HIMSS

transforming health through information and technology™

2018
HIMSS U.S. Leadership and Workforce Survey

2018 HIMSS U.S. Leadership and Workforce Survey

Table of Contents

1. Executive Summary

The **2018 HIMSS U.S. Leadership and Workforce Survey** reflects the perspectives of U.S. health information and technology leaders on a myriad of topics influencing the healthcare sector. The present report provides a robust profile of U.S. health information and technology priorities, especially as it relates to hospitals, as well as their linkage to various hospital strategic initiatives (e.g. employment of select information and technology leaders) and industry economic measures (e.g. workforce projections).

Based on the feedback from **369** U.S. health information and technology leaders (**224** from a healthcare Provider organization; **145** from a health IT Vendor/Consulting organization), the findings yield these notable themes:

1. There is a high level of consistency between leaders' reporting of top information and technology priorities from 2017 to 2018.
2. However, the information and technology priorities of leaders in different health settings vary notably.
3. Hospitals employ an array of information and technology executives and their influence appears to be growing.
4. Vendors/Consultants and Providers are at odds regarding the projected demand for information and technology resources this coming year.
5. Employment prospects for health IT professionals are more favorable in Vendor/Consulting organizations than in hospitals.
6. Hospitals more likely to modify IT projects due to health IT staffing/workforce challenges than Vendors/Consultants.

2. Methodology/Respondent Demographics

Respondents provide insights into the information and technology experiences of various care delivery settings with study findings strongest in relation to hospital-based organizations.

Findings from the **2018 HIMSS U.S. Leadership and Workforce Survey** reflect the feedback from 369 qualified[1] U.S. health information and technology leaders participating in a web survey commissioned by HIMSS, between late November 2017 and mid-February 2018.

This year's survey is similar to the 2017 HIMSS Leadership and Workforce Survey in design and distribution with the following modifications:

1. References to "information technology" were changed to "information ***and*** technology"
    - This change more accurately reflects the array of issues health leaders currently address.
2. The information and technology priorities considered changed to reflect the list of HIMSS18 education topics
    - While the list of priorities presented survey respondents continues to reflect the education topics presented at the annual HIMSS Global Conference & Exhibition, the 2018 list of topics is not an exact replica of the 2017 list. The 2018 list of education topics expanded in comparison to the 2017 topics (see Appendix A for a crosswalk between the two lists).
3. The number of workforce related questions were reduced
    - Given the length of the long form workforce questionnaire, HIMSS alternates between the expanded survey instrument and the abbreviated questionnaire used this year, biennially.

Individuals responding to the survey invite completed one of two parallel survey instruments based on the type of healthcare organization most closely reflecting their current employer; a **Provider** survey (Appendix B) for those employed by a healthcare provider organization or a Health IT **Vendor/Consultant** survey (Appendix C). Respondents not meeting the criteria of these two classifications were excluded from the study.

Organization Type/Focus

In order to allow for a comparison of provider types, Provider survey responses partitioned into one of the following three general care sites (see Appendix D to see how individual care sites group together):

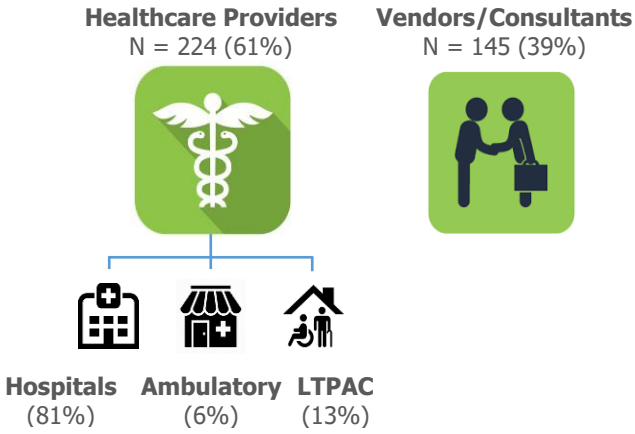
1. **Hospitals** and hospital-associated entities (e.g. health system corporate office)
2. **Ambulatory** organizations (e.g. physician office; freestanding outpatient clinics)
3. **LTPAC** (Long Term / Post-Acute Care) (e.g. nursing homes)

Over half (61 percent; N = 224) of the 369 respondents included in this year's study answered the Provider questionnaire (Graphic 1). With 81 percent of Provider survey respondents representing a hospital-based care setting, the insights from those representing a hospital setting is quite strong. Given the dominance of

[1] To participate in the survey Provider respondents had to have some level of IT oversight at their organization. Respondents were qualified by asking the extent to which they had "oversight of IT" at their healthcare organization. Of the 266 individuals representing a provider organization responding to the survey invite, 42 indicated they had "no oversight/influence at all" and excluded from the analysis.

hospital respondents in the Provider survey, to keep the Provider analysis "pure", unless otherwise noted, the Provider focused findings in the remainder of this report will rely exclusively on hospital respondents.

Graphic 1: Respondent Profile



Respondents to the Vendor/Consultant survey identified type(s) of provider organizations their company focuses on. Employing the same grouping of provider organizations as used in the Provider survey, the vast majority of vendors answering this question (90 percent) include hospital-based organizations as targets for their product and service offerings. (Table 1)

Table 1: Vendor Focus

	N	%
Hospitals	**95**	**90%**
Hospitals, Multi-Hospital Systems, Integrated Delivery Systems	*94*	*89%*
Academic Medical Centers	*73*	*69%*
Critical Access Hospitals	*62*	*58%*
Ambulatory	**80**	**75%**
Independent Ambulatory Clinics	*64*	*60%*
Community Health Center Clinics	*60*	*57%*
IDS/hospital-owned Ambulatory Clinics	*60*	*57%*
Long Term/Post-Acute Care (LTPAC)	**63**	**59%**
Mental/Behavioral Health Facilities	*48*	*45%*
Long Term Care Facilities	*47*	*44%*
Independent Rehabilitation Facilities	*43*	*41%*
Home Healthcare Organizations	*34*	*32%*
Hospice Organizations	*29*	*27%*

Leadership Status

Respondents to both the Provider and the Vendor/Consultant survey instruments indicated which of the following three **position-levels** best described their role within their organization:

1. Executive Management
2. Non-Executive Management
3. Non-Management

With almost two-thirds (65 percent) of all respondents reported to be in a management role, and over 36 percent associating themselves with an "*Executive Management*" position, respondents generally represent the information and technology leaders within their respective healthcare organizations. (Table 2) Interestingly, a much higher percentage of hospital respondents reflected a managerial role (90 percent) than those employed by a Vendor/Consultant organization (51 percent). It is unclear as to why there is a difference in managerial representation between these two groups. Likewise, we are uncertain why 27 percent of Vendor/Consultant respondents failed to identify with one of the three presented leadership status roles. It is possible that the roles presented to Vendors/Consultants are not as mutually exclusive as originally thought and therefore warrants reconsideration in next year's survey.

Table 2: Leadership Status

Leadership Status	All Respondents	Vendor	Hospital
Executive Management	36%	28%	50%
Non-Executive Management	29%	23%	40%
Non-Management	23%	21%	10%
No Answer	*12%*	*27%*	-

3. Key Observations and Implications

LEADERSHIP SURVEY

Information and Technology Priorities

Presented with a list of information and technology priorities, Provider and Vendor/Consultant respondents were asked to indicate the extent to which each issue would be a priority in the coming year using a seven-point scale (1 = "*not a priority*"; 7 = "*essential priority*"). Of significance were the following features:

1. The 24 issues presented to the respondents mirror the education tracks offered at the HIMSS18 Global Conference & Exhibition
2. Provider and Vendor/Consultant respondents were presented slightly different questions
    - Providers were asked to identify the information and technology issues of greatest priority for their organization in the year ahead
    - Vendor/Consultant respondents were asked to identify the information and technology issues of greatest priority for their clients in the year ahead

This approach yielded a number of significant observations and resulting implications.

Observation: **Vendors/Consultants and Hospitals continue to be generally aligned on information and technology priorities.**

Implication: **Efforts to address a broad array of information and technology issues should enjoy synergies from a broad spectrum of industry stakeholders.**

Vendors/Consultants and Hospitals evaluate many information and technology priorities with the same degree of intensity

When comparing the mean scores for each information and technology priority as assigned by the Vendor/Consultant respondents with the mean scores on the same issues as assessed by Hospital respondents, there is a remarkable consistency. As reflected in Table 3, using a 1 to 7 scale (1 = "*not a priority*"; 7 = "*essential priority*"), the two respondent pools are within 0.50 points of one another on 19 of the 24 priorities considered in the survey.

Table 3: Vendor/Consultants & Hospitals – Mean Scores (2018)

Based on a 1 to 7 scale where 1 = "not a priority"; 7 = "essential priority"; ordered by the absolute difference in mean scores

Information and Technology Priority	Vendors/ Consultants	Hospitals	Mean Difference
Population Health	4.83	4.85	0.02
Electronic Health Records (EHRs)	5.52	5.46	0.06
Health Informatics Education, Career Development & Diversity	4.20	4.13	0.06
Innovation, Entrepreneurship and Venture Investment	4.25	4.19	0.07
Connected Health & Telehealth	4.78	4.86	0.08
Clinical Informatics and Clinician Engagement	5.42	5.50	0.08
Improving Quality Outcomes Through Health IT	5.57	5.48	0.09
Precision Medicine/Genomics	3.89	3.76	0.13
Data Analytics/Clinical and Business Intelligence	5.63	5.50	0.13
Human Factors, User Experience and Design	4.78	4.63	0.15
Public Policy	4.13	3.94	0.19
Compliance, Risk Management & Program Integrity	5.27	5.47	0.19
Consumer and Patient Engagement	5.08	5.35	0.27
Privacy, Security and Cybersecurity	5.57	5.90	0.33
Emerging Payment Models for Value Based Care	5.06	4.72	0.34
Social, Psychosocial & Behavioral Determinants of Health	3.98	4.34	0.36
Culture of Care and Care Coordination	4.92	5.34	0.43
Pharmacy Standards & Technology	4.32	4.76	0.44
Process Improvement, Workflow, Change Management	5.21	5.70	0.49
Leadership, Governance, Strategic Planning	4.60	5.10	0.50
HIT Infrastructure and Standards	5.02	4.48	0.54
Supply Chain	3.56	4.16	0.61
Health Information Exchange, Interoperability and Data Integration	5.60	4.85	0.75
Patient Safety	5.30	6.07	0.77

Vendors/Consultants and Hospitals differ remarkably on select information and technology priorities

While there is a great deal of alignment between the two survey groups, there was a statistically significant difference between the two audiences on three issues. Hospital respondents consider "*Patient Safety*" and "*Supply Chain*" to be higher priority issues while Vendors/Consultants see "*Health Information Exchange, Interoperability and Data Integration*" to be higher concerns for their clients (primarily hospitals) than what the hospital respondents considered. (Table 4)

Table 4: Notable Vendor/Consultant vs Hospital Priority Mean Differences (2018)

Issue	Vendors/ Consultants	Hospital	Difference
Patient Safety	5.30	6.07	0.77
Health Information Exchange, Interoperability and Data Integration	5.60	4.85	0.75
Supply Chain	3.56	4.16	0.61

Vendors/Consultants and Hospitals differ on the rank order of the top information and technology priorities

When rank ordering the mean score of all 24 priorities, Vendors/Consultants and Hospital respondents share only two top five priorities; "*Data Analytics/Clinical and Business Intelligence*" and "*Privacy, Security and Cybersecurity*". (Table 5) Interestingly, the assessment of "*Patient Safety*" by Hospital respondents is not only their top issue but one in which Vendors/Consultants truly assess (statistically) differently. This finding suggests Vendors/Consultants and their Hospital clients/prospects may be "talking past" each other on this issue and as such, presents as an opportunity for Vendors/Consultants to re-evaluate their assessment of this issue.

Table 5: Rank Order of Priorities (2018)

Ordered by the descending priority of hospital respondents

Information and Technology Priority	Vendors/ Consultants	Hospitals	Rank Difference
Patient Safety	7	1	6
Privacy, Security and Cybersecurity	4	2	2
Process Improvement, Workflow, Change Management	9	3	6
Data Analytics/Clinical and Business Intelligence	1	4	3
Clinical Informatics and Clinician Engagement	6	5	1
Improving Quality Outcomes Through Health IT	3	6	3
Compliance, Risk Management & Program Integrity	8	7	1
Electronic Health Records (EHRs)	5	8	3
Consumer and Patient Engagement	10	9	1
Culture of Care and Care Coordination	13	10	3
Leadership, Governance, Strategic Planning	17	11	6
Connected Health & Telehealth	15	12	3
Health Information Exchange, Interoperability and Data Integration	2	13	11
Population Health	14	14	0
Pharmacy Standards & Technology	18	15	3
Emerging Payment Models for Value Based Care	11	16	5
Human Factors, User Experience and Design	16	17	1
HIT Infrastructure and Standards	12	18	6
Social, Psychosocial & Behavioral Determinants of Health	22	19	3
Innovation, Entrepreneurship and Venture Investment	19	20	1
Supply Chain	24	21	3
Health Informatics Education, Career Development & Diversity	20	22	2
Public Policy	21	23	2
Precision Medicine/Genomics	23	24	1

The year-over-year top priorities for Vendors/Consultants and Hospitals remain fairly consistent
In comparing the 2017 and 2018 top five priorities for both Hospitals (Table 6) and Vendors/Consultants (Table 7), the audiences appear to be consistent in their assessments. Taking into consideration the modifications to the list of priorities[2] between the two years, both groups had three 2017 priorities appear as the top five priorities in 2018. Note too that both groups had "Privacy, Security and Cybersecurity" and components of "Quality and Patient Safety Outcomes" (as listed in the 2017 priority list) appear as top priorities in both 2017 and 2018.

Table 6: Hospital Top Priorities (2017 – 2018)

Ordered by the 2018 descending priority of hospital respondents

Information and Technology Priority	2017 Priorities	2018 Priorities	Rank Order Shift
Patient Safety	1	1	0
Privacy, Security and Cybersecurity	3	2	1
Process Improvement, Workflow, Change Management	7	3	4
Data Analytics/Clinical and Business Intelligence	9	4	5
Clinical Informatics and Clinician Engagement	5	5	0
Improving Quality Outcomes Through Health IT	1	6	-5
Compliance, Risk Management & Program Integrity	6	7	-1
Electronic Health Records (EHRs)	2	8	-6
Consumer and Patient Engagement	8	9	-1
Culture of Care and Care Coordination	4	10	-6
Leadership, Governance, Strategic Planning	11	11	0
Connected Health & Telehealth	13	12	1
Health Information Exchange, Interoperability and Data Integration	10	13	-3
Population Health	4	14	-10
Pharmacy Standards & Technology	-	15	-
Emerging Payment Models for Value Based Care	12	16	-4
Human Factors, User Experience and Design	15	17	-2
HIT Infrastructure and Standards	14	18	-4
Social, Psychosocial & Behavioral Determinants of Health	-	19	-
Innovation, Entrepreneurship and Venture Investment	17	20	-3
Supply Chain	-	21	-
Health Informatics Education, Career Development & Diversity	16	22	-6
Public Policy	-	23	-
Precision Medicine/Genomics	18	24	-6

[2] There is a duplication in the 2017 ranking of priorities when paired with the 2018 priority list because two priorities in the 2017 priority list ("Care Coordination, Culture of Care, and Population Health" and "Quality and Patient Safety Outcomes") were split apart to form four separate issues in for the 2018 priority list.

Table 7: Vendor/Consultant Top Priorities (2017 – 2018)

Ordered by the 2018 descending priority of Vendors/Consultants respondents

Information and Technology Priority	2017 Priorities	2018 Priorities	Rank Order Shift
Data Analytics/Clinical and Business Intelligence	9	1	8
Health Information Exchange, Interoperability and Data Integration	5	2	3
Improving Quality Outcomes Through Health IT	2	3	-1
Privacy, Security and Cybersecurity	1	4	-3
Electronic Health Records (EHRs)	8	5	3
Clinical Informatics and Clinician Engagement	7	6	1
Patient Safety	2	7	-5
Compliance, Risk Management & Program Integrity	10	8	2
Process Improvement, Workflow, Change Management	6	9	-3
Consumer and Patient Engagement	13	10	3
Emerging Payment Models for Value Based Care	4	11	-7
HIT Infrastructure and Standards	12	12	0
Culture of Care and Care Coordination	3	13	-10
Population Health	3	14	-11
Connected Health & Telehealth	11	15	-4
Human Factors, User Experience and Design	15	16	-1
Leadership, Governance, Strategic Planning	14	17	-3
Pharmacy Standards & Technology	-	18	-
Innovation, Entrepreneurship and Venture Investment	16	19	-3
Health Informatics Education, Career Development & Diversity	17	20	-3
Public Policy	-	21	-
Social, Psychosocial & Behavioral Determinants of Health	-	22	-
Precision Medicine/Genomics	18	23	-5
Supply Chain	-	24	-

The market has a very different assessment of only one information and technology priority this year compared to last year

When comparing the mean score for each priority as assessed by Vendor/Consultant in 2017 and 2018, as well as the year-over-year assessment by Hospital respondents separately, one issue from the 2017 priority list emerges as being statistically different for both groups; "*Care Coordination, Culture of Care, and Population Health*". For both audiences, the component parts of this priority ("Culture of Care and Care Coordination" and "*Population Health*") declined notably as priorities in 2018. (Table 8)

Table 8: Notable Downward Shift in Priorities (2017 – 2018)

Information and Technology Priority	2017 Priorities	2018 Priorities	Rank Order Shift
Culture of Care and Care Coordination (Hospitals)	4	10	-6
Population Health (Hospitals)	4	14	-10
Culture of Care and Care Coordination (Vendors/Consultants)	3	13	-10
Population Health (Vendors/Consultants)	3	14	-11

We strongly urge readers to exercise caution in the interpretation of this finding as the labeling of the issue in 2017 differs from its presentation in 2018. That said, it is possible the market considers "Care Coordination, Culture of Care, and Population Health" intrinsically linked so that any effort to separate into distinctive issues may have diluted the significance of these activities, and resulted in a diminish assessment of these issues.

It is also very possible the market has come to understand that "Culture of Care", "Care Coordination" and "Population Health" cannot be achieved until certain supportive activities (e.g. data analytics) are in place. Accordingly, the prioritization of "Population Health" and "Culture of Care and Care Coordination" activities may have been usurped by the market's increased focus on data analytics as a means to achieve these desired activities. Indeed, the downward shift in the prioritization of "Culture of Care and Care Coordination" and "Population Health" is accompanied by an increased intensity on "Data Analytics/Clinical and Business Intelligence" as priorities. (Table 9)

Table 9: Notable Upward Shift in Priorities (2017 – 2018)

Information and Technology Priority	2017 Priorities	2018 Priorities	Rank Order Shift
Data Analytics/Clinical and Business Intelligence (Hospitals)	9	4	5
Data Analytics/Clinical and Business Intelligence (Vendors/Consultants)	9	1	8

Information and Technology Leadership

Observation: **Information and technology executives appear to have an increased influence within hospital settings.**

Implication: **Vendors/Consultants need to be very purposeful in establishing and managing their relationships with hospital information and technology executives.**

Hospitals employ an array of information and technology executives with whom vendors interact
When presented with a select list of hospital information and technology executive roles, provider respondents identified those employed by their organization.[3] Using a similar list, Vendors/Consultants identified those Hospital executives with whom they most frequently interact. When comparing the two lists together, Chief Information Officers understandably emerge as the executive most commonly employed by hospitals (87 percent) and the executive with whom Vendors/Consultants most usually interact (50 percent). Clinical Leaders emerged as the second most identified executive for both Providers (67 percent) and Vendors/Consultants (49 percent). (Table 10)

Table 10: Information and Technology Hospital Leaders (Interact/Employ)

Executive	Vendor - Interact	Hospital - Employ
Chief Information Officer	50%	87%
A senior clinical IT leader (e.g. CMIO, CNIO, CHIO)	49%	67%
A senior information security leader (e.g. CISO)	28%	42%
Chief Technology Officer	39%	36%
Chief Innovation Officer	21%	23%
Chief Transformation Officer	16%	12%

Note that hospital respondents also identified a select list of executives employed by their hospital in the 2017 survey. Comparing the two lists together reveals that the percentage of Chief Information Officers has increased notably. (Table 11)

Table 11: Information and Technology Hospital Leaders – Employ (2017 vs 2018)

Executive	2017	2018
Chief Information Officer	78%	87%
A senior clinical IT leader (e.g. CMIO, CNIO, CHIO)	65%	67%
A senior information security leader (e.g. CISO)	41%	42%

[3] Given the low number of respondents representing non-hospital settings, the following analysis was limited to those representing a hospital.

There are remarkable consistencies between vendors and hospital executives on the growing influence of select hospital executives

Both Provider respondents and Vendor/Consultants were asked to rate the "shift in influence" each executive appears to be experiencing within the provider organization. To enhance the robustness of the analysis, responses from the Provider community were limited to those holding an executive management role within a hospital. The findings reveal Vendors/Consultants and hospital executives largely in agreement regarding their perceptions of the increased influence of varied information and technology executives. Of interest is the widespread agreement surrounding the growing influence of the senior information security leader. (Table 11)

Table 11: Information and Technology Hospital Leaders (Increasing Influence)

Executive	Vendor – Influence Increasing	Hospital Execs – Influence Increasing	Difference
Chief Information Officer	58%	60%	2%
A senior clinical IT leader (e.g. CMIO, CNIO, CHIO)	63%	63%	0%
A senior information security leader (e.g. CISO)	76%	70%	6%
Chief Technology Officer	50%	57%	7%
Chief Innovation Officer	72%	Insufficient N	-
Chief Transformation Officer	64%	Insufficient N	-

Information and Technology Projected Demand

Observation: **Providers and Vendors/Consultants have different information and technology resource demand expectations for the coming year.**

Implication: **If Vendors/Consultants expend resources as projected and Hospitals fail to meet the Vendor's/Consultant's expectations, Vendors/Consultants may find they have overextended themselves and potentially experience financial challenges.**

Both Vendors/Consultants and Hospitals were asked to shed some insight on their IT resource allocation expectations for the coming year. Providers projected the directional change in their IT operating budget, whereas Vendors/Consultants projected the directional change in their volume of IT business. Given the low number of non-hospital respondents answering this question, the following Provider analysis is based on hospital respondents.

The findings suggest the two groups are at odds regarding their near future IT demands. A majority of Vendors/Consultants (86%) expect their volume of business to increase next year while the majority of hospitals (63%) project their IT operating budget to stay the same (21%) or be reduced (43%). (Table 12)

Table 12: Projected Resource Demands

Directional Shift	Vendors	Hospitals
Increase	86%	24%
No Change	8%	21%
Decrease	1%	43%
Don't Know/No Answer	*5%*	*13%*

When compared to previous years, the percentage of hospitals expecting an increase in their operating budget continued to shift downward with an accelerated decline this past year. (Table 13)

Table 13: Hospital Projected Resource Demands (2016 - 2018)

Directional Shift	2016	2017	2018
Increase	65%	57%	24%
No Change	21%	17%	21%
Decrease	7%	18%	43%
Don't Know/No Answer	*7%*	*8%*	*13%*

WORKFORCE SURVEY

Health IT Workforce Size

Observation: **The employment opportunities for health information and technology workers are greater in Vendor/Consultant organizations than hospitals.**

Implication: **Hospitals may be challenged to complete information and technology projects as originally planned.**

Similar to the 2017 study, all respondents were asked a series of questions surrounding their organization's IT workforce. In comparing the hospital respondents to the Vendor/Consultant respondents, the opportunities for health information and technology workers are greatest in Vendor/Consultant organizations. Vendor/Consultant organizations are more likely to be currently in need of health information and technology workers, have grown the size of their workforce during the past year, and plan to grow the size of their health information and technology staff next year.

Current Workforce Vacancy

While the findings for the Vendor/Consultant respondents this year are similar to last year's results, the hospital results are notably different. Only 34 percent of hospitals have open positions to fill in 2018 compared to 61 percent of hospitals with open positions in the 2017 report. (Table 14).

Table 14: Current Workforce Vacancy

Workforce Status	Vendors 2017	Vendors 2018	Hospitals 2017	Hospitals 2018
We are fully staffed	32%	24%	29%	56%
We have open positions to fill	61%	69%	61%	34%
Don't Know/No Answer	*7%*	*7%*	*10%*	*10%*

Workforce Size – Change Past Year

Though the majority of Vendor/Consultant respondents (67 percent) indicated their workforce increased in size, hospital respondents were not as positive with the shift in the array of response options from 2017 to 2018 suggesting staffing activities may be leveling off. (Table 15)

Table 15: Workforce Size – Change Past Year

Workforce Size Past Year	Vendors 2017	Vendors 2018	Hospitals 2017	Hospitals 2018
Increased	61%	67%	53%	37%
Stayed the same	17%	11%	17%	28%
Decreased	15%	15%	17%	22%
Don't Know/No Answer	*7%*	*7%*	*13%*	*13%*

Workforce Size – Change Next Year

Vendor/Consultant respondents (75 percent) were much more positive about their expected workforce growth than the hospital respondents (40 percent). Comparing the results from 2017 to 2018 reveals a greater percentage increase of Vendors/Consultants respondents projecting their workforce to expand (9 percentage point increase from 66 percent to 75 percent) than the percentage increase in hospitals respondents (4 percentage point increase from 36 percent to 40 percent). (Table 16)

Table 16: Workforce Size – Change Next Year

Workforce Size Next Year	Vendors 2017	Vendors 2018	Hospitals 2017	Hospitals 2018
Increase	66%	75%	36%	40%
Stayed the same	16%	8%	32%	30%
Decrease	4%	3%	16%	16%
Don't Know/No Answer	*14%*	*14%*	*16%*	*14%*

Impact of Health IT Workforce Challenges and Use of External Resources

Both Vendors/Consultants and Provider respondents were asked if their organization had been negatively impacted by a workforce challenge during the past year. Over one-third of Vendors/Consultant (38 percent) and over half of hospital respondents (51 percent) claimed their organization elected to place on hold or scale back an IT project or initiative in the past year due to a workforce challenge. (Table 17) The pervasiveness of the staffing impact in the hospital market appears to be the same (possibly expanding) compared to the previous year, whereas the impact appears to be lessening in Vendor/Consultant organizations.

Table 17: Workforce Challenges – Impact

IT Project Impact	Vendors 2017	Vendors 2018	Hospitals 2017	Hospitals 2018
Negatively Impacted - Yes	**37%**	**33%**	**47%**	**51%**
Place on Hold	*26%*	*33%*	*44%*	*47%*
Scaled back	*30%*	*28%*	*40%*	*41%*

One of the solutions to assist employers in overcoming workforce recruitment challenges is to leverage the services of an executive search firm. Interestingly, Vendors/Consultants and hospital respondents were fairly undifferentiated in their use of a search firm (Table 18) despite the fact that information and technology projects are more likely to be negatively impacted in a hospital than in a Vendor/Consultant organization.

Table 18: Workforce Solution – Use of a Search Agency

Used a Search Agency	Vendors 2017	Vendors 2018	Hospitals 2017	Hospitals 2018
Yes	**39%**	**33%**	**38%**	**29%**

4. Conclusion

Findings from the **2018 HIMSS U.S. Leadership and Workforce Survey** provide a valuable insight into the information and technology concerns of U.S. health leaders, especially those involved in the hospital marketplace. The information reveals Vendors/Consultants and Hospitals continue to be generally aligned on the prioritization of hospital information and technology issues, suggesting efforts to address information and technology issues should enjoy synergies from a broad spectrum of industry stakeholders. That said, there were a few notable year-over-year prioritization shifts (e.g. "Population Health", "Culture of Care and Care Coordination" and "Data Analytics/Clinical and Business Intelligence") observed warranting further exploration. As such, the market is too complex for health leaders to employ a "one-size fits all" approach.

The evidence in this report also suggests hospitals employ a wide array of information and technology leaders, and that the influence of these individuals appears to be expanding. Vendors/Consultants looking to extend their influence within hospital settings are therefore encouraged to be very purposeful in establishing and managing their relationships with an array of hospital information and technology executives.

Perhaps one of the more notable findings surrounds the divergent trajectory Vendors/Consultants have compared to Hospital respondents with respect to projected information and technology resource demands. Vendors/Consultants present as more positive about the near future than those Providers representing a hospital. Part of the muted outlook for hospital representatives may be due to past challenges in completing information and technology projects as originally planned. Given the variance in future projections, leaders from Vendor/Consultant organizations are encouraged to challenge their assumptions about the market's willingness to acquire needed information and technology solutions so that they do not overextend their organizations and experience financial challenges.

5. About HIMSS

HIMSS is a global voice, advisor, and thought leader of health transformation through health information and technology with a unique breadth and depth of expertise and capabilities to improve the quality, safety, and efficiency of health, healthcare, and care outcomes. HIMSS designs and leverages key data assets, predictive models and tools to advise global leaders, stakeholders, and influencers of best practices in health information and technology, so they have the right information at the point of decision.

HIMSS drives innovative, forward thinking around best uses of information and technology in support of better connected care, improved population health, and low cost of care. HIMSS is a not-for-profit, headquartered in Chicago, Illinois, with additional offices in North America, Europe, United Kingdom, and Asia.

6. How to Cite This Study

Individuals are encouraged to cite this report and any accompanying graphics in printed matter, publications, or any other medium, with attribution to the **2018 U.S. HIMSS Leadership and Workforce Survey**.

7. For More Information

Joyce Lofstrom
Senior Director, Corporate Communications
HIMSS
33 W. Monroe, Suite 1700
Chicago, IL 60603
312-915-9237
jlofstrom@himss.org

APPENDIX A – 2017-2018 Priority Crosswalk

2017 Priorities	2018 Priorities
Business of Healthcare and New Payment Models	Emerging Payment Models for Value Based Care
Care Coordination, Culture of Care, and Population Health	Culture of Care and Care Coordination
Care Coordination, Culture of Care, and Population Health	Population Health
Career/Workforce Development and Diversity	Health Informatics Education, Career Development & Diversity
Clinical and Business Intelligence	Data Analytics/Clinical and Business Intelligence
Clinical Informatics and Clinician Engagement	Clinical Informatics and Clinician Engagement
Compliance, Risk Management and Program Integrity	Compliance, Risk Management and Program Integrity
Connected Health	Connected Health & Telehealth
Consumer and Patient Engagement	Consumer and Patient Engagement
Electronic Health Records (EHRs)	Electronic Health Records (EHRs)
Genomics/Precision Medicine	Precision Medicine/Genomics
Health Information Exchange, Interoperability and Data Access	Health Information Exchange, Interoperability and Data Integration
Human Factors, User Experience and Design	Human Factors, User Experience and Design
Innovation, Entrepreneurship and Venture Investment	Innovation, Entrepreneurship and Venture Investment
IT Infrastructure, HIT Standards and Medical Device Integration	HIT Infrastructure and Standards
Leadership, Governance, Strategic Planning	Leadership, Governance, Strategic Planning
Privacy, Security and Cybersecurity	Privacy, Security and Cybersecurity
Process Improvement, Workflow, Change Management	Process Improvement, Workflow, Change Management
Quality and Patient Safety Outcomes	Patient Safety
Quality and Patient Safety Outcomes	Improving Quality Outcomes Through Health IT
	Pharmacy Standards & Technology
	Social, Psychosocial & Behavioral Determinants of Health
	Public Policy
	Supply Chain

APPENDIX B – Provider Survey

2018 HIMSS U.S. Health IT Leadership and Workforce Survey

Provider Version
November 2017

1. **In which country do you work?**
   - Canada
   - United
   - Other **IF SELECTED… skip to Q3**

2. **In which province/state do you work?**

3. **Which of the below best describes the type of organization for which you work?**
   - Academic Education Institution
   - Academic Medical Center
   - Banks/Financial Services
   - Community Health Center Clinic
   - Critical Access Hospital
   - Federal, State or Local Government Office
   - Financial, Legal, Investment Firm
   - Consulting Firm
   - HIE Organization
   - Home Healthcare Organization
   - Hospice
   - Hospital, Multi-Hospital System, Integrated Delivery
   - IDS/hospital-owned Ambulatory Clinic
   - Independent Ambulatory Clinic
   - Independent Rehabilitation Facility
   - Life Sciences
   - Long Term Care Facility
   - Mental/behavioral health facility
   - Payor, Insurance Company, Managed Care
   - Professional Society
   - Public Health
   - Vendor
   - Other (Please specify)

*****If selected send to Vendor/Consultant survey**

*****If selected… thank for their interest in the survey and end**

4. **Please indicate the tax-status of the healthcare organization for which you work.**
   - O For-Profit
   - O Not-For-Profit
   - O Government
   - O Don't Know

5. **Which role below best describes the position you hold within your organization?**
   - O Full-time Executive Management
   - O Full-time Non-Executive Management
   - O Full-time Non-Management
   - O Contract Executive Management
   - O Contract or Part-time Non-Executive Management
   - O Contract or Part-time Non-Management

6. **Are you a member of HIMSS?**
   - O Yes
   - O No
   - O Don't know

7. **To what extent do you have oversight and/or influence of IT at your healthcare organization?**
   - O Primary oversight and/or influence
   - O Some oversight and/or influence
   - O No oversight but have some influence on the use of IT in our organization
   - O No oversight/influence at all **If "No oversight/influence at all" is selected END SURVEY**

8. **To what extent are the below issues a priority for your information and technology efforts in the next 12 months?**

Not a priority	Low priority	Somewhat of a priority	Neutral	Moderate priority	High priority	Essential priority
O	O	O	O	O	O	O

a. Clinical Informatics and Clinician Engagement
b. Compliance, Risk Management & Program Integrity
c. Connected Health & Telehealth
d. Consumer and Patient Engagement
e. Culture of Care and Care Coordination
f. Data Analytics/Clinical and Business Intelligence
g. Electronic Health Records (EHRs)
h. Emerging Payment Models for Value Based Care
i. Health Informatics Education, Career Development & Diversity
j. Health Information Exchange, Interoperability and Data Integration
k. HIT Infrastructure and Standards
l. Human Factors, User Experience and Design
m. Improving Quality Outcomes Through Health IT
n. Innovation, Entrepreneurship and Venture Investment
o. Leadership, Governance, Strategic Planning
p. Patient Safety
q. Pharmacy Standards & Technology
r. Population Health
s. Precision Medicine/Genomics
t. Privacy, Security and Cybersecurity
u. Process Improvement, Workflow, Change Management

v. Public Policy
w. Social, Psychosocial & Behavioral Determinants of Health
x. Supply Chain

9. To what extent do you agree with the below statements?

a. The medical staff has a favorable attitude towards the use of clinical IT in our organization
b. The nursing staff has a favorable attitude towards the use of clinical IT in our organization
c. The ancillary clinical staff (e.g. pharmacists, dieticians, physical therapists, etc.) have a favorable attitude towards the use of clinical IT in our organization

Strongly disagree	Disagree	Somewhat disagree	Neither agree or disagree	Somewhat agree	Agree	Strongly disagree
O	O	O	O	O	O	O

10. Which of the below executives does your organization employ? (select all that apply)

O Chief Information Officer
O A senior clinical IT leader (e.g. CMIO, CNIO, CHIO)
O A senior information security leader (e.g. CISO)
O Chief Technology Officer
O Chief Innovation Officer
O Chief Transformation Officer
O None of the above **If selected skip to Q9**
O Don't know **If selected skip to Q9**

11. How would you characterize the shift in influence of the following executive positions in your organization during the past few years?

O No substantive change
O Influence has increased
O Influence has diminished
O Don't know

Only display if "Chief Information Officer" selected in Q7
a. Chief Information Officer
Only display if "A senior clinical IT leader" selected in Q7
b. The senior clinical IT leader (e.g. CMIO, CNIO, CHIO)
Only display if "A senior Information security leader" selected in Q7
c. The senior information security leader (e.g. CISO)
Only display if "Chief Technology Officer" selected in Q7
d. Chief Technology Officer
Only display if "Chief Innovation Officer" selected in Q7
e. Chief Innovation Officer
Only display if "Chief Transformation Officer" selected in Q7
f. Chief Transformation Officer

12. **Please select the statement which best describes the projected change, if any, to your organization's IT operating budget for the next fiscal year.**
    - O It will definitely increase
    - O It will probably increase
    - O No change
    - O It will probably decrease
    - O It will definitely decrease
    - O Don't know

HEALTH IT WORKFORCE STUDY Questions

13. **How many Full-Time-Equivalent (FTE) health information and technology staff positions (filled and open) support your organization.**
    - O No one FTE staff position dedicated to supporting our organization's needs
    - O 1 – 5
    - O 5 – 20
    - O More than 20
    - O Don't Know

14. **How would you characterize your organization's current IT staffing profile?**
    - O We are fully staffed
    - O We have open positions to be filled
    - O Don't Know

15. **Compared to this time <u>last year</u>, has the total number of FTE IT staff positions (filled and open) in your organization changed?**
    - O Yes – it increased
    - O Yes – it decreased
    - O No
    - O Don't know

16. **Compared to this time <u>next year</u>, do you expect the total number of IT FTE staff positions (filled and open) in your organization to change?**
    - O Yes – the number of IT FTE positions should increase
    - O Yes – the number of IT FTE positions should decrease
    - O No
    - O Don't know

17. **Did you <u>scale back</u> any projects or initiatives this past year because of any health IT staffing/workforce challenges faced by your organization?**
    - O Yes
    - O No
    - O Don't Know

18. **Did you <u>place on hold</u> any projects or initiatives this past year because of any health IT staffing/workforce challenges faced by your organization?**
    - O Yes
    - O No
    - O Don't Know

19. **Did you use the services of an IT staffing/executive search firm this past year?**
    - O Yes
    - O No
    - O Don't Know

APPENDIX C – Vendor/Consultant Survey

2018 HIMSS U.S. Health IT Leadership and Workforce Survey

Vendor Version
November 2017

1. **In which country do you work?**
   - Canada
   - United
   - Other **IF SELECTED… skip to Q3**

2. **In which province/state do you work?**

3. **Which of the below best describes the type of organization for which you work?**
   - Academic Education Institution
   - Academic Medical Center
   - Banks/Financial Services
   - Community Health Center Clinic
   - Critical Access Hospital
   - Federal, State or Local Government Office
   - Financial, Legal, Investment Firm
   - Consulting Firm
   - HIE Organization
   - Home Healthcare Organization
   - Hospice
   - Hospital, Multi-Hospital System, Integrated Delivery
   - IDS/hospital-owned Ambulatory Clinic
   - Independent Ambulatory Clinic
   - Independent Rehabilitation Facility
   - Life Sciences
   - Long Term Care Facility
   - Mental/Behavioral Health Facility
   - Payor, Insurance Company, Managed Care
   - Professional Society
   - Public Health
   - Vendor
   - Other (Please specify)

*****If selected send to Provider survey**
*****If selected… thank for their interest in the survey and end**

4. **Which role below best describes the position you hold within your organization?**
   - O Full-time Executive Management
   - O Full-time Non-Executive Management
   - O Full-time Non-Management
   - O Contract Executive Management
   - O Contract or Part-time Non-Executive Management
   - O Contract or Part-time Non-Management

5. **Are you a member of HIMSS?**
   - O Yes
   - O No
   - O Don't know

6. **Which of the below type of healthcare organizations does your organization serve? (select all that apply)**
   - Academic Medical Centers
   - Community Health Center Clinics
   - Critical Access Hospitals
   - Home Healthcare Organizations
   - Hospice Organizations
   - Hospitals, Multi-Hospital Systems, Integrated Delivery Systems
   - IDS/hospital-owned Ambulatory Clinics
   - Independent Ambulatory Clinics
   - Independent Rehabilitation Facilities
   - Long Term Care Facilities
   - Mental/Behavioral Health Facilities

7. **To what extent are the below information and technology issues projected to be a priority for your IT clients in the next 12 months?**

Not a priority	Low priority	Somewhat of a priority	Neutral	Moderate priority	High priority	Essential priority
O	O	O	O	O	O	O

   a. Clinical Informatics and Clinician Engagement
   b. Compliance, Risk Management & Program Integrity
   c. Connected Health & Telehealth
   d. Consumer and Patient Engagement
   e. Culture of Care and Care Coordination
   f. Data Analytics/Clinical and Business Intelligence
   g. Electronic Health Records (EHRs)
   h. Emerging Payment Models for Value Based Care
   i. Health Informatics Education, Career Development & Diversity
   j. Health Information Exchange, Interoperability and Data Integration
   k. HIT Infrastructure and Standards
   l. Human Factors, User Experience and Design
   m. Improving Quality Outcomes Through Health IT
   n. Innovation, Entrepreneurship and Venture Investment
   o. Leadership, Governance, Strategic Planning
   p. Patient Safety
   q. Pharmacy Standards & Technology
   r. Population Health

s. Precision Medicine/Genomics
t. Privacy, Security and Cybersecurity
u. Process Improvement, Workflow, Change Management
v. Public Policy
w. Social, Psychosocial & Behavioral Determinants of Health
x. Supply Chain

8. **Which of the below executives does your organization tend to interact with when servicing your clients? (select all that apply)**
   - O Chief Information Officer
   - O The senior clinical IT leader (e.g. CMIO, CNIO, CHIO)
   - O The senior information security leader (e.g. CISO)
   - O Chief Technology Officer
   - O Chief Innovation Officer
   - O Chief Transformation Officer
   - O None of the above **If selected skip to Q10**
   - O Don't know **If selected skip to Q10**

9. **How would you characterize the shift in influence of the following executive positions in your client's organizations during the past few years?**
   - O No substantive change
   - O Influence has increased
   - O Influence has diminished
   - O Don't know

Only display if "Chief Information Officer" selected in Q8
a. Chief Information Officer
Only display if "A senior clinical IT leader" selected in Q8
b. The senior clinical IT leader (e.g. CMIO, CNIO, CHIO)
Only display if "A senior Information security leader" selected in Q8
c. The senior information security leader (e.g. CISO)
Only display if "Chief Technology Officer" selected in Q8
d. Chief Technology Officer
Only display if "Chief Innovation Officer" selected in Q8
e. Chief Innovation Officer
Only display if "Chief Transformation Officer" selected in Q8
f. Chief Transformation Officer

10. **Please select the statement which best describes the projected change, if any, to the volume of IT business your organization addresses during the next fiscal year.**
    - O It will definitely increase
    - O It will probably increase
    - O No change
    - O It will probably decrease
    - O It will definitely decrease
    - O Don't know

HEALTH IT WORKFORCE STUDY Questions

11. **How would you characterize your organization's current staffing profile?**

- O We are fully staffed
- O We have open positions to be filled
- O Don't Know

12. Compared to this time last year, has the total number of FTE staff positions (filled and open) in your organization changed?

- O Yes – it increased
- O Yes – it decreased
- O No
- O Don't know

13. Compared to this time next year, do you expect the total number of FTE staff positions (filled and open) in your organization to change?

- O Yes – the number of FTE positions should increase
- O Yes – the number of FTE positions should decrease
- O No
- O Don't know

14. Did you scale back any client projects or initiatives this past year because of any health IT staffing/workforce challenges faced by your organization?

- O Yes
- O No
- O Don't Know

15. Did you place on hold any client projects or initiatives this past year because of any health IT staffing/workforce challenges faced by your organization?

- O Yes
- O No
- O Don't Know

16. Did you use the services of an IT staffing/executive search firm this past year?

- O Yes
- O No
- O Don't Know

APPENDIX D – Organization Type/Focus

Hospitals
Hospitals, Multi-Hospital Systems, Integrated Delivery Systems
Academic Medical Centers
Critical Access Hospitals
Ambulatory
Independent Ambulatory Clinics
Community Health Center Clinics
IDS/hospital-owned Ambulatory Clinics
Long Term/Post-Acute Care (LTPAC)
Mental/Behavioral Health Facilities
Long Term Care Facilities
Independent Rehabilitation Facilities
Home Healthcare Organizations
Hospice Organizations