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Readiness for Meaningful Use of Health Information Technology and Patient Centered Medical Home Recognition Survey Results

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Objective. Determine the factors that impact HIT use and MU readiness for community health centers (CHCs).

Background. The HITECH Act allocates funds to Medicaid and Medicare providers to encourage the adoption of electronic health records (EHR), in an effort to improve health care quality and patient outcomes, and to reduce health care costs.

Methods. We surveyed CHCs on their Readiness for Meaningful Use (MU) of Health Information Technology (HIT) and Patient Centered Medical Home (PCMH) Recognition, then we combined responses with 2009 Uniform Data System data to determine which factors impact use of HIT and MU readiness.

Results. Nearly 70% of CHCs had full or partial EHR adoption at the time of survey. Results are presented for centers with EHR adoption, by the length of time that their EHR systems have been in operation.

Keywords: community health centers, Information Technology in Health, Meaningful Use

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Introduction

Background on EHR adoption

Critics of the U.S. health care system fault it for incurring high costs while failing to deliver high-quality health care that improves patient outcomes. The increasing use of health information technology (HIT) is expected to reduce health care costs, while improving health care quality, care coordination (particularly for chronically ill patients, whose care accounts for much of the high cost of U.S. health care), and patient outcomes (Glaser, 2010). However, some health care providers have been reluctant to adopt this technology, due to the financial and time costs of implementing and running an electronic health record (EHR) system. In 2009, only 17% of doctors and 10% of hospitals were estimated to have even basic EHRs in use (Blumenthal, 2009).

In an effort to encourage the adoption of health information technology, the Health Information Technology for Economic and Clinical Health (HITECH) Act was included as a provision of the American Recovery and Reinvestment Act of 2009 (ARRA) to incentivize the adoption of EHRs by allocating $19.2 billion to health care providers who serve Medicaid and Medicare patients (Moreno, Peikes, & Krilla, 2010). The Act provides Medicare funds of up to $44,000 over 5 years (2011–2015) to eligible providers who serve Medicare patients and who implement and "meaningfully use" certified EHRs (Centers for Medicare & Medicaid Services, 2012a). It also encourages EHR adoption among providers who serve Medicaid patients by providing up to $63,750 in incentive payments over six years. Hospitals are also eligible for incentive payments for EHR adoption, in the form of a one-time $2 million bonus payment and increased Medicare diagnosis-related group (DRG) fees (Blumenthal, 2009). Beyond incentive payments, the HITECH Act also authorizes grants to states, academic institutions, and other organizations to promote the use of HIT, and expands security and privacy requirements of the Health Insurance Portability and Accountability Act (HIPAA). Finally, the HITECH Act also includes disincentives to providers who do not adopt HIT—in 2015, physicians and hospitals who fail to use EHR meaningfully will lose 1% in Medicare fees, 2% in 2016, and 3% in 2017 (Blumenthal, 2009).

The HITECH Act is expected to decrease federal spending on health care by $12 billion from 2011 to 2019, and to increase the adoption of HIT to 90% of physicians and 70% of hospitals by 2019 (Congressional Budget Office, 2009). Its goal of increasing the use of EHRs is congruent with the aims of the Affordable Care Act; in particular, the establishment of accountable care organizations (ACOs), which are designed to improve health care quality and care coordination for patients, in part, by relying on health information technologies, such as clinical decision supports and health information exchanges (Glaser, 2010).

In July 2010, the Centers for Medicare & Medicaid Services (CMS) announced their final rule on the definition of Stage 1 (of three stages) "meaningful use" (MU) criteria for 2011–2012

(CMS, 2010). The final rule established a set of 25 defined measures for eligible professionals (EPs) and 24 for hospitals, consisting of a core set (15 for EPs and 14 for hospitals) and a menu set (10 objectives, from which 5 must be selected by both EPs and hospitals). Providers are required to fulfill all objectives of the core set, but are allowed to defer up to five measures. The final rule also requires EPs and hospitals to report clinical quality measure data to their states or CMS in 2011, and to submit this information electronically through their EHR systems to their states or CMS in 2012. The initial requirement is for EPs to report on six clinical quality measures—3 core or alternate core measures and 3 additional measures—while hospitals must report on 15 clinical quality measures (CMS, 2012b).

In the summer of 2012, CMS announced the final rule for Stage 2 (CMS, 2012c). It pushed back the timeline for eligible providers to meet Stage 2 requirements from 2013 to 2014. The final rule also allows all providers to demonstrate meaningful use for only a three-month reporting period in 2014. Stage 2 MU for eligible providers was changed to include 17 core objectives and 6 menu objectives. Eligible hospitals must meet 16 of 17 core objectives and 3 menu objectives (chosen by the providers out of a possible 6 accounting for their normal scope of practice). Beginning in 2014, eligible providers will be required to report on 9 out of a possible 64 clinical quality measures, while eligible hospitals will be required to report on 16 out of a possible 29 clinical quality measures. The chosen measures must represent three out of the six Department of Health and Human Services (DHHS) National Quality Strategy's health care policy domains: Patient and Family Engagement, Patient Safety, Care Coordination, Population and Public Health, Efficient Use of Healthcare Resources, and Clinical Processes/Effectiveness.

Background on community health centers

CHCs are designated as Federally Qualified Health Centers (FQHCs) if they meet requirements to serve medically underserved communities, provide comprehensive primary care, and are governed by health center patient-majority (at least 51%) community boards. In 2011, over 1,200 federally funded and "look-alike" health centers provided care to over 21 million patients. FQHCs are required to annually report data on their provision of services, patient population, financial and staffing information, and quality of care measures to the Bureau of Primary Health Care (BPHC) through the Uniform Data System (UDS).

The CHC patient population is largely low-income (93% have incomes below 200% of the federal poverty level) and uninsured (36%), or insured by Medicaid (39%; BPHC, 2012). They are also at higher risk of health problems compared to the patient population of private physician offices (Shi, Lebrun, Tsai, & Zhu, 2010). Nearly a third of CHC patients have a chronic condition.[1]

[1]George Washington University analysis of 2011 UDS data, using the definition of chronic condition "(i.e., primary diagnosis of diabetes, selected heart disease, hypertension, asthma, chronic bronchitis, emphysema, HIV, hepatitis B, or hepatitis C)" from Shi et al., 2010, but also added overweight/obesity.

CHCs' EHR use has increased rapidly in the past years; in 2008, 49% of surveyed CHCs had full or partial EHR adoption, compared to 26% of surveyed CHCs in 2006 (Shields et al., 2007; Lardiere, 2009). HIT capacity at CHCs has been significantly associated with improved quality of care, as measured by patients' ease in getting a timely appointment for specialty care, patients' receipt of follow-up or preventive care reminder notifications, and CHCs' receipt of discharge summaries following their patients' hospital admissions (Frimpong et al., 2013).

Methods

In order to measure the success of community health centers in adopting EHR, and their readiness for MU of health information technology, researchers from the George Washington University, in conjunction with the National Association of Community Health Centers, conducted a survey of community health centers (CHCs) on their readiness for Meaningful Use of Health Information Technology (HIT) and Patient Centered Medical Home (PCMH) Recognition. All FQHCs in the U.S. and U.S. territories were invited to participate. The survey was administered through Survey Monkey® from December 2010 to February 2011 (for further details on the survey's methodology, see Cunningham, Lara, & Shin, 2011). A total of 714 community health centers, or 64% of the total, responded to the survey.

Survey data were merged with 2009 UDS data in order to determine which factors were associated with EHR adoption and compliance with Stage 1 Meaningful Use measures. Although some of the Stage 1 measures and reporting requirements were later revised (CMS, 2012c), survey results indicate CHCs have established a robust HIT infrastructure for collecting patient data. Of 708 centers who answered the question on EHR adoption, 68.5% had full or partial EHR adoption (Cunningham, Lara, & Shin, 2011). Although the survey largely centers on Stage 1 activities, it also hints at their level of readiness for meeting more advanced meaningful use standards.

Findings

Survey results suggest that health centers are progressing toward full implementation and use of electronic health records. Of CHCs with at least 3 years of EHR operation, 75 percent are fully electronic compared with 70 percent of CHCs with 1–2 years of EHR operation, and 48 percent of those with less than 1 year of operation (Exhibit 1). Health centers with 3 or more years of operating an EHR also had greater proportion of CHCs with PCMH recognition than their counterparts. The findings suggest that CHCs can attain compliance with MU standards given enough time and assistance.

Exhibit 2 shows compliance with Stage 1 core and menu set MU measures at the time of the survey, or by the end of 2012, for those CHCs with an EHR that had been in operation for 3 or more years. Among those centers, attainment of core measures was high, as indicated by the

ability to record patient demographics (98%), maintain an active medication list (97%), maintain an active medication allergy list (96%), and record and chart changes in vital signs (96%). A high percentage reported the ability to generate a list of patients by specific conditions for quality improvement and outreach (95%), incorporate clinical lab test results as

Exhibit 1. CHC respondent characteristics by duration of EHR operation

	< one year	1–2 years	3+ years	ANOVA or X^2 p value
Distribution (n=483)*	30.0%	31.1%	38.9%	
Mean count of total patients	18,452	16,651	19,744	0.417
Mean percent Medicaid patients	32.4%	29.3%	34.0%	0.026
Mean percent uninsured patients	40.2%	42.2%	37.8%	0.124
EHR adoption				
Full	48.3%	70.0%	74.5%	0.000
Partial	51.7%	30.0%	25.5%	
Of centers that provide behavioral health services, behavioral health records are fully or partially electronic	82.3%	90.8%	89.7%	0.099
Of centers that provide behavioral health services, medical and behavioral health records are integrated	81.4%	78.9%	81.3%	0.862
Of centers that provide onsite dental health services, use an electronic dental record	45.5%	53.2%	68.0%	0.001
Have received PCMH recognition (Level 1, 2, or 3)	2.8%	7.7%	12.5%	0.007
Have received American Recovery and Reinvestment Act (ARRA) Funding for Capital Improvement and Facility Investment	81.9%	73.3%	72.3%	0.099

*Only 2 health centers (0.4%) chose "not sure" in response to the length of EHR operation question so were dropped.
SOURCE: George Washington University, 2010–11 CHC Readiness for MU/HIT and PCMH Survey.

structured data (94%), and identify and provide patient-specific education resources if appropriate (84%). The high percentage of CHCs indicating the ability to meet these standards bodes well for complying with definitional changes of existing measures and new detailed measures of capturing patient notes, images, and family history.

Some core MU measures remain challenging for CHCs, including the ability to perform medication reconciliation at relevant transfers of care (74%), providing patients with timely electronic access to their health information (74%), and submitting syndromic surveillance data to public health agencies (63%). While modifying or extending some measures previously in Stage 1, such as providing patients electronic access to personal health information, will help CHCs to move closer toward complying with Stage 2 and 3 meaningful use standards, even the most experienced CHCs may struggle to meet the final standards.

Exhibit 2. Compliance with Stage 1 Core and Menu Meaningful Use measures for centers with an EHR in operation for over 3 years (n=185)

Meaningful Use Measures	Yes, now or by 2012		No, not by 2012 or unsure	
	Number	Percent	Number	Percent
Core MU Measures				
1. Uses CPOE for medication orders	166	89.7	19	10.3
2. Implements drug to drug and drug allergy interaction checks	174	94.1	11	5.9
3. Generates and transmits permissible prescriptions electronically (eRx)	177	95.7	8	4.3
4. Records patient demographics	181	97.8	4	2.2
5. Maintains an up-to-date problem list of current and active diagnoses	178	96.2	7	3.8
6. Maintains active medication list	179	96.8	6	3.2
7. Maintains active medication allergy list	178	96.2	7	3.8
8. Records and charts changes in vital signs	178	96.2	7	3.8
9. Records smoking status patients age 13+	176	95.1	9	4.9
10. Implements one clin. decision support rule	150	81.1	35	18.9
11. Reports ambulatory clin. quality measures	168	90.8	17	9.2
12. Provides patients with an electronic copy of their health information	157	84.9	28	15.1
13. Provides clinical summaries for patients for each office visit	167	90.3	18	9.7
14. Exchanges key clinical information among providers of care	163	88.1	22	11.9
15. Protects electronic health information	177	95.7	8	4.3
Menu MU measures				
1. Submits electronic data to immunization registries	155	83.8	30	16.2
2. Submits syndromic surveillance data to public health agencies	116	62.7	69	37.3
3. Implements drug formulary checks	154	83.2	31	16.8
4. Incorporates clinical lab test results as structured data	174	94.1	11	5.9
5. Generates lists of patients by specific conditions for QI, outreach	176	95.1	9	4.9
6. Sends reminders to patients for preventive/ follow-up care	157	84.9	28	15.1
7. Provides patients with timely electronic access to their health information	136	73.5	49	26.5
8. Identifies and provides patient-specific education resources if appropriate	158	85.4	27	14.6
9. Performs medication reconciliation at relevant transfers of care	136	73.5	49	26.5
10. Provides summary of care record for each transition of care or referral	144	77.8	41	22.2

SOURCE: George Washington University, 2010–11 CHC Readiness for MU/HIT and PCMH Survey.

Exhibit 3 shows CHC-reported technical assistance (TA) or training needs, by duration of EHR operation. Although there were no significant differences, one finding that approached significance was that CHCs with EHR systems in operation for 3 or more years were the least likely to express interest in receiving TA for preparation for applying for PCMH recognition, perhaps because they were the most likely to have received PCMH recognition (Exhibit 1).

Exhibit 3. CHCs' Technical Assistance (TA) or training interests (n=483*) by duration of EHR operation

	< one year %	1–2 years %	3+ years %	ANOVA p value
1. Selecting an EHR and/or EDR vendor	2.1	1.3	3.2	0.513
2. Medicaid EHR incentives	41.4	37.3	42.0	0.654
3. Regulatory analysis	26.2	24.0	22.3	0.715
4. Assessment/gap analysis of MU readiness	37.9	34.7	33.0	0.640
5. Prep. for compliance with MU measures	51.0	38.7	43.1	0.095
6. Workflow redesign & practice transform.	44.1	41.3	44.1	0.847
7. Prep. for applying for PCMH recognition	56.6	60.7	47.9	0.053
8. Using HIT to improve clinical care	51.0	42.7	42.6	0.233
9. Registries and clinical data warehouses	38.6	34.7	28.2	0.124

*Only 2 health centers (0.4%) chose "not sure" in response to the length of EHR operation question so were dropped.
SOURCE: George Washington University, 2010–11 CHC Readiness for MU/HIT and PCMH Survey.

Conclusions

Our survey results suggest the trend of increasing EHR adoption at CHCs is continuing, from only a quarter of health centers in 2006 to nearly 70% at the time of our survey. Data from the 2011 UDS support this trend, as 80% of CHCs reported full or partial EHR adoption in 2011 (BPHC, 2012). Although the 2011 UDS data also indicate 262 CHCs across 39 states have already received $72 million in EHR incentives, our survey findings indicate CHCs may require not only more assistance in fully understanding and implementing the technical and technological requirements for demonstrating meaningful use, but also more time to adapt their training and practices accordingly. Even after nearly three years of technical support provided by Regional Extension Centers (RECs), the Centers for Medicare & Medicaid Services indicate only 9 percent of CHCs were able to demonstrate meaningful use (ONC, 2013). This estimate closely approximates an earlier finding from this survey that nearly 6 percent of FQHCs had received PCMH recognition (Cunningham et al., 2011). These findings suggest that in order for CHCs to leverage fully the use and benefits of electronic health records, they will require further assistance and time in adapting to new complex work flows while expanding their capacity.

Other initiatives such as the 5-year Safety Net Medical Home Initiative, which was sponsored by The Commonwealth Fund in partnership with the MacColl Institute for Healthcare Innovation at the Group Health Research Institute and Qualis Health, found that CHCs can successfully transform their practices and optimize technology given enough resources and investment over time (Safety Net Medical Home Initiative, 2013). Additionally,

several states currently offer or are planning to offer quality or health information technology incentives to safety net providers to support medical home initiatives (Kaye & Takach, 2009). In fact, since 2010, CMS has offered states the option to provide "health homes" for Medicaid enrollees with chronic conditions with a 90 percent federal matching rate over the first two years; however, only 15 states have been approved to date (CMS, 2013). In addition to the RECs, the federal government also sponsors the Beacon Communities project to better promote health information exchange in 17 communities (Schachter, Rein, & Sabharwal, 2013). More notably, over 479 CHCs are currently participating in the Advanced Primary Care Practice Demonstration, which is operated by CMS in partnership with HRSA, to enhance quality, improve health outcomes, and reduce costs (CMS, 2011). Under this 3-year demonstration, CHCs receive additional case management fees and other support to meet the highest level of PCMH standards. These state and federal initiatives and the range of CHC surveyed activities indicate significant potential for meeting current and more advanced meaningful use standards. At the same time, CHCs will require more time and resources to fully embrace EHRs toward meeting their mission of providing high-quality care to medically underserved communities.

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References

Blumenthal, D. (2009). Stimulating the adoption of health information technology. *The New England Journal of Medicine*, *360*(15), 1477–1479. PubMed http://dx.doi.org/10.1056/NEJMp0901592

Bureau of Primary Health Care (2012). *Uniform Data System (UDS) Report 2011.*Washington, DC: Health Resources and Services Administration, US Department of Health and Human Services. Retrieved from http://bphc.hrsa.gov/uds/doc/2011/National_Universal.pdf

Centers for Medicare & Medicaid Services (2010). CMS finalizes definition of meaningful use of certified electronic health records (EHR) technology. Retrieved from http://www.cms.gov/apps/media/press/factsheet.asp?Counter=3794&intNumPerPage=10&checkDate=&checkKey=&srchType=1&numDays=3500&srchOpt=0&srchData=&keywordType=All&chkNewsType=6&intPage=&showAll=&pYear=&year=&desc=&cboOrder=date

Centers for Medicare & Medicaid Services (2011). Federally Qualified Health Center Advanced Primary Care Practice (FQHC APCP) Demonstration Fact Sheet. Retrieved from http://www.fqhcmedicalhome.com/docs/07_Demonstration%20Fact%20Sheet.pdf

Centers for Medicare & Medicaid Services (2012a). EHR Incentive Programs—Overview. Retrieved from http://www.cms.gov/EHRIncentivePrograms/

Centers for Medicare & Medicaid Services (2012b). Clinical Quality Measures (CQMs). Retrieved from http://www.cms.gov/EHRIncentivePrograms/31_ClinicalQualityMeasures.asp#TopOfPage

Centers for Medicare & Medicaid Services (2012c). EHR Incentive Programs: Stage 2. Retrieved from http://www.cms.gov/regulations-and-guidance/legislation/ehrincentiveprograms/stage_2.html

Centers for Medicare & Medicaid Services (2013). State-by-State Health Home State Plan Amendment Matrix: Summary Overview. Retrieved from http://www.medicaid.gov/State-Resource-Center/Medicaid-State-Technical-Assistance/Health-Homes-Technical-Assistance/Downloads/State-by-State-SPA-Matrix-7-23.pdf

Congressional Budget Office (January 21, 2009). Letter to the Honorable Charles B. Rangel, Chairman, Committee on Ways and Means, U.S. House of Representatives. Retrieved from http://www.cbo.gov/ftpdocs/99xx/doc9966/HITECHRangelLtr.pdf

Cunningham, M., Lara, A., & Shin, P. (2011). Results from the 2010–11 Readiness for Meaningful Use of HIT and Patient Centered Medical Home Recognition Survey. Policy Research Brief #27 *Geiger Gibson/RCHN Community Health Foundation Research Collaborative*, Issue No. 27. Retrieved

from http://sphhs.gwu.edu/departments/healthpolicy/dhp_publications/pub_uploads/dhpPublication_6461F0DD-5056-9D20-3D7593CB6AE409B5.pdf

Frimpong, J. A., Jackson, B. E., Stewart, L. M., Singh, K. P., Rivers, P. A., & Bae, S. (2013). Health information technology capacity at Federally Qualified Health Centers: a mechanism for improving quality of care. *BMC Health Services Research*, *13*(35), 1–12. Retrieved from http://www.biomedcentral.com/1472-6963/13/35/abstract

Glaser, J. (2010). HITECH lays the foundation for more ambitious outcomes-based reimbursement. *The American Journal of Managed Care*, *16*(12 Suppl HIT), SP19–SP23. PubMed

Kaye, N., & Takach, M. (2009). *Building medical homes in state Medicaid and CHIP programs.* Portland, ME: National Academy for State Health Policy.

Lardiere, M. (2009). A National Survey of Health Information Technology (HIT) Adoption in Federally Qualified Health Centers. National Association of Community Health Centers. Retrieved from http://www.nachc.com/client/NACHC%202008%20HIT%20Survey%20Analysis_FINAL_6_9_091.pdf

Moreno, L., Peikes, D., & Krilla, A. (2010). Necessary but not sufficient: the HITECH Act and health information technology's potential to build medical homes. (Prepared by Mathematica Policy Research under Contract No. HHSA290200900019I TO2.) AHRQ Publication No. 10-0080-EF. Rockville, MD: Agency for Healthcare Research and Quality.

Office of the National Coordinator for Health Information Technology.(2013). *Supporting Health Information Technology Adoption in Federally Qualified Health Centers.* ONC Data Brief, No 8. Retrieved from http://www.healthit.gov/sites/default/files/rec-fqhc_data_brief_final.pdf

Safety Net Medical Home Initiative (2013). *Project Summary: July 2013.* Retrieved from: http://www.safetynetmedicalhome.org/sites/default/files/2013-Project-Summary.pdf

Schachter, A., Rein, A., & Sabharwal, R. (2013). *Beacon Policy Brief: Building a Foundation of Electronic Data to Measure and Drive Improvement*. Retrieved from http://www.healthit.gov/sites/default/files/beacon_quality_measurement_brief_final_14aug13.pdf

Shi, L., Lebrun, L. A., Tsai, J., & Zhu, J. (2010). Characteristics of ambulatory care patients and services: a comparison of community health centers and physicians' offices. *Journal of Health Care for the Poor and Underserved*, *21*, 1169–1183. PubMed

Shields, A. E., Shin, P., Leu, M. G., Levy, D. E., Betancourt, R. M., Hawkins, D., & Proser, M. (2007). Adoption of Health Information Technology in Community Health Centers: Results of a National Survey. *Health Affairs*, *26*(5), 1373–1383. PubMed http://dx.doi.org/10.1377/hlthaff.26.5.1373

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