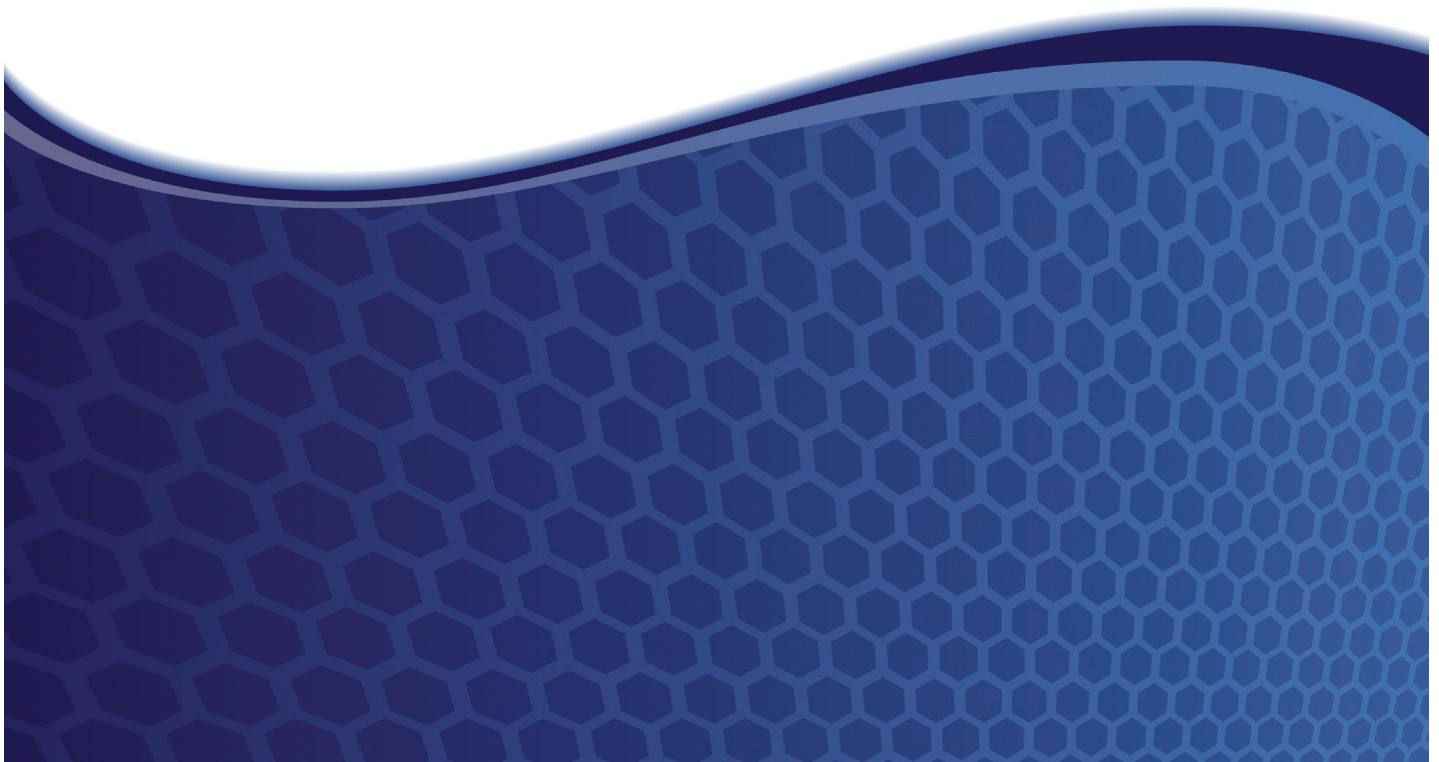




Status of Electronic Health Records in Missouri Hospitals

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INTRODUCTION

Missouri hospitals are making significant investments in health information technology. Hospitals' investment in electronic health records promises new opportunities for quality improvement in Missouri's health care delivery system and an economic boost through expansion of jobs in the state's health care and information technology sectors.

The use of EHR is even more important when disaster strikes. The tornado that hit Joplin, Missouri, in late May 2011 struck a large acute care hospital. However, because the hospital had fully implemented an electronic records system, patient records were accessible almost immediately.

Since 2009, the Missouri Hospital Association has surveyed hospitals through the IT supplement to the "Annual Licensing Survey of Missouri Hospitals." Data received from the IT supplement is intended to inform policymakers, hospital CEOs and others about the state of EHR adoption and Missouri hospitals' readiness to meet meaningful use requirements. Missouri's annual survey project is a joint project of MHA, the American Hospital Association and the Missouri Department of Health and Senior Services. The annual survey is viewed as the definitive source for aggregate hospital data and trend analysis

on Missouri hospital utilization, personnel, services and more.

The 2010 IT supplement was mailed to 155 Missouri hospitals in March 2011. Survey respondents were asked to submit information on their current health information technology adoption. This report summarizes survey responses for 145 Missouri hospitals that submitted complete IT supplements before May 31. Surveys from 10 additional hospitals were not available at the time, including two acute care hospitals. Comparisons to 2009 data are for 144 hospitals. A new rehabilitation hospital opened in Missouri in 2010. An [issue brief](http://www.mhanet.com/userdocs/articles/MHA%20Today/071610_Meaningful_Use.pdf) (www.mhanet.com/userdocs/articles/MHA%20Today/071610_Meaningful_Use.pdf) issued by MHA in July 2010 provides background information on the new federal law affecting hospitals and other eligible health care providers requirements for electronic health systems.

EHR ADOPTION

The IT supplement organizes 24 basic EHR functions into several categories — electronic clinical documentation, results viewing, computerized provider order entry and decision support. Hospitals report their level of EHR adoption along a glide path that ranges from "not implemented at all in the hospital" to "fully implemented across all units." Missouri's hospitals have made steady progress

toward the adoption of EHRs. In 2009, 30 percent of Missouri hospitals reported 13 or more functions fully implemented across their facilities. In 2010, 44 percent of hospitals report having 13 or more functions fully implemented across all units. The average number of functions fully implemented across all units in 2009 was 8.9. In 2010, the average number of EHR functions implemented across all units was 10.7.

Charts 1 and 2 below show the 2009 and 2010 levels of adoption.

CHART 1: Hospitals' EHR Adoption by Adoption Level, 2009 Annual Survey of Missouri Hospitals

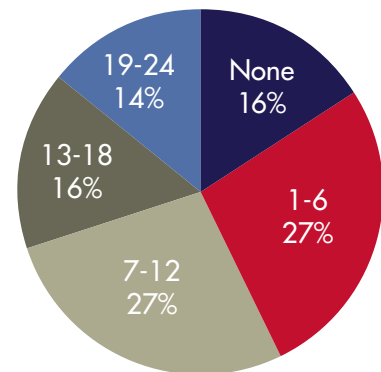
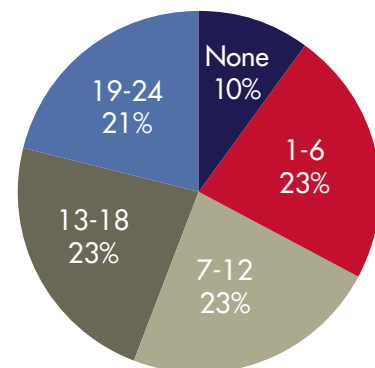


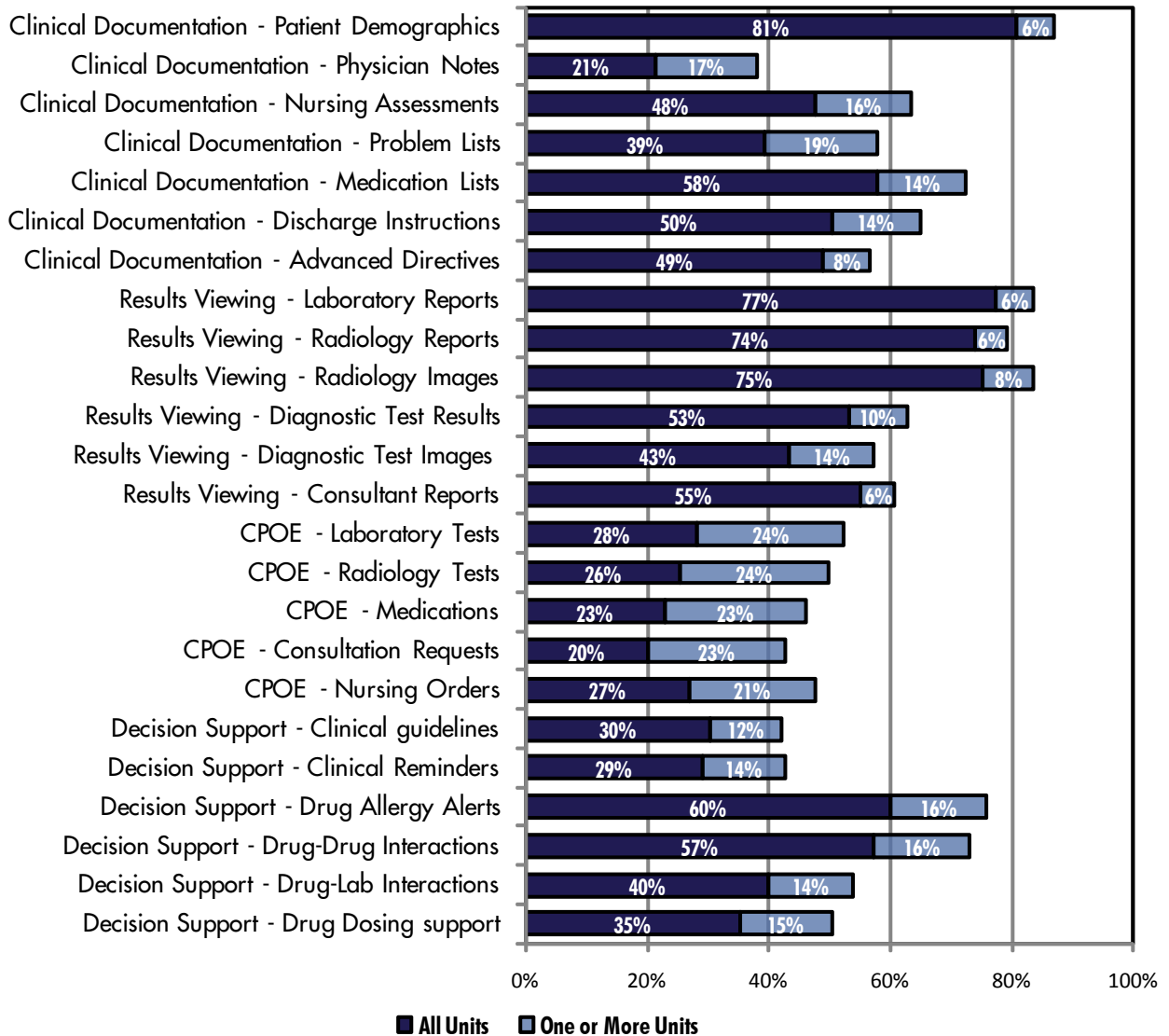
CHART 2: Hospitals' EHR Adoption by Adoption Level, 2010 Annual Survey of Missouri Hospitals



continued

The level of EHR adoption by Missouri hospitals is shown in Chart 3. More than 80 percent of hospitals report the implementation of electronic clinical documentation for patient demographics. Hospitals also have made significant progress toward viewing electronic results for laboratory reports (77 percent), radiology reports (74 percent) and radiology images (75 percent). The chart shows if the requirements were met for all units or for one or more units.

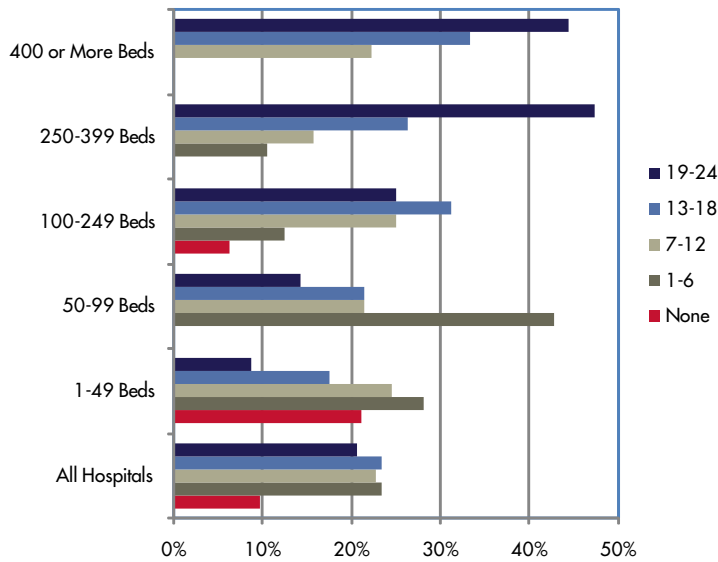
CHART 3: EHR Adoption by 24 Basic Functions, 2010 Annual Survey of Missouri Hospitals



EHR adoption by hospital staffed bed size is shown in Chart 4. Larger hospitals are much more likely to have a higher level of adoption. Nearly half of reporting hospitals with 250 or more staffed beds have implemented 19 or more functions. Conversely, nearly half of small hospitals with 100 or fewer staffed beds have less than seven functions implemented. However, some small Missouri hospitals report nearly all 24 functions implemented. Nearly 10 percent of hospitals report not having any of the 24 basic EHR functions implemented.

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CHART 4: Hospitals' EHR Adoption by Hospital Bed Size, 2010 Annual Survey of Missouri Hospitals



READINESS TO MEET MEANINGFUL USE REQUIREMENTS

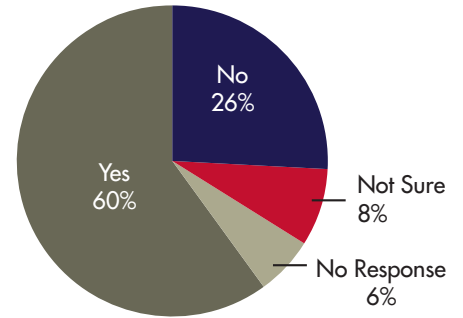
Nearly 60 percent of hospitals reported they plan to attest as a meaningful user of EHR during the next two years, as shown in Table 1. However, those that reported plans to attest in 2011 are not necessarily consistent with the level of adoption reported. This reporting inconsistency may be attributable to the complexity and ambiguity of reporting requirements at the time the survey was completed.

TABLE 1: Hospital Plans to Attest as a Meaningful User and Date

	Number	Percent	Average Implementation
No Response	12	8.3%	8.0
Yes, in 2011	46	31.7%	15.1
Yes, in 2012	39	26.9%	11.0
Yes, in 2013	14	9.7%	13.1
Yes, in 2015	3	2.1%	1.7
Do Not Know	26	17.9%	4.7
Not Planning to Attest	5	3.5%	13.2
Total	145	100.0%	11.0

Chart 5 shows that 60 percent of the hospitals have acquired an EHR system that has been certified as meeting the federal requirements for meaningful use.

CHART 5: Hospital Has an EHR System That Has Been Certified, 2010 Annual Survey of Missouri Hospitals

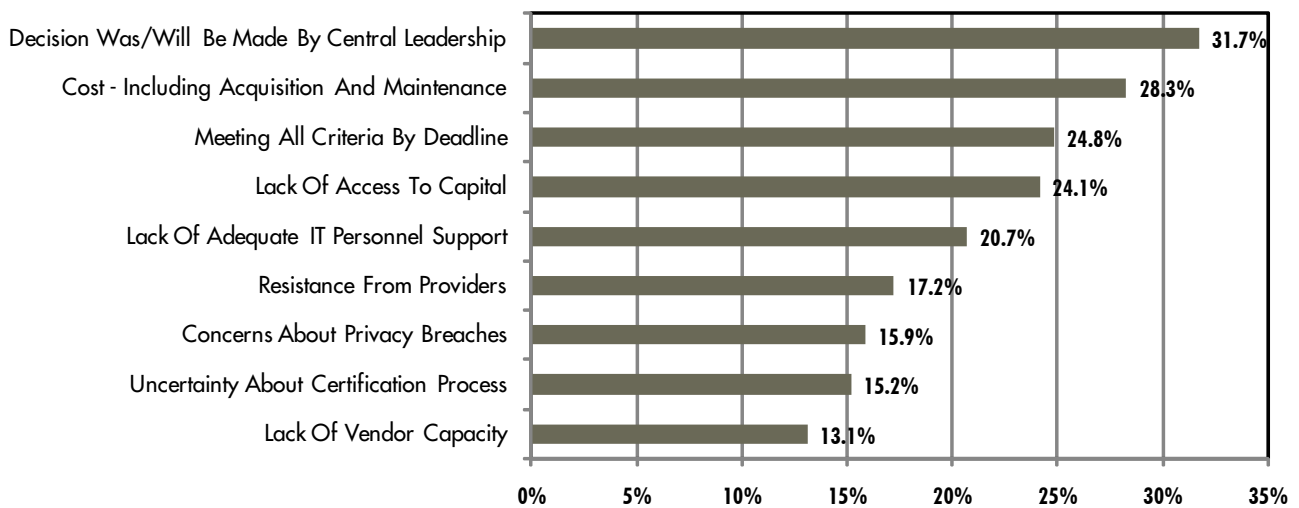


Among the top reasons reported by hospitals for not pursuing Medicare or Medicaid meaningful use incentive payments are acquisition costs and maintenance and uncertainty or inability to meet meaningful use reporting requirements, as shown in Chart 6. Hospital leaders are carefully evaluating the timing of attempting to meet meaningful use. The decision on when a hospital will first attest to meaningful use depends on multiple factors, including the ability to absorb the total cost of ownership of the project; the ability to engage key stakeholders, including physicians; and the organization's overall ability to meet the aggressive requirements of meaningful use. As noted in Chart 6, more than 50 percent of those responding to the survey noted access to capital and the cost of acquiring these systems as a major barrier to pursuing meaningful use payments. Acquisition costs alone can be in the millions of dollars, and annual recurring

maintenance costs are significant. Total cost of ownership of an EHR includes initial investment costs and other costs associated with the adoption and ongoing use of the technology, including maintenance, staff training, related hardware infrastructure and the staff time to implement and support the system. The adoption of an EHR is an ongoing commitment requiring the integration of resources across the hospital organization and involves not only hospital employees but all health professionals involved in the delivery of patient care.

Missouri hospitals report the two most challenging requirements to achieve meaningful use are implementing CPOE at the required specified level and exchanging clinical data with other providers.

CHART 6: Reasons for Not Pursuing Medicare/Medicaid Meaningful Use Payments, 2010 Annual Survey of Missouri Hospitals



Missouri hospitals own a variety of systems from various EHR vendors, including five hospitals that are using self-developed systems. The EHR inpatient and outpatient system vendors are shown in Chart 7 and Chart 8. Out of 115 hospitals reporting vendors, 75 hospitals use the same vendor for inpatients and outpatients. Five hospitals reported only an inpatient vendor.

CHART 7: Inpatient EHR Vendor and Number of Hospitals, 2010 Annual Survey of Missouri Hospitals

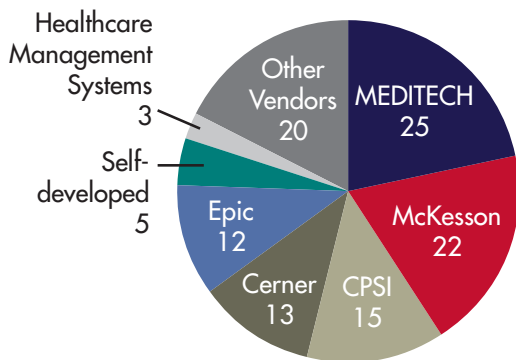
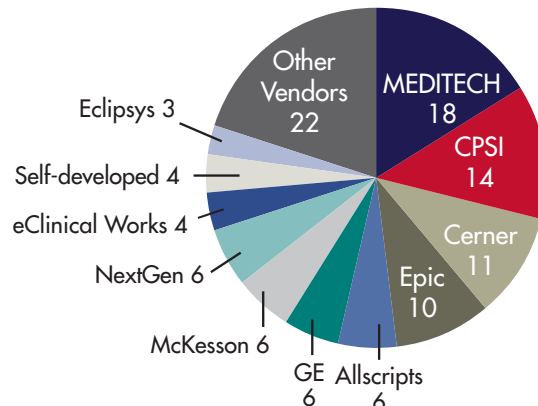


CHART 8: Outpatient EHR Vendor and Number of Hospitals, 2010 Annual Survey of Missouri Hospitals



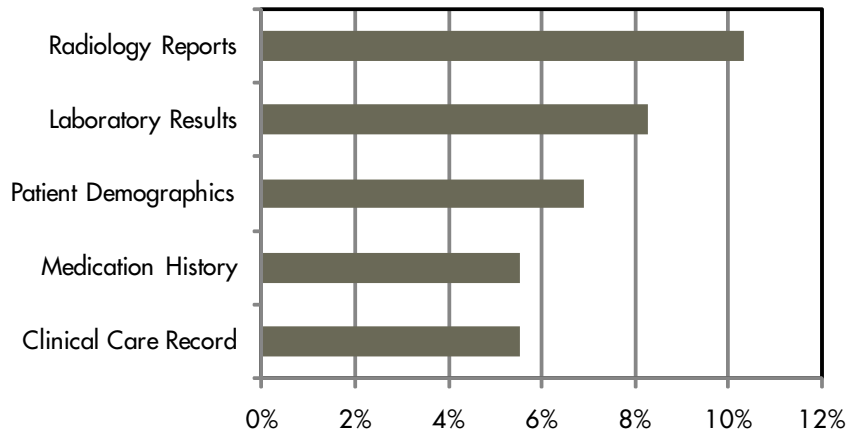
Although the survey's results demonstrate a strong intention to meet Stage 1 meaningful use, Missouri hospitals still have much work to do to meet the current aggressive Stage 1 meaningful use requirements for public health reporting. Only 33 percent of hospitals have systems capable of electronically submitting immunization data, and 37 percent have systems capable of electronically sending data on lab results to public health agencies. Missouri has had electronic surveillance reporting requirements in place for several years, as evidenced by 39 percent of Missouri hospitals reporting they electronically submit surveillance data.

Only 32 percent of Missouri hospitals report they have systems in place to electronically generate the required quality measures to meet Stage 1 meaningful use. Fifteen clinical quality measures are required to be generated directly from the EHR without additional manual processes.

The exchange of key clinical data elements will be essential to achieving improved care coordination across providers. The health information exchange landscape in Missouri is evolving. From the 2010 IT supplement, 9 percent of hospitals reported the active exchange of data within an HIE or regional health information organization. However, an additional 26 percent reported they have the framework to participate in an HIE or RHIO.

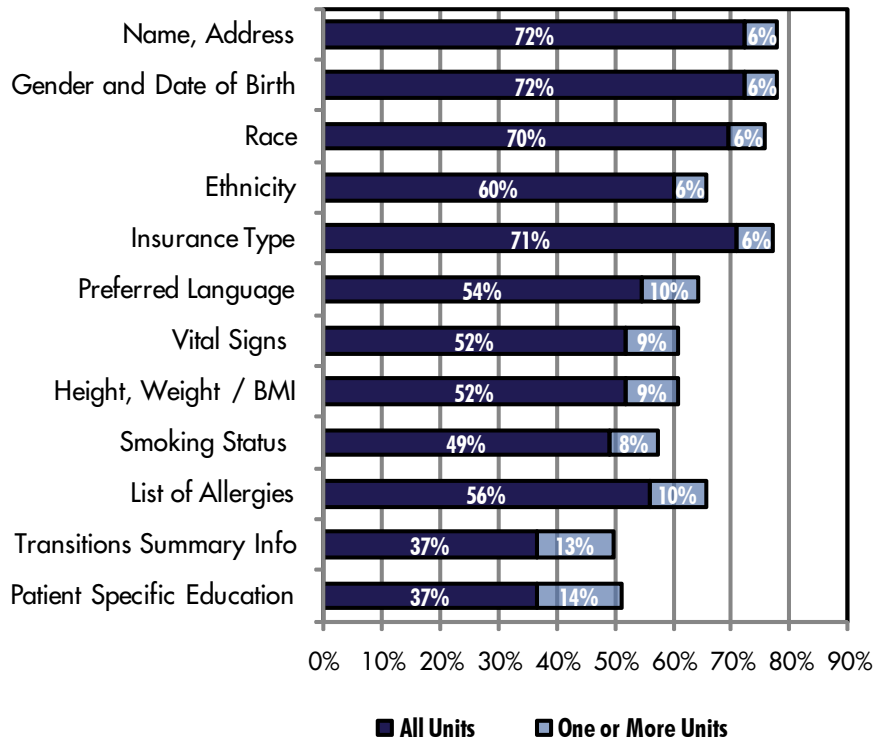
Chart 9 displays the level of HIE by Missouri hospitals with hospitals outside their own system.

CHART 9: Exchange Data With Hospitals Outside of System, 2010 Annual Survey of Missouri Hospitals



The Office of the National Coordinator Health Information Technology Standards and Policy Committee is considering requirements for Stage 2 meaningful use. The 2010 IT supplement included questions assessing the readiness of Missouri hospitals to have functionality available to meet anticipated Stage 2 requirements. Chart 10 displays the capacity of Missouri hospitals to collect anticipated Stage 2 data.

CHART 10: Missouri Hospitals' Capacity to Meet Anticipated Stage 2 Meaningful Use Requirements, 2010 Annual Survey of Missouri Hospitals



The management of medications, public health reporting and quality reporting are likely to be included in future meaningful use reporting. Table 2 shows the number and percent of hospitals reporting these capabilities. The average implementation is the average score out of 24 criteria for hospitals responding affirmatively to these items.

TABLE 2: Hospitals' Electronic System Allow Patient/Medication Lists, Public Health Reporting and Quality Reporting

	Number	Percent	Average Implementation
Patient/Medication Lists			
Develop a list of a patient's current meds	127	87.6%	12.2
Compare inpatient and preadmission	94	64.8%	14.4
Updated medication list at discharge	118	81.4%	12.6
Generate lists of patients by condition	116	80.0%	12.7
Public Health Reporting			
Data to immunization registries	48	33.1%	14.6
Syndrome data to public health agencies	56	38.6%	13.9
Lab results to public health agencies	54	37.2%	14.3
Quality Reporting			
Automatic quality measures extracting	46	31.7%	15.0
Automatic physician-specific measures from EHR	30	20.7%	16.1

In summary, Missouri hospitals have made steady progress toward becoming meaningful users of health information technology. The adoption of an EHR system and its related challenges and opportunities are considerable. Results of this survey demonstrate Missouri hospitals are investing in health information technologies that will improve the quality and efficiency of care provided to patients treated in Missouri hospitals and contribute to the economic vitality of the state.

This report was prepared by the Hospital Industry Data Institute, the data company of the Missouri Hospital Association.

FOR FURTHER INFORMATION

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APPENDIX A: 2010 IT SUPPLEMENT PARTICIPATING HOSPITAL CHARACTERISTICS

Service	Average Criteria	Number of Hospitals
General Medical and Surgical	11.9	111
<i>Non-Critical Access Hospitals</i>	13.9	76
<i>Critical Access Hospitals</i>	7.7	35
Psychiatric	4.1	10
Long-Term Acute Care	7.8	12
Rehabilitation	6.5	4
Children's General	22.0	3
* Other Specialty	8.8	5
Total	11.0	145

* Other Specialty - Children's Psychiatric, Children's Rehabilitation, Children's Orthopedic and a Cancer Hospital

Control	Average Criteria	Number of Hospitals
State	5.5	10
County	6.8	17
City	13.6	5
Hospital District	10.6	11
Other Not-For-Profit	14.4	46
Corporation	9.0	25
Church Affiliated	13.5	19
Partnership	3.9	8
* Other Ownership	16.5	4
Total	11.0	145

*Other Ownership - Two Veterans hospitals, Church Operated and Individual Ownership

Missouri Regions	Average Criteria	Number of Hospitals
Central	10.9	17
Kansas City Metropolitan Area	14.0	28
Northeast	6.1	9
Northwest	13.7	9
Southeast	7.8	19
Southwest	9.6	27
St Louis Metropolitan Area	12.0	36
Total	11.0	145

Bedsiz Category	Average Criteria	Number of Hospitals
0-49	7.9	57
50-99	9.4	28
100-249	13.0	32
250-399	16.1	19
400+	17.6	9
Total	11.0	145