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Electronic Capabilities for Patient Engagement among U.S. Non-Federal Acute Care Hospitals: 2012-2014

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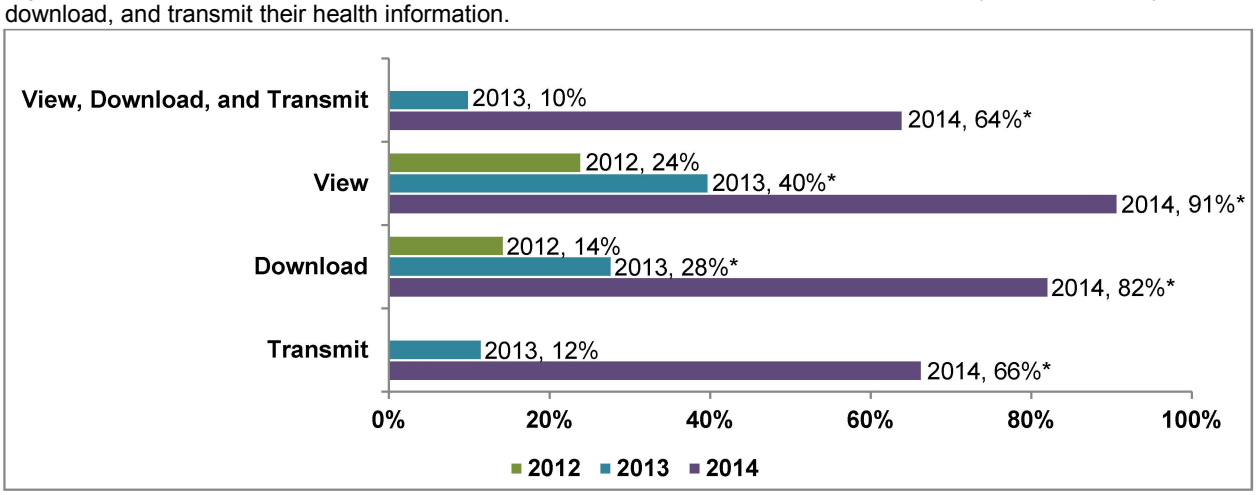
Research demonstrates that providing patients with access to their clinical information empowers them to increase patient engagement and improve health outcomes. Several federal programs and plans require or promote giving patients greater access to their health information. The Office of the National Coordinator for Health IT's (ONC) draft Interoperability Roadmap calls on healthcare providers to enable patients to electronically view, download, and transmit their health information to a destination of the patient's choice (1). Additionally, the draft Federal Health IT Strategic Plan encourages the advancement of patients' ability to access, amend, and make choices regarding the disclosure of their electronic health information (2). Also, the 2014 rules for the Centers for Medicare and Medicaid Services (CMS) Electronic Health Record (EHR) Incentive Program require participating hospitals to enable patients with online access to view, download, and transmit their health information (3). This brief describes trends in hospitals' capability to engage patients with their health information electronically from 2012 to 2014.

Six out of ten hospitals provide patients with the ability to electronically view, download, and transmit their health information

Figure 1: Percent of non-Federal acute care hospitals that provide patients with the capability to electronically view, download, and transmit their health information.

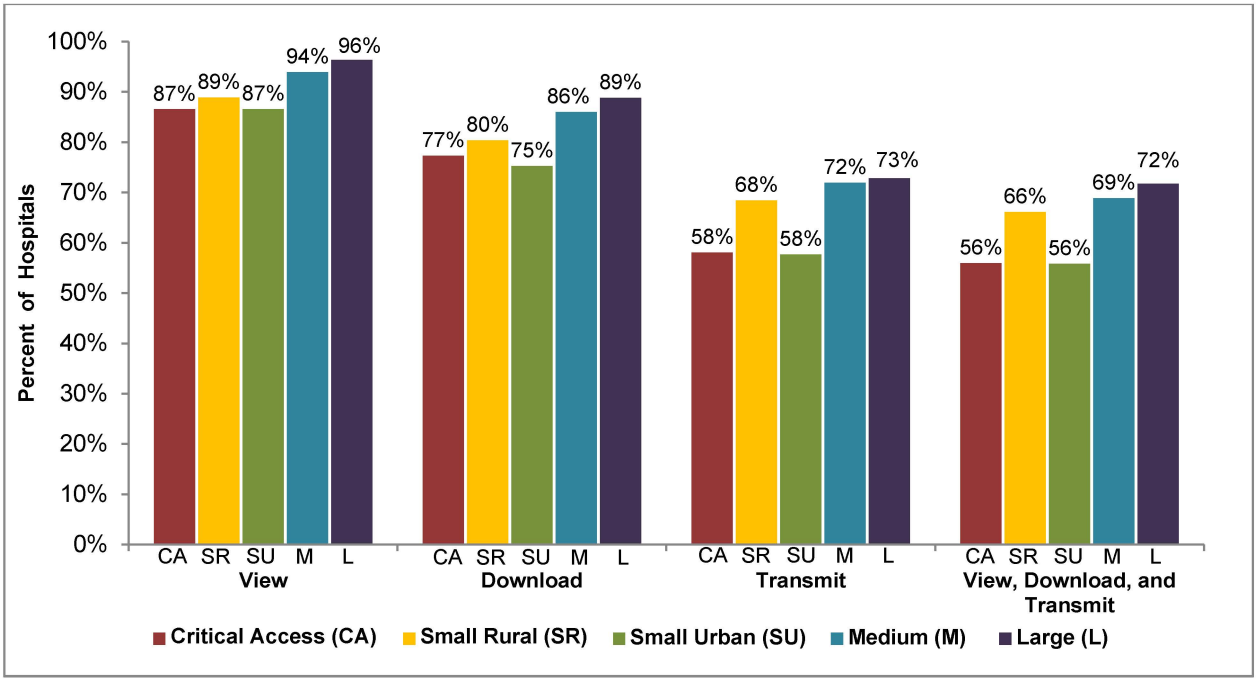


SOURCE: ONC/American Hospital Association (AHA), AHA Annual Survey Information Technology Supplement: 2012 – 2014
NOTE: *Significantly different from previous year ($p < 0.05$). Data regarding "View, Download, and Transmit" were not collected in 2012.

- ★ In 2014, 6 out of 10 (64%) hospitals provided their patients with the capability to electronically view, download, and transmit their health information. This is a significant increase from 2013, where 1 out of 10 (10%) hospitals provided the capability.
- ★ Most hospitals allowed patients to transmit (66%) and download (82%) health information; however nearly all hospitals (91%) allowed patients to view their health information electronically.

Critical Access and small urban hospitals lag behind other hospital types on providing patients the ability to electronically view, download, and transmit their health information.

Figure 2: Percent of non-federal acute care hospital types that provide their patients with the electronic ability to view, download, and transmit their health information, 2014.

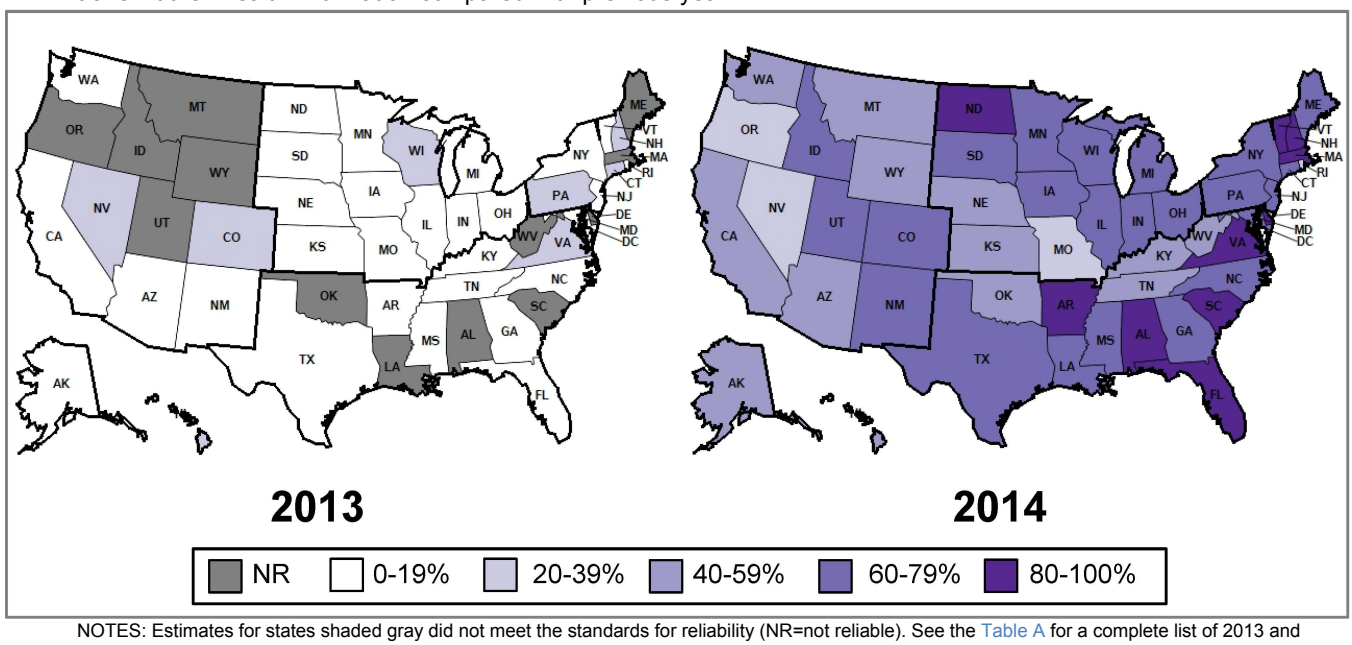


SOURCE: ONC/AHA, AHA Annual Survey Information Technology Supplement: 2014
NOTES: Larger, bold numbers represent hospitals types with significantly higher measures than other hospital types for that capability. Hospital size is based on the number of beds: large=400 or more; medium=between 399 and 100; and small=less than 100. Rural/urban status determined by U.S. Census Bureau Type: urban=metropolitan or division; and rural=micropolitan or rural. Critical Access is a special designation for certain small hospitals by the Centers of Medicare & Medicaid Services.

- ★ Large and medium hospitals provided patients with the ability to electronically view, download, and transmit health information at significantly higher rates than other hospital types.
- ★ Critical Access and small urban hospitals provided patients with the ability to electronically view, download, and transmit health information at significantly lower rates than other hospital types; including small rural.

All states have hospitals that provide patients with the ability to view, download, and transmit their health information electronically.

Figure 3: State percent of non-federal acute care hospitals with the capability for their patients to view, download, and transmit their health information compared with previous year.

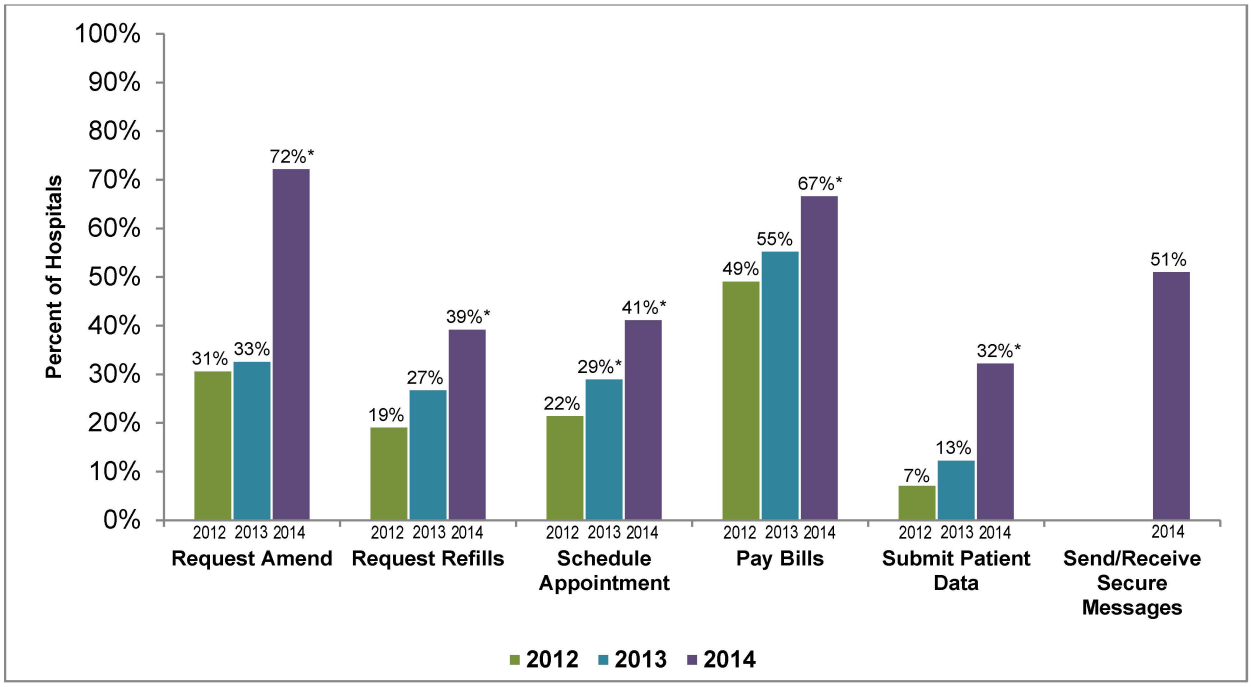


NOTES: Estimates for states shaded gray did not meet the standards for reliability (NR=not reliable). See the Table A for a complete list of 2013 and 2014 view, download, and transmit measures by state.
SOURCE: ONC/AHA, AHA Annual Survey Information Technology Supplement: 2013-2014

- ★ In 2013, zero states had more than 40% of their hospitals with the electronic capability for patients to view, download, and transmit their health information. This increased to 47 states by 2014.
- ★ In 2013, six states (Alaska, New Mexico, North Dakota, Rhode Island, South Dakota, and Vermont) had no hospital that allowed patients to electronically view, download, and transmit their health information. By 2014, all states had at least 20% of its hospitals with these capabilities.
- ★ By 2014, nine states (Alabama, Arkansas, Florida, Massachusetts, New Hampshire, North Dakota, South Carolina, Vermont, and Virginia) had more than 80% of hospitals that allowed patients to electronically view download, and transmit their health information.

Increasingly, hospitals are adopting various types of electronic patient engagement capabilities.

Figure 4: Electronic capabilities offered by non-federal acute care hospitals to their patients (excluding view, download, and transmit patient health information), 2014.

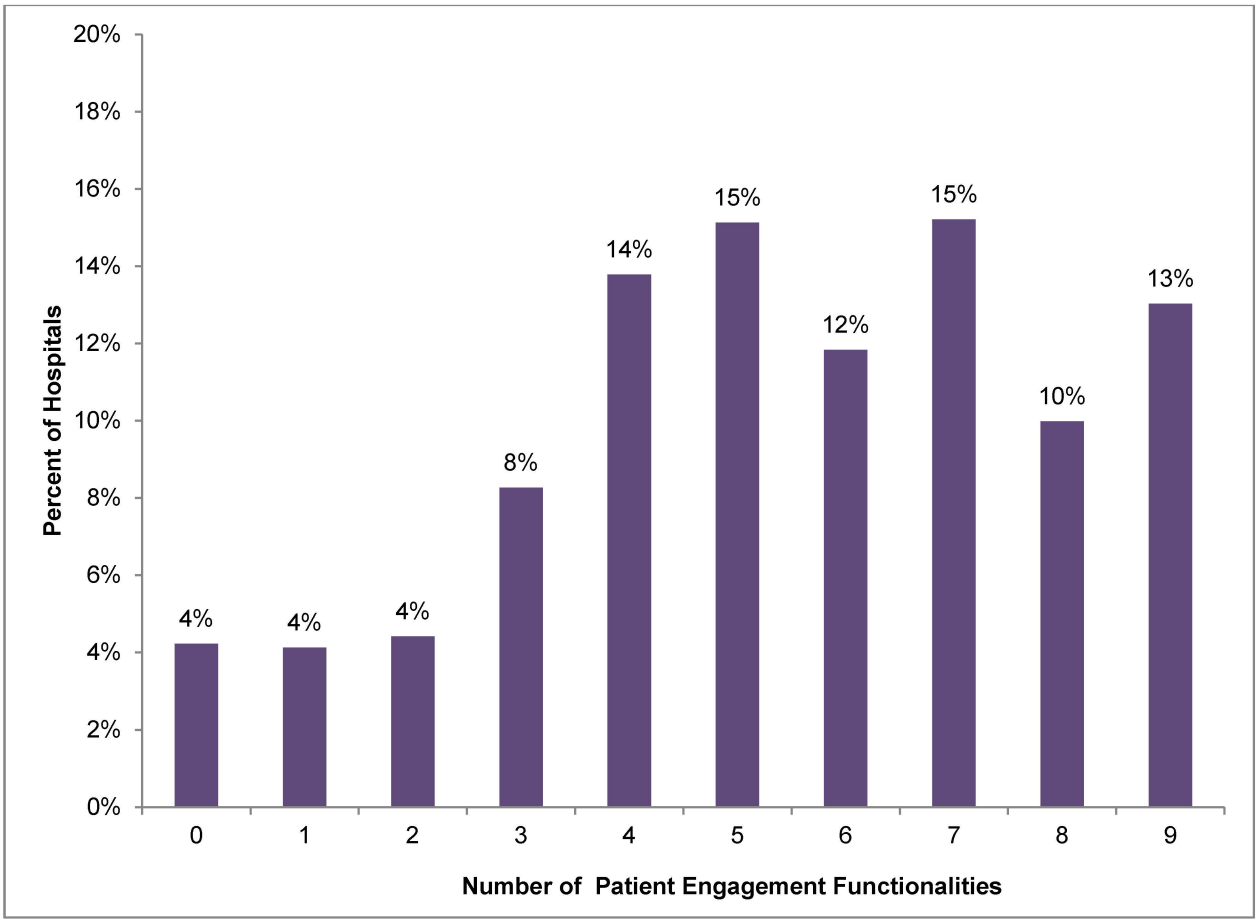


NOTES: Questions regarding secure messaging were asked in 2014 only.
*Significantly different from previous year ($p < 0.05$).
SOURCE: ONC/AHA, AHA Annual Survey Information Technology Supplements: 2012-2014

- ★ Nearly three quarters of hospitals (72%) in 2014 had the electronic capability to allow patients to request an amendment to their own health information. This is more than double the amount of hospitals that had this capability in previous years.
- ★ Four out of ten hospitals allow patients to request prescription refills (39%) or schedule appointments online (41%).
- ★ Over two thirds of hospitals allow their patients to pay bills online. Until 2014, this was the most commonly available electronic patient engagement functionality.
- ★ One in three hospitals (32%) allows patients to submit their own data electronically.
- ★ Over half (51%) of hospitals allow their patients to send and receive secure messages electronically.

Eight in ten hospitals can provide patients with four or more electronic engagement capabilities.

Figure 5: Number of electronic patient engagement capabilities among hospitals, 2014.



NOTES: Patient engagement activities include: view, download, transmit, request amend, request refill, schedule appointment, pay bills, submit patient data, and send secure messages.
SOURCE: ONC/AHA, AHA Annual Survey Information Technology Supplement: 2014

- ★ Eight in ten (79%) hospitals provide patients at least four electronic engagement functionalities.
- ★ All patient engagement functionalities are provided to patients by 13% of hospitals.
- ★ Electronic patient engagement functionalities are not provided by four percent of hospitals.

Summary

The key to engaging patients in their healthcare is providing them with the electronic capability to access, modify, and request their own health information (4). Hospitals, which play a critical role in coordinating patient care with a variety of providers across numerous settings, have begun offering patients opportunities to electronically interact with their health information at rates greater than ever before. One potential factor for this increase is the 2014 requirements of the CMS EHR Incentive Program that requires hospitals to provide patients with the ability to view online, download, and transmit their health information electronically.

Using data from the AHA, this brief describes growth in patient engagement capabilities among hospitals since 2012. More than six out of ten (64%) of non-federal acute care hospitals provide patients with the ability to view, download, and transmit their health information electronically. This represents a 6 fold increase since 2013 (10%). Along with this, over half (51%) of hospitals can send and receive secure messages from patients. In addition, the ability for patients to complete administrative functions electronically, such as schedule appointments and pay bills online has increased significantly since 2012.

There are differences in patient capabilities to view, download, and transmit their health information among hospitals based on their types and location. Only half (56%) of hospitals that are Critical Access Hospitals or small urban hospitals provide their patients with these capabilities. This is significantly lower than small rural (66%), medium (69%), and large (72%) hospitals, of which about 7 out 10 have the capabilities. However, overall there has been substantial growth in these capabilities among all hospitals across the country. In 2013, six states had no hospitals with the capabilities, and no states had more than 40% of their hospitals with the capabilities. By 2014, all states had hospitals with the capabilities and only four states had less than 40% of their hospitals with the capabilities.

This brief explored nine key hospital electronic patient engagement capabilities: capability for patients to view, download, or transmit their health information; request amendments to their medical records; request prescription refills; schedule appointments; pay bills; submit patient generated data; and send secure messages electronically. While only 13% of hospitals reported all nine patient engagement activities, the majority (greater than 50%) could provide 4 to 8 of these electronic patient engagement activities. Only 4% of hospitals could not provide any of these electronic patient engagement activities.

Definitions

Non-federal acute care hospital: Includes acute care general medical and surgical, general children's and cancer hospitals owned by private/not-for-profit, investor-owned/for-profit, or state/local government and located within the 50 states and District of Columbia.

Table 1: Survey questions assessing hospitals' patient engagement activity.

Are patients treated in your hospital able to do the following:			
	Yes	No	Do Not Know
View their health/medical information online	☐	☐	☐
Download information from their health/medical record	☐	☐	☐
Electronically transmit (send) transmission of care/referral summaries to a third party	☐	☐	☐
Request an amendment to change/update their health/medical record	☐	☐	☐
Request refills for prescriptions online	☐	☐	☐
Schedule appointments online	☐	☐	☐
Pay bills online	☐	☐	☐
Submit patient-generated data (e.g., blood glucose, weight)	☐	☐	☐
Secure messaging with providers	☐	☐	☐

Data Source and Methods

Data are from the American Hospital Association (AHA) Information Technology (IT) Supplement to the AHA Annual Survey. Since 2008, ONC has partnered with the AHA to measure the adoption and use of health IT in U.S. hospitals.

The chief executive officer of each U.S. hospital was invited to participate in the survey regardless of AHA membership status. The person most knowledgeable about the hospital's health IT (typically the chief information officer) was requested to provide the information via a mail survey or secure online site. Non-respondents received follow-up mailings and phone calls to encourage response. The survey was fielded from November 2014 to the end of February 2015.

This analysis consisted of non-federal, acute care hospitals, including children's and cancer hospitals. The response rate for non-federal acute care hospitals was 60%. A logistic regression model was used to predict the propensity of survey response as a function of hospital characteristics, including size, ownership, teaching status, system membership, availability of a cardiac intensive care unit, urban status, and region. Hospital-level weights were derived by the inverse of the predicted propensity.

Estimates considered unreliable had a relative standard error adjusted for finite populations greater than 0.49. Responses with missing values were assigned zero values. Significant differences were tested using $p < 0.05$ as the threshold.

References

1. The Office of the National Coordinator for Health IT. (2015). Connecting health and care for the nation: A shared nationwide interoperability roadmap version 1.0. Accessed June 1, 2015 at: http://www.healthit.gov/sites/default/files/nationwide-interoperability-roadmap-draft-version-1.0.pdf

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4. Ricciardi L, Mostashari F, Murphy J, Daniel JG, Siminerio EP. A National Action Plan to Support Consumer Engagement via E-Health. Health Affairs. 32(2): 376-384; 2013.

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Appendix

Table A: Percent of non-federal acute care hospitals that provide electronic capability to view, download, and transmit heath information by U.S. State, 2013 and 2014

State	2013 VDT, %	n (N)	State	2014 VDT, %	n (N)
United States	10%	2655(4472)	**United States**	64%	2682(4451)
Alabama	NR	31(90)	Alabama	87%	35(89)
Alaska	0%	6(19)	Alaska	59%	7(21)
Arizona	7%	39(60)	Arizona	43%	31(62)
Arkansas	10%	38(71)	Arkansas	86%	35(71)
California	6%	170(328)	California	52%	170(325)
Colorado	29%	48(71)	Colorado	73%	50(71)
Connecticut	24%	17(29)	Connecticut	72%	22(29)
Delaware	NR	4(6)	Delaware	80%	5(6)
District of Columbia	NR	6(8)	District of Columbia	66%	6(8)
Florida	11%	96(184)	Florida	81%	119(182)
Georgia	14%	58(134)	Georgia	66%	66(130)
Hawaii	31%	12(20)	Hawaii	43%	12(22)
Idaho	NR	20(38)	Idaho	63%	19(38)
Illinois	12%	141(178)	Illinois	75%	126(177)
Indiana	11%	63(107)	Indiana	62%	61(107)
Iowa	8%	75(117)	Iowa	64%	85(117)
Kansas	6%	97(125)	Kansas	50%	92(125)
Kentucky	6%	63(97)	Kentucky	55%	60(96)
Louisiana	NR	44(100)	Louisiana	64%	42(98)
Maine	NR	22(36)	Maine	63%	19(34)
Maryland	15%	31(45)	Maryland	78%	33(45)
Massachusetts	NR	40(62)	Massachusetts	91%	36(62)
Michigan	15%	74(128)	Michigan	70%	83(128)
Minnesota	14%	127(129)	Minnesota	73%	124(128)
Mississippi	17%	33(90)	Mississippi	63%	25(90)
Missouri	3%	111(112)	Missouri	20%	111(111)
Montana	NR	28(54)	Montana	59%	27(54)
Nebraska	4%	49(84)	Nebraska	55%	48(84)
Nevada	26%	11(29)	Nevada	33%	13(30)
New Hampshire	33%	12(26)	New Hampshire	83%	17(26)
New Jersey	17%	45(64)	New Jersey	77%	44(64)
New Mexico	0%	17(31)	New Mexico	69%	18(32)
New York	7%	115(171)	New York	71%	110(170)
North Carolina	16%	55(108)	North Carolina	70%	60(106)
North Dakota	0%	14(42)	North Dakota	82%	14(41)
Ohio	19%	106(158)	Ohio	68%	100(154)
Oklahoma	NR	57(107)	Oklahoma	57%	47(105)
Oregon	NR	27(59)	Oregon	38%	36(59)
Pennsylvania	22%	114(154)	Pennsylvania	69%	107(154)
Rhode Island	0%	8(10)	Rhode Island	36%	6(10)
South Carolina	NR	19(58)	South Carolina	82%	26(58)
South Dakota	0%	23(50)	South Dakota	71%	22(51)
Tennessee	9%	48(115)	Tennessee	54%	52(114)
Texas	4%	199(343)	Texas	64%	231(342)
Utah	NR	22(44)	Utah	63%	21(44)
Vermont	0%	6(14)	Vermont	100%	5(14)
Virginia	26%	42(81)	Virginia	81%	51(80)
Washington	11%	36(88)	Washington	42%	32(89)
West Virginia	NR	28(49)	West Virginia	51%	24(49)
Wisconsin	21%	93(125)	Wisconsin	76%	82(125)
Wyoming	NR	15(24)	Wyoming	52%	15(24)

NOTES: n = survey respondents; N = hospitals surveyed. NR = estimate does not meet standards for reliability (not reliable).
SOURCE: ONC/AHA, AHA Annual Survey Information Technology Supplement: 2013-2014