

FUTURE OF HEALTHCARE



HIMSSSM

Health System Insights

Thomas Kiesau

Director and Digital Health Leader, The Chartis Group

Methodology

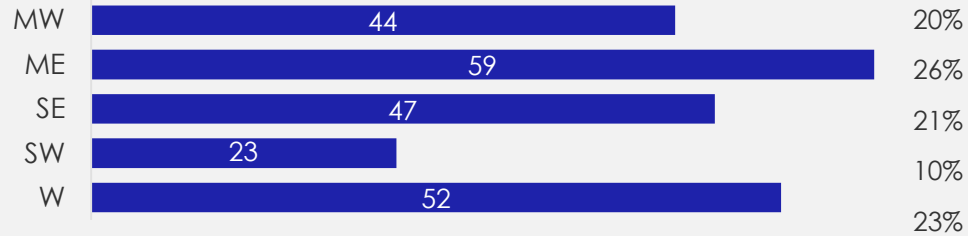
The following methodology was used to conduct the Health System Executive Survey:

- Based on the topic focus areas outlined by HIMSS, a set of survey questions was drafted by The Chartis Group, organized into three sections: (1) Digital Health; (2) Artificial Intelligence and Machine Learning (AI/ML); and (3) Financial Health.
- Chartis also identified target respondents by title, functional area, organizational type, size and location.
- Chartis engaged an external market research firm to field the survey and aggregate responses. Qualified survey respondents who completed the survey were compensated on par with the market rate.

Respondent Profile

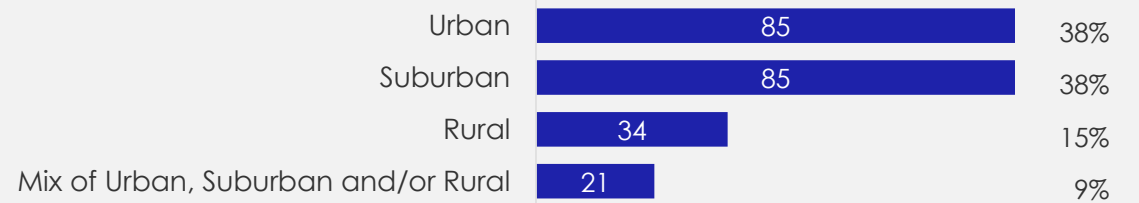
RESPONDENTS REPRESENTED A MIX OF GEOGRAPHIES, WITH THE SMALLEST COHORT FROM THE SOUTHWEST. MOST WERE FROM URBAN AND SUBURBAN AREAS, STAND-ALONE COMMUNITY HOSPITALS, OR REGIONAL HEALTH SYSTEMS, WITH \$500 MILLION TO \$5 BILLION IN REVENUE.

GEOGRAPHIC REGION



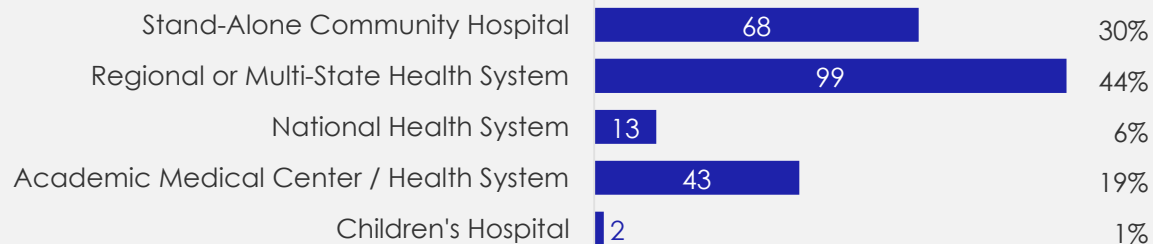
“In which region of the country are you personally located?”

GEOGRAPHIC POSITION



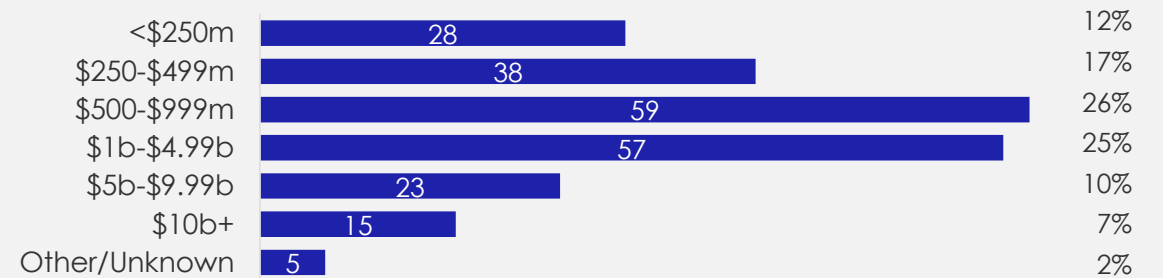
“How is your health system's geographic position best described?”

HEALTH SYSTEM TYPE



“How would you characterize your health system?”

HEALTH SYSTEM REVENUE



“What best represents your health system's revenue range, pre-COVID?”

The Challenging Transition



from

**FREE
STANDING**

Digital Solutions



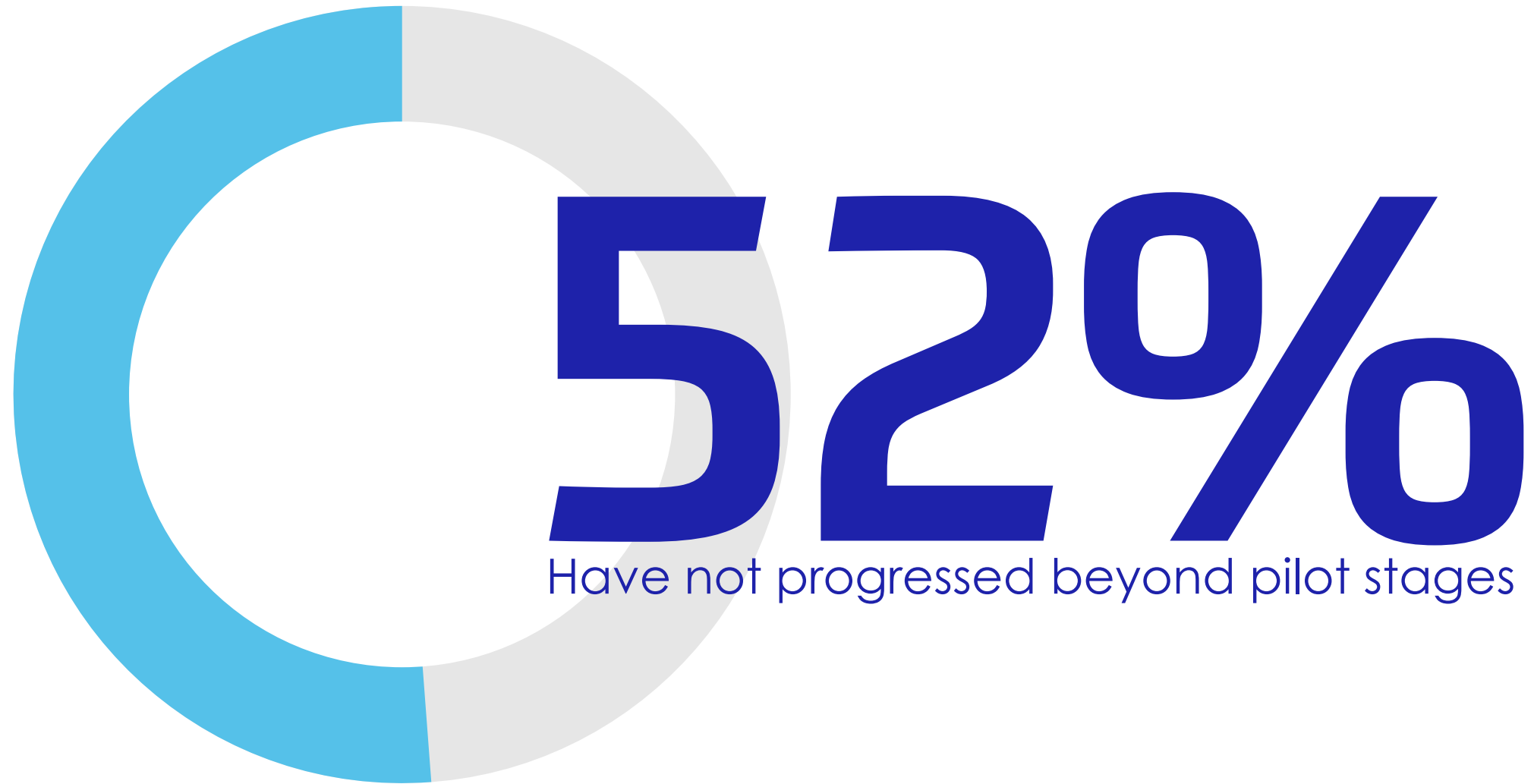
to
**DIGITAL
INTEGRATION**
with Traditional Healthcare
Delivery Assets



FUTURE OF HEALTHCARE

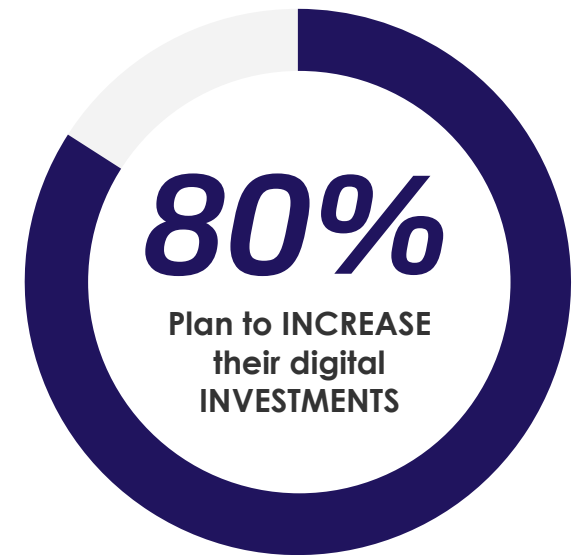
to
**DIGITALLY
FORWARD**
Care Delivery





Systems have a growing desire to invest in digital health...

but risk digitizing obsolete processes.



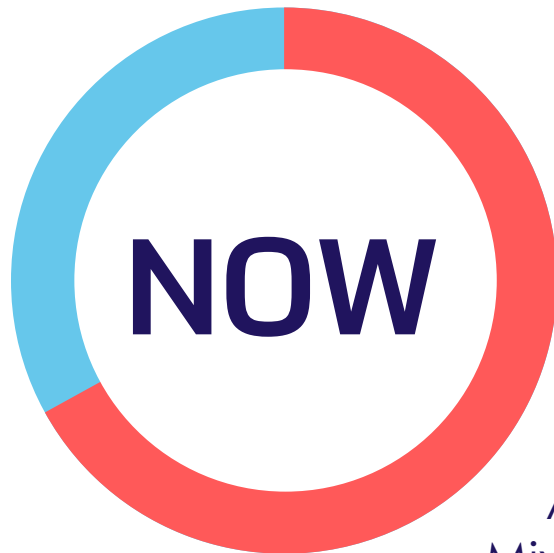
BUT... A formula for failure...

NT + OO = COO

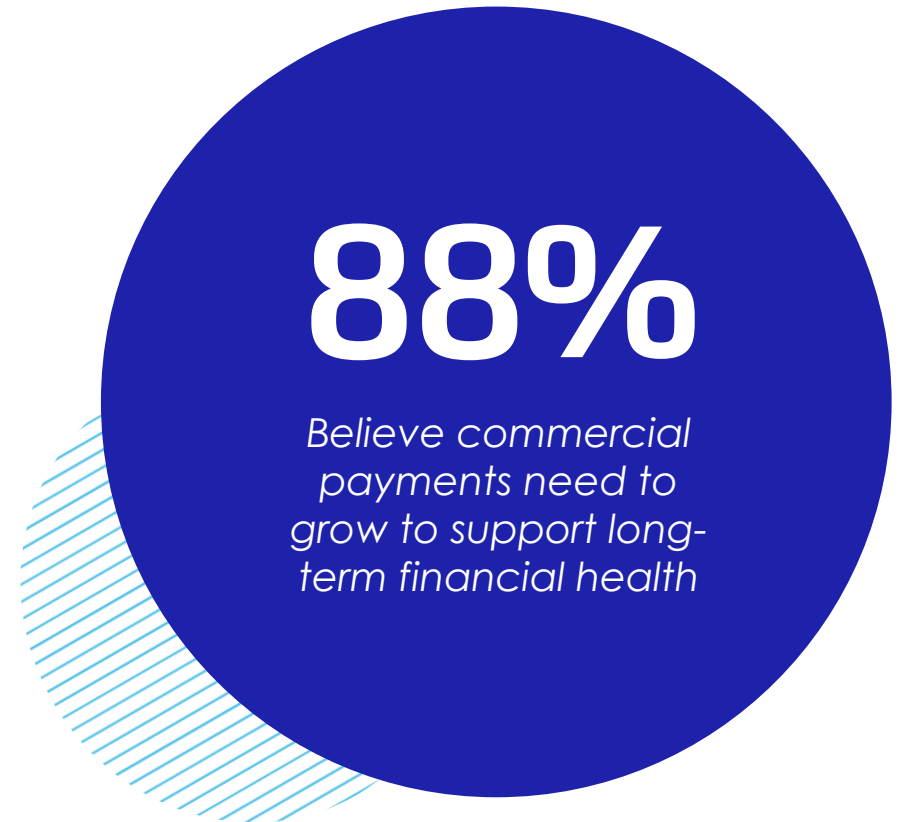
Little Margin for Error

EXPECTED GROWTH OF VALUE-BASED CARE & NEED FOR HIGHER PAYMENTS

■ FEE FOR SERVICE ■ VALUE BASED CARE



Anticipated
Mix of Provider
Revenue **8%**
INCREASE

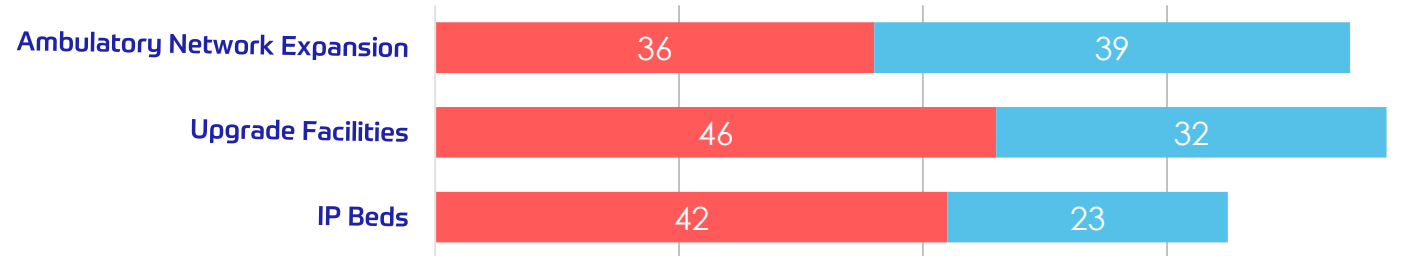


Digital Isn't the Only Significant Investment Planned

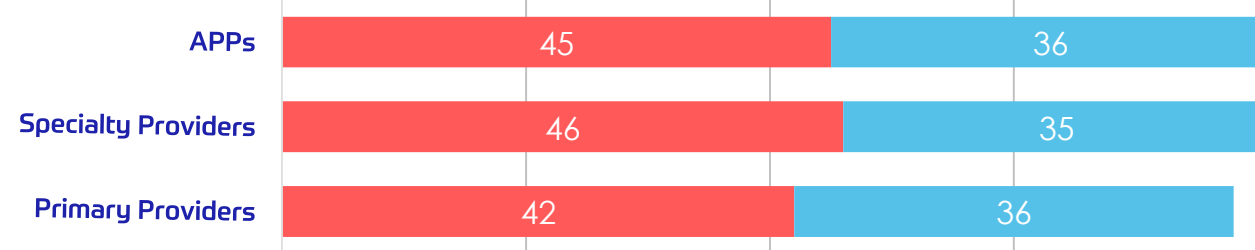


Planned Investment Increases

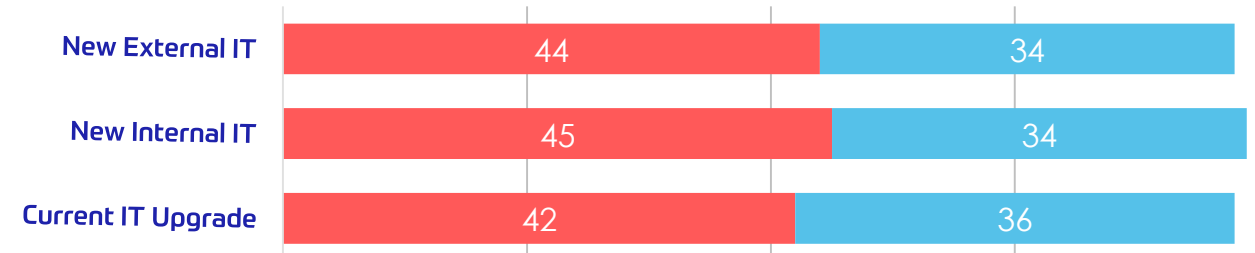
PHYSICAL INFRASTRUCTURE



PROVIDER STAFF



IT & DIGITAL INFRASTRUCTURE



Prioritizing Digital Investments Requires Alignment with Enterprise Goals

**COMMON PLANNING GOALS
ENABLED BY DIGITAL HEALTH**

Value-Based

Become a Leader in Value-Based Care Delivery

Primary Care

Grow & Tighten Alignment with Employed & Aligned Primary Care

New Market & Ambulatory Growth

Expand Reach into New Geographies and Position for Non-IP Growth

Consumer Focus

Become a Consumer-Centered Healthcare Delivery Enterprise

Quality

Become a Leading Tertiary/Destination Care Center for the Region

Cost

Reduce the Total Cost of Care and Improve Affordability for Community

Digital Health Investments Spread Across Multitude of Use Cases

Most Common Digital Health Use Cases

ALREADY IN PLACE



VIRTUAL VISITS

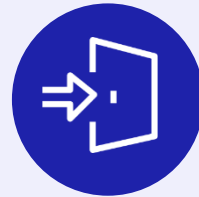
PARTIALLY IN PLACE & PRIORITIZED TO EXPAND



CARE ACCESS



MEDICATION ADHERENCE



TRANSITIONS OF CARE



SPECIALTY REFERRALS & CONSULTS



REMOTE MONITORING

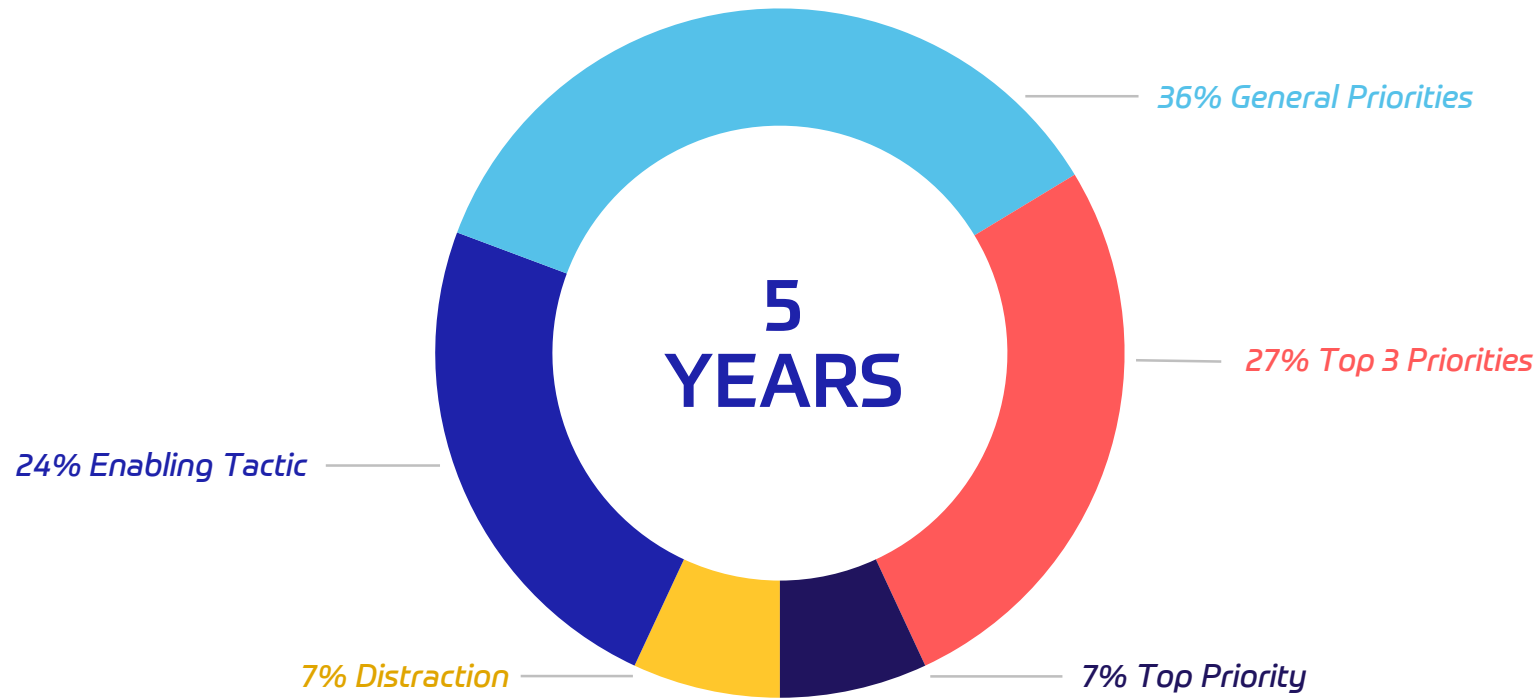
PRIORITIZED TO BUILD/IMPLEMENT



Hospital at Home

AI/ML Applicable for Most, Especially as Clinical Use Cases Grow

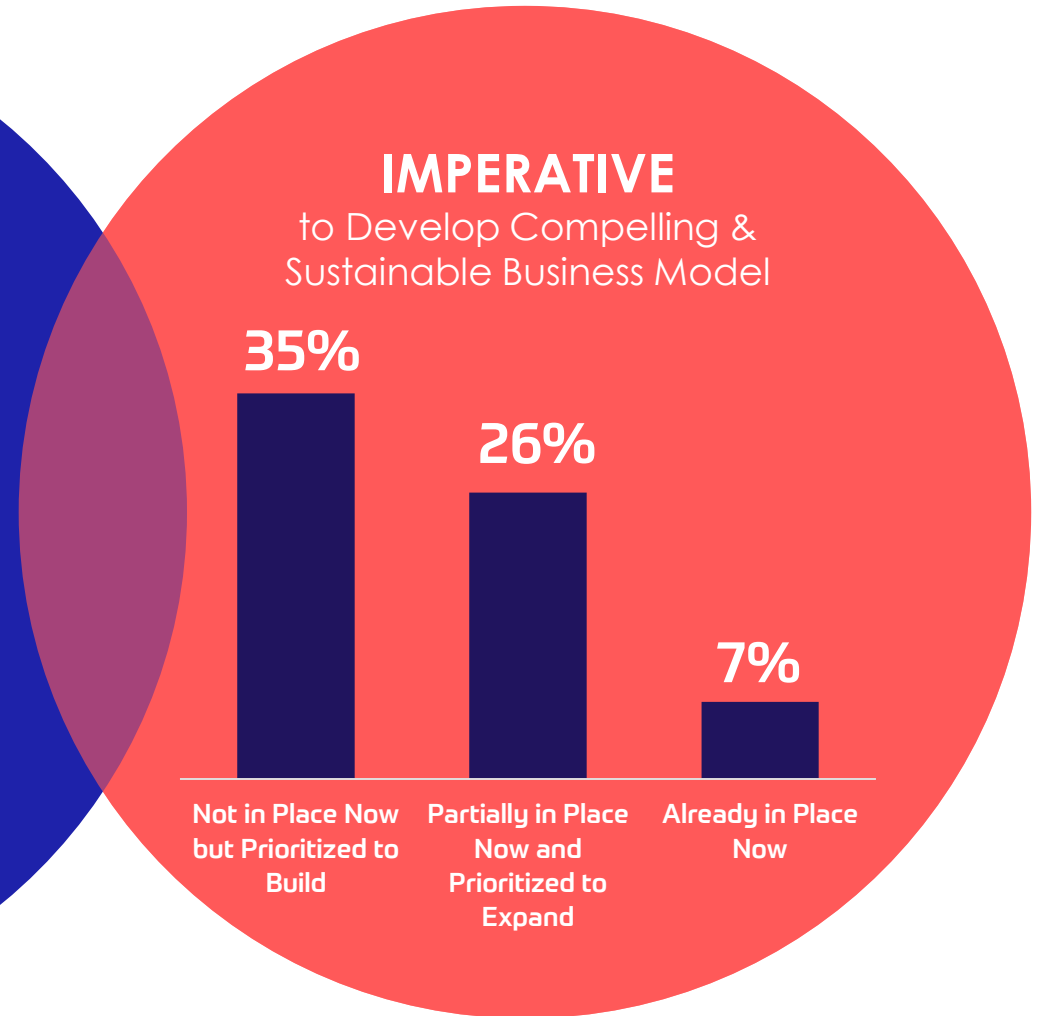
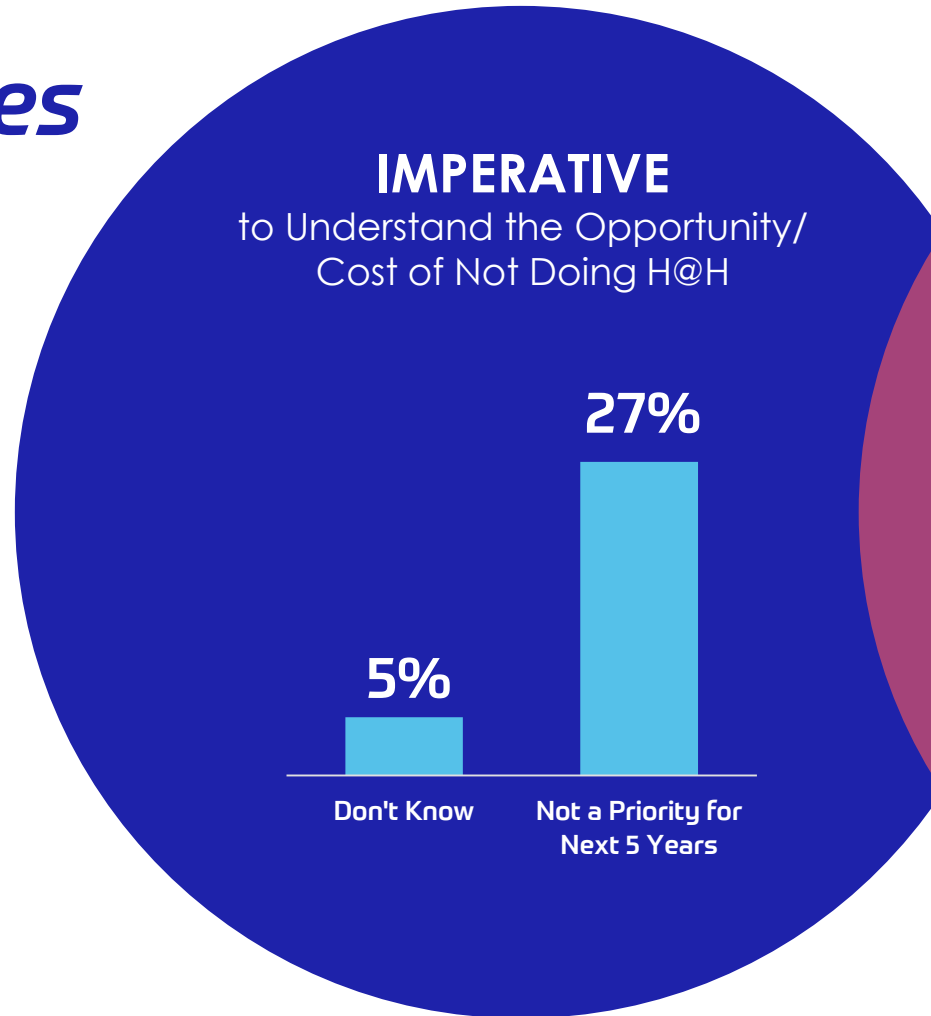
Organizations adopting AI/ML will see an uptick in clinical use cases compared to today's largely operational focus of AI/ML.



Varying Imperatives

DETERMINING THE ROLE & IMPACT OF HOSPITAL@HOME

Hospital at Home Adoption Trends



Future Outlook

SHIFT FROM INVESTING TO BUILDING TRANSFORMATIVE DIGITAL BUSINESS MODELS & OPERATING STRUCTURES



MOST HEALTH SYSTEMS ARE HERE

Focusing on Activating Core Digital/Technology Capabilities

40% Online scheduling

45% Virtual visits

84% Patient portals



Building Business Model Transformation Cases to Drive Digital Investments

58% Plan to invest \$10M+



Implementing Enterprise Transformation Governance & Operating Structure

70% Have/plan to establish a CDO

Clinician Insights

Darryl Gibbings-Isaac, MD

Senior Manager–Strategy,
Clinical Subject Matter Expert, Accenture

Do Clinicians Have Faith in the Future of Healthcare Technology?

True or False?

1

Clinician digital health tool adoption will not revert to pre-pandemic levels.

2

Clinicians believe AI is a threat to their future prosperity.

3

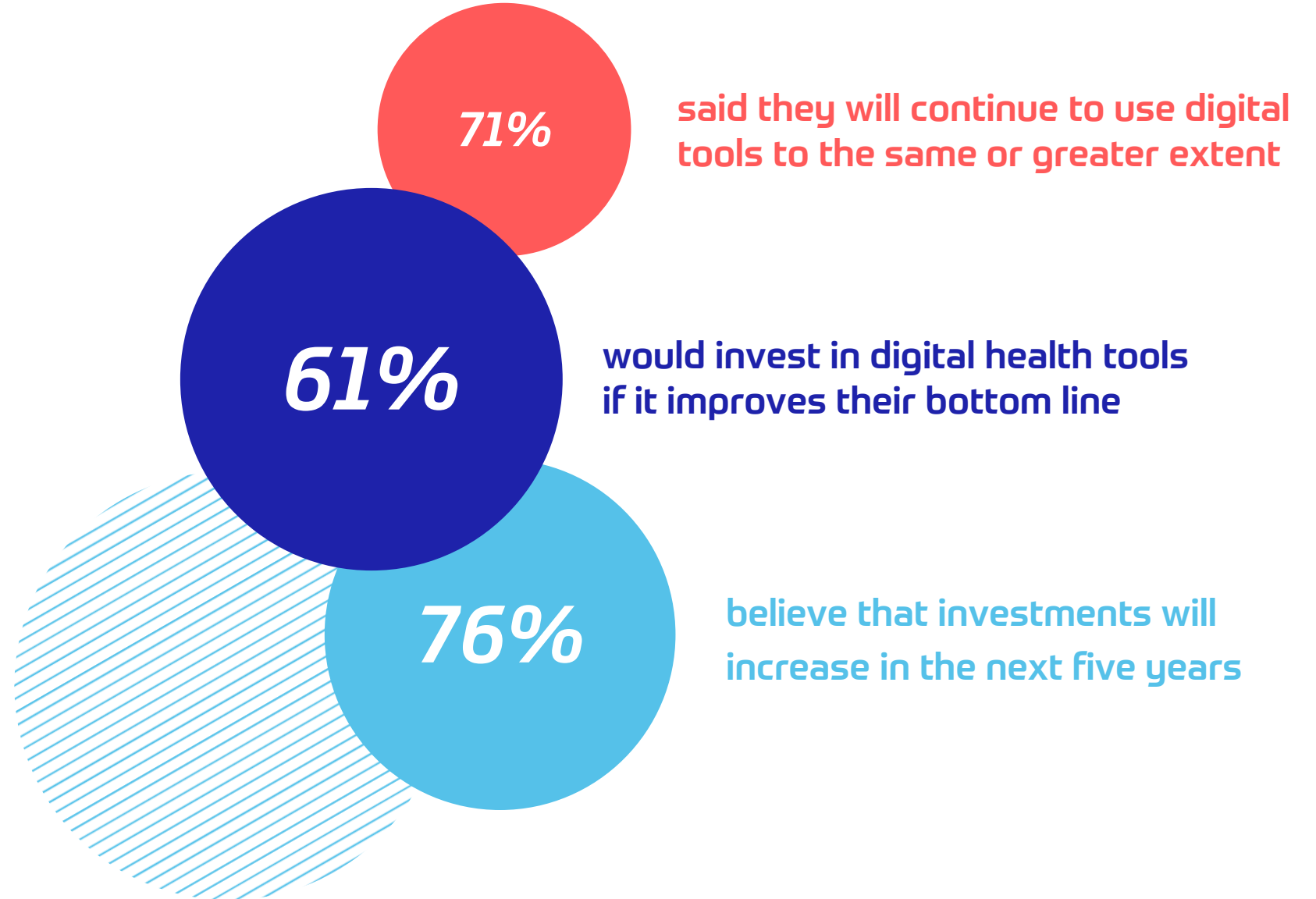
Clinicians see value in the business case to invest in AI and digital health.

4

Clinicians trust in the security of healthcare technology.

1.
**Clinician digital
health tool adoption
will not revert
to pre-pandemic
levels.**

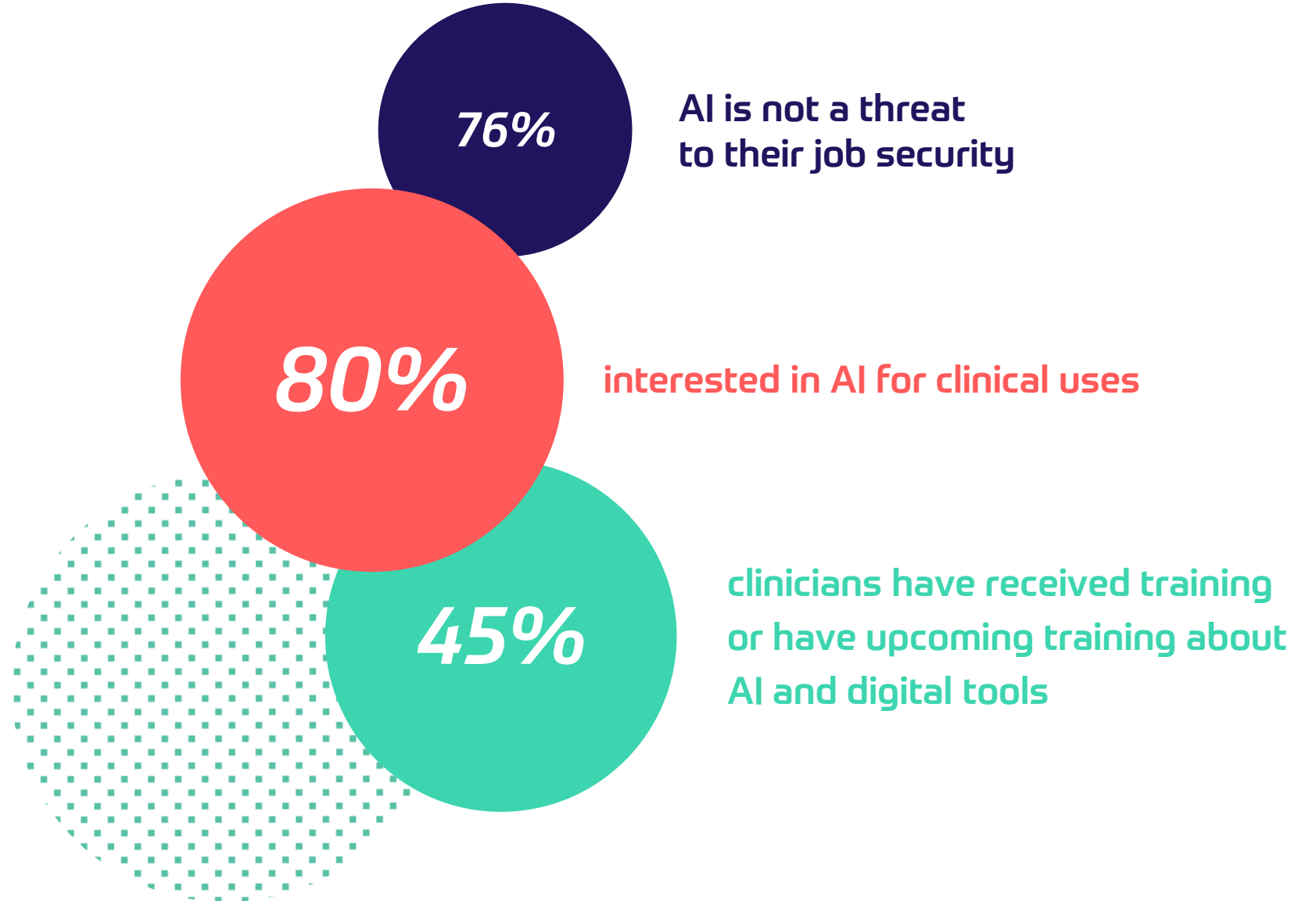
TRUE



2.

**Clinicians believe
AI is a threat
to their future
prosperity.**

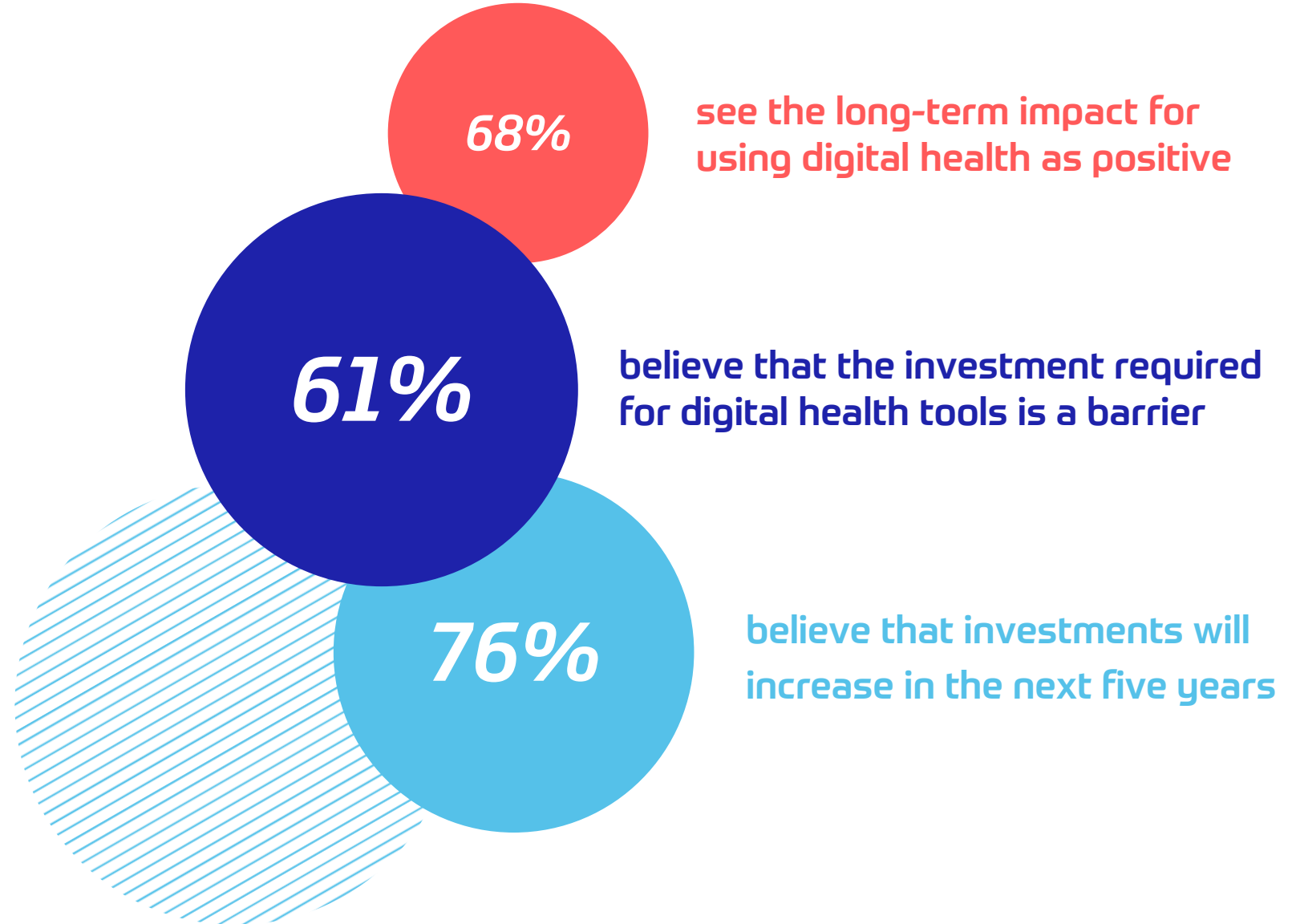
FALSE



3.

**Clinicians see
value in the business
case to invest in AI
and digital health.**

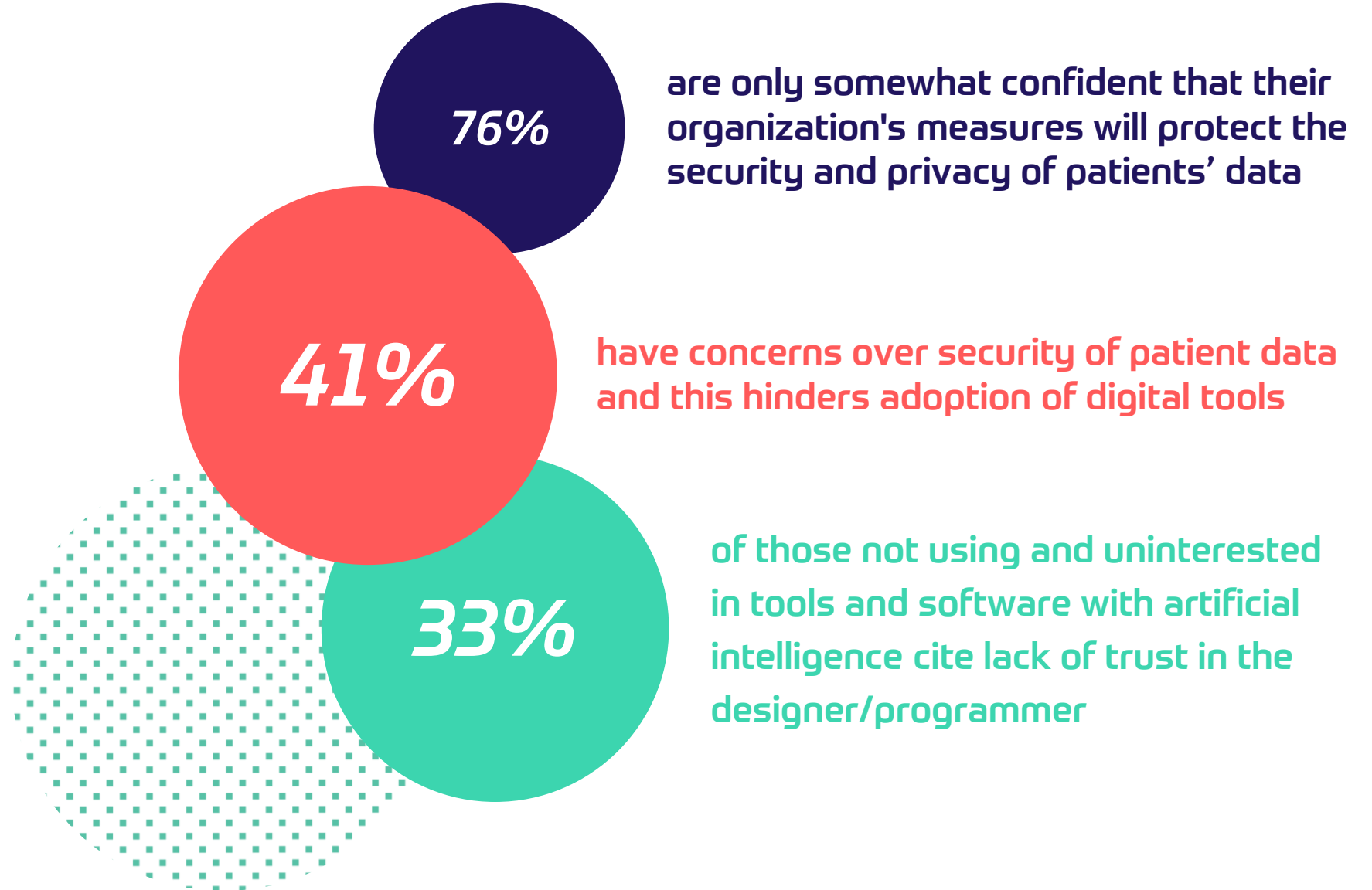
TRUE



4.

**Clinicians trust
in the security
of healthcare
technology.**

FALSE



Key Takeaways: Four Truths



Clinician digital health tool adoption will not revert to pre-pandemic levels.



Clinicians believe AI is part of their future prosperity.



Clinicians see value in the business case to invest in AI and digital health.



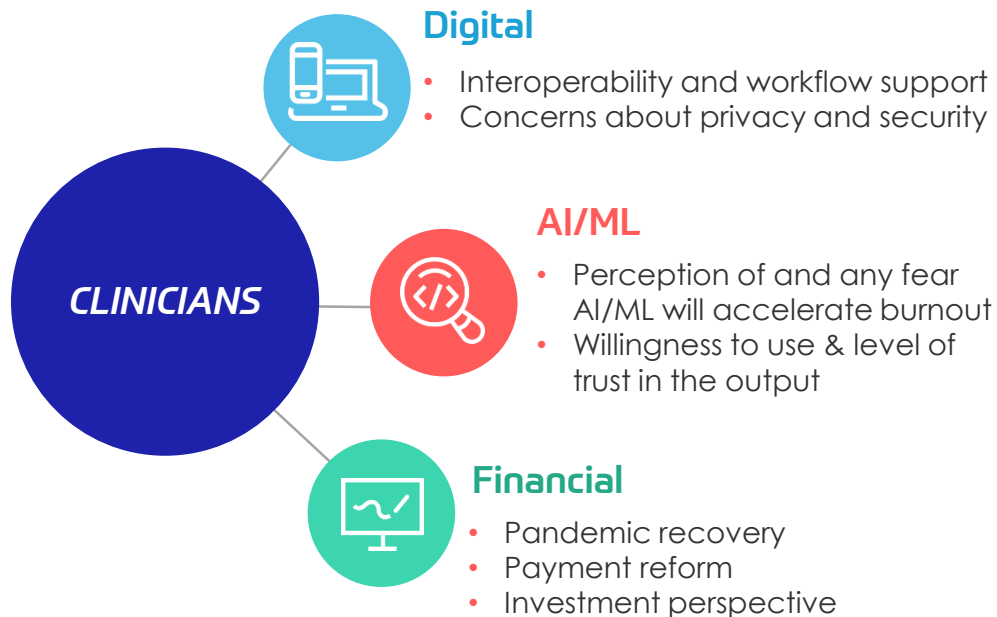
More work to do for clinicians to trust in the security of healthcare technology.

Do Clinicians Have Faith in the Future of Healthcare Technology?

Methodology

ABOUT THE RESEARCH

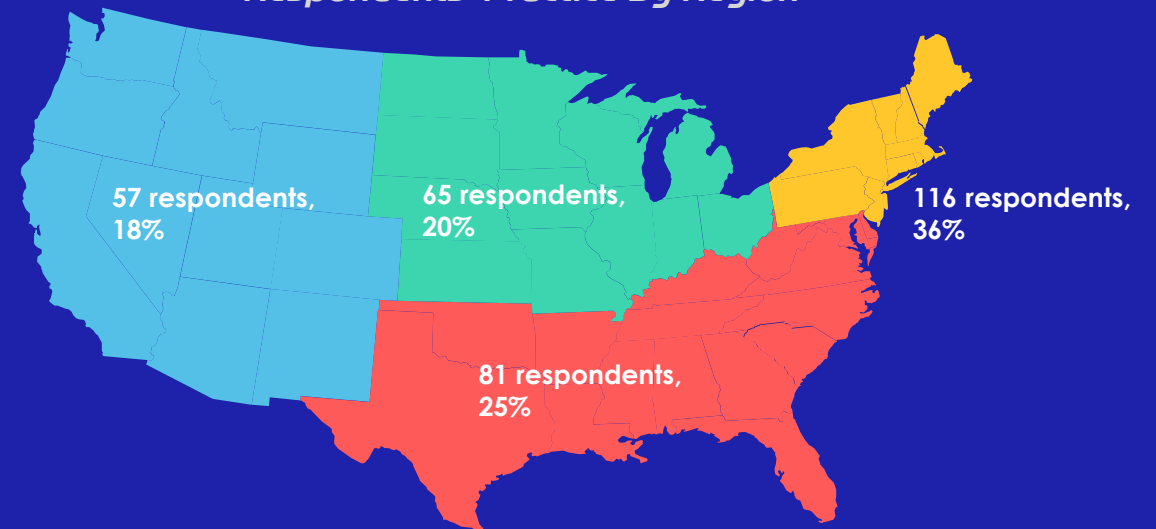
In March 2021, Accenture surveyed **309 clinicians in the U.S.** to understand their perspectives on the current state of industry changes and identify what is shaping the path ahead.



Respondents had to meet the following selection criteria to participate in the survey:

- Currently practicing medicine
- Directly responsible for making diagnoses and treatment decisions
- Hold a clinical degree: MD; DO; PsyD; PhD; Master of Science in Nursing (MSN); Doctor of Nursing Practice (DNP); other clinical degree (PA)

Respondents' Practice By Region



Note: Six respondents selected two or more states, and three of which the states are not in the same region

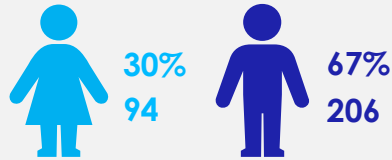
Respondent Profile

THE SURVEY WAS COMPRISED OF A DIVERSE GROUP OF CLINICIANS ACROSS AGES, LOCATIONS AND SPECIALTIES.

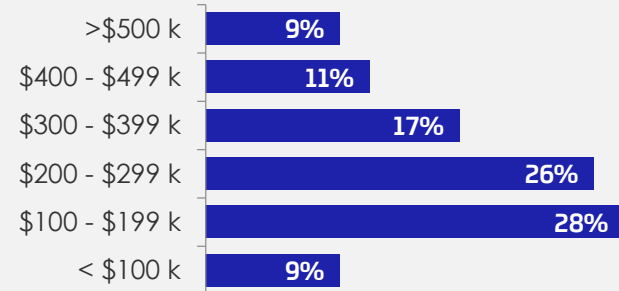
RESPONDENTS (100%=309)

GENDER

3% non-binary/other or prefer not to say



SALARY



AGE

N, %

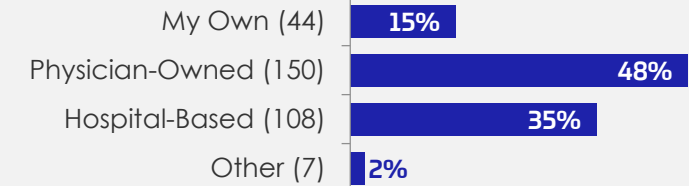
25-40	44, 14%
41-56	173, 56%
57-75	89, 29%
76+	3, 1%

LOCATION

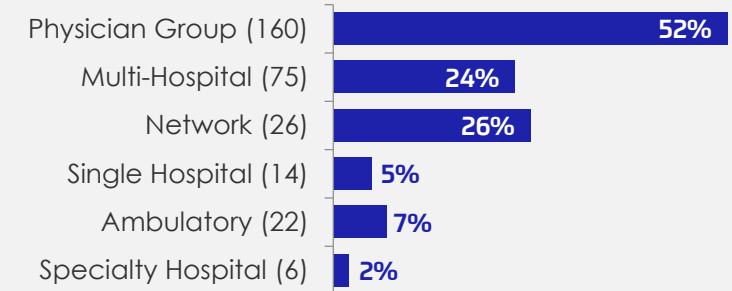
N, %

Urban	377, 89%
Rural	32, 10%

TYPE OF PRACTICE



ORGANIZATION*

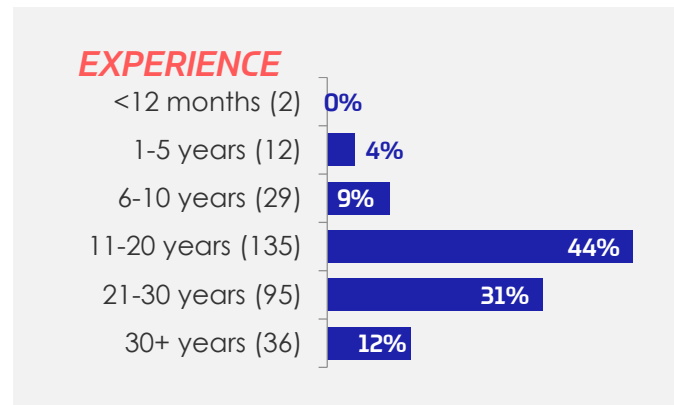
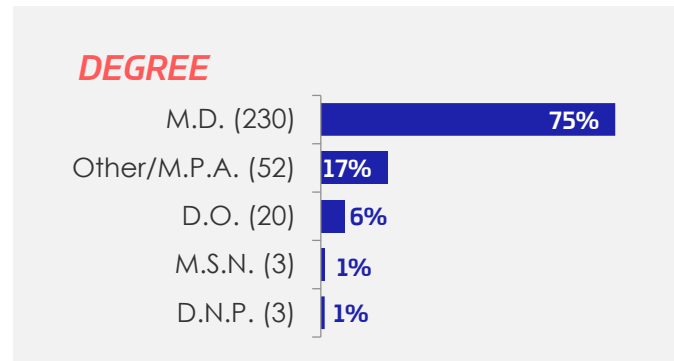


Note: % may not sum up to 100% due to round-ups
 *1 other healthcare facility and 1 long-term facility (<1%)

Respondent Profile (continued)

RESPONDENTS (100%=309)

RACE / ETHNICITY	N, %
Black	5, 2%
American Indian or Alaska Native	3, 1%
Asian	51, 17%
Native Hawaiian or Other Pacific	1, <1%
Hispanic	8, 3%
White (Non-Hispanic)	220, 71%
Other (Multiracial)	3, 1%
Prefer Not To Say	8, 6%



STAFFING*	N, %
0	6, 2%
1-3	60, 19%
4-10	107, 35%
11-20	53, 17%
21+	83, 7%

SPECIALIZATION**	N, %
Internal Medicine	86, 28%
Family Medicine	46, 15%
Emergency Medicine	24, 8%
Surgery	24, 8%
Pediatrics	22, 7%
OB-GYN	20, 6%

Note: % may not sum up to 100% due to round-ups

*Staffing – number of people sharing a practice

**Other specializations: Anesthesiology N=10, 3%; Neurology N= 8, 3%; Allergy and Immunology N=7, 2%; Physical Medicine and Rehabilitation N=5, 2%; Urology N=5, 2%; Other N=13, 4%

Payer Insights

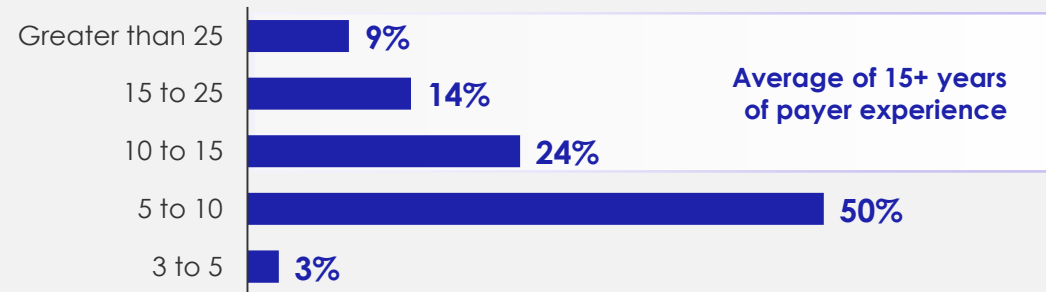
Shreesh Tiwari

Principal, Leader of Health Plan & Provider Digital,
Analytics & Technology Practice, ZS

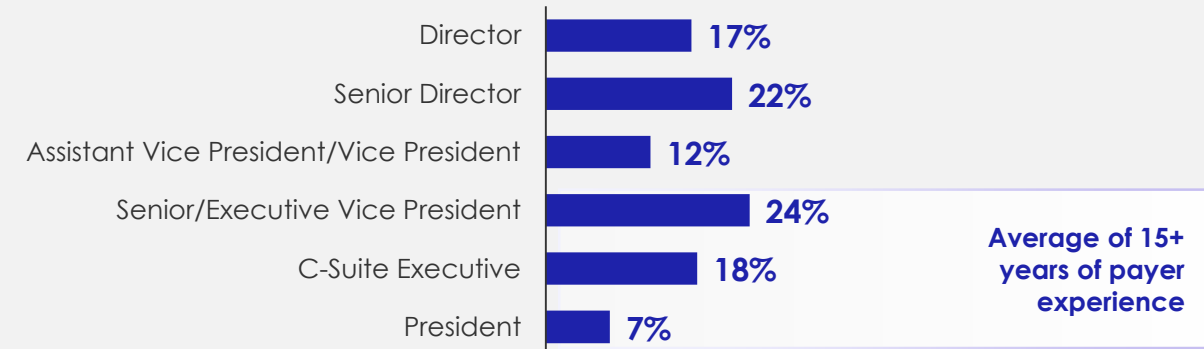
Payer Research Focus

DIGITAL HEALTH IMPLEMENTATIONS, ARTIFICIAL INTELLIGENCE/MACHINE LEARNING OPERATIONS, AND FINANCIAL HEALTH AND REGULATIONS

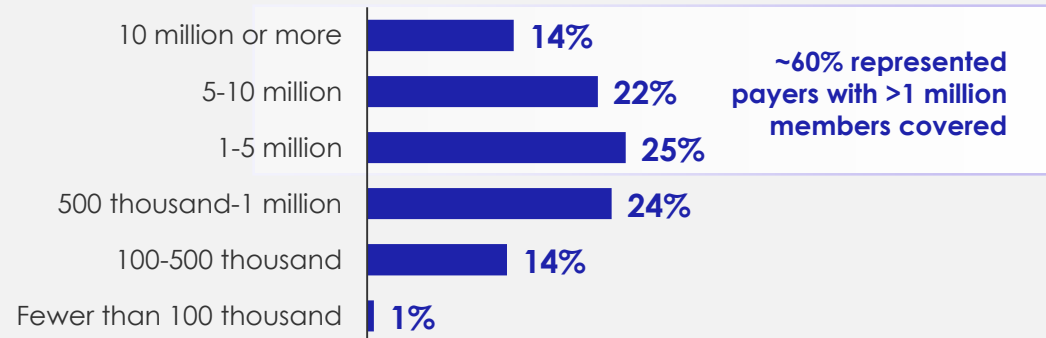
YEARS OF EXPERIENCE IN HEALTH INSURANCE INDUSTRY



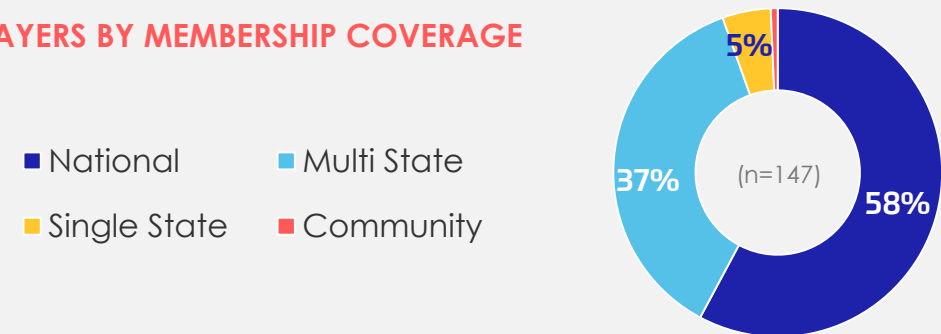
MOST RECENT POSITION IN HEALTH INSURANCE INDUSTRY



NUMBER OF MEMBERS COVERED ACROSS ALL LINES OF BUSINESS



PAYERS BY MEMBERSHIP COVERAGE



Summary of Current Trends in the Health Plan Industry



Investments are being made on forward-thinking innovations



Increased operational maturity motivates payers to improve and broaden the scope of AI/ML implementation into business operations to drive efficiency



Government, technology ecosystems and clinicians play a role to improve healthcare delivery and reduce the cost of care



There's a focus on expansion of value-based care (VBC) innovation and adoption to keep up with increased provider adoption and government policies

INSIGHT 1:

A paradigm shift to consumerism and personalized healthcare driven by big tech and IT startups

STAKEHOLDERS DRIVING DIGITAL HEALTH ADOPTION

Health/IT startups	47%	↓ 6%
Big tech companies	45%	↓ 2%
Biopharma/device manufacturers	37%	↑ 3%
Providers	36%	↑ 1%
Patients	33%	↑ 6%
Payers	29%	↑ 2%

KEY BARRIERS TO DIGITAL HEALTH ADOPTION

PATIENT/MEMBER ADOPTION

- Security/privacy concerns (39%)
- Steep learning curve for adoption (39%)

PROVIDER ADOPTION

- Security/privacy (41%)
- Providers' willingness to engage digitally (35%)

Barriers to adoption are more technological than cultural

PAYER ADOPTION

- Security/privacy concerns (37%)
- Integration challenges with other players in the ecosystem (34%)

DIGITAL HEALTH INITIATIVES OF STRATEGIC FOCUS

Payers will continue to be most focused in these two areas	Hybrid care (in-person/virtual care)	38%	↓ 6%
	Provider engagement & clinical decision	38%	↑ 1%
	Data privacy & cybersecurity	37%	↑ 3%

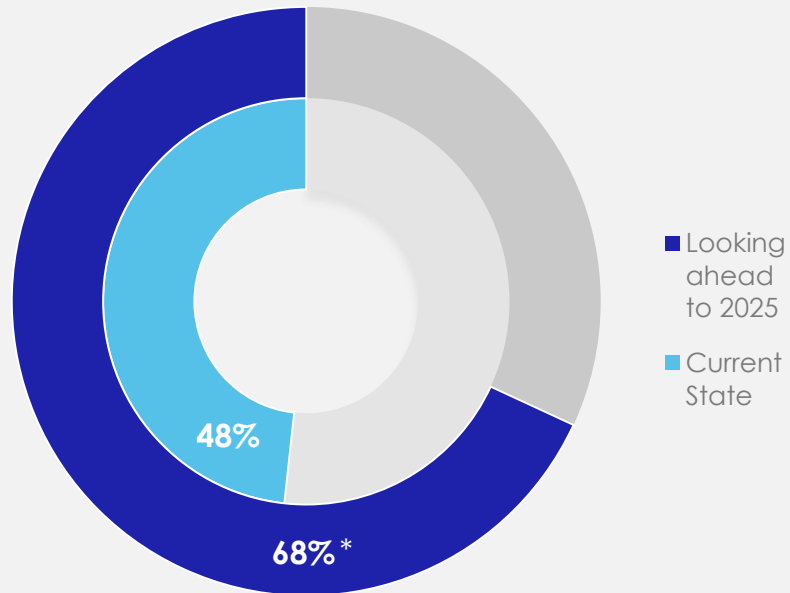
Payers expect a patient-centric evolution in the field of digital health

Personalized care	31%	↑ 8%
Member acquisition & retention	31%	↓ 2%
Data interoperability	24%	↓ 4%

INSIGHT 2:

AI/ML adoption continues with ROI focus in areas such as clinical decision support and operations

% respondents seeing significant returns on AI/ML investments



* indicates significant difference

EXPECTED LEVEL OF AI/ML INVOLVEMENT

Clinical operations	47%	↑ 10%
Claims operations	45%	↑ 9%
Member experience	37%	↓ 8%
Finance & accounting	36%	↓ 7%

CHALLENGES TO ADOPTION OF AI/ML

Keeping pace with rapidly evolving technologies	38%	↑ 6%
Performance/scalability	34%	↓ 7%
Data availability and reliability issues	25%	↓ 7%

STAKEHOLDERS ENHANCING AI/ML INNOVATION

Health IT startups/new players	51%
Big tech companies	48%
Biopharma/device manufacturers	41%

↓ represents decrease from current state to future state
 ↑ represents increase from current state to future state

INSIGHT 3:

Advanced data democratization/interoperability can boost innovation to drive adoption

EXPECTED DRIVERS OF INNOVATION

Evolving data landscape: Greater access to data due to devices/wearables, consumer apps, genomic data, SDoH, etc.	71%
Innovations in medical science and technology: Increased ability to process data at high speed and low cost, advancement in medical sciences, such as genetic engineering	66%
Shift in consumer behavior in favor of AI/ML	64%
Evolving marketplace for AI/ML	61%
Shift in government regulations in AI/ML	56%

AREAS LIKELY TO BE IMPACTED BY GOVERNMENT REGULATION

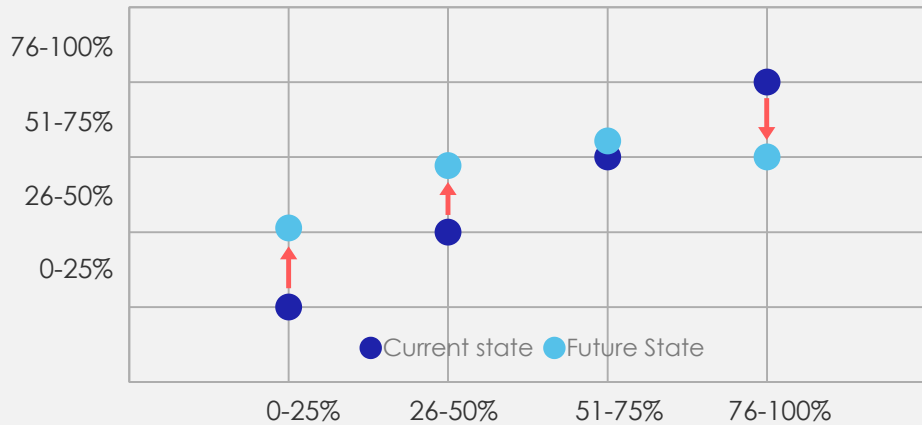
Data privacy and security	40%	—
Payment reform	36%	↓ 5%
Medicaid expansion	34%	↑ 2%
Interoperability	32%	↑ 6%
Cybersecurity	30%	↓ 12%
Public option	28%	↑ 10%

— represents no change from current state to future state
↓ represents decrease from current state to future state
↑ represents increase from current state to future state

INSIGHT 4:

Payers expect more value-based actions and provider participation in VBC and PHM programs

EXPECTED GROWTH OF VBC CLAIMS (% of Payment)



INFLUENCES FOR VBC ADOPTION

Health startups	57%	↑ 4%
Provider consolidation	55%	↑ 1%
Difference in costs/quality across providers	44%	↓ 5%
Drug pricing	38%	↑ 7%
Emergence of low cost, digital only plans/providers	37%	↓ 3%

BARRIERS TO VBC ADOPTION

Care management capabilities	36%	↑ 10%
Ability to meet quality/cost targets	34%	↑ 2%
Reluctance to take risk	32%	↓ 2%
Understanding of risk-based agreements	29%	↓ 5%
Lack of trust in payers for fair payments	22%	↓ 12%

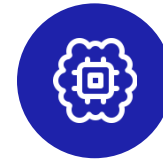
THE FUTURE OF VBC (% level of agreement)

Higher pressure on providers to adopt reference-based pricing scheme and/or high value care purchasing	58%	Will push providers to increase investments on population health management programs	56%
Increased participation in VBC will cause a massive revamp of STARS program	58%	Standardization of performance metrics across lines of business and payers	56%

Future State Takeaways



Personalized care offerings are expected to increase



Significant returns on AI/ML practices are expected and payers plan to invest more on optimizing clinical support and operations



Government regulations are projected to help overcome technological barriers of innovation, like data availability and interoperability



VBC arrangements are expected to increase with a higher level of provider participation

Patient Insights

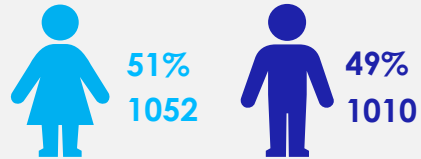
Lauren Goodman

Director Market Intelligence, HIMSS

Demographics

RESPONDENTS (100%*=2062)

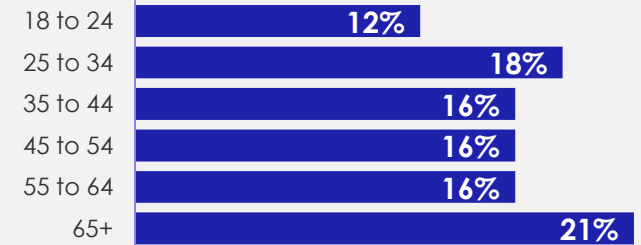
GENDER



REGION

Region	N	%
South	742	36%
Midwest	474	23%
West	454	22%
Northeast	392	19%

AGE



HOUSEHOLD INCOME



LOCATION

Location	N	%
Suburban	1053	51%
Urban	620	30%
Rural	361	18%

GENERATION

Generation	N	%
Gen Z	294	14%
Millennials	663	32%
Gen X	398	19%
Baby Boomers	607	29%
Silent Gen	100	5%

Note: % may not sum up to 100% due to round-ups

Demographics (continued)

RESPONDENTS (100%*=2062)

MARITAL STATUS **N, %**

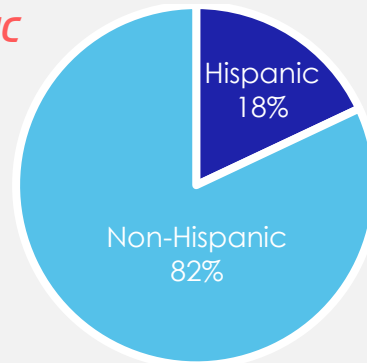
Has Partner	1147, 56%
Never Married	606, 29%
Other**	310, 15%

EDUCATION

*Other: 1%



HISPANIC



ETHNICITY

N, %

White	1485, 72%
Black	247, 12%
Asian	118, 6%
Other	212, 10%

EMPLOYMENT **N, %**

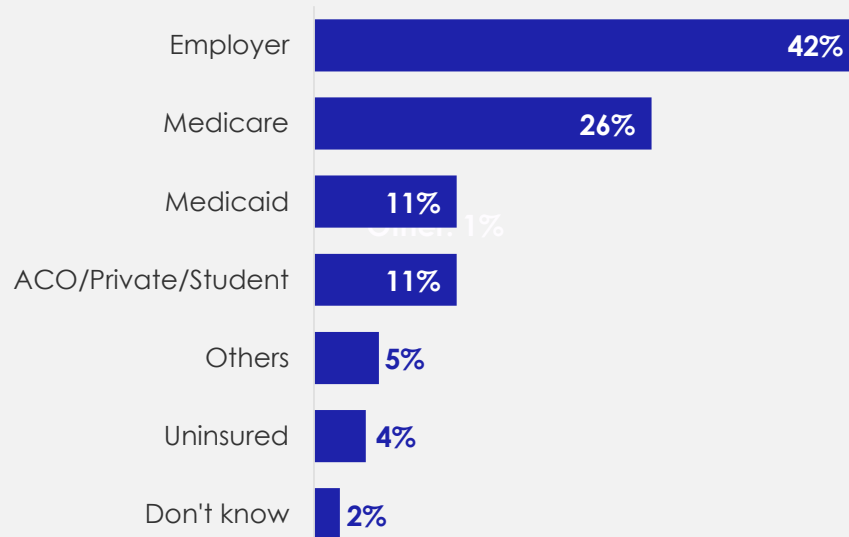
Full Time	875, 42%
Retired	452, 22%
Part Time / Self Employed	295, 14%
Out of Work	207, 10%
Unable to Work	119, 6%
Student	114, 6%

Demographics (continued)

RESPONDENTS (100%*=2062)

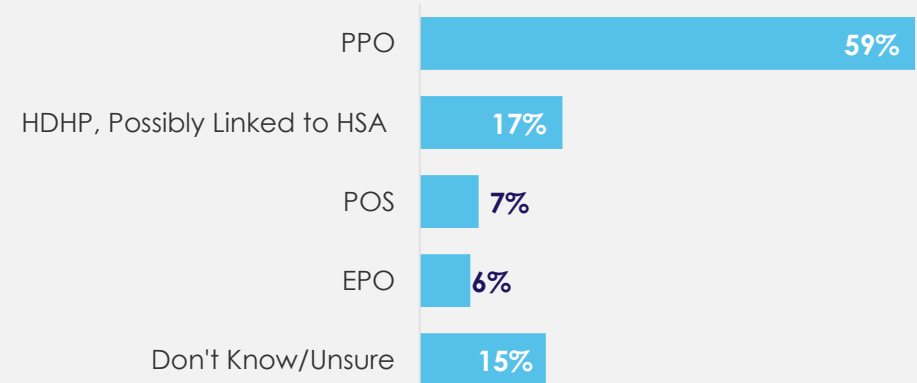
PRIMARY INSURANCE

Please select the primary type of health insurance you have.

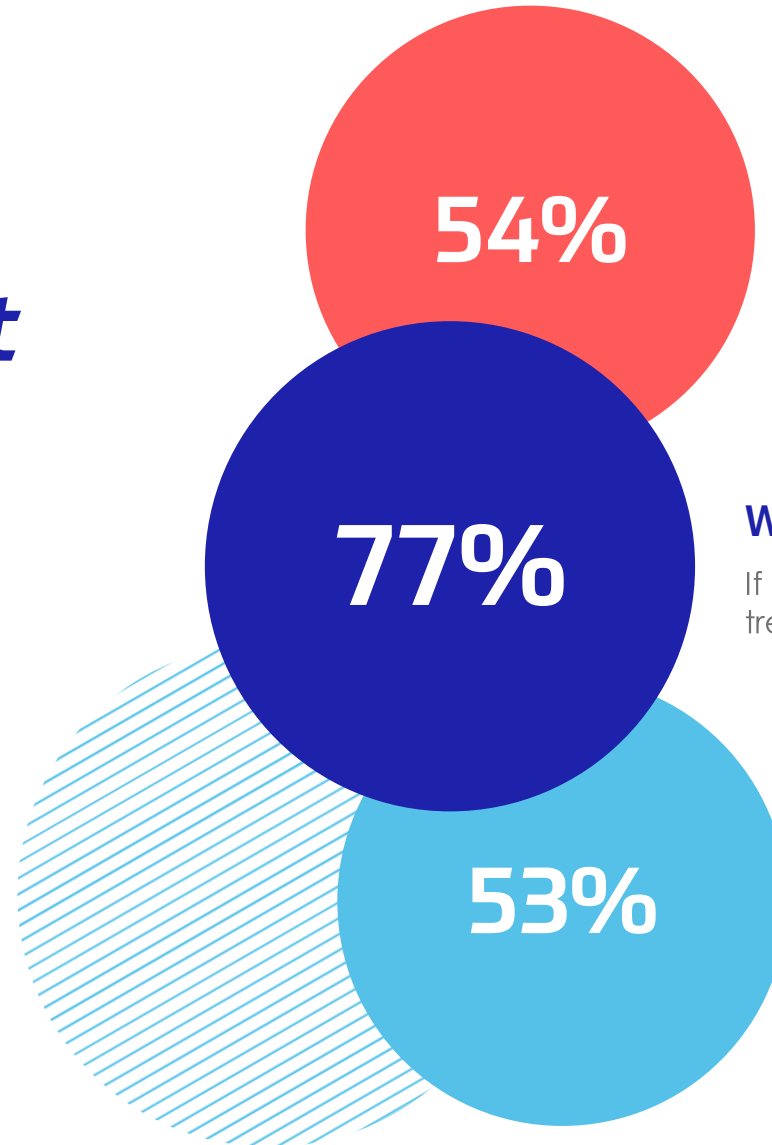


PLAN TYPE*

What type of health insurance plan do you have?*



Patients open to use of new technology but apprehensive



Likely to use digital health in future

Despite concerns about misdiagnoses and level of care, over half of patients would be interested in a telehealth-only healthcare system

Willing to share their data

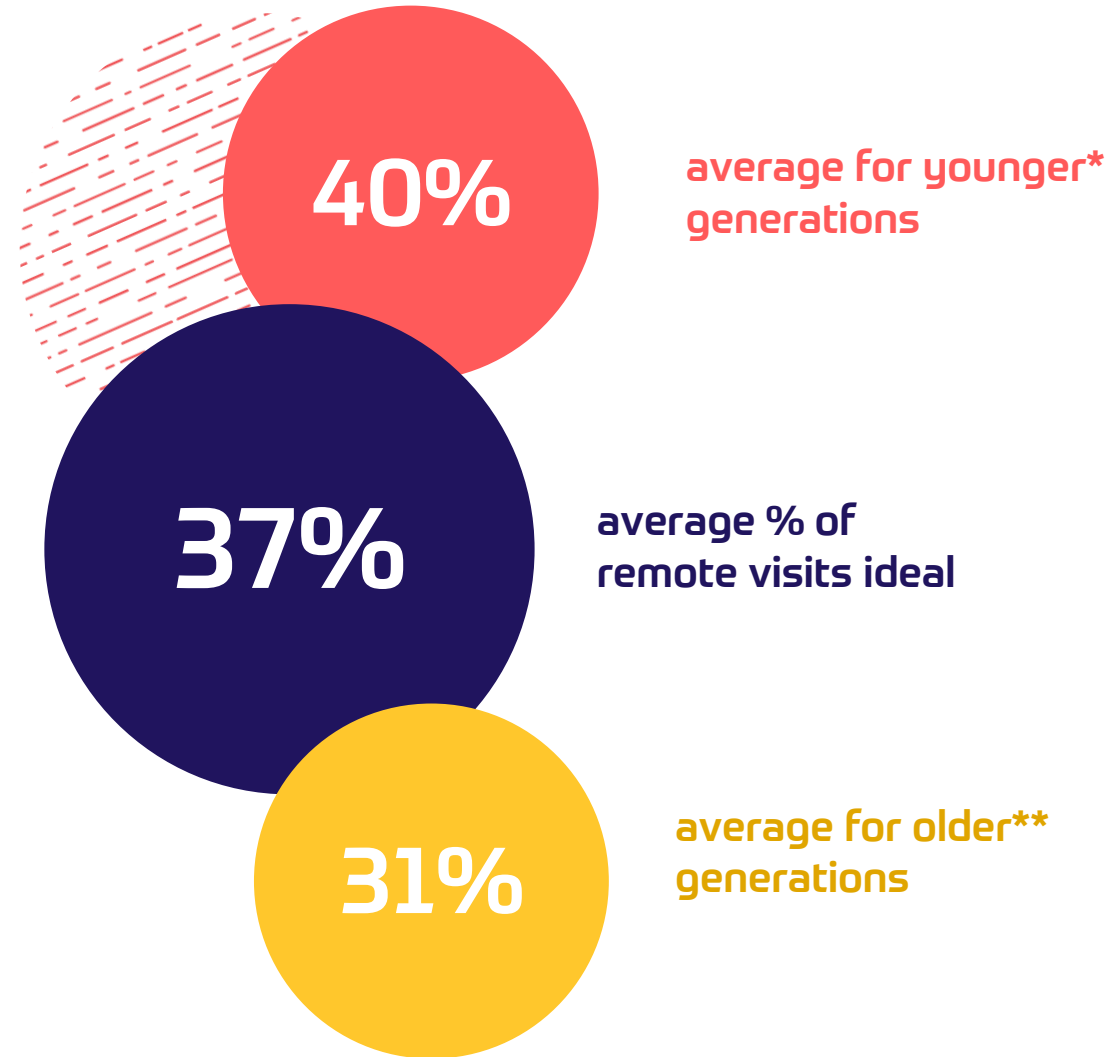
If it would allow healthcare organizations to better treat, diagnose or detect an illness or condition

Would like complete transparency regarding healthcare pricing

Compared with just 5% who say pricing is very transparent today


Patients imagine about one-third of visits being remote as ideal

Regardless of your current use of digital health products/services, what percentage of visits would ideally be remote in the future (e.g., 2025-2026)?



Higher appeal among younger patients

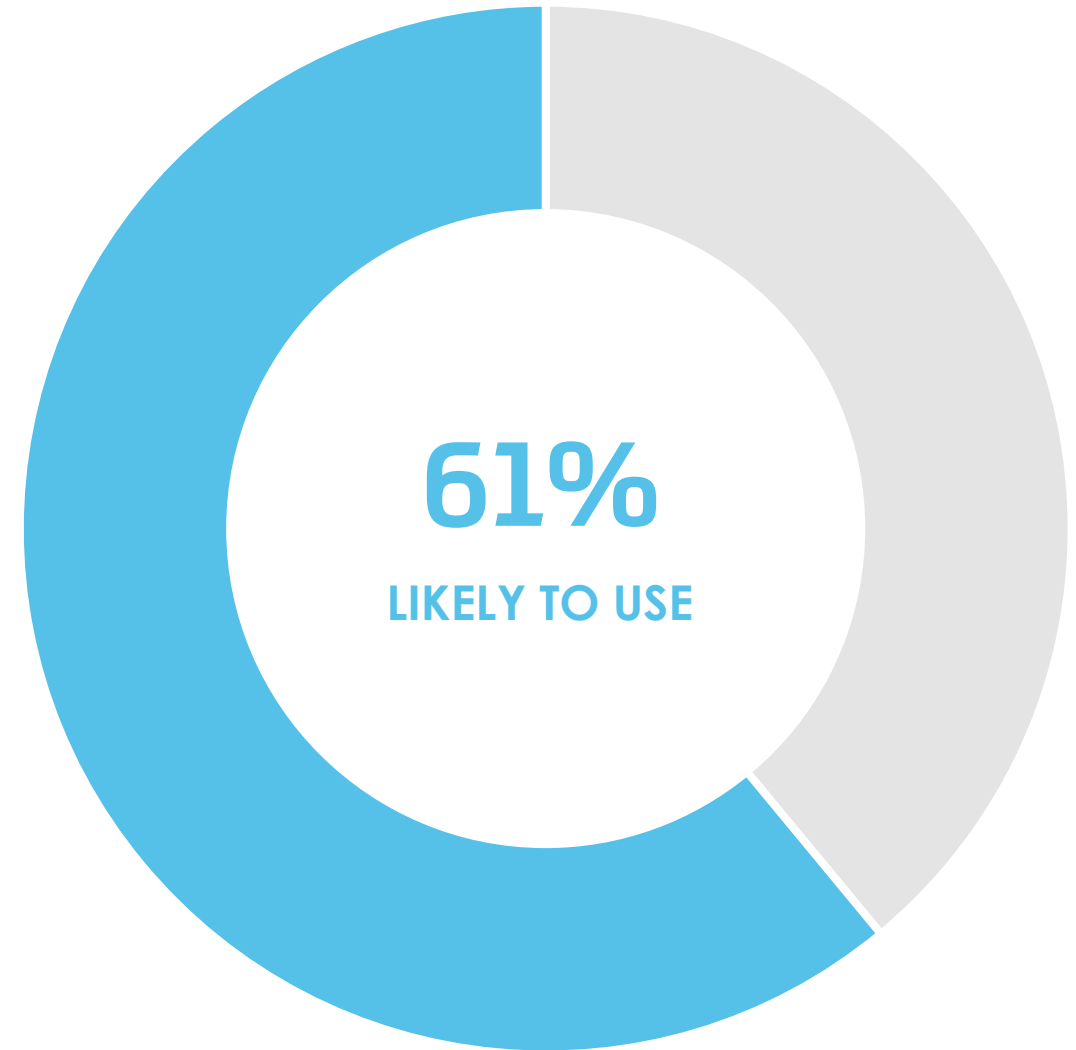
Imagine that in 2025, only telehealth visits were available for your healthcare provider visits, but during those visits, and possibly in conjunction with other technology, they could still properly diagnose, give you a treatment plan, which may include a prescription, if needed, update them on your current health status, etc. What do you think if that were the case?



52%
IN FAVOR

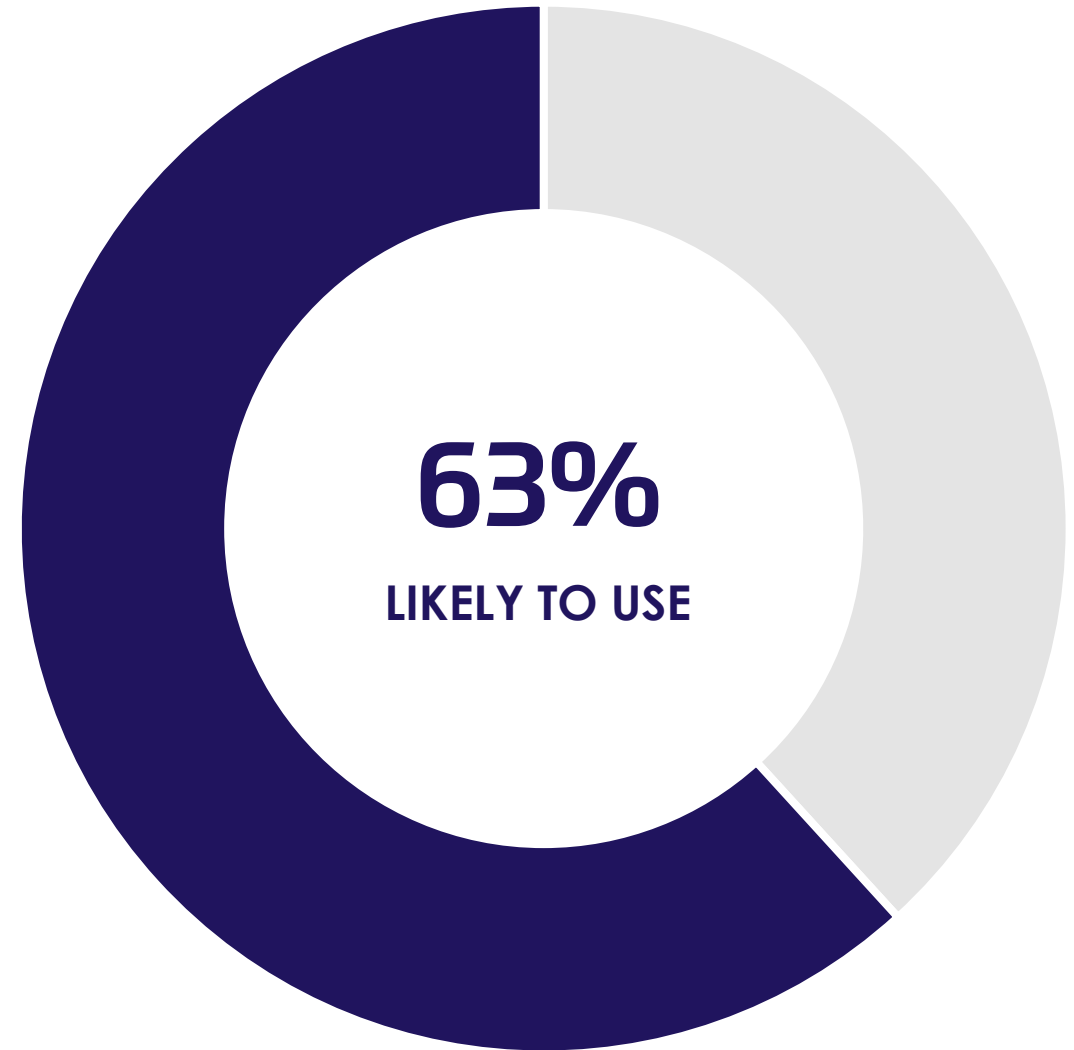
Synced wearable tech has high appeal

Imagine that in 2025, data from wearable technology devices could be automatically sent to your doctor, which would allow your doctor to properly diagnose, give you a treatment plan, which may include a prescription, if needed, update them on your current health status, etc. How likely are you to use a wearable technology device, like an Apple Watch/Fitbit, etc. for this?



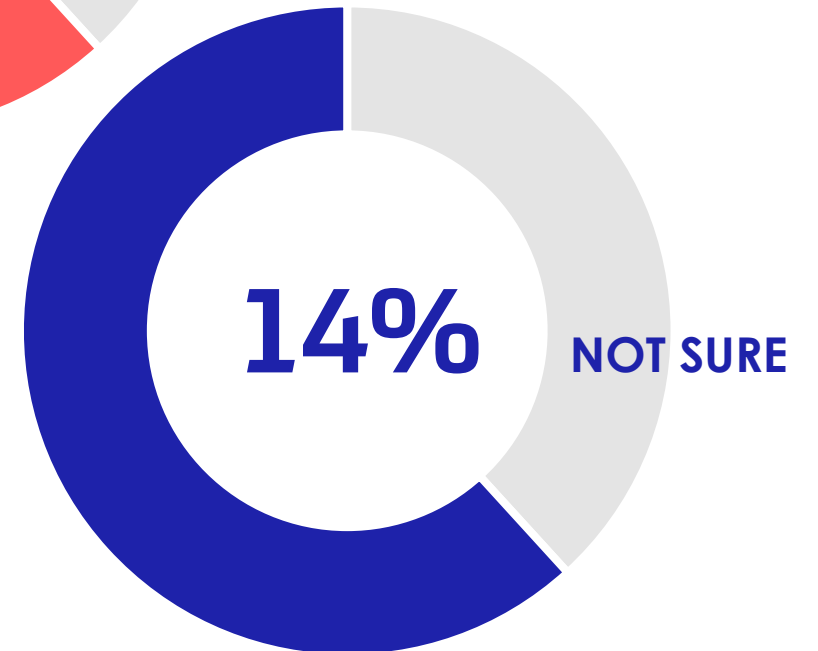
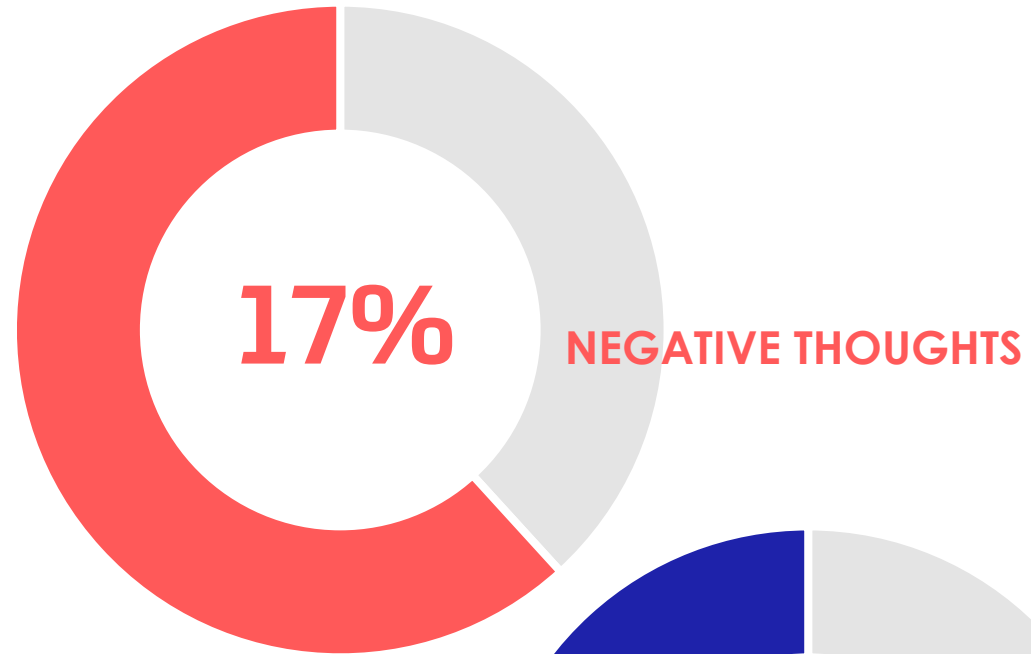
At-home medical tests also have high appeal

Imagine that in 2025, digital health technology could allow you to take medical tests from home and send data to your doctor, which would allow your doctor to properly diagnose, give you a treatment plan, which may include a prescription, if needed, update them on your current health status, etc. How likely are you to use this service?



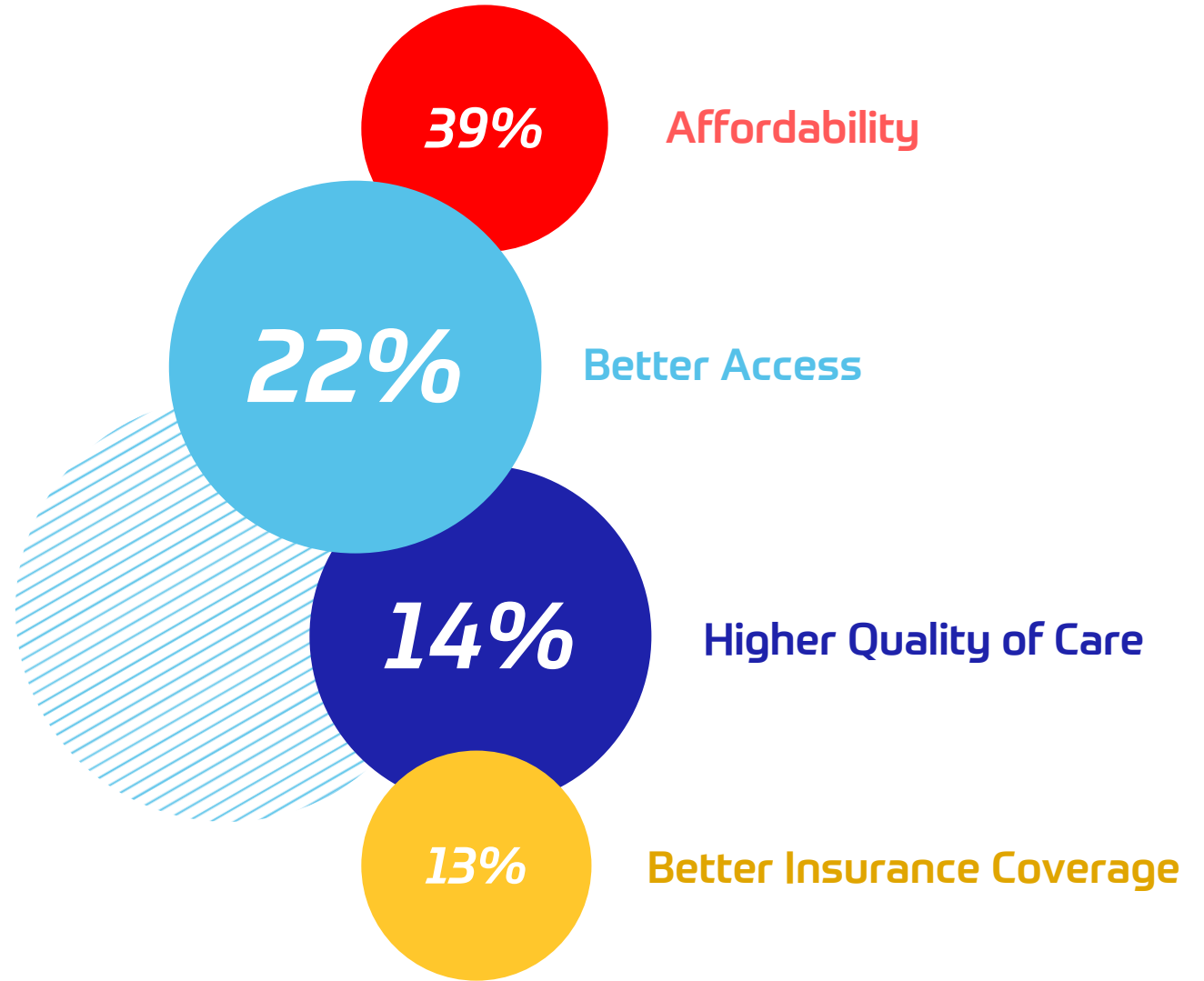
Many see AI/ML improving healthcare in the near future, though...

When thinking of AI/ML and how it can impact your healthcare, where do you hope AI/ML is by 2025? What would you like to see happen? What would you like it to do?



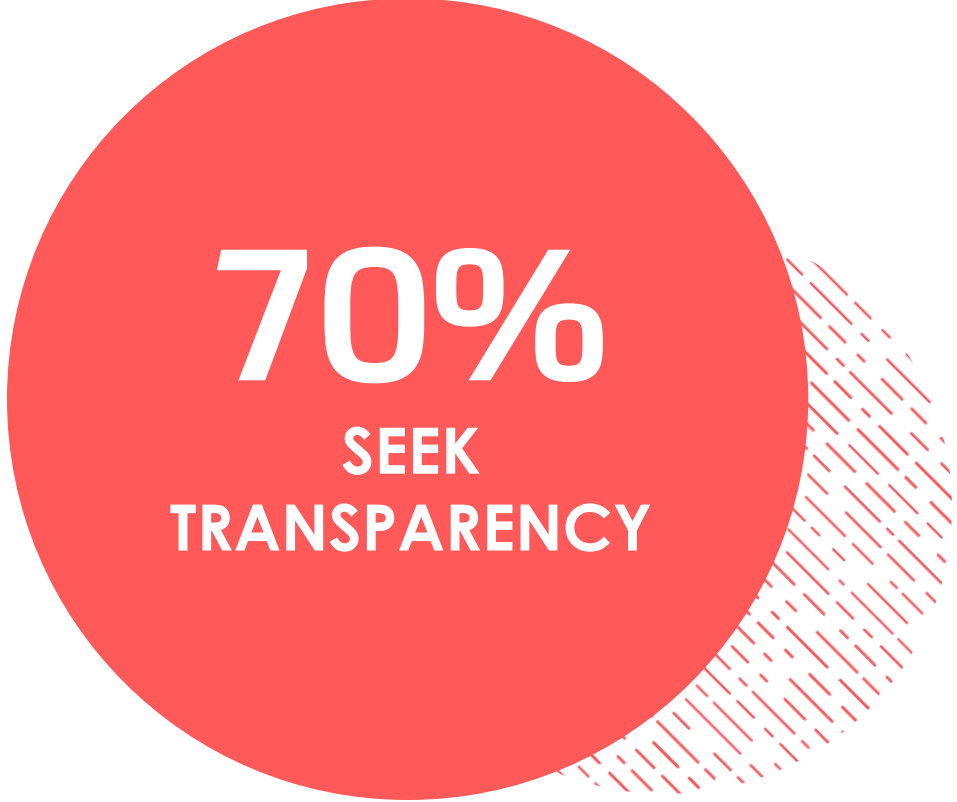
Affordability is top of mind for today's patients

Ideally, in thinking of what could happen in the next five years, describe your ideal healthcare scenario. What would you like healthcare to look like (other than free healthcare or universal/accessible healthcare)?



Big gap to close in meeting expectations for pricing transparency

By 2025, where would you ideally want to see pricing transparency from healthcare providers, hospitals or insurance companies?



70%
**SEEK
TRANSPARENCY**

Key Takeaways

FUTURE OF HEALTHCARE

2025/2026

- On average, **40%** of their total **visits being remote**
 - **52%** being **in favor of telehealth-only** visits should they have the same experience as in-person
- Should **at-home medical testing** be offered in the future
 - **63%** are **likely to use** this service
- **Synced wearable tech** also has **high appeal**
 - **61%** being **likely to use** if it helps diagnose, treat and align proper medications.
- When thinking of **AI/ML**, there is **opportunity to change or write the story** for those that have a negative perception (17%) or are unsure (14%)
- Nearly **40%** of patients described their **ideal future** healthcare scenario as being **affordable** as well as seeking **pricing transparency** from providers