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Face the Future with Confidence

ANALYTICS IN HEALTHCARE

A Survey Report

Internal Audit, Risk, Business & Technology Consulting

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Executive Summary

The growing importance of data and analytics in healthcare

The wealth of data available to healthcare organizations is expanding exponentially. While data in electronic medical records is of enormous value to patients and physicians, it also contributes significantly to the entire healthcare system. With aggregation, standardization, and analytical tools, this data can offer insights that will help healthcare regulators, providers, life-sciences, pharmaceutical companies, insurers, and associated industries to improve the prevention and treatment of patients.

With robust data management, healthcare organizations can lower their costs, increase operational efficiencies, improve clinical outcomes, enhance patient experience and establish a full risk and compliance management framework. Developing and implementing a healthcare analytics strategy is a critical requirement in a data-rich environment. Therefore healthcare organizations are setting up a strong team of data scientists who can develop strategies to leverage and scale data utilization capabilities.

The diagram on the right illustrates how analytics enhances organizational decision-making by leveraging the most value from each data source.

Background of the survey

Protiviti conducted a survey across healthcare organizations in the GCC and India region focusing on themes around Digital Maturity, Data and Analytics Adoption, Analytics applications and use-cases across the enterprise.

Source: *https://www.protiviti.com/AE-en/data-management-and-advanced-analytics -*

Protiviti Data Analytics Adoption Pyramid
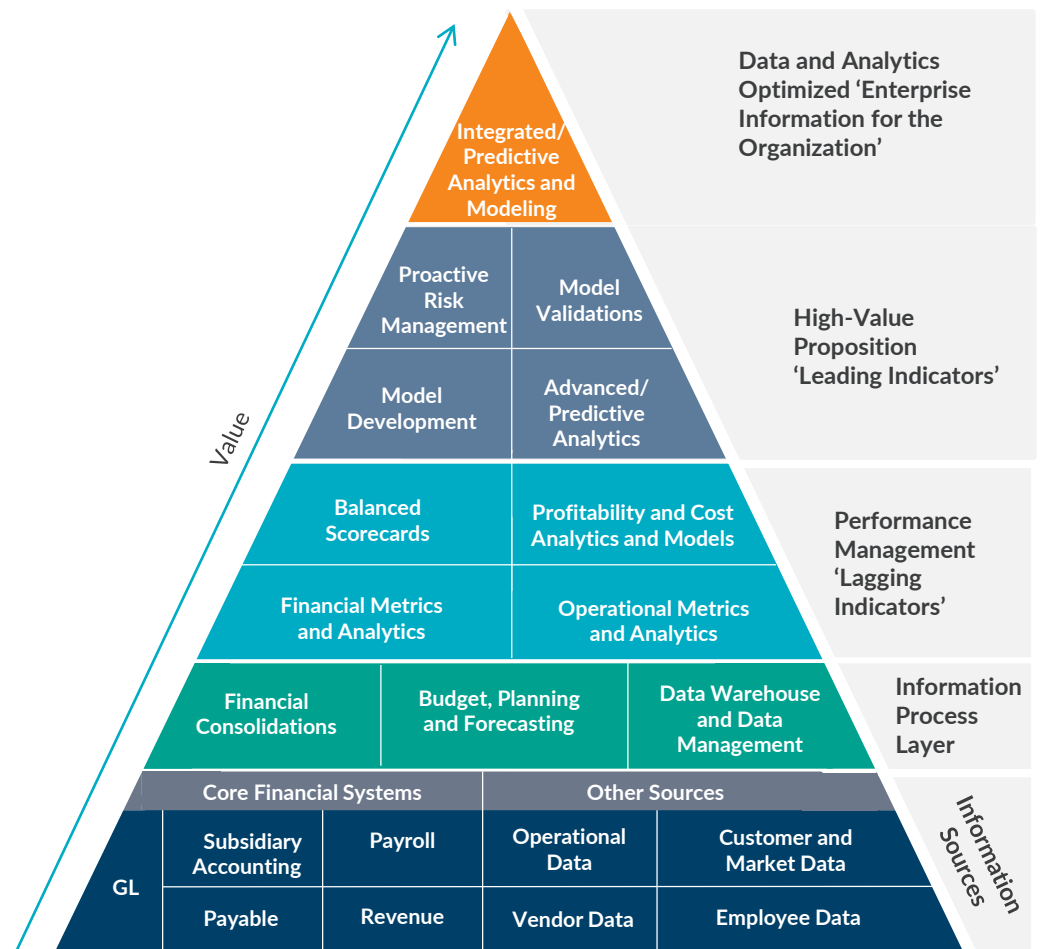
Key Takeaways: Analytics Applications and Use Cases

Data and Analytics is transforming healthcare. Analytics in healthcare enhances the patient journey and experience by predicting capacity trends, allocating optimal resources, and prioritizing the right care levels. The table below illustrates the top 10 use cases in a healthcare delivery environment

Top 10 applications of analytics in healthcare:

	Managing patient admissions	1		Predictive analytics to increase the accuracy of diagnosis	6
	Real-time alerting and clinical decision through wearables	2		Predictive analytics for insurance products and benefits	7
	Decrease unnecessary ER visits	3		Better financial planning and cost reductions	8
	Strategic planning through live patient trend analysis	4		Staff performance evaluation and better utilization	9
	Delivery of remote clinical services using tele-medicine	5		Monitoring business risks and better process reviews	10

Market Trends:

Global
The Global healthcare analytics market was estimated at USD14 Bn in 2019 and is expected to increase to USD 24.55 Bn by 2021 with the prescriptive analytics market holding the highest growth potential.

MENA
The Middle East and Africa healthcare analytics market was valued at USD 630M in 2018 with an estimated reach of USD 1.49 Bn by 2024.

Survey Highlights

Healthcare organizations realize the importance of embracing digitization and analytics at several levels of their organizations.

While they recognize the merits of adopting and acknowledging regulators' encouragement, most of them are still embarking in their digital and analytics journey.

They will require clear strategies to invest more. There remains significant room for improvement in how healthcare organizations use analytics to improve their performance, especially around the revenue cycle management area.

Many still rely on traditional tools, and a substantial amount indicated that they still need to enhance their data infrastructure to do so.

Finally, advanced adoption through predictive analytics remains to be white space for further investment.

The survey focused on the following two main themes:

01	Digital Maturity and Data & Analytics Adoption
02	Analytics Applications and Use Cases

Key Takeaways: Digital Maturity and Data & Analytics Adoption

'Digital' is of key importance on Leadership's agenda across the Healthcare Industry - About 85% of respondents agreed that it is 'critical' or 'essential' to have digital on leadership's agenda

Most organizations still label themselves as 'Digital Beginners' in adoption of digital - 64% of respondents agreed they are 'Digital Beginners' when asked about their level of readiness in adopting digital trends/emerging technologies

Having a robust Digital and Analytics strategy is still a work in progress - 75% of respondents agree that their organizations' strategic roadmap needs to be developed or needs revision

An encouraging regulatory environment to support analytics is crucial - 71% of respondents have indicated that the regulatory framework encourages adoption

There needs to be more investment in data infrastructure to leverage data analytics - 46% are not incredibly confident that their data infrastructure or data management framework is apt for analytics

A majority is still using traditional tools and has not tested advanced analytics - 70% of healthcare organizations always rely primarily on traditional tools such as excel and two-thirds do not have the infrastructure available to use advanced analytics
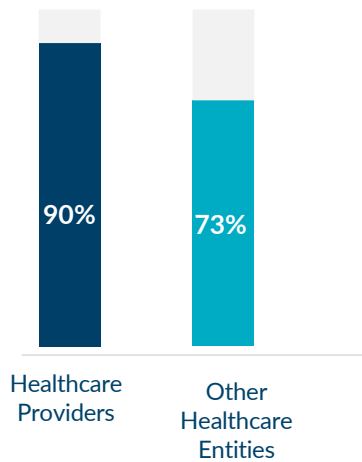
Survey Results and Findings

01 Where are healthcare organizations in their digital and analytics journey?

Healthcare organizations realize the importance of embracing digitization and analytics at several levels of their organizations. While they recognize the merits of adoption and acknowledge the encouragement of regulators, most of them are still embarking in their digital and analytics journey. They will require clear strategies to invest more.
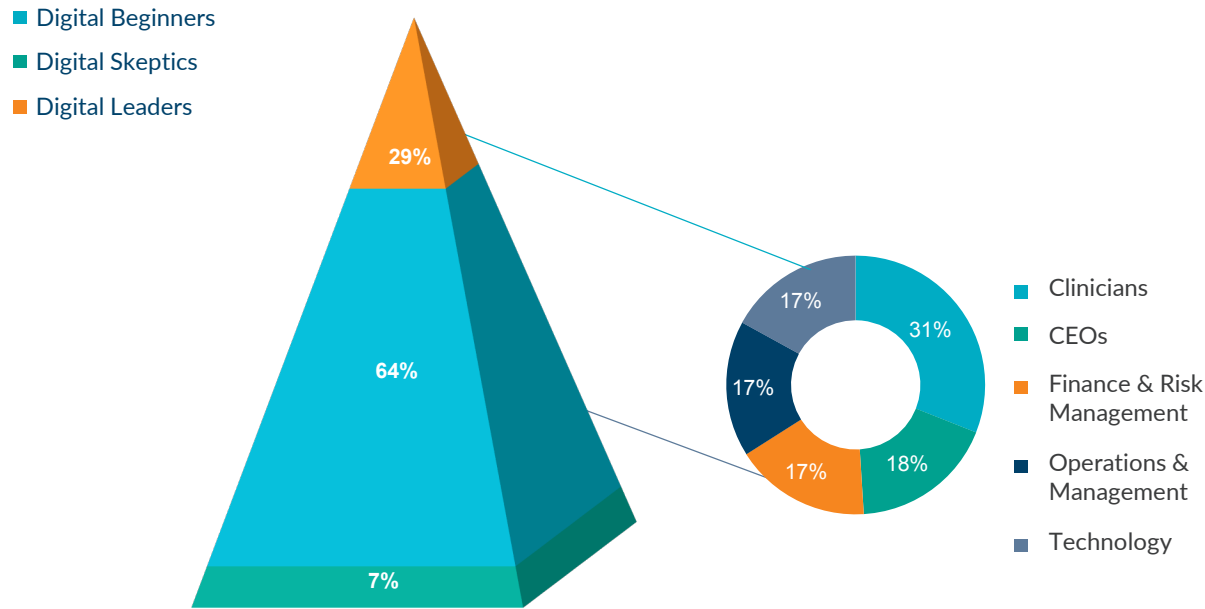
85% of respondents agree that digitization can be effectively integrated at the both management and clinical levels.

Adoption level of analytics by Sub-Industry

90% Healthcare Providers

73% Other Healthcare Entities

Adoption level of analytics by Function

Function	%
CEO	100%
Clinicians	85%
Technology	88%
Finance & Risk Management	75%
Operations & Management	75%

Importance of Digital on leadership agenda

45%
40%
11%
4%

- Critical
- Very Important
- Important
- Not so Important
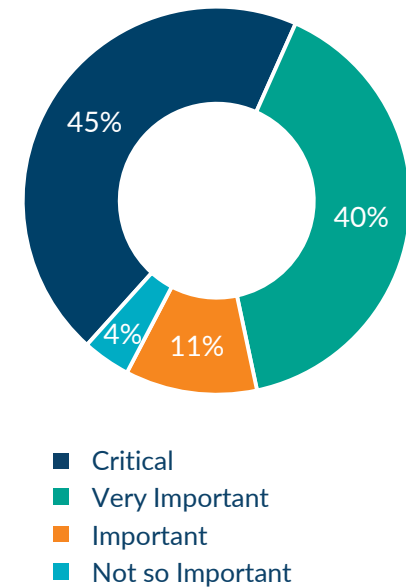
Level of maturity in terms of adoption of digital trends

- Digital Beginners
- Digital Skeptics
- Digital Leaders

29%

64%

7%

Donut chart:
- Clinicians: 31%
- CEOs: 18%
- Finance & Risk Management: 17%
- Operations & Management: 17%
- Technology: 17%

Clinicians are least prepared amongst all categories to embrace digital.

Presence of planned strategy and use cases defined for data analytics within healthcare organizations

| 24%	16%	29%	31%
Yes, there is a strategic roadmap	In process of drafting a strategic roadmap	Certain strategic initiatives are analytics dependent	No strategic roadmap presently
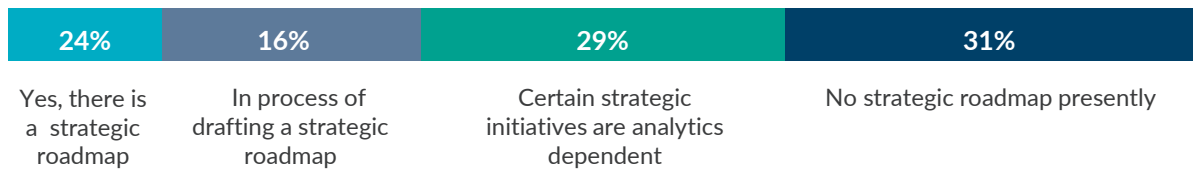
Only 24% of respondents are comfortable in admitting they have a strategic roadmap in their organizations.

When respondents, when asked about their readiness level, 64% said that they started their digitization journey and are keen on incorporating digital trends into their organizations' growth.

75% of respondents agree that their organizations' strategic roadmap needs to be developed or undergo significant improvements, including policy framework.
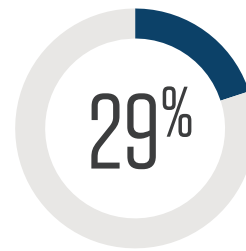
How encouraging do the respondents find the regulatory environment around them?
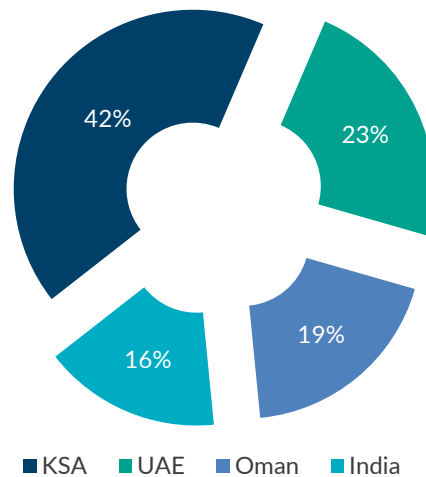

21%
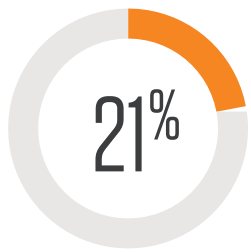
Regulations are extremely encouraging

50%
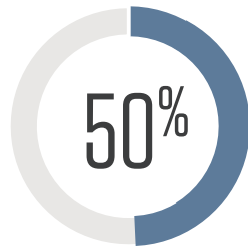
Regulations are encouraging

29%

Regulations need more attention

71% of respondents have indicated that the regulatory framework encourages adoption of data analytics.

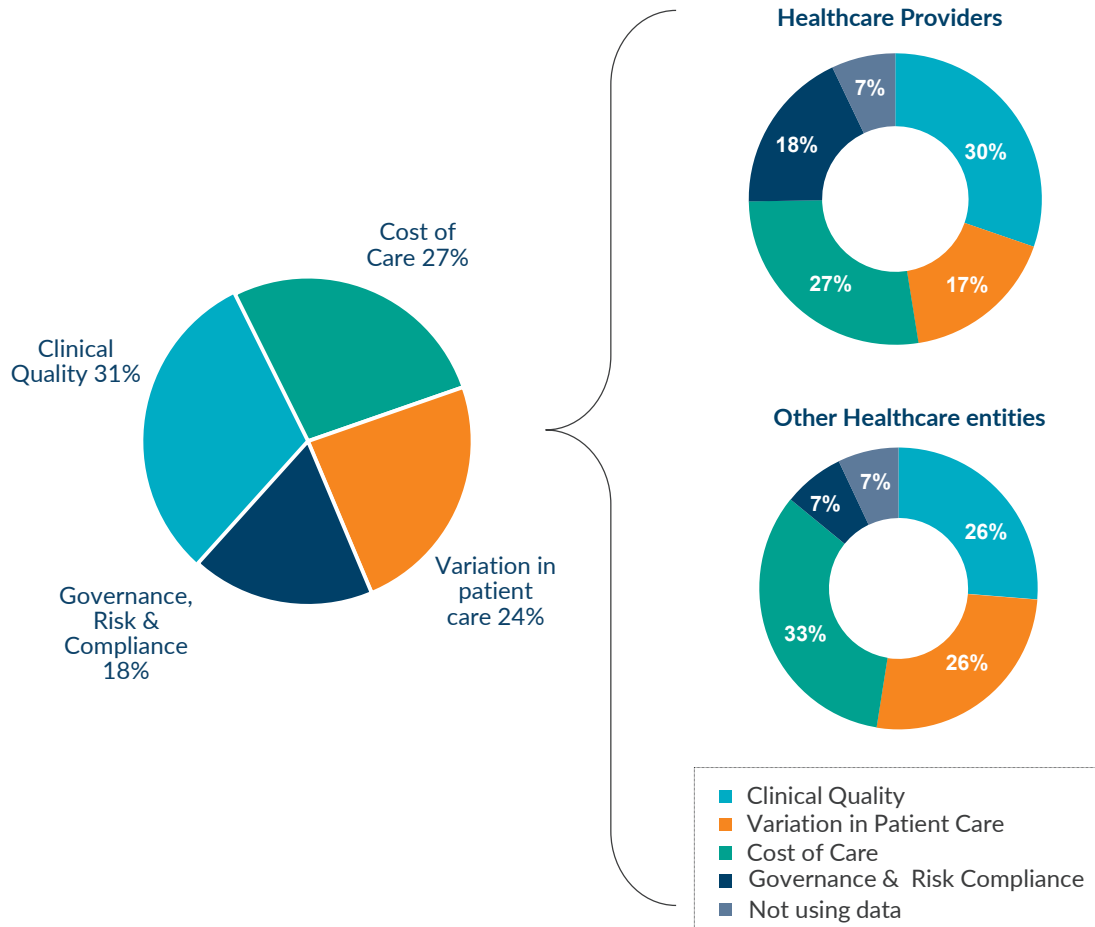*% of respondents agreeing their respective country has a encouraging environment for analytics and digital*

42%

23%

19%

16%

■ KSA ■ UAE ■ Oman ■ India

Initiatives like Malaffi in the UAE and the SHIE initiative in KSA have encouraged healthcare providers to adopt analytics platforms and frameworks in the GCC.

The goal of using data analytics in your organization is to drive accountability, improvement, or both?

- Drive accountability
- Drive improvement and accountability

80%

20%

80% of respondents agree that analytics helps organizations improve their performance and accountability which will enable an environment that promotes good data governance.

Top areas of decision making influenced by analytics as per respondents

Cost of Care 27%

Clinical Quality 31%

Governance, Risk & Compliance 18%

Variation in patient care 24%

Healthcare Providers

7%
18%
30%
27%
17%

Other Healthcare entities

7%
7%
26%
33%
26%

- Clinical Quality
- Variation in Patient Care
- Cost of Care
- Governance & Risk Compliance
- Not using data

Respondents point out that 'clinical quality' and 'cost of care' are the two main areas where analytics is vital.
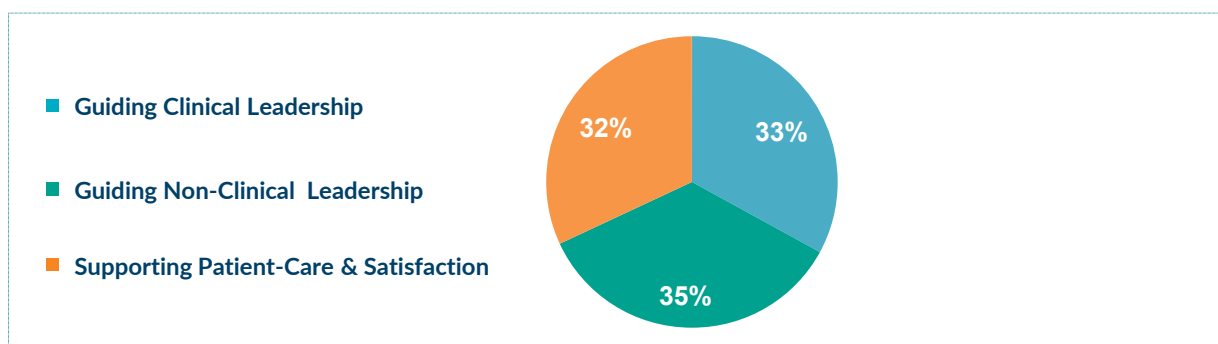
Healthcare providers voted for 'Clinical Quality' and 'Governance, Risk and Compliance', as critical areas of focus in digitalization and analytics.

02   How are healthcare organizations using data analytics?

There remains to be significant room for improvement on how healthcare organization use analytics to improve their performance, especially around the revenue cycle management area. A large majority of them still continue to rely on traditional tools and many to them indicated that they need to enhance their data infrastructure. Advanced adoption through predictive analytics remains to be a white space for further investment.

• • • *What kind of business decisions using data analytics are being taken within healthcare organizations?*

■ **Guiding Clinical Leadership**

■ **Guiding Non-Clinical Leadership**

■ **Supporting Patient-Care & Satisfaction**

32%
33%
35%

• • • *What are the two main purposes of data driving non-clinical business decisions?*

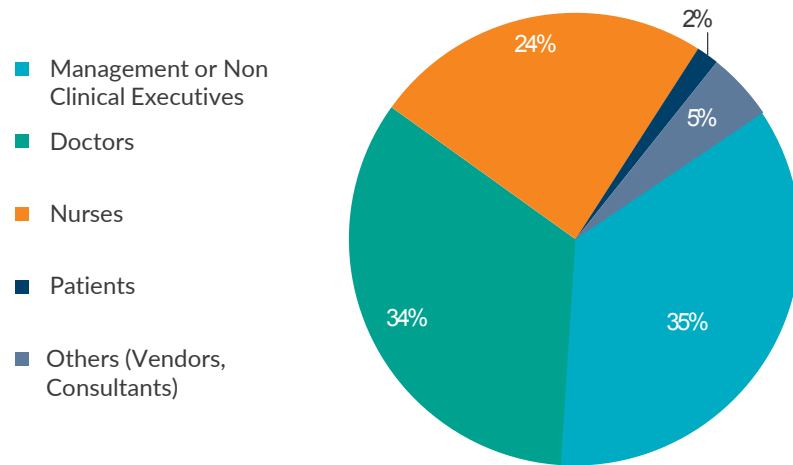|	
47%	of the respondents admitted analytics improved revenue cycle management
53%	of the respondents believe analytics has helped them in improving operational efficiencies and carry-out compliance and audit exercises more effectively

Among respondents who agree that analytics is 'very effective' and 'adequately effective' in guiding business decisions, 35% of respondents admit that data analytics drives a significant amount of non-clinical leadership decisions.

Looking at how data analytics influences non-clinical business decisions, less than half admit to utilizing analytics to improve revenue cycle management.
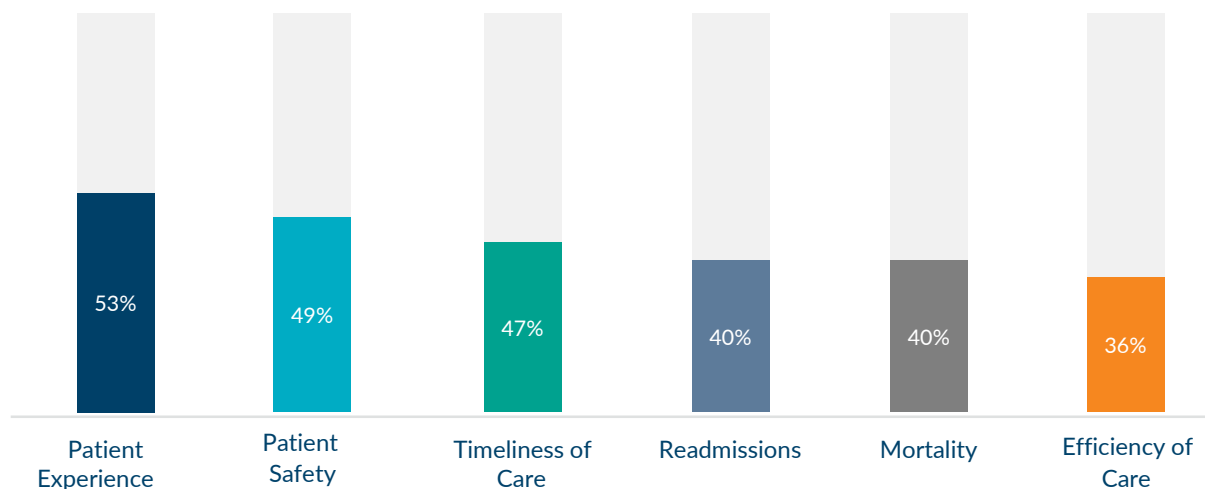
There is a scope to further integrate analytics for revenue cycle management.

Legend:
- Management or Non Clinical Executives
- Doctors
- Nurses
- Patients
- Others (Vendors, Consultants)

Pie chart values:
- 2%
- 5%
- 24%
- 34%
- 35%

The usage of clinical data doesn't seem to be limited merely to the clinical staff. It is of crucial significance to non-clinical leadership and executives as well. Besides, 93% of respondents are confident that data and analytics in healthcare will improve patient care and clinical outcomes.
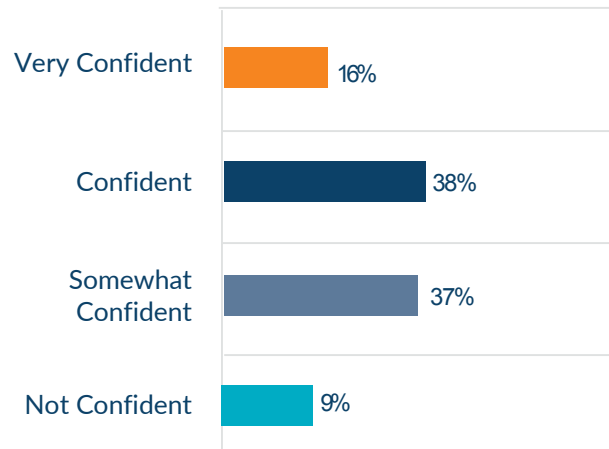
Pre and post clinical outcomes measured through analytics

Bar chart values:
- Patient Experience: 53%
- Patient Safety: 49%
- Timeliness of Care: 47%
- Readmissions: 40%
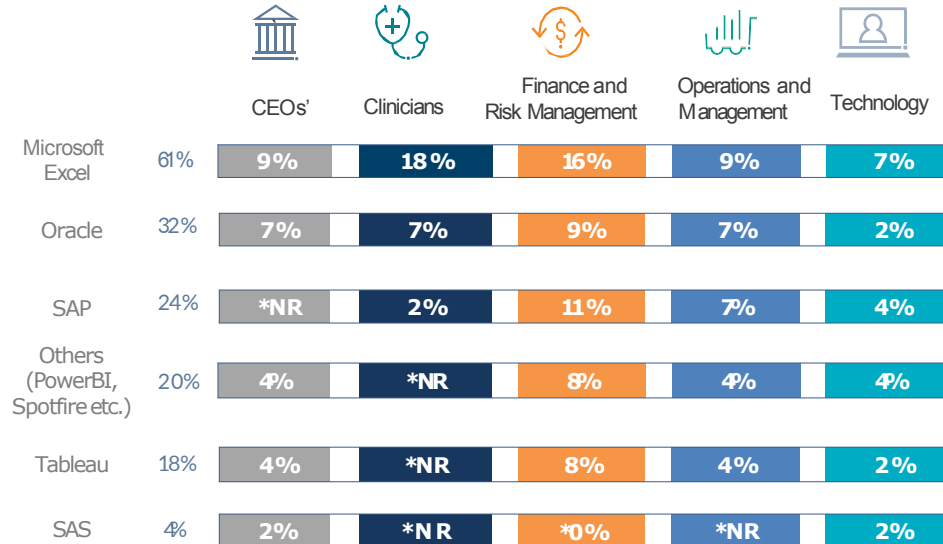- Mortality: 40%
- Efficiency of Care: 36%

While all staff functions have access to clinical data, patients do not seem to have the same level of control over their own clinical data.

While respondents agree that patient experience, timeliness of care and patient safety are among the top clinical outcomes measured through analytics, almost half haven't used analytics in measuring any clinical performance.

• • • *How confident are you that your organization has the right data infrastructure and data management frameworks in place to leverage data to generate business insights?*

Category	Percentage
Very Confident	16%
Confident	38%
Somewhat Confident	37%
Not Confident	9%

Majority of the healthcare providers will be looking to enhance their data infrastructure to leverage data.

• • • *Tools used by organizations for creating, storing and using data explained function-wise*

|		CEOs'	Clinicians	Finance and Risk Management	Operations and Management	Technology
Microsoft Excel	61%	9%	18%	16%	9%	7%
Oracle	32%	7%	7%	9%	7%	2%
SAP	24%	*NR	2%	11%	7%	4%
Others (PowerBI, Spotfire etc.)	20%	4%	*NR	8%	4%	4%
Tableau	18%	4%	*NR	8%	4%	2%
SAS	4%	2%	*NR	*0%	*NR	2%

NR: No Response

About 60% of respondents have leading ERPs while 40% of them seem to still be relying on business intelligence.

70% of healthcare organizations still rely primarily on traditional tools such as Excel. Only a small percentage have started leveraging advanced analytical tools like Tableau and SAS for Business Intelligence.

- • • *Presence of artificial intelligence, machine learning, automation to support advanced analytics in the organization*
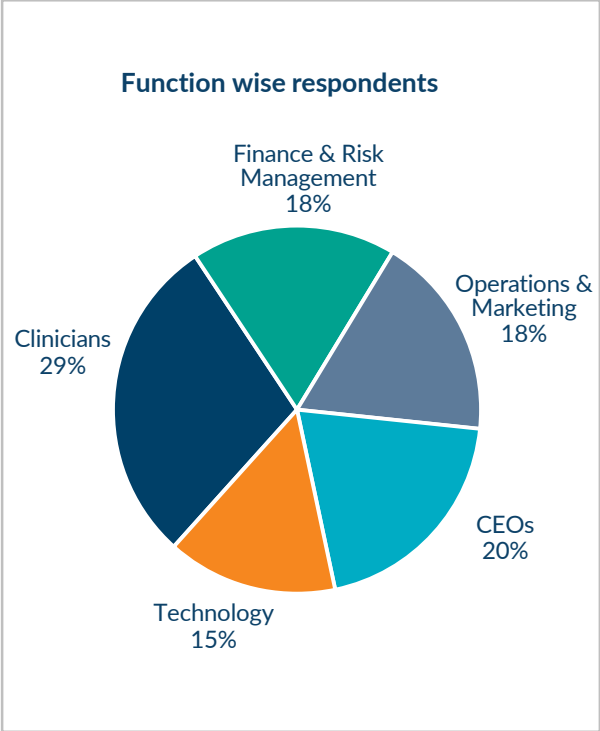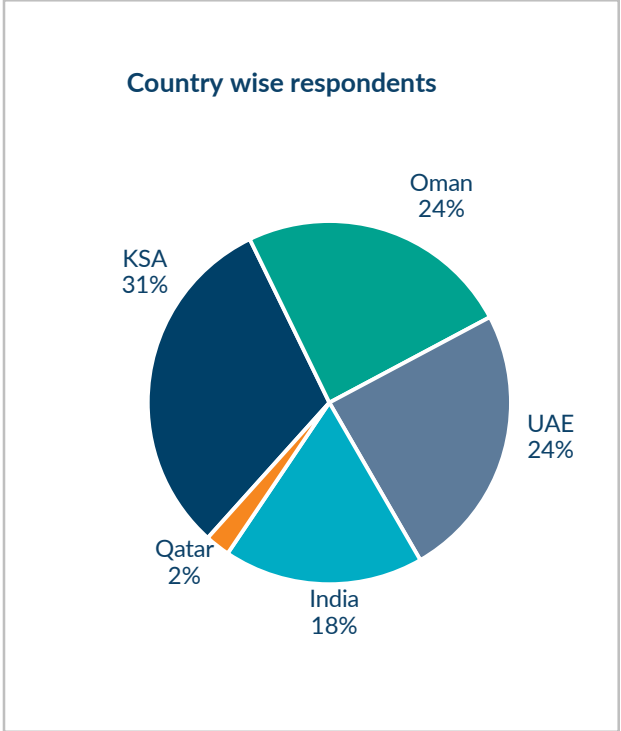

No
82%

Yes
18%
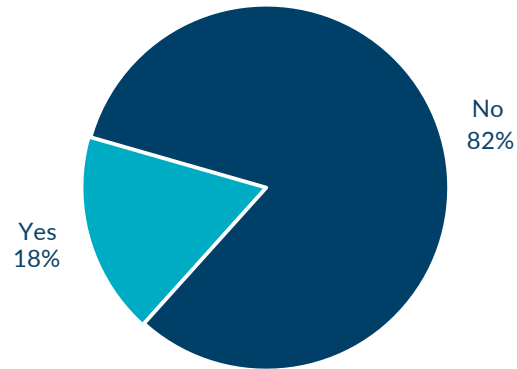
18% have of respondents have started to explore automation among other emerging technologies.

There is a 'white space opportunity' for organizations to utilize artificial intelligence, machine learning, and automation to support advanced analytics. More than two thirds of respondents felt that their organizations do not have such infrastructure available.
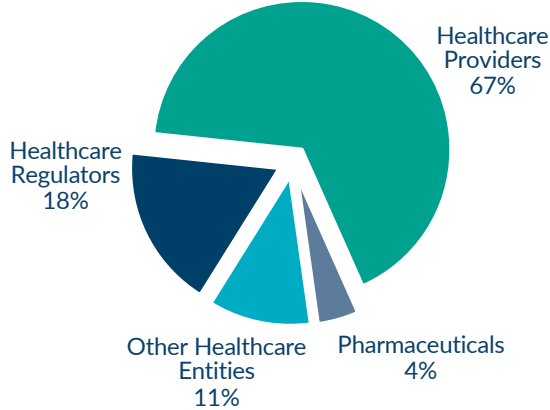
Survey Demography

Our respondents comprised 65 Industry Leaders and C-Suite executives playing a crucial role across various functions such as operations, finance, clinical, marketing, and risk management.

The survey covered the GCC and India Regions. Participants included representatives from regulators, healthcare providers, pharmaceutical companies, and other healthcare entities, including medical insurance providers.

Demography classifications:

Sub-Industry wise respondents

68% of the respondents were healthcare providers

23% of the respondents were healthcare regulators, pharmaceutical companies or other healthcare entities.

Country wise respondents

- Oman 24%
- KSA 31%
- Qatar 2%
- India 18%
- UAE 24%

Function wise respondents

- Finance & Risk Management 18%
- Clinicians 29%
- Operations & Marketing 18%
- Technology 15%
- CEOs 20%

- Healthcare Providers 67%
- Healthcare Regulators 18%
- Other Healthcare Entities 11%
- Pharmaceuticals 4%

Our Key Healthcare Digital and Advanced Analytics Solutions

Protiviti has the skills and insights to help your healthcare organization define and establish an overarching digital program or execute and implement innovative digital technologies that align to your goals and strategic business objectives.

Digital Solutions Overview

Digital Transformation

- Strategy and Business Case Definition
- Customer Experience and Journey Mapping
- Culture, Skills and Capabilities
- Transformation Program Definition
- Transformation Program Execution

Innovation Services

- Education and Training
- Discovery and Ideation
- Prototyping, Design and Development
- Implementation and Change Management

Intelligent Automation

- Automation Strategy
- Process Evaluation and Solution Design
- Program Implementation
- Program Support and Development

Enterprise Data and Analytics

- Enterprise Data Governance
- Enterprise Information Management
- Reporting and Visualization
- Advanced Analytics

About Protiviti

Protiviti (www.protiviti.com) is a global consulting firm that delivers deep expertise, objective insights, a tailored approach and unparalleled collaboration to help leaders confidently face the future. Protiviti and our independent and locally owned Member Firms provide clients with consulting and managed solutions in finance, technology, operations, data, analytics, governance, risk and internal audit through our network of more than 85 offices in over 25 countries.

Named to the 2020 Fortune 100 Best Companies to Work For® list, Protiviti has served more than 60 percent of *Fortune* 1000 and 35 percent of *Fortune* Global 500 companies. The firm also works with smaller, growing companies, including those looking to go public, as well as with government agencies. Protiviti is a wholly owned subsidiary of Robert Half (NYSE: RHI). Founded in 1948, Robert Half is a member of the S&P 500 index.

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