

Health Information Technology

An Assessment of Freestanding Ambulatory Surgical Centers in Maryland

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Overview

The Maryland Health Care Commission (MHCC) surveys Freestanding Ambulatory Surgical Centers (FASCs or Centers) yearly to assess their current health information technology (health IT) adoption and future planning efforts. This is the second year the survey was administered, and the first year the changes in adoption and planning activity are presented. In 2010, all 333 Maryland Centers responded to the survey. Approximately 37 percent of Centers report using technology to manage patient health information, while 28 percent report using at least one of the following key health IT functionalities: computerized provider order entry (CPOE); electronic health records (EHRs); electronic medication administration records (eMARs); barcode medication administration (BCMA); infection surveillance software (ISS); electronic prescribing (e-prescribing); and electronic health information exchange (HIE) with laboratories, diagnostic centers, and outpatient physicians. In 2009 about 34 percent of Centers reported using at least one of the above health IT functionalities.

Adoption

In 2010, Centers that reported using health IT achieved adoption levels of more than 25 percent in seven of the nine categories. Centers reported exceeding 40 percent adoption in CPOE, EHRs, e-prescribing, and exchanging data with laboratories. In 2009, EHRs were the only health IT functionality exceeding 40 percent adoption among Centers using health IT. No Center reported adopting BCMA. Increases in adoption were reported in four of the nine health IT categories, including CPOE, EHRs, e-prescribing, and electronic HIE with diagnostic centers. In particular, roughly 82 percent of Centers reported adopting an EHR, an increase of approximately 24 percent over last year. Both CPOE and e-prescribing adoption increased by at least 7 percent to about 47 percent and 46 percent respectively. Electronic HIE with diagnostic centers increased by about 10 percent, reaching nearly a 37 percent adoption rate. The adoption of ISS and the ability to electronically exchange health information with outpatient physicians remained unchanged.

Health IT adoption was assessed based upon a Center's geographic location and specialty, including those providing care within a single specialty or across more than one specialty. Centers within the Baltimore region have the highest proportion of health IT adoption in 7 out of the 9 key health IT categories. The same holds true for single specialty FASCs. Centers in the Capital region and multi-specialty FASCs reported greater adoption rates for ISS and electronic data exchange with outpatient physicians than Centers in any other region or single specialty FASCs. Among all health IT functionalities, EHR adoption exceeded all other categories regardless of geographic location or specialty, ranging from about 90 percent EHR adoption among Baltimore Centers to roughly 64 percent among multi-specialty FASCs.

Planning

Centers that have not adopted a particular health IT component were asked to report their 12-month planning activity. FASCs planning to assess or implement BCMA and electronic health exchange with outpatient physicians reported a sizable increase as compared to the other health IT categories. About 8 Centers reported plans to assess or implement BCMA last year. This year, approximately 24 percent, or 23 Centers, plan to assess or implement BCMA. About 31 percent plan to assess or implement the exchange of data with outpatient physicians within the next 12 months, an increase of about 83 percent. While many FASCs have moved to adopt certain technology, those planning or undecided have decreased overall from the prior year.

Methodology

The MHCC developed the *Freestanding Ambulatory Surgical Center Health Information Technology Survey* (survey)¹ to assess health IT adoption and planning among all FASCs in Maryland. Yearly, FASCs are asked to complete the survey as part of the larger *Maryland Freestanding Ambulatory Surgical Center Survey*. This is the second year the health IT component of the survey was administered. The survey was conducted from April 2010 to July 2010, and requested the FASCs to report on their current health IT adoption and anticipated future planning efforts. The survey questions focus on key health IT functionalities including: CPOE; EHRs; eMARs; BCMA; ISS; e-prescribing; and electronic HIE with laboratories, diagnostic centers, and outpatient physicians. All 333 Maryland FASCs completed the survey².

Report Limitations

The goal of the *Health Information Technology: An Assessment of Freestanding Ambulatory Surgical Centers in Maryland* (report) is to inform stakeholders on the adoption of health IT capabilities and planning efforts of FASCs. The information used to develop the report was obtained from survey responses, which have not been audited and where different interpretations to the questions by the responder could impact on reporting. The data presented in this report reflects health IT adoption and does not measure the Center's use of the different applications. This report details information specific to Maryland and does not contain a national level comparison as data at this level is not currently available. Reported changes in health IT adoption from the previous year reflect those Centers operating in Maryland during that year.

Acknowledgements

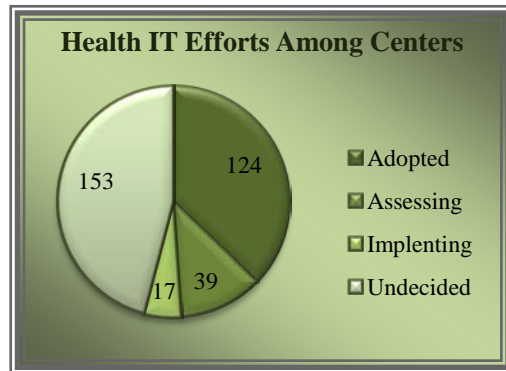
In 2009, the MHCC developed the survey in collaboration with the Maryland Ambulatory Surgical Association (MASA). The MHCC appreciates the assistance provided by MASA in developing the survey and in finalizing this report. MASA's commitment to health IT adoption and this report is commendable. The MHCC thanks the FASCs for putting forth the time and effort in completing the survey. Special thanks to Andrea Hyatt, President of the Maryland Ambulatory Surgery Association for providing feedback in the development of this report.

¹ See Appendix B for the *Survey Questions*.

² See Appendix D for the *2010 Freestanding Ambulatory Surgical Center HIT Survey Results*.

FASC Health IT Adoption

The widespread adoption and effective use of health IT is critical to transforming health care. Utilization of health IT has the potential to improve health care quality, prevent medical errors, and reduce health care costs.³ An analysis of the adoption of health IT among Centers is vital to understanding the progress in Maryland towards maximizing the advantages of this technology. This year centers were asked to report whether they use technology to manage patient health information and roughly 37 percent of all Centers report positively. Among those Centers not using technology to manage patient health information, approximately 73 percent are undecided in their future use of health IT, while about 27 percent plan to assess or implement health IT in the coming months.



Centers reported health IT adoption in the following key areas: CPOE, EHRs, eMARs, BCMA, ISS, e-prescribing, and HIE. Around 28 percent of Centers report using at least one area of health IT. The adoption rate in all health IT categories is greater for those Centers already using at least one health IT component. Between 10 to 13 percent of all Centers reported adopting CPOE, e-prescribing, electronic data exchange with laboratories, or data exchange with diagnostic centers. Approximately 23 percent of all Centers report EHR adoption, while only about seven percent exchange data electronically with providers in the community. The table below illustrates the adoption rate of key functionality among Centers.

2010 Health IT Adoption			
Health IT Functions	#	Centers Using HIT	All Centers
		(N=94) %	(N=333) %
Computerized Provider Order Entry	44	47	13
Electronic Health Record	77	82	23
Electronic Medication Administration Record	36	38	11
Barcode Medication Administration	-	-	-
Infection Surveillance Software	37	39	11
Electronic Prescribing	43	46	13
Electronic Data Exchange with Laboratories	42	45	13
Electronic Data Exchange with Diagnostic Centers	34	36	10
Electronic Data Exchange with Outpatient Providers	22	23	7

³ Shekelle PG, Morton SC, Keeler EB. Costs and Benefits of Health Information Technology. Evidence Report/Technology Assessment No. 132. (Prepared by the Southern California Evidence-based Practice Center under Contract No. 290-02-0003.) AHRQ Publication No.06-E006. Rockville, MD: Agency for Healthcare Research and Quality. April 2006. Available at: <http://www.ahrq.gov/downloads/pub/evidence/pdf/hitsyscosts/hitsys.pdf>.

Health IT Adoption among Centers using Health IT

This report highlights changes in adoption and planning efforts among FASCs that use health IT. Overall, adoption in four key categories exceeded 40 percent: CPOE, EHRs, e-prescribing, and exchanging data with laboratories. In 2009 only the adoption of EHR exceeded 40 percent. Adoption increased from last year in four categories by at least 7 percent among Centers. In particular, almost 82 percent of these FASCs adopted EHRs, an increase of about 24 percent from the prior year. Both CPOE and e-prescribing adoption increased by at least 7 percent since last year, while data exchange with diagnostic centers had an increase of about 10 percent. The adoption of ISS and the ability to exchange data with providers remained the same.

Health IT Adoption - 2009 and 2010			
Health IT Functions	Centers using health IT # (%)		Change (% change)
	2009 (N=109)	2010 (N=94)	
Computerized Provider Order Entry	41 (38)	44 (47)	3 (7)
Electronic Health Record	62 (57)	77 (82)	15 (24)
Electronic Medication Administration Record	37 (34)	36 (38)	-1 (-3)
Barcode Medication Administration	1 (1)	-	-1 (-100)
Infection Surveillance Software	37 (34)	37 (39)	-
Electronic Prescribing (e-prescribing)	40 (37)	43 (46)	3 (8)
Electronic Data Exchange with Laboratories	44 (40)	42 (45)	-2 (-5)
Electronic Data Exchange with Diagnostic Centers	31 (28)	34 (36)	3 (10)
Electronic Data Exchange with Outpatient Providers	22 (20)	22 (23)	-

Computerized Physician Order Entry

CPOE⁴ allows providers to enter order information directly into the computer system rather than hand-writing orders. This significantly reduces the potential for errors that can result from the misinterpretation of hand-written orders.⁵ Approximately 47 percent of Centers reported having CPOE capabilities, which is around a 7 percent increase from last year. Among those who report not having CPOE capabilities, nearly 80 percent are undecided in their plans to implement this technology, and around 20 percent plan either to assess or implement CPOE in the next 12 months.

CPOE Adoption # (%)			
	2009 (N=109)	2010 (N=94)	Change (% change)
Yes	41 (38)	44 (47)	3 (7)
No	68 (62)	50 (53)	-18 (26)
Planning			
Assessing	14 (21)	8 (16)	-6 (-43)
Implementing	4 (6)	2 (4)	-2 (-50)
Undecided	50 (74)	40 (80)	-10 (-20)

Clinical Decision Support

Clinical decision support (CDS)⁶ systems are designed to offer patient-specific guidance to physicians. This technology integrates clinical best practices or references with electronic patient-specific information, which are then used to communicate relevant information back to the physician; such as support for managing patients with specific conditions, or prompts for standards of care (SOC) guidelines or drug interactions.⁷ The value of CPOE is increased when CDS is integrated into the system.⁸ Nearly 80 percent of Centers report using CDS for medication prescribing, which is an increase of six percent from last year in the number of Centers adopting this technology. Roughly 20 percent of FASCs report that their CPOE technology has CDS capabilities for diagnosis, SOC, and chronic conditions. The adoption of CDS capabilities for diagnosis, SOC, and chronic conditions has remained the same.

CDS Integration # (%)			
	2009 (N=41)	2010 (N=44)	Change (% change)
Medication CDS	33 (80)	35 (80)	2 (6)
Diagnosis/SOC CDS	9 (22)	9 (20)	-

⁴ CPOE is a software application where providers with prescribing privileges enter patient care orders directly into the system [see *Glossary of Terms* in Appendix C].

⁵ S. Eslami, N. F. de Keizer, and A. Abu-Hanna, "The Impact of Computerized Physician Medication Order Entry in Hospitalized Patients – A Systemic Review," *International Journal of Medical Informatics*, June 2008, 77(6):365-376. Available at: [http://www.ijmijournal.com/article/S1386-5056\(07\)00169-4/abstract](http://www.ijmijournal.com/article/S1386-5056(07)00169-4/abstract).

⁶ CDS is technology that provides evidence-based knowledge in the context of patient-specific data [see *Glossary of Terms* in Appendix C].

⁷ Agency for Healthcare Research and Quality, *Clinical Decision Support Systems: State of the Art*, June 2009. Available at: http://healthit.ahrq.gov/images/jun09cdsreview/09_0069_ef.html.

⁸ Oregon Health & Science University, *Welcome to CPOE.org*. Available at: <http://www.cpo.e.org>.

Electronic Health Records

EHRs⁹ have the potential to improve the quality, safety, and efficiency of health care by furnishing health information in a consolidated record to the health care provider at the time care is rendered.¹⁰ The EHR adoption rate among Centers is approximately 82 percent. This is an increase of approximately 24 percent over last year. Approximately 35 percent of FASCs that have not adopted EHRs are planning to assess or implement this technology within the next 12 months, while about 65 percent remain undecided. Many FASCs have moved to adopt this technology, those planning or undecided have decreased from the prior year.

EHR Adoption # (%)			
	2009 (N=109)	2010 (N=94)	Change (% change)
Yes	62 (57)	77 (82)	15 (24)
No	47 (43)	17 (18)	-30 (-64)
Planning			
Assessing	14 (30)	4 (24)	-10 (-71)
Implementing	3 (6)	2 (12)	-1 (-33)
Undecided	30 (64)	11 (65)	-19 (-63)

Electronic Medication Administration Records

eMARs¹¹ automate a range of paper-based processes and provide staff with an electronic record of the patient's medication order history, resulting in reducing transcription errors and adverse drug events.¹² In 2010, FASCs that report using health IT reported eMAR adoption at around 38 percent. This is a decrease of about 3 percent from the prior year. Among those Centers who report not adopting eMAR, around 24 percent plan to assess or implement this technology within the next 12 months and about 76 percent are undecided. The number of Centers planning to assess this technology increased from the previous year, while the number of Centers that plan to implement this technology or are undecided about adopting eMARs decreased.

eMAR Adoption # (%)			
	2009 (N=109)	2010 (N=94)	Change (% change)
Yes	37 (34)	36 (38)	-1 (-3)
No	72 (66)	58 (62)	-14 (-19)
Planning			
Assessing	12 (17)	13 (22)	1 (8)
Implementing	4 (6)	1 (2)	-3 (-75)
Undecided	56 (78)	44 (76)	-12 (-21)

⁹ An EHR is a longitudinal collection of electronic health information that serves as a legal medical record [see *Survey Glossary* in Appendix C].

¹⁰G.D. Schiff and D.W. Bates, *Can Electronic Clinical Documentation Help Prevent Diagnostic Errors?*, *The New England Journal of Medicine*, March 24, 2010. Available at: <http://healthcarereform.nejm.org/?p=3217&query=home>.

¹¹ An eMAR is an electronic record of medications administered to a patient during their hospital stay [see *Survey Glossary* in Appendix C].

¹²The University of Sydney, *The Impact of Electronic Medication Administration Records (e-MAR) on Medication Administration Safety and Nurses' Work*. Available at: http://www.fhs.usyd.edu.au/hireu/research/current_projects/project_impact.shtml.

Barcode Medication Administration

BCMA¹³ decreases medication errors that occur during transcription and administration by electronically verifying medication through bar-code technology.^{14,15} BCMA is often utilized in environments where patients regularly receive medications during an extended stay. Centers did not report adopting BCMA during this reporting period. Among health IT adopting FASCs, roughly 76 percent are undecided in their future plans to adopt BCMA; however, around 25 percent plan on assessing or implementing this technology within the next year.

BCMA Adoption # (%)			
	2009 (N=109)	2010 (N=94)	Change (% change)
Yes	1 (1)	-	-1 (-100)
No	108 (99)	94 (100)	-14 (-13)
Planning			
Assessing	7 (6)	9 (10)	2 (29)
Implementing	1 (1)	14 (15)	13 (1300)
Undecided	100 (93)	71 (76)	-29 (-29)

Infection Surveillance Software

ISS¹⁶ allows Centers to automate infection monitoring by providing staff with the ability to electronically track and evaluate post operative infection trends. ISS can help avert health care acquired infections and better manage disease outbreaks.^{17,18} ISS adoption among health IT adopting Centers was reported at around 39 percent and remains virtually unchanged from last year. Roughly 23 percent of Centers not adopting this technology plan to assess or implement ISS within the next 12 months. Around 77 percent are undecided about adopting ISS, which is a decrease of about 10 percent from last year.

¹³ BCMA is technology that uses an infrared scan of the barcodes on the patient's bracelet and medication package at the bedside [see *Survey Glossary* in Appendix C].

¹⁴ B. Monegain (ed.), *Bar-coding with eMAR Tech Shown to Boost Safety*, Healthcare IT News, May 6, 2010. Available at: <http://www.healthcareitnews.com/news/bar-coding-emar-tech-shown-boost-safety>.

¹⁵ Eric G. Poon, M.D., M.P.H., et.al., *Effect of Bar-Code Technology on the Safety of Medication Administration*, The New England Journal of Medicine, 1698(362), May 6, 2010. Available at: <http://www.nejm.org/doi/pdf/10.1056/NEJMs0907115>

¹⁶ ISS is technology that electronically tracks the rates of infection outbreaks [see *Survey Glossary* in Appendix B].

¹⁷ C. Orlovsky, *Infection-Catchers: New Technology Combats HAIs, Tracks Potential Outbreaks*, NurseZone. Available at: http://www.nursezone.com/Nursing-News-Events/devices-and-technology/Infection-Catchers-New-Technology-Combats-HAIs-Tracks-Potential-Outbreaks_32350.aspx.

¹⁸ Executive Healthcare, *Infection Control Software: The Justification Has Never Been Greater*, Issue 7, November 20, 2009. Available at: <http://www.executivehm.com/article/Infection-Control-Software-The-Justification-Has-Never-Been-Greater/>.

ISS Adoption # (%)			
	2009 (N=109)	2010 (N=94)	Change (% change)
Yes	37 (34)	37 (39)	-
No	72 (66)	57 (61)	-15 (-21)
Planning			
Assessing	20 (28)	12 (21)	-8 (-40)
Implementing	3 (4)	1 (2)	-2 (-67)
Undecided	49 (68)	44 (77)	-5 (-10)

Electronic Prescribing

e-Prescribing¹⁹ enables providers to send a legible prescription in an electronic format directly to a pharmacy, improving the safety and efficiency of the current paper prescription process.²⁰ When integrated with other electronic systems, e-prescribing allows providers to stay abreast of changes in drug formularies and helps to expedite filling prescription requests at the pharmacy.²¹ Approximately 46 percent of Centers e-prescribe medications to community pharmacies, which is an increase of around 8 percent from the prior year. The number of Centers that plan to assess or implement within the next 12 months remained nearly unchanged from last year and about 63 percent are undecided. This is a decrease of about 36 percent from last year.

e-Prescribing w/Community Pharmacies # (%)			
	2009 (N=109)	2010 (N=94)	Change (% change)
Yes	40 (37)	43 (46)	3 (8)
No	69 (63)	51 (54)	-18 (-26)
Planning			
Assessing	13 (19)	12 (24)	-1 (-8)
Implementing	6 (9)	7 (14)	1 (17)
Undecided	50 (72)	32 (63)	-18 (-36)

¹⁹ e-Prescribing is the electronic transmission of a prescription to a community pharmacy [see *Survey Glossary* in Appendix B].

²⁰ R. A. Miller, R. M. Gardner, K.B. Johnson, G. Hripcsak, *Clinical decision support and electronic prescribing systems: a time for responsible thought and action*. Journal of the American Medical Informatics Association, 2005 Jul-Aug;12(4):403-9.

Available at: <http://jamia.bmj.com/content/12/4/403.extract>.

²¹ D.S. Bell, S Cretin, R.S. Marken, A.B. Landman, *A conceptual framework for evaluating outpatient electronic prescribing systems based on their functional capabilities*. Journal of the American Medical Informatics Association, 2004 Jan-Feb;11(1):60-70. Available at: <http://jamia.bmj.com/content/11/1/60.abstract?related-urls=yes&legid=amiainl:11/1/60>

Electronic Data Exchange

The electronic exchange of patient information improves care coordination by delivering information to the provider more efficiently than paper-based methods.²² During this reporting period, about 23 percent of Maryland FASCs that report using health IT also report the electronic exchange of some patient information with outpatient providers in their service area, which remains unchanged from last year. Among those that do not electronically share data with outpatient providers, roughly 11 percent plan to assess this technology, an increase of roughly 14 percent from the prior year. Most notably, roughly 14 Centers plan to implement data sharing with outpatient providers over the next 12 months, an increase of about 9 additional Centers since last year. Centers that report being undecided decreased by about 33 percent.

Data Sharing w/Outpatient Providers # (%)			
	2009 (N=109)	2010 (N=94)	Change (% change)
Yes	22 (20)	22 (23)	-
No	87 (80)	72 (77)	-15 (-17)
Planning			
Assessing	7 (8)	8 (11)	1 (14)
Implementing	5 (6)	14 (19)	9 (180)
Undecided	75 (86)	50 (69)	-25 (-33)

As part of the survey, Centers were asked to report on their exchange of electronic patient information with diagnostic centers.²³ Approximately 36 percent of FASCs that adopted health IT reported data sharing with diagnostic centers, about a 10 percent increase over last year. As Centers transition to sharing data with diagnostic centers electronically, the percent of those planning or undecided has decreased. Centers that plan to assess or implement this technology over the next 12 months decreased by roughly 25 percent and those undecided decreased by 22 percent.

Data Sharing w/Diagnostic Centers # (%)			
	2009 (N=109)	2010 (N=94)	Change (% change)
Yes	31 (28)	34 (36)	3 (10)
No	78 (72)	60 (64)	-18 (-23)
Planning			
Assessing	14 (18)	14 (23)	-
Implementing	6 (8)	1 (2)	-5 (-83)
Undecided	58 (74)	45 (75)	-13 (-22)

²² J. Walker, E. Pan, D. Johnston, J. Adler-Milstein, D.W. Bates, B. Middleton. *The Value of Health Care Information Exchange and Interoperability*. Health Affairs January 2005. Available at: <http://content.healthaffairs.org/content/suppl/2005/02/07/hlthaff.w5.10.DC1>.

²³ Diagnostic centers are places that offer diagnostic services such as imaging services and other medical tests to aid in diagnosing and treating a patient. [see *Survey Glossary* in Appendix B].

Centers were also asked to report if they exchange electronic patient information with community laboratories.²⁴ Although roughly 45 percent of Centers that report using health IT also report exchanging patient information with community laboratories during this reporting period, a small decrease of about 5 percent was reported from the prior year. The percent of FASCs that plan to assess or implement data sharing with laboratories over the next 12 months decreased by roughly 7 percent, and the percent that remain undecided decreased by about 24 percent.

Data Sharing w/Laboratories # (%)			
	2009 (N=109)	2010 (N=94)	Change (% change)
Yes	44 (40)	42 (45)	-2 (-5)
No	65 (60)	52 (55)	-13 (-20)
Planning			
Assessing	9 (13)	10 (19)	1 (11)
Implementing	5 (7)	3 (6)	-2 (-40)
Undecided	51 (74)	39 (75)	-12 (-24)

²⁴ Laboratories are places where clinical tests are performed on specimens in order to get information about the health of a patient and aid in the diagnosis, treatment, and prevention of disease.

Geography

An assessment of the health IT adoption by geographical location was performed by dividing up Centers based upon their location in Baltimore, the Capital region, or other regions within Maryland.²⁵ Areas outside of the Baltimore and Capital region have the highest proportion of Centers that report using technology to manage patient health information and adopting at least one health IT functionality. Approximately 37 percent of Centers in the Capital region and about 33 percent in Baltimore report using technology to manage patient health information, while both regions report 27 percent having adopted at least one health IT functionality. Among Baltimore FASCs that have not adopted health IT, around 19 percent plan to assess or implement over the next 12 months and 81 percent are undecided. In general, a larger percentage of Centers in Baltimore remain undecided in their adoption of health IT as compared to those in the Capital and Other regions.

Health IT Adoption # (%)			
	Baltimore (N=153)	Capital (N=105)	Other (N=75)
Manage Patient Health Information with Technology	51 (33)	39 (37)	34 (45)
Adopted a Key Function	42 (27)	28 (27)	24 (32)
Planning			
Assessing	12 (12)	17 (26)	10 (24)
Implementing	7 (7)	4 (6)	6 (15)
Undecided	83 (81)	45 (68)	25 (61)

Baltimore

Approximately 49 percent of the FASCs in the state are located in the Baltimore region. Among Baltimore Centers who report using health IT, about 90 percent also report adopting an EHR. This is roughly a 31 percent increase over last year. Only one FASC in this area is undecided about adopting an EHR. Around 24 percent of Baltimore Centers reported exchanging data with outpatient physicians. Compared to last year, the number of Centers exchanging data with outpatient physicians increase by about 67 percent, more than any other health IT category. Baltimore Centers that report using health IT achieved adoption levels of more than 50 percent in CPOE, e-prescribing, and exchanging electronic data with laboratories and diagnostics centers. During this reporting period, the adoption rate in five health IT categories; BCMA, eMAR, e-prescribing and exchanging electronic data with laboratories and diagnostics centers, remained unchanged. Baltimore FASCs did not report adopted BCMA and nearly 60 percent are undecided about this technology.

²⁵ See Appendix A for Geographic Distribution by County. Counties were distributed in accordance with the defined Standard Metropolitan Statistical Area of the U.S. Census Bureau. Data available at: <http://www.census.gov/population/www/metroareas/lists/historical/80mfips.txt>.

Health IT Function	Baltimore Centers # (%)		Change (% change)
	2009 (N=52)	2010 (N=42)	
Computerized Provider Order Entry	22 (42)	24 (57)	2 (9)
<i>Assessing</i>	3 (10)	2 (10)	-1 (-33)
<i>Implementing</i>	1 (3)	2 (10)	1 (100)
<i>Undecided</i>	26 (87)	16 (80)	-10 (-38)
Electronic Health Record	29 (56)	38 (90)	9 (31)
<i>Assessing</i>	3 (13)	2 (50)	-1 (-33)
<i>Implementing</i>	2 (9)	1 (25)	-1 (-50)
<i>Undecided</i>	18 (78)	1 (25)	-17 (-94)
Electronic Medication Administration Record	21 (40)	20 (48)	-1 (-5)
<i>Assessing</i>	1 (3)	7 (32)	6 (600)
<i>Implementing</i>	3 (10)	-	-3 (-100)
<i>Undecided</i>	27 (87)	15 (68)	-12 (-44)
Barcode Medication Administration	-	-	-
<i>Assessing</i>	1 (2)	5 (12)	4 (400)
<i>Implementing</i>	-	12 (29)	12
<i>Undecided</i>	51 (98)	25 (60)	-26 (-51)
Infection Surveillance Software	14 (27)	18 (43)	4 (29)
<i>Assessing</i>	11 (29)	6 (25)	-5 (-45)
<i>Implementing</i>	1 (3)	1 (4)	-
<i>Undecided</i>	26 (68)	17 (71)	-9 (-35)
Electronic Prescribing w/ Community Pharmacies	24 (46)	24 (57)	-
<i>Assessing</i>	2 (7)	3 (17)	1 (50)
<i>Implementing</i>	2 (7)	4 (22)	2 (100)
<i>Undecided</i>	24 (86)	11 (61)	-13 (-54)
Electronic Data Exchange w/ Laboratories	24 (46)	24 (57)	-
<i>Assessing</i>	2 (7)	4 (22)	2 (100)
<i>Implementing</i>	2 (7)	3 (17)	1 (50)
<i>Undecided</i>	24 (86)	11 (61)	-13 (-54)
Electronic Data Exchange w/ Diagnostic Centers	23 (44)	23 (55)	-
<i>Assessing</i>	2 (7)	4 (21)	2 (100)
<i>Implementing</i>	-	1 (5)	1
<i>Undecided</i>	27 (93)	14 (74)	-13 (-48)
Electronic Data Exchange w/ Outpatient Providers	6 (12)	10 (24)	4 (67)
<i>Assessing</i>	-	1 (3)	1
<i>Implementing</i>	2 (4)	12 (38)	10 (500)
<i>Undecided</i>	44 (96)	19 (59)	-25 (-57)

Capital

Capital region Centers account for approximately 31 percent of the FASCs in Maryland. About 75 percent of Capital Centers that report using health IT also report adopting an EHR. Similar to what was reported by Centers in the Baltimore region, the EHR adoption rate exceeds other health IT functionality. Around 43 percent of Capital region Centers reported e-prescribing with community pharmacies. The number of Centers e-prescribing increase by roughly 71 percent since 2009, more than any other health IT category. Capital region Centers that report using health IT achieved an adoption rate of approximately 43 percent in eMAR, an increase of around 50 percent as compared to last year. Similar to Centers in the Baltimore region, Capital area Centers did not report adopted BCMA and nearly 86 percent are undecided about adopting this technology.

Health IT Function	Capital Centers # (%)		Change (% change)
	2009 (n=27)	2010 (n=28)	
Computerized Provider Order Entry	7 (26)	10 (36)	3 (43)
<i>Assessing</i>	5 (25)	3 (17)	-2 (-40)
<i>Implementing</i>	2 (10)	2 (11)	-
<i>Undecided</i>	13 (65)	13 (72)	-
Electronic Health Record	18 (67)	21 (75)	3 (17)
<i>Assessing</i>	5 (56)	2 (29)	-3 (-60)
<i>Implementing</i>	1 (11)	1 (14)	-
<i>Undecided</i>	3 (33)	4 (57)	1 (33)
Electronic Medication Administration Record	8 (30)	12 (43)	4 (50)
<i>Assessing</i>	5 (26)	4 (25)	-1 (-20)
<i>Implementing</i>	-	1 (6)	1
<i>Undecided</i>	14 (74)	11 (69)	-3 (-21)
Barcode Medication Administration	-	-	-
<i>Assessing</i>	2 (7)	3 (11)	1 (50)
<i>Implementing</i>	-	1 (4)	1
<i>Undecided</i>	25 (93)	24 (86)	-1 (-4)
Infection Surveillance Software	12 (44)	7 (25)	-5 (-42)
<i>Assessing</i>	4 (27)	3 (14)	-1 (-25)
<i>Implementing</i>	2 (13)	-	-2 (-100)
<i>Undecided</i>	9 (60)	18 (86)	9 (100)
Electronic Prescribing w/ Community Pharmacies	7 (26)	12 (43)	5 (71)
<i>Assessing</i>	4 (20)	6 (38)	2 (50)
<i>Implementing</i>	2 (10)	1 (6)	-1 (-50)
<i>Undecided</i>	14 (70)	9 (56)	-5 (-36)
Electronic Data Exchange w/ Laboratories	8 (30)	9 (32)	1 (13)
<i>Assessing</i>	3 (16)	5 (26)	2 (67)
<i>Implementing</i>	3 (16)	-	-3 (-100)
<i>Undecided</i>	13 (68)	14 (74)	1 (8)
Electronic Data Exchange w/ Diagnostic Centers	-	4 (14)	4
<i>Assessing</i>	4 (15)	7 (29)	3 (75)
<i>Implementing</i>	4 (15)	-	-4 (-100)
<i>Undecided</i>	19 (70)	17 (71)	-2 (-11)
Electronic Data Exchange w/ Outpatient Providers	8 (30)	7 (25)	-1 (-13)
<i>Assessing</i>	1 (5)	5 (24)	4 (400)
<i>Implementing</i>	2 (11)	1 (5)	-1 (-50)
<i>Undecided</i>	16 (84)	15 (71)	-1 (-6)

Other

Centers located outside of the Capital or Baltimore region account for about 20 percent of the FASCs in Maryland. EHR adoption among Centers in other regions that report using health IT is similar to the adoption rate of the Capital area FASCs at about 75 percent. This is also the highest adoption rate of all health IT functions and an increase of around 20 percent as compared to last year. Approximately half of these Centers reported having ISS. ISS and EHR adoption are the only health IT functions that increased for these Centers from last year at around 9 percent and 20 percent, respectively.

Health IT Function	Other Centers # (%)		Change (% change)
	2009 (n=30)	2010 (n=24)	
Computerized Provider Order Entry	12 (40)	10 (42)	-2 (-17)
<i>Assessing</i>	6 (33)	3 (21)	-3 (-50)
<i>Implementing</i>	1 (6)	-	-1 (-100)
<i>Undecided</i>	11 (61)	11 (79)	-
Electronic Health Record	15 (50)	18 (75)	3 (20)
<i>Assessing</i>	6 (40)	-	-6 (-100)
<i>Implementing</i>	-	-	-
<i>Undecided</i>	9 (60)	6 (100)	-3 (-33)
Electronic Medication Administration Record	8 (27)	4 (17)	-4 (-50)
<i>Assessing</i>	6 (27)	2 (10)	-4 (-67)
<i>Implementing</i>	1 (5)	-	-1 (-100)
<i>Undecided</i>	15 (68)	18 (90)	3 (20)
Barcode Medication Administration	1 (3)	-	-1 (-100)
<i>Assessing</i>	4 (14)	1 (4)	-3 (-75)
<i>Implementing</i>	1 (3)	1 (4)	-
<i>Undecided</i>	24 (83)	22 (92)	-2 (-8)
Infection Surveillance Software	11 (37)	12 (50)	1 (9)
<i>Assessing</i>	5 (26)	3 (25)	-2 (-40)
<i>Implementing</i>	-	-	-
<i>Undecided</i>	14 (74)	9 (75)	-5 (-36)
Electronic Prescribing w/ Community Pharmacies	9 (30)	7 (29)	-2 (-22)
<i>Assessing</i>	7 (33)	3 (18)	-4 (-57)
<i>Implementing</i>	2 (10)	2 (12)	-
<i>Undecided</i>	12 (57)	12 (71)	-
Electronic Data Exchange w/ Laboratories	12 (40)	9 (38)	-3 (-25)
<i>Assessing</i>	5 (28)	1 (7)	-4 (-80)
<i>Implementing</i>	1 (6)	-	-1 (-100)
<i>Undecided</i>	12 (67)	14 (93)	2 (17)
Electronic Data Exchange w/ Diagnostic Centers	8 (27)	7 (29)	-1 (-13)
<i>Assessing</i>	8 (36)	3 (18)	-5 (-63)
<i>Implementing</i>	2 (9)	-	-2 (-100)
<i>Undecided</i>	12 (55)	14 (82)	2 (17)
Electronic Data Exchange w/ Outpatient Providers	8 (27)	5 (21)	-3 (-38)
<i>Assessing</i>	6 (27)	2 (11)	-4 (-67)
<i>Implementing</i>	1 (5)	1 (5)	-
<i>Undecided</i>	15 (68)	16 (84)	1 (7)

Specialty

Health IT adoption by specialty was analyzed by dividing up Centers based upon whether they reported providing care within a single specialty or across more than one specialty. Single specialty Centers have the highest proportion of Centers that report using technology to manage patient health information and adopting key health IT functionality; around 39 and 30 percent respectively. Approximately 31 percent of multi-specialty Centers report using technology to manage patient health information, while 23 percent report using health IT in at least one key function area. Among single specialty FASCs that have not adopted health IT, around 29 percent plan to assess or implement within the next 12 months and 71 percent are undecided. A larger proportion of multi-specialty Centers are undecided in their adoption of health IT than single specialty Centers.

Health IT Adoption # (%)		
	Single Specialty (N=259)	Multi-Specialty (N=74)
Manage Patient Health Information with Technology	101 (39)	23 (31)
Adopted a Key Function	77 (30)	17 (23)
Planning		
Assessing	30 (19)	9 (18)
Implementing	16 (10)	1 (2)
Undecided	112 (71)	41 (80)

Single Specialty

Approximately 78 percent of the FASCs in Maryland are single specialty Centers. Single specialty Centers that use health IT reported EHR adoption around 86 percent, the highest percentage of all health IT functions and around a 29 percent increase over last year. These FASCs report nearly 40 percent or greater adoption rate in six key health IT functionality areas: CPOE, EHR, eMAR, e-prescribing, and exchanging data with laboratories and diagnostic centers. While approximately 35 percent of single specialty Centers reported adopting ISS. Compared to 2009, ISS adoption increased more than any other health IT functionality, by about 35 percent. Among those single specialty Centers that have not adopted e-prescribing technology, about 45 percent either plan to assess or implement e-prescribing capabilities over the next 12 months, approximately a 42 percent increase since last year.

Health IT Function	Single Specialty Centers # (%)		Change (% change)
	2009 (n=78)	2010 (n=77)	
Computerized Provider Order Entry	34 (44)	39 (51)	5 (15)
<i>Assessing</i>	9 (20)	7 (19)	-2 (-22)
<i>Implementing</i>	4 (9)	1 (3)	-3 (-75)
<i>Undecided</i>	31 (70)	30 (81)	-1 (-3)
Electronic Health Record	51 (65)	66 (86)	15 (29)
<i>Assessing</i>	10 (37)	4 (36)	-6 (-60)
<i>Implementing</i>	2 (7)	1 (9)	-1 (-50)
<i>Undecided</i>	15 (56)	6 (55)	-9 (-60)
Electronic Medication Administration Record	32 (41)	31 (40)	-1 (-3)
<i>Assessing</i>	7 (15)	13 (28)	6 (86)
<i>Implementing</i>	4 (9)	1 (2)	-3 (-75)
<i>Undecided</i>	35 (76)	32 (70)	-3 (-9)
Barcode Medication Administration	-	-	-
<i>Assessing</i>	2 (3)	7 (9)	5 (250)
<i>Implementing</i>	1 (1)	14 (18)	13 (1300)
<i>Undecided</i>	75 (96)	56 (73)	-19 (-25)
Infection Surveillance Software	20 (26)	27 (35)	7 (35)
<i>Assessing</i>	16 (28)	10 (20)	-6 (-38)
<i>Implementing</i>	3 (5)	1 (2)	-2 (-67)
<i>Undecided</i>	39 (67)	39 (78)	-
Electronic Prescribing w/ Community Pharmacies	37 (47)	39 (51)	2 (5)
<i>Assessing</i>	6 (15)	11 (29)	5 (83)
<i>Implementing</i>	6 (15)	6 (16)	-
<i>Undecided</i>	29 (71)	21 (55)	-8 (-28)
Electronic Data Exchange w/ Laboratories	34 (44)	37 (48)	3 (9)
<i>Assessing</i>	6 (14)	10 (25)	4 (67)
<i>Implementing</i>	5 (11)	3 (8)	-2 (-40)
<i>Undecided</i>	33 (75)	27 (68)	-6 (-18)
Electronic Data Exchange w/ Diagnostic Centers	27 (35)	33 (43)	6 (22)
<i>Assessing</i>	7 (14)	13 (30)	6 (86)
<i>Implementing</i>	5 (10)	1 (2)	-4 (-80)
<i>Undecided</i>	39 (76)	30 (68)	-9 (-23)
Electronic Data Exchange w/ Outpatient Providers	14 (18)	18 (23)	4 (29)
<i>Assessing</i>	6 (9)	8 (14)	2 (33)
<i>Implementing</i>	5 (8)	14 (24)	9 (180)
<i>Undecided</i>	53 (83)	37 (63)	-16 (-30)

Multi-Specialty

Multi-specialty Centers account for approximately 22 percent of the FASCs in Maryland. The EHR adoption rate is the highest of all health IT functions; at approximately 65 percent. Although there was virtually no change in the number of multi-specialty Centers adopting EHR over last year, roughly a 30 percent increase was reported in the adoption rate of EHRs among multi-specialty Centers. Approximately 29 percent of these Centers reported adopting CPOE and eMAR capabilities, an increase of about 6 percent and around 13 percent, respectively, in the the adoption rate of these technologies among multi-specialty Centers over last year. Around 24 percent report adopting e-prescribing functionality, an increase of about 33 percent over last year. Approximately 92 percent of multi-specialty Centers who do not report e-prescribing with community pharmacies are undecided about their future adoption of this technology.

Health IT Function	Multi-Specialty Centers # (%)		Change (% change)
	2009 (n=31)	2010 (n=17)	
Computerized Provider Order Entry	7 (23)	5 (29)	-2 (-29)
<i>Assessing</i>	5 (21)	1 (8)	-4 (-80)
<i>Implementing</i>	-	1 (8)	-
<i>Undecided</i>	19 (79)	10 (83)	-9 (-47)
Electronic Health Record	11 (35)	11 (65)	-
<i>Assessing</i>	4 (20)	-	-4 (-100)
<i>Implementing</i>	1 (5)	1 (17)	-
<i>Undecided</i>	15 (75)	5 (83)	-10 (-67)
Electronic Medication Administration Record	5 (16)	5 (29)	-
<i>Assessing</i>	5 (19)	-	-5 (-100)
<i>Implementing</i>	-	-	-
<i>Undecided</i>	21 (81)	12 (100)	-9 (-43)
Barcode Medication Administration	1 (3)	-	-1 (-100)
<i>Assessing</i>	5 (17)	2 (12)	-3 (-60)
<i>Implementing</i>	-	-	-
<i>Undecided</i>	25 (83)	15 (88)	-10 (-40)
Infection Surveillance Software	17 (55)	10 (59)	-7 (-41)
<i>Assessing</i>	4 (29)	2 (29)	-2 (-50)
<i>Implementing</i>	-	-	-
<i>Undecided</i>	10 (71)	5 (71)	-5 (-50)
Electronic Prescribing w/ Community Pharmacies	3 (10)	4 (24)	1 (33)
<i>Assessing</i>	7 (25)	1 (8)	-6 (-86)
<i>Implementing</i>	-	1 (8)	1
<i>Undecided</i>	21 (75)	11 (92)	-10 (-48)
Electronic Data Exchange w/ Laboratories	10 (32)	5 (29)	5 (-50)
<i>Assessing</i>	3 (14)	-	-3 (-100)
<i>Implementing</i>	-	-	-
<i>Undecided</i>	18 (86)	12 (100)	-6 (-33)
Electronic Data Exchange w/ Diagnostic Centers	4 (13)	1 (6)	-3 (-75)
<i>Assessing</i>	7 (26)	1 (6)	-6 (-86)
<i>Implementing</i>	1 (4)	-	-1 (-100)
<i>Undecided</i>	19 (70)	15 (94)	-4 (-21)
Electronic Data Exchange w/ Outpatient Providers	8 (26)	4 (24)	-4 (-50)
<i>Assessing</i>	1 (4)	-	-1 (-100)
<i>Implementing</i>	-	-	-
<i>Undecided</i>	22 (96)	13 (100)	-9 (-41)

Remarks

Health IT has the potential to change the way health care is provided by making it safer, less costly, and more efficient.²⁶ Although federal EHR adoption incentives under the *American Recovery and Reinvestment Act of 2009* are not available to FASCs²⁷, Centers continue to report progress in adopting health IT in an effort to improve the quality of the care they provide and to create efficiencies in care delivery. FASCs voluntarily reported for the second year information related to health IT adoption as part of the *Maryland Freestanding Ambulatory Surgical Center Survey*. This is the first year the rate of health IT adoption was assessed among Centers. For the most part, FASCs continue to report an increase in health IT adoption. EHRs are the leading functionality adopted among the Centers over the last year. Notably, the Center did not report adopting BCMA during this reporting period, although the number of the Centers in the planning stage increased sizably. FASCs are expected to increase their adoption of health IT, over the next year as they seek to take advantage of the many benefits the technology has to offer.

²⁶ Walker, E. Pan, D. Johnston, J. Adler-Milstein, D.W. Bates, B. Middleton. *The Value of Health Care Information Exchange and Interoperability*. Health Affairs January 2005. Available at: <http://content.healthaffairs.org/content/suppl/2005/02/07/hlthaff.w5.10.DC1>.

²⁷ 42 CFR Parts 412, 413, 422 et al. *Medicare and Medicaid Programs; Electronic Health Record Incentive Program; Final Rule*. July 2010. Available at: <http://edocket.access.gpo.gov/2010/pdf/2010-17207.pdf>.

Geographic Distribution by County

Baltimore

Anne Arundel County

Baltimore City

Baltimore County

Carroll County

Harford County

Howard County

Capital

Montgomery County

Prince George's County

Other

Allegany County

Calvert County

Caroline County

Cecil County

Charles County

Dorchester County

Frederick County

Garrett County

Kent County

Queen Anne's County

Somerset County

St. Mary's County

Talbot County

Washington County

Wicomico County

Worcester County

Survey Questions

Below is a summary of the *2010 Freestanding Ambulatory Surgical Health Information Technology Survey*. FASCs were asked to answer a filter question to determine if the Center uses software applications to manage their patient workflow. The Planning Questions (refer to the end of the survey) were included in each section in the event that the FASC selected “no” to any question designated with: *“If no, go to Planning Questions.”*

Overview

1. Does your Center use technology (e.g., electronic health records, computerized provider order entry, etc.) to manage your patient health information? *If no, answer Planning Questions.*
2. If yes, what is the name of the vendor?

Order Entry

1. Does your Center have an order entry system where providers (MD, DO, NP, PA) can electronically enter patient care orders? *If no, answer Planning Questions.*
2. Does this system allow providers to electronically view the status and results of electronically entered orders above?
3. Does this system have an order set* feature where a group of orders can be selected based upon the problem or diagnosis?
4. Does this system offer decision support* software for medication prescribing, including drug-drug; drug-food; and contraindication/dose limit for diagnosis, allergies, age/weight, lab/radiology results?
 - a. Is this feature implemented and operationalized?
 - b. Does this software offer links to resources for reference?
 - c. Is electronic documentation required for overriding an interception?
5. Does this system offer decision support software for diagnosis, chronic conditions, and standards of care, including heart failure, diabetes, and other appropriate treatments such as pneumonia vaccination, flu shot, etc.?
 - a. Is this feature implemented and operationalized?
 - b. Does the software offer links to resources for reference?
 - c. Is electronic documentation required for overriding an interception?
6. Does the system have an active "read-back order" function for verbal/phone orders?

Electronic Health Record (EHR)

7. Does your Center have an EHR*? *If no, answer Planning Questions.*
8. Is this system CCHIT*-certified?
9. Does this system allow review of previous admission data? *If no, answer Planning Questions.*

Medication Administration

10. Does your Center have an electronic medication administration record (eMAR*)? *If no, answer Planning Questions.*
11. Does your Center have a barcode medication administration (BCMA*) system? *If no, answer Planning Questions.*

12. Does your Center have an electronic medication reconciliation system in place for admission and discharge? *If no, answer Planning Questions.*

Postoperative Infection Tracking

1. Does your Center use software to manage postoperative infection tracking? *If no, answer Planning Questions.*

Health Information Exchange

13. Does your Center electronically prescribe discharge medications to local pharmacies? *If no, answer Planning Questions.*
14. Does your Center have a bidirectional electronic interface with community laboratories? *If no, answer Planning Questions.*
15. Does your Center have a bidirectional electronic interface with diagnostic centers? *If no, answer Planning Questions.*
16. Does your Center have a system capable of electronic data exchange for consultation or transfer of care with outpatient providers?

Planning Questions

Planning questions were incorporated in all survey sections as appropriate.

1. If no, is your Center:
 - a. Assessing software vendors within 12 months?
 - b. Implementing software applications within 12 months?
 - c. Undecided at this time?

Glossary of Terms

Barcode Medication Administration (BCMA):

Technology that allows for the real-time confirmation of the "five rights" - right patient, right medication, right dose, right route, and right time - for medication administration.

Clinical Decision Support:

Computer application to assist in clinical decisions by providing evidence-based knowledge in the context of patient-specific data.

Computerized Physician Order Entry (CPOE):

Computer-based application system for ordering providers (MD, DO, NP, or PA) to enter patient care orders at the point of care.

Diagnostic Centers:

Places that offer diagnostic services such as imaging services and other medical tests to aid in diagnosing and treating a patient.

Electronic Health Record (EHR):

A longitudinal collection of electronic health information that serves as a legal medical record, which includes documentation, vital signs, and assessments.

Electronic Medication Administration Record (eMAR):

An electronic format of the traditional paper-based medication administration record.

Electronic Prescribing (e-prescribing):

Electronic transmission of prescriptions directly to the dispensing pharmacy by the ordering provider.

Health Information Exchange (HIE):

Electronic movement of health-related information among organizations.

Health Information Technology (HIT; health IT):

Technology used to maintain health information into electronic format.

Infection Surveillance Software (ISS):

An application that monitors the events of infectious disease.

Laboratories:

Places where clinical tests are performed on specimens in order to get information about the health of a patient and aid in the diagnosis, treatment, and prevention of disease.

Order Set:

A group of evidenced-based orders for specific diagnosis or problems.

Appendix D

2010 Freestanding Ambulatory Surgical Center Health IT Survey Results						
Health IT	Aggregate	Geography			Specialty	
	<i>All FASCs</i>	<i>Capital</i>	<i>Baltimore</i>	<i>Other</i>	<i>Multi</i>	<i>Single</i>
	<i>N = 94</i>	<i>N = 28</i>	<i>N = 42</i>	<i>N = 24</i>	<i>N = 17</i>	<i>N = 77</i>
Computerized Provider Order Entry (CPOE)						
Yes	44	10	24	10	5	39
<i>Planning Projections</i>						
Assessing	8	3	2	3	1	7
Implementing	2	2	2	-	1	1
Undecided	40	13	16	11	10	30
Clinical Decision Support						
<i>Medications</i>						
Yes	35	7	22	6	3	35
No	9	3	2	4	2	4
<i>Diagnosis</i>						
Yes	9	2	5	2	3	26
No	35	8	19	8	2	13
Electronic Health Record (EHR)						
Yes	77	21	38	18	11	66
<i>Planning Projections</i>						
Assessing	4	2	2	-	-	4
Implementing	2	1	1	-	1	1
Undecided	11	4	1	6	5	6
Electronic Medication Administration Record (eMAR)						
Yes	36	12	20	4	5	31
<i>Planning Projections</i>						
Assessing	13	4	7	2	-	13
Implementing	1	1	-	-	-	1
Undecided	44	11	15	18	12	32
Barcode Medication Administration (BCMA)						
Yes	-	-	-	-	-	-
<i>Planning Projections</i>						
Assessing	9	3	5	1	2	7
Implementing	14	1	12	1	0	14
Undecided	71	24	25	22	15	56
Infection Surveillance Software						
Yes	37	7	18	12	10	27
<i>Planning Projections</i>						
Assessing	12	3	6	3	2	10
Implementing	1	-	1	-	-	1
Undecided	44	18	17	9	5	39
Electronic Prescribing (e-prescribing)						
Yes	43	12	24	7	4	39
<i>Planning Projections</i>						
Assessing	12	6	3	3	1	11
Implementing	7	1	4	2	1	6
Undecided	32	9	11	12	11	21
Electronic Data Exchange with Laboratories (HIE)						
Yes	42	9	24	9	5	37
<i>Planning Projections</i>						
Assessing	10	5	4	1	-	10
Implementing	3	-	3	-	-	3
Undecided	39	14	11	14	12	27
Electronic Data Exchange with Diagnostic Centers (HIE)						
Yes	34	4	23	7	1	33
<i>Planning Projections</i>						
Assessing	14	7	4	3	1	13
Implementing	1	-	1	-	-	1
Undecided	45	17	14	14	15	30
Electronic Data Exchange with Providers (HIE)						
Yes	22	7	10	5	4	18
<i>Planning Projections</i>						
Assessing	8	5	1	2	-	8
Implementing	14	1	12	1	-	14
Undecided	50	15	19	16	13	37



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