDA Margin	11.9%

News

- **28 January, 2015:** Alere Inc. has sold Alere Health (a diagnostic tests company) and its subsidiaries, to Optum for $600 million

- **14 January, 2015:** Optum Labs Research has collaborated with five leading organizations - The Brown University School of Public Health, Johns Hopkins Bloomberg School of Public Health, MIT Sloan School of Management, Novartis Pharmaceuticals Corporation and ResMed to strengthen its collective resource base

Source: Company Financials

Public Players in US Market
Cerner

Company Description

- Cerner Corporation (Cerner) is a supplier of healthcare information technology (HCIT) solutions, services, devices and hardware

- Cerner solutions optimize processes for healthcare organizations, especially physicians, thereby helping them manage their clinical, financial and management information systems

- It provides solutions to around 14,000 facilities worldwide

Products / Analytics

- The Company designs and develops software solutions on the unified Cerner Millennium architecture, a person-centric computing framework, which combines clinical, financial and management information systems

- This architecture allows providers to access an individual's electronic health record (EHR) at the point of care, and it organizes and proactively delivers information to meet the specific needs of physicians, nurses, laboratory technicians, pharmacists, front- and back-office professionals and consumers

Financials – FY 2013

	US$ mm
Revenue	$2,840.6
EBITDA	839.6
EBITDA Margin	29.6%

News

- **26 January, 2015:** University of Medical Centre and Cerner signed a deal under which they will work together to continue their implementation of shared digital patient records, automate clinical workflows in endoscopy and oncology and create a single platform for communications across all three organizations

- **25 January, 2015:** United Arab Emirates Ministry of Health has decided to work with Cerner to achieve First Member Health Portal in the Middle East

Source: Company Financials

Public Players in US Market
Verisk Analytics

Company Description

- Verisk Analytics, Inc. (Verisk) is a provider of information about risk to professionals in insurance, healthcare, mortgage, government, supply chain, and risk management

- Verisk organizes its business in two segments: Risk Assessment and Decision Analytics, which manages the Healthcare division

Products / Analytics

- The company runs its customers' claims through its analytic system to identify potential fraud, abuse and overpayment, and then a registered nurse, physician or other clinical specialist - skilled in coding and reimbursement decisions - reviews all suspect claims and billing patterns

- The Company is a provider of healthcare business intelligence, predictive modelling, analytical and reporting systems to health insurers, provider organizations and self-insured employers

Financials – FY 2013

	US$ mm
Revenue	$977.4
EBITDA	397.9
EBITDA Margin	40.7%

News

- **06 January, 2015:** Xactware, a business of Verisk Analytics, announced expansion into Germany with a new suite of claims solutions

- **08 December, 2015:** Verisk Analytics, Inc. recently acquired Maplecroft Net Limited, a provider of global risk analytics and advisory services

Source: Company Financials

Public Players in US Market
Truven Health Analytics

TRUVEN=
HEALTH ANALYTICS™

Company Description

- Truven Health Analytics Inc. provides healthcare data and analytics solutions and services in the US and internationally

- It serves various customers, including federal government agencies, state government agencies, employers and health plans, hospitals, clinicians, and life sciences companies

- The company was founded in 2012 and is based in Ann Arbor, Michigan. Truven is a subsidiary of Truven Holding Corp.

Products / Analytics

- The company primarily offers healthcare analytics solutions, such as
  - Population health and cost analysis
  - Hospital performance management
  - Payment integrity and compliance
  - Patient care
  - Research solutions

- It also provides analytic consulting and research, strategic consulting, and data warehousing/data management services

Financials – FY 2013

	US$ mm
Revenue	$492.7
EBITDA	94.9
EBITDA Margin	19.3%

News

- **27 January, 2015:** Oakwood Healthcare, a four hospital / 1,129-bed system, selected Truven Health Analytics' Micromedex solutions to deliver comprehensive and integrated patient and consumer education and engagement resources

- **06 November, 2015:** Truven Health Analytics Acquired Heartbeat Experts, a stakeholder management solutions company for the life sciences industry

Source: Company Financials

Public Players in US Market
MedAssets

Company Description

- MedAssets, Inc. provides technology-enabled products and services

- The Company's technology-enabled solutions are delivered primarily through the company's hosted software, or software as a service (SaaS) or web-based applications

- Its web-based applications employ the concept of cloud computing by using the Internet to virtually deploy its solutions across decentralized health care organizations

- It operates in two segments: Spend and Clinical Resource Management (SCM) and Revenue Cycle Management (RCM)

Products / Analytics

- Spend and Clinical Resource Management Segment (SCM)
  - The Company's SCM segment provides a suite of cost management services, supply chain analytics, and data capabilities that help its customers manage many of their high expense categories

- Revenue Cycle Management Segment (RCM)
  - The Company's RCM segment provides a range of products and services spanning the revenue cycle workflow-from patient access and financial responsibility, capture and integrity, pricing analysis, claims processing and denials management, payer contract management, revenue recovery and accounts receivable services

Financials – FY 2013

	SCM	RCM	Consolidated
Revenue	$424.5	$256.0	$680.5
EBITDA	189.4	62.6	258
EBITDA Margin	44.6%	24.4%	37.9%

News

- **01 December, 2015:** MedAssets announced a strategic partnership with Procured Health, a proprietary data intelligence and collaboration technology platform, to deliver a holistic approach to implementing best-practice clinical value analysis programs

Source: Company Financials

Public Players in US Market
The Advisory Board Company

Company Description

- The Advisory Board Company is a global research, technology, and consulting firm partnering with more than 165,000 leaders across 4,100 organizations in the healthcare and higher education sector
- The Company offers programs rooted in best practices in three key areas
  - Best practices research
  - Software tools
  - Management and Advisory services

Products / Analytics

- The company's software tools programs are anchored by web-based business intelligence and software tools, which are updated with member-specific data
- The tools provide access to specific performance improvement metrics at its member institutions, pulling data from disparate legacy information systems through standardized data extracts and, with analytics and metrics informed by its practices research, transforming hard-to-access legacy data into performance reports and benchmarks offering actionable insight for managers and executives
- The company employs a membership model and combines the analytical, clinical, managerial, and technological expertise of its staff, with insights from over 100,000 interviews with executives, academics, policy makers, and consultants from across its global network, to find solutions to members' problems

Financials – FY 2013

	US$ mm
Revenue	$492.7
EBITDA	94.9
EBITDA Margin	19.3%

News

- **21 January, 2015:** The Advisory Board Company has Advanced Commitment to Public Health through BUILD Challenge, a national program that will award up to $8.5 million and a range of support services to proposals that strengthen partnerships among hospitals, non-profits, local health departments, and other community organizations to improve the health of low-income neighbourhoods within cities with populations greater than 150,000

Public Players in US Market
Huron Consulting Group

Company Description

- Huron Consulting Group Inc. is a provider of operational and financial consulting services

- The Company provides consulting services to a range of organizations, including: healthcare organizations, academic institutions, governmental entities, Fortune 500 companies, medium-sized businesses, and law firms

- The Company operates in three segments
  - Health and Education Consulting
  - Legal Consulting
  - Financial Consulting

Products / Analytics

- The Company's Health and Education Consulting segment provides consulting services to hospitals, health systems, physicians, managed care organizations, academic medical centres, colleges, universities, and pharmaceutical and medical device manufacturers

- Huron's healthcare practice provides solutions for hospitals, health systems and academic medical centres

- The Company provides service offerings in every aspect of higher education and healthcare administration

Financials of Huron Healthcare – FY 2013

	US$ mm
Revenue	$358.8
EBITDA	141.9
EBITDA Margin	39.5%

News

- **27 January, 2015:** Huron Consulting Group acquired Studer Group, which concentrates on working with health care providers

- **08 January, 2015:** Huron Consulting Group acquired Sky Analytics, which provides in-house legal departments with a web-based platform to access on-demand legal spend information and analytics

Source: Company Financials

Public Players in US Market
Streamline Health

Streamline Healthcare Solutions

Company Description

- Streamline Health Solutions is a provider of enterprise content management and business analytics solutions for healthcare organizations

- The Company provides computer software-based solutions that help hospitals and physicians improve efficiencies and business processes across the enterprise - thereby enhancing and protecting revenues

Products / Analytics

- Business Analytics Solutions allows staff across the healthcare enterprise to drill down quickly and deeply into actionable and real-time financial data and key performance indicators to improve revenue realization and staff efficiency

- These solutions include dashboards, data mining tools, and prescriptive reporting, which help to simplify, facilitate, and optimize overall revenue cycle operating performance of the healthcare enterprise

Financials – FY 2013

	US$ mm
Revenue	$492.7
EBITDA	94.9
EBITDA Margin	19.3%

News

- **13 November, 2014:** NantHealth solutions, which leveraged genomic science and innovative device development to advance diagnostics and guide treatment protocols, signed contract to add Streamline Health's Looking Glass clinical analytics solution to its cloud-based intelligent clinical operating systems

Source: Company Financials

Private Players in US Market

Private Players in US Market
Private Players

Company Name	Description	Analytics
MedeAnalytics MEASURE. MANAGE. LEAD.	▪ MedeAnalytics delivers performance management solutions across the healthcare system to ensure accountability and improved financial, operational and clinical outcomes ▪ It provides solutions such as Clinical Performance Manager, Compliance and Revenue Integrity, Hospital-Physician Revenue Cycle Intelligence, and others	▪ All of MedeAnalytics solutions use a common web analytics platform that is intuitive, user friendly, flexible and comprehensive ▪ Analytic software collects and aggregates data from varied information systems and locations, transforms the data into usable information, and presents the data to managers and individual contributors in a format that enables enhanced decision making and greater efficiency
Dimensional INSIGHT	▪ Dimensional Insight (DI) is a provider of integrated business intelligence and performance management solutions that empower information consumers throughout the enterprise with data-driven decision making abilities	▪ The Diver Solution (Diver), DI's robust flagship product helps hospitals to tackle productivity, quality, revenue cycle, and clinical challenges ▪ Clinical, financial, and operational data from multiple sources can be easily integrated with Diver ▪ A wide range of visualization options – dashboards, reports, charts, gauges and more – let executives, administrators, clinicians, and analysts see information in a meaningful context ▪ Unique ad hoc analytical capabilities allow users to dive into underlying details to identify issues and get to root causes

Private Players in US Market
Private Players

Company Name	Description	Analytics
Strata Decision T E C H N O L O G Y	▪ Strata Decision Technology engages in the development of innovative SaaS (Software as a Service) solutions for financial and business analytics, and decision support in healthcare ▪ The Company's solutions are used by over 1,000 healthcare organizations, including major academic medical centres, community hospitals, children's hospitals, and many of the largest and most influential healthcare systems in the US	▪ The Company specializes in healthcare analytics, budgeting and reporting, hospital planning systems, decision making, financial performance management, healthcare finance, and healthcare management software ▪ The Company provides a single integrated software platform for budgeting, decision support, financial forecasting, strategic planning, capital purchase planning and tracking, management reporting, and performance management
VisiQuate	▪ VisiQuate delivers dynamic SaaS performance management solutions that transform decision-making throughout the enterprise, bridging the gap between business analytics and real-world results ▪ It serves clients in healthcare, financial services and other industries	▪ VisiQuate's clients benefit from the successful integration of actionable workflow, guided eLearning solutions, and a rich complement of industry domain experts who work closely with VisiQuate's clients to help them achieve performance outcomes

Private Players in US Market
Private Players

Company Name	Description	Analytics
	▪ VitalSpring Technologies, Inc. is an enterprise technology company providing business intelligence solutions ▪ Its solutions enable self-insured corporations, government agencies, payers, hospitals, and providers to manage and control healthcare costs and quality ▪ Formerly known as Medical Internet Solutions, Inc.	**VitalSpring Agility** ▪ The Company offers VitalSpring Agility, a hosted software based on best practice frameworks that enables users to develop detailed strategies for reducing health care cost and improving service quality **VitalSpring Integrity** ▪ The Company also provides VitalSpring Integrity, a hosted software that delivers financial performance information, metrics, and scorecards that illustrate opportunities to improve financial performance for claims administration, funding, and accounting

Appendix

Appendix
State Wise Adoption of Basic EHR

State	Basic EHR, %	n (N)	State	Basic EHR, %	n (N)
United States	**59.4**	**2655 (4472)**	Missouri	53.1	111 (112)
Alabama	45.4	31 (90)	Montana	67.5	28 (54)
Alaska	55.3	6 (19)	Nebraska	41.0§	49 (84)
Arizona	71.6†	39 (60)	Nevada	68.0	11 (29)
Arkansas	78.2†	38 (71)	New Hampshire	58.7	12 (26)
California	55.3	170 (328)	New Jersey	43.9§	45 (64)
Colorado	76.3†	48 (71)	New Mexico	47.8	17 (31)
Connecticut	75.7†	17 (29)	New York	63.4	115 (171)
Delaware	50.1	4 (6)	North Carolina	74.7†	55 (108)
District of Columbia	67.9	6 (8)	North Dakota	78.7†	14 (42)
Florida	65.7	96 (184)	Ohio	57.9	106 (158)
Georgia	60.9	58 (134)	Oklahoma	47.3§	57 (107)
Hawaii	83.4†	12 (20)	Oregon	51.6	27 (59)
Idaho	52.4	20 (38)	Pennsylvania	53.2§	114 (154)
Illinois	66.8†	141 (178)	Rhode Island	61.3	8 (10)
Indiana	63.6	63 (107)	South Carolina	63.0	19 (58)
Iowa	61.4	75 (117)	South Dakota	82.2†	23 (50)
Kansas	36.1§	97 (125)	Tennessee	52.9	48 (115)
Kentucky	50.8§	63 (97)	Texas	53.7§	199 (343)
Louisiana	49.2	44 (100)	Utah	26.2§	22 (44)
Maine	45.2§	22 (36)	Vermont	66.1	6 (14)
Maryland	73.0†	31 (45)	Virginia	65.2	42 (81)
Massachusetts	63.6	40 (62)	Washington	70.3	36 (88)
Michigan	67.5†	74 (128)	West Virginia	47.3§	28 (49)
Minnesota	71.6†	127 (129)	Wisconsin	78.1†	93 (125)
Mississippi	56.1§	33 (90)	Wyoming	80.9†	15 (24)

NOTES: Basic EHR adoption requires the EHR system to have a set of EHR functions defined in Table 2.
n = survey respondents; N = hospitals surveyed. All estimates met standards for reliability.
†Significantly higher than national average
§Significantly lower than national average (p < 0.05)
SOURCE: ONC/AHA, AHA Annual Survey Information Technology Supplement

Appendix
Comparables Analysis - Trading Comparables

$mm Company Name	Enterprise Value	LTM Revenue	LTM EBITDA	LTM Margin EBITDA	EV/ Revenue LTM	EV/ Revenue CY2014	EV/ Revenue CY2015	EV/EBITDA LTM	EV/EBITDA CY2014	EV/EBITDA CY2015	Net Debt/ LTM EBITDA
Mckesson Corp	$59,119.6	$161,263.0	$3,448.0	2.1%	NM	NM	NM	17.1x	13.6x	11.5x	2.0x
Cerner Corp	21,751.7	3,272.0	932.8	28.5%	NM	NM	NM	23.3x	19.2x	15.8x	NM
Verisk Analytics Inc	11,438.2	1,698.6	779.7	45.9%	NM	NM	NM	14.7x	14.3x	13.0x	1.1x
Medassets Inc	2,041.2	692.5	200.8	29.0%	2.95x	2.85x	2.69x	10.2x	8.7x	8.1x	4.5x
Huron Consulting Group Inc	1,769.6	904.7	163.6	18.1%	1.96x	2.15x	2.00x	10.8x	11.3x	10.1x	0.8x
Advisory Board Co	1,785.9	555.1	79.3	14.3%	3.22x	3.10x	2.55x	22.5x	18.8x	14.1x	NM
Quality Systems Inc	908.5	477.0	34.3	7.2%	1.90x	1.92x	1.78x	26.4x	13.6x	11.0x	NM
Streamline Health Solutions	78.6	27.5	(5.8)	(21.1%)	2.85x	2.79x	2.43x	NM	NM	NM	NM
High				45.9%	3.22x	3.10x	2.69x	26.4x	19.2x	15.8x	4.5x
Mean				15.5%	2.58x	2.56x	2.29x	17.9x	14.2x	11.9x	2.1x
Median				16.2%	2.85x	2.79x	2.43x	17.1x	13.6x	11.5x	1.5x
Low				(21.1%)	1.90x	1.92x	1.78x	10.2x	8.7x	8.1x	0.8x

Source: Bloomberg

Appendix

Comparables Analysis - Transaction Comparables (1/4)

Sr No.	Date Announced	Target	Acquiror	Transaction Value (US$ mm)	Deal Type	% Sought	Target Description	Notes / Multiples
1	11/19/14	Valence Health Inc	General Electric Co,North Bridge Venture Partners LP, Foundation Medical Partners LP, Heritage Group Partners LLC	$15.0	Funding	NA	Valence Health, Inc. provides medical information software. The Company offers clinical integration and risk management solutions from data aggregation and web-based reporting tools. Valence Health serves customers in the United States.	
2	05/08/14	Flatiron Health Inc	Laboratory Corp of America Holdings, First Round Capital, Google Ventures	130.0	Funding	NA	Flatiron Health, Inc. offers health care technology services. The Company provides oncologists and hospitals with a more comprehensive view of their patient population, and what cancers they are facing. Flatiron Health serves and markets to patients and health care professionals throughout the world.	
3	11/13/13	Health Revenue Assurance Holdings Inc	Great Point Partners LLC	5.4	Funding	NA	Health Revenue Assurance Holdings, Inc. provides revenue integrity technology, solutions and services for healthcare organizations. The Company offers a full suite of business intelligence products and consulting services including: data analytics and predictive modeling software applications, ICD-10 solutions, outsource coding, billing and coding audits, education and consulting.	
4	01/21/14	Api Healthcare Corp	General Electric Co	NA	M&A	100.0%	API Healthcare Corporation offers staffing and workforce solutions. The Company provides staffing, scheduling, patient classification, time and attendance, human resources, and business analytics. API Healthcare operates in the United States.	
5	09/11/13	Enclarity Inc	LexisNexis Risk Solutions Inc	80.0	M&A	100.0%	Enclarity, Inc. operates as an information management and analytic software company. It offers ProviderPoint for healthcare provider file and claims data cleansing, augmentation, and integration.	
6	07/08/13	Predixion Software	Accenture PLC, DFJ Frontier, EMC, Miramar Venture Partners and Palomar Ventures	20.0	Funding	NA	Predixion Software develops and markets predictive analytics solutions fully integrated with Microsoft's BI platform. Predixion customers are achieving immediate results across a multitude of industries including: retail, finance, healthcare, marketing, telecommunications and insurance/risk management.	
7	05/10/13	TransUnion's Healthcare Analytics division (HCA)	Altegra Health	NA	M&A	100.0%	Healthcare Analytics (HCA) provides an integrated suite of analytical tools, reports and a provider portal designed to enhance organizational performance.	

Source: Bloomberg

Appendix
Comparables Analysis -Transaction Comparables (2/4)

Sr No.	Date Announced	Target	Acquiror	Transaction Value (US$ mm)	Deal Type	% Sought	Target Description	Notes / Multiples
8	01/25/13	Humedica	United Health Group	NA	M&A	100.0%	Humedica, Inc., a health care informatics company, provides software-as-a-service-based clinical business intelligence solutions to the health care industry.	
9	07/18/12	MaxIT Healthcare	Science Applications International Corporation (SAIC)	473.0	M&A	100.0%	MaxIT Healthcare offers a range of services to commercial hospital groups and other care providers. These include IT strategy and planning, electronic health record (EHR) implementation and optimization and more.	EV/Sales - 2.63x
10	05/15/12	Wolters Kluwer's Healthcare Analytics Division	Symphony Technology Group	NA	M&A	100.0%	Wolters Kluwer is a market-leading global information services company. Professionals in the areas of legal, business, tax, accounting, finance, audit, risk, compliance, and healthcare rely on Wolters Kluwer's leading information-enabled tools and software solutions	
11	05/07/12	TC3 Health	Emdeon Inc	NA	M&A	100.0%	TC3 is a leading provider of cost containment solutions, including payment integrity analytics, clinical code editing and out-of-network claims cost management to payers and claims administrators.	
12	04/23/12	Truven Health Analytics Inc	Veritas Capital	1,250.0	M&A	100.0%	Truven Health Analytics Inc. provides information, analytic tools, benchmarks, and services to the healthcare industry in the United States. The company was formerly known as Thomson Reuters.	EV/EBITDA - 10.0x
13	12/07/11	Anvita Health	Humana Inc	NA	M&A	100.0%	Anvita Health provides high-performance clinical analytics solutions for health plans, pharmacy benefit managers, personal health record and electronic health record companies, and health care providers.	
14	11/07/11	HealthDataInsights Inc	HMS Holding Corp	400.0	M&A	100.0%	HealthDataInsights, Inc., a technology-enabled healthcare services company, provides fraud, abuse, and overpayment identification and recoupment solutions for government payors, health plans, and employers.	EV/Sales - 4.71x
15	07/25/08	MedeAnalytics Inc.	Bain Capital Partners	50.0	Funding	NA	MedeAnalytics is the recognized leader in healthcare analytics with business intelligence services that are a revolutionary blend of adaptive web analytics, client services and a hosted IT environment that empowers healthcare executives to create value by establishing a culture of data-driven decision making and accountability.	

Source: Bloomberg

Appendix
Comparables Analysis -Transaction Comparables (3/4)

Funding in Flatiron Health Inc. by a consortium led by Google Ventures

- Flatiron Health raised $130 million in Series B funding led by Google Ventures with participation from First Round Capital, Laboratory Corporation of America, and angel investors

- Launched in 2012 and currently in beta form, Flatiron Health is a healthcare technology company based in New York

- It collects information by connecting cancer treatment centre around the world on its cloud-based technology platform, with the goal of allowing researchers, physicians, and patients to learn from aggregated data collected from millions of cases

- There are currently between 500 to 1,000 oncologists using Flatiron's data platform

- Flatiron Health planned to hire up to 30 more staffers, mostly engineers, by the end of 2014

This investment in Flatiron Health represents Google ventures
largest investment in medical start-up till date

Appendix
Comparables Analysis -Transaction Comparables (4/4)

## Veritas Capital's Acquisition of Truven Health Analytics Inc.

- Healthcare segment of Thomas Reuters was sold to a business affiliate of Veritas Capital for $1.3 billion in cash, in June 2012
  - The new independent company will be known as 'Truven Health Analytics'

- Truven Health Analytics provides data, analytics and performance benchmarking solutions and services to hospitals, health systems, employers, health plans, government agencies and pharmaceutical companies

- Truven Health Analytics employed ~2,200 people worldwide at the time of acquisition and has its principal offices in Ann Arbor, Chicago and Denver

- The company's many well-known brands, established in more than 30 years of leadership in the healthcare industry, include Advantage Suite, Action OI, MarketScan, 100 Top Hospitals CareDiscovery Micromedex

- Truven derives 95.0% of its revenue from US customers

- Separation from Reuters is expected to allow Truven to expand its customer base and sell more of its services to existing clients, develop new products, and broaden its sources of data

- For Thomson Reuters, the sale was part of the professional news and information provider's plan to shed non-core businesses to concentrate on faster growth areas such as financial risk and compliance

The transaction valued the company at 10.0x LTM EBITDA
making it one of the biggest M&A deal in healthcare analytics market

Appendix
Implementation of Healthcare Analytics: Clinical Decision Support System (CDSS)

- Clinical decision support system (CDSS) provides clinicians, staff, patients or other individuals with knowledge and person-specific information, intelligently filtered or presented at appropriate times, to enhance health and health care

- Encompasses a variety of tools to enhance decision-making in the clinical workflow
  - These tools include computerized alerts and reminders to care providers and patients, clinical guidelines, condition-specific order sets, focused patient data reports and summaries, documentation templates, diagnostic support, and contextually relevant reference information, among other tools

- Requires computable biomedical knowledge, person-specific data, and an inference mechanism that combines knowledge and data to generate and present helpful information to clinicians as care is being delivered

- Particularly attractive for its ability to address the growing information overload clinicians face, and to provide a platform for integrating evidence-based knowledge into care delivery
  - It can be used for a variety of clinical activities such as preventive care, diagnostics, therapeutics, comprehensive disease management, image recognition, and interpretation and prognostics
  - Additionally, CDSS can support research studies by identifying patients who may fit a certain description and assisting in management of such individuals in accordance with research protocols

- CDSS has a number of important benefits such as:
  - Increased quality of care and enhanced health outcomes
  - Avoidance of errors and adverse events
  - Improved efficiency, cost-benefit, and provider and patient satisfaction
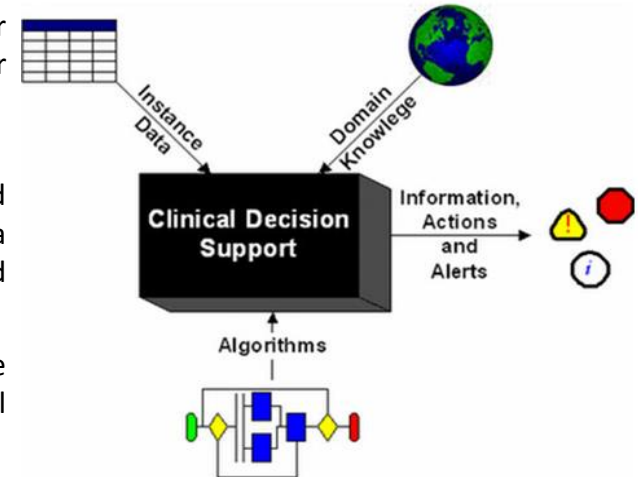
Appendix
Case Study – Baptist Healthcare's Implementation of 'OpportunityAnyWare'

OpportunityAnyWare

- OpportunityAnyWare is a web-based business analytics solution from Streamline Health
  - It aggregates data from disparate systems and provides healthcare facilities with analytics, which produce a real-time snapshot of their financial, operational and clinical performance
- Users can perform advanced data mining and opportunity analysis, and filter / isolate information down to transaction-level
- Also provides a fully-customizable dashboard which allows users to trend metrics, set targets and define alerts for a variety of key performance indicators (KPIs)

Steps Undertaken by Baptist

- Acceptance and employment of the OpportunityAnyWare analytical solution
- Retrained staff to take advantage of the tools offered by their platform
- Specifically designed the dashboard so that providers without analytic experience could view the information and understand it without impacting their workflow

OpportunityAnyWare's Benefits to Baptist

- Identified immediate cash opportunities, resulting in a $6.0 million cash infusion above projected net revenues
- Accelerated cash flow by reducing accounts receivable days by six days
- Reduced monthly denials from an average of $750,000.0 to $300,000.0
- Lowered DNFB beyond suspense bill hold from $7.1 million to $1.7 million
- Increased productivity: Reports that used to take two to four hours to produce now take minutes