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LAZARD GLOBAL HEALTHCARE LEADERS STUDY 2019

EXECUTIVE SUMMARY

LAZARD

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Foreword

Lazard recently completed its second in-depth study of global healthcare industry leaders, surveying more than 380 C-level executives and 70 investors across three sectors: Pharmaceuticals and Biotech; MedTech; and Healthcare Services. The executive respondents represented many of the largest healthcare companies globally¹. The objective of the study was to analyze industry leaders' views of strategic opportunities and challenges in healthcare during a period of tremendous change.

Most of the findings are consistent with our prior survey, conducted in 2017. Healthcare executives across the three sectors continue to consider pricing or reimbursement pressure as the top strategic challenge facing the industry. They see an industry being transformed by the adoption of value-based/risk sharing pricing models² and new models of delivering healthcare.

There is also a heightened focus on innovation, which is driving R&D investment and strategic activity across the industry. The executives expect increased levels of partnerships, collaborations and joint ventures as they seek to mitigate the challenges and remain competitive in this dynamic environment.

In 2019 we find increased focus on the impact of data analytics, artificial intelligence, and machine learning, which are driving transformative changes in all virtually all areas of the industry.

SURVEY RESPONDENTS

387

C-level Executives

72

Healthcare Investors

BY SECTOR

201

Healthcare Services

170

BioPharma

77

MedTech

1 The survey fieldwork was conducted between September 24 and December 7, 2018, with 387 C-level executives and 72 investors, representing the following sectors: Healthcare Services (201); Pharmaceuticals and Biotech (170); MedTech (77); and Other (11). C-level executives included CEOs, CFOs, and senior executives involved in strategic decision-making. Approximately 25% of public company respondents said their companies have market capitalizations of over \$10 billion. We focused on large companies with international or global operations, however Healthcare Services respondents were all U.S.-based. Healthcare Services in Europe and Other Regions were excluded because of the idiosyncratic nature of national healthcare systems.

2 Value-based care is an umbrella term for a variety of pricing systems (such as bundled pricing or risk-sharing pricing) that are designed to deliver the best healthcare outcomes to the most people while controlling costs.

Central Findings

1 Pricing and reimbursement pressure continue to be among the top strategic challenges facing the industry

61%

of all executive respondents say pricing and reimbursement is one of their top three strategic challenges

TOP STRATEGIC CHALLENGE BY SECTOR

BioPharma – Pricing and reimbursement



Healthcare Services – Quality and/or cost of healthcare



MedTech – Pricing and reimbursement



R Top responses by sector: “What are the greatest strategic challenges facing the healthcare industry at large? (Select up to three)”

2 Transformation over the next 5-10 years is expected to come from different sources across healthcare sectors

36%

of all executive respondents say that adoption of value-based/risk-sharing pricing models will transform the industry over the next five to ten years

MOST TRANSFORMATIVE FORCES IN HEALTHCARE

BioPharma – Scientific and Technological Innovation



Healthcare Services – Emergence of new models of healthcare delivery



MedTech – Advances in data analytics, AI, machine learning



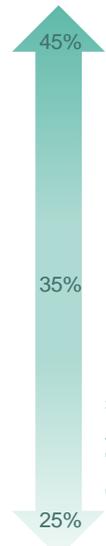
R Top responses by sector: “What will most transform the healthcare industry over the next 5-10 years? (Select up to three)”



3 Data analytics, artificial intelligence and machine learning are expected to have a transformative impact on the industry over the next five years

GREATEST IMPACT FROM BIG DATA, AI AND ML

| |  BioPharma |  Healthcare Services |  Medtech |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Virtual health | 30% | 46% | 39% |
| Clinical decision support | 37% | 35% | 43% |
| Value-based care pricing models | 32% | 40% | 34% |
| Integration of algorithms on therapeutics | 30% | 32% | 44% |
| BioPharma research | 37% | 23% | 44% |
| BioPharma clinical development and post-approval clinical trials | 30% | 18% | 33% |
| Physician benchmarking | 25% | 23% | 31% |

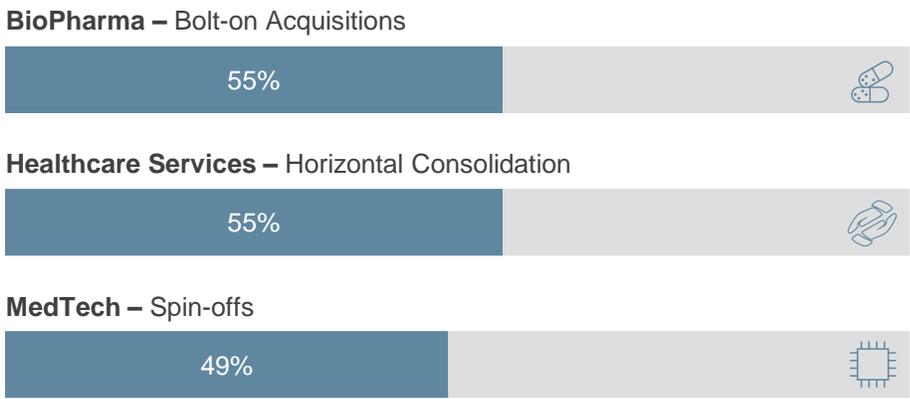


76% of all executive respondents believe that non-traditional competitors (such as Amazon, Alphabet, or Apple) will also have a meaningful impact on the healthcare market over the next 3-5 years

Percent of respondents stating data analytics, AI and ML will "significantly transform" each area

4 Pricing/reimbursement pressure and the need for innovation continue to drive strategic activity among healthcare companies

MOST EXPECTED STRATEGIC ACTIVITY BY SECTOR



72% of all executive respondents expect to see an increase in partnerships, collaborations and joint ventures over the next 18 months

R Top "increase" responses by sector: "How do you expect M&A activity to trend over the next 18 months for the following types of transactions?"

BioPharma Perspectives

73%

of BioPharma Executives plan to increase capital and resource allocations to R&D over the next 3 years

Drug pricing continues to be the biggest challenge

Nearly half of pharma/biotech executives cite drug pricing as one of the top three challenges for the sector in the current environment. This is followed by the political and regulatory environment and balance sheet capacity to fund R&D.

Consistent with 2017 findings, BioPharma executives say their best approaches to mitigate the challenges and remain competitive are bringing in new technology and products through in-licensing and collaborations, greater investment in scientific and technological innovation, and the adoption of new pricing approaches and risk-sharing models.

A large majority of pharma/biotech executives (73%) plan to increase capital and resource allocations to R&D over the next three years.

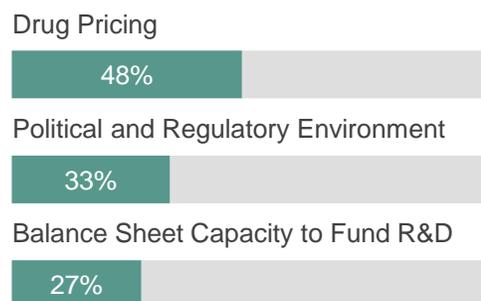
Drugs at greatest risk of pricing pressure

Consistent with 2017 findings, pharma/biotech executives see the therapeutic areas perceived to be at greatest risk of pricing pressure are oncology (28%), cardiovascular (22%), and rare diseases (15%).

Not all respondents agree, however, as 30% of the executives see oncology as being at the least risk of pricing pressure and 32% see rare diseases as being at the least risk.

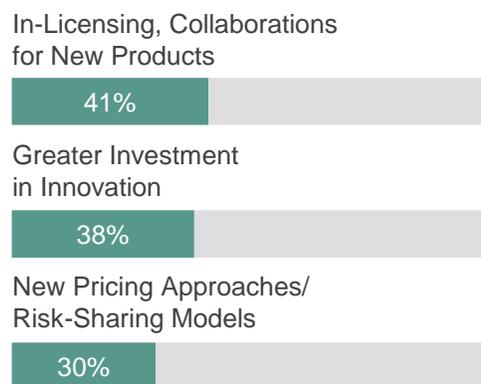
BIGGEST ISSUES IN CURRENT ENVIRONMENT

Q What are the biggest issues facing your company in the current environment? (Select up to three)



BEST APPROACHES TO MITIGATE CHALLENGES

Q What are the best approaches to mitigate challenges and remain competitive? (Select up to three)





Areas of greatest unmet need and opportunities for innovation

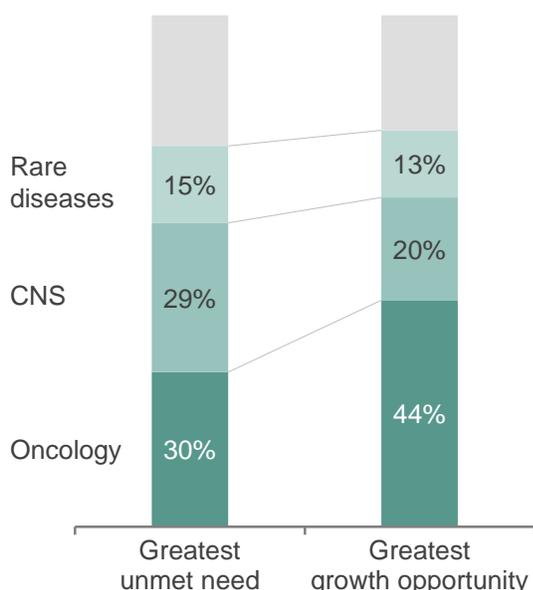
Consistent with 2017 findings, pharma/biotech executives believe oncology, CNS, and rare diseases are the therapeutic areas with the greatest unmet need and opportunities for innovation and growth.

The executives view gene therapy, gene editing and cell therapy as the most disruptive scientific or technological innovations in pharma/biotech.

37% of the executives expect advances in data analytics, artificial intelligence and machine learning to transform BioPharma research over the next five years.

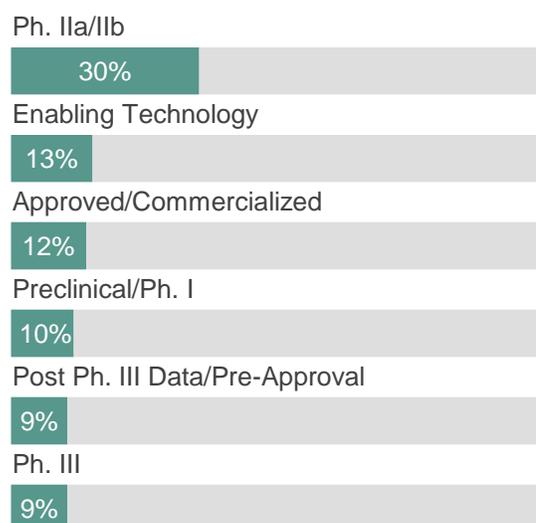
GREATEST NEEDS AND OPPORTUNITIES

Q Which of the following therapeutic areas do you think represents the greatest unmet need/innovation and growth opportunity? (% First choice)



"SWEET SPOT" FOR ACQUISITIONS

Q What is your "sweet spot" for acquisition candidates? (Select one)



Turning to M&A for long-term growth and innovation

Pharma/biotech executives' top priorities when evaluating M&A targets are: enhancing long-term growth (41%), strengthening current technology or accessing a new technology (41%), and strengthening a therapeutic area (33%).

Clinical-stage assets in Phase II development (30%) are viewed as the "sweet spot" for acquisitions, with the best balance between risk and reward.

When pharma/biotech executives turn to M&A for growth and innovation, price versus value remains the most common challenge (48%) – much more than the risk of clinical failure (27%), or gaining regulatory approval, or the integration of operations.

Healthcare Services Perspectives

51% of Healthcare Services executives say that reimbursement uncertainty is one of their top issues in the current environment

Top challenges: Payment uncertainty & regulations

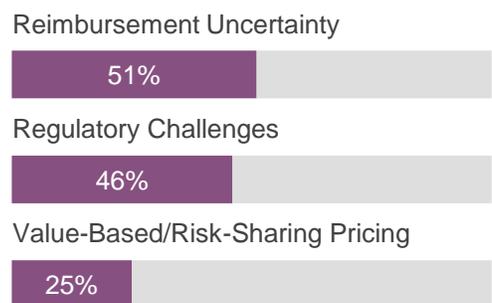
Healthcare Services executives consider reimbursement uncertainty and regulatory challenges as the biggest issues facing their sector, followed by regulatory challenges and the emergence of new value-based and risk-sharing pricing models.

The executives say their best approaches to mitigate the challenges are collaboration or partnerships/alliances, operational improvements, and coordination of healthcare across different providers.

“Virtual healthcare” holds a promise of helping to improve outcomes and control costs. Almost half (46%) of the executives believe that data analytics, artificial intelligence, and machine learning will transform virtual healthcare in the next five years.

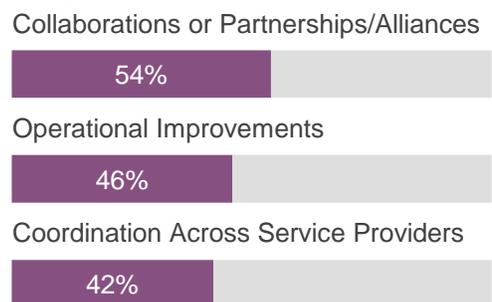
BIGGEST ISSUES IN CURRENT ENVIRONMENT

Q What are the biggest issues facing your company in the current environment? (Select up to three)



BEST APPROACHES TO MITIGATE CHALLENGES

Q What are the best approaches to mitigate challenges and remain competitive? (Select up to three)



Top priority for M&A is enhancing long-term growth

When evaluating acquisition targets, the top three priorities for healthcare services executives are enhancing long-term growth (40%), addressing increasing costs (27%), and diversifying into new services (26%).

Almost half of executives (47%) surveyed believe further vertical consolidation will increase overall healthcare quality. But 36% feel quality will not change, and 14% think it will decrease.



Preventative care to reduce costs

Consistent with 2017 findings, the executives view a focus on preventative care and greater coordination of care as the most effective ways to minimize healthcare costs. They also believe that greater price transparency is the best way to help consumer decision-making drive down overall healthcare costs.

BEST WAYS TO REDUCE COSTS

Q What do you believe is the best way to minimize healthcare costs? (Select up to three)

A Focus on Preventive Healthcare



Greater Healthcare Coordination



Disease Management



DRIVING CONSUMER COST-SAVING

Q What do you believe will be the most important driver of consumer healthcare decision-making in the future that could help drive down costs? (Select one)

Price Transparency/Price Availability



Healthcare Plan Costs

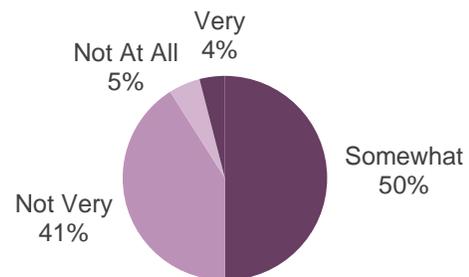


Healthcare Plan Benefit Design

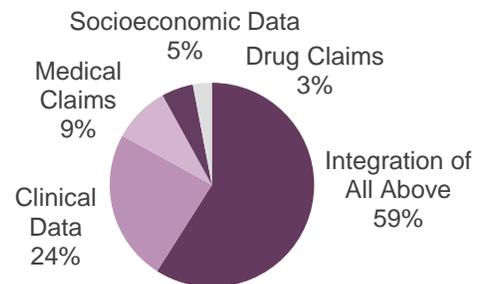


USING BIG DATA EFFECTIVELY

Q How effectively is “Big Data” or data analytics being used in today’s HC services sector? (Select one)



Q What is the most important information to collect through “Big Data” or data analytics? (Select one)



Effective use of data analytics has room to improve

While views remain mixed on the effective use of data analytics or “Big Data,” more healthcare services executives believe it is being used effectively (54%) than not (46%).

The majority of respondents (59%) agree that the integration of data – clinical, medical claims, socioeconomic data, drug claims – is more important than having access to any one type of data.

MedTech Perspectives

67%

of MedTech executives say that combining products and/or services into new solutions is one of their top three best approaches to mitigate challenges and remain competitive

Combining products and services to stay ahead

MedTech executives say that reimbursement pressure, pricing pressure, and regulatory hurdles are the top three issues facing their companies in the current environment. Government budgetary constraints and the shift to value-based care are considered to be relatively less pressing issues.

A great majority of the executives say their best approach to mitigate the challenges is by combining products and services into new solutions, followed by the adoption of new pricing approaches and risk-sharing models, and greater investment in innovation.

Overall, MedTech executives do not express great concern about the reduction in venture capital funding for early-stage companies.

BIGGEST ISSUES IN CURRENT ENVIRONMENT

Q What are the biggest issues facing your company in the current environment? (Select up to three)

Reimbursement Pressure

52%

Pricing Pressure

46%

Regulatory Hurdles

31%

BEST APPROACHES TO MITIGATE CHALLENGES

Q What are the best approaches to mitigate challenges and remain competitive? (Select up to three)

Combine Products/Services for New Solutions

67%

New Pricing Approaches/ Risk-Sharing Models

44%

Greater Investment in Innovation

39%

A perception that shareholders value revenue growth above all

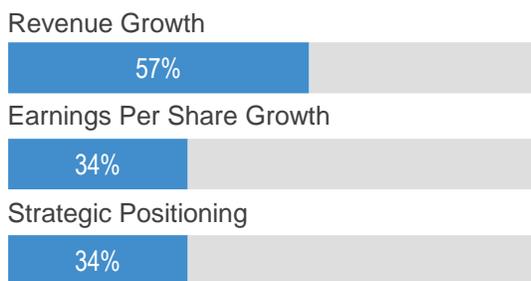
Most MedTech executives believe that shareholders prioritize revenue growth over any other factor when assessing the value of a MedTech company – considerably more than EPS growth, strategic positioning or margin expansion.

The majority of executives also believe that physicians and administration/procurement departments maintain the greatest influence on purchase decisions for medical devices and diagnostics today.



GAUGING WHAT SHAREHOLDERS VALUE THE MOST

Q What do you think your shareholder(s) view as most important to your valuation(s)? (Select up to three)

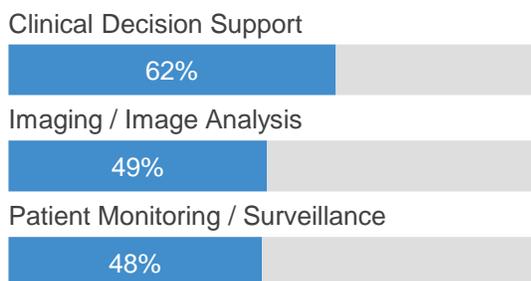


Leading the revolution

According to MedTech executives, the most ripe areas for innovation from big data/analytics are: clinical decision support, image analysis, and patient monitoring.

READY APPLICATIONS FOR DATA ANALYTICS

Q What areas do you think are most ripe for innovation from “Big Data” or data analytics? (Select up to three)



Who will pay for “Big Data” tools?

The majority of MedTech executives believe Big Data or data analytics will increasingly influence physician behavior. However, views are mixed as to how it will be monetized in the payer system. 30% of the executives believe payers will require it for reimbursement under an outcomes-based paradigm. Another 28% say it should be co-developed by payers, providers, pharmaceutical, device, and informatics companies and shared within these narrow networks of partnerships.

BIG DATA'S MOST IMPORTANT IMPACT

Q Rank the ways in which you think “Big Data” or data analytics will be most impactful to the MedTech industry. (% First choice)

Increasingly influence physician behavior through integration of imaging, diagnostics, patient records, and clinical decision support



Enable improved monitoring and surveillance of patients throughout the continuum of care



Accelerate path to market for innovative devices, with increased reliance on data-driven post-market surveillance



Enable R&D to develop new products / therapies



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