accenture consulting

DIGITAL HEALTH

Accenture 2017 Internet of Health Things Survey

Invest Today to Grow Tomorrow

The Internet of Health Things (IoHT) is already delivering tangible cost savings, but continuous investment is essential. To succeed in the digital economy, healthcare providers and payers must take full advantage of IoHT now to grow their businesses in the long-term. Connected devices using the Internet of Health Things are beginning to transform healthcare delivery.

By introducing more connectivity, remote monitoring and information gathering, IoHT can encourage better use of healthcare resources, more informed decisions, a reduction in inefficiencies or waste and the empowerment of health consumers.

According to estimates, the value of IoHT will top US$163 billion by 2020, with a Compound Annual Growth Rate (CAGR) of 38.1 percent between 2015 and 2020[1]. Within the next five years the healthcare sector is projected to be #1 in the top 10 industries for Internet of Things app development[2].

1 "The Internet Of Medical Things–What Healthcare Marketers Need to Know Now," January 2016, Victoria Petrock: Contributors: Annalise Clayton, Maria Minsker, Jennifer Pearson, eMarketer.

2 Ibid

Figure 1

What is The Internet of Health Things?

Internet of Health Things (IoHT) is the integration of the physical and digital worlds through objects with network connectivity in the healthcare industry. IoHT transforms raw data into simple, actionable information and communicates with other objects, machines or people. IoHT can be leveraged to improve access to health, quality of care, consumer experience, and operational efficiency.

Accenture research shows healthcare executives are all too aware of the changes IoHT is bringing to their industry. Yet they also acknowledge that their leaders do not yet fully understand IoHT's potential (Figure 1).

Internet of Health Things (IoHT) will make big waves

But healthcare leaders do not understand the potential impact.

73%
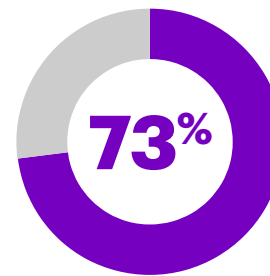
IoHT = major change

Almost 3/4 of healthcare executives say IoHT will be disruptive within three years.

49%
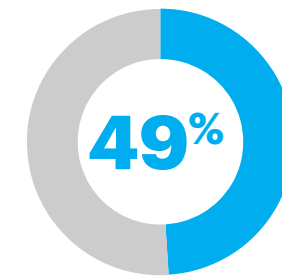
But my leadership does not understand.

Around one-half of healthcare executives say their leaders completely understand what IoHT means to their organization.

Source: Accenture 2017 Internet of Health Things Survey

Figure 2

Internet of Health Things (IoHT) is a significant budget line item.

IoHT: Who is investing and how much?

It is not just technology departments that are investing in IoHT. While 57 percent of healthcare organizations surveyed say th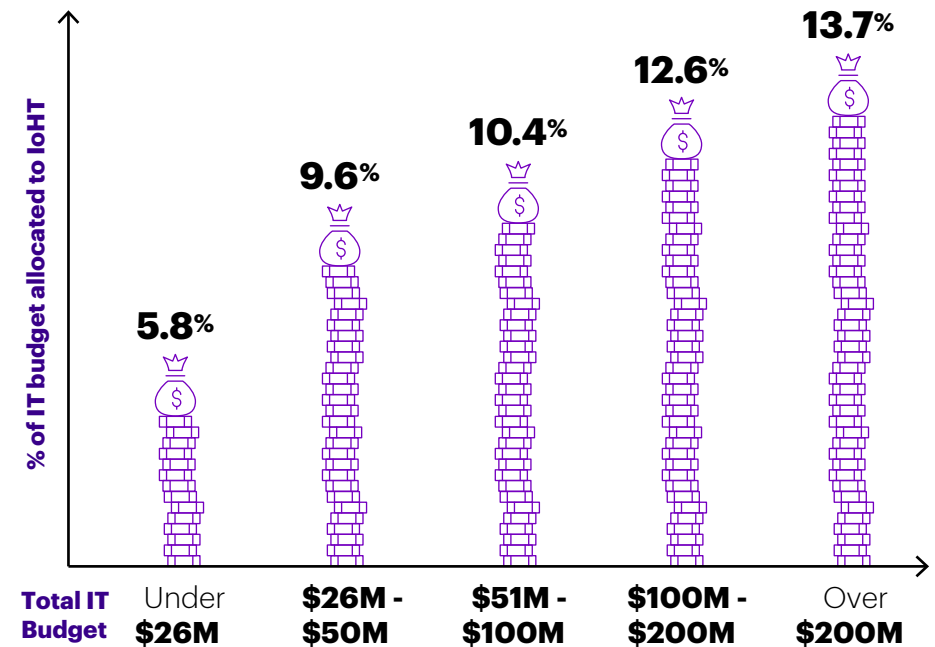at their IT departments lead the IoHT charge, 26 percent say their research and development (R&D) divisions are leading their IoHT efforts and one in ten organizations even have dedicated IoHT subsidiaries or business units.

Today, healthcare organizations allocate on average around 10 percent of their annual IT budgets to investments for IoHT solutions; this amount grows incrementally as the size of IT budgets as a whole grow larger (Figure 2).

As IT budgets grow, so do IoHT investments.

Total IT Budget	Under $26M	$26M - $50M	$51M - $100M	$100M - $200M	Over $200M
% of IT budget allocated to IoHT	5.8%	9.6%	10.4%	12.6%	13.7%

Source: Accenture 2017 Internet of Health Things Survey

Providers and payers are seeing real value from IoHT investments

Healthcare providers and payers are investing in IoHT programs in three areas of their businesses—remote patient monitoring (RPM), wellness and prevention, and operations—and are seeing real value from the initial programs. The value is being demonstrated from IoHT programs in the areas of medical or administrative/operational cost savings, improvements in consumer experience, and revenue growth through consumer attraction/retention (Figure 3).

Figure 3

Value is being achieved from Internet of Health Things (IoHT) programs in three business areas:

1) Remote patient monitoring (RPM)
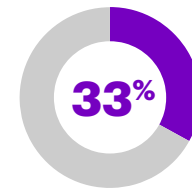
2) Wellness and prevention

3) Operations

IoHT services has driven medical and operational cost savings in the programs and patient populations to which it has been applied thus far.

Remote patient monitoring

To what extent are your RPM IoHT solution(s) driving these value levers?

Figure 3a

33% of **PROVIDERS** report extensive **operational cost savings** from their RPM IoHT programs.
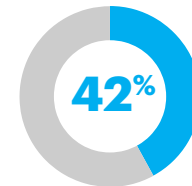
42% of **PAYERS** report extensive **medical cost savings** from their RPM IoHT programs.

Operational/Administrative Cost Savings

	Extensive	Moderate	Minimal	No Value
PROVIDER	33%	40%	24%	3%

Medical Cost Savings

	Extensive	Moderate	Minimal	No Value
PROVIDER	24%	52%	18%	6%
PAYER	42%	44%	8%	6%

Consumer Attraction/Retention

	Extensive	Moderate	Minimal	No Value
PROVIDER	18%	70%	9%	3%
PAYER	40%	41%	13%	6%

● Extensive ● Moderate ● Minimal ● No Value

Source: Accenture 2017 Internet of Health Things Survey

Wellness and prevention

To what extent are your wellness and prevention IoHT solution(s) driving value?

Figure 3b

42% of **PROVIDERS** achieve extensive **medical cost savings** from their wellness and prevention IoHT programs.

45% of **PAYERS** achieve extensive **medical cost savings** their wellness and prevention IoHT programs.

Operational/Administrative Cost Savings

	Extensive	Moderate	Minimal	No Value
PROVIDER	19%	58%	23%	
PAYER	37%	45%	13%	5%

Medical Cost Savings

	Extensive	Moderate	Minimal	No Value
PROVIDER	42%	47%	9%	2%
PAYER	45%	39%	13%	3%

Consumer Attraction/Retention

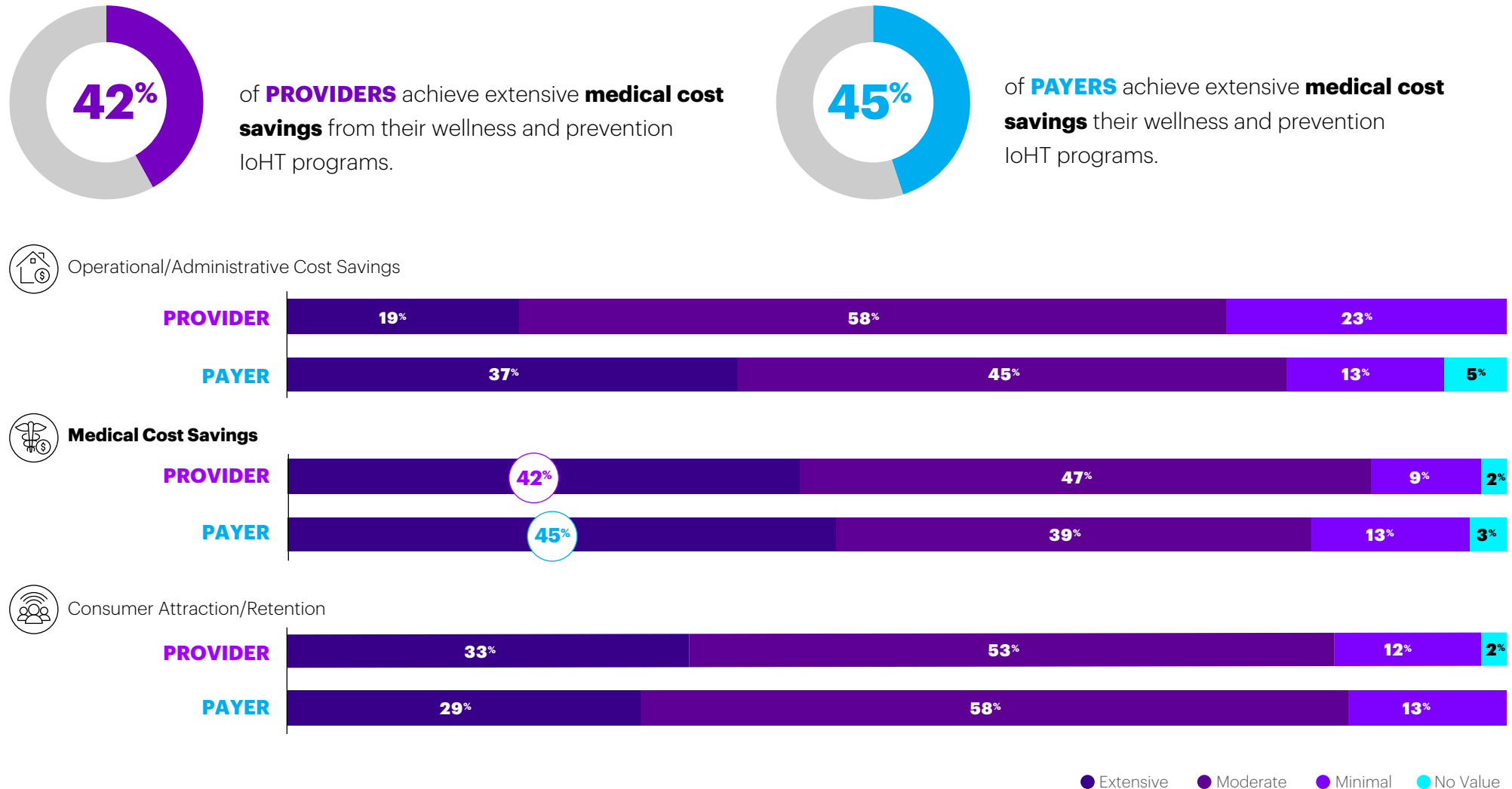|	Extensive	Moderate	Minimal	No Value
PROVIDER	33%	53%	12%	2%
PAYER	29%	58%	13%	

● Extensive ● Moderate ● Minimal ● No Value

Source: Accenture 2017 Internet of Health Things Survey

Operations

To what extent are your operations IoHT solution(s) driving value?

Figure 3c

31% of **PROVIDERS** realize extensive **administrative cost savings** fromtheir operations IoHT programs.

44% of **PAYERS** realize extensive improvement in **customer experience** scores from their operations IoHT programs.

Administrative Cost Savings

	Extensive	Moderate	Minimal	No Value
PROVIDER	31%	58%	8%	3%
PAYER	33%	48%	19%	

Patient/Customer Experience

	Extensive	Moderate	Minimal	No Value
PROVIDER	28%	54%	13%	5%
PAYER	44%	33%	21%	2%

Patient/Member Acquisition

	Extensive	Moderate	Minimal	No Value
PROVIDER	21%	51%	23%	5%
PAYER	27%	48%	25%	

● Extensive ● Moderate ● Minimal ● No Value

Source: Accenture 2017 Internet of Health Things Survey

But barriers to wider IoHT adoption still exist

Healthcare executives cite a number of barriers to IoHT uptake, but no single barrier stands out significantly from the others as a particular inhibitor. In fact, executives see the top two barriers— privacy concerns and legacy systems— as equal hindrances. These top two are only slightly ahead of the next three cited barriers: Security concerns, technology immaturity and lack of budget (Figure 4).
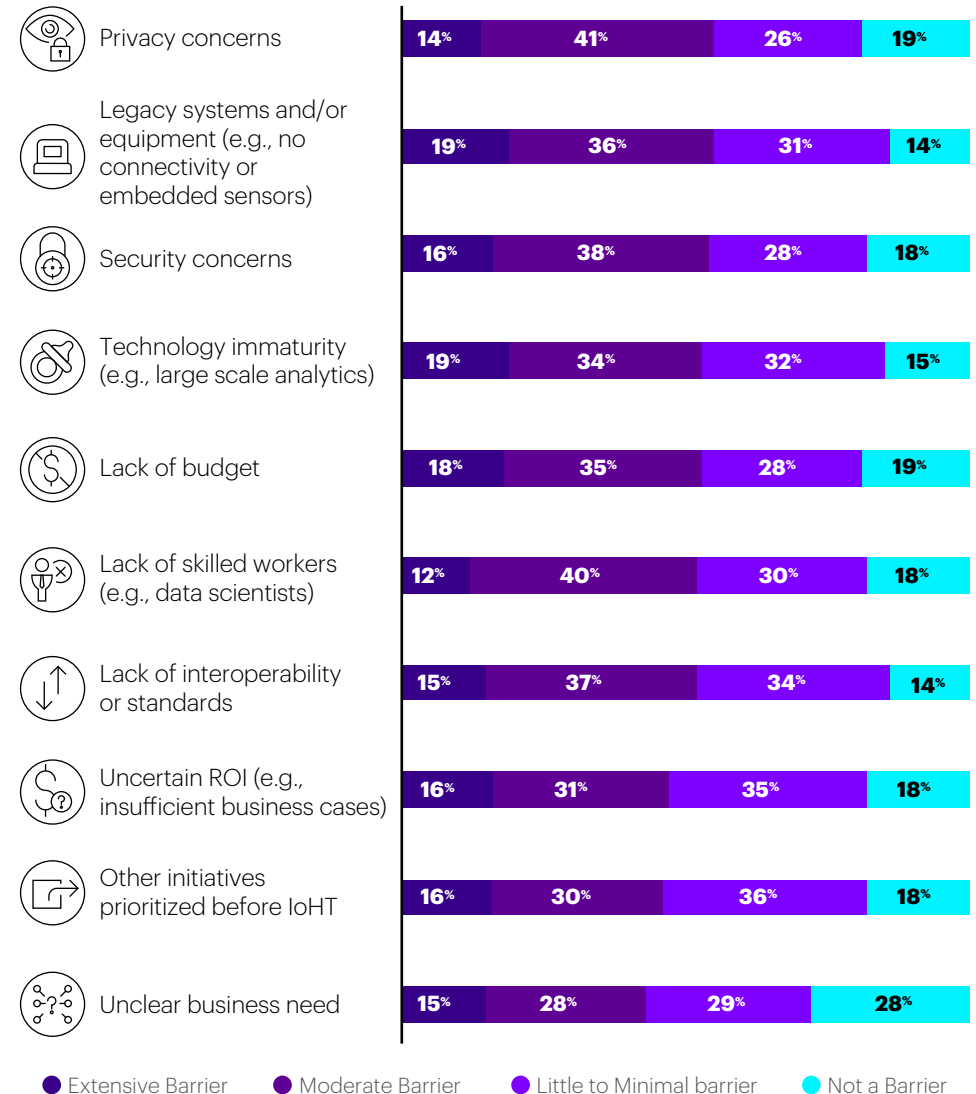
Figure 4

Healthcare executives cite a number of barriers to Internet of Health Things (IoHT) adoption but no one barrier stands out significantly from the others.

How much of a barrier are these inhibiting adoption of the Internet of Things in your organization?

Barrier	Extensive Barrier	Moderate Barrier	Little to Minimal barrier	Not a Barrier
Privacy concerns	14%	41%	26%	19%
Legacy systems and/or equipment (e.g., no connectivity or embedded sensors)	19%	36%	31%	14%
Security concerns	16%	38%	28%	18%
Technology immaturity (e.g., large scale analytics)	19%	34%	32%	15%
Lack of budget	18%	35%	28%	19%
Lack of skilled workers (e.g., data scientists)	12%	40%	30%	18%
Lack of interoperability or standards	15%	37%	34%	14%
Uncertain ROI (e.g., insufficient business cases)	16%	31%	35%	18%
Other initiatives prioritized before IoHT	16%	30%	36%	18%
Unclear business need	15%	28%	29%	28%

● Extensive Barrier ● Moderate Barrier ● Little to Minimal barrier ● Not a Barrier

Source: Accenture 2017 Internet of Health Things Survey

REMOTE PATIENT MONITORING

Investments in RPM are strong but vary for providers and payers; and what is not invested today, will likely be invested tomorrow.

Providers' current investments in RPM IoHT lag behind wellness and prevention, and operations programs today—but are set to take off in the near term. Forty-three percent of providers invest today; 56 percent by 2017. Payers' RPM IoHT investments lead the field at 69 percent today but will reduce to 48 percent by 2017.

The majority of both providers' and payers' RPM IoHT investments are focused on cardiac conditions. Interestingly, in the past, behavioral health has not received investment at similar levels to traditional high-cost areas such as cardiac[3], but the spotlight appears to now be shining on this area. Mental health, including behavioral health, is a relatively high priority for both providers (48 percent) and payers (55 percent) (Figure 5).
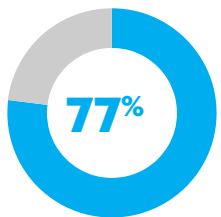
3 Centers for Disease Control and Prevention, Chronic Disease Prevention and Health Promotion, http://www.cdc.gov/chronicdisease/overview/

Figure 5

The majority of remote patient monitoring (RPM) Internet of Health Things (IoHT) investments are focused on cardiac conditions
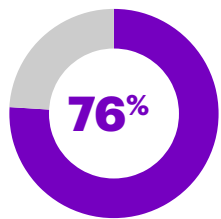
76% of **PROVIDERS** are focused on cardiac conditions

77% of **PAYERS** are focused on cardiac conditions

Source: Accenture 2017 Internet of Health Things Survey

What are you focused on in your current IoHT investment in remote patient monitoring (RPM)?

Cardiac, including congestive heart failure
PROVIDER 76%
PAYER 77%

Chronic respiratory conditions, including COPD, asthma
PROVIDER 61%
PAYER 49%

Cancer
PROVIDER 52%
PAYER 38%

Mental health, including behavioral health
PROVIDER 48%
PAYER 55%

Diabetes
PROVIDER 45%
PAYER 60%

Obesity
PROVIDER 33%
PAYER 43%

Orthopedic needs
PROVIDER 33%
PAYER 38%

Figure 6

Consumer satisfaction is pinpointed as an important business driver.

Providers and payers indicate a "consumer-first" mind shift. Both identify patient/member satisfaction as an important business driver in offering RPM IoHT solutions (Figure 6).

Patient/member satisfaction is a driver for offering remote patient monitoring (RPM) Internet of Health Things (IoHT) solutions.

Providers

What are the business drivers for offering RPM IoHT solutions?

Figure 6a

82% say patient survey satisfaction scores are important or extremely important.

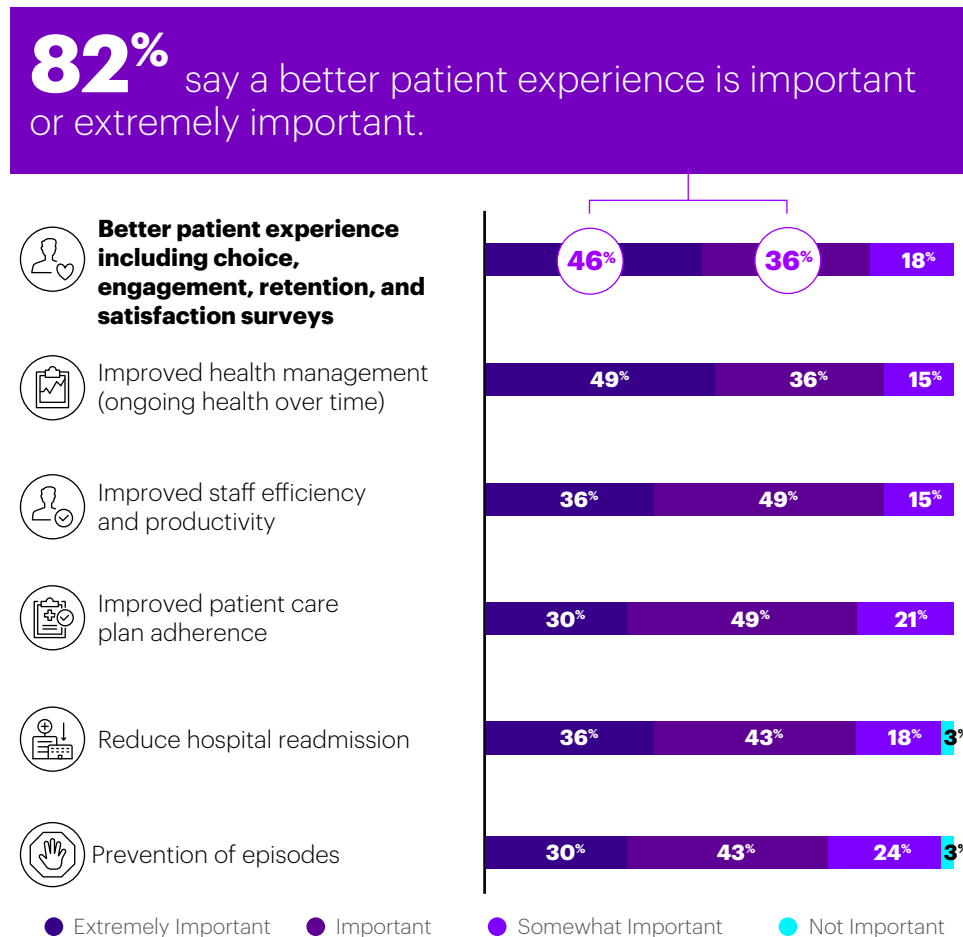|	Extremely Important	Important	Somewhat Important	Not Important
Emphasis on patient satisfaction survey scores (e.g., HCAHPS - value based incentive payments)	39%	43%	18%	
Shift to individualized market; patient demands changing (e.g., expectations that consumers receive innovative medical devices/ individualized services)	33%	43%	21%	3%
Shift to readmission penalties (e.g., additional chronic conditions or other being added to penalties)	36%	40%	18%	6%
Changes in Medicare reimbursement	33%	37%	21%	9%
Shifts to provider driven care management or 'at risk'/pay-for-performance (i.e., new ACO-like models)	24%	46%	21%	9%
Increase in chronic disease and complex patient/population mix	24%	46%	30%	

● Extremely Important　● Important　● Somewhat Important　● Not Important

Source: Accenture 2017 Internet of Health Things Survey

Providers

How important are the following benefits in driving your business to adopt this RPM IoHT solution?
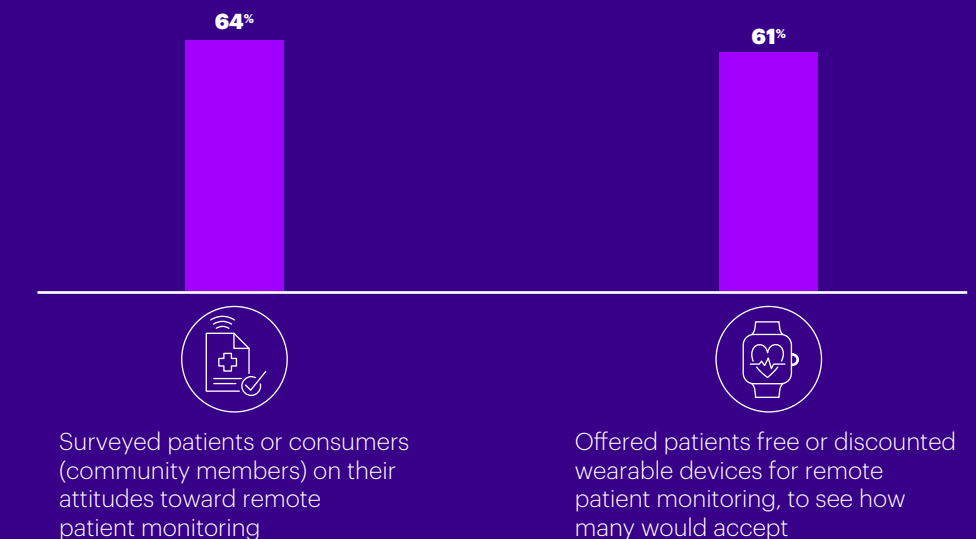
Figure 6b

82% say a better patient experience is important or extremely important.

Better patient experience including choice, engagement, retention, and satisfaction surveys
46% | 36% | 18%

Improved health management (ongoing health over time)
49% | 36% | 15%

Improved staff efficiency and productivity
36% | 49% | 15%

Improved patient care plan adherence
30% | 49% | 21%

Reduce hospital readmission
36% | 43% | 18% | 3%

Prevention of episodes
30% | 43% | 24% | 3%

● Extremely Important ● Important ● Somewhat Important ● Not Important

Providers

What actions have you taken to better understand whether patients or consumers would adopt this type of solution?

Figure 6c

64%

61%

Surveyed patients or consumers (community members) on their attitudes toward remote patient monitoring

Offered patients free or discounted wearable devices for remote patient monitoring, to see how many would accept

88% of providers **have** taken action to understand patient attitudes towards RMP IoHT solutions.

12% of providers **have not** taken any action.

Payers

What are the business drivers for offering RPM IoHT solutions?

Figure 6d

81% say member satisfaction is important or extremely important.

	Extremely Important	Important	Somewhat Important	Not Important
Increase need for member satisfaction	51%	30%	13%	6%
Increased need to stay competitive in the market	41%	40%	19%	
Shift toward individual market (i.e., expectations that consumers/ members receive innovative medical devices and more individualized services)	30%	51%	17%	2%
Increased emphasis in demonstrating effectiveness of care management programs (i.e., ROI)	30%	53%	17%	
Increase need for brand value/being seen as innovative	41%	36%	17%	6%
Increased emphasis on improving HEDIS* scores and medication adherence ratings	36%	37%	21%	6%
Shifts to provider driven care management or 'at risk'/ pay- for-performance (i.e., new ACO-like models)	36%	35%	25%	4%
Increase in chronic disease and complex member mix	36%	32%	23%	9%

*The Healthcare Effectiveness Data and Information Set (HEDIS) is a tool used by more than 90 percent of America's health plans to measure performance on important dimensions of care and service. Altogether, HEDIS consists of 81 measures across 5 domains of care.

Source: Accenture 2017 Internet of Health Things Survey

WELLNESS AND PREVENTION

Wearables receive a vote of confidence from both providers and payers.

Both providers and payers agree about the essential role wearables play in their wellness and prevention IoHT solutions (Figure 7). And they are not shy about offering incentives for patients and consumers to use such devices—79 percent of providers offer incentives to wellness and prevention IoHT users and a vast majority (95 percent) of payers offer incentives.
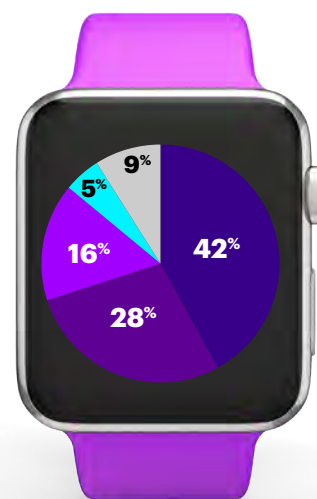
Figure 7

Almost all providers and payers say wearables are a component of their wellness and prevention Internet of Health Things (IoHT) investments.

Source: Accenture 2017 Internet of Health Things Survey

Are wearables a component of your wellness and prevention IoHT solutions?

PROVIDERS
91% YES

9%
5%
16%
42%
28%

PAYERS
95% YES

5% 5%
24%
21%
45%

PROVIDERS legend
● Yes, providing to patients
● Yes, providing at subsidized cost for patient
● Yes, but patients are fully responsible for cost
● Yes, but Health Plan(s) are providing wearables
● No
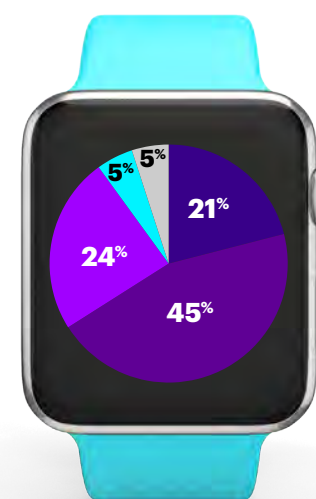
PAYERS legend
● Yes, providing to members
● Yes, providing at subsidized cost for members
● Yes, but members are fully responsible for cost
● Yes, but Health System is providing wearables
● No

Consumer satisfaction is top of the list as a driver for wellness and prevention IoHT solutions.
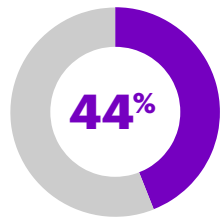
Close to one-half of healthcare providers ranked patient satisfaction survey scores—such as Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)[4] value-based incentive payments—as an extremely important business driver of wellness and prevention IoHT solutions. An identical percentage was chosen by payers with respect to a need to increase member satisfaction (Figure 8).
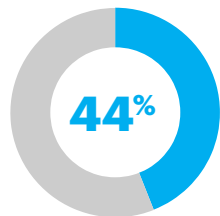
4 The Centers for Medicare and Medicaid (CMS) HCAHPS initiative provides a standardized survey instrument and data collection methodology for measuring patients' perspectives on hospital care.

Figure 8

What are the business drivers for offering wellness and prevention IoHT solutions?

Consumer satisfaction is an extremely important driver of offering wellness and prevention Internet of Health Things (IoHT) solutions.
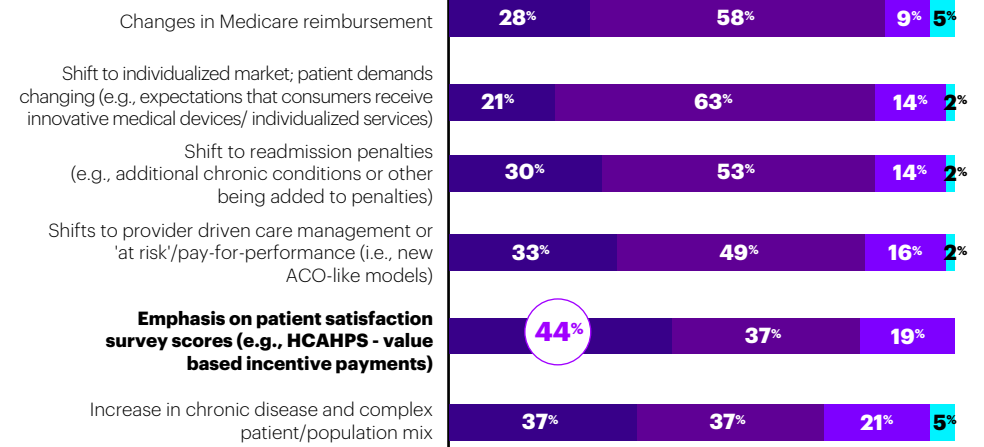
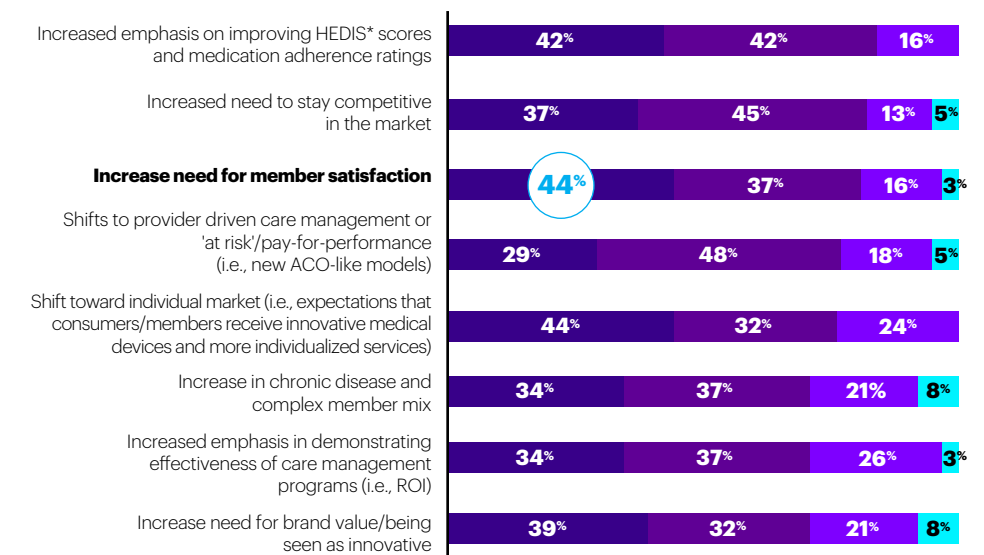**44%** of **PROVIDERS** ranked patient satisfaction as extremely important.

44% of **PAYERS** ranked increase member satisfaction as extremely important.

PROVIDER

	Extremely Important	Important	Somewhat Important	Not Important
Changes in Medicare reimbursement	28%	58%	9%	5%
Shift to individualized market; patient demands changing (e.g., expectations that consumers receive innovative medical devices/ individualized services)	21%	63%	14%	2%
Shift to readmission penalties (e.g., additional chronic conditions or other being added to penalties)	30%	53%	14%	2%
Shifts to provider driven care management or 'at risk'/pay-for-performance (i.e., new ACO-like models)	33%	49%	16%	2%
Emphasis on patient satisfaction survey scores (e.g., HCAHPS - value based incentive payments)	**44%**	37%	19%	
Increase in chronic disease and complex patient/population mix	37%	37%	21%	5%

PAYER

	Extremely Important	Important	Somewhat Important	Not Important
Increased emphasis on improving HEDIS* scores and medication adherence ratings	42%	42%	16%	
Increased need to stay competitive in the market	37%	45%	13%	5%
Increase need for member satisfaction	**44%**	37%	16%	3%
Shifts to provider driven care management or 'at risk'/pay-for-performance (i.e., new ACO-like models)	29%	48%	18%	5%
Shift toward individual market (i.e., expectations that consumers/members receive innovative medical devices and more individualized services)	44%	32%	24%	
Increase in chronic disease and complex member mix	34%	37%	21%	8%
Increased emphasis in demonstrating effectiveness of care management programs (i.e., ROI)	34%	37%	26%	3%
Increase need for brand value/being seen as innovative	39%	32%	21%	8%

● Extremely Important ● Important ● Somewhat Important ● Not Important

Source: Accenture 2017 Internet of Health Things Survey

*The Healthcare Effectiveness Data and Information Set (HEDIS) is a tool used by more than 90 percent of America's health plans to measure performance on important dimensions of care and service. Altogether, HEDIS consists of 81 measures across 5 domains of care.

OPERATIONS

Executives not only apply operations IoHT initiatives to manage inventory of medical supplies, but also expect to improve the consumer experience.

Fundamental operations investments to manage the inventory of medical supplies, such as drugs and gowns, is still a priority for 67 percent of providers. But in addition, almost two-thirds of providers identify patient experience as the beneficiary of operations' IoHT programs. Almost three-quarters of payers agree and expect their current IoHT investments to pay off in terms of better member service (Figure 9).

Figure 9

Consumer experience is a vital beneficiary of provider and payer operations IoHT programs.

What is your focus with your current IoHT investment to benefit operations?

64% of **PROVIDERS** focus IoHT investments on the patient experience.

73% of **PAYERS** focus IoHT investments on the member services.

	Providers	Payers
Patient experience/ member services (e.g., wayfinding, scheduling, accessing, navigating hospital resources, better service, shorter queue wait)	64%	73%
Inventory management of medical supplies (e.g., drugs, gowns, gloves)	67%	
Real-time location tracking of assets (e.g., wheelchairs, IV stands)	51%	
Automated asset management (e.g., predictive maintenance of MRI, CAT scanners)	49%	
Connected worker (e.g., clinician & worker collaboration & productivity)	49%	56%

● Providers ● Payers

Source: Accenture 2017 Internet of Health Things Survey

Providers' investments in operations IoHT solutions appear to be paying dividends in better patient experience scores (Figure 3c), while health payers are not only gaining in terms of member acquisition and administrative cost savings, but also improving customer service scores (Figure 3c). Improving patient or consumers' experiences, including engagement, retention and satisfaction surveys, is an important outcome for both providers and payers (Figure 10).
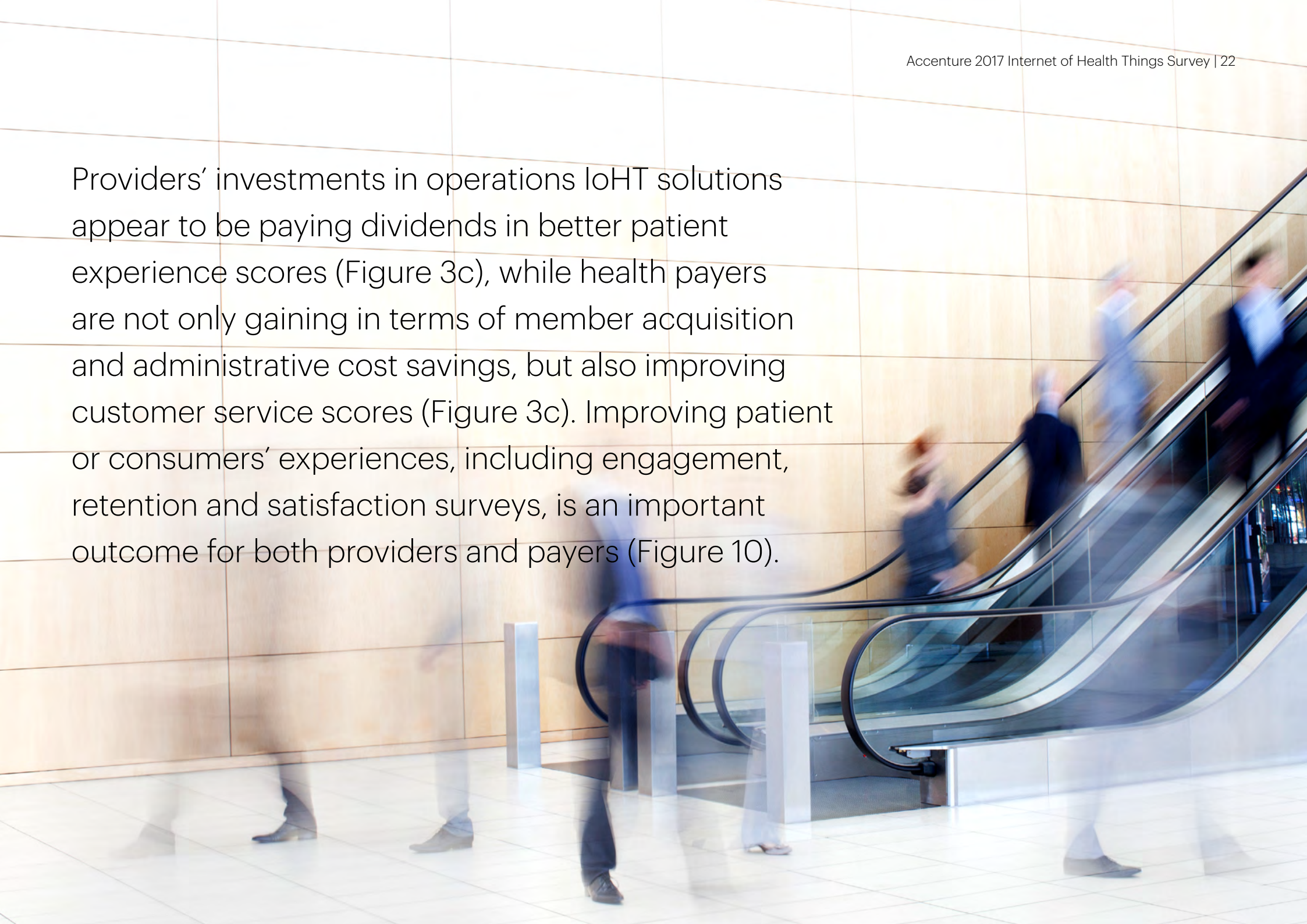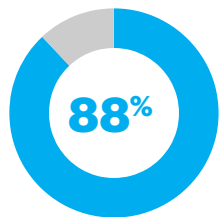
Figure 10

Providers and payers agree about the importance of consumer benefits of operations Internet of Health Things (IoHT) solutions.
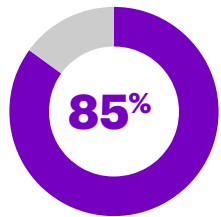
85% of **PROVIDERS** say that a better patient experience is important or extremely important.

88% of **PAYERS** say that a better member experience is important or extremely important.

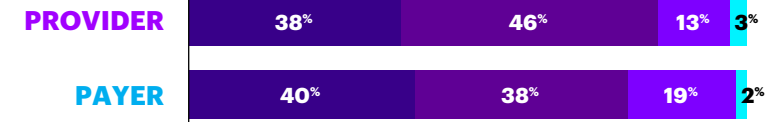How important are the following benefits of operations IoHT solutions?

Achieved greater operational efficiency

	Extremely Important	Important	Somewhat Important
PROVIDER	36%	49%	15%
PAYER	42%	44%	13%
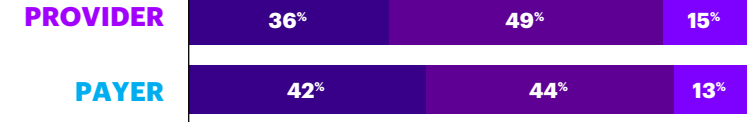
Improved communication and collaboration among staff/employees

	Extremely Important	Important	Somewhat Important	Not Important
PROVIDER	38%	46%	13%	3%
PAYER	29%	46%	23%	2%

Improved brand awareness

	Extremely Important	Important	Somewhat Important	Not Important
PROVIDER	38%	46%	13%	3%
PAYER	40%	38%	19%	2%

Better patient/member experience including choice, engagement, retention, and satisfaction surveys

	Extremely Important	Important	Somewhat Important
PROVIDER	28%	57%	15%
PAYER	42%	46%	12%

● Extremely Important   ● Important   ● Somewhat Important   ● Not Important

Source: Accenture 2017 Internet of Health Things Survey

Four takeaways for providers and payers

1) THE TIME IS NOW.

Despite challenges with security and privacy, inaction is not an option. There are players outside of traditional healthcare organizations looking at these same industry challenges and considering ways to capture the opportunity[5]. If providers and payers do not invest in demonstrating IoHT value now, they risk losing out to non-traditional players. Going forward, providers and payers must identify parts of the business where IoHT solutions may be applied to do things differently—and do different things to grow in the long-term.

2) MEASURE AND BUILD ON SUCCESSES.

Providers and payers have already demonstrated value through IoHT—but they need to continue investments to better understand where programs are successful to prepare for future scaling. They need to measure effectiveness beyond the technology and then build on those areas of effectiveness quickly to offer value across the business. By demonstrating the benefits and best practices, providers and payers can strengthen business cases, encourage adoption and drive interoperability.

3) PUT CONSUMERS FIRST.

Providers and payers must continue to incorporate IoHT solutions that drive better experiences and healthier patient outcomes, along with key medical and administrative cost savings initiatives. IoHT solutions offer the seamless collection of patient-generated health data, enabling providers and payers to provide more convenient, personalized and effective care. They must train their workforces to make IoHT a part of the "new normal."

4) FORM NIMBLE PARTNERSHIPS.

Technology and innovation partners can help payers and providers quickly test and learn how IoHT can drive business value to inform future scaling requirements. Strategy and change management partners can help to integrate these new technologies into their workflow, culture and training.

5 Healthcare's Big Bang Disruption, April 2016, Accenture. https://www.accenture.com/us-en/insight-healthcare-bigbang-disruption

Definitions

Remote patient monitoring:

Uses wearables, mobile and connected devices to help manage conditions outside of a health facility.

Connected wellness and prevention:

Sharing connected health devices that capture biometric data and using incentives and discounts to encourage healthy behaviors.

Operations at a health facility:

Enhanced through networked sensors and other technologies to improve the patient experience, the productivity of staff and overall workflow efficiency.

Operations at a health plan:

Enhanced through modern technologies to support a more efficient operation, accelerate new business models, member enrollment and achieve compliance.

For more information

Brian P. Kalis
brian.p.kalis@accenture.com

Ronan Wisdom
ronan.wisdom@accenture.com

Contributors

Kathy M. Andrews
kathy.m.andrews@accenture.com

Peggy Hsii
peggy.hsii@accenture.com

Alyssa Porritt
alyssa.r.porritt@accenture.com

Connect with us

@AccentureHealth

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Accenture 2017 Internet of Health Things survey

Accenture commissioned an online survey of 77 healthcare payers and 77 healthcare providers in the United States. The survey aimed to understand the current position of respondents with respect to the use of Internet of Health Things technologies and tools and find out what investments they were making and where. Organizations included in the survey had annual revenues of more than US$50 million and sample job titles were C-suite, mainly CEO and CIO. The overall margin is +/- 8 percentage points at the 95 percent confidence level. The survey was conducted by McGuire Research between January 29 and February 19, 2016.

About Accenture Insight Driven Health

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